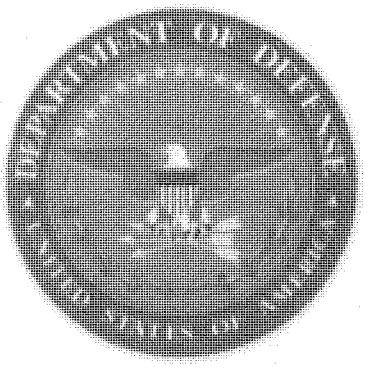
FISCAL YEAR 2016 REPORT TO CONGRESS ON THE REVIEW OF ENLISTMENT OF INDIVIDUALS WITH DISABILITIES IN THE ARMED FORCES



Prepared by the Office of the Under Secretary of Defense for Personnel and Readiness

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The estimated cost of this report or study for the Department of Defense is approximately $556,000 for the 2015 Fiscal Year. This includes $550,000 in expenses (IDA contract cost) and $5,910 in DoD labor.
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Executive Summary

In response to Senate Report 113-211, page 20, accompanying H.R. 4870, the Department of Defense (DoD) Appropriations Bill, 2015, DoD commissioned the Institute for Defense Analyses (IDA) to conduct a study into the viability of allowing individuals with disabilities an opportunity to join the military in certain occupations. This report is a follow-on to the study conducted by the Air Force on this same issue, which was requested in Senate Report 113-85, accompanying S. 1429, the DoD Appropriations Bill, 2014. DoD requested a study by IDA "Force Impact of Expanding the Recruitment of Individuals with Auditory Impairment," which examines the issue more fully, evaluating whether there are any military occupational specialties best suited for individuals with disabilities, and assessing how individuals with disabilities would fare as military members in the performance of their required duties.

Additionally, Senate Report 114-49, accompanying S. 1376, the National Defense Authorization Act for Fiscal Year 2016, directed DoD to assess the feasibility of a pilot program to determine whether civilians with certain medical conditions that are currently grounds for rejection for military service under Department of Defense Instruction (DoDI) 6130.03, "Medical Standards for Appointment, Enlistment, or Induction in the Military Services," dated April 28, 2010, may be appointed, enlisted, or inducted in the Military Services. The feasibility assessment would require an evaluation of a range of disabilities, including hearing impairment, amblyopia or partial visual impairment, a lost or missing limb or limbs, paraplegia, a history of surgical procedures, or a history of asthma. The Senate recommended using cohorts consisting of DoD military members or civilians with similar disabilities, who are not DoD military members or civilians, to determine whether individuals with certain medical conditions might be more suited to certain jobs than individuals without disabilities serving in the military. In our review of this requirement, DoD believes the focus of such a study should be on how individuals with disabilities would perform in the military, as well as the impact to force readiness. DoD has determined it is imprudent to proceed with an extensive pilot program encompassing the number of conditions identified in the Senate report, due to human subject research protection requirements, to include the basic provision for Institutional Review Boards, informed consent

and assurances of compliance,[1] the timeframe involved, and cost of scheduling. DoD believes that broad findings from a recent IDA study involving individuals with hearing disabilities is applicable to other medical conditions, including the list of disabilities in the Senate Report. Therefore, this report is submitted also to meet the requirements of Senate Report 114-49.

DoD Commissioned Study by IDA

In response to Senate Report 113-211 of 2015, DoD commissioned IDA to conduct a study into the viability of allowing individuals with hearing impairments an opportunity to join the military in certain occupations. IDA applied a holistic approach to this study evaluating both the clinical aspects, and the viability of allowing individuals with hearing impairments to access into the military to support the strategic goals to protect and defend the homeland.

Fundamental to evaluating this issue is maintaining a military force capable of meeting current and future mission demands. With this in mind, IDA's analysis focused primarily on questions raised in the Senate Report 113-85, but not sufficiently answered in the Air Force report on this subject. IDA's report, "Force Impact of Expanding the Recruitment of Individuals with Disabilities," provides detailed responses to:

(1) What if any, are the barriers that may limit individuals who have hearing impairments from serving in the military?

(2) What is the current state of the art in accommodations (assistive technologies and methods) for those with hearing impairments?

(3) Are there military occupational specialties that may be appropriate for further investigation (e.g., via fitness-for-duty) for allowing enlistment of individuals with hearing impairment." In addition, the study assessed "the feasibility and advisability of permitting individuals with hearing impairments to access as members of the armed forces."

The study methodology included evaluating individuals with actual disabilities, who have adapted and/or modified their way of life to compensate for their disability, to gain a better understanding of how these individuals would fare in the military. Equally critical to this issue is whether these individuals could perform all the duties expected of every Soldier, Sailor, Airman

[1] 32 CFR Part 219

or Marine, as each Service relies on the efforts of each and every Service member to contribute to Service missions and the overall national defense strategy. This may include the requirement to perform outside their primary military occupational specialty (MOS) and if needed, deploy anywhere in the world without limitations. DoD and the Services remain committed to maintaining a military force that is ready and capable of meeting our current and future mission demands.

DoDI 6130.03, "Medical Standards for Appointment, Enlistment, or Induction in the Military Services," states that "individuals under consideration for appointment, enlistment, or induction into the Military Services" should be "[f]ree of medical conditions or physical defects that may require excessive time lost from duty," or "result in separation from the Service for medical unfitness;" "[m]edically capable of satisfactorily completing required training;" "[m]edically adaptable to the military environment without the necessity of geographical area limitations;" and "[m]edically capable of performing duties without aggravation of existing physical defects or medical conditions."[2]

This DoD guidance informs the Military Services' foundational organizing principles. These are the basic principles that underlie each Service's fundamental personnel expectations and underlying cultural norms, as tied to their basic roles and missions.[3]

The Army's foundational organizing principle emphasizes that every Soldier is a "Warrior." According to the Army Field Manual 3-21.75, The Warrior Ethos and Soldier Combat Skills, *"[t]oday's conflicts are fought throughout the whole spectrum of the battlespace by all Soldiers, regardless of military occupational specialty (MOS)." As Warriors, professional soldiers must be "trained, ready, and able to enter combat; ready to fight—and win—against any enemy, any time, any place."*[4]

The Navy's foundational organizing principle likewise emphasizes a Total Force construct, which incorporates Active and Reserve Component Service personnel. According to the Department of the Navy's 2014 document entitled, "The Nation's Total Force: At the Right

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[2] Department of Defense Instruction (DoDI) 6130.03, Apr. 28, 2010, Incorporating Change 1, Sept. 13, 2011, Medical Standards for Appointment, Enlistment, or Induction in the Military Services

[3] USA. Institute for Defense Analyses. *Force Impact of Expanding the Recruitment of Individuals with Auditory Impairment.* By Joseph Adams, Amy Alrich, James Belanich, Colin Doyle, Rachel Dubin, David Eisler, Rebecca Grier, and Alan Wang. Print.

[4] Army source: Army Field Manual 3-21.75, *The Warrior Ethos and Soldier Combat Skills*, retrieved at: https://fas.org/irp/doddir/army/fm3-21-75.pdf

Place, At the Right Time, All the Time," "*[t]he evolving dynamics of the 21st century security environment require forces to be ready to deploy globally."*[5]

The Air Force also emphasizes the expeditionary nature of Airmen. For example, the Air Force PAM 10-100, Airman's Manual, states that *"[a]s an expeditionary Airman you must stay ready to deploy anywhere in the world on short notice."*[6]

The Marine Corps emphasizes that every Marine is a rifleman. Regardless of their MOS, every Marine must be ready to take on a range of basic Marine Corps roles in support of their core missions.[7]

Accession Standards and Applicant Screening

Central to the analysis conducted by IDA was the requirement for the DoD to maintain a military force capable of meeting current and future mission demands. Mission effectiveness is, and will remain, absolutely critical to our Nation's defense. Military service, by its very nature, is difficult and frequently hazardous. Meeting DoD's mission demands requires each Service member be available and qualified to perform assigned missions, including roles and functions outside of their occupation, in any setting.

Additionally, as the military is significantly smaller than in other periods of wartime history, each and every member of the military must be physically and medically able to deploy to isolated and harsh locations with very little notice. This requirement limits the Services' ability to provide reasonable accommodation for individuals with medical conditions. Each Service establishes its own standards for enlistment and commissioning utilizing the specific policies for accession medical standards established by DoDI 6130.03.

Current accession standards reflect Service needs and are designed to ensure that those individuals accepted are qualified, effective, do not have a disability, and are capable of successfully performing military duties, and "satisfactorily completing required training." Such duties involve a wide range of demands, including exposure to danger, emotional stress, harsh environments, and the operation of dangerous equipment. Military duty may be in remote areas

[5] Navy source: Department of the Navy Fiscal Year 2014 Annual Financial Report, The Nation's Total Force: At the Right Place, At the Right Time, All the Time, November 2014

[6] Air Force source: Air Force PAM 10-100, *Airman's Manual* ,1 March 2009 (incorporating Change 1, 24 June 2011), retrieved at: http://static.e-publishing.af.mil/production/1/af_a3_5/publication/afpam10-100/afpam10-100.pdf

[7] Marine Corps source: http://www.marines.com/becoming-a-marine/school-of-infantry

lacking immediate and comprehensive medical support or the ability to provide reasonable accommodations. Such demands are not normally found in civilian occupations. Further, each of the Services have independently stated that, absent the granting of an exception to policy, every uniformed individual is expected to be worldwide deployable, and be "medically adaptable to the military environment without the necessity of geographical area limitations."[8] An important objective of DoD's thorough applicant screening process is to ensure that persons accepted for military service are physically and psychologically capable to withstand the isolation and rigors associated with military service. We would be negligent in our responsibility if standards permitted the entrance of applicants whose physical or emotional impairments could cause them to compromise the military mission or to further aggravate their conditions.[9] This policy exists to protect the individual with a disability or limiting medical condition, as well as the other members within their units. The DoD team is comprised of both uniformed and civilian personnel. Although military service is limited to those without disabilities, civilian personnel positions can be exempt from deployment and Federal agencies are legally obligated to accommodate the employment of individuals with disabilities.

IDA Study Findings

1. Barriers that may limit individuals who have hearing impairments from serving in the military.

IDA's research results indicate that for individuals with hearing impairments there are several barriers to military service. Of these, deployability and security are the most challenging. Ethos, for all intents and purposes, is the same across the Services; Service members are warriors ready to deploy rapidly and without impediment or encumbrance. As stated earlier in the report (page 4), the Army specifies "Every soldier is a "Warrior." Today's conflicts are fought throughout the whole spectrum of the battlespace by all Soldiers, regardless of military occupational specialty (MOS)." The Marine Corps ethos is "every Marine is a rifleman."

[8] USA. Institute for Defense Analyses. *Force Impact of Expanding the Recruitment of Individuals with Auditory Impairment*. By Joseph Adams, Amy Alrich, James Belanich, Colin Doyle, Rachel Dubin, David Eisler, Rebecca Grier, and Alan Wang. Print.
[9] USA. Department of Defense. Office of the Secretary of Defense (OSD). *Medical Standards for Appointment, Enlistment, or Induction in the Military Services*. Washington D.C.: n.p., 2011. Print. DoDI 6130.03.

Regardless of their MOS, every Marine must be ready to take on a range of basic Marine Corps roles in support of their core missions. The other Services have similar ethos. Examining the Service personnel deployment rates of every MOS over the last 10 years, IDA's analysis revealed that while some individuals did not deploy during this timeframe, there were no non-deployable occupations, MOSs, designators, specialties, or ratings. Service readiness would be significantly impacted if certain MOS/occupations were exempt from deployment.

With regard to security, there are two barriers. First, national security systems are excluded from compliance with requirements under section 508 of the Rehabilitation Act of 1973, as amended, with respect to information and communications technology that falls within the definition of national security systems as defined in title 10, U.S.C., 11103.[10] As a result, the accessibility of military equipment may be a barrier for individuals with a hearing impairment from serving in the military. Federal regulations implementing the Act provide greater explanation of the exemption under the Act.

36 CFR Part 1194.3 General exceptions.

(a) This part does not apply to any electronic and information technology operated by agencies, the function, operation, or use of which involves intelligence activities, cryptologic activities related to national security, command and control of military forces, equipment that is an integral part of a weapon or weapons system, or systems which are critical to the direct fulfillment of military or intelligence missions. Systems which are critical to the direct fulfillment of military or intelligence missions do not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications).[11]

In addition, many of the assistive technologies discussed as accommodations for individuals with hearing impairments utilize portable electronics and/or wireless technologies. Department of Defense Directive 8100.02, "Use of Commercial Wireless Devices, Services, and Technologies in the Department of Defense (DoD) Global Information Grid (GIG)" states wireless technologies in DoD Information Systems can have a significant adverse effect on the

[10] 29 USC § 794d(a)(5).
.[11] 36 CFR Part 1199.3 (2015).

security posture of the IS and requires security review and documentation.[12] Accordingly, these devices cannot be used without explicit written approval of a designated approving authority.

2. Current state of the art in accommodations

There are many different accommodations used by individuals with hearing impairments. The variety of accommodations is a result of the variety of tasks typically involving hearing (for example, alerting, sound discrimination, and communication), as well as the nature of the impairment. Often, individuals with hearing impairments use strategies or general consumer technologies (for example, mobile phones, email, instant messaging, speech to text software) to overcome barriers. There are also technologies developed specifically for the hearing impaired. Assistive technology related to hearing loss can be divided into seven broad groups; General amplification, Communication-General, Communication-Written, Communication-Distant, Assistive Listening Devices, Alerting, and Sound Discrimination. While an individual with a hearing impairment may use one or a combination of assistive technologies on a day-to-day basis, these technologies may not be compatible or appropriate for military use, particularly in deployed environments. As noted above, many assistive technologies contain electronics which may not be compliant with security directives.

3. Are there military occupational specialties that may be appropriate for allowing enlistment of individuals with hearing impairments?

Maintaining a military force capable of meeting unanticipated demands is a core component of the 2015 National Military Strategy. The strategy states "we must prepare our Service members to fight under conditions of complexity and persistent danger, conditions that demand courage, toughness, adaptability, and endurance as well as an abiding commitment to our Nation's values and professional military ethic."[13] When evaluating whether there are any military specialties appropriate for allowing enlistment of individuals with a hearing impairment, support of the national military strategy is paramount. Core to maintaining a ready and capable military force is the understanding that each Service member is required to be available and

[12] USA. Department of Defense. ASD. *Use of Commercial Wireless Devices, Services, and Technologies in the Department.* Washington D.C., 2004. Print.
[13] www.jcs.mil/.../2015_National_Military_Strategy.pdf, page 13.

qualified to perform assigned missions, including roles and functions outside of their occupation, in any setting. During the 2007 hearing before the Readiness Subcommittee on the committee on Armed Services, the Air Force reported that 25 percent of the Airmen were filling positions outside their primary MOS and the Navy reported over 46,000 Sailors filled joint requirements in the USCENTCOM area.[14] According to 2009 Joint Manning Documents, 7,724 individual augmentee requirements were levied on the military Services for sourcing outside of pre-planned rotational and assigned forces.[15] This trend is expected to continue as requirements are outpacing the number of available resources. As stated above, IDA's examination of personnel data from recent operational experiences revealed the Services do not have any non-deploying communities, MOSs, designators, specialties, or ratings. This as a matter of policy, and in the interest of military readiness, precludes the designation of certain occupations or specialties for the purpose of establishing pools of personnel exempt from deployment.

Using predictive modeling techniques, IDA forecasted that future mission demands on the force will continue to increase for the foreseeable future. This environment, where the operational requirements are growing faster than available resources, necessitates that the force must be manned with Service members capable of meeting all mission demands. The Services require that every Service member contribute to full mission readiness, regardless of occupation. In other words, the Services require all Service members be able to engage in core military tasks, including the ability to deploy rapidly, without impediment or encumbrance.

While the concept of establishing pools of personnel exempt from deployment is feasible, the impact to the force would be significant. When determining their ability to deploy, unit leadership must evaluate personnel readiness data as part of their unit readiness calculation. Leadership focuses on having the right occupational specialties and grades in all required billets. Deploying commanders are responsible for both processing non-deployable Service members and for the deployment readiness of the entire unit. When Service members assigned to the organization cannot deploy, leadership takes appropriate action to find replacement individuals. This "swap out" places demands on the Service's human resource management systems, and on

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[14] Hearing before the Readiness Subcommittee on the Committee on Armed Services, House of Representatives, The Use of In Lieu Of, Ad Hoc and Augmentee Forces in Operations Enduring Freedom and Iraqi Freedom, July 31, 2007.

[15] United States Joint Forces Command briefing on the Joint Individual Augmentee Sourcing Process, April 2010.

individual Service members. When personnel processing cannot be conducted in a timely manner, operational readiness for mission deployment is negatively affected. Ultimately, an increase in the number of non-deployable military personnel places undue risk and personal burden on Service members qualified and eligible to deploy, and negatively impacts mission readiness.

Conclusion

Based on the finding of the IDA study, we conclude that significant barriers remain to allowing individuals with disabilities to access into the uniformed Services.

A. Military equipment, vehicles, and weapons systems currently in use may not be supportive for use by individuals with disabilities, and the cost to modify the equipment may be cost prohibitive as the population with disabilities accessed into the military would be small. While accommodation and greater access to information and communication technology are providing support within civilian personnel, we do not believe it is achievable to access individuals with disabilities into the Military. Assistive technologies with electronics and receiver/transmitter devices may pose significant security risks, and are prohibited from use in secure spaces and where classified information is stored or discussed; exceptions to this policy may be granted, but only on a case-by-case basis.

B. The study determined there were no MOSs that would be suitable for fencing off as non-deployable. To designate certain individuals as non-deployable would place an undue burden on non-disabled Service members, who would be called upon more frequently to shoulder the burden created by establishing a non-deployable MOS within the uniformed Services.

C. Finally, the accession of individuals with disabilities can have an unintended consequence of placing the individual Service member, as well as other personnel, at risk in combat situations, as a direct result of an individual's physical limitations. In today's military, every uniformed Service member is expected to be deployable as well as carry out duties not specific to their MOS.

The makeup of DoD's civilian employee population spans virtually every segment of society, to include individuals with disabilities. As articulated by Defense Civilian Personnel Advisory Service in "Individuals with Disabilities,"[16] as civilians in DoD, "individuals with disabilities play an important role in the defense of our Nation and in helping support our men and women in the military. Together, the military and civilian arms of DoD protect national interests through war-fighting, providing humanitarian aid, and performing peacekeeping and disaster relief services."[17] This Total Force emphasis—which extends beyond the Active and Reserve Component, to include the DoD civilian workforce—is central to the underlying organizing principle that informs DoD civilian workforce identity. While DoD does not support allowing individuals with hearing impairments or other disabilities into the military, DoD will continue to rely on these individuals for the work they do on the defense team and their exceptional contributions to DoD's mission.

[16] "INDIVIDUALS WITH DISABILITIES." *Defense Civilian Personnel Advisory Service (DCPAS) in "Individuals with Disabilities.* Web. 14 Jan. 2016. <http://godefense.cpms.osd.mil/individuals_with_disabilities.aspx>.
[17] "INDIVIDUALS WITH DISABILITIES." *Defense Civilian Personnel Advisory Service (DCPAS) in "Individuals with Disabilities.* N.p., n.d. Web. 14 Jan. 2016. <http://godefense.cpms.osd.mil/individuals_with_disabilities.aspx>.

THE ESSENTIAL HOLMES

Selections from the Letters, Speeches, Judicial Opinions, and Other Writing

OLIVER WENDELL HOLMES, JR.

Edited and with an Introduction by
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Frontispiece: Oliver Wendell Holmes, Jr., circa 1920. Harvard Art Collection.

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CONTENTS

must pass in reverent silence. All that may be said has been said by one of their own sex—

> But when the days of golden dreams had perished,
> And even despair was powerless to destroy,
> Then did I learn how existence could be cherished,
> Strengthened, and fed without the aid of joy.
>
> Then did I check the tears of useless passion,
> Weaned my young soul from yearning after thine
> Sternly denied its burning wish to hasten
> Down to that tomb already more than mine.

Comrades, some of the associations of this day are not only triumphant, but joyful. Not all of those with whom we once stood shoulder to shoulder—not all of those whom we once loved and revered—are gone. On this day we still meet our companions in the freezing winter bivouacs and in those dreadful summer marches where every faculty of the soul seemed to depart one after another, leaving only a dumb animal power to set the teeth and to persist—a blind belief that somewhere and at last there was rest and water. On this day, at least, we still meet and rejoice in the closest tie which is possible between men—a tie which suffering has made indissoluble for better, for worse.

When we meet thus, when we do honor to the dead in terms that must sometimes embrace the living, we do not deceive ourselves. We attribute no special merit to a man for having served when all were serving. We know that, if the armies of our war did anything worth remembering, the credit belongs not mainly to the individuals who did it, but to average human nature. We also know very well that we cannot live in associations with the past alone, and we admit that, if we would be worthy of the past, we must find new fields for action or thought, and make for ourselves new careers.

But, nevertheless, the generation that carried on the war has been set apart by its experience. Through our great good fortune, in our youth our hearts were touched with fire. It was given to us to learn at the outset that life is a profound and passionate thing. While we are permitted to scorn nothing but indifference, and do not pretend to undervalue the worldly rewards of ambition, we have seen with our own eyes, beyond and above the gold fields, the snowy heights of honor, and it is for us to bear the report to those who come after us. But, above all, we have learned that whether a man accepts from Fortune her spade, and will look downward and dig, or from Aspiration her axe and cord, and will scale the ice, the one and only success which it is his to command is to bring to his work a mighty heart.

Such hearts—ah me, how many!—were stilled twenty years ago; and to us who remain behind is left this day of memories. Every year—in the full tide of spring, at the height of the symphony of flowers and love and life—there comes a pause, and through the silence we hear the lonely pipe of death. Year after year lovers wandering under the apple boughs and through the clover and deep grass are surprised with sudden tears as they see black veiled figures stealing through the morning to a soldier's grave. Year after year the comrades of the dead follow, with public honor, procession and commemorative flags and funeral march—honor and grief from us who stand almost alone, and have seen the best and noblest of our generation pass away.

But grief is not the end of all. I seem to hear the funeral march become a pæan. I see beyond the forest the moving banners of a hidden column. Our dead brothers still live for us, and bid us think of life, not death—of life to which in their youth they lent the passion and glory of the spring. As I listen, the great chorus of life and joy begins again, and amid the awful orchestra of seen and unseen powers and destinies of good and evil our trumpets sound once more a note of daring, hope, and will.

The Soldier's Faith.

An Address Delivered on Memorial Day, May 30, 1895, at a Meeting Called by the Graduating Class of Harvard University.

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Any day in Washington Street, when the throng is greatest and busiest, you may see a blind man playing a flute. I suppose that some one hears him. Perhaps also my pipe may reach the heart of some passer in the crowd.

I once heard a man say, "Where Vanderbilt sits, there is the head of the table. I teach my son to be rich." He said what many think. For although the generation born about 1840, and now governing the world, has fought two at least of the greatest wars in history, and has witnessed others, war is out of fashion, and the man who commands the attention of his fellows is the man of wealth. Commerce is the great power. The aspirations of the world are those of commerce. Moralists and philosophers, following its lead, declare that war is wicked, foolish, and soon to disappear.

The society for which many philanthropists, labor reformers, and men of fashion unite in longing is one in which they may be comfortable and may shine without much trouble or any danger. The unfortu-

nately growing hatred of the poor for the rich seems to me to rest on the belief that money is the main thing (a belief in which the poor have been encouraged by the rich), more than on any grievance. Most of my hearers would rather that their daughters or their sisters should marry a son of one of the great rich families than a regular army officer, were as beautiful, brave, and gifted as Sir William Napier. I have heard th question asked whether our war was worth fighting, after all. There are many, poor and rich, who think that love of country is an old wife's tale, to be replaced by interest in a labor union, or, under the name of cosmopolitanism, by a rootless self-seeking search for a place where the most enjoyment may be had at the least cost.

Meantime we have learned the doctrine that evil means pain, and the revolt against pain in all its forms has grown more and more marked. From societies for the prevention of cruelty to animals up to socialism, we express in numberless ways the notion that suffering is a wrong which can be and ought to be prevented, and a whole literature of sympathy has sprung into being which points out in story and in verse how hard it is to be wounded in the battle of life, how terrible, how unjust it is that any one should fail.

Even science has had its part in the tendencies which we observe. It has shaken established religion in the minds of very many. It has pursued analysis until at last this thrilling world of colors and sounds and passions has seemed fatally to resolve itself into one vast network of vibrations endlessly weaving an aimless web, and the rainbow flush of cathedral windows, which once to enraptured eyes appeared the very smile of God, fades slowly out into the pale irony of the void.

And yet from vast orchestras still comes the music of mighty symphonies. Our painters even now are spreading along the walls of our Library glowing symbols of mysteries still real, and the hardly silenced cannon of the East proclaim once more that combat and pain still are the portion of man. For my own part, I believe that the struggle for life is the order of the world, at which it is vain to repine. I can imagine the burden changed in the way in which it is to be borne, but I cannot imagine that it ever will be lifted from men's backs. I can imagine a future in which science shall have passed from the combative to the dogmatic stage, and shall have gained such catholic acceptance that it shall take control of life, and condemn at once with instant execution what now is left for nature to destroy. But we are far from such a future, and we cannot stop to amuse or to terrify ourselves with dreams. Now, at least, and perhaps as long as man dwells upon the globe, his destiny is battle, and he has to take the chances of war. If it is our business to fight, the book for the army is a war-song, not a hospital-sketch. It is not well for soldiers to think much about wounds. Sooner or later we shall fall; but

meantime it is for us to fix our eyes upon the point to be stormed, and to get there if we can.

Behind every scheme to make the world over, lies the question, What kind of a world do you want? The ideals of the past for men have been drawn from war, as those for women have been drawn from motherhood. For all our prophecies, I doubt if we are ready to give up our inheritance. Who is there who would not like to be thought a gentleman? Yet what has that name been built on but the soldier's choice of honor rather than life? To be a soldier or descended from soldiers, in time of peace to be ready to give one's life rather than to suffer disgrace, that is what the word has meant; and if we try to claim it at less cost than a splendid carelessness for life, we are trying to steal the good will without the responsibilities of the place. We will not dispute about tastes. The man of the future may want something different. But who of us could endure a world, although cut up into five-acre lots and having no man upon it who was not well fed and well housed, without the divine folly of honor, without the senseless passion for knowledge outreaching the flaming bounds of the possible, without ideals the essence of which is that they never can be achieved? I do not know what is true. I do not know the meaning of the universe. But in the midst of doubt, in the collapse of creeds, there is one thing I do not doubt, that no man who lives in the same world with most of us can doubt, and that is that the faith is true and adorable which leads a soldier to throw away his life in obedience to a blindly accepted duty, in a cause which he little understands, in a plan of campaign of which he has no notion, under tactics of which he does not see the use.

Most men who know battle know the cynic force with which the thoughts of common sense will assail them in times of stress; but they know that in their greatest moments faith has trampled those thoughts under foot. If you have been in line, suppose on Tremont Street Mall, ordered simply to wait and to do nothing, and have watched the enemy bring their guns to bear upon you down a gentle slope like that from Beacon Street, have seen the puff of the firing, have felt the burst of the spherical case-shot as it came toward you, have heard and seen the shrieking fragments go tearing through your company, and have known that the next or the next shot carries your fate; if you have advanced in line and have seen ahead of you the spot which you must pass where the rifle bullets are striking; if you have ridden by night at a walk toward the blue line of fire at the dead angle of Spottsylvania, where for twenty-four hours the soldiers were fighting on the two sides of an earthwork, and in the morning the dead and dying lay piled in a row six deep, and as you rode have heard the bullets splashing in the mud and earth about you; if you have been on the picket-line at night in a black

and unknown wood, have heard the spat of the bullets upon the trees, and as you moved have felt your foot slip upon a dead man's body; if you have had a blind fierce gallop against the enemy, with your blood up and a pace that left no time for fear—if, in short, as some, I hope many, who hear me, have known, you have known the vicissitudes of terror and of triumph in war, you know that there is such a thing as the faith I spoke of. You know your own weakness and are modest; but you know that man has in him that unspeakable somewhat which makes him capable of miracle, able to lift himself by the might of his own soul, unaided, able to face annihilation for a blind belief.

From the beginning, to us, children of the North, life has seemed a place hung about by dark mists, out of which come the pale shine of dragon's scales, and the cry of fighting men, and the sound of swords. Beowulf, Milton, Dürer, Rembrandt, Schopenhauer, Turner, Tennyson, from the first war-song of our race to the stall-fed poetry of modern English drawing-rooms, all have had the same vision, and all have had a glimpse of a light to be followed. "The end of worldly life awaits us all. Let him who may, gain honor ere death. That is best for a warrior when he is dead." So spoke Beowulf a thousand years ago.

Not of the sunlight,
Not of the moonlight,
Not of the starlight!
O young Mariner,
Down to the haven,
Call your companions,
Launch your vessel,
And crowd your canvas,
And, ere it vanishes
Over the margin,
After it, follow it,
Follow The Gleam.

So sang Tennyson in the voice of the dying Merlin.

When I went to the war I thought that soldiers were old men. I remembered a picture of the revolutionary soldier which some of you may have seen, representing a white-haired man with his flint-lock slung across his back. I remembered one or two living examples of revolutionary soldiers whom I had met, and I took no account of the lapse of time. It was not until long after, in winter quarters, as I was listening to some of the sentimental songs in vogue, such as—

Farewell, Mother, you may never
See your darling boy again,

that it came over me that the army was made up of what I now should call very young men. I dare say that my illusion has been shared by some of those now present, as they have looked at us upon whose heads the white shadows have begun to fall. But the truth is that war is the business of youth and early middle age. You who called this assemblage together, not we, would be the soldiers of another war, if we should have one, and we speak to you as the dying Merlin did in the verse which I just quoted. Would that the blind man's pipe might be transfigured by Merlin's magic, to make you hear the bugles as once we heard them beneath the morning stars! For you it is that now is sung the Song of the Sword:—

The War-Thing, the Comrade,
Father of honor
And giver of kingship,
The fame-smith, the song master.
. . .
Priest (saith the Lord)
Of his marriage with victory.
. . .
Clear singing, clean slicing;
Sweet spoken, soft finishing;
Making death beautiful
Life but a coin
To be staked in the pastime
Whose playing is more
Than the transfer of being;
Arch-anarch, chief builder,
Prince and evangelist,
I am the Will of God:
I am the Sword.

War, when you are at it, is horrible and dull. It is only when time has passed that you see that its message was divine. I hope it may be long before we are called again to sit at that master's feet. But some teacher of the kind we all need. In this snug, over-safe corner of the world we need it, that we may realize that our comfortable routine is no eternal necessity of things, but merely a little space of calm in the midst of the tempestuous untamed streaming of the world, and in order that we may be ready for danger. We need it in this time of individualist negations, with its literature of French and American humor, revolting at discipline, loving flesh-pots, and denying that anything is worthy of reverence—in order that we may remember all that buffoons forget.

We need it everywhere and at all times. For high and dangerous action teaches us to believe as right beyond dispute things for which our doubting minds are slow to find words of proof. Out of heroism grows faith in the worth of heroism. The proof comes later, and even may never come. Therefore I rejoice at every dangerous sport which I see pursued. The students at Heidelberg, with their sword-slashed faces, inspire me with sincere respect. I gaze with delight upon our polo-players. If once in a while in our rough riding a neck is broken, I regard it, not as a waste, but as a price well paid for the breeding of a race fit for headship and command.

We do not save our traditions, in this country. The regiments whose battle-flags were not large enough to hold the names of the battles they had fought vanished with the surrender of Lee, although their memories inherited would have made heroes for a century. It is the more necessary to learn the lesson afresh from perils newly sought, and perhaps it is not vain for us to tell the new generation what we learned in our day, and what we still believe. That the joy of life is living, is to put out all one's powers as far as they will go; that the measure of power is obstacles overcome; to ride boldly at what is in front of you, be it fence or enemy; to pray, not for comfort, but for combat; to keep the soldier's faith against the doubts of civil life, more besetting and harder to overcome than all the misgivings of the battle-field, and to remember that duty is not to be proved in the evil day, but then to be obeyed unquestioning; to love glory more than the temptations of wallowing ease, but to know that one's final judge and only rival is oneself: with all our failures in act and thought, these things we learned from noble enemies in Virginia or Georgia or on the Mississippi, thirty years ago; these things we believe to be true.

> "Life is not lost," said she, "for which is bought
> Endlesse renown."

We learned also, and we still believe, that love of country is not yet an idle name.

> Deare countrey! O how dearely deare
> Ought thy remembraunce, and perpetuall band
> Be to thy foster-child, that from thy hand
> Did commun breath and nouriture receave!
> How brutish is it not to understand
> How much to her we owe, that all us gave;
> That gave unto us all, whatever good we have!

As for us, our days of combat are over. Our swords are rust. Our guns will thunder no more. The vultures that once wheeled over our heads are buried with their prey. Whatever of glory yet remains for us to win must be won in the council or the closet, never again in the field. I do not repine. We have shared the incommunicable experience of war; we have felt, we still feel, the passion of life to its top.

Three years ago died the old colonel of my regiment, the Twentieth Massachusetts. He gave our regiment its soul. No man could falter who heard his "Forward, Twentieth!" I went to his funeral. From a side door of the church a body of little choir-boys came in like a flight of careless doves. At the same time the doors opened at the front, and up the main aisle advanced his coffin, followed by the few gray heads who stood for the men of the Twentieth, the rank and file whom he had loved, and whom he led for the last time. The church was empty. No one remembered the old man whom we were burying, no one save those next to him, and us. And I said to myself, The Twentieth has shrunk to a skeleton, a ghost, a memory, a forgotten name which we other old men alone keep in our hearts. And then I thought: It is right. It is as the colonel would have had it. This also is part of the soldier's faith: Having known great things, to be content with silence. Just then there fell into my hands a little song sung by a warlike people on the Danube, which seemed to me fit for a soldier's last word, another song of the sword, but song of the sword in its scabbard, a song of oblivion and peace.

A soldier has been buried on the battle-field.

And when the wind in the tree-tops roared,
The soldier asked from the deep dark grave:
"Did the banner flutter then?"
"Not so, my hero," the wind replied,
"The fight is done, but the banner won,
Thy comrades of old have borne it hence,
Have borne it in triumph hence."
Then the soldier spake from the deep dark grave:
"I am content."

Then he heareth the lovers laughing pass,
And the soldier asks once more:
"Are these not the voices of them that love,
That love—and remember me?"
"Not so, my hero," the lovers say,
"We are those that remember not;
For the spring has come and the earth has smiled,
And the dead must be forgot."
Then the soldier spake from the deep dark grave:
"I am content."

ACHILLES IN VIETNAM

Combat Trauma and the Undoing of Character

Jonathan Shay, M.D., Ph.D.

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sonable inference. If it was safe enough to sleep, it was safe enough to grieve. In addition, there were funerary truces when grieving was not only safe and acceptable but socially compelled.

WHAT WAS THE LEVEL OF TRUST, SAFETY, AND SOCIAL COHESIVENESS IN THE REAR DURING MOURNING?

I have already indicated that a degree of security from enemy attack is essential for griefwork to proceed. During much of the Vietnam War, combat soldiers felt as unsafe in the rear as out in the field. Many veterans have told me, "There were two wars going on—one out in the boonies against the V.C., another in the rear between blacks and whites. I felt safer in the boonies." Virtually all combat units were racially integrated and mostly color-blind in combat, but when they came to the rear, social cohesion fell to pieces. Men segregated themselves rigidly along racial lines in the rear, preventing units from mourning together in relative safety. Racially motivated killings and riots were common in Vietnam. American soldiers in the rear were not safe *from each other*.

Men also felt unsafe in the rear because of the large number of Vietnamese civilians employed on American bases. In part this fear reflected racist identification of all Vietnamese as enemy "Gooks," and in part it reflected the reality that some of these civilians were gathering intelligence for the enemy, both on military operations in the field and for attacks on the rear-area bases themselves. For many years of the Vietnam War there was *no* safe rear area, because of the Vietcong's "unconventional" warfare. If you cannot let down your guard, you cannot grieve.

Among the many Greek contingents at Troy, we hear of nothing equivalent to racial antagonisms serious enough to make the men a danger to each other. Captive women must have sometimes sought revenge for their slaughtered families by fomenting hostility among their ultracompetitive slave masters, but we do not hear of this. The Greek units appear to have been internally very cohesive. Although we hear of some comings and goings from the beachhead, the overall assumption appears to be that everyone came over with his contingent, is there "for the duration," and will return with his contingent if he survives to do so, along with the bones of men who have died.

The individual (as contrasted to unit) rotation policy practiced in Vietnam, which moved individual men in and out of combat units on a preordained time schedule, systematically destroyed the unit cohesion of combat groups. Very, very few Vietnam veterans went over with the unit they had trained with, fought with that unit, *and* returned "to the world" with it.[14] I estimate that of the three-quarters of a million Vietnam combat veterans, only a few hundred or thousand did so. By contrast, my impression is that this was the majority experience in World War II, particularly in the Pacific. Even men who went over as individual replacements in World War II spent weeks or months with their units after fighting ended and universally returned by boat. "The long trip home" is generally credited as an opportunity for mutual support and communal reworking of combat trauma.

Survival and success in combat often require soldiers to virtually read one another's minds, reflexively covering each other with as much care as they cover themselves, and going to one another's aid with little thought for safety:

> . . . if one of the Recon outfits, the shit hit the fucking fan, we'd be out the fucking door on the helicopters. And I don't care a shit if we were totally fucking exhausted. . . .
>
> One of the teams got trapped, and . . . we got on a pickup. They picked us up, we flew in, and the pilot said, "Can't go in. They're receiving fire. Receiving fire." I'm on the radio [internal voice circuit of the aircraft] talking to this fucking pilot, and y'know, we're all sitting on the doors, three on each door.
>
> And I said to the pilot, "Well, get down fucking close, and we'll kick ammo to them."
>
> And the pilot said, "Okay, I'm going to make one fucking pass, so when we get down there . . ."
>
> I said, "Well, you got to get like about ten, fifteen feet off the fucking ground. You gotta roll in, because I want to drop it right in on them."
>
> "Oh, yeah, no fucking problem."
>
> And then I whipped the fucking headset off, and I said to the guys, "Listen, when this motherfucker gets close, we gotta go."
>
> An' we all went.
>
> Now, you're talking about a fucking plane that's moving like a fucking tornado. And we crashed and burned, too. I remember my fucking head was all bruised and shit.

Grief at the Death of a Special Comrade

> It didn't matter. It didn't matter getting out of that fucking helicopter.
>
> And I was so fucking proud of the other five guys. Because they went with it. . . .
>
> Now we're all here. We kick some fucking ass. . . . Now the bond begins. The bond begins of you can count on everyone. The other team appreciated what we did. Y'know, they weren't alone. And I knew if that same situation happened that I could count on six more to come and get me. . . .
>
> Half of us couldn't fucking walk after we got out of there, we were so fucking bruised from the fucking brush and trees and whatever else we landed on. But we weren't going to leave them, even though the pilot said it was impossible to do this. . . . So you gotta pull devious shit. Y'know what I'm saying?

This illustration of cohesion within an airborne reconnaissance unit can be summed up in the words of this same veteran: "You grew like a hand."[15]

Use of Mind-Altering Substances

The word *wine* apears fifteen times in Fitzgerald's translation of the *Iliad*, sometimes as a figure of speech but most often to refer to part of a meal or a libation. It was clearly available in quantity on the Greek beachhead at Troy. To be sure, wine played a role in the Homeric rituals of mourning—to quench the embers of the funeral pyre (e.g., 23:274, 24:947). At no point do we see a soldier drowning his grief in wine, nor do we hear it mentioned. It is hard to imagine that there was no wine at the funeral feast that Achilles made for the Myrmidons (23:36ff), yet wine is not mentioned. Nor is it mentioned in the brief notice of the funeral feast made by Priam for Hektor. (24:959) This is a startling piece of cultural pharmacology; we unthinkingly assume that "drowning one's sorrows" is somehow natural and not culturally constructed.

Mind-altering substances of all sorts seem to have been the main shrines to which American soldiers brought their grief. I shall give two illustrations from the accounts of veterans of the days immediately after the deaths of their special comrades-in-arms:

> And I cried and I cried and I cried. They started giving me I don't know what kind of pills. They gave me some pills. And I had

Conclusion

I want that this is the last war in my life.
—Twelve-year-old Bosnian
girl in refugee camp

No more fucking wars!
—Four-tour airborne Vietnam veteran

I have written this book because I believe we should *care* about how soldiers are trained, equipped, led, and welcomed home when they return from war. This is our moral duty toward those we ask to serve on our behalf, and it is in our own self-interest as well. Unhealed combat trauma blights not only the life of the veteran but the life of the family and community. In some instances, such as in the Weimar Republic in Germany after World War I, it can substantially weaken the society as a whole.

Economically, unhealed combat trauma costs, and costs, and costs. Recall that more than 40 percent of Vietnam combat veterans sampled in the National Vietnam Veterans Readjustment Study reported engaging in violent acts three or more times in the preceding year. When violence against others results in injury, society incurs the costs of medical care and lost productivity of the victims of this violence. Between a tenth and a quarter of all males in prison are veterans, and it costs an average of about $25,000 per year to incarcerate each of them. When combat trauma results in domestic violence and pathologic family life, there is an intergenerational transmission of trauma. A number of men in our program have children who are currently in prison.

Unhealed combat trauma diminishes democratic participation and can become a threat to democratic political institutions. Severe psychological injury originates in violation of trust and destroys the capacity for trust. When mistrust spreads widely and deeply, democratic civic discourse becomes impossible.

Conclusion

PREVENTION

Can combat PTSD, and particularly the devastating character changes associated with it, be prevented? In the language of public health, primary prevention of combat PTSD requires elimination of the source of the injury, which is to say, elimination of combat. However, moving from international and civil wars to an era that is free of war will take generations or centuries, during which many more soldiers will fight. Is there anything we can do to protect men and women from psychological injury when they must face combat? In public health terminology, this is secondary prevention.

The military's answer to this question usually comes in one word: training. There can be no doubt that rigorous, realistic training does provide significant psychological protection to people who must fight, not to speak of enormously raising their chances of survival. The reader may have noticed that there are no accounts in this book of veterans attributing their psychological injuries to military training. In fact, many Vietnam combat veterans felt deeply betrayed by the *irrelevance* of their training to the actual conditions and enemy they had to face. As with the well-chronicled deficiencies of the M-16 rifle, this perception fostered a bitter conviction among veterans that their country simply didn't care. Negligence in the training of soldiers for Vietnam is one of the deepest sources of anger in Colonel David Hackworth's very angry book, *About Face*.[1]

Thoughtful military people assert that the answer lies in better training *and* leadership. Colonel James Stokes of the U.S. Army Medical Department issued an Information Paper titled "Management of Combat Stress and Battle Fatigue"[2] shortly before the Persian Gulf War. It states tersely, "Control of stress is a command responsibility." The whole of this book's first chapter, "Betrayal of 'What's Right,'" makes the point that bad leadership is a cause of combat trauma. The elements of military leadership that were stated some twenty-four centuries ago by the Chinese warrior-philosopher Sun Tzu still hold true today: "Leadership is a matter of intelligence, trustworthiness, humaneness, courage, and sternness."[3] Tragically, the institutional pressures and cultural milieu of the Vietnam War destroyed or warped each of these military leadership virtues at every level of command.

Support on the home front for the soldier, *regardless of ethical and political disagreements over the war itself*, is essential. This is never easy in the emotionally polarized climate of a war. However, when facing individual soldiers, we must remember that all modern soldiers serve under constraint.[4] The justice of overall war aims and of operational theories—"strategic" bombing of civilians to weaken the industrial capacity to wage war is an example of such a theory—is not within the individual soldier's scope of moral choice, unless he or she is willing to face imprisonment or death by refusing to fight. I cannot hold soldiers to an ethical standard that *requires martyrdom in order simply to be blameless*. I am not arguing against the Nuremberg principles, which say that no person is absolved of responsibility for horrible acts by the fact that he or she was legally ordered to do them. I am speaking from the pain that I feel when I witness in our veterans the ruin of moral life by the overwhelming coercive social power of military institutions and of war itself. If war goals, operational methods, and military culture were so unjust that the Nuremberg principles loomed over every Vietnam combat soldier, we must recognize that the blood is on our hands too. If we had exercised Sun Tzu's virtues of "intelligence, trustworthiness, humaneness, courage, and sternness" toward our representatives in Washington, from the presidents down, our soldiers in Vietnam would not have been in that position. War itself always creates situations in which physical survival contradicts moral survival. Bad moral luck haunts every battle along with the other manifestations of luck. However, wrong-headed civilian/military leadership and destructive cultural patterns bloat isolated bad moral luck into tragedy that can afflict a whole generation.

Primary prevention of combat trauma requires an end to the social institution of war. However, we must not allow despair of bringing this about in our lifetime blind us to the possibilities of secondary prevention of combat trauma. Given that we will continue to send men and women into combat, what can be done to protect them? What existing cultural and organizational patterns need to be changed? The military can do many things to reduce permanent psychological injury.[5]

Conclusion

Protect Unit Cohesion by Unit Rather than Individual Rotation

Preservation of the social and moral cohesion of the soldier's face-to-face combat unit ranks highest among things that must be done. Destruction of unit cohesion by the individual-rotation policy in Vietnam cannot be overemphasized as a reason why so many psychological injuries that might have healed spontaneously instead became chronic.[6]

I am often asked why Vietnam apparently caused such a high rate of long-lasting psychological injuries compared to World War II. We have no data for the Second World War comparable to the *National Vietnam Veterans Readjustment Study* on the prevalence of PTSD among World War II veterans twenty years after that war's end. This is a large and complex subject, but I always begin my answer to the question by focusing on the fact that most World War II soldiers trained together, went overseas together, fought together, had R&R together, and came home together. The typical Vietnam soldier went over alone, integrated himself as the "fucking new guy" in an already formed and highly stressed unit to the extent that luck and his personal traits permitted, went on R&R alone, and came home alone, often leaving behind a unit that was still in combat. He had no chance to "debrief," to talk about what had happened with people he trusted who understood his experiences.

What a returning soldier needs most when leaving war is not a mental health professional but a living community to whom his experience matters. There is usually such a community close at hand: his or her surviving comrades. Men and women returning from combat should "debrief" as units, not as isolated individuals. *Unit rotation is the most important measure for secondary prevention of combat PTSD.*

Value Griefwork

I have emphasized the importance of griefwork in chapter 3. The official and folk culture of the American military must change so that grieving enjoys high status—is valued, not stigmatized. The capacity to weep and to feel the pain of sorrow does not weaken a

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PERSONNEL AND READINESS

FEB 14 2018

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DEPUTY CHIEF MANAGEMENT OFFICER
CHIEF, NATIONAL GUARD BUREAU
DIRECTOR OF COST ASSESSMENT AND PROGRAM EVALUATION

SUBJECT: DoD Retention Policy for Non-Deployable Service Members

In July, the Secretary of Defense directed the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD(P&R)) to lead the Department's effort to identify changes to military personnel policies necessary to provide more ready and lethal forces. In his initial memorandum to the Department, Secretary Mattis emphasized, "[e]very action will be designed to ensure our military is ready to fight today and in the future." Given the Secretary's guidance, OUSD(P&R) moved forward from the underlying premise that all Service members are expected to be world-wide deployable. Based on the recommendations of the Military Personnel Policy Working Group, the Deputy Secretary of Defense determined that DoD requires a Department-wide policy establishing standardized criteria for retaining non-deployable Service members. The objective is to both reduce the number of non-deployable Service members and improve personnel readiness across the force.

The Deputy Secretary of Defense directed the following interim policy guidance, which will remain in effect until the Department issues a DoD Instruction on reporting and retention of non-deployable Service members:

- Service members who have been non-deployable for more than 12 consecutive months, for any reason, will be processed for administrative separation in accordance with Department of Defense Instruction (DoDI) 1332.14, *Enlisted Administrative Separations*, or DoD Instruction 1332.30, *Separation of Regular and Reserve Commissioned Officers*, or will be referred into the Disability Evaluation System in accordance with DoDI 1332.18, *Disability Evaluation System (DES)*. Pregnant and post-partum Service members are the only group automatically excepted from this policy.

- The Secretaries of the Military Departments are authorized to grant a waiver to retain in service a Service member whose period of non-deployability exceeds the 12 consecutive months limit. This waiver authority may be delegated in writing to an official at no lower than the Military Service headquarters level.

- The Military Services have until October 1, 2018, to begin mandatory processing of non-deployable Service members for administrative or disability separation under this policy, but they may begin such processing immediately.

- The Military Services may initiate administrative or disability separation upon determination that a Service member will remain non-deployable for more than 12 consecutive months; they are not required to wait until the Service member has been non-deployable for 12 consecutive months.

- The Military Services will continue to provide monthly non-deployable reports to OUSD(P&R) in the format established by the Military Personnel Policy Working Group.

My office will issue a DoDI to provide additional policy guidance and codify non-deployable reporting requirements. Publication of the DoDI will supersede and cancel this policy memorandum.

Robert L. Wilkie

Robert L. Wilkie

cc:
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for Manpower and Reserve Affairs
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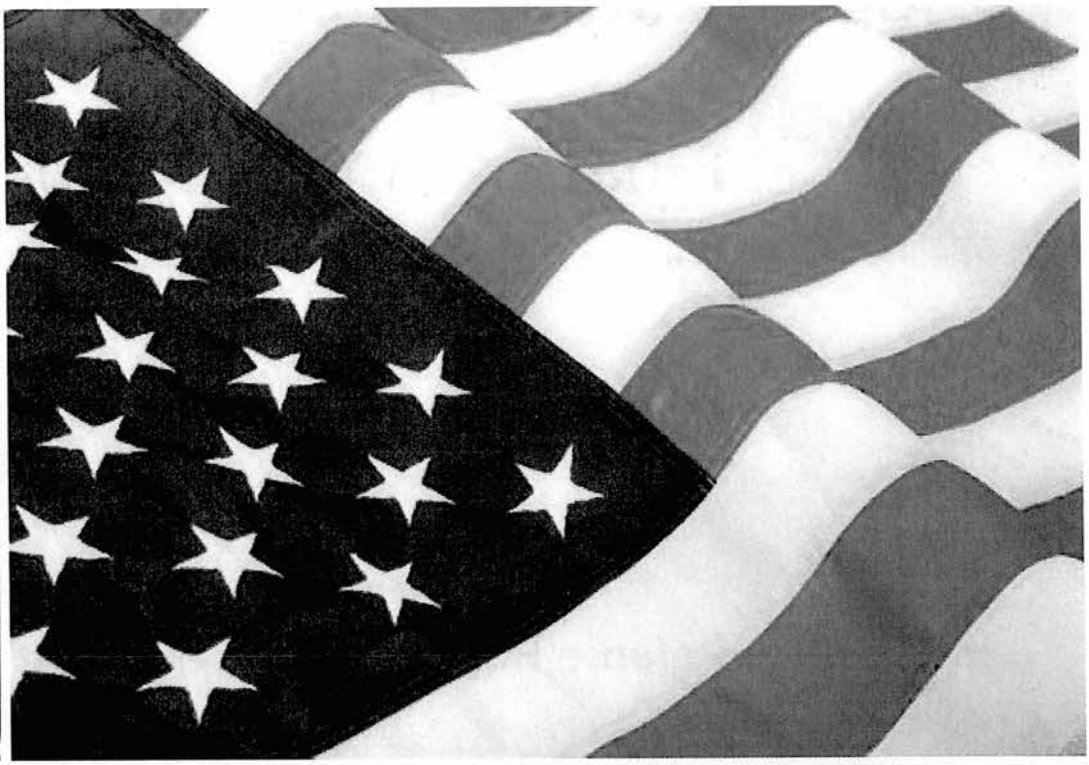

HEALTHCARE AND HUMAN SERVICES POLICY, RESEARCH, AND CONSULTING – WITH REAL-WORLD PERSPECTIVE.

Qualified Military Available (QMA) and Interested Youth

Final Technical Report

Prepared for: **Defense Human Resources Activity**

Submitted by: **The Lewin Group, Inc.**

September, 2016

Qualified Military Available (QMA) Update Study: QMA and Interested Youth
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The Lewin Group, Inc.

September 19, 2016

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I. Introduction

The number of youth eligible and available for military service is a critical indicator used by the Department of Defense (DoD) to plan recruiting policy and programs. A basic ingredient of this metric, known as Qualified Military Available (QMA), is the size of the U.S. population aged 17 – 24, reduced by the number who are disqualified for service because of medical, moral, mental, or other reasons. The QMA is the number of youth who are mentally, medically and morally qualified to join each service without a waiver, and are free of family commitments that would make them unavailable for duty. The purpose of the current project is to update previous QMA estimates by using more recent data and to evaluate QMA among youth who are propensed to enlist in the military service (i.e., interested in enlisting). That is, the study's objective is to answer "How is the likelihood of meeting a given enlistment standard, and the likelihood of meeting all seven standards (and thus being QMA), related to the propensity to enlist?" Because the likelihoods of meeting the different standards are related to one another, we employ a multivariate probit model to estimate the probability that a youth will meet all seven enlistment standards and thus be qualified for enlistment. This approach provides more accurate estimates of the QMA population than one that treats the standards independently of one another. The estimates of the prevalence of disqualifying conditions obtained using a multivariate probit model allows one to better understand the correlations between the disqualifying conditions and propensity and to obtain more accurate estimates of the QMA population.

Knowledge of the relationship between propensity to enlist and QMA has important implications for military recruiting. Most obviously, if the youth who are most interested in military service are the ones who are most likely to meet the various entry criteria, recruiting will be easier and less costly. Thus, sound estimates of QMA by propensity status both in the aggregate and by small geographic area such as ZIP Code are important for several reasons. First, the estimates will help the Services and recruiters target their recruiting efforts to improve the efficiency of recruiting. Second, at budget formulation level, it will help DoD officials better understand potential recruiting problems, and the resources necessary to overcome the problems. It will help them explain the recruiting environment to Congress, the Office of Management and Budget, and others with responsibility for obtaining the budget resources necessary to meet recruiting goals. Third, visibility of factors that affect qualification rates may, in the longer term, lead to reevaluation of standards that unnecessarily limit the recruitable population or to interventions which may better enable the recruiting-age population to qualify for service. Furthermore, to the extent that propensity has a different overlap with each entry criterion such that some criteria are more likely to screen out the more highly propensed youth than others, the DoD might be able to craft waiver policies, or changes in policies, that enable these youth to enlist, if that is possible and desirable to do. Thus, knowledge of which criteria might be barriers to the enlistment of propensed youth is crucial.

II. Background

In 2005, The Lewin Group (Lewin) developed a model it called the "QMA Estimator" for the Office of the Secretary of Defense Accession Policy Directorate and the Joint Market Analysis and Research Council (JMARC). This model estimated the QMA population by Sex, Race-Ethnicity, and Education at the ZIP Code level. It was based on Woods & Poole population data and accounted for medical, moral, dependents, and intellectual qualification rates. These rates were

based on several data sources. The National Health and Nutrition Examination Survey (NHANES) 1999-2002 and the Substance Abuse and Mental Health Services Administration (SAMHSA)'s National Survey on Drug Use and Health (NSDUH) published averages in 2004 were used to measure the percentage of the population meeting medical, physical, and mental health criteria. The National Longitudinal Survey of Youth 1997 (NLSY97) provided estimates for moral qualification rates and dependency criteria, and the Profile of American Youth 1997 (PAY97) supplied Armed Forces Qualification Test (AFQT) scores to measure intellectual qualification.

The 2005 QMA Estimator used national estimates of AFQT categories based on gender, race-ethnicity, and education, which were constant over all ZIP Codes. In 2007, Lewin updated estimates of AFQT categories at the ZIP Code level to reflect greater geographic variation. The model used PAY97 data and census socioeconomic measures to estimate AFQT scores at the ZIP Code level.

For the 2013 study, Lewin applied a new methodological approach that accounts for potential overlaps (correlations) across disqualifying conditions using the Multivariate Probit Model (MVPM).[1] Unlike prior studies, the model accounted for the likelihood that a particular youth who meets one standard is not independent of the likelihood that the youth will meet other standards. In fact, youth who meet a given standard are more likely to meet other standards, or criteria, for enlistment. Models that do not account for the overlap (or correlation) in disqualifiers tend to overestimate the overall military disqualification rates. Accounting for the overlaps increases the percentage of youth who are QMA to 29% compared to approximately 24% when the overlaps are neglected (i.e., when it is assumed that disqualification reasons are independent of each other). Other changes included modeling Overweight and Mental Health disqualifiers as separate, stand-alone conditions rather than as a part of the medical/physical disqualifier, using more recent data from the national surveys to adjust the means of disqualifiers to reflect the national numbers, and using the Youth Poll surveys, rather than NLSY97 as the primary sources for Conduct and Dependent disqualifiers. Finally, aptitude measured by AFQT from MEPCOM Production Applicant AFQT score database data and the AFQT distribution was statistically adjusted so that 9% of the national sample is Category V.

The 2013 study left unanswered a key question: "How is the likelihood of meeting a given enlistment standard and the likelihood of meeting all seven standards (and thus being QMA) related to the propensity (or interest) to enlist?" Knowledge of the propensity to enlist/QMA relationship has important implications for military recruiting. Most obviously, if youth who are most propensed to join the military are the ones who are most likely to meet the various entry criteria, recruiting will be easier and less costly. To the extent that the converse is true, recruiting will be more difficult and more costly. The current project used the most recent data from the Joint Advertising Market Research & Studies Youth Poll Survey (JAMRS-YP) and added propensity to enlist as an additional variable of interest to the MVPM. Thus, the relationship between each

[1] The results of this study are documented in the Lewin's report titled *Qualified Military Available (QMA) Final Technical Report* (dated October 10, 2013).

disqualifying criterion and propensity will be evaluated and the estimates of propensity categories and QMA eligibility can be obtained.

III. Technical Approach

Our overall approach relies on the same modeling methodology as in the 2013 study and the same data sources, shown in Table 1. We generated estimates of disqualifying conditions for each demographic subgroup designated by age, gender, race-ethnicity, and education. The NHANES, NSDUH, and JAMRS-YP are nationally representative samples. In contrast, the MEPCOM sample is a very large database of individuals identified by age, gender, race-ethnicity, education, and ZIP Code but it is self-selected in that it includes only potential military recruits who have applied at a recruiting office. In this study, we weight the MEPCOM applicant data so that they reproduce the known (PAY97) youth population AFQT frequencies. Weights are by race-ethnicity. Details of the weighting procedure are described in Section G below.

Table 1. Data Sources for Seven Disqualifying Conditions and Propensity

Disqualifying Condition	Data Source
Medical/Physical	National Health and Nutrition Examination Survey (NHANES) 2007-2010
Overweight	National Health and Nutrition Examination Survey (NHANES) 2007-2010
Mental Health	National Survey on Drug Use and Health (NSDUH) 2010
Drugs	National Survey on Drug Use and Health (NSDUH) 2010
Conduct	Joint Advertising Market Research & Studies Youth Poll Survey (JAMRS-YP) 2012-2015
Dependents	Joint Advertising Market Research & Studies Youth Poll Survey (JAMRS-YP) 2012-2015
Aptitude	MEPCOM Production Applicant AFQT score database (MEPCOM) 1998-2006
Propensity	Joint Advertising Market Research & Studies Youth Poll Survey (JAMRS-YP) 2012-2015

Similar to the 2013 study, we apply a Multivariate Probit Model (MVPM) to the JAMRS-YP data to estimate the probability that a youth is disqualified from service on the basis of each of seven disqualifying conditions (medical/physical conditions, drug use, conduct, dependents, weight, mental health, and aptitude) and the overlap between disqualifying conditions. Accounting for the overlap between disqualifying conditions has several advantages. Specifically, the assumption of independence among the various disqualifiers has a direct impact on the magnitude of the QMA estimate. For instance, if on average, individuals that report drug abuse are indeed more likely to report conduct related issues, this positive correlation among disqualification conditions will lead us to understate the fraction of population that is QMA. Conversely, if disqualification conditions are negatively correlated, the assumption of independence will lead to an overstatement of the fraction of the population that is QMA. This modeling technique should improve the QMA estimates. Additionally, this is an accepted method for analyzing binary outcomes that are "seemingly unrelated." The method is a generalized version of the well-known one-equation probit model and two-equation bivariate probit model. After we calculated the probabilities of disqualifying on each of seven conditions by propensity status and the overlap, we applied these probabilities to the Woods & Poole (W&P)

population counts to obtain ZIP Code level estimates for each of the demographic subgroups by propensity status.

To incorporate propensity, two changes were introduced to the previous methodology. First, we used more waves of JAMRS-YP data (i.e., ten waves of data instead of three waves used in the 2013 study).[2] The larger sample size can increase the precision of MVPM estimates, as well as the estimates of overlaps. Additionally, the MVPM model is extended to include an eighth outcome, whether the youth is propensed (or interested) to enlist in the military or not. The increase in the number of conditions in the MVPM from seven to eight does not affect the national QMA estimate, which represents a weighted average of the QMA among propensed and the QMA among not propensed.

IV. Disqualifying Conditions

In our 2013 study, we provided a detailed description of the seven broad disqualification categories for applicants to military service: medical/physical, overweight, mental health, drugs, conduct, dependents, and aptitude. These conditions were considered because they address particular guidelines established by DoD Instruction 6130.03 that governs military entrance eligibility criteria and because enough data were available to estimate condition prevalence. Below, we provide a brief description of each condition, and prevalence estimates of ineligibility are given by gender, race-ethnicity, and education.

A. Medical/Physical

1. Disqualifying Criteria

The Center for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES), a program of studies designed to assess the health and nutritional status of adults and children in the United States, is used to estimate the prevalence of more than thirty health conditions in the U.S. population. The survey is unique in that it combines interviews and physical examinations. Disqualifying health conditions available in NHANES include anemia, asthma, cancer, diabetes, physical limitations, pregnancy, hearing deficiency, hypertension, height, underweight, heart problems, respiratory diseases, vision, other specific diseases, oral health, and stroke. NHANES uses weighted observations each year to represent the U.S. civilian non-institutional population. In order to have a substantial sample size to estimate medical/physical ineligibility of 17-24 year olds by gender, race-ethnicity, and education, we used four years of NHANES data, 2007-2010. Vision was not measured during years 2009-2010, so we used NHANES data in 2007-2008 for this criterion.

Three documents served as a basis for disqualifiers:

1. QMA Working Group Ineligibility Data Analysis Decisions & Recommendations (see Appendix A in The Lewin Group's 2013 report)

[2] The surveys from Spring 2013, Summer 2013, Fall 2013, Spring 2014, Summer 2014, Fall 2014, and Spring 2015 were added to the analysis.

2. Department of Defense Instruction 6130.03, "Medical Standards for Appointment, Enlistment, or Induction in the Military Services," April 28, 2010 (Incorporating Change 1, September 13, 2011)
3. Department of Defense Instruction 1308.3, "DoD Physical Fitness and Body Fat Programs Procedures," November 5, 2002

2. Ineligibility Estimates

We obtained prevalence estimates of Medical/Physical disqualifications for 17-24 year olds by gender, race-ethnicity, and education from the NHANES data. Table 2 provides the overall Medical/Physical disqualification estimates by gender and race-ethnicity.

Table 2. Percent Disqualified from Military Service for Medical/Physical Conditions

Gender	Race & Ethnicity	Mean	N	Lower 95% CL for Mean	Upper 95% CL for Mean
Total		30.2%	1,852	28.1%	32.3%
Male	**Total**	27.4%	959	24.5%	30.2%
	White Non-Hispanic	26.5%	346	21.8%	31.1%
	Black Non-Hispanic	36.3%	219	29.9%	42.7%
	Other Race Non-Hispanic	22.1%	52	10.4%	33.7%
	Hispanic	25.5%	342	20.8%	30.1%
Female	**Total**	34.6%	893	31.5%	37.8%
	White Non-Hispanic	32.4%	328	27.3%	37.5%
	Black Non-Hispanic	49.7%	211	42.9%	56.5%
	Other Race Non-Hispanic	36.9%	48	22.8%	51.1%
	Hispanic	31.8%	349	26.9%	36.7%

Source: NHANES 2007-2010

B. Overweight Disqualifying Criteria

1. Disqualifying Criteria

To determine the prevalence of overweight youth, we relied on NHANES data. Since over 30 percent of the youth population aged 17-24 were estimated to be overweight according to the criteria specified in DoD Instruction [1308.3, Enclosure], the overweight disqualification was separated from other medical/physical disqualifiers.

In our analysis, "overweight" refers to excess weight compared to DoD or service standards. It does not necessarily correspond to the definition used by public health professionals, which is a Body Mass Index (BMI) of 25.0-29.5. DoD guidelines require the services to set maximum Body Mass Index (BMI) requirements[3] no lower than 25.0 and no higher than 27.5 (DoD, 2002).

[3] BMI summarizes weight in relation to height and is widely used as a proxy for body fat. It is calculated as weight (in kilograms) divided by the square of height (in meters); that is BMI=704.5 x weight(lbs)/(height(in)* height(in)).

However, the services' published weight standards for recruits often fall outside DoD guidelines. Taking the DoD regulations as binding, we developed the following service-specific BMI standards for initial procurement of non-prior service (NPS) personnel aged 17-24. We used a general standard under which youth would be eligible to join at least one of the services. It disqualifies men and women with a BMI greater than 27.5.

2. Ineligibility Estimates

We obtained prevalence estimates of Overweight disqualifications for 17-24 year olds by gender, race-ethnicity, and education from the NHANES data. Table 3 displays the overall Overweight disqualification estimates by gender and race-ethnicity.

Table 3. Percent Disqualified from Military Service for Overweight

Gender	Race & Ethnicity	Mean	N	Lower 95% CL for Mean	Upper 95% CL for Mean
Total		30.9%	1,783	28.8%	33.1%
Male	**Total**	29.4%	931	26.5%	32.4%
	White Non-Hispanic	28.6%	337	23.8%	33.5%
	Black Non-Hispanic	28.7%	215	22.7%	34.8%
	Other Race Non-Hispanic	21.6%	47	9.4%	33.8%
	Hispanic	34.3%	332	29.2%	39.4%
Female	**Total**	32.6%	852	29.4%	35.7%
	White Non-Hispanic	30.9%	300	25.7%	36.2%
	Black Non-Hispanic	46.1%	189	39.0%	53.3%
	Other Race Non-Hispanic	13.5%	47	3.4%	23.7%
	Hispanic	34.6%	316	29.3%	39.9%

Source: NHANES 2007-2010

C. Mental Health

1. Disqualifying Criteria

The Substance Abuse and Mental Health Services Administration's (SAMHSA) National Survey on Drug Use and Health (NSDUH) provided the best data regarding mental health problems. The NSDUH data include indicators of mental health for the civilian non-institutional population in the United States. DoD Instruction 29 (j-r & t) disqualifies applicants for conditions such as obsessive-compulsive disorder, suicidal behavior, and any condition that "shall interfere with or prevent satisfactory performance of military duty."

We use NSDUH data for 18-25 year olds to tabulate the percentage disqualified on the basis of mental health conditions by gender, race-ethnicity, and educational attainment. We disqualify those who have serious mental illness (SMI) and individuals who have been diagnosed with a broader range of mental health problems.

2. Ineligibility Estimates

We obtained prevalence estimates of Mental Health disqualification for 17-24 year olds by gender, race-ethnicity, and education from the NSDUH data. Table 4 shows the overall Mental Health disqualification estimates by gender and race-ethnicity.

Table 4. Percent Disqualified from Military Service for Mental Health

Gender	Race & Ethnicity	Mean	N	Lower 95% CL for Mean	Upper 95% CL for Mean
Total		15.5%	22,157	15.1%	16.0%
Male	**Total**	11.8%	10,685	11.2%	12.4%
	White Non-Hispanic	11.9%	6,388	11.1%	12.7%
	Black Non-Hispanic	9.4%	1,415	7.9%	11.0%
	Other Race Non-Hispanic	14.7%	1,002	12.5%	16.9%
	Hispanic	11.9%	1,880	10.4%	13.3%
Female	**Total**	19.2%	11,472	18.5%	20.0%
	White Non-Hispanic	20.9%	6,625	19.9%	21.9%
	Black Non-Hispanic	16.6%	1,687	14.8%	18.3%
	Other Race Non-Hispanic	21.4%	1,083	18.9%	23.8%
	Hispanic	15.6%	2,077	14.1%	17.2%

Source: NSDUH 2010

D. Drugs

1. Disqualifying Criteria

The National Survey on Drug Use and Health (NSDUH) provided the best data on drug use and abuse. The NSDUH data include rates of drug use, and drug dependence for the civilian non-institutional population. DoD I 6130.03 disqualifies applicants for "current or history of alcohol dependence (303), drug dependence (304), alcohol abuse (305.0), or other drug abuse (305.2 thru 305.9)." We use data for 18-25 year olds and tabulate the percentage disqualified due to drugs by gender, race-ethnicity, and educational attainment. Applicants are disqualified for marijuana use within last 30 days, drug abuse including marijuana and alcohol, and illicit drug use (e.g., cocaine, heroin, and hallucinogen).

2. Ineligibility Estimates

We obtained prevalence estimates of Drugs disqualification for 17-24 year olds by gender, race-ethnicity, and education from the NSDUH data. Table 5 has the overall Drugs disqualification estimates by gender and race-ethnicity.

Table 5. Percent Disqualified from Military Service for Drugs

Gender	Race & Ethnicity	Mean	N	Lower 95% CL for Mean	Upper 95% CL for Mean
Total		31.4%	22,157	30.8%	32.0%
Male	**Total**	36.0%	10,685	35.0%	36.9%
	White Non-Hispanic	39.6%	6,388	38.4%	40.8%
	Black Non-Hispanic	31.8%	1,415	29.3%	34.2%
	Other Race Non-Hispanic	27.9%	1,002	25.1%	30.6%
	Hispanic	32.1%	1,880	30.0%	34.2%
Female	**Total**	26.9%	11,472	26.1%	27.8%
	White Non-Hispanic	30.5%	6,625	29.4%	31.6%
	Black Non-Hispanic	18.7%	1,687	16.8%	20.5%
	Other Race Non-Hispanic	23.8%	1,083	21.2%	26.3%
	Hispanic	24.2%	2,077	22.4%	26.1%

Source: NSDUH 2010

E. Conduct

1. Disqualifying Criteria

Multiple waves of the JAMRS Youth Poll Survey (JAMRS-YP) were used to estimate the proportion of the youth population with a record of misconduct. A criminal record with one felony, two misdemeanors or a pattern of misconduct is the disqualifying criteria put forward in the DoD Instruction. Section 29 (i) states "current or history of disturbance of conduct, impulse control, oppositional defiant, other behavior disorders, or personality disorder" is sufficient for disqualification.

2. Ineligibility Estimates

We obtained prevalence estimates of Conduct disqualification for 17-24 year olds by gender, race-ethnicity, and education from the JAMRS-YP data. Table 6 has the overall Conduct disqualification estimates by gender and race-ethnicity.

Table 6. Percent Disqualified from Military Service for Conduct

Gender	Race & Ethnicity	Mean	N	Lower 95% CL for Mean	Upper 95% CL for Mean
Total		8.1%	15,570	7.7%	8.6%
Male	**Total**	11.5%	7,706	10.8%	12.2%
	White Non-Hispanic	10.0%	5,085	9.2%	10.9%
	Black Non-Hispanic	16.9%	775	14.3%	19.7%
	Asian Non-Hispanic	5.6%	342	3.4%	8.5%
	Other Race Non-Hispanic	14.5%	387	11.1%	18.4%
	Hispanic	12.4%	1,117	10.5%	14.4%
Female	**Total**	4.8%	7,864	4.4%	5.3%
	White Non-Hispanic	3.7%	4,974	3.2%	4.3%
	Black Non-Hispanic	8.6%	919	6.9%	10.6%
	Asian Non-Hispanic	1.6%	327	0.5%	3.5%
	Other Race Non-Hispanic	7.1%	464	4.9%	9.8%
	Hispanic	5.1%	1,180	3.9%	6.5%

Source: JAMRS-YP 2012-2013

F. Dependents

1. Disqualifying Criteria

Multiple waves of the JAMRS-YP were used to estimate the proportion of the youth population with dependents. If an applicant is married with more than two dependents under the age of 18 or an applicant is unmarried and has custody of any dependents under the age of 18, then they are disqualified from military service.

2. Ineligibility Estimates

We obtained prevalence estimates of Dependents disqualification for 17-24 year olds by gender, race-ethnicity, and education from the JAMRS-YP data. Table 7 has the overall Dependents disqualification estimates by gender and race-ethnicity.

Table 7. Percent Disqualified from Military Service for Dependents

Gender	Race & Ethnicity	Mean	N	Lower 95% CL for Mean	Upper 95% CL for Mean
Total		8.8%	15,633	8.3%	9.2%
Male	**Total**	6.5%	7,745	5.9%	7.1%
	White Non-Hispanic	4.0%	5,112	3.5%	4.5%
	Black Non-Hispanic	15.2%	779	12.8%	18.0%
	Asian Non-Hispanic	1.1%	347	0.3%	2.9%
	Other Race Non-Hispanic	9.6%	387	6.8%	12.9%
	Hispanic	8.3%	1,120	6.8%	10.1%
Female	**Total**	11.1%	7,888	10.4%	11.8%
	White Non-Hispanic	8.6%	4,989	7.9%	9.5%
	Black Non-Hispanic	19.4%	925	17.0%	22.2%
	Asian Non-Hispanic	2.1%	329	0.9%	4.3%
	Other Race Non-Hispanic	12.7%	469	9.9%	16.2%
	Hispanic	12.4%	1,176	10.6%	14.4%

Source: JAMRS-YP 2012-2013

G. Aptitude

1. Disqualifying Criteria

The military services use the Armed Forces Qualification Test (AFQT) to measure qualification for service on the basis of aptitude. The AFQT score is the percentile ranking of the individual based on a weighted average of the individual's performance on parts of the Armed Forces Vocational Aptitude Battery (ASVAB). Applicants are placed into six aptitude categories based on the AFQT score: Category I (93-99), Category II (65-92), Category IIIA (50-64), Category IIIB (31-49), Category IV (10-30), and Category V (1-9). Youth are legally barred from enlistment on the basis of aptitude if they score 9 or below and fall into Category V. The AFQT has been nationally normed in the youth population, and the norms indicate that 9.5 percent of youth are disqualified due to low aptitude.[4]

2. Ineligibility Estimates

Models of the AFQT distribution and the percent disqualified from service due to low aptitude were developed for this project using MEPCOM data on all military applicants over the period 1998-2006. We refer to these as the QMA 2007 Applicant data because the same data were used in our prior QMA study conducted in 2007. This dataset contains about 3.2 million applications from youth ages 17-24 and includes, in addition to AFQT percentile and AFQT category, demographic information about each applicant, including age, gender, race-ethnicity, and level of education at the time of application. These individual-level data are supplemented with data

[4] See Segall, Daniel O. (2004), *Development and Evaluation of the 1997 ASVAB Score Scale*, Monterey, CA: Defense Manpower Data Center, July.

from the American Community Survey that describe the socio-economic characteristics of the ZIP Code in which the applicant dwells, including the ZIP Code's median family income, poverty rate, percent non-white, and percent with a college degree.

The distribution of AFQT in the applicant data is different from the distribution in the youth population when it was last normed using the 1997 Profile of American Youth (PAY97). To adjust for these differences, we obtained the ratio between the distribution of AFQT in PAY97 and in our applicant data for each of the five race-ethnicity groups employed for this study (White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, Other Non-Hispanic, and Hispanic of any race). Because the distribution of applicants by race-ethnicity is not the same in the applicant data as PAY97, we needed an additional adjustment of the ratio of PAY97 and the applicant data by race-ethnicity. Multiplication of the two relevant race-ethnicity ratios produced the final weight.

We used a multinomial logit model (MNL) to predict the distribution of AFQT in various subgroups of the youth population by ZIP Code. Our final model contains demographic characteristics, socio-economic characteristics of the applicant's ZIP Code and 50 state controls. To obtain estimates of these models, applicants were randomly assigned to an estimation sample and a validation sample and models were estimated using the estimation sample. Predicted probabilities were obtained for each sample and result summaries are based on the validation sample (see Table 8).

Table 8: Distribution of AFQT by Race-Ethnicity (%)

Race & Ethnicity	AFQT Category					
	I	II	IIIA	IIIB	IV	V
All Youth	7.8	27.6	15.6	18.8	20.7	9.4
White Non-Hispanic	10.3	34.6	17.0	18.4	15.4	4.3
Black Non-Hispanic	1.3	10.2	12.8	21.7	31.5	22.6
Asian Non-Hispanic	13.5	16.9	18.6	15.5	25.9	9.8
Other Race Non-Hispanic	2.9	27.9	15.2	17.4	24.6	12.0
Hispanic	1.7	10.7	10.7	19.3	35.5	22.1

Source: The Lewin Group (2013). Based on PAY 97 data.

3. AFQT Distribution in the Youth Population versus the Applicant Data

The detailed comparison of the AFQT distribution across two datasets (MEPCOM data and PAY97 data) is discussed in the Lewin's 2013 study. Below, we briefly review the methodology.

An issue is that military applicants are not random samples of the youth population and the distribution of applicant AFQT is not same as distribution of AFQT in the youth population as a whole. The most recent data on the distribution of AFQT in the youth population is provided by the 1997 Profile of American Youth (PAY97). Table 9 shows the overall distribution of AQFT in PAY97 and in our applicant data and it also shows the distribution for each of the five race-ethnicity groups employed for this study (White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, Other Non-Hispanic, and Hispanic of any race).

Table 9 shows that the military services do not receive as many applications from youth in AFQT Category I as they are represented in the youth population. In fact, as indicated by the row labeled 'Ratio', there are 1.9343 Category I youth in the 17-24 year-old population per Category I applicant. Additionally, the military services do not receive a representative share of applications at the low end among Category V youth. In fact, the PAY97 data indicate that Category V youth comprise 9.44% of the youth population; however, less than 2% of them apply for military service. Finally, the services receive about the same share of Category II applicants as they are represented in the youth population, larger shares of Category IIIA and Category IIIB applicants than their representation in the population, and a smaller share of Category IV applicants than their population share.

Table 9: AFQT Distribution in Applicant Data and PAY97

		AFQT Category					
	Data	I	II	IIIA	IIIB	IV	V
Overall	Applicant	0.0404	0.2918	0.2243	0.2763	0.1391	0.0197
	PAY97	0.0782	0.2759	0.1555	0.1883	0.2077	0.0944
	Ratio	1.9343	0.9456	0.6934	0.6815	1.4926	4.7990
White Non-Hispanic	Applicant	0.0544	0.3543	0.2373	0.2414	0.0924	0.0114
	PAY97	0.1029	0.3461	0.1697	0.1839	0.1537	0.0436
	Ratio	1.8931	0.9769	0.7151	0.7619	1.6641	3.8084
Black Non-Hispanic	Applicant	0.0086	0.1408	0.1875	0.3576	0.2584	0.0402
	PAY97	0.0132	0.1025	0.127	0.2164	0.3159	0.2250
	Ratio	1.5313	0.7278	0.6772	0.6051	1.2225	5.5961
Asian Non-Hispanic	Applicant	0.0523	0.2908	0.2030	0.2641	0.1517	0.0282
	PAY97	0.1348	0.1686	0.1849	0.1558	0.2581	0.0977
	Ratio	2.5754	0.5799	0.9109	0.5899	1.7014	3.4701
Other Non-Hispanic	Applicant	0.0339	0.2736	0.2225	0.2788	0.1563	0.0227
	PAY97	0.0292	0.2768	0.1519	0.176	0.2498	0.1163
	Ratio	0.8615	1.0116	0.6826	0.6313	1.5982	5.1180
Hispanic	Applicant	0.0161	0.2032	0.2231	0.3344	0.1885	0.0279
	PAY97	0.0171	0.1062	0.1065	0.192	0.3561	0.2221
	Ratio	1.0606	0.5227	0.4774	0.5742	1.8892	7.9723

Because the distribution of AFQT in the youth population is different from the distribution in the applicant data, MNL models based on the applicant data, without adjustment, will tend to predict the distribution of AFQT among applicants, not the youth population. To obtain the distribution of AFQT in the youth population, not the applicant population, we weighted each observation by the relevant race group ratio reported in Table 9. Thus, a White Non-Hispanic applicant who is in

AFQT Category I received a weight of 1.8931, a White Non-Hispanic applicant who is in AFQT Category II received a weight of 0.9769, and so forth.[5]

The weights require one additional adjustment that arises from the fact that the distribution of applicants by race-ethnicity is not the same in the applicant data as PAY97. Table 10 shows the distribution of youth by race-ethnicity in the two sources and a corresponding ratio that produces the final weight used in the analysis.

Table 10: Distribution by Race-Ethnicity in Applicant Data and PAY97 Data

Race-Ethnicity	Applicant Data	PAY97 Data	Ratio
White Non-Hispanic	63.16%	68.13%	1.08
Black Non-Hispanic	19.07%	13.01%	0.68
Asian Non-Hispanic	3.27%	2.77%	0.85
Other Non-Hispanic	2.96%	2.86%	0.97
Hispanic	11.54%	13.23%	1.15

V. Propensity to Enlist among Youth

To determine QMA by propensity status, Lewin used propensity data collected within the DoD's Youth Poll surveys. The definition of propensity is described below along with the prevalence estimates of propensity by gender and race-ethnicity. Additionally, we provide an overview of the determinants of propensity as documented in the literature.

A. Propensity or Interest to Enlist

Ten waves of JAMRS-YP were used to estimate the proportion of the youth population who is propensed (interested) to enlist in the military. Propensity is typically measured by a 4-category response to the question of "How likely are you to join the military in the near future?" The possible responses recorded in the YP survey are (a) definitely, (b) probably, (c) probably not, and (d) definitely not. "Propensed" youth are usually defined to be those who indicate that they are definitely or probably going to join the military in the future and "not propensed" otherwise. We followed this aggregation as well.

Additionally, the questionnaire distinguishes between the likelihood of joining the active duty and the likelihood of joining the reserves. The propensity measure that we used for the main analysis does not distinguish between active duty and reserves, indicating that an interested individual is either "definitely" or "probably" likely to join the active duty or "definitely" or "probably" likely to join the reserves.[6] We do perform a sensitivity test for an alternative definition of propensity that

[5] For a technical discussion of the econometric justification for the weighting scheme implemented here, see Cameron and Trivedi (2005, 822-829). The key assumption for the weighting scheme to provide consistent estimates of model parameters is that the distribution of regressors (X's) within a given strata (e.g., AFQT category) in the sample (e.g., applicant data) is independent of the parameters to be estimated (e.g., the β's in equation (2)).

[6] We use JAMRS-YP variables "COMP1: Composite propensity Active Duty" and "COMP2: Composite propensity Reserves".

equals one if a person is either "definitely" or "probably" likely to join the active duty and "not propensed" otherwise.

B. Determinants of Propensity

The youth population eligible for and interested in military service is a critical indicator used by the DoD to plan recruiting policy and programs. Our approach to update the estimate of QMA by propensity involves a literature review of published articles and environmental scan of unpublished evidence on factors commonly used to predict youth interest in the military, as well as the significance and magnitude of such predictors.

Evidence on youth interest in military service was collected from economics, sociology, psychology, and industry journals, as well as alternative sources. As a primary strategy for identifying appropriate articles, we employed a Google Scholar engine with the following specific key words search: "enlistment", "propensity", "enlistment propensity", "to enlist", "to serve", "military". Our literature review covered academic and peer-reviewed journals including, but not limited to, Defence and Peace Economics, Armed Forces & Society, Military Psychology, and Handbook of Defense Economics. Our environmental scan also included RAND and JAMRS online libraries. After reviewing hundreds of abstracts, our search yielded 22 published articles on topics relevant to this study. All articles on predictors of youth interest in the military are dated prior to 2009. The most recent research on youth interest in service has been conducted by DoD or has focused on the attitudes toward military enlistment and propensity to enlist in the military (Ford et al. 2009).

A detailed summary of predictors is reported in Appendix A. All published and unpublished literature determined to be relevant is categorized by significance of the factors in predicting youth interest in the military into three groups: (1) strong, (2) weak, and (3) potential predictors.

The strong predictors of propensity to enlist are well-known and commonly used in the literature due to their statistically significant predictive power (Appendix A, Table A-1). Statistically significant predictors of youth propensity include observable demographic characteristics such as race/ethnicity, sex, education/aptitude, family background (e.g., parental education, parents' military service), plans regarding ones future (e.g., to attend the 4-year college), attitudes toward the military (e.g., attitude toward joining), and economic opportunities factors (e.g., military pay relative to the civilian pay; youth unemployment rates). Specifically, Blacks, Hispanics, and other non-whites are more propensed toward military service than their white peers (Warner et al 2002, Bachman et al 2000, Bray et al 1990). While it is well established in the literature that males have higher levels of interest in the military service (Simon and Warner 2008; JAMRS 2015), the magnitude of the race/ethnicity effect is higher for women than for men (Segal et al 1998). Propensity tends to have an inverse relationship with age: it is higher among youth aged 16-17 compared to those aged 18-24 (JAMRS 2015). Similarly, own educational attainment as well as parents' educational attainment, higher AFQT score, those with generally good high school grades (i.e., mostly As and Bs), and those with plans to attend college have lower propensity to enlist. This is not entirely surprising as these youths might have a larger set of alternatives and as a group, they might be different based on some unobservable characteristics. Finally, youth responds to economic incentives. For example, a 10% increase in military pay relative to the civilian pay, increases the probability of being positively propensed by about 1.4% (Warner et al 2002). Alternatively,

worsening labor market conditions (i.e., an increase in unemployment rate) increase propensity (e.g., Simon and Warner 2008, Bray et al 1990). This is in line with an observation that income status and financial well-being affect interest and enlistment decisions. For example, Gorman and Thomas (1993) find that youth in poverty have stronger intentions to enlist. Additionally, interest is much higher among poor Blacks than poor whites, echoing findings on differential propensity across race-ethnicity groups reported in the literature.

Appendix A, Table A-2 contains a list of weak predictors. That is, although the predictors are thought to influence the propensity, the empirical support for such relationship is weak: the corresponding predictors are identified to have an effect that either not statistically different from zero or have a mixed effect on the propensity (e.g., inconsistency in terms of a sign across studies). Such predictors include political affiliation and attitudes towards military (e.g., approval of President Obama's use of troops), household region, youth risk-taking behavior (e.g., heavy drinking, smoking, aggressive behavior), and military recruiting resources. For example, in a similar econometric model, the number of recruiters per thousand youth has been found to have both a positive effect on propensity (Warner et al 2001) and a negative effect on propensity (Warner et al 2002). Bachman et al. (2000) find that heavy drinking has virtually no relation with either propensity or enlistment. These weak predictors often represent broad categories (i.e., region); whereas, more specific factors like population density of the respondent's state, have a stronger predictive power of propensity. Finally, with respect to geographic differences the effect might vary across race-ethnicities as well: there are little regional differences among whites, whereas among African Americans both propensity and enlistment are highest for those in the South (Bachman et al 2000).

A further review of available JAMRS reports and DoD's Manpower Reports reveals a set of potential, yet uncommon, predictors of youth interest in military service that include family influence, familiarity with military (e.g., knows someone currently serving), speaking with a recruiter, and distance to recruiter location and military bases. A list of these potential predictors is summarized in Appendix A Table A-3. Practical use of these variables in predicting the likelihood of interest is controversial. For example, JAMRS-YP survey asks respondents whether they have spoken to a recruiter and whether they are knowledgeable about the US military. If these two variables are truly exogenous (i.e., independent of other variables), then one can use them for predicting propensity. However, these variables are likely to be endogenous. That is, some unobserved factors, like aspiration of the military career or a positive attitude toward military, affect both the reported propensity to enlist and other variables included in the prediction model. For example, a respondent who is truly serious about the military career is more likely to report the positive propensity to enlist and more likely to reach out to speak to a recruiter than a person who does not have an aspiration of the military career. Therefore, the inclusion of the variables such as "spoke to a recruiter" and "knowledge of the military" will bias estimates, as they are correlated with the unobserved factors that are difficult to capture (i.e., they are captured by the error term).

VI. Estimation of the Probabilities of Disqualification, Propensity, and the Overlap between Disqualification Criteria and Propensity

Our goal is to estimate the fraction of the youth population that is qualified for military service and propensed to enlist, as well as to determine how this fraction varies with observable youth

characteristics and by geographic area. We also want to determine the fraction of youth who are disqualified from service, but propensed by the reason for the disqualification. As discussed earlier, this study has grouped the criteria for qualification for service into the following seven categories:

- Medical/Physical
- Drugs
- Conduct
- Dependents
- Overweight
- Mental Health
- Aptitude

Youth may be disqualified for service for more than one reason. It may be that youth who are disqualified from service on the basis of one criterion (e.g., drugs) are also more likely to be disqualified for other reasons (e.g., conduct). If this is the case (and we show below that it is true empirically), then treating outcomes of the seven qualification criteria as if they were independent will lead us to *overstate* the fraction of youth who are disqualified from service and, as a consequence, *understate* the fraction who are QMA. In the discussion below, we refer to related outcomes as *overlap*. Below, we develop and implement an empirical method for estimating the overlap between the outcomes on the various qualification criteria.

As a bit of terminology, when we are referring to an individual youth, we will refer to the *probability* that the youth is disqualified for a particular reason or set of reasons and the probability of being QMA. When referring to a particular group of youth or the whole youth population, we will refer to the *fraction* that is disqualified for a particular reason or set of reasons and the fraction that is QMA.

Consideration of the overlap between outcomes allows us to estimate a number of fractions or probabilities by the propensity status: fraction disqualified due to failure of one criterion only, fraction disqualified due to failure of exactly two criteria, etc. Our methodology also allows us to estimate the fraction disqualified due to any set of criteria among propensed and not propensed individuals: drugs and conduct, drugs and aptitude, drugs, conduct, and aptitude, etc. In fact, with seven criteria for disqualification, there are 127 different ways that a given youth can be disqualified from service:

- fail one criterion only (7 ways)
- fail two criteria (21 ways)
- fail three criteria (35 ways)
- fail four criteria (35 ways)
- fail five criteria (21 ways)
- fail six criteria (7 ways)
- fail all seven criteria (1 way)

With an additional eighth criterion (i.e., propensity), there are 256 combinations. That is, 127 mentioned combinations for propensed and 127 for not propensed, fail only propensity condition (i.e., QMA and propensed) and not fail all eight conditions (i.e, QMA and not propensed). Our method permits us to estimate each of these 256 probabilities (at the individual level) or fractions (at the group or population level). The next section discusses our empirical method for estimating these probabilities.

A. Multivariate Probit Model

The analysis objectives discussed above may be accomplished by extending the 2013 QMA Multivariate Probit Model (MVPM) to include an eighth outcome: interest or propensity to enlist. Since MVPM is only capable of accommodating binary outcome variables, the outcome variables are defined as:

- $Y_1 = 1$ if the youth is disqualified due to Medical/Physical conditions and 0 if not;
- $Y_2 = 1$ if the youth is disqualified due to Drugs and 0 if not;
- $Y_3 = 1$ if the youth is disqualified due to Conduct and 0 if not;
- $Y_4 = 1$ if the youth is disqualified due to Dependents and 0 if not;
- $Y_5 = 1$ if the youth is disqualified due to Overweight and 0 if not;
- $Y_6 = 1$ if the youth is disqualified due to Mental Health conditions and 0 if not;
- $Y_7 = 1$ if the youth is disqualified due to Aptitude and 0 if not;
- $Y_8 = 1$ if the youth is Interested (Positively Propensed) to enlist and 0 if not.

Before outlining features of MVPM, first, consider the setup of the standard single binary outcome probit model. A simple illustration is appropriate as the MVPM extends the probit model to multiple outcomes, in our application eight. In case of a single outcome, it is conventional to define a continuous latent variable Y* as a function of a linear combination of independent variables (X) and a standard normal random error (ε):

$$Y^* = X\beta + \varepsilon \qquad (1)$$

The latent variable Y* is not observed, but we do observe $Y = 1$ if $Y^* > 0$ and $Y = 0$ if $Y^* \leq 0$. We therefore observe $Y = 1$ if $X\beta + \varepsilon > 0$ or $X\beta > -\varepsilon$. The probability that we observe $Y = 1$ is therefore

$$Pr(Y = 1) = Pr(Y^* > 0) = Pr(X\beta + \varepsilon > 0) = Pr(X\beta > -\varepsilon) = \Phi(X\beta) \qquad (2)$$

In equation (2), Φ represents the cumulative standard normal distribution and $\Phi(X\beta)$ represents the cumulative normal distribution evaluated at the point $X\beta$.[7] Once we estimate the parameter vector β, we can easily calculate $Pr(Y = 1)$, which is simply the area under a standard normal (bell-shaped) curve to the left of the point $X\beta$.

[7] Notice that $X\beta = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_K X_K$ where $X_1, X_2, \ldots, X_K$ denote the independent variables in the model and $X\beta$ represents the linear combination of them.

The MVPM generalizes the setup of the simple probit model shown in equation (1). In this setup, there are eight latent variables underlying the seven conditions for disqualification and one condition for propensity or interest. Each of these eight latent variables is a linear combination of a set of observable variables X and a condition-specific random error. In our application and assuming that the set of independent variables entering each equation is the same, our MVPM has the following structure:

$$Y_1^* = X\beta_1 + \varepsilon_1 = \beta_{0,1} + \beta_{1,1}X_1 + \beta_{2,1}X_2 + \ldots + \beta_{K,1}X_K + \varepsilon_1 \quad (3a)$$

$$Y_2^* = X\beta_2 + \varepsilon_2 = \beta_{0,2} + \beta_{1,2}X_1 + \beta_{2,2}X_2 + \ldots + \beta_{K,2}X_K + \varepsilon_2 \quad (3b)$$

.....

$$Y_7^* = X\beta_7 + \varepsilon_7 = \beta_{0,7} + \beta_{1,7}X_1 + \beta_{2,7}X_2 + \ldots + \beta_{K,7}X_K + \varepsilon_7 \quad (3g)$$

The eighth equation of propensity, in addition to the set of independent variables X, also contains a set of variables Z that correlate with the propensity to enlist (discussed in the previous section), and MVPM has the following structure:

$$Y_8^* = X\beta_8 + Z\gamma_8 + \varepsilon_8 = \beta_{0,8} + \beta_{1,8}X_1 + \beta_{2,8}X_2 + \ldots + \beta_{K,8}X_K + \gamma_{1,8}Z_1 + \ldots + \gamma_{M,8}Z_M + \varepsilon_8 \quad (3h)$$

The inclusion of Z vector might reduce the omitted variable bias that occurs from the inclusion of variables that otherwise might be captured in the error term of the propensity equation. To investigate how the inclusion of Z improves the model, we will estimate a model with and without Z (i.e., this is equivalent to setting all γs in equation (3h) to zero). Given data availability, we include following dichotomous variables in the Z vector: whether the respondent has a parent(s) with the military experience, whether he plans to attend a four-year college, whether he would not join due to opposition of family or friend(s), whether he believes that military wages area relatively higher to the civilian jobs, and whether he has a favorable opinion of the US military.

The MVPM assumes that the random errors in all eight equations are standard normal (i.e., each has a standard deviation of one) and it allows them to be correlated. For example, $\rho_{1,2}$ is the correlation between the unobservable factors that influence an individual's disqualification from service due to Medical/Physical conditions (ε_1) and disqualification due to Drugs (ε_2) . Since there are eight conditions for disqualification, there are 28 correlations between the random errors in equations (3a-3h). Non-zero correlations imply an overlap between the various pairs of disqualification outcomes and interest. Specifically, a positive correlation indicates that youth who fail on a given criterion are more likely to fail on the other criterion. In contrast, when outcomes are negatively correlated, individuals who are more likely to fail on one condition are less likely to fail on other conditions. Negative overlaps would have very adverse implications for military recruiting. For instance, compared with the case of no overlap, a negative correlation of -0.3 between each pair of outcomes has the effect of increasing the total disqualification probability and reducing the QMA probability.[8] Fortunately, as we show below, overlaps are generally positive, not negative.

[8] In the extreme case of perfect negative correlation between outcomes, the fraction of youth of qualifying for military service would approach zero as qualification criteria are added because each disqualification criterion would tend to reject a different subset of the youth population. For a detailed example see the 2013 Lewin's report.

Estimation of the MVPM involves estimation of the parameter vectors in the eight equations (i.e., β_1, β_2,..., β_8) as well as the 28 pairwise correlations between the random errors in the eight equations. Our MVPM estimates were obtained using a software program written by statisticians Lorenzo Cappellari and Stephen Jenkins and implemented in the statistical package STATA (Cappellari and Jenkins 2003, 2006). Once the model has been estimated, estimates of the parameter vectors and correlations are used to calculate the various disqualification probabilities. We employ the software provided by Cappellari and Jenkins for the calculations.

B. JAMRS-YP Data

The Joint Advertising Market Research and Studies (JAMRS) program of the Department of Defense administers a quarterly Youth Poll (YP) survey with the purpose of measuring youths' interest in the military service and their qualifications for service. We use ten waves of the JAMRS-YP to estimate the MVPM and derive rates of disqualification and propensity and the fraction that is QMA by propensity status. The ten JAMRS-YP waves used in the analysis are from Spring 2012, Summer 2012, Fall 2012, Spring 2013, Summer 2013, Fall 2013, Spring 2014, Summer 2014, Fall 2014, and Spring 2015. These ten waves combined contain 51,852 youth ages 17-24, of which 46,114 have complete information on variables of interest and are hence usable in the analysis. Each youth in JAMRS-YP is asked questions that are used to establish the youth's qualification or disqualification for service on each of the seven criteria identified above.

JAMRS-YP respondents are asked whether they have been diagnosed and or treated for various disqualifying medical conditions. We consider that a youth fails the medical/physical qualification criterion if she answers affirmatively to one of the ten medical conditions.[9] Similarly, if a respondent indicates that he has been diagnosed with a mental or psychological illness, we consider that they failed the mental health qualifying criteria. In addition, respondents that confirmed that they would not pass a drug test the day of the survey were considered to be disqualified for service due to drugs. We construct our overweight measure using the same methodology as described in section IV.B. Finally, we discuss our measures of qualifications based on conduct and dependents in sections IV.E and IV.F, respectively.

The military services use the Armed Forces Qualification Test (AFQT) to measure qualification for service on the basis of aptitude. Because it is infeasible to administer the ASVAB as part of the Youth Poll survey, the JAMRS-YP data do not contain a direct measure of aptitude qualification. As discussed earlier, we use Military Entrance Processing Center (MEPCOM) data on all military applicants over the period 1998-2006 to directly estimate how the probability of disqualification varies with applicant attributes and variables describing the economic environment in the applicant's local area. Since the MEPCOM applicant data accurately measure aptitude qualification for service, one might think that we can omit aptitude as an outcome from the MVPM. However, we would lose information by doing so because aptitude is likely to have overlap with other qualification criteria. Intuitively, one would suspect that youth disqualified from service due to low aptitude would also be disqualified on other grounds (e.g., drugs or poor

[9] The ten medical diagnoses are: asthma, diabetes, ADHD, high or low blood pressure, glaucoma or blindness, cancer, hearing loss, skin disorder, neurological disorder, and heart disorder.

conduct). If this is true, ignoring the potential overlaps between aptitude and other outcomes will cause us to overestimate the probability of disqualification and understate the QMA probability.

To overcome this problem, we use a proxy for aptitude in the JAMRS-YP data to estimate the MVPM and obtain estimates of the overlaps between our aptitude proxy and the other qualification outcomes. Then, to calculate the various disqualification probabilities and the QMA probability, we essentially replace the aptitude coefficients estimated using the aptitude proxy with the aptitude coefficients estimated with the MEPCOM applicant data (i.e., the β_7 vector in equation (3g)).[10] Our aptitude proxy is based on high school grades. Youth who reported that their high school grades were C or below were categorized as ineligible for service. Fortuitously, about 10% of the youth in the JAMRS-YP report grades of C or below, about the same percentage that is disqualified based on AFQT, the correct qualification criterion.

As described in section V.A, the propensity outcome is constructed using JAMRS-YP data.

C. Multivariate Probit Model Estimates

1. Main Model

The MVPM was estimated using JAMRS-YP data on 46,114 youth aged 17-24 with non-missing information. The model included the following demographic controls:

- an indicator for male,
- four indicators for age group (20, 21, 22, 23-24; omitted age category = 17-19),
- seven indicators for education level (enrolled in high school, high school senior, enrolled in college, high school diploma graduate, GED or alternative high school equivalency, Associate's Degree, and College Degree; omitted education category = high school dropout), and
- four indicators for race-ethnicity group (White Non-Hispanic, Black Non-Hispanic, Asian Non-Hispanic, Other Race Non-Hispanic; omitted race-ethnic group = Hispanic of any race).

Because we know the ZIP Code of each youth in the JAMRS-YP survey, we are able to control for potential relationships between the disqualification outcomes and the characteristics of the area in which the youth resides. We, therefore, control for the following ZIP Code level variables, which are available in the American Community Survey:

- median family income (in log form),
- percentage of the population below the poverty line,
- percentage of the population ages 25 and above who are college graduates,
- percentage of the population that is non-white, and
- an indicator for whether the ZIP Code is within a Metropolitan Statistical Area (MSA).

[10] Probit models for the probability of being in AFQT category V are reported in Appendix E of the Lewin's 2013 report.

The MVPM coefficient estimates are found in Table 11. Each column contains the estimated coefficients on the included variables for the given disqualification criterion. A positive (negative) coefficient on a given variable indicates that the variable increases (decreases) the probability of disqualification. However, care must be taken in interpreting the coefficients, as they do not directly indicate probability changes. The estimates that are statistically significant at the 5% level are in bold. To briefly interpret these estimates, observe that in the equations for Medical/Physical, Dependents, and Mental Health the coefficients on the variable Male are negative, indicating that males are less likely to be disqualified on the basis of these criteria than females. On the other hand, males are more likely to be disqualified than females due to Drugs, Conduct, and Aptitude.[11] Males are also more propensed to enlist in the military than females.

[11] However, since the aptitude measure in the MVPM is based on high school grades, and not performance on the ASVAB, the aptitude coefficients in Table 11 should not receive much attention. In fact, the analysis of MEPCOM applicant data indicates virtually no gender difference in performance on the ASVAB.

Table 11: Parameter Estimates for Eight Condition Multivariate Probit Model

	Medical/ Physical	Drugs	Conduct	Depen-dents	Over-weight	Mental Health	Aptitude	Interest
Intercept	**-1.717**	**-3.123**	-0.547	1.205	**1.936**	-0.783	-0.106	1.673
Male	**-0.165**	**0.236**	**0.441**	**-0.530**	-0.029	**-0.405**	**0.332**	**0.549**
Age (Reference Group = 17-19)								
Age 20	-0.015	**0.154**	**0.249**	**0.346**	0.039	**0.060**	0.066	-0.033
Age 21	0.024	**0.126**	**0.273**	**0.562**	**0.112**	**0.150**	0.050	0.033
Age 22	0.019	**0.112**	**0.389**	**0.702**	**0.182**	**0.129**	**0.098**	**-0.103**
Age 23-24	**0.049**	**0.165**	**0.484**	**0.864**	**0.308**	**0.211**	**0.165**	**-0.130**
Education (Reference Group = Non-HS Grad)								
HS Enrolled	-0.093	**-0.623**	**-0.800**	**-1.152**	**-0.295**	**-0.491**	**-0.800**	0.070
HS Senior	**-0.212**	**-0.618**	**-0.809**	**-1.068**	**-0.241**	**-0.464**	**-1.001**	**-0.162**
College Enrolled	**-0.225**	**-0.650**	**-0.941**	**-1.287**	**-0.249**	**-0.561**	**-1.349**	**-0.603**
HS Grad	**-0.143**	**-0.308**	**-0.528**	**-0.494**	0.002	**-0.281**	**-0.624**	**-0.280**
GED	-0.078	**-0.270**	**-0.285**	**-0.389**	-0.063	**-0.184**	**-0.513**	**-0.325**
Associate Degree	**-0.168**	**-0.398**	**-0.646**	**-0.802**	-0.050	**-0.291**	**-1.060**	**-0.512**
College Grad	**-0.296**	**-0.878**	**-1.261**	**-1.910**	**-0.483**	**-0.725**	**-1.983**	**-0.778**
Race-Ethnicity (Reference Group = Hispanic)								
White Non-Hispanic	**0.131**	-0.019	-0.048	**-0.172**	**-0.149**	**0.271**	-0.116	**-0.418**
Black Non-Hispanic	**0.138**	-0.055	0.063	**0.362**	**0.059**	-0.110	-0.041	**0.199**
Asian Non-Hispanic	-0.004	-0.074	**-0.282**	**-0.570**	**-0.462**	**-0.229**	**-0.405**	**-0.151**
Other Non-Hispanic	**0.301**	**0.187**	0.086	0.061	-0.038	**0.354**	-0.027	**-0.119**
ZIP Code Level Variables								
Log Med Income	0.134	**0.173**	-0.066	-0.169	**-0.192**	-0.007	-0.030	**-0.209**
% in Poverty	0.004	**0.010**	0.004	**0.008**	-0.002	**0.004**	-0.002	**-0.006**
% College Grad	0.100	**1.104**	0.150	**-0.982**	**-1.673**	**1.146**	**-0.785**	**-0.994**
% Non-White	-0.047	0.112	-0.040	**-0.204**	0.004	**-0.277**	0.154	**0.377**
ZIP Code in MSA	0.037	**0.049**	-0.058	-0.043	**-0.080**	**0.057**	0.070	0.002

Note: Bolded estimates are statistically significant at a 0.05 level.

Effects of other variables may be interpreted similarly. Among the more salient findings, it appears that

- older youth are more likely than younger youth to be disqualified on all grounds other than Medical/Physical,
- youth with more education are less likely to be disqualified on almost all grounds;
- race-ethnicity has a mixed association with the various disqualification outcomes and propensity (although Asian Non-Hispanics are significantly less likely to be disqualified on four of the seven criteria and only Black youth is more likely to be propensed compared to Hispanics), and
- outcomes do appear to be significantly related to one or more of the ZIP Code level economic factors (drug disqualification and mental health in particular).

- propensity is lower among older youth and those with more education.

For sensitivity analysis, we estimated the eight-equation MVPM that contains an extended list of variables in the propensity equation (coefficients from this model are reported in Appendix B). A list of additional variables includes "The respond's mother, father, or both served in the military", "Plans to attend/graduate a 4-year college", "Has a perceptions of better/equal pay in the military relative to civilian jobs", "Family opposes joining the military", "A responded has a favorable opinion about the military". With an exception of "Family opposes joining", all these estimates are statistically significant at the 1% level, resulting in a moderate improvement in the fit of the model. Overall, the impacts of characteristics are similar to the ones described here. Additionally, propensity is higher among youth whose parents are in the military, those who have a favorable opinion about the military, those who believe that pay is relatively better in the military compared to the civilian jobs, and those who plan to attend a four-year college.

Table 12 displays the estimated correlations between the various outcomes in the MVPM, i.e., the overlaps. A positive correlation indicates that youth who fail on a given criterion are more likely to fail on the other criterion. For example, and not surprisingly, disqualification for Drugs is strongly related to disqualification for Conduct (correlation = 0.381). Disqualification due to Medical/Physical conditions has significant overlap with disqualification due to Mental Health conditions. There are also significant overlaps between Conduct and Dependents, Drugs and Mental Health, and Conduct and Mental Health. Although the correlations are not large, there is statistically significant overlap between our proxy measure of Aptitude, low high school grades, and every other condition for disqualification. Only two of the estimated correlations are negative and statistically significant (Conduct and Overweight; Drugs and Overweight), but the estimates (-0.057 and -0.057, respectively) are very small. Finally, only four of the estimated correlations are not statistically significant, and all of these estimates are essentially 0 in value.

Table 12: Overlaps in the Eight-Condition Multivariate Probit Model

	Drugs	Conduct	Dependents	Overweight	Mental Health	Aptitude	Propensity
Medical/Physical	**0.144**	0.029	-0.030	**0.168**	**0.424**	**0.064**	**-0.147**
Drugs		**0.381**	**0.117**	**-0.057**	**0.283**	**0.164**	-0.027
Conduct			**0.260**	**-0.057**	**0.204**	**0.148**	**0.097**
Dependents				**0.037**	**0.039**	**0.090**	**0.048**
Overweight					**0.122**	**0.096**	-0.009
Mental Health						**0.139**	**-0.122**
Aptitude							**0.064**

Note: Bolded estimates are statistically significant at a 0.05 level. Data set contains 10 waives of JAMRS-YP data. Sample size is 46,114.

There is a substantial variation in the overlaps between interest and disqualifying conditions. Three overlap estimates are positive and statistically significant, indicating that youth who fail on a given disqualifying criteria are more likely to fail on another criteria. Given the coding of propensity measure (i.e., positive propensity outcome equals one), "failing" a propensity indicates an interest. That is, the positive correlations indicate that youth who are more propensed (interested) are also more likely to fail the corresponding disqualifying criterion. For

example, those who disqualify based on Conduct are more likely to be positively propensed or interested (an estimate of 0.097). Similarly, those who more likely to disqualify based on Dependent disqualifier, or our proxy measure of Aptitude (low high school grades), are more likely to be propensed. However, the overall magnitude of the overlaps between these two disqualifiers and propensity is small (0.048 for Dependents and Propensity and 0.064 for Aptitude and Propensity). Two overlap estimates are negative and statistically significant, indicating that a youth who is propensed is less likely to fail the disqualifying condition. Thus, more propensed people are less likely to be disqualified for Medical /Physical and Mental Health reasons. Conversely, those who are more likely to be disqualified for Medical /Physical or Mental Health reasons are less likely to be interested. The remaining two estimates of overlaps between Interest and Drugs and Interest and Overweight are not statistically different from zero.

2. Sensitivity Analysis

Since the inclusion of Z vector might mitigate the omitted variable bias in the Propensity equation (3h), we evaluated the estimates of overlaps across two eight-equation MVPMs: a MVPM without Z vector (presented above) and a MVPM with Z vector in the propensity equation. The inclusion of additional parameters might affect some of the correlations, particularly overlaps with Propensity. We evaluated the differences (model fit, overlaps, and coefficient estimates) across these two models. This exercise is important, as the subsequent predictions of QMA estimates for various geographical levels rely on the MVPM model estimates and Woods & Poole (W&P) population data. Unfortunately, the latter dataset does not contain many individual level variables that are included in the Z vector, which prevented us from using this extended model as a main model. Therefore, the QMA estimates at a zip code level were calculated using the estimates from the MVPM without the Z vector.

Table 13 contains the correlations estimates from the eight-equation MVPM model with an extended list of predictors in the propensity equation (with the Z vector). Qualitatively, the correlation estimates in Table 13 are similar to the ones in Table 12; quantitatively, there is a slight variation in the magnitude. Generally, the overlaps between Propensity and other conditions become larger. For example, an overlap between Propensity and Aptitude is 0.079 (instead of 0.064 reported in Table 12) indicating that interested youth are also more likely to fail the aptitude disqualifying criterion after controlling for a larger set of covariates.

Table 13: Overlaps in the Extended Eight-Condition Multivariate Probit Model

	Drugs	Conduct	Dependents	Overweight	Mental Health	Aptitude	Propensity
Medical/Physical	**0.139**	0.024	-0.026	**0.174**	**0.418**	**0.064**	**-0.132**
Drugs		**0.375**	**0.119**	**-0.062**	**0.286**	**0.168**	0.016
Conduct			**0.264**	**-0.060**	**0.205**	**0.134**	**0.108**
Dependents				**0.047**	**0.043**	**0.096**	**0.063**
Overweight					**0.126**	**0.106**	-0.007
Mental Health						**0.136**	**-0.117**
Aptitude							**0.079**

Note: Bolded estimates are statistically significant at a 0.05 level. Data set contains 10 waives of JAMRS-YP data. Sample size is 42,072.

We also explored how the alternative definition of propensity limited to active duty affects the MVPM estimates. That is, we defined propensity as an interested individual is "definitely" or "probably" likely to join the active force (our main propensity measure does not distinguish between active duty and reserves). The estimates reported in Appendix B Table B-2 indicate qualitatively and quantitatively similar effects. Not surprisingly, the largest differences in estimates are observed for the propensity equation. Table 14 summarizes overlap estimates that are very similar in magnitude and statistical significance to the ones reported for our main model (Table 12).

Table 14: Overlaps in the Eight-Condition Multivariate Probit Model Based on Active Duty Propensity

	Drugs	Conduct	Dependents	Overweight	Mental Health	Aptitude	Propensity
Medical/Physical	**0.144**	0.029	-0.025	**0.172**	**0.421**	**0.064**	**-0.149**
Drugs		**0.378**	**0.116**	**-0.060**	**0.284**	**0.162**	-0.028
Conduct			**0.259**	**-0.060**	**0.202**	**0.151**	**0.099**
Dependents				**0.045**	**0.041**	**0.094**	**0.040**
Overweight					**0.123**	**0.095**	-0.015
Mental Health						**0.136**	**-0.125**
Aptitude							**0.066**

Note: Bolded estimates are statistically significant at a 0.05 level. Data set contains 10 waives of JAMRS-YP data. Sample size is 45,988.

D. Predicting the Fractions Disqualified and the QMA Population at the National Level

The MVPM estimates obtained with the JAMRS-YP data were applied to the Woods and Poole (W&P) data to calculate the probability of each of the 256 ways each 17-24 year-old youth in the population may be disqualified from service by propensity status, as well as the probability that the youth is QMA by propensity status.[12] Then, national-level estimates of the fraction of the youth population that is disqualified each of these 256 ways were calculated along with the fraction that is QMA. Because the JAMRS-YP data on certain qualifying criteria is not perfectly consistent with the prevalence in various established national surveys, we adjust the marginal probabilities for these conditions so that our predictions are consistent with the national surveys. Specifically, we perform such adjustments for the medical/physical, drug, overweight, mental health, and aptitude qualifying criteria, as well as propensity. For instance, we adjust the probability of being disqualified for being overweight from 27% based on JAMRS-YP and W&P estimates to 30.9% based on NHANES national data.[13]

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[12] As stated above, to do these calculations, we replace the β_7 vector from the estimated MVPM with estimates based on MEPCOM applicant data.

[13] We also adjust the probability of being disqualified for mental health conditions from 14% based on JAMRS-YP and W&P estimates to 15.5% based on NSDUH national data and the probability of being disqualified drugs from 13.9% based on JAMRS-YP and W&P estimates to 31.4% based on NSDUH national data.

Appendix C (Table C-1 and Table C-2 for propensed and not propensed, respectively) has the detailed probabilities for national-level estimates of the disqualifications including overlap and the QMA for the 17-24 year-old youth population from W&P 2014 data. From these 256 probability estimates, it is straightforward to calculate the various other probabilities or fractions of interest, such as the fraction of the youth population or a subgroup of the population failing one criterion only, failing one criterion only and being propensed, the fraction failing two criteria, the fraction failing two criteria and being propensed, etc.

E. Predicting the Fractions Disqualified and the QMA Population at the ZIP Code Level

For a number of reasons, the Department of Defense and military recruiters would like to know the size of the youth population at the ZIP Code level, the fraction of this population that is QMA, the fraction of this population that is both QMA and propensed, and the fraction that is disqualified on various grounds by propensity status. The JAMRS-YP data are insufficient for this purpose. The standard source for population data at the ZIP Code level is Woods & Poole (W&P). W&P uses Census data and other sources to estimate the size of the U. S. population by year between the decennial censuses at different levels of disaggregation, including the county level and the ZIP Code level. In addition to estimating the total population in a ZIP Code, W&P estimates the population in each of 400 cells defined by the different combinations of gender, age group, education level, and race-ethnicity in our analysis. Our MVPM will be used to calculate the fraction in each cell that is disqualified due to each of the seven disqualifying conditions, the overall fraction disqualified, and the fraction (and number) that is QMA, all by propensity status. These estimates will then be averaged or summed over the 400 cells to obtain estimates at the ZIP Code level.

VII. Methodological Differences between Current QMA Estimates and 2013 QMA Estimates

There are no major methodological differences across the studies. The current study builds on the methodology of 2013 report, but introduces an additional layer – the propensity or interest in military service, which is modeled as a separate disqualification criterion. The overall QMA, which is a weighted average of QMA and propensed and QMA and not propensed, is comparable to the 2013 study. About 29% of youth are QMA.

Notable extensions include:

- Estimates of various disqualifying probabilities are available by propensity status;
- Estimates of QMA are available by propensity status;
- Additional waves of JAMRS-YP data, adding up to ten waves, are included in the analysis.

VIII. Qualified Military Available Estimator

The QMA Estimator allows users to estimate the number of qualified military available from Woods & Poole 2014 data. We have provided a QMA dataset, a sample set of SQL queries that can be used to analyze the data at the Zip Code level and results from the sample queries.

A. QMA Dataset

There are 11,952,800 records in the dataset. This includes 29,882 ZIP Codes, each with 400 records. Each ZIP Code has the 2014 population count by Gender (2 categories), Race-Ethnicity (5 categories), Age (5 categories), and Education (8 categories):

- ZIP Code
- Gender
  - 1 = Male
  - 2 = Female
- Race-Ethnicity
  - 1 = White Non-Hispanic
  - 2 = Black Non-Hispanic
  - 3 = Asian Non-Hispanic
  - 4 = Other Race Non-Hispanic
  - 5 = Hispanic of any race
- Education
  - 1 = High School Dropout (HD)
  - 2 = High School Enrolled (HE)
  - 3 = High School Senior (HS)
  - 4 = GED or alternative high school equivalency (GG)
  - 5 = High School Diploma Graduate (HG)
  - 6 = College Enrolled (CE)
  - 7 = Associate Degree (AA)
  - 8 = College Degree (CG)
- Age
  - 17-19
  - 20, 21
  - 22
  - 23-24
- Woods and Poole 2014 estimated documented population for that ZIP Code, Gender, Race-Ethnicity, Education, and Age combination

In addition, each record has estimated probabilities, including:

- Probability of being in each AFQT category
  - Category I
  - Category II
  - Category IIIA
  - Category IIIB
  - Category IV

  - Category V
- Probability of failing individual disqualifiers
  - Medical/Physical
  - Drugs
  - Conduct
  - Dependents
  - Overweight
  - Mental Health
  - Aptitude
- QMA probability taking into account overlap between disqualifying conditions by propensity status:
  - Probability of QMA and Propensed
  - Probability of QMA and Not Propensed
- Probability of failing only one disqualifier by propensity status
  - Medical/Physical only and Propensed (not Propensed)
  - Drugs only and Propensed (not Propensed)
  - Conduct only and Propensed (not Propensed)
  - Dependents only and Propensed (not Propensed)
  - Overweight only and Propensed (not Propensed)
  - Mental Health only and Propensed (not Propensed)
  - Aptitude only and Propensed (not Propensed).

B. SQL Queries

There are sample queries and results provided with the QMA dataset. Users can create their own queries to generate results tailored to their needs. Sample queries include:

- QMA Counts by Propensity and Zip Code
- QMA Counts by Propensity, Gender, and Zip Code
- QMA Counts by Propensity, Race-Ethnicity, and Zip Code
- QMA Counts by Propensity, Education, and Zip Code
- AFQT Counts among qualified by Zip Code
- AFQT Counts among qualified and Propensed by Zip Code
- AFQT Counts among qualified and not Propensed by Zip Code
- AFQT Counts among qualified and Propensed by Gender and Zip Code
- AFQT Counts among qualified and Propensed by Gender, Race-Ethnicity, Education, and Zip Code

- Highly Qualified (AFQT Categories I, II, and IIIA) by Propensity, Gender, Education, Race-Ethnicity, and ZIP Code.

IX. National Estimates of Qualified Military Available

Probability estimates for meeting the qualification standards for each of the seven conditions and the total qualified military available accounting for overlap in the disqualifications were applied to the population counts for each ZIP Code in the W&P data. Adding the population counts across all ZIP Codes allows us to obtain the national estimates presented in Table 15. There may be some discrepancies between the prevalence tables and the QMA national estimates due to rounding, survey sample distribution and our current estimates accounting for overlap in the disqualifying conditions.

Table 15: QMA National Estimates, by Propensity

	QMA & Propensed	QMA & Not Propensed	QMA
Male	6.04	22.98	29.02
Female	2.65	26.04	28.69
Overall	4.36	24.50	**28.86**

Overall, 28.86% of 17-24 year olds are qualified for military service without a waiver. The QMA estimate in our 2013 study was 28.6%. A relatively small proportion of the QMA population is also propensed to enlist (4.36%). The remaining 24.50% are QMA, but not propensed (interested).

Next, we compared how the differences in the estimates obtained from the MVPM with an extended set of variables in the propensity equation translate into differences in calculated QMA estimates. Table 16 reports the estimates of the overall probability of QMA and the probability of QMA among propensed and not propensed youth for the following MVPMs: an 8-equation model without the Z vector and an 8-equation model with the Z vector.

Table 16: Estimates of QMA probabilities at the national level and by interest status

	8-equation MVPM (without the Z vector)	8-equation MVPM (with the Z vector)
Overall QMA	**28.9**	**29.2**
QMA among interested	27.3	26.8
QMA among not interested	29.1	29.6

As anticipated, the overall QMA varies slightly across models. The estimate from the 8-equation MVPM without the Z vector (28.9%) is close to the 28.6% estimate reported in the Lewin's 2013 report, which relied on data from three waves of JAMRS-YP surveys. An addition of the Z vector improves model's fit and leads to an increase in the QMA estimate to 29.2%. Since the QMA estimates are similar across models and given the limitations of W&P data, we proceed with estimation of various combinations of disqualifiers by propensity status using the MVPM without the Z vector. Noteworthy, QMA is higher among youth who are not propensed (29% versus

27%). This is not surprising: the observed probability of interest in the military in JAMRS-YP data is between 15-16%, depending on the model.

In addition to the overall QMA, we estimated the QMA by Gender, Race, and Education. These results are presented in Table 17 for qualified and propensed and Table 18 for qualified and not propensed.

Table 17: Estimates of QMA and Propensed, by Gender, Race, and Education

		Education							
		HD	HE	HS	GG	HG	CE	AA	CG
Overall		3.1	3.1	9.8	8.0	3.0	3.4	3.7	2.5
Male	Total	4.0	4.0	12.3	10.6	4.0	4.6	5.4	3.8
	White Non-Hispanic	3.4	10.8	8.5	3.2	3.7	4.0	2.6	2.5
	Black Non-Hispanic	4.6	14.8	14.9	5.7	5.9	8.6	5.5	8.0
	Asian Non-Hispanic	6.0	16.7	14.5	6.5	8.2	7.6	5.7	5.4
	Other Non-Hispanic	3.6	11.6	10.4	3.9	3.8	5.3	3.2	5.1
	Hispanic	4.1	13.0	12.5	5.2	5.1	7.2	4.9	5.9
Female	Total	2.0	2.0	6.7	5.1	1.7	2.0	2.2	1.6
	White Non-Hispanic	1.4	5.0	3.5	1.2	1.4	1.3	0.9	0.8
	Black Non-Hispanic	2.7	9.7	8.6	2.6	2.9	4.1	2.7	3.4
	Asian Non-Hispanic	3.4	9.2	7.3	3.2	3.7	3.1	2.5	1.9
	Other Non-Hispanic	1.5	6.6	5.2	1.4	1.8	2.3	1.4	2.8
	Hispanic	2.3	8.0	6.7	2.4	2.5	3.0	2.1	2.2

Note: HD - High school dropout; HE - High school enrolled; HS - High school senior; GG - GED certificate; HG - High school graduate; AA - Associate degree; CE - College enrolled; CG - College graduate.

Table 18: Estimates of QMA and Not Propensed, by Gender, Race, and Education

		Education							
		HD	HE	HS	GG	HG	CE	AA	CG
Overall		8.4	23.1	28.8	15.3	15.7	31.5	19.5	39.2
Male	Total	7.7	20.9	26.7	15.2	15.2	30.5	19.3	39.0
	White Non-Hispanic	10.4	26.8	31.3	17.6	18.5	32.9	21.6	40.1
	Black Non-Hispanic	4.2	10.9	15.6	8.2	8.1	21.4	11.8	28.3
	Asian Non-Hispanic	12.0	25.2	31.7	20.8	22.5	36.7	26.8	46.2
	Other Non-Hispanic	5.3	14.2	17.8	9.8	9.5	22.4	12.1	29.0
	Hispanic	5.7	15.0	20.8	12.1	11.7	26.3	16.5	33.6
Female	Total	9.1	25.9	31.0	15.5	16.4	32.3	19.7	39.3
	White Non-Hispanic	10.8	30.9	34.4	18.1	19.2	33.8	21.2	39.9
	Black Non-Hispanic	5.4	16.6	21.3	9.0	9.4	25.1	13.6	30.8
	Asian Non-Hispanic	16.2	33.3	39.7	25.5	27.0	41.7	32.1	49.2
	Other Non-Hispanic	5.6	18.4	22.0	9.4	10.7	25.5	13.0	33.4
	Hispanic	7.4	21.6	27.0	13.9	14.0	29.7	18.1	36.4

Note: HD - High school dropout; HE - High school enrolled; HS - High school senior; GG - GED certificate; HG - High school graduate; AA - Associate degree; CE - College enrolled; CG - College graduate.

Focusing on QMA and propensity among males, within each educational level Asian Non-Hispanics consistently have the highest QMA, followed by Black Non-Hispanics, Hispanics, Other Non-Hispanics, and White Non-Hispanics. The impact of education is consistent across gender. The highest percentage of QMA and propensity is among students enrolled in high school and high school seniors. The estimate of QMA and Propensity among youth is lowest among college graduates. Figure 1 graphically shows the QMA estimates by Propensity status, Gender, and Race-Ethnicity. For example, the QMA among white non-Hispanic males is 32%. However, only 5% are QMA and propensed; the remaining 27% are QMA and not propensed. The highest QMA is among Asian Non-Hispanic (both males and females). This group also has a relatively high proportion of QMA and propensed compared to other Race-Ethnicity groups.

Figure 1: QMA and Propensity Estimates by Gender and Race-Ethnicity

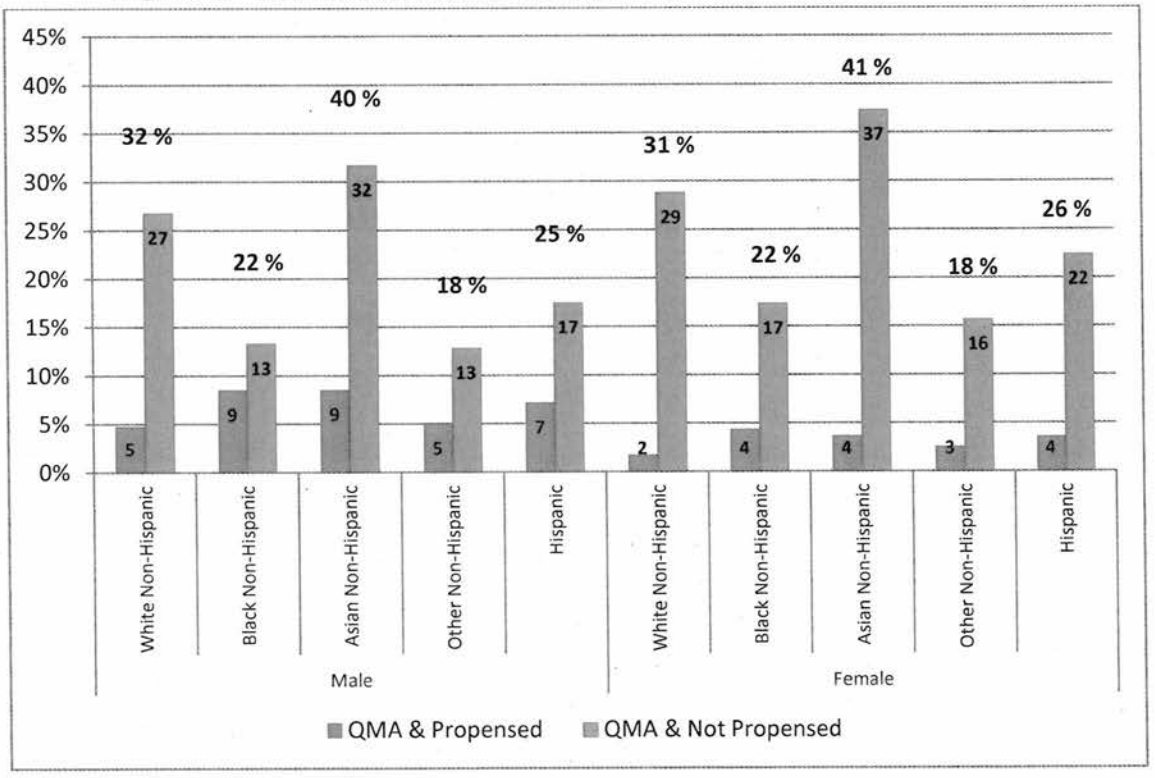
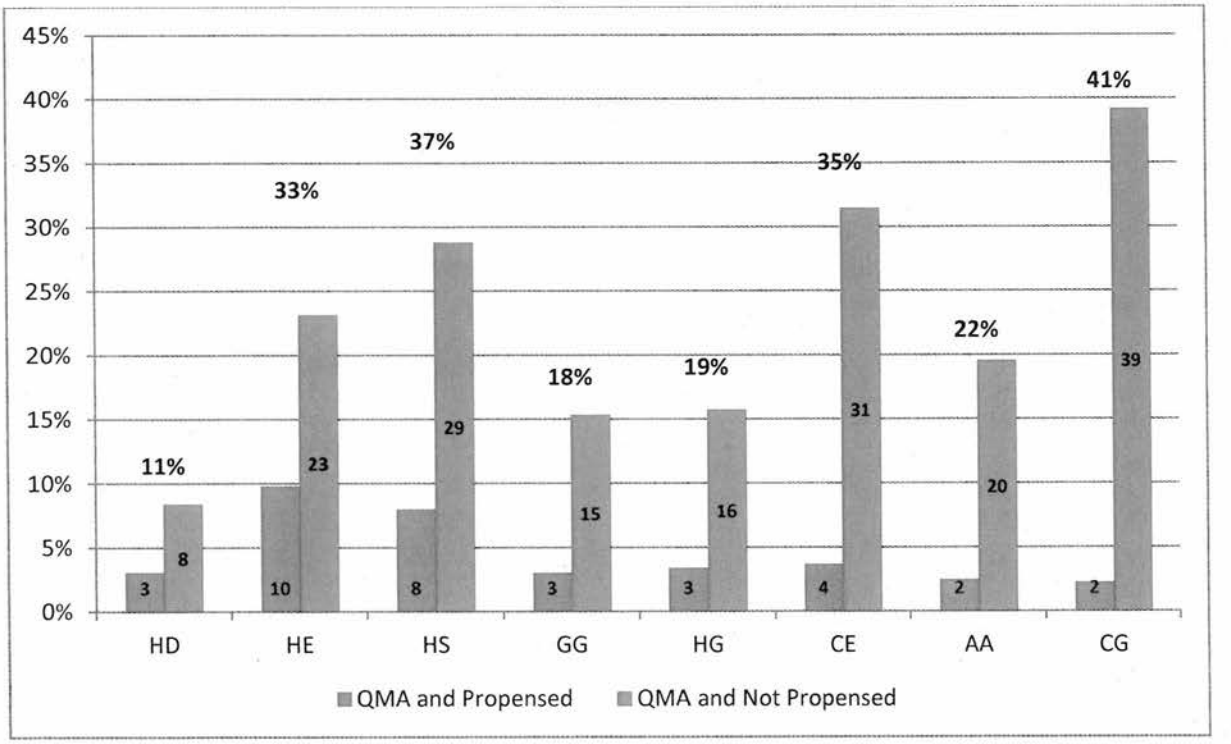


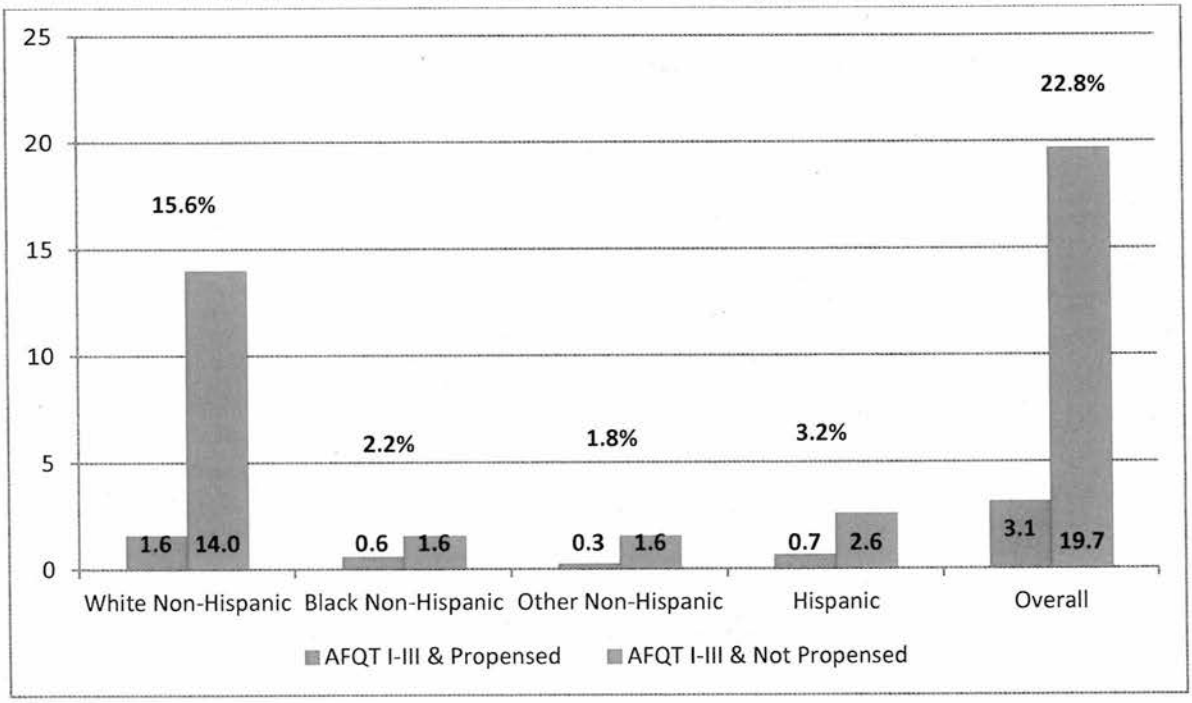
Figure 2 graphically shows the QMA and Propensed estimates by Education. Overall, 33% of high school enrollees and 37% of high school seniors are QMA. However, less than half of high school enrollees (10%) are QMA and propensed and less than one third of high school seniors (8%) are QMA and propensed in the military service. As noted before, there is an inverse relationship between educational attainment and propensity. For example, among QMA youth with some post high school education (e.g., Associate degree, college graduate) the propensed represent only 2%.

Figure 2: QMA and Propensity Estimates by Education



Finally, we break down highly qualified population (i.e., AFQT I, AFQT II, AFQT IIIA, and AFQT IIIB) by propensity status (Figure 3). Overall, about 23% of population is QMA and AFQT I-III, but only 3.1% are qualified, AFQT I-III and propensed; the remaining 20% are qualified and not propensed.

Figure 3: AFQT I-III population by Propensity and Race-Ethnicity



X. National Charts and Detailed Probabilities

Persons can be disqualified for more than one condition; simply adding the disqualifying percentages would result in more than 100%. To adjust for this, the impact of the disqualifiers is order dependent. The percentage disqualified for a specific condition would be smaller if it was entered later in the pie. Figure 4 presents disqualifiers in the following order: Aptitude, Medical / Physical (including Overweight and Mental health), Drugs, Dependents, and Conduct.

Figure 4: National QMA and Disqualifiers - Order Dependent

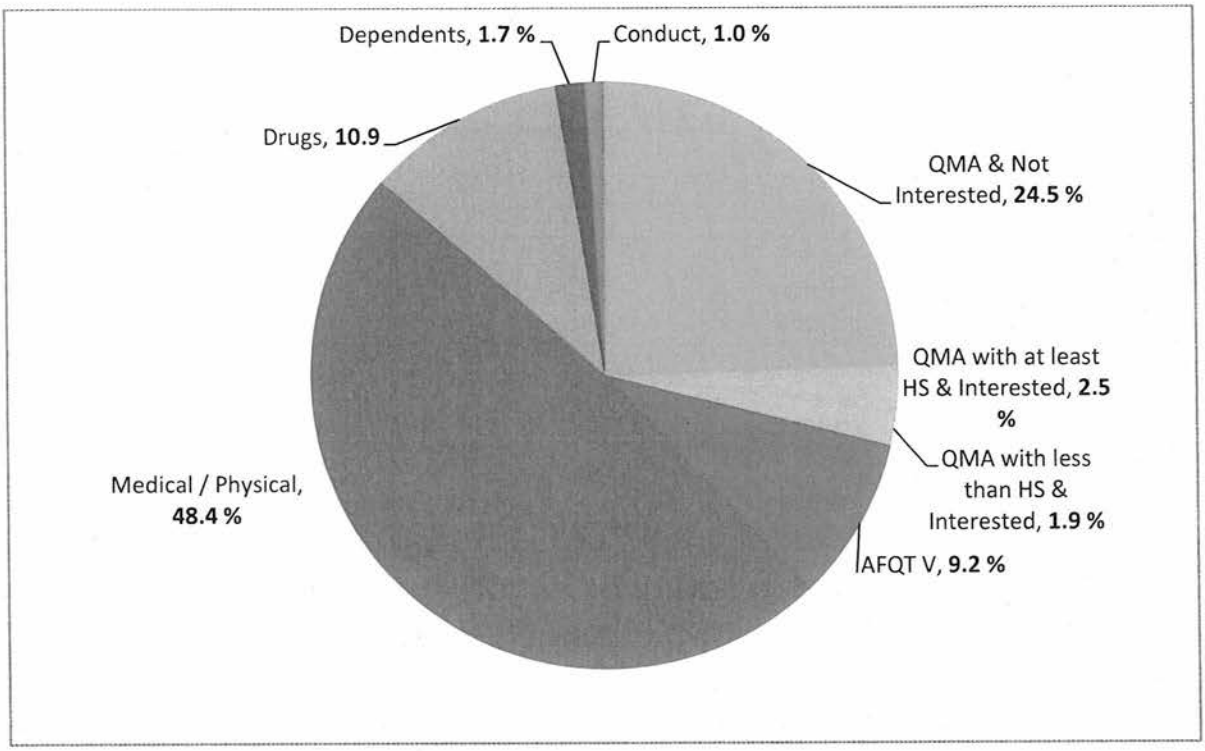


Figure 5 is also order dependent but separates Overweight and Mental Health from Medical/ Physical and provides QMA and interested estimates by AFQT. The order is Aptitude, Overweight, Mental Health, Medical/Physical, Drugs, Dependents, and Conduct.

Figure 5: National QMA and Disqualifiers - Order Dependent

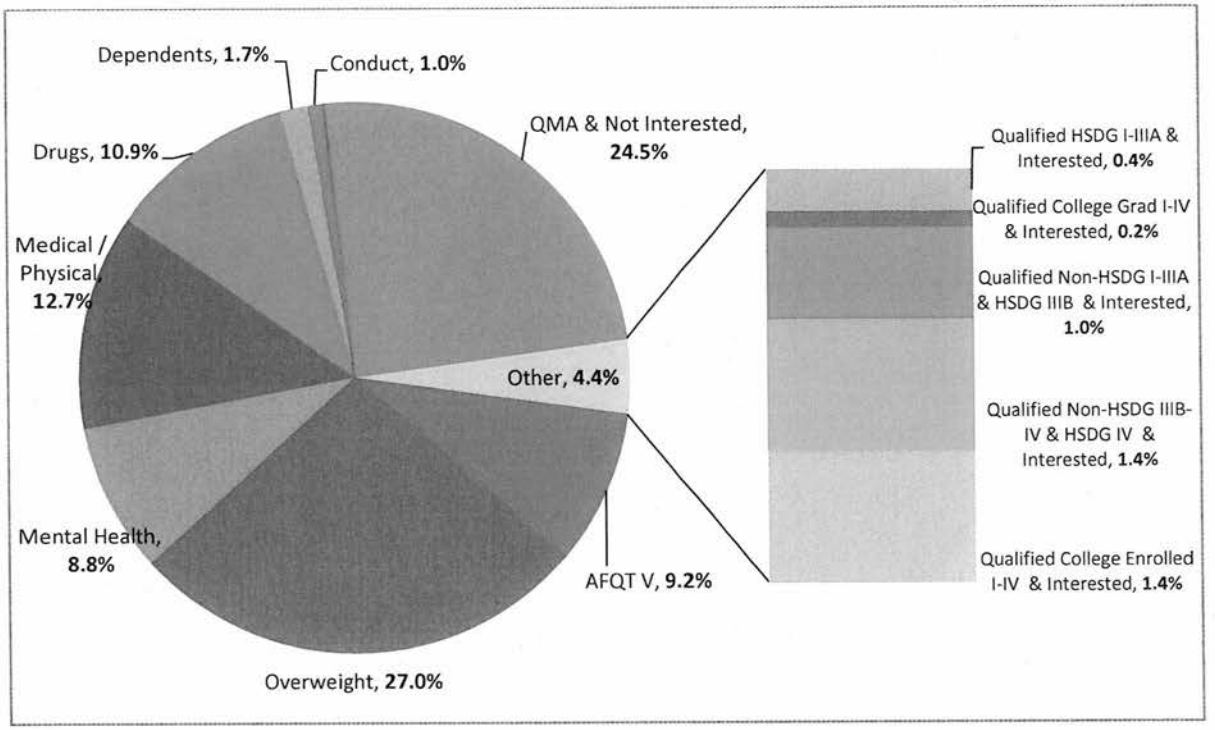
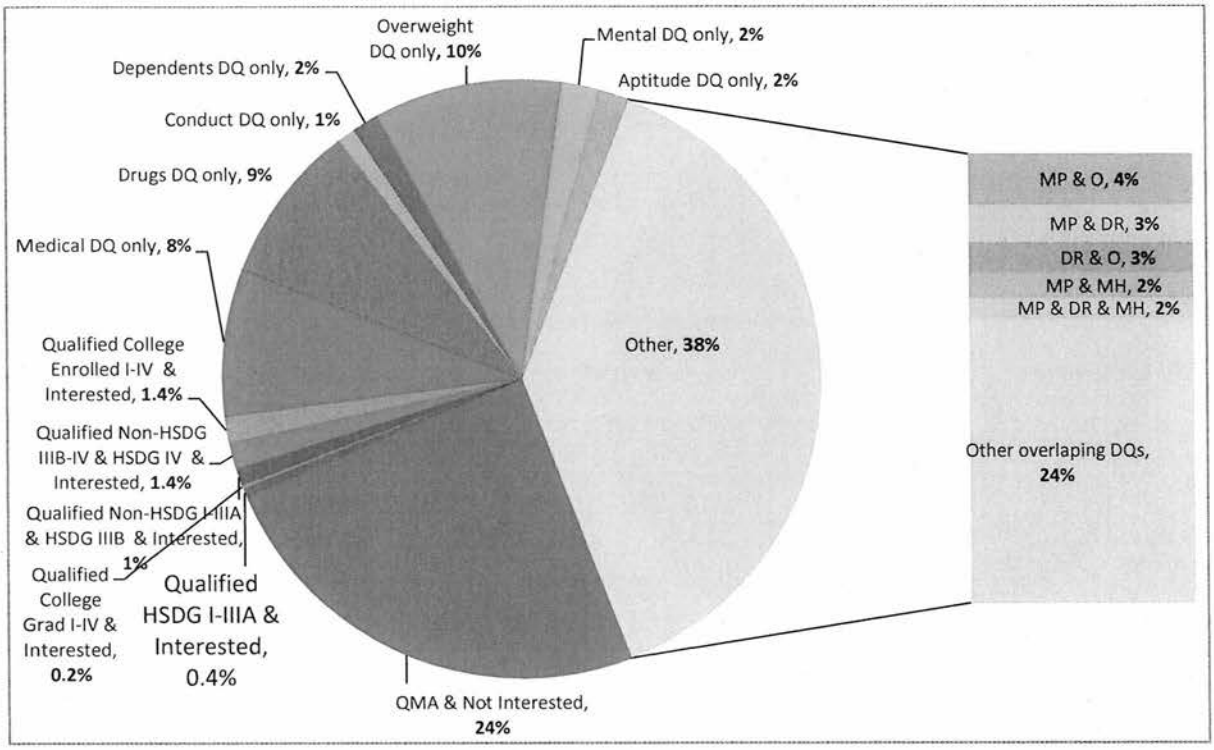


Figure 6 has percentages for only one disqualifier and disqualified for multiple reasons. For example, 8% of 17-24 population are disqualified on the basis of only Medical/Physical standard; about 9% disqualified only Drugs standard, etc. The top five multiple disqualifiers and the aggregated remaining multiple disqualifiers are displayed. The top five combinations are Medical/Physical and Overweight (4%), Medical/Physical and Drugs (3%), Drugs and Overweight (3%), Medical/Physical and Mental Health (2%), Medical/Physical, Mental Health, and Drugs (2%). Other combinations of disqualifying conditions represent 24%.

Figure 6: National QMA and Disqualifiers (DQ) - Only One Disqualifier and Multi-Disqualifiers



Note: MP = Medical / Physical disqualifier; DR = Drugs disqualifier; O = Overweight disqualifier; MH = Mental Health disqualifier.

Table 19 summarizes the percent of population age 17-24 who are disqualified for each of seven conditions by propensity status. Specifically, 30% of youth are disqualified based on Medical /Physical standard of which only 3.6% are propensed. A relatively high percent of propensed are among those who are disqualified based on aptitude standard (constituting about one third of all youth disqualified on the basis of this standard) and conduct standard (about one quarter of all youth disqualified on the bases of conduct).

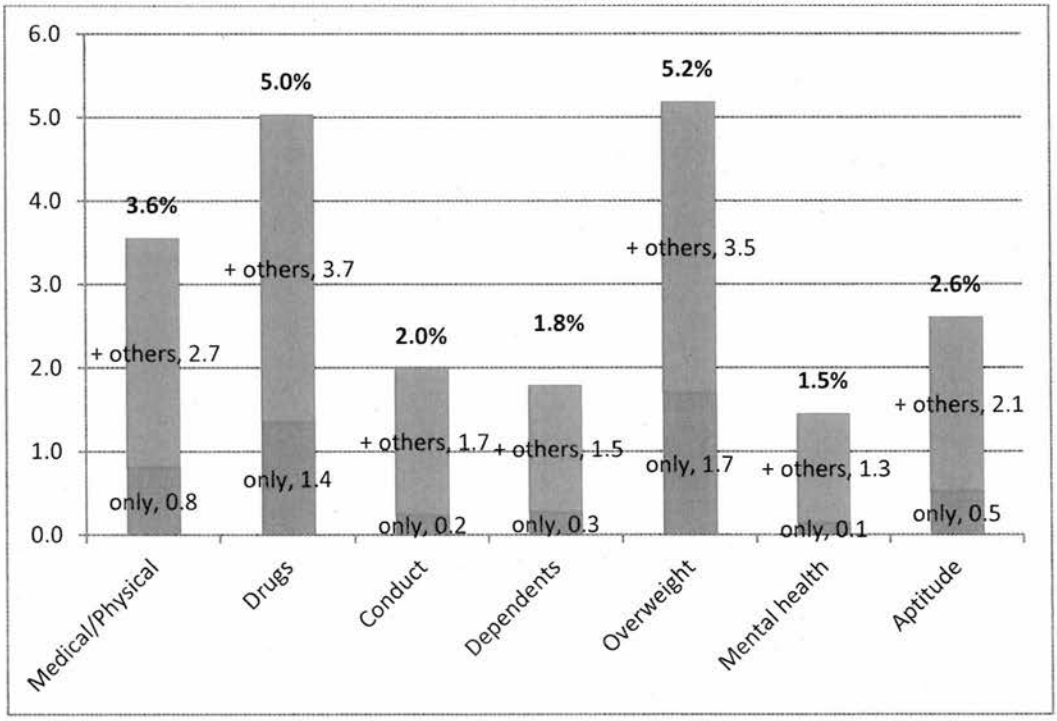
Table 19: Disqualification Estimates, by Propensity

Condition	Disqualified		
	Propensed	Not Propensed	Total
Medical/Physical	3.6	26.7	30.3
Drugs	5.0	25.5	30.6
Conduct	2.0	6.1	8.1
Dependents	1.8	7.1	8.9
Overweight	5.2	25.6	30.8
Mental health	1.5	14.0	15.5
Aptitude	2.6	6.6	9.2

Figure 7 shows the percentage of the population that is propensed to enlist and disqualified for each of the seven conditions. Within each condition, the percentage of the population that has

that disqualifier only and the percentage of the population that has that disqualifier and other disqualifying conditions are shown. For example, 3.6% of populations who are propensed fail Medical/Physical standard. Of which only 0.8% fail only this one disqualifier; the rest 2.7% fail Medical/Physical standard and some other standards as well (e.g., Medical/Physical and Drugs, Medical/Physical and Overweight, Medical/Physical, Drugs, and Overweight, etc.). An important take away, here, is that the most of the non-qualified but propensed are not qualified for multiple reasons. Therefore, it would be difficult to relax only one area of disqualification and thereby obtain significant numbers of qualified and propensed.

Figure 7: National Disqualifiers and Propensed - Only and with Other Disqualifiers



XI. Summary and Conclusions

This report extends the application of multivariate probit model to develop new estimates of the percentage of the youth population that is propensed to enlist (or interested in the military service) and that meets each of seven different criteria for qualification for military service, and the percentage that is fully qualified for service without a waiver. According to the analysis, 28.9% of the youth population age 17-24 is qualified (this estimate is similar to Lewin's 2013 estimate). However, only 4.4% of youth are qualified and propensed to enlist. The method accounts for correlations (overlap) between the different criteria; the analysis indicates that youth that are more likely to qualify based on a given criterion are also more likely to qualify on the basis of other criteria. That is to say, the overlaps are generally positive.

The analysis accounted for ZIP Code level factors that might influence the various qualification criteria. The factors accounted for in the analysis include median family income, the percentage of the adult population with a college degree, the poverty rate, and the percentage of the population that is non-white. The analysis indicated that many of the qualification criteria are

statistically significantly related to one or more of these ZIP Code level factors. Furthermore, the analysis revealed that Aptitude qualification was strongly related to all of these factors and that youth living in the top quartile of median income were about 10 percentage points more likely to be qualified on the basis of Aptitude than youth living in the bottom quartile of incomes.

Propensity to enlist, generally, is lower among older youth (aged 22-24) and those with more education. There are significant differences across genders, with propensity being much higher among males than females. Finally, like disqualifications criteria, propensity also is significantly related to one or more of the ZIP Code level economic factors. Specifically, Zip Code level median income, percent in poverty, and the percent of college graduates reduce the propensity. In contrast, living in Zip Codes with higher share of non-whites has a positive effect on propensity.

The analysis in this report answers the question of what percentage of the youth population is both fully qualified to enlist and interested in enlisting. Specifically, we predict the various probabilities of disqualification, the percent QMA, and the AFQT distribution by interest status at the ZIP Code level for each of the 400 combinations of age, gender, race-ethnicity, and education. The results of this analysis can assist recruiters by providing information regarding which geographic areas are the most fertile for successful recruiting.

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Appendix A: Predictors of Propensity

Table A-1: Strong predictors of propensity based on the literature review

Variable	Reference	Availability/Data Source
Demographics		
Race	Bray et al 1990; Gorman and Thomas 1993; Orvis et al 1996; Bachman et al 1998; Segal et al 1998; Segal et al 1999; Bachman et al 2000; Warner et al 2002; Simon and Warner 2008; JAMRS 2013	YP waves 1-10
Gender	Segal et al 1999; Bourg 2003; Simon and Warner 2008; JAMRS 2015	YP waves 1-10
Age	Bray et al 1990; Warner et al 2002; JAMRS 2015	YP waves 1-10
Religion	Bachman et al 1998	NA
Has siblings	Bourg 2003	NA
Education / Aptitude / Ability / Employment		
Educational attainment	Gorman and Thomas 1993; Warner et al 2002	YP waves 1-10
High School Grades Mostly As or As & Bs	Bachman et al 1998; Segal et al 1998; Bachman et al 2000; Warner et al 2001; Warner et al 2002; Bourg 2003; Simon and Warner 2008	YP waves 1-10
AFQT	Bray et al 1990; Gorman and Thomas 1993	NA
Weekly wage	Bourg 2003	NA
Family background / Household		
Parental Education	Bachman et al 1998; Segal et al 1998; Bachman et al 2000; Warner et al 2001; Warner et al 2002; Bourg 2003	NA
Mother works	Bachman et al 1998; Bourg 2003	NA
Lives with 2 parents	Bachman et al 1998; Segal et al 1998; Bachman et al 2000; Bourg 2003	Not in all YP waves
Lives in a city	Segal et al 1998; Bourg 2003	YP waves 1-10 (MSA based on zip codes)
Poverty	Gorman and Thomas 1993	NA
Parents' military service experience	Warner et al 2001	YP waves 1-10
Future Plans		

Variable	Reference	Availability/Data Source
Plans to attend/graduate 4-year college	Bachman et al 1998; Bachman et al 2000; Segal et al 1998; Segal et al 1999; Warner et al 2001; Bourg 2003	YP waves 1-10
Plans to attend/graduate 2-year college	Warner et al 2001; Bourg 2003	YP waves 1-10
Attitudes		
Attitude toward joining	JAMRS 2015	Not in all YP waves
Perceptions of better/equal pay in the Military vs. civilian jobs	JAMRS 2015	YP waves 1-10
Expectation about finding a job	JAMRS 2015	YP waves 1-10
Influencers		
Parent intention to recommend military service	Gibson et al 2007	NA
Economic opportunities and other external factors		
Military pay relative to the civilian pay	Warner et al 2001; Warner et al 2002	March Current Population Survey
Unemployment rate	Warner et al 2001; Warner et al 2002; Simon and Warner 2008	Bureau of Labor Statistics
Population density of in respondent's state	Warner et al 2002	Census; Woods & Poole

Note: NA indicates that a question was not asked in any of the JAMRS-YP surveys. "YP waves 1-10" refers to ten waves used in the current study.

Table A-2: Weak predictors based on the literature review (no effect or mixed effect)

Variable	Reference	Availability/Data Source
Demographic		
Married	Bachman et al 1998; Bourg 2003	-
Political affiliation	Simon and Warner 2008	-
Unemployment status/being laid off	Bray et al 1990; Gorman and Thomas 1993	-
Income	Gorman and Thomas 1993	-
Attitudes		
Support for troops being in Afghanistan	JAMRS 2015	-
Approval of Obama use of troops	JAMRS 2015	-
Index of attitudes toward military (military role/mission)	Bachman et al 1998; Bachman et al 2000	-
Index of attractiveness of military as workplace	Bachman et al 1998; Bachman et al 2000	-
Family background / Household		
Region	Bray et al 1990; Bourg 2003	-
Behavioral		
Used marijuana	Bachman et al 1998; Bachman et al 2000; Bourg 2003	-
Heavy drinking	Bachman et al 1998; Bachman et al 2000	-
Smoking	Bachman et al 1998; Bachman et al 2000	-
Aggressive behavior	Bachman et al 1998; Bachman et al 2000	-
Pattern of vigorous exercise	Bachman et al 1998; Bachman et al 2000	-
Economic opportunities and other external factors		
Dollars of advertising per youth	Warner et al 2001; Warner et al 2002	-
Recruiters per 1,000 youth	Warner et al 2001; Warner et al 2002	-

Table A-3: Potential predictors

Variable	Reference	Availability/Data Source
Influencers		
Influencer/Family supports/opposition	-	YP waves 1-10
Influencer (parental) advice	-	Not in all YP waves
Family members ever in military (other than parents)	-	YP waves 1-10
Attitudes		
Considered military	-	YP waves 1-10
Favorable opinion about the military	-	YP waves 1-10
Spoken with the recruiter	-	YP waves 1-10; Potentially endogenous
Knowledge of the US military	-	YP waves 1-10; Potentially endogenous
Knows anyone currently serving	-	YP waves 1-10
Economic opportunities and other external factors		
Distance to closest recruiter/ recruiting center	-	DoD Manpower Reports
Distance to closest military base	-	DoD Manpower Reports

Appendix B:
Multivariate Probit Model with Extended Set of Predictors of Propensity

Table B-1: Coefficients from the Multivariate Probit Model with an Extended Set of Propensity Predictors

	Medical/ Physical	Drugs	Conduct	Depen-dents	Over-weight	Mental Health	Aptitude	Propensity
Intercept	**-1.743**	**-3.321**	-0.841	1.474	**1.623**	-1.031	-0.318	1.402
Male	**-0.166**	**0.244**	**0.434**	**-0.525**	-0.024	**-0.413**	**0.332**	**0.581**
Age (Reference Group = 17-19)								
Age 20	-0.018	**0.161**	**0.215**	**0.340**	0.044	**0.072**	0.041	-0.037
Age 21	0.027	**0.119**	**0.281**	**0.583**	**0.109**	**0.154**	0.016	0.051
Age 22	0.015	**0.112**	**0.375**	**0.711**	**0.174**	**0.115**	**0.092**	**-0.113**
Age 23-24	0.045	**0.163**	**0.464**	**0.863**	**0.309**	**0.212**	**0.170**	**-0.124**
Education (Reference Group = Non-HS Grad)								
HS Enrolled	**-0.103**	**-0.717**	**-0.857**	**-1.206**	**-0.267**	**-0.475**	**-0.846**	0.032
HS Senior	**-0.228**	**-0.695**	**-0.844**	**-1.127**	**-0.218**	**-0.453**	**-1.052**	**-0.202**
College Enrolled	**-0.230**	**-0.706**	**-0.966**	**-1.332**	**-0.232**	**-0.530**	**-1.352**	**-0.663**
HS Grad	**-0.153**	**-0.374**	**-0.527**	**-0.516**	0.022	**-0.259**	**-0.629**	**-0.253**
GED	-0.051	**-0.308**	**-0.313**	**-0.404**	-0.021	**-0.135**	**-0.518**	**-0.356**
Associate Degree	**-0.172**	**-0.429**	**-0.642**	**-0.819**	-0.017	**-0.256**	**-1.058**	**-0.549**
College Grad	**-0.293**	**-0.923**	**-1.263**	**-1.918**	**-0.459**	**-0.696**	**-2.010**	**-0.860**
Race-Ethnicity (Reference Group = Hispanic)								
White Non-Hispanic	**0.127**	-0.030	-0.053	**-0.168**	**-0.154**	**0.274**	-0.120	**-0.472**
Black Non-Hispanic	**0.126**	-0.080	0.039	**0.341**	0.046	**-0.139**	-0.055	**0.179**
Asian Non-Hispanic	-0.005	**-0.129**	**-0.301**	**-0.609**	**-0.456**	**-0.227**	**-0.394**	-0.084
Other Non-Hispanic	**0.277**	**0.169**	0.047	0.049	-0.042	**0.347**	-0.030	**-0.158**
ZIP Code Level Variables								
Log Med Income	**0.138**	**0.196**	-0.038	-0.190	**-0.164**	0.015	-0.010	**-0.242**
% in Poverty	0.004	**0.011**	**0.005**	**0.008**	-0.001	0.003	-0.001	-0.004
% College Grad	0.067	**1.192**	0.193	**-1.113**	**-1.858**	**1.023**	**-0.896**	**-0.857**
% Non-White	-0.031	**0.154**	-0.012	**-0.223**	0.007	**-0.257**	0.120	**0.429**
ZIP Code in MSA	0.036	0.028	-0.064	-0.036	**-0.080**	**0.061**	**0.077**	0.032
ZIP Code Level Variables								
Parent(s) in military								**0.230**
Plans 4-year college								**0.089**
Better pay in military								**0.395**
Family/ friends oppose								-0.039
Favorable opinion								**0.605**

Note: Bolded estimates are statistically significant at a 0.05 level. Sample size is 42,072.

Table B-2: Coefficients from the Multivariate Probit Model with an Alternative Definition of Propensity (Active Duty Only)

	Medical/ Physical	Drugs	Conduct	Depen-dents	Over-weight	Mental Health	Aptitude	Propensity
Intercept	**-1.750**	**-3.161**	-0.599	1.268	**1.978**	-0.825	-0.083	1.004
Male	**-0.165**	**0.235**	**0.439**	**-0.531**	-0.030	**-0.406**	**0.331**	**0.568**
Age (Reference Group = 17-19)								
Age 20	-0.014	**0.156**	**0.247**	**0.341**	0.039	**0.061**	0.066	-0.036
Age 21	0.023	**0.126**	**0.272**	**0.559**	**0.113**	**0.147**	0.052	0.025
Age 22	0.022	**0.114**	**0.390**	**0.701**	**0.184**	**0.126**	**0.095**	**-0.107**
Age 23-24	0.052	**0.165**	**0.484**	**0.859**	**0.309**	**0.208**	**0.162**	**-0.138**
Education (Reference Group = Non-HS Grad)								
HS Enrolled	**-0.092**	**-0.620**	**-0.799**	**-1.162**	**-0.289**	**-0.500**	**-0.805**	0.121
HS Senior	**-0.212**	**-0.616**	**-0.801**	**-1.070**	**-0.237**	**-0.470**	**-1.004**	**-0.124**
College Enrolled	**-0.227**	**-0.650**	**-0.936**	**-1.289**	**-0.245**	**-0.564**	**-1.352**	**-0.571**
HS Grad	**-0.144**	**-0.303**	**-0.521**	**-0.497**	0.006	**-0.283**	**-0.633**	**-0.214**
GED	-0.080	**-0.275**	**-0.289**	**-0.391**	-0.058	**-0.192**	**-0.521**	**-0.321**
Associate Degree	**-0.168**	**-0.397**	**-0.641**	**-0.800**	-0.049	**-0.291**	**-1.064**	**-0.450**
College Grad	**-0.298**	**-0.875**	**-1.256**	**-1.909**	**-0.480**	**-0.726**	**-1.982**	**-0.751**
Race-Ethnicity (Reference Group = Hispanic)								
White Non-Hispanic	**0.131**	-0.019	-0.049	**-0.175**	**-0.148**	**0.272**	-0.119	**-0.411**
Black Non-Hispanic	**0.136**	-0.056	0.064	**0.359**	0.062	**-0.107**	-0.041	**0.166**
Asian Non-Hispanic	-0.005	**-0.072**	**-0.280**	**-0.565**	**-0.463**	**-0.227**	**-0.401**	-0.158
Other Non-Hispanic	**0.301**	**0.181**	0.075	0.056	-0.034	**0.356**	-0.030	**-0.116**
ZIP Code Level Variables								
Log Med Income	**0.137**	**0.177**	-0.061	-0.174	**-0.196**	-0.002	-0.031	**-0.163**
% in Poverty	0.004	**0.010**	**0.004**	**0.008**	-0.002	0.004	-0.002	-0.004
% College Grad	0.087	**1.072**	0.131	**-0.946**	**-1.651**	**1.130**	**-0.813**	**-0.871**
% Non-White	-0.045	**0.115**	-0.041	**-0.207**	0.002	**-0.279**	0.155	**0.411**
ZIP Code in MSA	0.036	0.050	-0.056	-0.043	**-0.079**	**0.055**	**0.064**	-0.025

Note: Bolded estimates are statistically significant at a 0.05 level. Sample size is 45,988.

Appendix C:
National-Level Estimated Probabilities of Disqualifications including Overlap and QMA from Woods & Poole 2014

Table C-1: National-Level Estimated Probabilities of Disqualifications including Overlap and QMA from Woods & Poole 2014, Propensed

Probability	Mean	Std. Dev.	Min	Max
QMA and Propensed	4.4%	3.3%	0.1%	23.3%
Fail One Disqualifier Only and Propensed				
Medical (M) and Propensed (P)	0.8%	0.7%	0.0%	5.1%
Drug (Dr) and P	1.4%	1.1%	0.0%	8.3%
Conduct (C) and P	0.2%	0.2%	0.0%	1.9%
Dependent (Dep) and P	0.3%	0.4%	0.0%	3.3%
Overweight (O) and P	1.7%	1.3%	0.0%	13.5%
Mental Health (MH) and P	0.1%	0.1%	0.0%	0.9%
Aptitude (A) and P	0.5%	0.9%	0.0%	10.5%
Fail Two Disqualifiers Only and Propensed				
M, Dr, and P	0.4%	0.3%	0.0%	2.9%
M, C, and P	0.0%	0.0%	0.0%	0.4%
M, Dep, and P	0.0%	0.1%	0.0%	0.8%
M, O, and P	0.5%	0.4%	0.0%	3.6%
M, MH, and P	0.1%	0.1%	0.0%	0.7%
M, A, and P	0.1%	0.2%	0.0%	2.9%
Dr, C, and P	0.3%	0.3%	0.0%	3.0%
Dr, Dep, and P	0.1%	0.2%	0.0%	1.7%
Dr, O, and P	0.5%	0.4%	0.0%	2.8%
Dr, MH, and P	0.1%	0.1%	0.0%	1.2%
Dr, A, and P	0.3%	0.4%	0.0%	4.6%
C, Dep, and P	0.1%	0.1%	0.0%	1.3%
C, O, and P	0.1%	0.1%	0.0%	1.6%
C, MH, and P	0.0%	0.0%	0.0%	0.2%
C, A, and P	0.0%	0.1%	0.0%	1.0%
Dep, O, and P	0.2%	0.4%	0.0%	4.1%
Dep, MH, and P	0.0%	0.0%	0.0%	0.3%
Dep, A, and P	0.1%	0.1%	0.0%	1.9%
O, MH, and P	0.1%	0.0%	0.0%	0.6%
O, A, and P	0.3%	0.5%	0.0%	8.2%
MH, A, and P	0.0%	0.0%	0.0%	0.4%
Fail Three Disqualifiers Only and Propensed				
M, Dr, C, and P	0.1%	0.1%	0.0%	1.1%
M, Dr, Dep, and P	0.0%	0.1%	0.0%	0.8%
M, Dr, O, and P	0.2%	0.2%	0.0%	1.6%
M, Dr, MH, and P	0.1%	0.1%	0.0%	1.4%
M, Dr, A, and P	0.1%	0.1%	0.0%	2.4%
M, C, Dep, and P	0.0%	0.0%	0.0%	0.2%
M, C, O, and P	0.0%	0.0%	0.0%	0.5%
M, C, MH, and P	0.0%	0.0%	0.0%	0.1%
M, C, A, and P	0.0%	0.0%	0.0%	0.2%
M, Dep, O, and P	0.1%	0.1%	0.0%	1.3%
M, Dep, MH, and P	0.0%	0.0%	0.0%	0.2%
M, Dep, A, and P	0.0%	0.0%	0.0%	0.5%
M, O, MH, and P	0.1%	0.1%	0.0%	0.6%

Probability	Mean	Std. Dev.	Min	Max
M, O, A, and P	0.1%	0.2%	0.0%	3.0%
M, MH, A, and P	0.0%	0.0%	0.0%	0.3%
Dr, C, Dep, and P	0.1%	0.2%	0.0%	2.2%
Dr, C, O, and P	0.1%	0.2%	0.0%	1.4%
Dr, C, MH, and P	0.0%	0.1%	0.0%	1.2%
Dr, C, A, and P	0.1%	0.2%	0.0%	2.4%
Dr, Dep, O, and P	0.1%	0.2%	0.0%	1.5%
Dr, Dep, MH, and P	0.0%	0.0%	0.0%	0.4%
Dr, Dep, A, and P	0.0%	0.1%	0.0%	1.5%
Dr, O, MH, and P	0.1%	0.0%	0.0%	0.4%
Dr, O, A, and P	0.1%	0.2%	0.0%	2.5%
Dr, MH, A, and P	0.0%	0.0%	0.0%	0.5%
C, Dep, O, and P	0.0%	0.1%	0.0%	2.0%
C, Dep, MH, and P	0.0%	0.0%	0.0%	0.1%
C, Dep, A, and P	0.0%	0.0%	0.0%	1.3%
C, O, MH, and P	0.0%	0.0%	0.0%	0.2%
C, O, A, and P	0.0%	0.1%	0.0%	1.1%
C, MH, A, and P	0.0%	0.0%	0.0%	0.1%
Dep, O, MH, and P	0.0%	0.0%	0.0%	0.6%
Dep, O, A, and P	0.1%	0.1%	0.0%	3.5%
Dep, MH, A, and P	0.0%	0.0%	0.0%	0.2%
O, MH, A, and P	0.0%	0.0%	0.0%	0.3%
Fail Four Disqualifiers Only and Propensed				
M, Dr, C, Dep, and P	0.0%	0.0%	0.0%	1.1%
M, Dr, C, O, and P	0.0%	0.1%	0.0%	0.8%
M, Dr, C, MH, and P	0.0%	0.0%	0.0%	1.0%
M, Dr, C, A, and P	0.0%	0.1%	0.0%	0.8%
M, Dr, Dep, O, and P	0.0%	0.1%	0.0%	0.8%
M, Dr, Dep, MH, and P	0.0%	0.0%	0.0%	0.4%
M, Dr, Dep, A, and P	0.0%	0.0%	0.0%	0.8%
M, Dr, O, MH, and P	0.1%	0.1%	0.0%	0.6%
M, Dr, O, A, and P	0.1%	0.1%	0.0%	1.5%
M, Dr, MH, A, and P	0.0%	0.0%	0.0%	0.5%
M, C, Dep, O, and P	0.0%	0.0%	0.0%	0.6%
M, C, Dep, MH, and P	0.0%	0.0%	0.0%	0.1%
M, C, Dep, A, and P	0.0%	0.0%	0.0%	0.3%
M, C, O, MH, and P	0.0%	0.0%	0.0%	0.2%
M, C, O, A, and P	0.0%	0.0%	0.0%	0.4%
M, C, MH, A, and P	0.0%	0.0%	0.0%	0.1%
M, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.5%
M, Dep, O, A, and P	0.0%	0.1%	0.0%	1.3%
M, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.2%
M, O, MH, A, and P	0.0%	0.0%	0.0%	0.3%
Dr, C, Dep, O, and P	0.0%	0.1%	0.0%	2.4%
Dr, C, Dep, MH, and P	0.0%	0.0%	0.0%	0.5%
Dr, C, Dep, A, and P	0.0%	0.1%	0.0%	3.0%
Dr, C, O, MH, and P	0.0%	0.0%	0.0%	0.4%
Dr, C, O, A, and P	0.0%	0.1%	0.0%	1.7%
Dr, C, MH, A, and P	0.0%	0.0%	0.0%	0.7%

Probability	Mean	Std. Dev.	Min	Max
Dr, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.3%
Dr, Dep, O, A, and P	0.0%	0.1%	0.0%	2.4%
Dr, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.3%
Dr, O, MH, A, and P	0.0%	0.0%	0.0%	0.3%
C, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.3%
C, Dep, O, A, and P	0.0%	0.1%	0.0%	2.7%
C, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.1%
C, O, MH, A, and P	0.0%	0.0%	0.0%	0.1%
Dep, O, MH, A, and P	0.0%	0.0%	0.0%	0.5%
Fail Five Disqualifiers Only and Propensed				
M, Dr, C, Dep, O, and P	0.0%	0.0%	0.0%	1.0%
M, Dr, C, Dep, MH, and P	0.0%	0.0%	0.0%	0.5%
M, Dr, C, Dep, A, and P	0.0%	0.0%	0.0%	1.2%
M, Dr, C, O, MH, and P	0.0%	0.0%	0.0%	0.5%
M, Dr, C, O, A, and P	0.0%	0.1%	0.0%	0.8%
M, Dr, C, MH, A, and P	0.0%	0.0%	0.0%	0.5%
M, Dr, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.5%
M, Dr, Dep, O, A, and P	0.0%	0.0%	0.0%	1.0%
M, Dr, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.3%
M, Dr, O, MH, A, and P	0.0%	0.0%	0.0%	0.5%
M, C, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.3%
M, C, Dep, O, A, and P	0.0%	0.0%	0.0%	0.8%
M, C, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.1%
M, C, O, MH, A, and P	0.0%	0.0%	0.0%	0.1%
M, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	0.6%
Dr, C, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.5%
Dr, C, Dep, O, A, and P	0.0%	0.1%	0.0%	5.4%
Dr, C, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.5%
Dr, C, O, MH, A, and P	0.0%	0.0%	0.0%	0.4%
Dr, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	0.6%
C, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	0.3%
Fail Six Disqualifiers Only and Propensed				
M, Dr, C, Dep, O, MH, and P	0.0%	0.0%	0.0%	0.8%
M, Dr, C, Dep, O, A, and P	0.0%	0.0%	0.0%	2.2%
M, Dr, C, Dep, MH, A, and P	0.0%	0.0%	0.0%	0.6%
M, Dr, C, O, MH, A, and P	0.0%	0.0%	0.0%	0.5%
M, Dr, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	0.8%
M, C, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	0.3%
Dr, C, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	1.0%
Fail Seven Disqualifiers and Propensed				
M, Dr, C, Dep, O, MH, A, and P	0.0%	0.0%	0.0%	1.7%

Table C-2: National-Level Estimated Probabilities of Disqualifications including Overlap and QMA from Woods & Poole 2014, Not Propensed

Probability	Mean	Std. Dev.	Min	Max
QMA and Not Propensed (NP)	24.5%	10.4%	0.3%	58.3%
Fail One Disqualifier Only and Not Propensed				
Medical (M) and NP	7.2%	3.2%	0.1%	19.3%
Drug (Dr) and NP	7.3%	2.9%	0.2%	26.7%
Conduct (C) and NP	0.7%	0.5%	0.0%	3.2%
Dependent (Dep) and NP	1.2%	1.3%	0.0%	7.1%
Overweight (O) and NP	8.4%	2.7%	0.1%	23.2%
Mental Health (MH) and NP	1.8%	1.3%	0.0%	14.7%
Aptitude (A) and NP	1.2%	1.1%	0.0%	9.8%
Fail Two Disqualifiers Only and Not Propensed				
M, Dr, and NP	2.9%	1.1%	0.1%	15.5%
M, C, and NP	0.2%	0.1%	0.0%	0.8%
M, Dep, and NP	0.3%	0.4%	0.0%	2.8%
M, O, and NP	3.8%	1.1%	0.0%	8.7%
M, MH, and NP	2.0%	1.5%	0.0%	9.9%
M, A, and NP	0.4%	0.4%	0.0%	4.3%
Dr, C, and NP	1.0%	0.8%	0.0%	7.5%
Dr, Dep, and NP	0.6%	0.6%	0.0%	6.6%
Dr, O, and NP	2.1%	0.9%	0.1%	6.4%
Dr, MH, and NP	1.2%	0.8%	0.0%	19.3%
Dr, A, and NP	0.6%	0.6%	0.0%	5.3%
C, Dep, and NP	0.1%	0.2%	0.0%	1.5%
C, O, and NP	0.3%	0.2%	0.0%	2.3%
C, MH, and NP	0.1%	0.1%	0.0%	1.0%
C, A, and NP	0.1%	0.1%	0.0%	0.8%
Dep, O, and NP	0.8%	1.1%	0.0%	9.8%
Dep, MH, and NP	0.1%	0.2%	0.0%	1.9%
Dep, A, and NP	0.1%	0.2%	0.0%	2.1%
O, MH, and NP	0.9%	0.6%	0.0%	4.3%
O, A, and NP	0.7%	0.7%	0.0%	5.4%
MH, A, and NP	0.1%	0.1%	0.0%	1.1%
Fail Three Disqualifiers Only and Not Propensed				
M, Dr, C, and NP	0.3%	0.3%	0.0%	3.0%
M, Dr, Dep, and NP	0.2%	0.3%	0.0%	5.0%
M, Dr, O, and NP	1.3%	0.4%	0.0%	5.4%
M, Dr, MH, and NP	1.6%	1.0%	0.0%	17.6%
M, Dr, A, and NP	0.3%	0.2%	0.0%	3.6%
M, C, Dep, and NP	0.0%	0.0%	0.0%	0.4%
M, C, O, and NP	0.1%	0.1%	0.0%	0.8%
M, C, MH, and NP	0.1%	0.1%	0.0%	0.7%
M, C, A, and NP	0.0%	0.0%	0.0%	0.2%
M, Dep, O, and NP	0.3%	0.5%	0.0%	4.4%
M, Dep, MH, and NP	0.1%	0.2%	0.0%	1.8%
M, Dep, A, and NP	0.0%	0.1%	0.0%	0.9%
M, O, MH, and NP	1.4%	0.9%	0.1%	4.7%

Probability	Mean	Std. Dev.	Min	Max
M, O, A, and NP	0.3%	0.3%	0.0%	2.8%
M, MH, A, and NP	0.1%	0.1%	0.0%	1.5%
Dr, C, Dep, and NP	0.2%	0.3%	0.0%	5.2%
Dr, C, O, and NP	0.3%	0.3%	0.0%	2.0%
Dr, C, MH, and NP	0.2%	0.2%	0.0%	7.0%
Dr, C, A, and NP	0.1%	0.2%	0.0%	2.9%
Dr, Dep, O, and NP	0.3%	0.4%	0.0%	4.9%
Dr, Dep, MH, and NP	0.1%	0.2%	0.0%	3.5%
Dr, Dep, A, and NP	0.1%	0.2%	0.0%	3.1%
Dr, O, MH, and NP	0.5%	0.3%	0.0%	2.1%
Dr, O, A, and NP	0.3%	0.3%	0.0%	2.6%
Dr, MH, A, and NP	0.1%	0.1%	0.0%	1.8%
C, Dep, O, and NP	0.1%	0.1%	0.0%	1.6%
C, Dep, MH, and NP	0.0%	0.0%	0.0%	0.6%
C, Dep, A, and NP	0.0%	0.0%	0.0%	0.8%
C, O, MH, and NP	0.0%	0.0%	0.0%	0.5%
C, O, A, and NP	0.0%	0.1%	0.0%	0.7%
C, MH, A, and NP	0.0%	0.0%	0.0%	0.2%
Dep, O, MH, and NP	0.1%	0.2%	0.0%	3.4%
Dep, O, A, and NP	0.1%	0.3%	0.0%	4.6%
Dep, MH, A, and NP	0.0%	0.0%	0.0%	0.4%
O, MH, A, and NP	0.1%	0.1%	0.0%	0.7%
Fail Four Disqualifiers Only and Not Propensed				
M, Dr, C, Dep, and NP	0.1%	0.1%	0.0%	3.1%
M, Dr, C, O, and NP	0.2%	0.2%	0.0%	1.4%
M, Dr, C, MH, and NP	0.3%	0.3%	0.0%	7.6%
M, Dr, C, A, and NP	0.1%	0.1%	0.0%	1.4%
M, Dr, Dep, O, and NP	0.2%	0.2%	0.0%	4.8%
M, Dr, Dep, MH, and NP	0.2%	0.3%	0.0%	6.4%
M, Dr, Dep, A, and NP	0.0%	0.1%	0.0%	2.6%
M, Dr, O, MH, and NP	0.9%	0.5%	0.0%	4.2%
M, Dr, O, A, and NP	0.2%	0.2%	0.0%	1.8%
M, Dr, MH, A, and NP	0.1%	0.1%	0.0%	2.7%
M, C, Dep, O, and NP	0.0%	0.1%	0.0%	0.7%
M, C, Dep, MH, and NP	0.0%	0.0%	0.0%	0.5%
M, C, Dep, A, and NP	0.0%	0.0%	0.0%	0.2%
M, C, O, MH, and NP	0.1%	0.1%	0.0%	0.5%
M, C, O, A, and NP	0.0%	0.0%	0.0%	0.3%
M, C, MH, A, and NP	0.0%	0.0%	0.0%	0.1%
M, Dep, O, MH, and NP	0.2%	0.3%	0.0%	3.1%
M, Dep, O, A, and NP	0.1%	0.1%	0.0%	2.0%
M, Dep, MH, A, and NP	0.0%	0.0%	0.0%	0.5%
M, O, MH, A, and NP	0.1%	0.1%	0.0%	1.2%
Dr, C, Dep, O, and NP	0.1%	0.2%	0.0%	2.8%
Dr, C, Dep, MH, and NP	0.1%	0.1%	0.0%	3.0%
Dr, C, Dep, A, and NP	0.1%	0.1%	0.0%	3.0%
Dr, C, O, MH, and NP	0.1%	0.1%	0.0%	1.0%
Dr, C, O, A, and NP	0.1%	0.1%	0.0%	1.1%
Dr, C, MH, A, and NP	0.0%	0.0%	0.0%	1.5%

Probability	Mean	Std. Dev.	Min	Max
Dr, Dep, O, MH, and NP	0.1%	0.1%	0.0%	1.9%
Dr, Dep, O, A, and NP	0.1%	0.2%	0.0%	2.3%
Dr, Dep, MH, A, and NP	0.0%	0.0%	0.0%	1.1%
Dr, O, MH, A, and NP	0.1%	0.1%	0.0%	0.6%
C, Dep, O, MH, and NP	0.0%	0.0%	0.0%	1.0%
C, Dep, O, A, and NP	0.0%	0.0%	0.0%	1.4%
C, Dep, MH, A, and NP	0.0%	0.0%	0.0%	0.2%
C, O, MH, A, and NP	0.0%	0.0%	0.0%	0.2%
Dep, O, MH, A, and NP	0.0%	0.0%	0.0%	1.0%
Fail Five Disqualifiers Only and Not Propensed				
M, Dr, C, Dep, O, and NP	0.1%	0.1%	0.0%	2.5%
M, Dr, C, Dep, MH, and NP	0.1%	0.2%	0.0%	4.8%
M, Dr, C, Dep, A, and NP	0.0%	0.0%	0.0%	2.3%
M, Dr, C, O, MH, and NP	0.2%	0.2%	0.0%	1.7%
M, Dr, C, O, A, and NP	0.0%	0.1%	0.0%	0.8%
M, Dr, C, MH, A, and NP	0.0%	0.1%	0.0%	1.6%
M, Dr, Dep, O, MH, and NP	0.1%	0.3%	0.0%	5.5%
M, Dr, Dep, O, A, and NP	0.0%	0.1%	0.0%	2.6%
M, Dr, Dep, MH, A, and NP	0.0%	0.1%	0.0%	2.4%
M, Dr, O, MH, A, and NP	0.1%	0.1%	0.0%	1.5%
M, C, Dep, O, MH, and NP	0.0%	0.0%	0.0%	1.0%
M, C, Dep, O, A, and NP	0.0%	0.0%	0.0%	0.6%
M, C, Dep, MH, A, and NP	0.0%	0.0%	0.0%	0.2%
M, C, O, MH, A, and NP	0.0%	0.0%	0.0%	0.2%
M, Dep, O, MH, A, and NP	0.0%	0.1%	0.0%	1.5%
Dr, C, Dep, O, MH, and NP	0.0%	0.1%	0.0%	1.7%
Dr, C, Dep, O, A, and NP	0.0%	0.1%	0.0%	3.1%
Dr, C, Dep, MH, A, and NP	0.0%	0.0%	0.0%	1.1%
Dr, C, O, MH, A, and NP	0.0%	0.0%	0.0%	0.5%
Dr, Dep, O, MH, A, and NP	0.0%	0.1%	0.0%	1.2%
C, Dep, O, MH, A, and NP	0.0%	0.0%	0.0%	0.5%
Fail Six Disqualifiers Only and Not Propensed				
M, Dr, C, Dep, O, MH, and NP	0.1%	0.1%	0.0%	4.3%
M, Dr, C, Dep, O, A, and NP	0.0%	0.1%	0.0%	2.8%
M, Dr, C, Dep, MH, A, and NP	0.0%	0.1%	0.0%	2.3%
M, Dr, C, O, MH, A, and NP	0.0%	0.1%	0.0%	1.0%
M, Dr, Dep, O, MH, A, and NP	0.0%	0.1%	0.0%	3.0%
M, C, Dep, O, MH, A, and NP	0.0%	0.0%	0.0%	0.7%
Dr, C, Dep, O, MH, A, and NP	0.0%	0.0%	0.0%	1.3%
Fail Seven Disqualifiers and Not Propensed				
M, Dr, C, Dep, O, MH, A, and NP	0.0%	0.1%	0.0%	3.1%

Assessing the Implications of Allowing Transgender Personnel to Serve Openly

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Preface

U.S. Department of Defense (DoD) policies have rendered both the physical and psychological aspects of "transgender conditions" as disqualifying conditions for accession and allow for the administrative discharge of service members who fall into these categories. However, in July 2015, Secretary of Defense Ashton Carter announced that DoD would "create a working group to study the policy and readiness implications of welcoming transgender persons to serve openly." In addition, he directed that "decision authority in all administrative discharges for those diagnosed with gender dysphoria[1] or who identify themselves as transgender be elevated to the Under Secretary of Defense (Personnel and Readiness), who will make determinations on all potential separations" (DoD, 2015b).

It is against this backdrop that DoD is considering allowing transgender personnel to serve openly. To assist in identifying the potential implications of such a change in policy, the Office of the Under Secretary of Defense for Personnel and Readiness asked the RAND National Defense Research Institute to conduct a study to (1) identify the health care needs of the transgender population, transgender service members' potential health care utilization rates, and the costs associated with extending health care coverage for transition-related treatments; (2) assess the potential readiness implications of allowing transgender service members to serve openly; and (3) review the experiences of foreign militaries that permit transgender service members to serve openly. This report documents the findings from that study. This research should be of interest to DoD and military service leadership, members of Congress, and others who are interested in the potential implications of allowing transgender personnel to serve openly in the U.S. armed forces.

This research was sponsored by the Office of the Under Secretary of Defense for Personnel and Readiness and conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint

[1] *Gender dysphoria* is "discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth" (World Professional Association for Transgender Health, 2011, p. 2).

Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community.

For more information on the RAND Forces and Resources Policy Center, see www.rand.org/nsrd/ndri/centers/frp or contact the director (contact information is provided on the web page).

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Summary

The U.S. Department of Defense (DoD) is reviewing its policy on transgender personnel serving openly and receiving gender transition–related treatment during military service. The prospect of transgender personnel serving openly raises a number of policy questions, including those regarding access to gender transition–related health care, the range of transition-related treatments to be provided, the potential costs associated with these treatments, and the impact of gender transition–related health care needs (i.e., surgical, pharmacologic, and psychosocial) on military readiness—specifically, in terms of the deployability of transgender service members. The Office of the Under Secretary of Defense for Personnel and Readiness asked the RAND National Defense Research Institute to conduct a study to (1) identify the health care needs of the transgender population, transgender service members' potential health care utilization rates, and the costs associated with extending health care coverage for transition-related treatments; (2) assess the potential readiness implications of allowing transgender service members to serve openly; and (3) review the experiences of foreign militaries that permit transgender service members to serve openly. This report presents the study findings centered around the following research questions:

- What are the health care needs of the transgender population?
- What is the estimated transgender population in the U.S. military?
- How many transgender service members are likely to seek gender transition–related medical treatment?
- What are the costs associated with extending health care coverage for gender transition–related treatments?
- What are the potential readiness implications of allowing transgender service members to serve openly?
- What lessons can be learned from foreign militaries that permit transgender personnel to serve openly?
- Which DoD policies would need to be changed if transgender service members are allowed to serve openly?

In the following sections, we summarize the findings associated with each research question.

What Are the Health Care Needs of the Transgender Population?

For the purposes of this analysis, we use *transgender* as an umbrella term to refer to individuals who identify with a gender different from the sex they were assigned at birth. Under the recently established criteria and terminology in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), the American Psychiatric Association (APA) publication that provides standard language and criteria for classifying mental health conditions, transgender status alone does not constitute a medical condition (APA, 2013). Instead, under the revised diagnostic guidelines, only transgender individuals who experience significant related distress are considered to have a medical condition called *gender dysphoria* (GD). Some combination of psychosocial, pharmacologic (mainly but not exclusively hormonal), or surgical care may be medically necessary for these individuals. Psychotherapy to confirm a diagnosis of GD is a common first step in the process, often followed by hormone therapy and, perhaps, gender reassignment surgery involving secondary or primary sex characteristics. Not all individuals seek all forms of care.

A subset of transgender individuals may choose to *transition*, the term we use to refer to the act of living and working as a gender different from that assigned at birth. For some, the transition may be primarily social, with no accompanying medical treatment; we refer to this as *social transition*. For others, medical treatments, such as hormone therapy and hair removal, are important steps to align their physical body with their target gender. We refer to this as *medical transition*. A subset of those who medically transition may choose to undergo gender reassignment surgery to make their body as congruent as possible with their gender identity. This process of surgical transition is also often referred to as *sex* or *gender reassignment* or *gender confirmation*.

What Is the Estimated Transgender Population in the U.S. Military?

Estimates of the transgender population in the U.S. military and the analyses presented in this report should be interpreted with caution, as there have been no rigorous epidemiological studies of the size or health care needs of either the transgender population in the United States or the transgender population serving in the military. As a result, much existing research relies on self-reported, nonrepresentative survey samples. We applied a range of prevalence estimates from published research to fiscal year (FY) 2014 personnel numbers to estimate the number of transgender individuals serving in the U.S. military. We estimate that there are between 1,320 and

6,630 transgender personnel serving in the active component (AC) and 830–4,160 in the Selected Reserve (SR). Combining survey evidence from multiple states and adjusting for the male/female distribution in the military gave us a midrange estimate of around 2,450 transgender personnel in the AC and 1,510 in the SR.

How Many Transgender Service Members Are Likely to Seek Gender Transition–Related Medical Treatment?

We developed two estimates of demand for gender transition–related medical treatments based on private health insurance data and self-reported data from the National Transgender Discrimination Survey (NTDS). Based on our analyses of available private health insurance data on transition-related health care utilization, we expect only a small number of AC service members to access transition-related health care each year. Our estimates based on private health insurance data ranged from 0.022 to 0.0396 annual claimants per 1,000 individuals. Applied to the AC population, these estimates led to a lower-bound estimate of 29 AC service members and an upper-bound estimate of 129 AC service members annually utilizing transition-related health care, out of a total AC force of 1,326,273 in FY 2014.

We also projected health care utilization using the estimated prevalence of transgender service members and self-reported survey data from the NTDS describing the proportion of the transgender population seeking transition-related treatments by age group. Based on these calculations, we estimated, as an upper-bound, 130 total gender transition–related surgeries and 140 service members initiating transition-related hormone therapy (out of a total AC force of 1,326,273 in FY 2014). To put these numbers in perspective, an estimated 278,517 AC service members accessed mental health services in FY 2014. Hence, we expect annual gender transition–related health care to be an extremely small part of the overall health care provided to the AC population.

What Are the Costs Associated with Extending Health Care Coverage for Gender Transition–Related Treatments?

To determine the budgetary implications of gender transition–related treatment for Military Health System (MHS) health care costs, we again used data from the private health insurance system on the cost of extending coverage for this care to the transgender personnel population. We estimate that AC MHS health care costs will increase by between $2.4 million and $8.4 million annually—an amount that will have little impact on and represents an exceedingly small proportion of AC health care expendi-

tures (approximately $6 billion in FY 2014)[1] and overall DoD health care expenditures ($49.3 billion actual expenditures for the FY 2014 Unified Medical Program; Defense Health Agency, 2015, p. 22). These estimates imply small increases in annual health care costs; results that are consistent with the low prevalence of transgender personnel and the low annual utilization estimates that we identified.

What Are the Potential Readiness Implications of Allowing Transgender Service Members to Serve Openly?

Similarly, when assessing the readiness impact of a policy change, we found that less than 0.0015 percent of the total available labor-years would be affected, based on estimated gender transition–related health care utilization rates.[2] This is because even at upper-bound estimates, less than 0.1 percent of the total force would seek transition-related care that could disrupt their ability to deploy.[3] Existing data also suggest a minimal impact on unit cohesion as a result of allowing transgender personnel to serve openly. However, we caution that these results rely on data from the general civilian population and foreign militaries, as well as previous integration experiences in the military (e.g., gays, lesbians, women), which may not hold for transgender service members.

What Lessons Can Be Learned from Foreign Militaries That Permit Transgender Personnel to Serve Openly?

There are 18 countries that allow transgender personnel to serve openly in their militaries: Australia, Austria, Belgium, Bolivia, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Israel, Netherlands, New Zealand, Norway, Spain, Sweden, and the United Kingdom (Polchar et al., 2014). Our analysis focused on the policies of the four countries—Australia, Canada, Israel, and the United Kingdom—with the most well-developed and publicly available policies on transgender military personnel. Several common themes emerged from our analysis of their experiences:

- The service member's gender is usually considered to have shifted to the target gender in areas such as housing, uniforms, identification cards, showers, and restrooms when a service member publicly discloses an intention to live as the target

[1] AC beneficiaries make up less than 15 percent of TRICARE beneficiaries (Defense Health Agency, 2015).

[2] We define a labor-year as the amount of work done by an individual in a year.

[3] We note that the ability to deploy is not exactly equivalent to readiness. A service member's readiness could be measured by the ability to participate in required training and exercises, which could be affected by treatments as well. Our estimates include days of inactivity due to medical treatments, which could also apply in these settings.

gender and receives a diagnosis of gender incongruence. However, physical fitness standards typically do not fully shift until the medical transition is complete. In many cases, personnel are considered exempt from physical fitness tests during transition.

- Because the gender transition process is unique for each individual, issues related to physical standards and medical readiness are typically addressed on a case-by-case basis. This flexibility has been important in addressing the needs of transgender personnel.
- The foreign militaries we analyzed permit the use of sick leave for gender transition–related medical issues and cover some, if not all, medical or surgical treatments related to a service member's gender transition.
- In no case was there any evidence of an effect on the operational effectiveness, operational readiness, or cohesion of the force.

The case studies also suggested a number of key best practices:

- Ensure strong leadership support.
- Develop an explicit written policy on all aspects of the gender transition process.
- Provide education and training to the entire force on transgender personnel policy, but integrate this training with other diversity-related training and education.
- Develop and enforce a clear anti-harassment policy that addresses harassment aimed at transgender personnel alongside other forms of harassment.
- Make subject-matter experts and gender advisers serving within military units available to commanders seeking guidance or advice on gender identity issues.
- Identify and communicate the benefits of an inclusive and diverse workforce.

Which DoD Policies Would Need to Be Changed if Transgender Service Members Are Allowed to Serve Openly?

We reviewed 20 current accession, retention, separation, and deployment regulations across the services and the Office of the Secretary of Defense to assess the impact of changes that may be required to allow transgender individuals to serve openly. We also reviewed 16 other regulations that have been replaced by more recent regulations or that did not mention transgender personnel.[4] Based on the experiences of foreign militaries, we recommend that DoD issue clear and comprehensive policies.

[4] These additional policies can are listed in Appendix D of this report.

Accession Policy

We recommend that DoD review and revise the language in accession instructions to match the DSM-5 for conditions related to mental fitness, ensuring the alignment of mental health–related language and facilitating appropriate screening and review processes for disorders that may affect fitness for duty. Similarly, physical fitness standards should specify physical requirements (rather than physical conditions). Finally, physical fitness policies should clarify when the service member's target gender requirements will begin to apply.

Retention Policy

We recommend that DoD expand and enhance its guidance and directives to clarify retention standards for review during and after medical transition. For example, evidence from Canada and Australia suggests that transgender personnel may need to be held medically exempt from physical fitness testing and requirements (Canadian Armed Forces, 2012; Royal Australian Air Force, 2015). However, after completing medical transition, the service member could be required to meet the standards of the acquired gender.

Separation Policy

DoD may wish to revise the current separation process based on lessons learned from the repeal of Don't Ask, Don't Tell. The current process relies on administrative decisions outside the purview of the standard medical and physical review process. This limits the documentation and review of discharges, and it could prove burdensome if transgender-related discharges become subject to re-review and redetermination. When medically appropriate, DoD may wish to establish guidance on when such discharge reviews should be handled through the existing medical fitness processes. We also recommend that DoD develop and disseminate clear criteria for assessing whether and how transgender-related conditions may interfere with duty performance.

Deployment Policy

The degree of austerity will differ across deployment environments, and some locations may be able to meet the health care needs of some transgender individuals. Moreover, recent advancements can minimize the invasiveness of treatments and allow for telemedicine or other forms of remote medical care.

Given this, DoD may wish to adjust some of its processes and deployment restrictions in the context of medical and technological advancements (e.g., minimally invasive treatments, telemedicine). Such reforms could minimize the readiness impact of medical procedures that are common among the transgender population. For example, current regulations specifying that conditions requiring regular laboratory visits that cannot be accommodated in a deployed environment can leave service members ineligible for deployment and would affect all individuals receiving hormone treatments

(Office of the Assistant Secretary of Defense for Health Affairs, 2013, p. 3). These treatments require laboratory monitoring every three months for the first year as hormone levels stabilize (Hembree et al., 2009; Elders et al., 2014). To avoid this cost, DoD would need to either permit more flexible monitoring strategies[5] or provide training to deployed medical personnel.[6]

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[5] Some experts suggest that alternatives, such as telehealth reviews, would address this issue for rural populations with limited access to medical care (see, for example, World Professional Association for Transgender Health, 2011).

[6] "Independent duty corpsmen, physician assistants, and nurses can supervise hormone treatment initiated by a physician" (Elders et al., 2014).

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Abbreviations

AC	active component
APA	American Psychiatric Association
DoD	U.S. Department of Defense
DoDI	U.S. Department of Defense instruction
DSM-5	*Diagnostic and Statistical Manual of Mental Disorders*, fifth ed.
FY	fiscal year
GD	gender dysphoria
IDF	Israel Defense Forces
LGBT	lesbian, gay, bisexual, and transgender
MHS	Military Health System
MTF	military treatment facility
NTDS	National Transgender Discrimination Survey
SR	Selected Reserve
VHA	Veterans Health Administration
WPATH	World Professional Association for Transgender Health

CHAPTER ONE

Introduction

U.S. Department of Defense (DoD) policies have rendered both the physical and psychological aspects of "transgender conditions" disqualifying conditions for accession and allowed for the administrative discharge of service members who fall into these categories. However, in July 2015, Secretary of Defense Ashton Carter announced that DoD would "create a working group to study the policy and readiness implications of welcoming transgender persons to serve openly." In addition, he directed that "decision authority in all administrative discharges for those diagnosed with gender dysphoria[1] or who identify themselves as transgender be elevated to the Under Secretary of Defense (Personnel and Readiness), who will make determinations on all potential separations" (DoD, 2015b). It is against this backdrop that DoD is considering allowing transgender service members to serve openly. To assist in identifying the potential implications of such a policy change, the Office of the Under Secretary of Defense for Personnel and Readiness asked the RAND National Defense Research Institute to conduct a study to (1) identify the health care needs of the transgender population, transgender service members' potential health care utilization rates, and the costs associated with extending health care coverage for transition-related treatments; (2) assess the potential readiness impacts of allowing transgender service members to serve openly; and (3) review the experiences of foreign militaries that permit transgender service members to serve openly.

Study Approach

Our study approach centered around the following research questions:

- What are the health care needs of the transgender population?
- What is the estimated transgender population in the U.S. military?

[1] *Gender dysphoria*, or GD, is "discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth" (World Professional Association for Transgender Health [WPATH], 2011, p. 2).

- How many transgender service members are likely to seek gender transition–related medical treatment?
- What are the costs associated with extending health care coverage for gender transition–related treatments?
- What are the potential readiness implications of allowing transgender service members to serve openly?
- What lessons can be learned from foreign militaries that permit transgender personnel to serve openly?
- Which DoD policies would need to be changed if transgender service members are allowed to serve openly?

We explain our methodological approaches in detail in each chapter of this report, but, here, we present overviews of the various methodologies that we employed. We began our analysis by defining the term *transgender* and then identifying the health care needs of the transgender population. This entailed an extensive literature review of these health care needs, along with treatment standards and medical options—particularly for those who have been diagnosed with gender dysphoria (GD).

We then undertook a review of existing data to estimate the prevalence and likely utilization rates of the transgender population in the U.S. military. Based on our estimates of the potential utilization of gender transition–related health care services, we estimated the Military Health System (MHS) costs for transgender active-component (AC) service members and reviewed the potential effects on force readiness from allowing these service members to serve openly.

We adopted two distinct but related approaches to estimating health care utilization and readiness impact. The first is what we label the *prevalence-based approach*, in which we estimated the prevalence of transgender personnel in the military and applied information on rates of gender transition and reported preferences for different medical treatments to measure utilization and the implied cost and readiness impact. This approach has the benefit of including those who may seek other forms of accommodation, even if they do not seek medical care. It also provides detailed information on the types of medical treatments likely to be sought, which can improve the accuracy of cost and readiness estimates. However, this approach suffers from a lack of rigorous evidence in terms of the rates at which transgender individuals seek treatment and instead relies on the nonscientific National Transgender Discrimination Survey (NTDS). This approach also relies on prevalence measures from only two states, Massachusetts and California, which may not be directly applicable to military populations.

Using our second approach, which we label the *utilization-based approach*, we estimated the rates of utilization of gender transition–related medical treatment. This approach has the benefit of providing real-world measures of utilization, which may be more accurate and more rigorously collected than survey information. However, it suffers from a lack of large-scale evidence and instead relies on several case studies

that may not be directly applicable to the U.S. military. Given the caveats described, these approaches provide the best available estimate of the potential number of transgender service members likely to seek medical treatment or require readiness-related accommodations.[2] In both cases, we applied measures of population prevalence and utilization to fiscal year (FY) 2014 DoD force size estimates to provide estimates of prevalence within the U.S. military.

We also reviewed the policies of foreign militaries that allow transgender service members to serve openly. Our primary method supporting the observations presented in this report was an extensive document review that included primarily publicly available policy documents, research articles, and news sources that discussed policies on transgender personnel in these countries. The information about the transgender personnel policies of foreign militaries came directly from the policies of these countries, as well as from research articles describing the policies and their implementation. Findings on the effects of open transgender service on cohesion and readiness drew largely from research articles that specifically examined this question using interviews and an analysis of studies completed by the foreign militaries themselves. Finally, insights on best practices and lessons learned emerged both directly from research articles describing the evolution of policy and experience and indirectly from commonalities in the policies and experiences of our four in-depth case studies. Recommendations provided in this report are based on these best practices and lessons learned, as well as a consideration of the unique characteristics of the U.S. military.

Finally, for our analysis of DoD policies, we reviewed 20 current accession, retention, separation, and deployment regulations across the services and the Office of the Secretary of Defense. We also reviewed 16 other regulations that have been replaced by more recent regulations or that did not mention transgender personnel.[3] Our review focused on transgender-specific DoD instructions (DoDIs) that may contain unnecessarily restrictive conditions and reflect outdated terminology and assessment processes. However, in simply removing these restrictions, DoD could inadvertently affect standards overall. While we focused on reforms to specific instructions and directives, we note that DoD may wish to conduct a more expansive review of personnel policies to ensure that individuals who join and remain in service can perform at the desired level, regardless of gender identity.

Limitations and Caveats

A critical limitation of such a comprehensive assessment is the lack of rigorous epidemiological studies of the size or health care needs of either the U.S. transgender population or the transgender population serving in the military. Indeed, much of the

[2] We define *accommodations* as adjustments in military rules and policies to allow individuals to live and work in their target gender.

[3] These additional policies are listed in Appendix D of this report.

existing research on the transgender population relies on self-reported, nonrepresentative survey data, along with unstandardized calculations using results from available studies. Because there are no definitive data on this topic, the information presented here should be interpreted with caution and, therefore, we present the full range of estimates.

Organization of This Report

The report is organized around our seven research questions. Chapter Two defines what is meant by the term *transgender*, identifies the health care needs of the transgender population, explains the various treatment options for those diagnosed with GD, and examines the capacity of the MHS to provide treatment options to service members diagnosed with GD. Chapter Three estimates the number of transgender service members in the AC and Selected Reserve (SR). Chapter Four estimates how many transgender service members are likely to seek medical treatment. Chapter Five estimates the costs associated with extending health care coverage for gender transition–related treatments. Chapter Six assesses the potential readiness implications of allowing transgender service members to serve openly. Chapter Seven identifies lessons learned from foreign militaries that allow transgender personnel to serve openly. Chapter Eight offers recommendations regarding which DoD accession, retention, separation, and deployment policies would need to be changed if a decision is made to allow transgender service members to serve openly. Chapter Nine summarizes key findings presented in the report and suggests best practices for implementing policy changes.

Appendix A presents definitions of common terms related to gender transition and transgender identity. Appendix B provides a history of the historical nomenclature associated with transgender identity. Appendix C provides details on the psychosocial, pharmacologic, surgical, and other treatments for GD. Appendix D lists the DoD accession, retention, separation, and deployment policies that we reviewed.

CHAPTER TWO

What Are the Health Care Needs of the Transgender Population?

This report begins by describing the health care needs of the U.S. transgender population overall. To discern the potential impact of changing DoD policies to allow transgender military personnel to serve openly and to ensure appropriate health care for those who seek gender transition–related treatment, it is also important to consider whether the MHS has the capacity to provide this care.

Definitions of Key Terms and Concepts

A challenge to our efforts to understand the health care needs of the transgender population in general, as well as in the military, is the varied and shifting terminology used in the clinical literature. Consequently, here, we define a range of terms that we will use throughout this review.[1] Consistent with the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), the American Psychiatric Association (APA) publication that provides standard language and criteria for classifying mental health conditions, we use the term *transgender* to refer to "the broad spectrum of individuals who . . . identify with a gender different from their natal gender" (APA, 2013).[2] *Natal gender* or *birth sex*, which is the sex that an individual was assigned at birth and typically correlates with primary sex characteristics (e.g., genitalia).

We refer to the subset of the population whose gender identity does not conform with the expressions and behaviors typically associated with the sex to which they were assigned at birth as *transgender* or *gender nonconforming*. Many identities fall under these umbrella terms, including individuals who identify as androgynous, multigendered, third gender, and two-spirit people. The *gender nonconforming* category also includes individuals who *cross-dress*, which means they wear clothing that is traditionally worn by a gender different from that of their birth sex. The exact definitions of each of these identities vary under the term *gender nonconforming*, and individuals may

[1] A comprehensive list of terms and definitions is provided in Appendix A.

[2] A brief history of the DSM language and diagnostic criteria for related conditions is presented in Appendix B.

fluidly change, blend, or alter their gender identity over time. For the purposes of this analysis, we use *transgender* as an umbrella term that refers to individuals who identify with a gender different from the sex they were assigned at birth.

Importantly, under the recently established criteria and terminology outlined in DSM-5, transgender status alone does not constitute a medical condition (APA, 2013). Instead, under the revised diagnostic guidelines, only transgender individuals who experience significant related distress are considered to have a medical condition called *gender dysphoria* (GD). Some combination of psychosocial, pharmacologic (mainly but not exclusively hormonal), or surgical care may be medically necessary for these individuals. Psychotherapy to confirm a diagnosis of GD is a common first step in the process, often followed by hormone therapy and, perhaps, by gender reassignment surgery involving secondary or primary sex characteristics. Not all patients seek all forms of care. However, recognized standards of care require documentation of 12 continuous months of hormone therapy and living in the target gender role consistently and in all aspects of life. Unfortunately, the diagnosis is newly established, and data from which to estimate the size of these subgroups are lacking. In the future, however, transgender individuals seeking gender transition–related treatment are likely to require a GD diagnosis as the clinical justification.

Among transgender individuals, a subset may choose to *transition*, the term used to refer to the act of living and working in a gender different from one's sex assigned at birth. For some individuals, this may involve primarily social change but no medical treatment; this is referred to as *social transition*. For others, medical treatments, such as hormone therapy and hair removal, are important steps to align their physical body with their target gender. This is referred to as *medical transition*. A subset of those who medically transition may choose to undergo *gender reassignment surgery* to make their physical body as congruent as possible with their gender identity. This process of *surgical transition* is also often referred to as *sex* or *gender reassignment* or *gender confirmation*.

Health Care Needs of the Transgender Population

The main types of gender transition–related treatments are psychosocial, pharmacologic (primarily but not exclusively hormonal), and surgical. While one or more of these types of treatments may be necessary for some transgender individuals with GD, the course of treatments varies and must be determined on an individual basis by patients and clinicians. Since little is known about currently serving transgender service members, the following discussion draws primarily from available research on nonmilitary transgender populations.[3]

[3] The 2015 DoD Health Related Behavior Survey of active-duty service members was being fielded concurrently to this research. It marked the first time a U.S. military survey asked questions relating to gender identity.

Diagnosis and Treatments for Gender Dysphoria

Treatments deemed necessary for transgender populations have shifted over time based on research advancements and the accumulation of clinical knowledge. The World Professional Association for Transgender Health (WPATH) regularly publishes revised versions of its *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People*; the most current at the time of our research was version 7. The standards are designed to guide the treatment of patients experiencing GD while recognizing that not all expressions of gender nonconformity require treatment (WPATH, 2011, p. 2). Some transgender individuals (again, the proportion is largely unknown) experience significant dysphoria (distress) with the sex and gender they were assigned at birth, and they meet formal DSM-5 diagnostic criteria for GD, as described in Appendix B of this report. For those diagnosed with GD, treatment options include psychotherapy, hormone therapy, surgery, and changes to gender expression and role (i.e., how people present themselves to the world; WPATH, 2011, pp. 9–10). We discuss these treatment options in detail in Appendix C.

Not all patients will prefer or need all or any of these options; however, when clinically indicated, appropriate care can "alleviate gender dysphoria by bringing one's physical characteristics into alignment with one's internal sense of gender" (Herman, 2013b, p. 4). There have been no randomized controlled trials of the effectiveness of various forms of treatment, and most evidence comes from retrospective studies. The widely endorsed consensus-based practice guidelines outlined in the WPATH *Standards of Care* suggest that transition-related mental health care, hormone therapy, and surgery are generally effective and constitute necessary health care for many individuals with GD.[4] The appropriate treatment plan is best determined collaboratively by patients and their health care providers. Optimally, specialized transgender health care will be provided by an interdisciplinary team (WPATH, 2011, p. 26).

Military Health System Capacity and Gender Transition–Related Treatment

To discern the potential impact of changing DoD policies to allow transgender military personnel to serve openly and to ensure appropriate health care for GD, it is also important to consider whether the MHS has the capacity to provide this care.

We anticipate that these survey results will provide additional information regarding how many transgender personnel currently serve in the U.S. military and their health behaviors.

[4] These standards are endorsed by the American Medical Association, American Psychological Association, American Academy of Family Physicians, National Association of Social Workers, World Professional Association for Transgender Health, and American College of Obstetricians and Gynecologists (see Lambda Legal, 2012). Major insurers, including Aetna and UnitedHealthcare, have incorporated many of these standards of care into their policies (see, for example UnitedHealthcare, 2015).

Psychotherapy, Hormone Therapies, and Gender Transition–Related Surgery

Both psychotherapy and hormone therapies are available and regularly provided through the military's direct care system, though providers would need some additional continuing education to develop clinical and cultural competence for the proper care of transgender patients. Surgical procedures quite similar to those used for gender transition are already performed within the MHS for other clinical indications.

Reconstructive Surgery

Reconstructive breast/chest and genital surgeries are currently performed on patients who have had cancer, been in vehicular and other accidents, or been wounded in combat. The skills and competencies required to perform these procedures on transgender patients are often identical or overlapping. For instance, mastectomies are the same for breast cancer patients and female-to-male transgender patients. Perhaps most importantly, the surgical skills and competencies for some gender transition surgeries also overlap with skills required for the repair of genital injuries sustained in combat, which have increased dramatically among troops deployed to Afghanistan. From 2009 to 2010, the percentage of wounded troops with genitourinary injuries transiting through Landstuhl Regional Medical Center in Germany nearly doubled from 4.8 percent to 9.1 percent—a dramatic increase that led some health providers to call this the "new 'signature wound'" of Operation Enduring Freedom (D. Brown, 2011).[5] There are particular similarities to the procedures recommended to treat those experiencing dismounted complex blast injuries, which typically involve multiple amputations with other injuries, often to the genitals (Wallace, 2012). Providing high-quality surgery to treat the 5 percent of combat wounds that require penile reconstruction requires extensive knowledge and practice in reconstructive techniques (Williams and Jezior, 2013). Assuming the MHS continues to directly provide health services as it has in the past, there are at least two potential implications: First, military surgeons may currently have the competencies required to surgically treat patients with GD, and, second, performing these surgeries on transgender patients may help maintain a vitally important skill required of military surgeons to effectively treat combat injuries during a period in which fewer combat injuries are sustained.

Cosmetic Surgery

Recognition of the requirement for reconstructive plastic surgery as a result of the wartime mission drives the existing DoD policy for cosmetic surgery procedures in the MHS; the services have requirements and manpower authorizations for specialists who can perform reconstructive plastic surgery (Office of the Assistant Secretary of Defense

[5] Experimental penis transplants, expected to be performed for the first time within the next year at Johns Hopkins School of Medicine, are being developed in the United States specifically for combat-wounded veterans; however, there may be benefits for transgender patients as well (Welsh, 2015).

for Health Affairs, 2005, p. 1). Cosmetic/reconstructive surgery skills need to be maintained with practice, and surgeons must also "meet board certification, recertification, and graduate medical education program requirements" (Office of the Assistant Secretary of Defense for Health Affairs, 2005, p. 1).

Current DoD policy draws a distinction between elective cosmetic plastic surgery performed "to improve the patient's appearance or self-esteem" and reconstructive plastic surgery performed on bodily structures that are abnormal due to health conditions to improve function or approximate a normal appearance (Office of the Assistant Secretary of Defense for Health Affairs, 2005, p. 3). While reconstructive surgeries constitute necessary treatment, access to elective cosmetic surgical procedures is subject to added constraints. For example, cosmetic procedures are performed on a space-available basis and restricted to those who will be TRICARE-eligible for at least six months. These procedures also require written permission from the commander of the service member's active-duty unit, and the patient must pay surgical, institutional, and anesthesia fees (Office of the Assistant Secretary of Defense for Health Affairs, 2005, p. 3).[6] DoD recognizes the need for these reconstructive surgery competencies and has crafted a policy to cover plastic surgeries to maintain providers' surgical skills and certification requirements.

Potential Consequences of Not Providing Necessary Gender Transition–Related Care

The discussion of the health care needs of transgender military personnel is incomplete without considering the potential unintended effects of constraining or limiting gender transition–related treatment. Little question remains that there are transgender personnel currently serving in the AC. Adverse consequences of not providing transition-related health care to transgender personnel could include avoidance of other necessary health care, such as important preventive services, as well as increased rates of mental and substance use disorders, suicide, and reduced productivity.

Research indicates that, "due to discrimination and problematic interactions with health care providers, transgender individuals frequently do not access health care, resulting in short and long-term adverse health outcomes" (Roller, Sedlak, and Draucker, 2015, p. 418).[7] Further, patients denied appropriate health care may turn to other solutions, such as injecting construction-grade silicone into their bodies to alter

[6] Interestingly, according to Elders et al. (2014, p. 19), there is no difference in leave policies related to recovery time between the two.

[7] For example, among NTDS respondents, 28 percent reported postponing or avoiding treatment when sick or injured, and 33 percent delayed or skipped preventive care due to discrimination or disrespect from health care providers (Grant et al., 2011, p. 76). In one study, transgender respondents had fewer self-reports of good health and were more likely to report limitations on daily activities due to health issues (Kates et al., 2015, p. 5).

their shape (State of California, 2012, p. 12). There are also potential costs related to mental health care services for individuals who do not receive such care (Herman, 2013b, p. 20). Multiple observational studies have suggested significant and sometimes dramatic reductions in suicidality, suicide attempts, and suicides among transgender patients after receiving transition-related treatment (State of California, 2012, p. 10). A study by Padula, Heru, and Campbell (2015) found that removing exclusions on transgender care "could change the trajectory of health for all transgender persons" at a minimal cost per member per month.[8]

However, we caution that it is not known how well these findings generalize to military personnel. Moreover, while the existing data offer some indication of the needs for and costs of gender transition–related health care, it is important to note that none of these studies were randomized controlled trials (the gold standard for determining treatment efficacy). In the absence of quality randomized trial evidence, it is difficult to fully assess the outcomes of treatment for GD.

[8] Specifically, they found that insurance provider coverage for transgender-related services resulted in "greater effectiveness, and was cost-effective relative to no health benefits at 5 and 10 years from a willingness-to-pay threshold of $100,000/[quality-adjusted life year]."

CHAPTER THREE

What Is the Estimated Transgender Population in the U.S. Military?

This chapter provides several estimates of the number of transgender service members in the U.S. military. To date, there have been no systematic studies of the number of transgender individuals in the U.S. general population or in the U.S. military. Current studies rely on clinical samples of health care service utilizers, nonrepresentative samples assembled in ways that are difficult to replicate, and self-reported survey data from a small number of states.

General Population Estimates of Transgender Prevalence

The transgender prevalence in the U.S. general population is thought to be significantly less than 1 percent (Gates, 2011, p. 6; APA, 2013, p. 454). However, there have been no rigorous epidemiological studies in the general U.S. population that confirm this estimate. Our subsequent estimates must be qualified, therefore, as somewhat speculative; they are based on numerous sources, including health services claims data, representative state-level health surveillance survey data, a convenience (i.e., nonrepresentative) sample recruited by an advocacy network, the experiences of foreign militaries, and selected other data sources.

The Williams Institute at the University of California, Los Angeles, School of Law, calculated that, based on estimates from Massachusetts and California, 0.3 percent of the U.S. population is transgender (Gates, 2011, p. 6). The Massachusetts data were collected between 2007 and 2009 as part of the Massachusetts Behavioral Risk Factor Surveillance System initiative. The survey suggests that 0.5 percent of the population in Massachusetts identifies as "transgender" (95-percent confidence interval: 0.3 to 0.6 percent; Conron et al., 2012). The California data combine information on the percentage of individuals who are transgender from the California Lesbian, Gay, Bisexual, and Transgender (LGBT) Tobacco Survey and the percentage of the overall population that is LGBT from the 2009 California Health Interview Survey. Gates

multiplies these values together to estimate that 0.1 percent of the population of California is transgender.[1]

To develop an estimate of transgender prevalence for the entire United States, Gates (2011) simply averages the Massachusetts and California values, yielding 0.25 percent, then rounds that up to 0.3 percent. This measure is very problematic, however. While survey-based estimates of transgender prevalence are likely to be accurate measures of true state-level transgender prevalence, it is not clear that taking an unweighted average from states with vastly different population sizes is appropriate for estimating national prevalence. For example, a weighted average calculation using the 2009 census population estimates for California and Massachusetts implies a 0.16 percent "national" prevalence estimate, as opposed to the 0.3 percent estimate calculated by Gates (2011)—a nearly 50-percent difference. We used this 0.16 percent weighted average as our combined, national estimate using the California and Massachusetts studies. This estimate was our midrange starting point, though we included both the 0.1 percent (from California) and 0.5 percent (from Massachusetts) as comparison points.

We note that there have been and continue to be other efforts to measure the prevalence of transgender identity in the general population. The two most prominent examples are the meta-analysis conducted by WPATH and a recent effort from the U.S. census. We did not use these estimates due to concerns that they systematically undercounted the prevalence of transgender identity for a variety of reasons detailed in the discussions that follow.

Separately, in 2007, the WPATH reviewed ten studies of prevalence with estimates for transgender individuals presenting for gender transition–related care, ranging from 1:11,900 to 1:45,000 for male-to-female transitions and 1:30,400 to 1:200,000 for female-to-male transitions (WPATH, 2011).[2] The studies cited were largely based on clinical usage. The WPATH authors note that these numbers should be considered "minimum estimates at best":

> The published figures are mostly derived from clinics where patients met criteria for severe gender dysphoria and had access to health care at those clinics. These estimates do not take into account that treatments offered in a particular clinic setting might not be perceived as affordable, useful, or acceptable by all self-identified gender dysphoric individuals in a given area. By counting only those people who

[1] Although Gates (2011) states that 3.2 percent of the LGBT population is transgender, we note that an earlier document (California Department of Health Services, 2004) reporting analyses from the same survey states that 2 percent of this population is transgender. We were not able to obtain the raw data and could not verify which of the two values is correct. We used the 3.2-percent estimate to calculate the California transgender prevalence estimate.

[2] The studies were Wålinder, 1968; Wålinder, 1971; Hoenig and Kenna, 1974; Eklund, Gooren, and Bezemer, 1988; Tsoi, 1988; Bakker et al., 1993; van Kesteren, Gooren, and Megens, 1996; Weitze and Osburg, 1996; De Cuypere et al., 2007; and Zucker and Lawrence, 2009.

> present at clinics for a specific type of treatment, an unspecified number of gender dysphoric individuals are overlooked. (WPATH, 2011, p. 7)

Additionally, the information is based on utilization rates from the ten studies, mostly conducted in European countries, such as the United Kingdom, the Netherlands, Sweden, Germany, and Belgium. One study was conducted in Singapore. This raises concerns about the applicability of these estimates to the U.S. population due to differences in costs and social tolerance, both of which would likely make health utilization behavior in Europe significantly different from that in the United States. Moreover, the studies were conducted over a 30-year period in which utilization was dramatically increasing, suggesting that the estimates were not stable. This concern is reported in the WPATH report, with the authors noting that the trend (over time) was due to higher rates of individuals seeking care. In one example, the estimated transgender population doubled in just five years in the United Kingdom. If the numbers are increasing over time based on the use of clinics, then an estimate from ten to 15 years ago would likely be very low relative to utilization in those same places today, and again not representative of likely utilization in the United States.[3]

Harris (2015) used information on name and sex changes in Social Security Administration data files to estimate the number of transgender individuals in the U.S. population. Using information on male-to-female and female-to-male name changes, he estimates that there were 89,667 transgender individuals in the United States in 2010. Of this group, 21,833 (24 percent) also changed their sex, according to Social Security records; during some periods in U.S. history, this required documented proof of either initiation or completion of medical transition. Since name changes are not required, prevalence estimated in this manner is likely to be a lower-bound estimate of the true transgender prevalence rate in the United States. Using the 2010 population of adults age 18 and over as the denominator (234,564,071), 89,667 transgender cases implies a lower-bound transgender prevalence rate of 0.038 percent in the United States.

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[3] According to the WPATH authors,

> The trend appears to be towards higher prevalence rates in the more recent studies, possibly indicating increasing numbers of people seeking clinical care. Support for this interpretation comes from research by Reed and colleagues (2009), who reported a doubling of the numbers of people accessing care at gender clinics in the United Kingdom every five or six years. Similarly, Zucker and colleagues (2008) reported a four- to five-fold increase in child and adolescent referrals to their Toronto, Canada clinic over a 30-year period. (WPATH, 2011, p. 7)

Prevalence-Based Approach to Estimating the Number of Transgender Service Members in the U.S. Military

Before discussing estimates of prevalence of transgender individuals in the U.S. military, it is important to note that, to our knowledge, no studies have directly measured the prevalence or incidence of transgender individuals currently serving in the active or reserve component.[4] To estimate prevalence in the military, we have constructed estimates using a combination of data sources.[5] One of those sources, the NTDS, provides detailed information on the choices and preferences of transgender individuals but it is not a randomized, representative sample of the military and thus is not generalizable.

We applied measures of population prevalence to DoD force size estimates to estimate prevalence in the U.S. military. We measured force size using information from DoD's 2014 demographics report (DoD, 2014; see Table 3.1). The demographics are separated into AC and SR. For much of the discussion of our medical care analysis, we focus on the AC. We did not include reserve-component service members, retirees, or dependents in the cost analyses because we did not have information on age and sex distribution within these beneficiary categories. Some of these beneficiary categories also have limited eligibility for health care provided through military treatment facilities (MTFs) and may receive their health care through TRICARE coverage in the purchased care setting or through other health insurance plans. For our readiness analysis, we included both the AC and SR because both components may be used for deployments. Although there are ongoing discussions regarding the feasibility of activating the Individual Ready Reserve, we excluded this population because we lacked the detailed information on gender and age needed to conduct our analysis.

Table 3.2 contains estimates of the number of transgender personnel in the AC and SR using the baseline prevalence from existing studies and shows the results of several tests that provide a range of estimates based on different assumptions in the literature. To estimate prevalence in the military, we conducted analyses using five values: (1) a lower-bound estimate of 0.1 percent based on a study in California

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[4] G. Brown (1988) found that eight out of 11 evaluated natal males with severe GD had a military background; he explains his findings by positing a "hypermasculine" phase among transgender individuals that coincides with the age of enlistment. Since the sample size in that study was extremely small, we do not consider this good evidence for this theory. Gates and Herman (2014) used estimates from the NTDS, combined with estimates of transgender prevalence (0.3 percent) from Gates (2011) and history of military service in the U.S. population from the American Community Survey, to estimate transgender prevalence in the military. Data from the National College of Health Administration showed that military experience was significantly higher among transgender individuals than among those who did not identify as transgender (9.4 percent versus 2.1 percent; Blosnich, Gordon, and Fine, 2015). However, these data were collected from only 51 institutions, and the response rate for the survey was only 20 percent, which again raises questions regarding the validity of the estimates.

[5] Our estimates were constructed using Gates (2011), which combined estimates from the Massachusetts Behavioral Risk Factor Social Surveys with the California LGBT Tobacco Survey, and Gates and Herman (2014), which used data from the NTDS, Gates (2011), and the American Community Survey.

Table 3.1
DoD Military Force Demographics

Category	Number	%
Active Component		
Sex		
Female	200,692	15
Male	1,125,581	85
Age		
<25	572,293	43
26–30	293,698	22
31–35	201,137	15
36–40	137,653	11
41+	121,492	9
Total	1,326,273	—
Selected Reserve		
Sex		
Female	149,759	18
Male	682,233	82
Age		
<25	285,494	34
26–30	156,983	19
31–35	124,179	15
36–40	86,151	10
41+	179,185	22
Total	831,992	—

SOURCE: DoD, 2014.

(Conron, 2012); (2) an upper-bound estimate of 0.5 percent based on a study in Massachusetts (Gates, 2011); (3) a population-weighted average of the California and Massachusetts studies, yielding a prevalence estimate of 0.16 percent; (4) an adjustment of this population-weighted approach based on the natal male/female distribution in the military, yielding a prevalence estimate of 0.19 percent; and (5) a doubling of the population-weighted, gender-adjusted value, yielding a prevalence estimate of 0.37 percent.

Table 3.2
Prevalence-Based Estimates of the Number of Transgender Active-Component and Selected Reserve Service Members

Component	Total Force Size (FY 2014)	0.1%[a] (CA study)	0.16%[b] (combined, population-weighted CA + MA studies)	0.19%[c] (gender-adjusted rate)	0.37%[d] (twice gender-adjusted rate)	0.5%[e] (MA study)
Active	1,326,273	1,320	2,120	2,450	4,900	6,630
Selected Reserve	831,992	830	1,330	1,510	2,930	4,160

SOURCES: Estimates for force size are based on RAND calculations using FY 2014 data from DoD, 2014.

[a] Based on estimates of prevalence from a California study (Conron, 2012).

[b] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state.

[c] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state and applied specifically to the male/female distribution in the military components.

[d] Based on estimates of prevalence from NTDS, Gates (2011), and the American Community Survey (Gates and Herman, 2014) and applied specifically to the male/female distribution in the military.

[e] Based on estimates of prevalence from a Massachusetts study (Gates, 2011).

Based on the 0.1 percent lower bound, we estimate that there are approximately 1,320 transgender individuals in the AC and approximately 830 in the SR. Using the Massachusetts study (0.5 percent) as an upper bound, we estimate that there are approximately 6,630 transgender service members in the AC and 4,160 in the SR. Because these estimates are based on selected populations in the state and the variation in these populations is significant, we were concerned that they were not representative of broader national numbers, especially as they pertain to the gender mix of the military. Therefore, we adjusted the population-weighted combination of these estimates to account for the male/female distribution in the U.S. military populations. This gender adjustment is critical, as most research indicates that male-to-female transitions are two to three times more common than female-to-male transitions (APA, 2013; Horton, 2008; Gates, 2011; Grant et al., 2011). This assumption of a two to one difference in underlying prevalence across genders applied to the 0.16 percent aggregate estimate implies a natal male-specific prevalence of 0.2 percent and a natal female-specific prevalence of 0.1 percent. Assigning these values to the male/female AC distributions increases the military prevalence estimate from 0.16 percent to 0.19 percent, which implies that there are 2,450 transgender individuals in the AC and 1,510 in the SR.

The estimate of 0.37 percent doubles the gender-adjusted rate based on information provided by the NTDS that 20 percent of the transgender population in its sample reported a history of military service, which is twice the rate of the general population,

as reported in the American Community Survey (Grant et al., 2011). We note that this is likely to be an overestimate of the overall transgender population for two reasons. First, given the highly tolerant environment in Massachusetts and California, the prevalence estimates in those two states are likely to overstate the nationwide prevalence.[6] Second, the evidence that transgender individuals are twice as likely to serve in the military is based on extrapolations from a nonrepresentative sample of individuals and not on direct, rigorous study of the transgender military population.

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[6] For example, both California and Massachusetts are rated as "top places for LGBT rights" (Keen, 2015).

CHAPTER FOUR

How Many Transgender Service Members Are Likely to Seek Gender Transition–Related Medical Treatment?

We adopted two distinct but related approaches to estimate the health care utilization and impact on readiness of allowing transgender personnel to serve openly in the U.S. military. The first is what we label the *prevalence-based approach*, in which we estimated the prevalence of transgender individuals in the military and applied information on rates of gender transition and reported preferences for different medical treatments to measure utilization and the implied cost and readiness impact. This approach has the benefit of including those who may seek other forms of accommodation, even if they do not seek medical care. It also provides detailed information on the types of medical treatments likely to be sought, which can improve the accuracy of cost and readiness estimates. However, this approach suffers from a lack of rigorous evidence in terms of the rates at which transgender individuals seek treatment and instead relies on the nonscientific NTDS. It also relies on prevalence measures from only two states—Massachusetts and California—that may not be directly applicable to military populations.

We refer to our second approach as the *utilization-based approach*, which we used to estimate the rates of utilization of medical treatment. This approach has the benefit of providing real-world measures of utilization based on health insurance claims, which may be more accurate and more rigorously collected than survey information. However, this approach suffers from a lack of large-scale evidence and instead relies on several case studies that may not be directly applicable to the U.S. military. Despite these caveats, these approaches provide the best available estimate of the range in the potential number of transgender service members likely to seek medical treatment or require readiness-related accommodations.[1]

In both cases, we applied measures of population prevalence and utilization to DoD force size demographics to provide estimates of prevalence within the U.S. military. As indicated in the previous chapter, our calculations of population prevalence and health care utilization used FY 2014 data from DoD's 2014 demographics report (DoD, 2014; see Table 3.1 in Chapter Three).

[1] Again, we define *accommodations* as adjustments in military rules and policies to allow individuals to live and work in their target gender.

Prevalence-Based Approach to Estimating the Number of Gender Transition–Related Treatments in the U.S. Military

To estimate the utilization of gender transition–related health care treatments, we scaled the prevalence of transgender service members identified in Chapter Three by the rates of transition and reported take-up of medical treatments. We based our transition rates on self-reported transitions in the NTDS data. According to the NTDS, 55 percent of transgender individuals reported living and working as their target gender; we refer to this as *social transition*.[2] For others, medical treatments, such as hormone therapy and hair removal, are important steps to align their physical body with their target gender. We refer to this as *medical* or *surgical transition*.[3]

Using the prevalence estimates from Table 3.2 in Chapter Three, we used information from the NTDS on the age of transition for individuals under 25, 26–30, 31–35, 36–40, and over 40 and calibrated our estimates with the age distribution in the military. Fifty-five percent of NTDS respondents reported that they had socially transitioned over their lifetime, and the data indicate that male-to-female transition ages differ from female-to-male transition ages. Nearly 54 percent of female-to-male transitions occurred before the age of 25, compared with only 23 percent of male-to-female transitions.

We focus on social transition because we assess this as most relevant for individuals who may need accommodations as they live and work in a different gender. This was also used as the basis in some foreign militaries, as discussed in Chapter Seven. Table 4.1 presents the estimated number of individuals who may seek to transition each year under each of our prevalence assumptions. We found that a lower bound of 40 AC and 20 SR service members and an upper bound of 190 AC and 110 SR service members will seek to transition each year and may need some sort of accommodations. The population-weighted, gender-adjusted estimate implies a middle range of 65 AC and 40 SR service members who will seek to transition each year.

Next, we combine the estimates of the number of transgender service members with information on the proportion undergoing transition and the age-specific proportion undergoing gender transition–related treatment to generate the number of annual treatments. Surgical preference rates vary by transition type (male-to-female versus female-to-male transition; see Table 4.2). Surgeries are distributed evenly across

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[2] We note that an additional 27 percent of those who had not yet socially transitioned wished to transition at some point in the future. Because the timeline and desire for transition are difficult to translate to concrete numbers, we used the estimate of 55 percent of transgender individuals living and working full-time as their target gender as our planning parameter for readiness accommodations.

[3] In the NTDS sample, 65 percent of transgender individuals had medically transitioned, and 33 percent had surgically transitioned. Note that the rate of medical transitions is higher than the rate of social transitions because some individuals receive hormone treatments but do not live full-time as their target gender.

Table 4.1
Estimated Number of Transgender Service Members Who May Seek to Transition per Year

Estimate Source	Active Component (total force: 1,326,273)	Selected Reserve (total force: 831,992)
0.1% (CA study)[a]	40	20
0.16% (combined, population-weighted CA + MA studies)[b]	60	30
0.19% (gender-adjusted rate)[c]	65	40
0.37% (twice gender-adjusted rate)[d]	130	80
0.5% (MA study)[e]	190	110

SOURCES: Estimated proportions of subgroups based on Grant et al., 2011, p. 25. Estimates for the AC and SR are based on RAND calculations using FY 2014 data from DoD, 2014.

[a] Based on estimates of prevalence from a California study (Conron, 2012).

[b] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state.

[c] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state and applied specifically to the male/female distribution in the military components.

[d] Based on estimates of prevalence from NTDS, Gates (2011), and the American Community Survey (Gates and Herman, 2014) and applied specifically to the male/female distribution in the military.

[e] Based on estimates of prevalence from a Massachusetts study (Gates, 2011).

NOTE: The table excludes Individual and Inactive Ready Reserve members because comparable information on their demographics was not available for analysis.

four procedures for male-to-female transitions and primarily over two procedures for female-to-male transitions.

Recall, not all of the individuals seeking to transition would meet the diagnostic criteria for GD, which is a requirement for these surgeries. Moreover, even among individuals who transition in some manner, surgical treatment rates are typically only around 20 percent, with the exception of chest surgery among female-to-male transgender individuals (see Table 4.2).

Table 4.3 shows the estimated annual number of hormone therapy treatments and surgeries in the AC and SR calculated using the same prevalence assumptions described in Chapter Three (see Table 3.2). The surgeries included in the calculations are vaginoplasty, chest surgeries, orchiectomy, hysterectomy, metoidioplasty, and phalloplasty. Note that these estimates constitute the number of treatments, not necessarily the number of individuals. For hormone therapy recipients, the number of treatments and recipients is the same, and these estimates can be treated as counts of individuals. However, the number of individuals is likely smaller for surgical counts because the

Table 4.2
Lifetime Surgery Preferences Among NTDS Survey Respondents

Procedure	Have Had (%)	Want Someday (%)	Do Not Want (%)
Male-to-female			
Augmentation mammoplasty	21	53	26
Orchiectomy	25	61	14
Vaginoplasty	23	64	14
Facial surgery	17	Not reported	Not reported
Female-to-male			
Chest surgery	43	50	7
Hysterectomy	21	58	21
Metoidioplasty	4	53	44
Phalloplasty	2	27	72

SOURCE: NTDS data (Grant et al., 2011).

NOTE: These estimates are from cross-sectional data; individuals likely received each treatment only once and varied in the age at treatment initiation.

same individual may receive more than one type of surgical treatment.[4] Using the lower-bound estimate from the California study and the upper-bound estimate from the Massachusetts study (see Table 4.3), we estimated that there will be between 45 and 220 hormone treatments and between 40 and 200 transition-related surgeries annually in the AC and SR. The combined population-weighted and gender-adjusted estimate indicates a midrange of 80 hormone treatments and 70 transition-related surgical treatments annually. Although surgical procedures are most likely to be one-time events, hormone therapy treatment rates are likely to be used indefinitely, and the cost and manpower effects will apply until individuals leave the MHS. We did not have information on the length of service conditional on age and therefore could not calculate the total number of service members who would be receiving hormone therapy at any given point in time. We recommend that this line of analysis be explored in the future.

Utilization-Based Approach to Estimating the Number of Gender Transition–Related Treatments in the U.S. Military

While the prevalence-based approach provides a tractable means to estimate potential utilization of gender transition–related care, there are a number of concerns regard-

[4] For example, a female-to-male transition might include both chest surgery and phalloplasty.

Table 4.3
Estimated Annual Number of Surgeries and Hormone Therapy Users

	Active Component		Selected Reserve	
Assumption Regarding Underlying Prevalence	Annual Major Surgeries	Annual Hormone Therapy	Annual Major Surgeries	Annual Hormone Therapy
0.1% (CA study)[a]	25	30	15	15
0.16% (combined, population-weighted CA + MA studies)[b]	40	45	20	25
0.19% (gender-adjusted)[c]	45	50	25	30
0.37% (twice gender-adjusted rate)[d]	90	100	50	55
0.5% (MA study)[e]	130	140	70	80

SOURCE: RAND analysis.

[a] Based on estimates of prevalence from a California study (Conron, 2012).

[b] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state.

[c] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state and applied specifically to the male/female distribution in the military components.

[d] Based on estimates of prevalence from NTDS, Gates (2011), and the American Community Survey (Gates and Herman, 2014) and applied specifically to the male/female distribution in the military.

[e] Based on estimates of prevalence from a Massachusetts study (Gates, 2011).

NOTE: Hormone therapy is person-level; surgery statistics are counts of surgeries, and one person may have multiple surgeries.

ing the information on which these estimates rely. As stated previously, these concerns include both a reliance on prevalence estimates from just two states and a reliance on data from the NTDS, which were not collected from a random sample. Our utilization estimates were taken primarily from three sources:

- private health insurance utilization data on annual rates of enrollee transgender-related health care utilization in health insurance plans that cover transition-related health care, as reported by Herman (2013b)
- private health clinic data showing estimates of the rates of penectomies and bilateral mastectomies in the U.S. population in 2001, as reported by Horton (2008)[5]

[5] A penectomy is the surgical removal of the penis. A bilateral mastectomy is the surgical removal of both breasts.

- Veterans Health Administration (VHA) claims data, which were used to calculate prevalence and incidence rates of gender identity disorder (now referred to as GD in DSM-5) from 2006 to 2013, as reported by Kauth et al. (2014).

Each of these data sources provides information on a different outcome, which makes understanding the results more complicated. However, collectively, the information taken from these three studies provides a broad, useful picture regarding potential gender transition–related health care utilization in the AC population. In the following sections, we review each of these studies in detail, identify key estimates from each, and apply the estimates to the AC population identified in Table 3.2 in Chapter Three.

Private Health Insurance Utilization Estimates

Herman (2013b) reports on the experiences of 34 employers that provided gender transition–related health care benefits to their employees and dependents via their health insurance plans. This study specifically reports on the annual number of enrollees who accessed "transition-related care." This information is derived from health insurance claims data and thus is dependent on the treatments that were covered by the health insurance companies.[6] The firms surveyed typically covered major gender transition–related surgeries and hormone therapy, but they varied in their coverage of other transition-related treatments, such as vocal cord surgery.[7]

Firms reviewed by Herman (2013b) also typically did not report information on the number of dependents covered but included dependents in their utilization estimates. Data from several sources (e.g., Sonier et al., 2013; Gould, 2012) imply an approximate average one-to-one ratio of employees to dependents in privately insured firms in the United States. Thus, not accounting for the role of dependents in these utilization estimates would overstate utilization by approximately 100 percent.[8] For

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[6] If firms do not cover particular treatments, it is not possible to file a claim for reimbursement. If individuals in these firms utilized services that were not covered, thus paying for treatments out of pocket or through some other form of health insurance, these utilization estimates will be biased downward.

[7] One hundred percent of firms covered major gender transition–related surgeries, including hysterectomy, oophorectomy, metoidioplasty, phalloplasty, urethroplasty, vaginectomy, orchiectomy, vaginoplasty, labiaplasty, and clitoroplasty. Ninety-two percent of firms covered bilateral mastectomy for female-to-male patients, but only 59 percent covered female-to-male chest reconstruction, and only 59 percent covered male-to-female augmentation mammoplasty (breast augmentation). All firms covered hormone therapies, specifically estrogen, progesterone, spironolactone, and testosterone.

[8] We used two different data sources to determine the typical number of dependents covered by the main policyholder in private health insurance firms in the United States. First, we used information from the Robert Wood Johnson Foundation on the number of people who are covered by employer-sponsored health insurance and are the main policyholders and on the number of people who are covered by employer-sponsored health insurance and are dependents. Using these figures, we estimated a 1-to-0.99 policyholder-to-dependent ratio in employer-sponsored private health insurance. The Economic Policy Institute also reports information on this question using data from the U.S. census Current Population Survey. Using this information, we calculated a policyholder-to-dependent ratio of 1 to 0.94.

firms that did not provide information on dependents, we imputed a one-to-one ratio of employees to dependents to identify the total number of enrolled individuals in a given health plan.

Table 4.4 presents the information from Herman (2013b) on the utilization of gender transition–related care in private health insurance firms. The first column shows available information on the identity of the firm. The second describes the number of firms in each category for which we had utilization estimates. The third contains our estimates regarding the total number of enrollees and dependents from all firms in that category. For confidentiality reasons, some surveyed data sources report only ranges for the number of employees in a firm. Therefore, we used the midpoint of the range to impute the number of employees in a particular firm, then assigned the total number of dependents based on this employee value. For example, we had utilization data from two firms in the "private 1,000–9,999 employees" category. Since we assume the midpoint value for firm size, this implies that there are 5,000 employees in each firm, or 10,000 total employees across the two firms. Assuming a one-to-one employee-to-dependent ratio implies an additional 10,000 covered individuals, resulting in a combined total of 20,000 enrollees.

The estimates presented in Table 4.4 indicate that utilization rates range from an annual low of zero individuals per 1,000 enrollees to an annual high of 0.064 individuals per 1,000 enrollees. To obtain a combined estimate of the different values, we constructed a weighted average using the existing utilization estimates, weighting by the number of covered individuals that generated each of the estimates in Table 4.4. A weighted average of all the estimates results in an overall utilization estimate of 0.0396 individuals per 1,000 enrollees.

Table 4.4
Enrollee Utilization of Gender Transition–Related Benefits in Private Health Insurance Firms

Private and Public Firms	Number of Firms	Total Contribution (enrollees + dependents)	Individual Claimants per 1,000 Enrollees
Private, fewer than 1,000 employees	1	1,000	0.0000
Private, 1,000–9,999 employees	2	20,000	0.0540
Private, 10,000–49,000 employees	5	250,000	0.0220
City and County of San Francisco	NA	80,000	0.0640
University of California	NA	100,000	0.0620
Weighted average per 1,000 enrollees			0.0396

SOURCE: Data from Herman, 2013b.

We conducted two sets of calculations using these estimates. First, we used the lowest non-zero utilization figure (0.022 claimants per 1,000 enrollees);[9] then, we used the weighted average calculation of 0.0396 per 1,000 enrollees. Applying the 0.022 claimants per 1,000 figure to the AC population of 1,326,273 implies that 29 AC service members would receive gender transition–related care annually. Applying the weighted average estimate of 0.0396 per 1,000 enrollees to the AC population implies that 53 service members would receive gender transition–related care annually.

Sensitivity Analyses

We also conducted two additional sensitivity analyses to determine the full potential scope of gender transition–related health care utilization in the AC. A key consideration when applying estimates from civilian populations to the military is that the underlying male/female distribution in the AC is different, with 85 percent of the AC population being male (versus approximately 50 percent in the civilian population). Studies suggest that the prevalence of transgender individuals is higher in the male population than in the female population (APA, 2013; Horton, 2008; Gates, 2011; Grant et al., 2011), so applying civilian estimates directly to the AC would underestimate the true utilization rates.

Accurately accounting for this issue required sex-specific utilization estimates that we could then multiply with the male/female AC distribution (85 percent male, 15 percent female). Unfortunately, we could not identify any sex-specific utilization estimates in the available private health insurance data; the aggregate cost and utilization estimates that we were able to identify already included underlying prevalence differences between the sexes. We posited that utilization would be twice as large for male-to-female transitions than for female-to-male transitions based on an assumption of linearity between transgender prevalence, for which we have sex-specific estimates, and total utilization (Horton, 2008).

Combining this assumption about differing utilization rates with the fact that the male/female labor force participation in the civilian population is close to 50 percent male and 50 percent female, we were able to solve for the sex-specific utilization estimates implied by the aggregate lower-bound (0.022) and weighted average (0.0396) values. Solving for the sex-specific utilization estimates in this manner, for the 0.022 aggregate estimate, we estimated a utilization rate of 0.0293 per 1,000 natal male enrollees and a utilization rate of 0.0146 per 1,000 natal female enrollees.[10] Similarly, for the 0.0396 weighted average figure, solving for the natal sex–specific utiliza-

[9] The unadjusted version of this figure (0.0044 percent) was also used in Belkin (2015) to estimate health care utilization in the military.

[10] The equation we solved to calculate the natal male–specific and natal female–specific utilization rates is as follows: $0.5(x) + 0.5(2x) = 0.022$. In this equation, the variable x is the natal female–specific utilization rate, and solving for x results in a value of 0.0146. Since the natal male–specific utilization rate is assumed to be twice the natal female rate, it equals 0.0293.

tion estimates, we identified a utilization rate of 0.0528 per 1,000 natal male enrollees and a utilization rate of 0.0264 per 1,000 natal female enrollees.

Applying these solved sex-specific estimates to the AC male/female distribution (1,125,581, or 85 percent male, versus 200,692, or 15 percent female) increased our initial lower-bound estimate of claimants from 29 to 36 and increased our estimate from applying the weighted average from 53 to 65.

Finally, the sociology and psychology literature speculates that there is a higher transgender prevalence in the military compared with the civilian population (G. Brown, 1988). Gates and Herman (2014) also calculated that transgender prevalence in the military is approximately twice the civilian prevalence (Gates, 2011; Gates and Herman, 2014).[11] Although we believe that the current body of empirical evidence validating this theory is weak, we take it seriously and consider the possible implications for transition-related health care utilization in the military. Assuming that transgender prevalence in the military is twice the transgender prevalence in the civilian population, and, again, assuming a direct relationship between prevalence and utilization, this would inflate our male/female distribution-adjusted estimates of individuals receiving transition-related care annually from 36 to 72, and from 65 to 129 in the AC. Table 4.5, which summarizes the results from applying the private health insurance estimates to the AC population, allows for a comparison of the different estimates.

Private Health Clinic Estimates

A second source of information regarding gender transition–related health care utilization comes from a survey of surgical clinics conducted by Horton (2008). In 2001, Horton surveyed all major clinics in the United States known to provide transition-related care to determine the number of penectomies and bilateral mastectomies performed on transgender patients. Table 4.6 reports surgery incidence estimates broken out by male-to-female transitions and female-to-male transitions. The third column shows estimates using clinic-reported data only. Horton also developed lower- and upper-bound estimates via assumptions regarding treatment counts for clinics with missing data, and these numbers are reported in the second and fourth columns of Table 4.6.[12] These data were collected in 2001 and coverage of gender transition-related benefits have increased over time, so it is also reasonable to assume that surgical tran-

[11] As stated previously, Gates and Herman (2014) used estimates from the NTDS and Gates (2011) for a transgender prevalence of 0.3 percent. That study also used data on history of military service in the U.S. population from the American Community Survey to estimate transgender prevalence in the military. Data from the National College of Health Administration show that military experience was significantly higher among transgender individuals than among those who did not identify as transgender (9.4 percent versus 2.1 percent; Blosnich, Gordon and Fine, 2015). However, data were collected from only 51 institutions, and the response rate for the survey was only 20 percent, which again raises questions regarding the validity of the estimates.

[12] Horton generated upper- and lower-bound estimates by assigning the largest and smallest surgical counts in the data to the clinics with missing values.

Table 4.5
Utilization Estimates from Applying Private Health Insurance Parameters

Annual Individual Claimants	Estimate from the Literature	Estimates Using Private Employer Data		
		Baseline	Sensitivity Analysis 1[a]	Sensitivity Analysis 2[b]
Active component, lower-bound estimate	0.022 claimants per 1,000 individuals	29	36	72
Active component, weighted average estimate	0.0396 claimants per 1,000 individuals	53	65	129

NOTES: Each cell in the "Estimates Using Private Employer Data" columns represents a unique prediction for utilization in the AC population. In the second column of the table, we describe the estimate from the literature that is applied to the AC population. See the text for details on each of the calculations.

[a] Sensitivity Analysis 1: We calculated a set of estimates that accounted for differences in the male/female distribution between the civilian and AC populations.

[b] Sensitivity Analysis 2: We calculated a set of estimates that accounted for differences in the male/female distribution between the civilian and AC populations and the possibility that transgender prevalence is twice as high in the military population as in the civilian population.

Table 4.6
Incidence of Penectomies and Bilateral Mastectomies Performed on Transgender Individuals

Transition Type	Incidence Estimates (%)		
	Low	Clinic-Reported Data	High
Male-to-female	0.00048	0.00053	0.00103
Female-to-male	0.00020	0.00030	0.00084

SOURCE: 2001 data from Horton, 2008.

NOTE: The table includes data on penectomies and bilateral mastectomies only.

sitions have also increased over time. Thus, these utilization rates of penectomies and bilateral mastectomies should be considered lower-bound estimates.

Applying these estimates to the AC male/female distribution results in low, medium, and high annual estimates of 5.8, 6.6, and 13.2 AC service members receiving these two surgeries, respectively. We reiterate here that these estimates are not directly comparable to the private health insurance estimates presented in the previous section because these estimates apply to only two specific procedures, while the private health insurance estimates include any gender transition–related procedures that private health insurance firms cover. One would expect estimates for two specific surgeries from 2001 to be lower than estimates generated from the private health insurance system in the later 2000s. Indeed, they are, but it is more difficult to make other direct

comparisons between these two estimates, given the private health insurance utilization data presented in Herman (2013b).

Veterans Health Administration Estimates

In this analysis, we used VHA data to calculate the expected annual incidence of gender identity disorder (the condition now known as GD in the DSM-5) in the AC population. As described previously, those with a gender identity disorder diagnosis are a subset of transgender individuals. Kauth et al. (2014) used VHA health claims data to identify incidence rates of new diagnoses. They also calculated prevalence rates of gender identity disorder in each year using previous yearly incidence rates. Because 2006 was the first year in their data set, the prevalence rate in the first year of their data is equivalent to the incidence rate. In the years after 2006, the prevalence rate is essentially a running total of the incidence rates in the previous years added to the most recent incidence rates.

The data in Table 4.7 imply that the incidence of gender identity disorder increased from 3.5 of 100,000 enrollees in FY 2006 to 6.7 of 100,000 enrollees in FY 2013 among veterans who use VHA health care (Kauth et al., 2014). Before applying these estimates to the AC population, we note two important points with respect to the analyses in Kauth et al. (2014). First, because the prevalence rate is simply a running total of new cases diagnosed since the first year of the study's data (2006), adding years of data prior to 2006 would mechanically increase the prevalence estimates. Thus, Kauth et al.'s prevalence calculations are a lower-bound for the total gender

Table 4.7
Prevalence and Incidence of Gender Identity Disorder Diagnoses in VHA Claims Data

Fiscal Year	New Diagnosis Rate (%)	Prevalence (%)
2006	0.0035	0.0035
2007	0.0034	0.0068
2008	0.0034	0.0098
2009	0.0038	0.0131
2010	0.0046	0.0172
2011	0.0051	0.0217
2012	0.0060	0.0270
2013	0.0067	0.0329

SOURCE: Kauth et al., 2014.

NOTE: The authors calculated new cases diagnosed and total existing cases in a given year based on the entirety of the data since 2006.

identity disorder prevalence rate in this population. Second, estimates based on claims data will likely be lower-bound estimates of incidence and prevalence, since individuals are identified only if they interact with the health care system for reasons related to gender identity disorder. These two caveats should be kept in mind when interpreting the extrapolations here.

Applying estimates from the 2013 data in Table 4.7 to the AC population, one would expect approximately 90 new cases of gender identity disorder each year and that approximately 440 AC service members would be diagnosed with this condition. Although the male/female distribution in the VHA system mirrors that of the AC, veterans who use VHA health care services may have lower socioeconomic and health status than veterans who do not use VHA health care, other military retirees, and AC service members. The VHA population also differs by age and, potentially, by other unmeasured characteristics related to underlying health status. For these varied reasons, these estimates may not be generalizable to the military population overall.

Summarizing the Estimates

Table 4.8 summarizes the key results after applying the estimates from the various data sets to the AC and SR populations. The largest estimate—270 treatments (surgeries and hormone therapies)—was calculated by combining the upper-bound population-level transgender prevalence estimate from Massachusetts with information from the NTDS data on the age of those receiving common transition-related treatments. When applied to the AC population, estimates from VHA and the private health insurance literature imply that only 30–90 AC service members will receive some type of gender transition–related treatment annually.

To understand the full implications of our estimates regarding the expected annual number of AC service members likely to obtain gender transition–related care, in Figure 4.1 we compare the above utilization estimates with the number of AC service members who self-reported visiting a mental health care provider in a given year (21 percent) and the number of AC service members who visited a mental health care specialist in a given year (7 percent; Hoge et al., 2006; McKibben et al., 2013). We chose this outcome because mental health care among military populations is an important, well-studied topic, and data were readily accessible for us to conduct the comparison. The mental health care utilization estimates represent unique service members accessing health care; thus, they compare most directly to the estimates using the private health insurance data and the NTDS hormone therapy estimates. For clarity's sake, we do not present all of the private health insurance and NTDS hormone therapy estimates in Figure 4.1. We do include the smallest, middle, and largest estimates using the private health insurance data and the largest hormone therapy estimate drawn from the NTDS data.

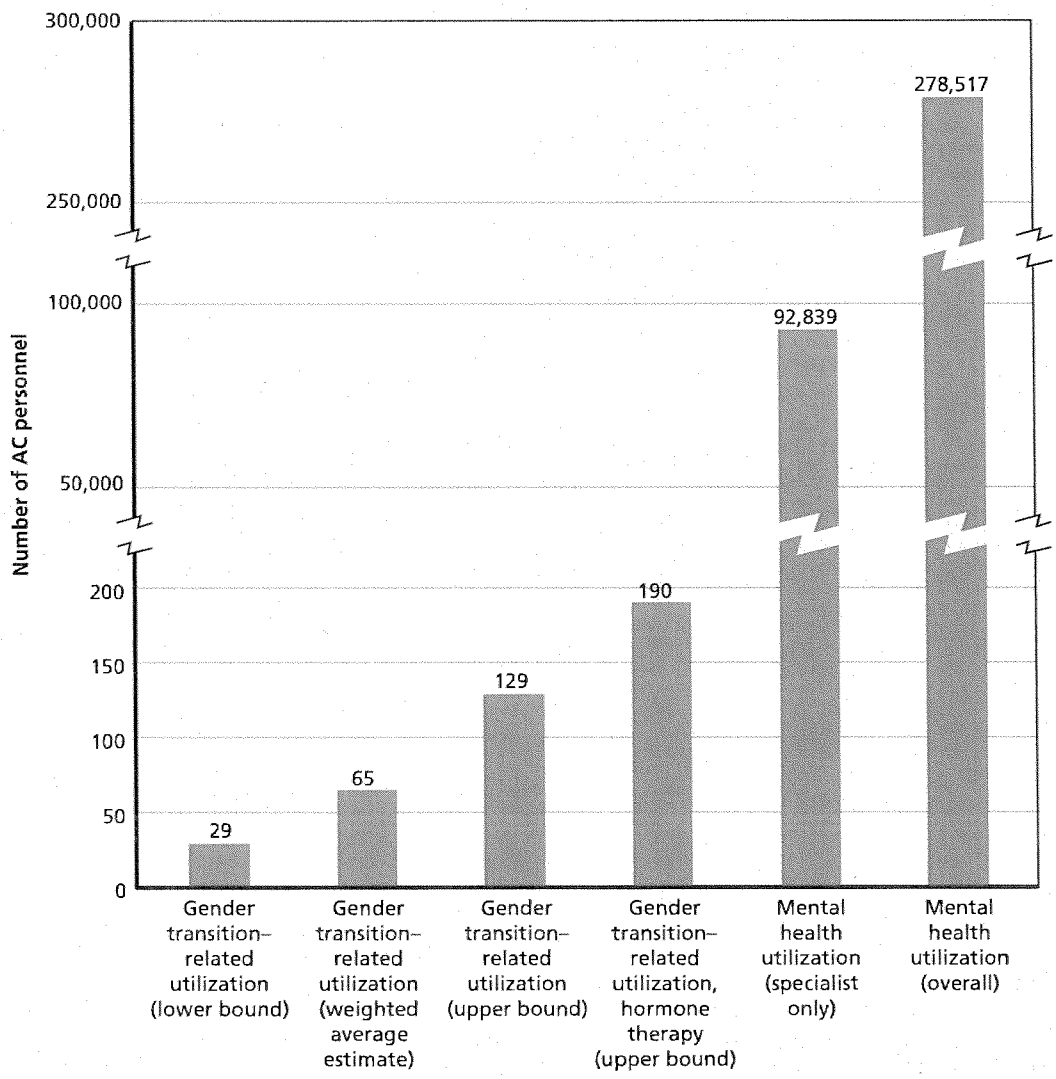
Table 4.8
Annual Gender Transition–Related Treatment Estimates from All Data Sources

	Active Component			Selected Reserve		
Estimate Type	Hormone Treatment	Surgical Treatments	All Treatments	Hormone Treatment	Surgical Treatments	All Treatments
Prevalence-based estimates (using NTDS data)						
Annual treatments based on CA study estimate (0.1%)	30	25	55	15	15	30
Annual treatments based on combined, population-weighted, gender-adjusted rate (0.19%)	50	45	95	25	30	55
Annual treatments based on MA study estimate (0.5%)	140	130	270	70	80	150
Utilization-based estimates						
Private health insurance annual individual claimants (0.022 per 1,000)	NA	NA	29	NA	NA	20
Private health insurance annual individual claimants (0.0396 per 1,000)	NA	NA	53	NA	NA	30
VHA-based annual new diagnoses (0.0067%)	90	NA	NA	60	NA	NA
Clinical utilization of penectomies and bilateral chest surgeries (0.0005%)	NA	10	NA	NA	5	NA

SOURCE: RAND analysis.

As Figure 4.1 shows, our estimates of the number of AC personnel who will use the gender transition–related health care benefits are overwhelmingly small compared with the number of AC personnel who access mental health treatment. Overall, based on our calculations, we expect annual gender transition–related health care to be an extremely small part of overall health care provided to the AC population.

Figure 4.1
Comparison of Annual Estimated Gender Transition–Related Health Care Utilization and Mental Health Care Utilization, Active Component



SOURCE: RAND analysis. Utilization rates in the figure are derived from both the prevalence-based and utilization-based approaches presented in Table 4.8.

NOTES: The non–hormone therapy transgender utilization estimates are from the application of estimates from the private health insurance data. The hormone therapy upper-bound transgender utilization estimate is from calculations using the NTDS data.

RAND *RR1350-4.1*

CHAPTER FIVE

What Are the Costs Associated with Extending Health Care Coverage for Gender Transition–Related Treatments?

In this chapter, we provide estimates for the costs associated with extending health care coverage for gender transition–related treatments. We focused on transgender service members in the AC because they have uniform MHS access. We did not include reserve-component service members in our analyses, but their MHS utilization and the associated cost will be negligible, given their highly limited military health care eligibility. Likewise, we did not include retirees or dependents in the cost analyses because we did not have information on age and sex distribution within these beneficiary categories. Some of these beneficiary categories also have limited eligibility for health care provided through MTFs and may receive their health care through TRICARE coverage in the purchased care setting or through other health insurance plans. Given these unknowns, it was only feasible to estimate the costs of gender transition–related care for AC service members; however, we recommend expanding these analyses in the future to include reserve-component members, as well as all individuals eligible for treatment under TRICARE. For the following analyses, we used demographic characteristics of the 2014 AC population to estimate the cost of providing such services.

Private Health Insurance Cost Estimates

To determine the potential costs of covering gender transition–related health care for transgender service members, we collected information on private health insurers' experiences with covering this care from two sources (Herman, 2013b; State of California, 2012). These actuarial estimates represent the expected increase in health care costs from covering a new set of treatments or a new group of beneficiaries. If employers decide to provide coverage for a particular treatment, these actuarial estimates are translated into premium increases for covered employees. These estimates should be thought of as the expected costs of extending coverage for gender transition–related care to transgender AC service members. Moreover, we note that the military may already be incurring the cost of some transgender treatments, as some patients and their providers use "omissions and ambiguities" to acquire needed care (Roller, Sedlak, and Draucker, 2015, p. 420). For example, a currently serving female-to-male patient

who had undergone a hysterectomy reported taking only the testosterone and not the estrogen prescribed as part of hormone therapy with his endocrinologist's knowledge and tacit support, while another was trying to get breast reduction surgery due to back pain rather than GD (Parco, Levy, and Spears, 2015, pp. 235–236).

Table 5.1 presents available data from public employers and private firms on the actuarial costs of covering gender transition–related care. It identifies the particular institution, the number of employees and dependents covered, and the identified premium increases due to expanding benefits.

Data from Table 5.1 show, generally, that the actuarial estimates of providing benefits for gender transition–related care increased total premiums (employee + employer share) by only a small fraction of a percent—and, in the most extreme cases, by only approximately 1 percent. Taking a weighted average of most of the information,[1] we estimated that extending insurance coverage to transgender individuals would increase health care spending by 0.038 percent. Applying this figure to total AC health care spending of $6.27 billion,[2] we find that covering gender transition–related care will increase AC health care spending by approximately $2.4 million (see Table 5.2).

The data in Table 5.1 suggest that the University of California, with 100,000 enrollees in its health plan, is one of the key drivers of the 0.038-percent weighted

Table 5.1
Actuarial Estimated Costs of Gender Transition–Related Health Care Coverage from the Literature

Public Employer Data	Actuarially Calculated Premium Increase	Total Contribution (employees + dependents)
City of Seattle	0.19% increase in health care budget	23,090
City of Portland	0.08% increase in health care budget	18,000
City of San Francisco	0% increase in health care budget	100,000
University of California	0% increase in health care budget	100,000
Private Employer Data	**Estimate**	**Total Contribution (employees + dependents)**
22 firms	Many employers reported no actuarial costs to adding benefit; estimates range from 0 to 0.2%	Mix of firm sizes
2 firms	Approximately 1% increase in premiums	5,800
1 firm	Much less than 1% increase in premium	77,000

SOURCE: Estimates are from Herman, 2013b, and State of California, 2012.

[1] We did not use information about the firm with 77,000 enrollees because it is not clear what "much less than 1 percent" implies with respect to the premium increase.

[2] Pharmaceutical and direct and purchased care inpatient and outpatient data calculated from TRICARE costs in Defense Health Agency, 2015.

average result. In addition to the actuarial increases, the University of California also reported a realized increase in health care spending of 0.05 percent, so we recalculated the weighted average figure by replacing the 0-percent estimate with the 0.05 percent estimate. This new calculation raised the overall cost estimate from 0.038 percent to 0.054 percent, or from $2.4 million to $3.4 million when applied to the AC. To summarize, our baseline estimates regarding expected gender transition–related health care costs in the AC are between $2.4 million and $3.4 million.

Sensitivity Analyses

To understand the potential full range of cost effects in the AC population, we conducted two additional sensitivity analyses similar to those described for our utilization ranges in Chapter Four. We used these sensitivity analyses to account for the skewed male/female distribution in the military population and for the possibility that transgender prevalence is higher in the military population. As in the utilization case, we were not able to identify any sex-specific effects on the premium increases. Thus, as in our utilization analysis, we assume that cost estimates are linearly related to prevalence,[3] and cost estimates for male-to-female transitions are twice the cost estimates for female-to-male transitions. Using this relationship, we again calculated natal male– and natal female–specific estimates from the aggregate estimates.

Given the assumption about differing cost effects, we calculated a natal male–specific cost estimate of 0.05 percent and a natal female–specific cost estimate of 0.025 percent for the aggregate premium estimate of 0.038 percent. Applying these sex-specific estimates to the AC male/female distribution increased our initial premium estimate from 0.038 percent to 0.047 percent. A similar calculation can be performed for our realized cost estimate of 0.054 percent. Assuming that gender transition–related health care costs are twice as large for male-to-female transitions as for female-to-male transitions, we calculated a natal male–specific cost effect of 0.072 percent and a natal female–specific cost effect of 0.036 percent. Applying these sex-specific estimates to the AC male/female distribution increased our initial premium estimate from 0.054 percent to 0.067 percent. Applying these newly calculated health care costs to the 2014 AC health care expenditures ($6.27 billion) increased our estimate of costs from the initial range of $2.4–3.4 million to a range of $2.9–4.2 million.

Finally, as noted previously, Gates (2011) and Gates and Herman (2014) calculated that transgender prevalence in the military is approximately twice that in civilian

[3] We also note that built into this linearity assumption and how it is applied in the two sensitivity analyses is the assumption that the cost of male-to-female transitions is the same as the cost of female-to-male transitions. Since there is no sex-specific information in the private health insurance cost data, the validity of the cost per case being equivalent is unknown. Padula, Heru, and Campbell (2015) estimated that a male-to-female surgical case is 33 percent more expensive than a female-to-male surgical case, but these estimates were not based on private employer data, so we did not directly incorporate this result into our calculations.

populations. Assuming that this estimate is valid, and, again, assuming that health care costs are linearly related to underlying prevalence, this would increase the above calculated value of $2.9 million to $5.8 million and the calculated value of $4.2 million to $8.4 million. Table 5.2 summarizes the results from the calculations described in this section.

To better understand the relative importance of our estimates regarding expected AC annual gender transition–related health care spending, we compared our cost estimates to the MHS spending on mental health in 2012 and to total AC health care spending in FY 2014. As Figure 5.1 shows, gender transition–related health care spending is expected to be extremely small compared with MHS spending on mental health (Blakely and Jansen, 2013) and overall AC health care expenditures (Defense Health Agency, 2015).

Summarizing the Estimates

A direct application of estimates from the private health insurance system implies a baseline spending range between $2.4 million and $3.4 million for AC gender transition–related health care. Sensitivity analyses that attempt to account for the fact that the male/female distribution in the AC population skews more heavily male than the civilian population and that transgender prevalence might be higher in the military increase this initial range to $5.8 million to $8.4 million. The implication is that even in the most extreme scenario that we were able to identify using the private health insurance data, we expect only a 0.13-percent ($8.4 million out of $6.2 billion) increase in AC health care spending.[4]

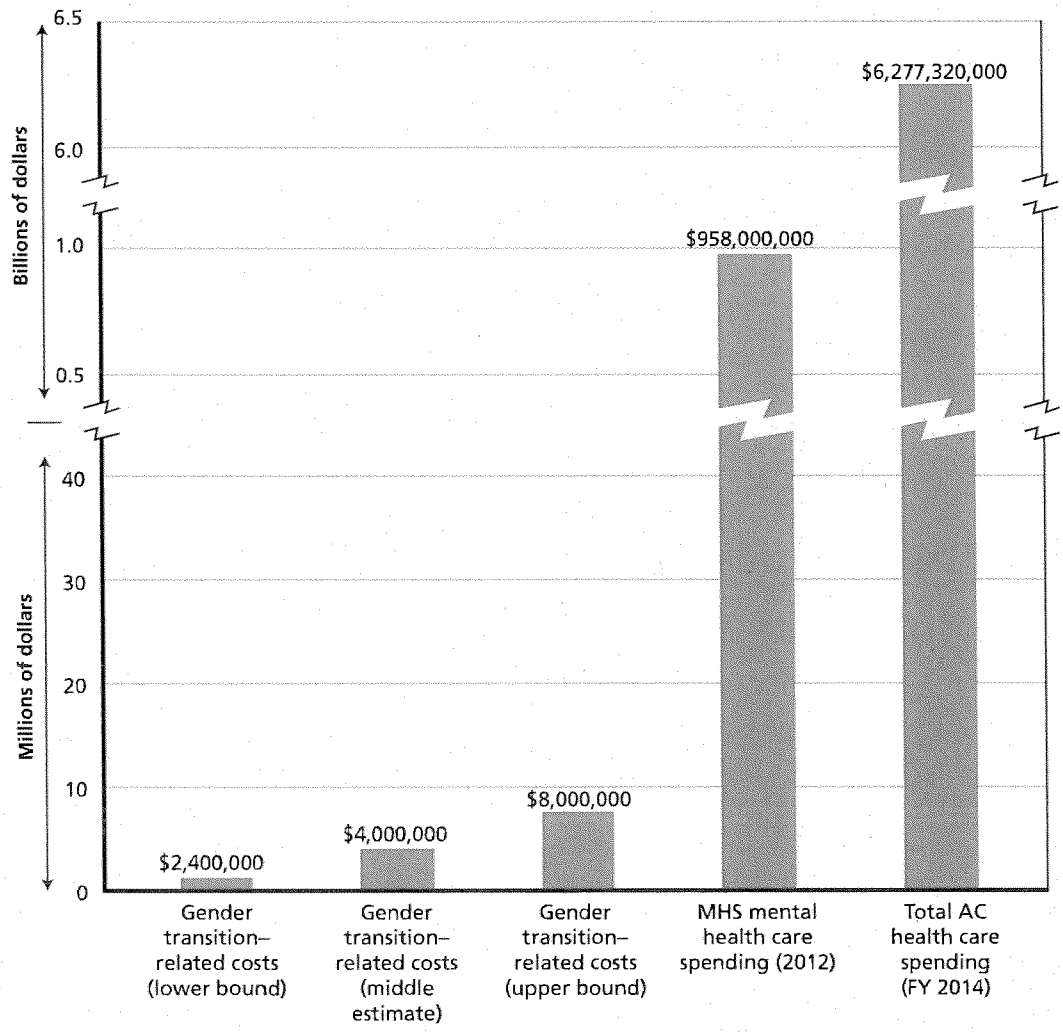
Table 5.2
Estimated Annual MHS Costs of Gender Transition–Related Health Care, Active Component

Analysis Type	Calculations Using Only Actuarial Premium Estimates 0.038% (actuarial)	Calculations Using Actuarial Premiums and Realized Values 0.054% (actuarial + realized)
Baseline	$2.4 million	$3.4 million
Sensitivity analysis 1: Adjusts for the male/female distribution in the AC population	$2.9 million	$4.2 million
Sensitivity analysis 2: Adjusts for the male/female distribution in the AC population and the assumption that transgender prevalence is twice as high in the military compared to the civilian population	$5.8 million	$8.4 million

SOURCE: RAND analysis.

[4] AC beneficiaries make up less than 15 percent of total TRICARE beneficiaries (Defense Health Agency, 2015).

Figure 5.1
Gender Transition–Related Health Care Cost Estimates Compared with Total Health Spending, Active Component



SOURCES: RAND analysis; Blakely and Jansen, 2013; Defense Health Agency, 2015. Estimates of premium increased and realized costs are reported in Table 5.1.

NOTES: The lower-bound estimate refers to premium increases only. The middle estimate includes premium increases and realized costs after adjusting for male/female distribution in the military. The upper-bound estimate includes premium increases and realized costs after adjusting for male/female distribution in the military and assuming the prevalence rate of transgender individuals in the military is twice that of civilian populations.

RAND *RR1350-5.1*

CHAPTER SIX

What Are the Potential Readiness Implications of Allowing Transgender Service Members to Serve Openly?

As DoD considers whether to allow transgender personnel to serve openly and to receive transition-related treatment during the course of their military service, it must consider the implications of such a policy change on the service members' ability to deploy and potential reductions in unit cohesion. In prior legal challenges to the transgender military discharge policy, DoD has expressed concern that the medical needs of these service members would affect military readiness and deployability. To address these concerns, this chapter provides estimates of the potential effects on force readiness from a policy change allowing these service members to serve openly.

A critical limitation of such an assessment is that much of the current research on transgender prevalence and medical treatment rates relies on self-reported, nonrepresentative samples. Thus, the information cited here must be interpreted with caution because it may have varying degrees of reliability. In addition, to estimate effects on readiness, we focused on transgender personnel in the AC and SR only. We did not include the Individual Ready Reserve because of the lack of publicly available, detailed demographic information. We used the same approach that applied to our analysis of health care utilization, applying both the prevalence-based and utilization-based approaches to force size. We note that the prevalence-based approach was the only approach that allowed us to estimate the number of transgender service members who may seek to live and work as their target gender. Transition does not necessarily imply the use of medical treatments, and we emphasize that some of these service members may still require accommodations in terms of housing and administrative functions (e.g., military identification cards, restrooms).

Impact on Ability to Deploy

The most salient and complex issue in allowing transgender personnel to serve openly is how DoD should regulate and manage operational deployment requirements for these personnel in the context of their transition to their target gender.

Pre-Transition

If transgender personnel are allowed to serve openly prior to transition, DoD will need to establish policies on when individuals may use the uniforms, physical standards, and facilities (e.g., barracks, restrooms) of their target gender. Additionally, DoD will need to clarify policies related to qualifications for deployment. Current deployment rules suggest that to qualify for deployment, individuals with diagnosed mental health disorders must show a "pattern of stability without significant symptoms or impairment for at least three months prior to deployment."[1] Ensuring appropriate screening will be critical to minimizing any mental health–related readiness issues. Secondary prevention measures prior to deployment, such as screening for GD, may be needed to ensure a pattern of stability and readiness for deployment.

During Transition

DoD would also need to determine when transitioning service members would be able to change uniforms and adhere to the physical standards of their target gender, as well as which facilities and identification cards they will use. Other countries have found that, in some cases, it may be necessary to restrict deployment of transitioning individuals to austere environments where their health care needs cannot be met. Deployment restrictions may also be required for individuals seeking medical treatment, including those seeking hormone therapy and surgical treatments.

We detail the constraints associated with transition-related medical treatments in Table 6.1. These constraints typically include a postoperative recovery period that would prevent any work and a period of restricted physical activity that would prevent deployment. The rightmost column of Table 6.1 presents the estimated number of nondeployable days we used to estimate the readiness impact. We note that these estimates do not account for any additional time required to determine medical fitness to deploy. Army guidelines, for example, do not permit deployment within six weeks of surgery. Nevertheless, there may be a significant difference between the estimated availability to deploy and the actual impact on deployability, as it is possible that transgender service members would time their medical treatments to minimize the effect on their eligibility to deploy.[2]

In addition to an expected, short-term inability to deploy during standard postoperative recovery time, some individuals experience postoperative complications that would render them unfit for duty. For instance, among those receiving vagino-

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[1] Detailed guidance is provided in a memorandum from the Office of the Assistant Secretary of Defense for Health Affairs, 2013, p. 2.

[2] See for example, Personnel Policy Guidance Tab A (known as PPG-TAB A) that accompanies the medical guidelines document MOD TWELVE, Section 15.C, which articulates the minimal standards of fitness for deployment to the U.S. Central Command area of responsibility (U.S. Central Command, 2013).

plasty surgery, 6–20 percent have complications.[3] This implies that between three and 11 service members per year would experience a long-term disability from gender reassignment surgery. Among those receiving phalloplasty surgery, as many as 25 percent experience some medical complications (Elders et al., 2014).

Table 6.1
Gender Transition–Related Readiness Constraints

Transition Type and Treatment	Recovery Time	Leave and Deployment Implications	Estimated Nondeployable Days
Male-to-Female			
Hormone therapy only	Long-term, no recovery required	None (pending accommodations)	N/A
Augmentation mammoplasty	1 week no work, 4–6 weeks restricted physical activity	Up to 14 days medical leave, up to 60 days medical disability	75
Genital surgery (orchiectomy, vaginoplasty)	4–6 weeks no work, 8+ weeks restricted physical activity	Up to 45 days medical leave, up to 90 days medical disability	135
Female-to-Male			
Hormone therapy only	Long-term, no recovery required	None (pending accommodations)	N/A
Chest surgery	1 week no work, 4–6 weeks restricted physical activity	Up to 14 days medical leave, up to 60 days medical disability	75
Hysterectomy	2 weeks no work, 4–8 weeks restricted physical activity	Up to 21 days medical leave, up to 90 days medical disability	111
Genital surgery (metoidioplasty, phalloplasty)	2–4 weeks no work, 4–6 weeks restricted physical activity	Up to 21 days medical leave, up to 60 days medical disability	81

SOURCES: Treatment times based on RAND research compiled for this study. Estimates of numbers of treatments based on rates in Gates, 2011. Estimated nondeployable days based on RAND calculations using FY 2014 data from DoD, 2014.

NOTES: The total population in the table includes AC and SR personnel. Estimates of treatments are non-unique per person. Individuals may (and likely will) seek multiple treatments simultaneously. As such, deployment days are measured per treatment, not per individual. Estimates of nondeployable days do not include estimated delays generated by Medical Evaluation Board/Physical Evaluation Board review, which may be required depending on service rules.

[3] According to Elders et al. (2014, p. 15), summarizing findings from 15 studies, "2.1 percent of patients had rectal-vaginal fistula, 6.2 percent with vaginal stenosis, 5.3 percent had urethral stenosis, 1.9 percent with clitoral necrosis, and 2.7 percent with vaginal prolapse," and approximately 2.3 percent of patients experienced complications after vaginoplasty.

Taking the estimates for treatment and recovery time, we then applied the standards for leave and restricted physical activity.[4] We applied the recovery times and translated those into nondeployable days separated into medical leave, in which the service member is off the job, and medical disability, in which the service member can be at work but is subject to restricted physical requirements (e.g., no physical training, no heavy lifting). This provided us with the total number of nondeployable days per treatment type. We scaled this estimate by the number of days an individual can be deployed per year. For the AC, we assumed this to be 330 days per year (allowing 30 days of leave plus five days of processing time).[5] For the SR, we assumed 270 days per year (which allows nine months of deployment time). We counted each treatment separately and applied the number of treatments by treatment type shown in Table 6.1.

Note that because individuals may seek multiple treatments, sometimes at the same time, this number is not the same as the total number of individuals who will be nondeployable. Therefore, the estimates presented in Table 6.2 should be considered an upper bound in each category. Moreover, the prevalence-based estimates are significantly larger than the utilization-based estimates as shown in Table 4.8. Using the prevalence-based approach, we found that between eight and 43 of the available 1.2 million labor-years in the AC may be unavailable for deployment.[6] The combined, population-weighted, and gender-adjusted estimate implies that about 16 labor-years from the AC and about 11 labor-years from the SR may be nondeployable. This represents 0.0015 percent of available deployable labor-years across the AC and SR.

These estimates are based on surgical take-up rates ranging from 25 to 130 per year in the AC, with 55–270 total treatments, including hormone treatments. Similarly, the prevalence-based estimates imply 15–80 surgical treatments per year in the SR, with between 30 and 150 total treatments, including hormone therapy.

The utilization-based approach implies many fewer treatments. Although we could not estimate the impact on labor-years because we did not have information on specific treatments, based on usage rates in California, the utilization-based approach implies 30–50 total treatments, including surgeries and hormone therapy. Evidence from the VHA suggests that 90 service members in the AC and 50 in SR are diagnosed with GD in any given year. Such a diagnosis would be a prerequisite for any surgical treatments, suggesting that true utilization rates in the military may be significantly lower than suggested by the prevalence-based approach.

We caution that our labor-year estimates also likely overcount actual nondeployable time because our estimate captures "availability to deploy," rather than the deploy-

[4] For reference, we used the Army Regulation 40-501 (revised 2011), which governs leave and disability, and the Navy Medical Policy 07-009 (2007), which provides guidance on pre-clearance, accommodations for deployment readiness, and additional requirements in the U.S. Central Command area of operations.

[5] We based this estimate on Army Regulation 600-8-101 (2015).

[6] We define a labor-year as the amount of work done by an individual in a year.

Table 6.2
Estimated Number of Nondeployable Man-Years Due to Gender Transition–Related Treatments

		Estimated Number of Nondeployable Labor-Years				
Component	Total Labor-Years Available (FY 2014)	0.1%[a] (CA study)	0.16%[b] (combined, population-weighted CA + MA studies)	0.19%[c] (gender-adjusted rate)	0.37%[d] (twice gender-adjusted rate)	0.5%[e] (MA study)
Active	1,199,096	8.2	13.7	16.2	32.3	42.8
Selected Reserve	615,446	5.9	9.9	10.7	21.3	29.9

SOURCES: Estimates for nondeployable labor-years are based on RAND calculations using FY 2014 data from DoD, 2014.

[a] Based on estimates of prevalence from a California study (Conron, 2012).

[b] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state.

[c] Based on weighted average of studies from California and Massachusetts, weighted by relative population sizes in each state and applied specifically to the male/female distribution in the military components.

[d] Based on estimates of prevalence from NTDS, Gates (2011), and the American Community Survey (Gates and Herman, 2014) and applied specifically to the male/female distribution in the military.

[e] Based on estimates of prevalence from a Massachusetts study (Gates, 2011).

ment impact itself. This difference comes from three key assumptions that we make to calculate these estimates: (1) service members who are seeking treatment will also be deployed; (2) service members who are seeking treatment cannot time those treatments to avoid affecting their deployment eligibility; and (3) service members seek only one treatment at a time rather than having multiple treatments at the same time, which would allow concurrent (rather than sequential) recovery times. Thus, it is likely that a service member's care would have a substantial overall impact on readiness only if that service member worked in an especially unique military occupation, if that occupation was in demand at the time of transition, and if the service member needed to be available for frequent, unpredicted mobilizations.

Post-Transition

Having completed medical transition, a service member could resume activity in an operational unit if otherwise qualified. As in other cases in which a service member receives a significant medical treatment, DoD should review and ensure that any longer-term medical care or other accommodations relevant to the transgender service member's specific medical needs are addressed.

Impact on Unit Cohesion

A key concern in allowing transgender personnel to serve openly is how this may affect unit cohesion—a critical input for unit readiness. The underlying assumption is that if service members discover that a member of their unit is transgender, this could inhibit bonding within the unit, which, in turn, would reduce operational readiness. Similar concerns were raised in debates over whether to allow gay and lesbian personnel to serve openly (Rostker et al., 1993; RAND National Defense Research Institute, 2010), as well as whether to allow women to serve in ground combat positions (Schaefer et al., 2015; Szayna et al., 2015). Evidence from foreign militaries and surveys of the attitudes of service members have indicated that this was not the case for women or for lesbian and gay personnel (Schaefer et al., 2015; Harrell et al., 2007; RAND National Defense Research Institute, 2010). In examining the experiences of foreign militaries, the limited publicly available data we found indicated that there has been no significant effect of openly serving transgender service members on cohesion, operational effectiveness, or readiness. (For a more in-depth discussion of this topic, see Chapter Seven.) However, we do not have direct survey evidence or other data to directly assess the impact on the U.S. military.

Evidence from the General U.S. Population

According to recent research on the U.S. general population, attitudes toward transgender individuals are significantly more negative than attitudes toward other sexual minorities (Norton and Herek, 2013). However, heterosexual adults' positive attitudes toward and acceptance of transgender individuals are strongly correlated with their attitudes and acceptance of gay, lesbian, and bisexual individuals (Flores, 2015). As such, similar to changes seen in public attitudes toward homosexuality, tolerance and acceptance toward the transgender population could change over time. Additionally, evidence does indicate that direct interactions with transgender individuals significantly reduce negative perceptions and increase acceptance (Flores, 2015), which would suggest that those who have previously interacted with transgender individuals would be more likely to be tolerant and accepting of them in the future. Similar findings have arisen from surveys and focus groups with service members regarding attitudes toward the integration of women into direct combat positions (Szayna et al., 2015) and attitudes toward allowing gay and lesbian service members to serve openly in the U.S. military (RAND National Defense Research Institute, 2010).[7]

[7] A recent article examined the attitudes of military academy, Reserve Officers' Training Corps, and civilian undergraduates in the United States toward transgender people in general, in the workplace, and in the military (see Ender, Rohall, and Matthews, 2016).

Evidence from Foreign Militaries

While there are limited data on the effects of transgender personnel serving openly in foreign militaries, the available research revealed no significant effect on cohesion, operational effectiveness, or readiness. In the case of Australia, there is no evidence and there have been no reports of any effect on cohesion, operational effectiveness, or readiness (Frank, 2010). In the case of Israel, there has also been no reported effect on cohesion or readiness (Speckhard and Paz, 2014). Transgender personnel in these militaries have reported feeling supported and accommodated throughout their gender transition, and there is no evidence of any impact on operational effectiveness (Speckhard and Paz, 2014). In fact, commanders have reported that transgender personnel perform their military duties and contribute effectively to their units (Speckhard and Paz, 2014). Interviews with commanders in the United Kingdom also found no effect on operational effectiveness or readiness (Frank, 2010). Some commanders reported that increases in diversity had led to increases in readiness and performance. Interviews with these same commanders also found no effect on cohesion, though there were some reports of resistance to the policy change within the general military population, which led to a less-than-welcoming environment for transgender personnel. However, this resistance was apparently short-lived (Frank, 2010).

The most extensive research on the potential effects of openly serving transgender personnel on readiness and cohesion has been conducted in Canada. This research involved an extensive review of internal defense reports and memos, an analysis of existing literature, and interviews with military commanders. It found no evidence of any effect on operational effectiveness or readiness. In fact, the researchers heard from commanders that the increased diversity improved readiness by giving units the tools to address a wider variety of situations and challenges (Okros and Scott, 2015). They also found no evidence of any effect on unit or overall cohesion. However, there have been reports of bullying and hostility toward transgender personnel, and some sources have described the environment as somewhat hostile for transgender personnel (Okros and Scott, 2015).

To summarize, our review of the limited available research found no evidence from Australia, Canada, Israel, or the United Kingdom that allowing transgender personnel to serve openly has had any negative effect on operational effectiveness, cohesion, or readiness. However, it is worth noting that the four militaries considered here have had fairly low numbers of openly serving transgender personnel, and this may be a factor in the limited effect on operational readiness and cohesion.

Costs of Separation Requirements Related to Transgender Service Members

We considered the costs and benefits of providing appropriate care to transgender service members, the requirements for those who would serve openly if the current policy changed, and the costs of continuing the current administrative separation process. We analyzed the costs of separation under several assumptions: (1) some transgender personnel are currently serving but are not able to reveal their transgender status, (2) some individuals who would be desirable recruits could be excluded for reasons only related to their gender identity, and (3) some individuals who are transgender are or have been separated for reasons only related to their gender identity, which imposes separation costs.

Separation and a continued ban on open service (i.e., manpower losses) are the alternatives to meeting the medical needs of transgender individuals. As detailed in Chapter Two, the continued ban on open service may result in worsening mental health status, declining productivity, and other negative outcomes due to lack of treatment for gender identity–related issues. In addition, if DoD actively pursues separation, the process can be tedious, especially now that it requires the approval of the Under Secretary of Defense for Personnel and Readiness. Under current DoD regulations, transgender personnel can be declared administratively unfit for service if their gender identity affects their ability to meet operational or duty requirements. A June 2015 revision to DoD policy requires that a discharge justification be based on inability to meet duty requirements. However, any "administratively unfit" finding prohibits the individual from being medically evaluated for continued service.[8] Absent this process, transgender service members do not have recourse to allow mental health experts or medical professionals to review their case concurrently. This can result in unnecessary and inconsistent approaches to discharging transgender service members. As was the case in enforcing the policy on homosexual conduct, this can involve costly administrative processes and result in the discharge of personnel with valuable skills who are otherwise qualified (U.S. Government Accountability Office, 2011).

Moreover, the total cost in lost days available for deployment is negligible and significantly smaller than the lack of availability due to medical conditions. For example, in 2015 in the Army alone, there were 102,500 nondeployable soldiers, 50,000 of whom were in the AC (Tan, 2015). This accounted for about 14 percent of the AC—personnel who were ineligible to deploy for legal, medical, or administrative reasons.

[8] These boards provide an established process and mechanism for evaluating whether a service member with an ailment or diagnosis, such as a mental health diagnosis, could continue military service. The services use the Medical Evaluation Board and Physical Evaluation Board systems to determine whether personnel "with an ailment or diagnosis, such as a mental health diagnosis, can continue . . . military service," based on a thorough review of fitness to serve (DoDI 1332.38, 1996).

Of those, 37,000 could not deploy due to medical conditions.[9] Excluding those who were severely injured and required longer-term care, there were 28,490 service members who had either category 1 (up to 30 days) or category 2 (more than 30 days) restrictions. Assuming those in category 1 cannot deploy for 30 days and those in category 2 cannot deploy for 90 days, we estimate there are currently 5,300 nondeployable labor-years in the Army alone. Thus, we anticipate a minimal impact on readiness from allowing transgender personnel to serve openly.

[9] Rates of injury and nondeployability time as reported in Cox (2015).

CHAPTER SEVEN

What Lessons Can Be Learned from Foreign Militaries That Permit Transgender Personnel to Serve Openly?

As the U.S. military considers changes to its transgender personnel policy, revisions to several other policies may be necessary. Policies in need of change would cover a range of personnel, medical, and operational issues affecting individuals and units, including some policies that currently vary by gender. Examples of the latter would include housing assignments, restrooms, uniforms, and physical standards. While these are new questions for the U.S. military, there are other countries that already allow transgender personnel to serve openly in their militaries and have already addressed these policy issues.

We reviewed policies in foreign militaries that allow transgender service members to serve openly. Our primary source for the observations presented in this report was an extensive document review that included primarily publicly available policy documents, research articles, and news sources that discussed policies on transgender personnel in these countries. The information about the policies of foreign militaries came directly from the policies of these countries as well as from research articles describing the policies and their implementation. Our findings on the effects of policy changes on readiness draw largely from research articles that have specifically examined this question using interviews and analyses of studies completed by the militaries themselves. Finally, our insights on best practices and lessons learned emerged both directly from research articles describing the evolution of policy and the experiences of foreign militaries and indirectly from commonalities in the policies and experiences across our four case studies. Recommendations provided in this report are based on these best practices and lessons learned, as well as a consideration of unique characteristics of the U.S. military.

This review and analysis of the policies in foreign militaries can serve as a reference for U.S. decisionmakers as they consider possible policy revisions to support the integration of openly transgender personnel into the U.S. military. We include information on how, when, and why each country changed its policy. We also detail the policies of each country, covering such issues as the medical and administrative

requirements before gender transition can begin, housing assignments, uniform wear, and physical fitness standards.

Policies on Transgender Personnel in Foreign Militaries

According to a report by the Hague Center for Security Studies, there are 18 countries that allow transgender personnel to serve openly in their militaries: Australia, Austria, Belgium, Bolivia, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Israel, Netherlands, New Zealand, Norway, Spain, Sweden, and the United Kingdom (Polchar et al., 2014). This chapter describes the policies of the four countries—Australia, Canada, Israel, and the United Kingdom—with the most well-developed and publicly available policies on transgender military personnel. It focuses explicitly on policies that describe how these foreign militaries treat transgender personnel and how they address this population's gender transition needs. While the focus of the chapter is on the specific policies integrating openly transgender military personnel in these four foreign militaries, we also provide some information about what happened after the policy change, including bullying and harassment, and summarize best practices and challenges that emerged from our four case studies.[1]

The formal policies on transgender personnel in the four countries address a number of aspects of the gender transition process.[2] Generally, these policies do not explicitly address such issues as the recruitment or retention of transgender personnel, though we provide information on the qualification of transgender personnel to serve when it is available. They do generally address such issues as the requirements for transitioning, housing assignments, restroom use, uniforms, identity cards, and physical standards. They also address whether the transitioning personnel remain with their old units or shift to new ones and how other members of a unit should be informed. Finally, the policies address access to medical care and what is or is not covered by the military health care system.

In addition to addressing these crucial issues, foreign military policies on transgender personnel typically lay out a gender transition plan, which describes the timeline or steps in the transition process. However, it is worth noting that each individual's

[1] We looked for information on the policies of the other 14 countries but were unable to find any publicly available documents in English.

[2] We note a few interesting points about other countries that we investigated but for which we were unable to find sufficient publicly available information to construct a complete case. The Netherlands was the first country to allow transgender personnel to serve openly in its military, opening its ranks in 1974. New Zealand opened its military to transgender personnel in 1993; although we could not find a written policy, a 2014 report by Hague Center for Strategic Studies referred to New Zealand's as the most friendly military to transgender personnel. The New Zealand Defence Force also has an advocacy group, OverWatch, that provides support to lesbian, gay, bisexual, and transgender personnel (see Polchar et al., 2014).

gender transition is unique. While some choose to undergo hormone therapy or gender reassignment surgery, this is not required for gender transition. As a result, the timelines outlined in the policies are intended to be examples only.

Australia

In 2010, the Australian Defence Force revoked the defense instruction that prohibited transgender individuals from serving openly, stating that excluding transgender personnel from service was discrimination that could no longer be tolerated (Ross, 2014). The Australian Department of Defence, with the advocacy group Defence Lesbian, Gay, Bisexual, Transgender, and Intersex Information Service, has produced guides to support commanders, transitioning service members, and the units in which transitioning members are serving (Royal Australian Air Force, 2015). The guide outlines five stages in the gender transition process: diagnosis, commencement of treatment, disclosure to commanders and colleagues, the post-transition experience, and, if applicable, gender reassignment surgery (Royal Australian Air Force, 2015). There is no public information on the number of transgender personnel in the Australian military or the costs associated with covering gender transition–related medical care.

A service member's gender transition begins after receiving a medical diagnosis of gender incongruence from a doctor approved by the Australian Defence Force. According to Australian Defence Force policy, once service members receive this diagnosis and present a medical certification form to their commanders, they can begin the "social transition," which policy defines as the time when an individual begins living publicly as the target gender. Under the current policy, after this point, the service member's administrative record is updated to indicate the target gender for the purposes of uniforms, housing, name, identification cards, showers, and restrooms (Royal Australian Air Force, 2015). This means that, after this point, the service member is assigned to housing of the target gender, may use the restrooms of the target gender, has an identification card with the target gender and new name, and can wear the uniform of the target gender.

During the social transition, the service member may undergo hormone therapy. However, neither hormone therapy nor gender reassignment surgery is required for the administrative changes to occur. Importantly, this shift in gender for military administrative purposes may not always match the legal transition (with respect to the Australian government) to the target gender (Royal Australian Air Force, 2015). Finally, when transgender service members choose to transition, they may choose whether to stay with their current unit or transfer to a different one. They may also choose how colleagues are informed of the gender transition—that is, whether they wish to tell colleagues themselves or have a senior leader do so.

Australia's policy also addresses matters related to physical standards and medical readiness. During the transition period, a service member may be downgraded in terms of physical readiness or declared unable to deploy for some time. However, this

determination is decided on a person-by-person basis and is only temporary. According to the guide provided to service members and commanders, most individuals are placed on "MEC [Medical Employment Classification] 3—Rehabilitation" status during their medical transition or if they require four consecutive weeks of sick leave. Others may be able to remain "MEC 2—Employable and Deployable with Restrictions" for the majority of the gender transition period. In most cases, this determination is made by a certification board, though commanders are also given discretion to downgrade transitioning service members or declare them unfit to deploy, contingent on a stated inability to accommodate the service member's needs or a determination that the transitioning service member's presence would undermine the unit's performance. However, there is no public information available on the types of justifications a commander might give in making such a determination.

The deployment status of each individual will vary during the gender transition based on the transition path chosen (for example, whether hormone therapy or surgery is undertaken). Some of these treatments are covered by military health care. In Australia, medical treatments associated with gender transition, including both hormone therapy and gender reassignment surgery, are covered, but treatments considered "cosmetic" might not be (Royal Australian Air Force, 2015). However, it is not clear what is classified as cosmetic or what might be considered medically necessary. Importantly, gender transition–related medical procedures are provided only at certain facilities, so service members who wish to receive these treatments may need to make special requests for specific assignments where their needs can be met. In general, personnel are permitted to take sick leave to facilitate their medical transition (Royal Australian Air Force, 2015).

Transitioning service members' deployment status will also depend on their ability to meet physical fitness standards. During the transition period, a service member may be considered medically exempt from meeting physical fitness standards, with a coinciding readiness classification of nondeployable. Once deemed medically able to complete the test by a medical professional, the service member may be asked to meet the standards of the target gender. However, which gender standards the individual is required to meet and when is determined by the medical officer overseeing the gender transition (Royal Australian Air Force, 2015). Thus, the point at which each transitioning service member is required to meet the target-gender standards varies.

Canada

In Canada, a 1992 lawsuit from a member of the armed forces resulted in the repeal of a regulation banning gay, lesbian, and transgender individuals from serving openly in the military (Okros and Scott, 2015). In 1998, the Canadian military explicitly recognized gender identity disorder and agreed to cover gender reassignment surgery. In 2010, Canadian military policy was revised to clarify transgender personnel issues, such as name changes, uniforms, fitness standards, identity cards, and records (Okros

and Scott, 2015). An updated policy, Military Personnel Instruction 01/11, "Management of Transsexual Members," was released in 2012 (Canadian Armed Forces, 2012). It stated, "The CF [Canadian Forces] shall accommodate the needs of CF transsexual members except where the accommodation would: constitute undue hardship; or cause the CF member to not meet, or to not be capable of meeting. . . . Minimum Operational Standards Relating to Universality of Service" (Canadian Armed Forces, 2012, p. 5). Other considerations that can be used to determine whether an accommodation is reasonable include cost and the safety of other service members and the public (Canadian Armed Forces, 2012, p. 5). Data suggest that there are approximately 265 transgender personnel serving openly and that the Canadian military pays for about one gender reassignment surgery per year (Okros and Scott, 2015).

Canada's policy on transgender personnel covers such issues as housing, identification cards, restrooms, physical standards, deployment, medical treatment, and uniforms. The process is similar in most ways to that in Australia, described earlier. In Canada, one of the first steps in the gender transition process is a medical assessment in which the individual is given a diagnosis of gender incongruence and assigned a temporary medical category that defines both employment limitations and accommodations that will be needed to support the service member during gender transition. After receiving this diagnosis, service members are responsible for informing their commanders and are asked to give commanders as much notice as possible before beginning their gender transition. After that, the service member, the service member's manager, and the unit's commanding officer are expected to meet to discuss the service member's gender transition plan and to addresses any necessary accommodations. The policy recommends frequent meetings between the service member and relevant leaders and medical professionals to ensure that the transitioning service member's needs are met. The policy also identifies subject-matter experts, such as chaplains and mental health professionals, who might be available to provide advice (Canadian Armed Forces, 2012).

The policy states that the gender transition plan should address housing, uniforms, deployments, and other administrative considerations. While the timeline will vary for each individual, in most cases, after receiving the diagnosis and informing the commander, the service member is able to begin living openly as the target gender. At this point, the service member is assigned to housing of the target gender, given ID cards with the target gender and new name, given uniforms of the target gender, and permitted to use restrooms of the target gender. However, while the individual is considered a member of the target gender for all administrative purposes within the military at this point, an official name and gender change in the military personnel system requires both medical certificates and legal documentation (Canadian Armed Forces,

2012).[3] Finally, medals and awards earned by the service member prior to transitioning cannot be transferred to the new name when the service member transitions to the target gender (Okros and Scott, 2015).

While the policy expects accommodations to be made to meet the needs of transgender personnel, it also notes that commanders must strike a balance between meeting the needs and legal rights of transgender personnel and the privacy needs of other service members in restrooms, showers, and housing. It does not, however, provide guidance on how this should be accomplished (Canadian Armed Forces, 2012). The policy also makes clear that incidents of harassment must be dealt with according to the Canadian military's discrimination and harassment policy. Finally, if the transgender service member is assigned to a new unit permanently or temporarily, any required accommodations are to be communicated to the new commanding officer prior to the service member's arrival (Canadian Armed Forces, 2012).

The medical assessment and gender transition plan developed at the start of transition are also used to determine a service member's readiness status and deployability. The policy states that service members can be downgraded temporarily in terms of their readiness, ability to deploy, and eligibility for remote assignments until gender transition is complete (Canadian Armed Forces, 2012). This determination is made primarily by the medical professionals overseeing the service member's gender transition. After the gender transition is complete, the continued need for a reduced medical standard is decided on a case-by-case basis based on the service member's overall health, chronic conditions, and need for access to medical care. After beginning the gender transition, and based on the medical assessment, the service member is considered medically exempt from physical fitness testing and requirements until legally assuming the acquired or target gender (which, as noted earlier, requires provincial recognition). At that point, the fitness standards for the acquired or target gender apply. More specifically, once personnel are removed from the medical exemption list, they have 90 days to meet the new standards (Canadian Armed Forces, 2012).

A reduced medical readiness determination during gender transition is intended primarily to ensure that the service member has uninterrupted access to medical care. Once gender transition is complete, transgender service members and their commanders are responsible for identifying the service member's specific needs and how they will be addressed (Canadian Armed Forces, 2012). Gender reassignment surgery will not, however, automatically result in permanent deployment restrictions. As in Australia, gender reassignment surgery and hormone therapy are covered by military health care. The Canadian military paid for one gender reassignment surgery in 1998 and has paid for one or two surgeries per year since then (Canadian Armed Forces, 2012).

[3] Also note that the requirements for the legal change vary by province but typically involve only a statement that the individual has assumed the target gender and a medical certification from a doctor of a diagnosis of gender incongruence.

Israel

The Israel Defense Forces (IDF) have allowed transgender personnel to serve openly since 1998 (Speckhard and Paz, 2014).[4] The IDF experience with transgender personnel is somewhat unique because Israel's military is composed largely of conscripts who serve two or three years and then serve in the reserves with extended periods of active service. As a result, a very high percentage of the population spends extended periods of time mixing military and civilian life. From the perspective of this report, this blending of civilian and military life creates unique challenges for transgender personnel, as they cannot be one person in their civilian life and then a different person in their military life. Some transgender individuals receive a discharge or exemption from their military service based on their gender incongruence, but this decision is currently at the discretion of the commander. There is no official IDF policy on transgender personnel, but according to one report, senior members of the IDF are working to draft one (Speckhard and Paz, 2014). In 2014, the IDF announced that it would support transgender individuals throughout the transition process. Under this new policy, transgender teens who have not yet begun to transition to another gender will be enlisted according to their birth sex, but after enlistment, they will be given support and assistance with the gender transition process (Zitun, 2014). As a result, Speckhard and Paz (2014) noted, experiences vary for transgender personnel in the IDF. Some individuals report that once they ask to transition, they are allowed to dress and serve as their target gender. However, it is unclear how generalizable this is.

Typically, IDF administrative records use the gender at that time of enlistment. Since conscription occurs at age 18, and because hormone treatment for gender incongruence cannot legally begin until age 18, the administrative records of most personnel show their birth gender. Under a newly announced policy, personnel enlisted using their birth gender who identify as transgender can immediately receive support and treatment to begin the gender transition (Zitun, 2014). Importantly, however, as of 2014, the military identification card carries the birth gender until a service member undergoes gender reassignment surgery, even if the service member is living publically as the target gender (Speckhard and Paz, 2014). It should be noted that, in Israel, only one hospital can perform gender reassignment surgery, and this surgery cannot be performed until age 21, though some people go abroad for it (Speckhard and Paz, 2014). This creates some complications for housing and other matters, discussed in more detail later. The new policy will also allow transgender recruits to receive support for gender transition after enlistment.

Available evidence suggests that, in the IDF, assignment of housing, restrooms, and showers is typically linked to the birth gender, which does not change in the military system until after gender reassignment surgery. Service members who are undergo-

[4] We do not know the exact date for this change because there was never a formal policy allowing or prohibiting transgender personnel from serving. It was in 1998 that the first openly transgender individual served in the IDF.

ing gender transition are accommodated, however, through the use of ad hoc solutions, including giving transitioning personnel their own showers, housing, or restrooms (Speckhard and Paz, 2014). Once transitioning personnel have completed gender reassignment surgery, they can be assigned to the housing, restrooms, and showers of their acquired gender. It is also worth noting that the majority of noncombat personnel are able to live at home, off base. As a result, the housing issue does not affect a large number of transitioning personnel (Speckhard and Paz, 2014). The issue of uniforms is usually easier to address, and service members are able to wear the uniform of the target gender once they begin their gender transition.

In addition to addressing housing and other administrative matters for conscripts and career soldiers, the IDF must address transitioning reservists. The limited information available suggests that the approach to addressing the needs of this group also varies from person to person. Usually, if reserve members are in the process of transitioning or have transitioned when called to active duty, they are permitted to return to service as their target or acquired gender (following the same administrative policies described earlier). For example, a service member who served in an all-male combat unit and is transitioning to female may be moved to another position. Again, many reservists serve their duty while living at home, so housing is not usually an issue. Restroom and shower assignments are addressed on an ad hoc basis (Speckhard and Paz, 2014). Finally, some personnel who have transitioned or are in the process of transitioning are exempted from their reserve duty. However, this is becoming less common as the IDF strives to accommodate the needs of these personnel rather than exempting them from service (Speckhard and Paz, 2014).

The IDF does not have a formal policy on physical standards for transgender individuals serving their conscription duty, reserve duty, or as professional soldiers. Available information suggests only that transgender personnel can serve in any unit or occupation for which they meet the requirements, with the exception of a few male-only combat units and certain security-related positions (Speckhard and Paz, 2014). Personnel transitioning from female to male are able to serve in male-only combat units only if they can meet the requirements set for other men. Personnel transitioning from male to female cannot serve in male-only combat units once they begin hormone treatment (Speckhard and Paz, 2014).

There do appear to be some limitations on the assignment of transgender personnel, particularly in combat units. Because of austere living conditions in these types of units, necessary accommodations may not be available for service members in the midst of a gender transition. As a result, transitioning individuals are typically not assigned to combat units (Speckhard and Paz, 2014). Transgender personnel are also limited from assignment to certain security-related positions due to concerns about blackmail, based on the assumption that these service members might be open about their gender identity in the military but might not have told others, including family members. Keeping

these types of secrets might make an individual susceptible to blackmail or extortion (Speckhard and Paz, 2014).

In the IDF, medical issues and matters related to the readiness of transgender personnel are addressed on a case-by-case basis, though a more formal policy is being developed. For conscripts, the only treatment that can be provided by the military is hormone therapy because gender reassignment surgery is possible in Israel only after age 21, by which point the conscription duty is usually completed (Speckhard and Paz, 2014). Those who choose to stay in the military full-time after the age of 21, as well as those in the reserve called to back to active service, may receive both hormone therapy and gender reassignment surgery. Those who choose to undergo surgery are permitted to take a period of sick leave for the surgery and recovery, as they can for any other medical treatment or surgery (Speckhard and Paz, 2014). Israel has nationalized health care that typically covers all treatments associated with gender transition, ranging from psychiatric care to pre- and postoperative care, hormone treatment, breast augmentation, and facial feminization. Apart from the approaches used to address physical standards for transitioning individuals (discussed earlier), there are no specific policies governing the readiness classification of transitioning IDF personnel, though some are in development (Zitun, 2014).

United Kingdom

The United Kingdom lifted the ban on transgender personnel in 2000 following a European Court of Human Rights ruling that the country's policy violated the right to privacy under the European Convention on Human Rights (Frank, 2010). The policy change was implemented with guidance to commanders, as well as a code of social conduct that allowed commanders to address inappropriate behavior toward transgender personnel by appealing to broader principles of tolerance and diversity and to guard operational effectiveness (Yerke and Mitchell, 2013). In 2009, the British Armed Forces released the "Policy for Recruitment and Management of Transsexual Personnel in the Armed Forces" to offer clearer guidance to commanders on how gender transition–related issues should be addressed (Yerke and Mitchell, 2013). While transgender personnel are able to serve openly, under the current policy, they can be excluded from sports that organize around gender to ensure the safety of the individual or other participants. The British Army also provides its official policy on transgender personnel on its website:

> The Army welcomes transgender personnel and ensures that all who apply to join are considered for service subject to meeting the same mental and physical entry standard as any other candidate. If you have completed transition you will be treated as an individual of your acquired gender. Transgender soldiers serve throughout the Army playing their part in the country's security. There is a formal network that operates in the Army to ensure that transgender soldiers can find advice and support with issues that affect their daily lives. (British Army, undated)

However, the military encourages those who have not yet started their gender transition to complete their transition before joining (UK Ministry of Defence, 2009).

The 2009 UK policy is similar to those in Canada and Australia in terms of the areas covered and approaches to addressing key issues, though the UK policy provides some additional room for individual differences. The policy also includes an extensive discussion of the legal and privacy protections afforded to transgender personnel. These protections are important because they also apply to administrative and medical records in the military system.

The UK policy defines five stages of gender transition: diagnosis, social transition (the individual begins living openly as the target gender), medical treatment/hormone therapy, surgical reassignment, and postoperative transition. However, it also recognizes that the process of gender transition may be different for each person. The policy suggests that each individual work with commanders and service authorities to develop a plan that includes a timeline for transition. The gender transition plan agreed to by the service member and commanders should specify the timing of changes, such as to housing assignments and uniforms. The specific point at which a service member transitions for the purposes of name, uniform, housing, restrooms, and ID cards may vary from person to person. Typically, when service members begin living publicly as the target gender (the social transition) they are reassigned to housing of the target gender, use the restrooms and uniforms of the target gender, and are given an ID card indicating that they are a member of the target gender. Importantly, this shift in gender for administrative purposes does not have to correspond to the point at which an individual transitions gender within the UK legal system, a process that involves a diagnosis of gender incongruence and two years of living as the acquired gender (UK Ministry of Defence, 2009). The policy also notes that it is unlawful to force transgender personnel to use separate toilet or shower facilities or occupy separate housing accommodations from the rest of the force.

The gender transition plan addresses other logistics of the transition. For example, it should specify scheduled time off required for medical procedures, including gender reassignment surgery. In general, medical treatment associated with gender transition is treated like any other medical issue experienced by a service member. However, while hormone replacement therapy is covered by military health care, gender reassignment surgery is not (UK Ministry of Defence, 2009). The policy notes that the timeline and timing of the transition must take into consideration the needs of the service. As a result, at least four weeks notice is typically needed prior to the start of a service member's gender transition. The gender transition plan should also specify whether service members wish to transition in their current post or transfer to a new position and whether they want to tell their colleagues about the gender transition themselves or would like someone else to do this. This decision may depend on the size of the unit. In a small unit, it may be easy to inform fellow service members personally. In a larger organization, it may not be necessary to tell every individual. Commanders of units

with transgender personnel are encouraged to consult members of the Service Equality and Diversity staff about how to approach education and management in matters associated with transgender service members.

The UK policy also addresses medical readiness and physical standards. Transgender personnel are evaluated for medical readiness and deployability on a case-by-case basis following a medical evaluation. During the transition period, specifically during hormone treatment and immediately before and after surgery, service members may receive a reduced Medical Employment Standard, which restricts deployability and sea service (UK Ministry of Defence, 2009). Transitioning service members who continue to meet physical standards throughout this period and are able to perform their jobs may retain normal readiness standards. Usually, those who do not undergo hormone therapy or gender reassignment surgery are able to maintain a fully deployable status throughout their gender transition (UK Ministry of Defence, 2009). Service members who are undergoing hormone therapy are able to deploy, as long as the hormone dose is steady and there are no major side effects. However, deployment to all areas may not be possible, depending on the needs associated with any medication (e.g., refrigeration). Some service members may also be required to have a psychiatric evaluation, but only if they show signs of mental health distress (UK Ministry of Defence, 2009). Individuals who have finished their gender transition and can meet the requirements of their legal gender are considered fully deployable. However, those who remain in a state of reduced readiness for an extended period may have to be discharged (UK Ministry of Defence, 2009). Importantly, the British military encourages individuals who are in the midst of their gender transition and are considering joining the military to wait until the gender transition is complete before joining, as the military may not always be able to provide the support the individual needs during gender transition.

The specific physical standards a transitioning individual must meet during and after the gender transition period are determined on a case-by-case basis. The policy allows that there may be a period of time—especially for individuals transitioning from female to male—during which a service member is not yet able to meet the standards of the target gender. In these cases, medical staff and commanders may assess the individual and determine the appropriate interim standards (UK Ministry of Defence, 2009). Once the gender transition is considered "complete," personnel are required to meet the standards of the target gender (UK Ministry of Defence, 2009). However, the policy recognizes that the point at which the gender transition is complete may vary: It may be complete after hormone therapy or after surgery, or simply after the individual begins living as the target gender. Therefore, the policy continues to allow for some flexibility in physical standards, even for members at the end of their gender transition process (UK Ministry of Defence, 2009). Modified standards may be set by medical staff and commanders, if necessary. Continued failure to meet whatever physical stan-

dards are determined to be appropriate (modified or otherwise) can lead to administrative discharge (UK Ministry of Defence, 2009).

The policy also addresses positions that are "gender-restricted" or have unique standards. The United Kingdom still has a number of combat occupations closed to women. Personnel who are transitioning from male to female may not serve in male-only occupations as long as this policy remains in place. Those transitioning from female to male may hold these jobs, assuming that they are able to meet the physical standards (UK Ministry of Defence, 2009). Transgender personnel may hold positions that have unique standards related to the occupation, as long as they can meet the physical and other requirements for the specific position. Finally, according to the policy, service members may request that their medals be transferred to a new name by submitting the request in writing. They are allowed to continue wearing qualifications earned while serving as their birth gender. However, this may indicate their transgender status to others (UK Ministry of Defence, 2009).

Effects on Cohesion and Readiness

As indicated in Chapter Six, while there is limited research on the effects of transgender personnel serving openly in foreign militaries, the available evidence indicated no significant effect on cohesion, operational effectiveness, or readiness. In the Australian case, there is no evidence and there have been no reports of any effect on cohesion, operational effectiveness, or readiness (Frank, 2010). In the Israeli case, there has also been no reported effect on cohesion or readiness (Speckhard and Paz, 2014). Transgender personnel in these militaries report feeling supported and accommodated throughout their gender transition, and there has been no evidence of any effect on operational effectiveness (Speckhard and Paz, 2014). As noted earlier, commanders report that transgender personnel perform their military duties and contribute to their units effectively (Speckhard and Paz, 2014). Interviews with commanders in the United Kingdom also found no effect on operational effectiveness or readiness (Frank, 2010). Some commanders reported that increases in diversity had led to increases in readiness and performance. Interviews with these same commanders also found no effect on cohesion, though there were some reports of resistance to the policy change within the general military population, which led to a less-than-welcoming environment for transgender personnel. However, this resistance was apparently short-lived (Frank, 2010).

The most extensive research on the potential effects of openly serving transgender personnel on readiness and cohesion has been conducted in Canada. This research involved an extensive review of internal defense reports and memos, an analysis of existing literature, and interviews with military commanders. It found no evidence of any effect on operational effectiveness or readiness. In fact, the researchers

heard from commanders that the increased diversity improved readiness by giving units the tools to address a wider variety of situations and challenges (Okros and Scott, 2015). They also found no evidence of any effect on unit or overall cohesion. However, there have been reports of bullying and hostility toward transgender personnel, and some sources have described the environment as somewhat hostile for transgender personnel (Okros and Scott, 2015).

To summarize, our review of the limited available research found no evidence from Australia, Canada, Israel, or the United Kingdom that allowing transgender personnel to serve openly has had any negative effect on operational effectiveness, cohesion, or readiness. However, it is worth noting that the four militaries considered here have had fairly low numbers of openly serving transgender personnel, and this may be a factor in the limited effect on operational readiness and cohesion.

Best Practices from Foreign Militaries

Several best practices and lessons learned emerged both directly from research articles describing the evolution of policy and the experiences of foreign militaries and indirectly from commonalities in the policies and experiences across our four case studies. The best practices that extended across all cases include the following:

The Importance of Leadership

Sources from each of our case-study countries stressed that leadership support was important to executing the policy change. Leaders provided the impetus to draft and implement new policies and were integral to communicating a message of inclusion to the entire force. Supportive leaders were also important in holding accountable those personnel who participated in discrimination (Okros and Scott, 2015; Speckhard and Paz, 2014). Each of the cases underscores the importance of having strong leadership support to back and enforce the policy change, along with clearly written policies that are linked to national policy wherever possible (Frank, 2010). The militaries found that presenting a "business case" for diversity and emphasizing the advantages of an inclusive military, including better retention and recruiting, can help reduce resistance to a policy change (Frank, 2010).

Awareness Through Broad Diversity Training

The most effective way to educate the force on matters related to transgender personnel is to integrate training on these matters into the diversity and harassment training already given to the entire force. This training addresses all forms of harassment and bullying, including that based on religion, race, and ethnicity (Frank, 2010; Okros and Scott, 2015; Belkin and McNichol, 2000–2001).

In the four cases we reviewed in-depth, we found that targeting only commanders with training and information on what it means to be transgender is not as effective in fostering an inclusive and supportive environment as training that targets the entire force and is integrated into broader forcewide diversity training. The foreign militaries that we examined train not only units with transitioning individuals but also the entire force by including gender identity alongside sexual orientation, religion, ethnicity, and other markers of difference in diversity training and education. However, efforts must be made simultaneously to protect the privacy of transitioning service members. In some cases, telling a unit that a transgender member is arriving before that individual arrives can be counterproductive (Frank, 2010).

The Importance of an Inclusive Environment

An all-inclusive military environment—not just as it pertains to transgender personnel, sexual orientation, or gender identity, but a culture that embraces diversity—can support the integration of openly serving transgender personnel. In this context, gender identity is just one marker of diversity.[5]

Ensuring Availability of Subject-Matter Experts to Advise Commanders

Most of the four countries we examined in-depth also make subject-matter experts (e.g., chaplains, psychiatrists) and gender advisers (individuals who have special training in gender awareness and gender mainstreaming in the military context) available to commanders tasked with the integration of transgender personnel. Gender advisers were originally intended to deal primarily with issues associated with integrating women into male-dominated military environments, but they could also help with other gender-related matters, including transgender personnel policy. They serve directly within military units and are a readily available resource to commanders. Adopting a similar practice of integrating advisers with expertise in the area of transgender personnel policy and gender transition-related matters might also support the integration of transgender service members in the U.S. military.

Lessons Learned and Issues to Consider for U.S. Military Policy

Based on these best practices and the broader experiences of four foreign militaries, there are some key lessons to be learned and possible issues to consider when crafting U.S. military transgender personnel policy. First, in each of the four foreign militaries, there were some reports of resistance, bullying, and harassment of transgender personnel who made their gender transition public. This harassment ranged from exclusion to more aggressive behavior. In most cases, this behavior was relatively limited; however,

[5] Remarks by a Canadian subject-matter expert in a phone discussion with RAND researchers, November 2015.

in some cases, it did contribute to a hostile work environment for transgender personnel and had the effect of discouraging these personnel from being open about their gender transition or gender identity (Okros and Scott, 2015; Frank, 2010). Although the foreign militaries we examined tended to adopt a policy of no tolerance for this type of harassment, some bullying behavior may have gone unreported (Okros and Scott, 2015; Frank, 2010). In the case of Canada, the issue of restrooms for transgender personnel is an ongoing topic of discussion, and restrooms have been a common site of harassment and discrimination (Okros and Scott, 2015).

A second lesson learned is related to problems caused by the lack of an explicit, clearly written policy. For instance, in the IDF, without a clear policy, some transitioning individuals are placed in difficult and uncomfortable situations. For example, in some cases, personnel who have been permitted to begin hormone therapy cannot be housed with members of their target gender or grow their hair and fingernails (in the case of individuals transitioning from male to female). Others have been isolated, assigned to separate housing, or asked to use separate restrooms (Speckhard and Paz, 2014). Recognizing these challenges, IDF leadership is working to design a clear and explicit policy. In the Israeli case, transgender individuals were allowed to serve openly before a formal policy was written. Only when it was faced with questions about the integration of transgender personnel did the IDF begin to create a formal policy.[6] In Canada, a similar policy gap arose when transgender personnel were allowed to serve openly following a national policy revision that ended discrimination based on sexual orientation or gender. However, the focus at that point was on gay and lesbian service members, and no formal policy was created to address transgender personnel explicitly. When matters related to the medical care of transgender personnel arose, Canadian defense leaders developed a policy that just addressed this narrow, pressing issue, and did not develop policies to address the other matters (e.g., housing, restrooms, name changes). Commanders complained that the original policy was too vague and lacked sufficient details. A new, revised policy was written in 2012, and commanders have responded with positive feedback.[7] The lack of a clear, written policy has also been an issue in Australia.

A third and final issue that has come up in at least two of the countries we surveyed is that of awards and medals. In the UK case, medals and awards received prior to gender transition can be transferred to the service member's post-transition name (UK Ministry of Defence, 2009). In the Canadian case, this is not possible, and the awards remain associated only with the original name. This is a cause for concern among transgender personnel in the Canadian military, but Canadian officials have responded that they cannot rewrite history (Okros and Scott, 2015). This is a policy area that the United States should consider alongside other administrative policies.

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[6] Remarks by a Canadian subject-matter expert in a phone discussion with RAND researchers, November 2015.

[7] Remarks by a Canadian subject-matter expert in a phone discussion with RAND researchers, November 2015.

CHAPTER EIGHT

Which DoD Policies Would Need to Be Changed if Transgender Service Members Are Allowed to Serve Openly?

This chapter reviews DoD accession, retention, separation, and deployment policies and provides an assessment of the impact of changes required to allow transgender personnel to serve openly. For our analysis of DoD policies, we reviewed 20 current accession, retention, separation, and deployment regulations across the services and the Office of the Secretary of Defense. We also reviewed 16 other regulations that have been replaced by more recent regulations or did not mention transgender policies.[1] DoDI 6130.03 establishes medical standards for entry into military service, including a list of disqualifying physical and mental conditions, some of which are transgender-related.[2] Current DoD policy also authorizes, but no longer requires, the discharge of transgender personnel for reasons related to both medical conditions that generate disabilities, as well as mental health concerns.[3] However, a July 2015 directive from the Office of the Secretary of Defense elevated decisions to administratively separate transgender service members to the Office of the Under Secretary of Defense for Personnel and Readiness (DoD, 2015b).

Note that our review focused on transgender-specific DoD instructions that may contain unnecessarily restrictive conditions and reflect outdated terminology and assessment processes. However, in simply removing these restrictions, DoD could inadvertently affect overall standards. While we focus on reforms to specific instruc-

[1] These additional policies are listed in Appendix D.

[2] The instruction specifies conditions that disqualify accessions, including "current or history of psychosexual conditions, including but not limited to transsexualism, exhibitionism, transvestism, voyeurism, and other paraphilias"; "history of major abnormalities or defects of the genitalia including but not limited to change of sex, hermaphroditism, pseudohermaphroditism, or pure gonadal dysgenesis"; and "history of major abnormalities or defects of the genitalia such as change of sex, hermaphroditism, pseudohermaphroditism, or pure gonadal dysgenesis" (DoDI 6130.03, 2011, enclosure 4).

[3] "Sexual gender and identity disorders" are specified as medical conditions that may generate disabilities under DoDI 1332.38, enclosure 5 (2006). Mental health conditions are specified in DoDI 1332.14 (2014) and DoDI 1332.30 (2013) for enlisted and officers, respectively. DoDI 1332.18, issued on August 5, 2014, updated these guidelines and established general criteria for referral for disability evaluation and defers to service-specific standards for retention. However, a recent review of this revision suggests that service-specific regulations may still disqualify transgender personnel, and the new guidance may not overrule those service policies (Pollock and Minter, 2014).

tions and directives, we note that DoD may wish to conduct a more expansive review of personnel policies to ensure that individuals who join and remain in service can perform at the desired level, regardless of gender identity.

Accession Policy

The language pertaining to transgender individuals in accession instructions does not match that used in DSM-5.[4] This results in restrictions in DoD policy that do not match current medical understanding of gender identity issues and thus may be misapplied or difficult to interpret in the context of current medical treatments and diagnoses. Under current guidelines, otherwise qualified individuals could be excluded for conditions that are unlikely to affect their military service, and individuals with true restrictions may be more difficult to screen for and identify. Modernizing the terminology to match current psychological and medical understanding of gender identity would help ensure that existing procedures do not inadvertently exclude otherwise qualified individuals who might want to join the military. We recommend that DoD review and revise the language to match the DSM-5 for conditions related to mental fitness so that mental health screening language matches current disorders and facilitates appropriate screening and review processes for disorders that may affect fitness for duty. Similarly, physical fitness standards should specify physical requirements, rather than physical conditions. Finally, the physical fitness language should clarify when in the transition process the service member's target gender requirements will begin to apply.

Retention Policy

We recommend that DoD expand and enhance its guidance and directives to clarify and adjust, where necessary, standards for retention of service members during and after gender transition. Evidence from Canada and Australia suggests that transgender personnel may need to be held medically exempt from physical fitness testing and requirements during transition (Canadian Armed Forces, 2012; Royal Australian Air Force, 2015). However, after completing transition, the service member could be required to meet the standards of the acquired gender. The determination of when the service member is "medically ready" to complete the physical fitness test occurs on a case-by-case basis and is typically made by the unit commander.

[4] Two key changes are that the term *transsexualism* has been replaced, and *gender dysphoria* is no longer in the chapter "Sexual Desire Disorders, Sexual Dysfunctions, and Paraphilias" but, rather, has its own chapter (Milhiser, 2014).

Separation Policy

DoD may wish to revise the current separation process based on lessons learned from the repeal of Don't Ask, Don't Tell. The current process relies on administrative decisions outside the purview of the standard medical and physical review process. This limits the available documentation and opportunities for review, and it could prove burdensome if transgender-related discharges become subject to re-review. When medically appropriate, DoD may wish to establish guidance on when and how such discharge reviews should be handled. We also recommend that DoD develop and disseminate clear criteria for assessing whether transgender-related conditions may interfere with duty performance.

Deployment Policy

Deployment conditions vary significantly based on the unique environment of each deployment, with some deployed environments able to accommodate transgender individuals, even those who are undergoing medical treatments. Moreover, recent medical advancements can minimize the invasiveness of treatments and allow for telemedicine or other forms of remote medical care. Given medical and technological advances, DoD may wish to adjust some of its processes and deployment restrictions to minimize the impact on readiness. For example, current regulations specify that conditions requiring regular laboratory visits make service members ineligible for deployment, including all service members who are receiving hormone treatments,[5] since such treatments require laboratory monitoring every three months for the first year as hormone levels stabilize (Hembree et al., 2009; Elders et al., 2014). Such a change would require DoD to either permit more flexible monitoring strategies[6] or provide training to deployed medical personnel.[7] Similarly, the use of refrigerated medications is a disqualifying condition for deployment,[8] even though nearly all hormone therapies are available in other formats that do not require refrigeration.

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[5] Current regulations state that "medications that require laboratory monitoring or special assessment of a type or frequency that is not available or feasible in a deployed environment" disqualify an individual from deployment (Office of the Assistant Secretary of Defense for Health Affairs, 2013, p. 3).

[6] Some experts suggest that alternatives, such as telehealth reviews, would address this issue for rural populations with limited access to medical care (see, for example, WPATH, 2011).

[7] "Independent duty corpsmen, physician assistants, and nurses can supervise hormone treatment initiated by a physician" (Elders et al., 2014).

[8] The memo issued by the Office of the Assistant Secretary of Defense for Health Affairs states, "Medications that disqualify an individual for deployment include . . . [m]edications that have special storage considerations, such as refrigeration (does not include those medications maintained at medical facilities for inpatient or emergency use)" (Office of the Assistant Secretary of Defense for Health Affairs 2013, p. 3).

CHAPTER NINE

Conclusion

By many measures, there are currently serving U.S. military personnel who are transgender. Overall, our study found that the number of U.S. transgender service members who are likely to seek transition-related care is so small that a change in policy will likely have a marginal impact on health care costs and the readiness of the force. We estimate, based on state-level surveys of transgender prevalence, that between 1,320 and 6,630 transgender personnel may be serving in the AC, and 830–4,160 may be serving in the SR. Estimates based on studies from multiple states, weighted for population and the gender distribution in the military, imply that there are around 2,450 transgender service members in the AC and 1,510 in the SR.[1]

However, only a small proportion of these service members will seek gender transition–related treatment each year. Employing utilization and cost data from the private health insurance system, we estimated the potential impact of providing this care to openly serving transgender personnel on AC health care utilization and costs. Directly applying private health insurance utilization rates to the AC military population indicated that a very small number of service members will access gender transition–related care annually. Our estimates based on private health insurance data ranged from a lower-bound estimate of 29 AC service members to an upper-bound estimate of 129 annually using care, including those seeking both surgical and other medical treatments.

Using estimates from two states and adjusting for the male/female AC distribution, we also estimate a total of 45 gender transition–related surgeries, with 50 service members initiating transition-related hormone therapy annually in the AC.[2] We estimate 30 gender transition-related surgeries and 25 service members initiating hormone therapy treatments in the SR. These are likely to be upper-bound estimates, given the nonrepresentative sample selection procedures used in the NTDS. Furthermore, the best prevalence estimates that we were able to identify were from two of the more transgender-tolerant states in the country, and the empirical evidence that trans-

[1] Estimates are based on FY 2014 AC and SR personnel numbers.

[2] For hormone therapy recipients, the number of treatments and recipients is the same, and these estimates can be treated as counts of individuals.

gender prevalence is higher in the military than in the general population is weak. As a point of comparison, we also compared these estimated values to mental health utilization in the AC population overall. Using data from McKibben et al. (2013), we calculated that approximately 278,517 AC service members accessed mental health care treatment in 2014, the implication being that health care for the transgender population will be a very small part of the total health care provided to AC service members across the MHS.

With respect to health care costs, actuarial estimates from the private health insurance sector indicate that covering gender transition–related care for transgender employees increased premiums by less than 1 percent. Taking a weighted average of the identified firm-level data, we estimate that covering transgender-related care for service members will increase the U.S. military's AC health care spending by only 0.038–0.054 percent. Using these baseline estimates, we estimate that MHS health care costs will increase by between $2.4 million and $8.4 million. These numbers represent only a small proportion of FY 2014 AC health care expenditures ($6.27 billion) and the FY 2014 Unified Medical Program budget ($49.3 billion). This is consistent with our estimate of relatively low AC rates of gender transition–related health care utilization in the MHS.

Similarly, when considering the impact on readiness, we found that using either the prevalence-based approach or the utilization-based approach yielded an estimate of less than 0.0015 percent of total labor-years likely to be affected by a change in policy. This is much smaller than the current lost labor-years due to medical care in the Army alone.

Even if transgender personnel serve in the military at twice the rate of their prevalence in the general population and we use the upper-bound rates of health care utilization, the total proportion of the force that is transgender and would seek treatment would be less than 0.1 percent, with fewer than 130 AC surgical cases per year even at the highest utilization rates. Given this, true usage rates from civilian case studies imply only 30 treatments in the AC, suggesting that the total number of individuals seeking treatment may be substantially smaller than 0.1 percent of the total force. Thus, we estimate the impact on readiness to be negligible.

We conclude with some general recommendations and insights based on the experiences of foreign militaries that permit transgender individuals to serve openly—specifically, Australia, Canada, Israel, and the United Kingdom. Our case studies provide some guidance that policymakers should consider as they develop policies to govern the employment of transgender personnel in the U.S. military. These cases also suggested a number of key implementation practices if a decision is made to allow transgender service members to serve openly:

- Ensure strong leadership support.
- Develop an explicit written policy on all aspects of the gender transition process.

- Provide education and training to the rest of the force on transgender personnel policy, but integrate this training with other diversity-related training and education.
- Develop and enforce a clear anti-harassment policy that addresses harassment aimed at transgender personnel alongside other forces of harassment.
- Make subject-matter experts and gender advisers serving within military units available to commanders seeking guidance or advice on gender transition-related issues.
- Identify and communicate the benefits of an inclusive and diverse workforce.

APPENDIX A

Terminology

Augmentation mammoplasty: breast augmentation involving implants or lipofilling

Buccal administration: placement of medication between the gums and cheek

Chest surgery: surgery to create a contoured, male-looking chest

Clitoroplasty: surgical creation/restoration of a clitoris

Cross-dresser: someone who dresses in the clothes of the other gender, not always on a full-time basis

Female-to-male: those assigned female sex at birth who identify as male; transgender men; transmen

Gender: an individual's gender identity, which is influenced by societal norms and expectations; public, lived role as male or female

Gender assignment: initial assignment at birth as male or female; yields "natal gender" (APA, 2013, p. 451)

Gender atypical: behaviors not typical for one's gender "in a given society and historical era" (APA, 2013, p. 451)

Gender identity: "one's inner sense of one's own gender, which may or may not match the sex assigned at birth" (Office of Personnel Management, 2015, p. 2)

Gender dysphoria: "discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics)" (WPATH, 2011, p. 2).

Gender nonconformity: "the extent to which a person's gender identity, role, or expression differs from the cultural norms prescribed for people of a particular sex" (WPATH, 2011, p. 5, citing Institute of Medicine definition)

Gender transition–related surgery/gender-confirming surgery/sex reassignment surgery: surgery to mitigate distress associated with gender dysphoria by aligning sex characteristics with gender identity

Genderqueer: those who "define their gender outside the construct of male or female, such as having no gender, being androgynous, or having elements of multiple genders" (Roller, Sedlak, and Draucker, 2015, p. 417)

Gluteal augmentation: buttocks augmentation involving implants or lipofilling

Hormone therapy: "the administration of exogenous endocrine agents to induce feminizing or masculinizing changes" (WPATH, 2011, p. 33)

Hysterectomy: surgery to remove the uterus

Intersex: "a general term used for a variety of conditions in which a person is born with a reproductive or sexual anatomy that doesn't seem to fit the typical definitions of female or male" (Intersex Society of North America, undated)

Labiaplasty: plastic surgery for altering or creating the labia

Lipofilling: injection of fat rather than artificial implants

Male-to-female: those assigned male sex at birth who identify as female; transgender females; transwomen

Mastectomy: surgical removal of one or both breasts

Metoidioplasty: surgically relocating a clitoris that has been enlarged by hormone therapy to a more forward position that more closely resembles that of a penis; average length is 1.5–2 inches

Oophorectomy: surgical removal of one or both ovaries

Orchiectomy: surgical removal of one or both testicles

Ovariectomy: surgical removal of one or both ovaries

Parenteral administration: intravenous injection (into a vein) or intramuscular infusion (into muscle) of medication

Penectomy: surgical removal of the penis

Phalloplasty: surgical creation/reconstruction of a penis using one of a variety of techniques including free or pedicled (attached) flap (see Rashid and Tamimy, 2013)

Primary sex characteristics: physical characteristics/sex organs directly involved in reproduction

Salpingo-oophorectomy: removal of the ovaries and fallopian tubes

Scrotoplasty: surgical creation/reconstruction of testicles; in transmen, native labia tissue is used; testicular implants can be used

Secondary sex characteristics: physical characteristics that appear at puberty and vary by sex but are not directly involved in reproduction (e.g., breasts)

Sex: a person's biological status as male or female based on chromosomes, gonads, hormones, and genitals (intersex is a rare exception)

Sexual orientation: sexual identity in relation to the gender to which someone is attracted: heterosexual, homosexual, or bisexual

Thyroid chondroplasty: removal or reduction of the Adam's apple

Transdermal administration: delivery of medication across the skin with patches

Transgender: "an umbrella term used for individuals who have sexual identity or gender expression that differs from their assigned sex at birth" (Roller, Sedlak, and Draucker, 2015, p. 417)

Transsexual: someone whose gender identity is inconsistent with their assigned sex and who desires to permanently transition their physical characteristics to match their inner sense of their own gender

Urethroplasty: surgical reconstruction or fabrication of the urethra.

Vaginectomy (colpectomy): surgical removal of all or part of the vagina

Vaginoplasty: surgical creation/reconstruction of a vagina

Vulvoplasty: surgical creation/reconstruction of the vulva

APPENDIX B

History of DSM Terminology and Diagnoses

A brief historical understanding of the evolving diagnostic nomenclature pertaining to transgender status is important to discussions of related health care. DSM-III (APA, 1980) first contained the diagnosis of transsexualism. DSM-III-R (APA, 1987) introduced gender identity disorder, non-transsexual type. In DSM-IV (APA, 1994), these two diagnoses were merged and called *gender identity disorder*. Gender identity disorder, together with the paraphilias (disorders of extreme, dangerous, or abnormal sexual desire, including transvestic fetishism, sometimes referred to as cross-dressing), constituted the DSM-IV section "Sexual and Gender Identity Disorders."

With DSM-5 (APA, 2013) came the migration from *gender identity disorder* to *gender dysphoria*. The clinical significance of the shift in DSM-5 was great: For the first time, without accompanying symptoms of distress, transgender individuals were no longer considered to have a diagnosable mental disorder. The historical parallel with homosexuality is hard to miss: In 1980, DSM-III similarly normalized the DSM-II diagnosis of homosexuality, moving instead to ego-dystonic homosexuality, a diagnosis reserved only for gay persons who felt related distress. In the next DSM iteration, DSM-III-R, all reference to homosexuality as a diagnostic term was removed. In the aftermath of depathologizing gender nonconformity, a similar move relating to transgender status appears to be underway.

As noted in this report, there is a consensus among clinicians and their professional organizations that transition-related treatment with hormones or surgery constitutes necessary health care, though there is a divide over whether it serves as "a strategy to diminish the serious suffering" of the patient or "a method to assist people in finding self-actualization" (Gijs and Brewaeys, 2007, p. 184). The conclusion that transition-related surgery "is an effective treatment for gender identity disorder in adults" is based primarily on retrospective studies of satisfaction rather than randomized controlled trials or prospective studies (Gijs and Brewaeys, 2007, p. 199). The prevalence of post-operative regret is very low, though "little empirical research has been done" on related risk and protective factors (Gijs and Brewaeys, 2007, pp. 201, 204). Overall, surgery is considered "the most appropriate treatment to alleviate the suffering of extremely gender dysphoric individuals," but rigorous controlled-outcome studies evaluating its

effectiveness should be conducted despite feasibility and ethical challenges (Gijs and Brewaeys, 2007, pp. 215–216; Buchholz, 2015, p. 1786).

DSM-5 Diagnostic Criteria: Gender Dysphoria in Adolescents and Adults 302.85 (F64.1)

A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least two of the following:
   1. A marked incongruence between one's experienced/expressed gender and primary and/or secondary sex characteristics (or in young adolescents, the anticipated secondary sex characteristics).
   2. A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics).
   3. A strong desire for the primary and/or secondary sex characteristics of the other gender.
   4. A strong desire to be of the other gender (or some alternative gender different from one's assigned gender).
   5. A strong desire to be treated as the other gender (or some alternative gender different from one's assigned gender).
   6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's assigned gender).

B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

APPENDIX C

Treatments for Gender Dysphoria

In this appendix, we provide additional details about psychosocial, pharmacologic, surgical, and other treatments for gender dysphoria (GD).

Psychotherapy

The emphasis of psychotherapy for this population today is on "affirming a unique transgender identity," rather than focusing on gender transition (Institute of Medicine, 2011, p. 52). Mental health professionals can also help patients presenting with GD navigate the process of coming out to family, friends, and peers; treat comorbid mental health conditions;[1] weigh options related to gender identity, gender expression, and transition-related treatment interventions; and conduct assessments, make referrals, and guide preparation for and provide support through the transition-related treatment process (WPATH, 2011, pp. 22–26). Referral from a mental health professional is necessary under the standards of care for those seeking breast/chest or genital surgeries, and the latter also requires confirmation from an independent mental health provider (WPATH, 2011, p. 27). Mental health providers may also serve an important role on behalf of their patients by providing education and advocacy within the community and supporting changes to identity documents (WPATH, 2011, p. 31).

Of note, treatment aimed at changing one's gender identity to align with the sex assigned at birth has proven unsuccessful and is no longer considered ethical care; mental health providers who are unwilling or unable to provide appropriate care should refer patients to a provider who is (WPATH, 2011, p. 32).

Hormone Therapy

Hormone therapy is necessary for many individuals with GD (WPATH, 2011, p. 33). It has two major goals: (1) reduce naturally occurring hormones to minimize secondary sex characteristics and (2) maximize desired feminization/masculinization using the principles and medications used for hormone replacement in non-transgender patients who do not produce enough hormones, such as women who have had hyster-

[1] Co-occurring mental health conditions could range from anxiety and depression, which are common among the transgender population, to more severe and rare illnesses, such as schizophrenia or bipolar disorder.

ectomies or men with low testosterone (WPATH, 2011, p. 33; Hembree et al., 2009). As with most medications, there are risks, which may increase in the presence of some health conditions or behaviors (such as smoking); these should be evaluated and managed (Hembree et al., 2009).

For those transitioning from female to male, hormone therapy should lead to "deepened voice, clitoral enlargement (variable, 3–8 cm), growth in facial and body hair, cessation of menses, atrophy of breast tissue, increased libido, and increased percentage of body fat." For those transitioning from male to female, hormone therapy should lead to "breast growth (variable), decreased libido and erections, decreased testicular size, and increased percentage of body fat" (WPATH, 2011, p. 36). The timeline for these and other physical changes varies by individual; expected onset is within months, and maximum expected effect (such as body fat and muscle mass changes) is generally achieved in three or more years. Feminizing hormone therapy typically involves both estrogen and antiandrogens.[2] Masculinizing hormone therapy consists primarily of testosterone, which is available in oral, transdermal, parenteral (intravenous/intramuscular), buccal (cheek), and implantable administrations; brief use of progestin can help stop menstrual periods early in treatment (WPATH, 2011, p. 49). Detailed clinical practice guidelines are available from the Endocrine Society (Hembree et al., 2009).

Gender Transition–Related Surgery

As noted, gender transition–related surgery (also called sex reassignment surgery or gender-confirming surgery) is necessary for some transgender patients. Under the standards of care, mental health professionals must refer patients for surgery; in addition, criteria for both breast/chest and genital surgery include persistent and well-documented GD, the capacity to make informed decisions and to consent, and for other mental or general health concerns to be reasonably well controlled if present (WPATH, 2011, p. 59). Hormone therapy is not a prerequisite for breast/chest (also called "top") surgery, though it is recommended for 12–24 months for male-to-female patients to achieve optimal results (Hembree et al., 2009).

For genital (also called "bottom") surgery, 12 continuous months of hormone therapy are required prior to oophorectomy or orchiectomy (surgical removal of ovaries or testicles), unless contraindicated; health record documentation of "12 continuous months of living in a gender role that is congruent with their gender identity . . . consistently, on a day-to-day basis and across all settings of life" is also required for metoidioplasty (surgical relocation of an enlarged clitoris), phalloplasty (surgical creation of a penis), or vaginoplasty (surgical creation of a vagina; WPATH, 2011,

[2] Transdermal rather than oral estrogen is recommended. Common antiandrogens include spironolactone (an antihypertensive agent that requires electrolyte monitoring); cyproterone acetate (not approved in the United States); GnRH agonists, such as gosrelin, buserelin, or triptorelin (available as injectables or implants); and 5-alpha reductase inhibitors, such as finasteride and dutasteride (WPATH, 2011, p. 48).

pp. 60–61). Mastectomy is often the only surgery undertaken by the female-to-male population; for those who do undergo genital surgery, phalloplasty is relatively uncommon, as it often requires multiple procedures and has frequent complications (WPATH, 2011, pp. 63–64). Surgeons should work closely with patients and other care providers, if needed, to ensure that the advantages, disadvantages, and risks of various treatments and procedures are well understood.

Other Treatments

Aside from breast/chest and genital surgery, other surgical interventions may include liposuction, lipofilling, and various aesthetic procedures. For male-to-female patients, these may include "facial feminization surgery, voice surgery, thyroid cartilage reduction, gluteal augmentation (implants/lipofilling), [and] hair reconstruction"; female-to-male patients may seek pectoral implants (WPATH, 2011, pp. 57–58). There is ongoing debate regarding whether these and other transition-related treatments are "medically necessary" (and therefore covered by insurance). For example, in some circumstances, facial hair removal for male-to-female patients may constitute necessary transition-related treatment: One study found that those who have undergone the procedure were "less likely to experience harassment in public spaces," and harassment can "have a negative impact on the success of a person's treatment for gender dysphoria" (Herman, 2013b, p. 19). In addition, voice and communication therapy to develop vocal characteristics and nonverbal communication patterns congruent with gender identity may prevent "vocal misuse and long-term vocal damage" (WPATH, 2011, pp. 52–54).

APPENDIX D

Review of Accession, Retention, and Separation Regulations

Directive	Date	Department
Air Force Instruction 36-2002, *Regular Air Force and Special Category Accessions*	4/7/1999, revised 6/2/2014	Air Force
Air Force Instruction Guidance Memorandum AFI48-123_AFGM2015-01, "Guidance Memorandum: AFI 48-123, *Medical Examinations and Standards*"	8/27/2015	Air Force
Air Force Instruction Guidance Memorandum 48-123_AFGM4, "Air Force Guidance Memorandum to AFI 48-123, *Medical Examinations and Standards*"	1/29/2013	Air Force
Air Force Recruiting Service Instruction 36-2001, *Recruiting Procedures for the Air Force*	8/1/2012	Air Force
Air Force Instruction 41-210, *TRICARE Operations and Patient Administration Functions*	6/6/2012	Air Force
U.S. Army Recruiting Command, *Pocket Recruiter Guide*	7/1/2013	Army
Army Regulation 635-40, *Physical Evaluation for Retention, Retirement, or Separation*	3/20/2012	Army
Army Regulation 601-280, *Army Retention Program*	9/15/2011	Army
Army Regulation 40-501, *Standards of Medical Fitness*	8/4/2011	Army
Army Regulation 40-66, *Medical Record Administration and Healthcare Documentation*	1/4/2010	Army
Army Regulation 635-200, *Active Duty Enlisted Administrative Separations*	9/6/2011	Army
Army Regulation 601-210, *Active and Reserve Components Enlistment Program*	3/12/2013	Army
DoDI 6130.03, *Medical Standards for Appointment, Enlistment, or Induction in the Military Services*	4/28/2010, revised 9/13/11	DoD
DoDI 1332.18, *Disability Evaluation System (DES)*	8/5/2014	DoD
Office of the Under Secretary of Defense for Personnel and Readiness, *Disability Evaluation System (DES) Pilot Operations Manual*	12/2008	DoD

Directive	Date	Department
Marine Corps Order 1040.31, *Enlisted Retention and Career Development Program*	9/8/2010	Marine Corps
Marine Corps Order 6110.3, *Marine Corps Body Composition and Military Appearance Program*	8/8/2008	Marine Corps
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Navy Military Personnel Manual 1306-964, "Recruiting Duty"	5/9/2014	Navy
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Current U.S. Department of Defense (DoD) policy bans transgender personnel from serving openly in the military. DoD has begun considering changes to this policy, but the prospect raises questions regarding access to gender transition–related health care, the range of transition-related treatments that DoD will need to provide, the potential costs associated with these treatments, and the impact of these health care needs on force readiness and the deployability of transgender service members. A RAND study identified the health care needs of the transgender population and transgender service members in particular. It also examined the costs of covering transition-related treatments, assessed the potential readiness implications of a policy change, and reviewed the experiences of foreign militaries that permit transgender service members to serve openly.

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Understanding the Transgender Community

Filed under: Transgender, Transgender Children & Youth

Transgender people come from all walks of life. We are dads and moms, brothers and sisters, sons and daughters. We are your coworkers, and your neighbors. We are 7-year-old children and 70-year-old grandparents. We are a diverse community, representing all racial and ethnic backgrounds, as well as faith backgrounds.

The word "transgender" – or trans – is an umbrella term for people whose gender identity is different from the sex assigned to us at birth. Although the word "transgender" and our modern definition of it only came into use in the late 20th century, people who would fit under this definition have existed in every culture throughout recorded history.

Despite the increased visibility of transgender celebrities like actress Laverne Cox or writer Janet Mock, many Americans still don't personally know anyone who is transgender – but the number who do is growing rapidly. According to a 2016 survey by Greenberg Quinlan Rosner Research, commissioned by the Human Rights Campaign, 35 percent of likely voters in the United States "personally know or work with someone who is transgender." That's more than double the 17 percent who answered yes when asked the same question in 2014.

Other research suggests that there are at least 700,000 transgender people in the United States, about 0.3 percent of the total population and about 3.5 percent of the LGBTQ community; but these estimates are likely conservative because of the limited amount of studies that have attempted to measure the transgender population.

What does it mean to be transgender?

The transgender community is incredibly diverse. Some transgender people identify as male or female, and some identify as genderqueer, nonbinary, agender, or somewhere else on or outside of the spectrum of what we understand gender to be. Some of us take hormones and have surgery as part of our transition, and some don't. Some choose to openly identify as transgender, while others simply identify as men or women. For more information on questions you may have about transgender people, check out our Transgender FAQ.

In the HRC Foundation's 2012 survey of LGBTQ youth, about 10 percent of respondents identified themselves either as "transgender" or as "other gender," and wrote in identities like "genderqueer," "gender-fluid" or "androgynous." This suggests that a larger portion of this generation's youth are identifying somewhere on the broad transgender spectrum.
In many ways, transgender people are just like cisgender (non-transgender) people; but because of the social stigma surrounding our transgender identity, our community faces a unique set of challenges.

What challenges do transgender people face?

While the visibility of transgender people is increasing in popular culture and daily life, we still face severe discrimination, stigma and systemic inequality. Some of the specific issues facing the transgender community are:

- **Lack of legal protection**– While the federal government's Equal Employment Opportunity Commission (EEOC) and the Department of Education have recently taken steps to include transgender people under existing non-discrimination protections, there is still no comprehensive non-discrimination law that includes gender identity. According to the Human Rights Campaign's 2014 State Equality Index, only 18 states and the District of Columbia prohibit employment and housing discrimination based on gender identity; only 17 states and the District of Columbia prohibit discrimination based on gender identity in public accommodations; and only 15 states and the District of Columbia prohibit discrimination based on gender identity in education. Moreover, state legislatures across the country are debating – and in some cases passing – legislation specifically designed to prohibit transgender people from accessing public bathrooms that correspond with our gender identity, or creating exemptions based on religious beliefs that would allow discrimination against LGBTQ people.

- **Poverty**– In too many cases, this lack of legal protection translates into unemployment for transgender people. The National Transgender Discrimination Survey (NTDS) found that 15 percent of respondents were living in severe poverty (making less than $10,000/year). For transgender people of color, those rates were even higher, with 34 percent of Black and 28 percent of Latina/o respondents reporting a household income of less than $10,000 a year. As anyone who has experienced poverty or unemployment understands, being unable to afford basic living necessities can result in homelessness or lead people to engage in underground economies like drug sales or survival sex work, which can put people at increased risk for violence and arrest.

- **Harassment and stigma**– The LGBTQ community still faces considerable stigma based on over a century of being characterized as mentally ill, socially deviant and sexually predatory. While these flawed views have faded in recent years for lesbians and gay men, transgender people are still often met with ridicule from a society that does not understand us. This stigma plays out in a variety of contexts – leaving us vulnerable to lawmakers who attempt to leverage anti-transgender stigma to score cheap political points; to family, friends or coworkers who reject transgender people upon learning about our transgender identities; and to people who harass, bully and commit serious violence against transgender people.

- **Anti-transgender violence**– At least 13 transgender women were murdered in 2014, and 2015 is on track to see even higher numbers. These women were stabbed, shot, strangled, burned; killed violently by intimate partners or strangers. According to the 2013 National Coalition of

Anti-Violence Programs (NCAVP) report on hate violence against lesbian, bisexual, transgender, queer and HIV-affected (LGBTQH) communities, 72 percent of the victims of LGBTQ or HIV-motivated hate violence homicides in 2013 were transgender women, and 67 percent were transgender women of color. Transgender people have few options for protecting ourselves from violence or seeking justice. The NTDS found that 22 percent of transgender people who had interacted with police experienced bias-based harassment from police, with transgender people of color reporting much higher rates. Six percent reported physical assault; 2 percent reported sexual assault by police; and 20 percent reported having been denied equal service by law enforcement. Nearly half of the transgender people surveyed in the study said that they were uncomfortable turning to police for help.

- **Barriers to healthcare**– Data collection on health disparities among transgender people is very limited, but the data we do have reveal a healthcare system that is not meeting the needs of the transgender community. In a 2012 needs assessment by the Washington D.C. Trans Coalition, 44 percent of those who identified health as one of their top priorities said that access to transgender-sensitive healthcare was their most significant need. Beyond facing barriers to obtaining medically-necessary health services and encountering medical professionals who lacked transgender health care competency, the NTDS found that almost 20 percent of respondents had been refused medical care outright because of bias.

- **Identity Documents** – The widespread lack of accurate identity documents among transgender people can have an impact on every area of their lives, including access to emergency housing or other public services. To be clear, without identification, one cannot travel, register for school or access many services that are essential to function in society. Many states require evidence of medical transition – which can be prohibitively expensive and is not something that all transgender people want – as well as fees for processing new identity documents, which may make them unaffordable for some members of the transgender community. The NTDS found that among those respondents who have already transitioned, 33 percent had not been able to update any of their identity documents to match their affirmed gender.

While advocates continue working to remedy these disparities, change cannot come too soon for transgender people. Visibility – especially positive images of transgender people in the media and society – continues to make a critical difference for us; but visibility is not enough and comes with real risks to our safety, especially for those of us who are part of other marginalized communities. That is why the Human Rights Campaign is committed to continuing to support and advocate for

the transgender community, so that the transgender Americans who are and will become your friends, neighbors, coworkers and family members have an equal chance to succeed and thrive.

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DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS

FIFTH EDITION

DSM-5™

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Gender Dysphoria

In this chapter, there is one overarching diagnosis of gender dysphoria, with separate developmentally appropriate criteria sets for children and for adolescents and adults. The area of sex and gender is highly controversial and has led to a proliferation of terms whose meanings vary over time and within and between disciplines. An additional source of confusion is that in English "sex" connotes both male/female and sexuality. This chapter employs constructs and terms as they are widely used by clinicians from various disciplines with specialization in this area. In this chapter, *sex* and *sexual* refer to the biological indicators of male and female (understood in the context of reproductive capacity), such as in sex chromosomes, gonads, sex hormones, and nonambiguous internal and external genitalia. Disorders of sex development denote conditions of inborn somatic deviations of the reproductive tract from the norm and/or discrepancies among the biological indicators of male and female. *Cross-sex* hormone treatment denotes the use of feminizing hormones in an individual assigned male at birth based on traditional biological indicators or the use of masculinizing hormones in an individual assigned female at birth.

The need to introduce the term *gender* arose with the realization that for individuals with conflicting or ambiguous biological indicators of sex (i.e., "intersex"), the lived role in society and/or the identification as male or female could not be uniformly associated with or predicted from the biological indicators and, later, that some individuals develop an identity as female or male at variance with their uniform set of classical biological indicators. Thus, *gender* is used to denote the public (and usually legally recognized) lived role as boy or girl, man or woman, but, in contrast to certain social constructionist theories, biological factors are seen as contributing, in interaction with social and psychological factors, to gender development. *Gender assignment* refers to the initial assignment as male or female. This occurs usually at birth and, thereby, yields the "natal gender." *Gender-atypical* refers to somatic features or behaviors that are not typical (in a statistical sense) of individuals with the same assigned gender in a given society and historical era; for behavior, *gender-nonconforming* is an alternative descriptive term. *Gender reassignment* denotes an official (and usually legal) change of gender. *Gender identity* is a category of social identity and refers to an individual's identification as male, female, or, occasionally, some category other than male or female. *Gender dysphoria* as a general descriptive term refers to an individual's affective/cognitive discontent with the assigned gender but is more specifically defined when used as a diagnostic category. *Transgender* refers to the broad spectrum of individuals who transiently or persistently identify with a gender different from their natal gender. *Transsexual* denotes an individual who seeks, or has undergone, a social transition from male to female or female to male, which in many, but not all, cases also involves a somatic transition by cross-sex hormone treatment and genital surgery (*sex reassignment surgery*).

Gender dysphoria refers to the distress that may accompany the incongruence between one's experienced or expressed gender and one's assigned gender. Although not all individuals will experience distress as a result of such incongruence, many are distressed if the desired physical interventions by means of hormones and/or surgery are not available. The current term is more descriptive than the previous DSM-IV term *gender identity disorder* and focuses on dysphoria as the clinical problem, not identity per se.

Gender Dysphoria

Diagnostic Criteria

Gender Dysphoria in Children 302.6 (F64.2)

A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least six of the following (one of which must be Criterion A1):

1. A strong desire to be of the other gender or an insistence that one is the other gender (or some alternative gender different from one's assigned gender).
2. In boys (assigned gender), a strong preference for cross-dressing or simulating female attire; or in girls (assigned gender), a strong preference for wearing only typical masculine clothing and a strong resistance to the wearing of typical feminine clothing.
3. A strong preference for cross-gender roles in make-believe play or fantasy play.
4. A strong preference for the toys, games, or activities stereotypically used or engaged in by the other gender.
5. A strong preference for playmates of the other gender.
6. In boys (assigned gender), a strong rejection of typically masculine toys, games, and activities and a strong avoidance of rough-and-tumble play; or in girls (assigned gender), a strong rejection of typically feminine toys, games, and activities.
7. A strong dislike of one's sexual anatomy.
8. A strong desire for the primary and/or secondary sex characteristics that match one's experienced gender.

B. The condition is associated with clinically significant distress or impairment in social, school, or other important areas of functioning.

Specify if:

With a disorder of sex development (e.g., a congenital adrenogenital disorder such as 255.2 [E25.0] congenital adrenal hyperplasia or 259.50 [E34.50] androgen insensitivity syndrome).

Coding note: Code the disorder of sex development as well as gender dysphoria.

Gender Dysphoria in Adolescents and Adults 302.85 (F64.1)

A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least two of the following:

1. A marked incongruence between one's experienced/expressed gender and primary and/or secondary sex characteristics (or in young adolescents, the anticipated secondary sex characteristics).
2. A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics).
3. A strong desire for the primary and/or secondary sex characteristics of the other gender.
4. A strong desire to be of the other gender (or some alternative gender different from one's assigned gender).
5. A strong desire to be treated as the other gender (or some alternative gender different from one's assigned gender).
6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's assigned gender).

B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

With a disorder of sex development (e.g., a congenital adrenogenital disorder such as 255.2 [E25.0] congenital adrenal hyperplasia or 259.50 [E34.50] androgen insensitivity syndrome).

Coding note: Code the disorder of sex development as well as gender dysphoria.

Specify if:

Posttransition: The individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one cross-sex medical procedure or treatment regimen—namely, regular cross-sex hormone treatment or gender reassignment surgery confirming the desired gender (e.g., penectomy, vaginoplasty in a natal male; mastectomy or phalloplasty in a natal female).

Specifiers

The posttransition specifier may be used in the context of continuing treatment procedures that serve to support the new gender assignment.

Diagnostic Features

Individuals with gender dysphoria have a marked incongruence between the gender they have been assigned to (usually at birth, referred to as *natal gender*) and their experienced/expressed gender. This discrepancy is the core component of the diagnosis. There must also be evidence of distress about this incongruence. Experienced gender may include alternative gender identities beyond binary stereotypes. Consequently, the distress is not limited to a desire to simply be of the other gender, but may include a desire to be of an alternative gender, provided that it differs from the individual's assigned gender.

Gender dysphoria manifests itself differently in different age groups. Prepubertal natal girls with gender dysphoria may express the wish to be a boy, assert they are a boy, or assert they will grow up to be a man. They prefer boys' clothing and hairstyles, are often perceived by strangers as boys, and may ask to be called by a boy's name. Usually, they display intense negative reactions to parental attempts to have them wear dresses or other feminine attire. Some may refuse to attend school or social events where such clothes are required. These girls may demonstrate marked cross-gender identification in role-playing, dreams, and fantasies. Contact sports, rough-and-tumble play, traditional boyhood games, and boys as playmates are most often preferred. They show little interest in stereotypically feminine toys (e.g., dolls) or activities (e.g., feminine dress-up or role-play). Occasionally, they refuse to urinate in a sitting position. Some natal girls may express a desire to have a penis or claim to have a penis or that they will grow one when older. They may also state that they do not want to develop breasts or menstruate.

Prepubertal natal boys with gender dysphoria may express the wish to be a girl or assert they are a girl or that they will grow up to be a woman. They have a preference for dressing in girls' or women's clothes or may improvise clothing from available materials (e.g., using towels, aprons, and scarves for long hair or skirts). These children may role-play female figures (e.g., playing "mother") and often are intensely interested in female fantasy figures. Traditional feminine activities, stereotypical games, and pastimes (e.g., "playing house"; drawing feminine pictures; watching television or videos of favorite female characters) are most often preferred. Stereotypical female-type dolls (e.g., Barbie) are often favorite toys, and girls are their preferred playmates. They avoid rough-and-tumble play and competitive sports and have little interest in stereotypically masculine toys (e.g., cars, trucks). Some may pretend not to have a penis and insist on sitting to urinate. More

rarely, they may state that they find their penis or testes disgusting, that they wish them removed, or that they have, or wish to have, a vagina.

In young adolescents with gender dysphoria, clinical features may resemble those of children or adults with the condition, depending on developmental level. As secondary sex characteristics of young adolescents are not yet fully developed, these individuals may not state dislike of them, but they are concerned about imminent physical changes.

In adults with gender dysphoria, the discrepancy between experienced gender and physical sex characteristics is often, but not always, accompanied by a desire to be rid of primary and/or secondary sex characteristics and/or a strong desire to acquire some primary and/or secondary sex characteristics of the other gender. To varying degrees, adults with gender dysphoria may adopt the behavior, clothing, and mannerisms of the experienced gender. They feel uncomfortable being regarded by others, or functioning in society, as members of their assigned gender. Some adults may have a strong desire to be of a different gender and treated as such, and they may have an inner certainty to feel and respond as the experienced gender without seeking medical treatment to alter body characteristics. They may find other ways to resolve the incongruence between experienced/expressed and assigned gender by partially living in the desired role or by adopting a gender role neither conventionally male nor conventionally female.

Associated Features Supporting Diagnosis

When visible signs of puberty develop, natal boys may shave their legs at the first signs of hair growth. They sometimes bind their genitals to make erections less visible. Girls may bind their breasts, walk with a stoop, or use loose sweaters to make breasts less visible. Increasingly, adolescents request, or may obtain without medical prescription and supervision, hormonal suppressors ("blockers") of gonadal steroids (e.g., gonadotropin-releasing hormone [GnRH] analog, spironolactone). Clinically referred adolescents often want hormone treatment and many also wish for gender reassignment surgery. Adolescents living in an accepting environment may openly express the desire to be and be treated as the experienced gender and dress partly or completely as the experienced gender, have a hairstyle typical of the experienced gender, preferentially seek friendships with peers of the other gender, and/or adopt a new first name consistent with the experienced gender. Older adolescents, when sexually active, usually do not show or allow partners to touch their sexual organs. For adults with an aversion toward their genitals, sexual activity is constrained by the preference that their genitals not be seen or touched by their partners. Some adults may seek hormone treatment (sometimes without medical prescription and supervision) and gender reassignment surgery. Others are satisfied with either hormone treatment or surgery alone.

Adolescents and adults with gender dysphoria before gender reassignment are at increased risk for suicidal ideation, suicide attempts, and suicides. After gender reassignment, adjustment may vary, and suicide risk may persist.

Prevalence

For natal adult males, prevalence ranges from 0.005% to 0.014%, and for natal females, from 0.002% to 0.003%. Since not all adults seeking hormone treatment and surgical reassignment attend specialty clinics, these rates are likely modest underestimates. Sex differences in rate of referrals to specialty clinics vary by age group. In children, sex ratios of natal boys to girls range from 2:1 to 4.5:1. In adolescents, the sex ratio is close to parity; in adults, the sex ratio favors natal males, with ratios ranging from 1:1 to 6.1:1. In two countries, the sex ratio appears to favor natal females (Japan: 2.2:1; Poland: 3.4:1).

Development and Course

Because expression of gender dysphoria varies with age, there are separate criteria sets for children versus adolescents and adults. Criteria for children are defined in a more con-

crete, behavioral manner than those for adolescents and adults. Many of the core criteria draw on well-documented behavioral gender differences between typically developing boys and girls. Young children are less likely than older children, adolescents, and adults to express extreme and persistent anatomic dysphoria. In adolescents and adults, incongruence between experienced gender and somatic sex is a central feature of the diagnosis. Factors related to distress and impairment also vary with age. A very young child may show signs of distress (e.g., intense crying) only when parents tell the child that he or she is "really" not a member of the other gender but only "desires" to be. Distress may not be manifest in social environments supportive of the child's desire to live in the role of the other gender and may emerge only if the desire is interfered with. In adolescents and adults, distress may manifest because of strong incongruence between experienced gender and somatic sex. Such distress may, however, be mitigated by supportive environments and knowledge that biomedical treatments exist to reduce incongruence. Impairment (e.g., school refusal, development of depression, anxiety, and substance abuse) may be a consequence of gender dysphoria.

Gender dysphoria without a disorder of sex development. For clinic-referred children, onset of cross-gender behaviors is usually between ages 2 and 4 years. This corresponds to the developmental time period in which most typically developing children begin expressing gendered behaviors and interests. For some preschool-age children, both pervasive cross-gender behaviors and the expressed desire to be the other gender may be present, or, more rarely, labeling oneself as a member of the other gender may occur. In some cases, the expressed desire to be the other gender appears later, usually at entry into elementary school. A small minority of children express discomfort with their sexual anatomy or will state the desire to have a sexual anatomy corresponding to the experienced gender ("anatomic dysphoria"). Expressions of anatomic dysphoria become more common as children with gender dysphoria approach and anticipate puberty.

Rates of persistence of gender dysphoria from childhood into adolescence or adulthood vary. In natal males, persistence has ranged from 2.2% to 30%. In natal females, persistence has ranged from 12% to 50%. Persistence of gender dysphoria is modestly correlated with dimensional measures of severity ascertained at the time of a childhood baseline assessment. In one sample of natal males, lower socioeconomic background was also modestly correlated with persistence. It is unclear if particular therapeutic approaches to gender dysphoria in children are related to rates of long-term persistence. Extant follow-up samples consisted of children receiving no formal therapeutic intervention or receiving therapeutic interventions of various types, ranging from active efforts to reduce gender dysphoria to a more neutral, "watchful waiting" approach. It is unclear if children "encouraged" or supported to live socially in the desired gender will show higher rates of persistence, since such children have not yet been followed longitudinally in a systematic manner. For both natal male and female children showing persistence, almost all are sexually attracted to individuals of their natal sex. For natal male children whose gender dysphoria does not persist, the majority are *androphilic* (sexually attracted to males) and often self-identify as gay or homosexual (ranging from 63% to 100%). In natal female children whose gender dysphoria does not persist, the percentage who are *gynephilic* (sexually attracted to females) and self-identify as lesbian is lower (ranging from 32% to 50%).

In both adolescent and adult natal males, there are two broad trajectories for development of gender dysphoria: early onset and late onset. *Early-onset gender dysphoria* starts in childhood and continues into adolescence and adulthood; or, there is an intermittent period in which the gender dysphoria desists and these individuals self-identify as gay or homosexual, followed by recurrence of gender dysphoria. *Late-onset gender dysphoria* occurs around puberty or much later in life. Some of these individuals report having had a desire to be of the other gender in childhood that was not expressed verbally to others. Others do not recall any signs of childhood gender dysphoria. For adolescent males with late-onset gender dysphoria, parents often report surprise because they did not see signs of gender

dysphoria during childhood. Expressions of anatomic dysphoria are more common and salient in adolescents and adults once secondary sex characteristics have developed.

Adolescent and adult natal males with early-onset gender dysphoria are almost always sexually attracted to men (androphilic). Adolescents and adults with late-onset gender dysphoria frequently engage in transvestic behavior with sexual excitement. The majority of these individuals are gynephilic or sexually attracted to other posttransition natal males with late-onset gender dysphoria. A substantial percentage of adult males with late-onset gender dysphoria cohabit with or are married to natal females. After gender transition, many self-identify as lesbian. Among adult natal males with gender dysphoria, the early-onset group seeks out clinical care for hormone treatment and reassignment surgery at an earlier age than does the late-onset group. The late-onset group may have more fluctuations in the degree of gender dysphoria and be more ambivalent about and less likely satisfied after gender reassignment surgery.

In both adolescent and adult natal females, the most common course is the early-onset form of gender dysphoria. The late-onset form is much less common in natal females compared with natal males. As in natal males with gender dysphoria, there may have been a period in which the gender dysphoria desisted and these individuals self-identified as lesbian; however, with recurrence of gender dysphoria, clinical consultation is sought, often with the desire for hormone treatment and reassignment surgery. Parents of natal adolescent females with the late-onset form also report surprise, as no signs of childhood gender dysphoria were evident. Expressions of anatomic dysphoria are much more common and salient in adolescents and adults than in children.

Adolescent and adult natal females with early-onset gender dysphoria are almost always gynephilic. Adolescents and adults with the late-onset form of gender dysphoria are usually androphilic and after gender transition self-identify as gay men. Natal females with the late-onset form do not have co-occurring transvestic behavior with sexual excitement.

Gender dysphoria in association with a disorder of sex development. Most individuals with a disorder of sex development who develop gender dysphoria have already come to medical attention at an early age. For many, starting at birth, issues of gender assignment were raised by physicians and parents. Moreover, as infertility is quite common for this group, physicians are more willing to perform cross-sex hormone treatments and genital surgery before adulthood.

Disorders of sex development in general are frequently associated with gender-atypical behavior starting in early childhood. However, in the majority of cases, this does not lead to gender dysphoria. As individuals with a disorder of sex development become aware of their medical history and condition, many experience uncertainty about their gender, as opposed to developing a firm conviction that they are another gender. However, most do not progress to gender transition. Gender dysphoria and gender transition may vary considerably as a function of a disorder of sex development, its severity, and assigned gender.

Risk and Prognostic Factors

Temperamental. For individuals with gender dysphoria without a disorder of sex development, atypical gender behavior among individuals with early-onset gender dysphoria develops in early preschool age, and it is possible that a high degree of atypicality makes the development of gender dysphoria and its persistence into adolescence and adulthood more likely.

Environmental. Among individuals with gender dysphoria without a disorder of sex development, males with gender dysphoria (in both childhood and adolescence) more commonly have older brothers than do males without the condition. Additional predisposing

factors under consideration, especially in individuals with late-onset gender dysphoria (adolescence, adulthood), include habitual fetishistic transvestism developing into autogynephilia (i.e., sexual arousal associated with the thought or image of oneself as a woman) and other forms of more general social, psychological, or developmental problems.

Genetic and physiological. For individuals with gender dysphoria without a disorder of sex development, some genetic contribution is suggested by evidence for (weak) familiality of transsexualism among nontwin siblings, increased concordance for transsexualism in monozygotic compared with dizygotic same-sex twins, and some degree of heritability of gender dysphoria. As to endocrine findings, no endogenous systemic abnormalities in sex-hormone levels have been found in 46,XY individuals, whereas there appear to be increased androgen levels (in the range found in hirsute women but far below normal male levels) in 46,XX individuals. Overall, current evidence is insufficient to label gender dysphoria without a disorder of sex development as a form of intersexuality limited to the central nervous system.

In gender dysphoria associated with a disorder of sex development, the likelihood of later gender dysphoria is increased if prenatal production and utilization (via receptor sensitivity) of androgens are grossly atypical relative to what is usually seen in individuals with the same assigned gender. Examples include 46,XY individuals with a history of normal male prenatal hormone milieu but inborn nonhormonal genital defects (as in cloacal bladder exstrophy or penile agenesis) and who have been assigned to the female gender. The likelihood of gender dysphoria is further enhanced by additional, prolonged, highly gender-atypical postnatal androgen exposure with somatic virilization as may occur in female-raised and noncastrated 46,XY individuals with 5-alpha reductase-2 deficiency or 17-beta-hydroxysteroid dehydrogenase-3 deficiency or in female-raised 46,XX individuals with classical congenital adrenal hyperplasia with prolonged periods of non-adherence to glucocorticoid replacement therapy. However, the prenatal androgen milieu is more closely related to gendered behavior than to gender identity. Many individuals with disorders of sex development and markedly gender-atypical behavior do not develop gender dysphoria. Thus, gender-atypical behavior by itself should not be interpreted as an indicator of current or future gender dysphoria. There appears to be a higher rate of gender dysphoria and patient-initiated gender change from assigned female to male than from assigned male to female in 46,XY individuals with a disorder of sex development.

Culture-Related Diagnostic Issues

Individuals with gender dysphoria have been reported across many countries and cultures. The equivalent of gender dysphoria has also been reported in individuals living in cultures with institutionalized gender categories other than male or female. It is unclear whether with these individuals the diagnostic criteria for gender dysphoria would be met.

Diagnostic Markers

Individuals with a somatic disorder of sex development show some correlation of final gender identity outcome with the degree of prenatal androgen production and utilization. However, the correlation is not robust enough for the biological factor, where ascertainable, to replace a detailed and comprehensive diagnostic interview evaluation for gender dysphoria.

Functional Consequences of Gender Dysphoria

Preoccupation with cross-gender wishes may develop at all ages after the first 2–3 years of childhood and often interfere with daily activities. In older children, failure to develop age-typical same-sex peer relationships and skills may lead to isolation from peer groups and to distress. Some children may refuse to attend school because of teasing and harass-

ment or pressure to dress in attire associated with their assigned sex. Also in adolescents and adults, preoccupation with cross-gender wishes often interferes with daily activities. Relationship difficulties, including sexual relationship problems, are common, and functioning at school or at work may be impaired. Gender dysphoria, along with atypical gender expression, is associated with high levels of stigmatization, discrimination, and victimization, leading to negative self-concept, increased rates of mental disorder comorbidity, school dropout, and economic marginalization, including unemployment, with attendant social and mental health risks, especially in individuals from resource-poor family backgrounds. In addition, these individuals' access to health services and mental health services may be impeded by structural barriers, such as institutional discomfort or inexperience in working with this patient population.

Differential Diagnosis

Nonconformity to gender roles. Gender dysphoria should be distinguished from simple nonconformity to stereotypical gender role behavior by the strong desire to be of another gender than the assigned one and by the extent and pervasiveness of gender-variant activities and interests. The diagnosis is not meant to merely describe nonconformity to stereotypical gender role behavior (e.g., "tomboyism" in girls, "girly-boy" behavior in boys, occasional cross-dressing in adult men). Given the increased openness of atypical gender expressions by individuals across the entire range of the transgender spectrum, it is important that the clinical diagnosis be limited to those individuals whose distress and impairment meet the specified criteria.

Transvestic disorder. Transvestic disorder occurs in heterosexual (or bisexual) adolescent and adult males (rarely in females) for whom cross-dressing behavior generates sexual excitement and causes distress and/or impairment without drawing their primary gender into question. It is occasionally accompanied by gender dysphoria. An individual with transvestic disorder who also has clinically significant gender dysphoria can be given both diagnoses. In many cases of late-onset gender dysphoria in gynephilic natal males, transvestic behavior with sexual excitement is a precursor.

Body dysmorphic disorder. An individual with body dysmorphic disorder focuses on the alteration or removal of a specific body part because it is perceived as abnormally formed, not because it represents a repudiated assigned gender. When an individual's presentation meets criteria for both gender dysphoria and body dysmorphic disorder, both diagnoses can be given. Individuals wishing to have a healthy limb amputated (termed by some *body integrity identity disorder*) because it makes them feel more "complete" usually do not wish to change gender, but rather desire to live as an amputee or a disabled person.

Schizophrenia and other psychotic disorders. In schizophrenia, there may rarely be delusions of belonging to some other gender. In the absence of psychotic symptoms, insistence by an individual with gender dysphoria that he or she is of some other gender is not considered a delusion. Schizophrenia (or other psychotic disorders) and gender dysphoria may co-occur.

Other clinical presentations. Some individuals with an emasculinization desire who develop an alternative, nonmale/nonfemale gender identity do have a presentation that meets criteria for gender dysphoria. However, some males seek castration and/or penectomy for aesthetic reasons or to remove psychological effects of androgens without changing male identity; in these cases, the criteria for gender dysphoria are not met.

Comorbidity

Clinically referred children with gender dysphoria show elevated levels of emotional and behavioral problems—most commonly, anxiety, disruptive and impulse-control, and de-

pressive disorders. In prepubertal children, increasing age is associated with having more behavioral or emotional problems; this is related to the increasing non-acceptance of gender-variant behavior by others. In older children, gender-variant behavior often leads to peer ostracism, which may lead to more behavioral problems. The prevalence of mental health problems differs among cultures; these differences may also be related to differences in attitudes toward gender variance in children. However, also in some non-Western cultures, anxiety has been found to be relatively common in individuals with gender dysphoria, even in cultures with accepting attitudes toward gender-variant behavior. Autism spectrum disorder is more prevalent in clinically referred children with gender dysphoria than in the general population. Clinically referred adolescents with gender dysphoria appear to have comorbid mental disorders, with anxiety and depressive disorders being the most common. As in children, autism spectrum disorder is more prevalent in clinically referred adolescents with gender dysphoria than in the general population. Clinically referred adults with gender dysphoria may have coexisting mental health problems, most commonly anxiety and depressive disorders.

Other Specified Gender Dysphoria

302.6 (F64.8)

This category applies to presentations in which symptoms characteristic of gender dysphoria that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for gender dysphoria. The other specified gender dysphoria category is used in situations in which the clinician chooses to communicate the specific reason that the presentation does not meet the criteria for gender dysphoria. This is done by recording "other specified gender dysphoria" followed by the specific reason (e.g., "brief gender dysphoria").

An example of a presentation that can be specified using the "other specified" designation is the following:

The current disturbance meets symptom criteria for gender dysphoria, but the duration is less than 6 months.

Unspecified Gender Dysphoria

302.6 (F64.9)

This category applies to presentations in which symptoms characteristic of gender dysphoria that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for gender dysphoria. The unspecified gender dysphoria category is used in situations in which the clinician chooses *not* to specify the reason that the criteria are not met for gender dysphoria, and includes presentations in which there is insufficient information to make a more specific diagnosis.

Department of Defense

INSTRUCTION

NUMBER 6130.03
April 28, 2010
Incorporating Change 1, September 13, 2011

USD(P&R)

SUBJECT: Medical Standards for Appointment, Enlistment, or Induction in the Military Services

References: See Enclosure 1

1. PURPOSE. This Instruction:

a. Reissues DoD Directive (DoDD) 6130.3 (Reference (a)) as a DoD Instruction (DoDI) in accordance with the authority in DoDD 5124.02 (Reference (b)) to establish policy, assign responsibilities, and prescribe procedures for physical and medical standards for appointment, enlistment, or induction in the Military Services.

b. Establishes medical standards, which, if not met, are grounds for rejection for military service. Other standards may be prescribed for a mobilization for a national emergency.

c. Incorporates and cancels DoDI 6130.4 (Reference (c)).

2. APPLICABILITY. This Instruction applies to:

a. OSD, the Military Departments (including the Coast Guard at all times, including when it is a service in the Department of Homeland Security by agreement with that Department), the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components").

b. The Reserve Components, which include the Army and the Air National Guards of the United States, in accordance with title 10, United States Code (Reference (d)).

c. The United States Merchant Marine Academy in accordance with section 310.56 of title 46, Code of Federal Regulations (Reference (e)).

3. DEFINITIONS. See Glossary.

4. POLICY. It is DoD policy to:

a. Utilize common physical standards for the appointment, enlistment, or induction of Service personnel and eliminate inconsistencies and inequities based on race, sex, or location of examination in the application of these standards by the Military Services.

b. Precisely define any medical condition that causes a personnel action, such as separation, medical waiver, or assignment limitation, by utilizing the International Classification of Diseases (ICD) (Reference (f)), Current Procedural Terminology (CPT) (Reference (g)), and the Healthcare Common Procedure Coding System (HCPCS) (Reference (h)), and annotate qualification decisions by standard medical terminology, rather than codes. The standards in this Instruction shall be for the acquisition of personnel in the Military Services.

c. Ensure that individuals under consideration for appointment, enlistment, or induction into the Military Services are:

(1) Free of contagious diseases that probably will endanger the health of other personnel.

(2) Free of medical conditions or physical defects that may require excessive time lost from duty for necessary treatment or hospitalization, or probably will result in separation from the Service for medical unfitness.

(3) Medically capable of satisfactorily completing required training.

(4) Medically adaptable to the military environment without the necessity of geographical area limitations.

(5) Medically capable of performing duties without aggravation of existing physical defects or medical conditions.

5. RESPONSIBILITIES. See Enclosure 2.

6. PROCEDURES. See Enclosure 3 for Medical and Personnel Executive Steering Committee (MEDPERS) information. Procedures and standards for implementation are in Enclosure 4.

7. RELEASABILITY. UNLIMITED. This Instruction is approved for public release and is available on the Internet from the DoD Issuances Website at http://www.dtic.mil/whs/directives.

8. EFFECTIVE DATE. This Instruction is effective immediately.

Clifford L. Stanley
Under Secretary of Defense for
Personnel and Readiness

Enclosures
1. References
2. Responsibilities
3. Medical and Personnel Executive Steering Committee
4. Medical Standards for Appointment, Enlistment, or Induction

Glossary

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ENCLOSURE 1

REFERENCES

(a) DoD Directive 6130.3, "Physical Standards for Appointment, Enlistment, or Induction," December 15, 2000 (hereby cancelled)
(b) DoD Directive 5124.02, "Under Secretary of Defense for Personnel and Readiness (USD(P&R))," June 23, 2008
(c) DoD Instruction 6130.4, "Medical Standards for Appointment, Enlistment, or Induction in the Armed Forces," January 18, 2005 (hereby cancelled)
(d) Title 10, United States Code
(e) Section 310.56 of title 46, Code of Federal Regulations
(f) International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)[1]
(g) American Medical Association, Current Procedural Terminology (CPT®), Fourth Edition, 2010 Revision, Chicago, IL, 2010[2]
(h) 2010 Healthcare Common Procedure Coding System (HCPCS) Level II Codes from Centers for Medicare and Medicaid Services (CMS)[2]
(i) American National Standards Institute ANSI S3.6-2004, "Specification for Audiometers"[3]
(j) Joint Publication 1-02, "Department of Defense Dictionary of Military and Associated Terms," current edition

[1] Available at http://www.cdc.gov/NCHS/icd/icd9cm.htm.
[2] Available at https://catalog.ama-assn.org/Catalog/cpt/cpt_home.jsp
[3] Available from the American National Standards Institute, 1819 L Street, N.W., Washington, D.C. 20036 or on the Internet at http://www.ansi.org/

ENCLOSURE 2

RESPONSIBILITIES

1. PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS (PDUSD(P&R)). The PDUSD(P&R), under the authority, direction, and control of the Under Secretary of Defense for Personnel and Readiness (USD(P&R)), shall:

a. Ensure that the standards in Enclosure 4 are implemented throughout the U.S. Military Entrance Processing Command.

b. Eliminate inconsistencies and inequities based on race, sex, or location of examination in the application of these standards by the Military Services.

c. Convene the MEDPERS under the joint guidance of the Deputy Under Secretary of Defense for Military Personnel Policy (DUSD(MPP)) and Principal Deputy Assistant Secretary of Defense for Health Affairs (PDASD(HA)). MEDPERS responsibilities are in Enclosure 3.

2. ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS (ASD(HA)). The ASD(HA), under the authority, direction, and control of the USD(P&R), shall:

a. Review, approve, and issue to the Secretaries of the Military Departments technical modifications to the standards in Enclosure 4.

b. Provide guidance to the DoD Medical Examination Review Board to implement the standards in Enclosure 4.

c. Eliminate inconsistencies and inequities based on race, sex, or location of examination in the application of these standards by the Military Services.

3. SECRETARIES OF THE MILITARY DEPARTMENTS AND COMMANDANT OF THE COAST GUARD. The Secretaries of the Military Departments and Commandant of the Coast Guard shall:

a. Direct their respective Services to apply and uniformly implement the standards contained in this Instruction.

b. Authorize the waiver of the standards in individual cases for applicable reasons and ensure uniform waiver determinations.

c. Authorize the changes in Service-specific visual standards (particularly for officer accession programs) and establish other standards for special programs. Notification of any

proposed changes in standards shall be provided to the ASD(HA) at least 60 days before implementation.

d. Ensure that accurate ICD codes are assigned to all medical conditions resulting in a personnel action, such as separation, waiver, or assignment limitation, and that such codes are included in all records of such actions.

e. Eliminate inconsistencies and inequities based on race, sex, or examination location in the application of these standards by the Military Services.

ENCLOSURE 3

MEDPERS

1. MEDPERS convenes quarterly under the joint guidance of the DUSD(MPP) and PDASD(HA).

2. MEDPERS shall:

a. Provide policy oversight and guidance to the accession medical and physical standards setting process through the Accession Medical Standards Working Group.

b. Direct research and studies as necessary to produce evidence-based accession standards utilizing the Accession Medical Standards Analysis and Research Activity.

c. Ensure medical and personnel community coordination when formulating policy changes that affect each community and other relevant DoD *and* Department of Homeland Security~~, and Department of Transportation~~ organizations.

ENCLOSURE 4

MEDICAL STANDARDS FOR APPOINTMENT, ENLISTMENT, OR INDUCTION

1. APPLICABILITY. The medical standards in this enclosure apply to:

a. Applicants for appointment as commissioned or warrant officers in the Active and Reserve Components.

b. Applicants for enlistment in the Military Services. For medical conditions or defects predating original enlistment, these standards apply to enlistees' first 6 months of active duty.

c. Applicants for enlistment in the Reserve Components and federally recognized units or organizations of the National Guard. For medical conditions or defects predating original enlistment, these standards apply during the enlistees' initial period of active duty for training until their return to Reserve or National Guard units.

d. Applicants for reenlistment in Regular and Reserve Components and in federally recognized units or organizations of the National Guard after a period of more than 12 months have elapsed since discharge.

e. Applicants for the Scholarship or Advanced Course Reserve Officer Training Corps (ROTC), and all other Military Services' special officer personnel procurement programs.

f. Cadets and midshipmen at the U.S. Service academies and students enrolled in ROTC scholarship programs applying for retention in their respective programs.

g. Individuals on the Temporary Disability Retired List (TDRL) who have been found fit on reevaluation by the Physical Disability Evaluation System (PDES) and who elect to return to active duty or to active status in the Reserve Components within the time standards prescribed by Service Regulations. These individuals are exempt from this Instruction for the conditions for which they were found fit on reevaluation by the PDES.

h. All individuals being inducted into the Military Services.

2. MEDICAL STANDARDS. Throughout this enclosure, ICD, CPT and HCPCS codes are included with most medical conditions and procedures, usually parenthetically, to aid cross-referencing. Unless otherwise stipulated, the conditions listed in this enclosure are those that do NOT meet the standard by virtue of current diagnosis, or for which the candidate has a verified past medical history. The medical standards for appointment, enlistment, or induction into the Military Services are classified by the general systems described in *sections* 3-~~3031~~ of this enclosure.

3. HEAD

a. Deformities of the skull, face, or mandible (738.19, 744.9, 754.0) of a degree that shall prevent the individual from the proper wearing of a protective mask or military headgear.

b. Loss, or absence of the bony substance of the skull (756.0 or 738.19) not successfully corrected by reconstructive materials, or leaving any residual defect in excess of 1 square inch (6.45 square centimeters), or the size of a 25-cent piece.

4. EYES

a. Lids

(1) Current symptomatic blepharitis (373.0x).

(2) Current blepharospasm (333.81).

(3) Current dacryocystitis, acute (375.32), or chronic (375.42).

(4) Defect or deformity of the lids or other disorders affecting eyelid function (374.4x, 374.50, 374.85, 374.89, 743.62), complete, or significant ptosis (374.3x, 743.61), sufficient to interfere with vision or impair protection of the eye from exposure.

(5) Current growths or tumors of the eyelid (173.1, 198.2, 216.1, 232.1, 238.8, 239.89), other than small, non-progressive, asymptomatic, benign lesions.

b. Conjunctiva

(1) Current acute or chronic conjunctivitis (372.1x, 077.0). Seasonal allergic conjunctivitis (372.14) DOES meet the standard.

(2) Current pterygium (372.4x) if condition encroaches on the cornea in excess of 3 millimeters, interferes with vision, is progressive, or a history of recurrence after any prior surgical removal (372.45).

c. Cornea

(1) Corneal dystrophy or degeneration of any type (371.x), including but not limited to keratoconus (371.6x) of any degree.

(2) History of any incisional corneal surgery including, but not limited to, partial or full thickness corneal transplant, radial keratotomy (RK), astigmatic keratotomy (AK), or corneal implants (Intacs®)

(3) Corneal refractive surgery performed with an excimer laser, including but not limited to photorefractive keratectomy (PRK) (HCPCS S0810), laser epithelial keratomileusis (LASEK), and laser-assisted in situ keratomileusis (LASIK) (HCPCS S0900) (ICD-9 code for each is P11.7) if any of the following conditions are met:

(a) Pre-surgical refractive error in either eye exceeded a spherical equivalent of +8.00 or -8.00 diopters.

(b) Pre-surgical astigmatism exceeded 3.00 diopters.

(c) For corneal refractive surgery, at least 180 days recovery period has not occurred between last refractive surgery or augmenting procedure and accession medical examination.

(d) There have been complications and/or medications or ophthalmic solutions, or any other therapeutic interventions such as sunglasses, are required.

(e) Post-surgical refraction in each eye is not stable as demonstrated by at least two separate refractions at least 1 month apart, with initial refraction at least 90 days post-procedure, and the most recent of which demonstrates more than +/- 0.50 diopters difference for spherical vision and/or more than +/- 0.50 diopters for cylinder vision.

(4) Current or recurrent keratitis (370.xx)

(5) Documented herpes simplex virus keratitis (054.42, 054.43).

(6) Current corneal neovascularization, unspecified (370.60), or corneal opacification (371.00, 371.03) from any cause that is progressive or reduces vision below the standards prescribed in this Instruction.

(7) Current or history of uveitis or iridocyclitis (364.00-364.3).

d. Retina

(1) Current or history of any abnormality of the retina (361.00-362.89, 363.14-363.22), choroid (363.00-363.9) or vitreous (379.2x).

e. Optic Nerve

(1) Any current or history of optic nerve disease (377.3), including but not limited to optic nerve inflammation (363.05), optic nerve swelling, or optic nerve atrophy (377.12, 377.14).

(2) Any optic nerve anomaly.

f. Lens

(1) Current aphakia (379.31, 743.35), history of lens implant (V45.61, V43.1) (CPT 66982-66986), or current or history of dislocation of a lens (379.32-379.34, 743.37).

(2) Current or history of opacities of the lens (366.xx), including cataract (366.9).

g. Ocular Mobility and Motility

(1) Current or recurrent diplopia (368.2).

(2) Current nystagmus (379.5x) other than physiologic "end-point nystagmus."

(3) Esotropia (378.0x), exotropia (378.1x), and hypertropia (378.31): For entrance into Service academies and officer programs, the individual Military Services may set additional requirements. The Military Services shall determine special administrative criteria for assignment to certain specialties.

h. Miscellaneous Defects and Diseases

(1) Current or history of abnormal visual fields (368.9) due to diseases of the eye or central nervous system (368.4x), or trauma.

(2) Absence of an eye (V43.0, V45.78), clinical anophthalmos, unspecified congenital (743.00) or acquired, or current or history of other disorders of globe (360.xx).

(3) Current unilateral or bilateral exophthalmoses (376.21-376.36).

(4) Current or history of glaucoma (365.xx), ocular hypertension, pre-glaucoma (365.0-365.04), or glaucoma suspect.

(5) Any abnormal pupillary reaction to light (379.4x) or accommodation (367.5x).

(6) Asymmetry of pupil size greater than 2mm.

(7) Current night blindness (264.5, 368.6x).

(8) Current or history of intraocular foreign body (360.50-360.69, 871.x).

(9) Current or history of ocular tumors (190.0, 190.8-190.9, 198.4, 224.0, 224.8-224.9, 234.0, 238.8, 239.89, V10.84).

(10) Current or history of any abnormality of the eye (360) or adnexa (376, 379.9), not specified in subparagraphs 4.h.(1)-(9) of this enclosure, which threatens vision or visual function V41.0-V41.1, V52.2, V59.5).

5. VISION

a. Current distant visual acuity of any degree that does not correct with spectacle lenses to at least one of the following (367):

(1) 20/40 in one eye and 20/70 in the other eye (369.75).

(2) 20/30 in one eye and 20/100 in the other eye (369.75).

(3) 20/20 in one eye and 20/400 in the other eye (369.73).

b. Current near visual acuity of any degree that does not correct to 20/40 in the better eye (367.1-367.32).

c. Current refractive error (hyperopia (367.0), myopia (367.1), astigmatism (367.2x)), in excess of -8.00 or +8.00 diopters spherical equivalent or astigmatism in excess of 3.00 diopters.

d. Any condition requiring contact lenses for adequate correction of vision, such as corneal scars and opacities (370.0x) and irregular astigmatism (367.22).

e. Color vision (368.5x) requirements shall be set by the individual Services.

6. EARS

a. Current atresia of the external ear (744.02) or severe microtia (744.23), congenital or acquired stenosis (380.5x), chronic otitis externa (380.15-380.16, 380.23), or severe external ear deformity (380.32, 738.7, 744.01, 744.3) that prevents or interferes with the proper wearing of hearing protection.

b. Current or history of Ménière's Syndrome or other chronic diseases of the vestibular system (386.xx).

c. History of cochlear implant.

d. Current or history of cholesteatoma (385.3x)

e. History of any inner (P20) (CPT 69801-69930) or middle (P19) (CPT 69631-69636, 69676) ear surgery excluding successful tympanoplasty (CPT 69635) performed during the preceding 180 days.

f. Current perforation of the tympanic membrane (384.2x) or history of surgery to correct perforation during the preceding 180 days (P19) (CPT 69433, 69436, 69610, 69631-69646).

g. Chronic Eustachian tube dysfunction as evidenced by retracted tympanic membrane, or recurrent otitis media, or the need for pressure-equalization (PE) tube within the last 3 years.

7. HEARING All hearing defects are coded with ICD-9 code 389.xx.

a. Audiometric hearing levels are measured by audiometers calibrated to the standards in American National Standards Institute (ANSI S3.6-2004) (Reference (i)) and shall be used to test the hearing of all applicants.

b. Current hearing threshold level in either ear greater than that described in subparagraphs 7.b.(1)-(3) of this enclosure does not meet the standard:

(1) Pure tone at 500, 1000, and 2000 cycles per second for each ear of not more than 30 decibels (dB) on the average with no individual level greater than 35 dB at those frequencies.

(2) Pure tone level not more than 45 dB at 3000 cycles per second or 55 dB at 4000 cycles per second for each ear.

(3) There is no standard for 6000 cycles per second.

c. Current or history of hearing aid use (V53.2).

8 NOSE, SINUSES, MOUTH, AND LARYNX

a. Current cleft lip or palate defects (749.xx) not satisfactorily repaired by surgery or that interfere with use or wear of military equipment, or that prevent drinking from a straw.

b. Current ulceration of oral mucosa, including tongue (528.6), excluding apthous ulcers.

c. Current chronic conditions of larynx including vocal cord paralysis (478.3x) or history of laryngeal papillomatosis.

d. History of non-benign polyps, (478.4) chronic hoarseness (78.49), chronic laryngitis (476.0) or spasmodic dysphonia.

e. Current anosmia or parosmia (781.1).

f. History of recurrent epistaxis with more than one episode per week of bright red blood from the nose occurring over a 3-month period (784.7) within the last 3 years.

g. Current nasal polyp or history of nasal polyps (471.x), unless more than 12 months have elapsed since nasal polypectomy (CPT 30110, 30115, 31237-31240) and/or sinus surgery, and asymptomatic.

h. Current perforation of nasal septum (478.1, 478.19, 748.1).

i. Current chronic sinusitis (473) as evidenced by chronic purulent discharge, symptoms requiring frequent medical attention, or computed tomography (CT) scan.

j. Current or history of deformities, or conditions or anomalies of the upper alimentary tract (750.9), mouth (750.26), tongue (750.1x), palate, throat, pharynx, larynx (748.3), and nose (748.1), that interfere with chewing (V41.6), swallowing, speech, or breathing.

9 DENTAL

a. Current diseases or pathology of the jaws or associated tissues that prevent normal functioning. Those diseases or conditions include but are not limited to temporomandibular disorders (524.6x) and/or myofascial pain (784.0). A minimum of 6 months healing time must elapse for any individuals completing surgical treatment of any maxillofacial pathology lesions.

b. Current severe malocclusion (524.00-524.29, 524.4), which interferes with normal chewing or requires immediate and protracted treatment, or a relationship between the mandible and maxilla that prevents satisfactory future prosthodontic replacement.

c. Eight or more grossly (visually) cavitated and/or carious teeth (521.0x). Applicants who are edentulous must have functioning dentures. Lack of a serviceable prosthesis that prevents adequate biting and chewing of a normal diet. Individuals undergoing endodontic care are acceptable for entry into the Delayed Entry Program (DEP) only if a civilian or military dentist or endodontist provides documentation that active endodontic treatment shall be completed prior to being sworn to active duty.

d. Current orthodontic appliances (mounted or removable, i.e., Invisalign®) for continued active treatment (V53.4). Permanent or removable retainers are permissible. Individuals undergoing active orthodontic care are acceptable for accession (including DEP) only if a civilian or military orthodontist provides documentation that active orthodontic treatment shall be completed prior to being sworn into active duty. Entrance to active duty will not occur until all orthodontic treatment is documented to be completed.

10 NECK

a. Current symptomatic cervical ribs (756.2).

b. Current congenital cyst(s) (744.4x) of branchial cleft origin or those developing from the remnants of the thyroglossal duct (759.2).

c. Current contraction (723.5, 754.1)) of the muscles of the neck, spastic or non-spastic, or cicatricial contracture of the neck to the extent it interferes with the proper wearing of a uniform or military equipment, or is so disfiguring as to interfere with or prevent satisfactory performance of military duty.

11. LUNGS, CHEST WALL, PLEURA, AND MEDIASTINUM

a. Current abnormal elevation of the diaphragm (either side) (756.6). Any nonspecific abnormal findings on radiological and other examination of body structure, such as lung field (793.1) or other thoracic or abdominal organ (793.2).

b. Current abscess of the lung (513.0) or mediastinum (513.1).

c. Current or history of recurrent acute infectious processes of the lung, including but not limited to viral pneumonia (480.x), pneumococcal pneumonia (481), bacterial pneumonia (482.xx), pneumonia due to other specified organism (483.x), pneumonia infectious disease classified elsewhere (484.x), bronchopneumonia (organism unspecified) (485), and pneumonia (organism unspecified) (486).

d. Airway hyper responsiveness including asthma (493.xx), reactive airway disease, exercise-induced bronchospasm (519.11) or asthmatic bronchitis (493.90), reliably diagnosed and symptomatic after the 13th birthday.

(1) Reliable diagnostic criteria may include any of the following elements: substantiated history of cough, wheeze, chest tightness, and/or dyspnea which persists or recurs over a prolonged period of time, generally more than 12 months.

(2) Individuals *DO* MEET the standard if within the past 3 years they meet ALL of the criteria in subparagraphs 11.d.(2)(a)-(d).

(a) No use of controller or rescue medications (including, but not limited to inhaled corticosteroids, leukotriene receptor antagonists, or short-acting beta agonists).

(b) No exacerbations requiring acute medical treatment.

(c) No use of oral steroids.

(d) A current normal spirometry (within the past 90 days), performed in accordance with American Thoracic Society (ATS) guidelines and as defined by current National Heart, Lung, and Blood Institute (NHLBI) standards.

e. Chronic obstructive pulmonary disease (491).

(1) Current or history of bullous or generalized pulmonary emphysema (492).

(2) Current bronchitis (490), acute or chronic symptoms over 3 months occurring at least twice a year (491).

f. Current or history of bronchiectasis (494). Bronchiectasis during the first year of life is not disqualifying if there are no residual or sequelae.

g. Current or history of bronchopleural fistula (510.0), unless resolved with no sequelae.

h. Current chest wall malformation (754.89), including but not limited to pectus excavatum (754.81) or pectus carinatum (754.82), if these conditions interfere with vigorous physical exertion.

i. History of empyema (510.9).

j. Pulmonary fibrosis (515).

k. Current foreign body in lung (934.8, 934.9), trachea (934.0), or bronchus (934.1).

l. History of thoracic surgery (32-33), (CPT 32035-32999, 33010-33999, 43020-43499) including open and endoscopic procedures.

m. Current or history of pleurisy with effusion (511.9) within the previous 2 years.

n. Current or history of pneumothorax (512) occurring during the year preceding examination if due to trauma (860) or surgery, or occurring during the 2 years preceding examination from spontaneous (512.8) origin.

o. Recurrent spontaneous pneumothorax (512.8).

p. History of chest wall surgery (34-34.9), including breast (85-85.9), during the preceding 6 months, or with persistent functional limitations.

12. HEART

a. History of valvular repair or replacement (CPT 33400-33478).

(1) Current or history of the following valvular conditions as defined by the current American College of Cardiology and American Heart Association guidelines:

(a) Severe pulmonic regurgitation.

(b) Severe tricuspid regurgitation.

(c) Moderate pulmonic regurgitation unless documented mean pulmonary artery pressure is less than 25 mmHg.

(d) Moderate tricuspid regurgitation unless documented mean pulmonary artery pressure is less than 25 mmHg.

(e) Moderate or severe mitral regurgitation.

(f) Mild, moderate, or severe aortic regurgitation.

(2) The following are considered normal variants that meet accession standards:

(a) Trace or mild pulmonic regurgitation.

(b) Trace or mild tricuspid regurgitation.

(c) Trace or mild mitral regurgitation in the absence of mitral valve prolapse.

(d) Trace aortic insufficiency.

b. Mitral valve prolapsed (396.3) with normal exercise tolerance not requiring medical therapy DOES meet the standard.

c. Bicuspid aortic valve (746.4), in the absence of stenosis or regurgitation as in *sub*paragraph*s* 12.a.*(1)(a)-(f)*, DOES meet the standard.

d. All valvular stenosis (396).

e. Current or history of atherosclerotic coronary artery disease (410).

f. Current or history of pacemaker or defibrillator implantation (CPT 3320-33249).

g. History of supraventricular tachycardia (427.0).

(1) History of recurrent atrial fibrillation (427.31) or flutter (427.32).

(2) Supraventricular tachycardia (427.0) associated with an identifiable reversible cause and no recurrence during the preceding 2 years while off all medications DOES meet the standard.

(3) Those with identified atrioventricular nodal reentrant tachycardia or atrioventricular reentrant tachycardia (such as Wolff-Parkinson-White (WPW) syndrome) (426.7) who have undergone successful ablative therapy with no recurrence of symptoms after 3 months and with documentation of normal electrocardiograph (ECG) meet the standard.

h. Premature atrial or ventricular contractions sufficiently symptomatic to require treatment, or result in physical or psychological impairment.

i. Abnormal ECG patterns (794.31):

(1) Long QT (426.82).

(2) Brugada pattern.

(3) WPW syndrome (426.7) pattern unless associated with low risk accessory pathway by appropriate diagnostic testing.

j. Current or history of ventricular arrhythmias (427.1) including ventricular fibrillation, tachycardia, or multifocal premature ventricular contractions. Occasional asymptomatic unifocal premature ventricular contractions meet the standard.

k. Current or history of conduction disorders, including but not limited to disorders of sinus arrest, asystole, Mobitz type II second-degree atrioventricular (AV) block (426.12), and third-degree AV block (426.0).

l. In the absence of cardiovascular symptoms, the following meet the standard:

(1) Sinus arrhythmia.

(2) First degree AV block (426.11).

(3) Left axis deviation of less than -45 degrees.

(4) Early repolarization.

(5) Incomplete right bundle branch block.

(6) Wandering atrial pacemaker (427.89) or ectopic atrial rhythm (427.89).

(7) Sinus bradycardia (427.81).

(8) Mobitz type I second-degree AV block (426.13).

m. Current or history of conduction disturbances such as left anterior hemiblock (426.2), right or left bundle branch block (426.4) do not meet the standard unless asymptomatic with a normal echocardiogram.

n. Current or history of cardiomyopathy (425), cardiomegaly, hypertrophy (defined as septal wall thickness of 15 mm or greater), dilation (429.3), or congestive heart failure (428).

o. History of myocarditis (422) or pericarditis (420) unless the individual is free of all cardiac symptoms, does not require medical therapy, and has normal echocardiography for at least 1 year.

p. Current persistent tachycardia (785.0) (as evidenced by average heart rate of 100 beats per minute or greater over a 24-hour period of continuous monitoring).

q. Current or history of congenital anomalies of heart and great vessels (746). The following conditions meet the standard with an otherwise normal current (within 6 months) echocardiogram.

(1) Dextrocardia (746.87) with situs inversus (759.3) without any other anomalies.

(2) Ligated or occluded patent ductus arteriosus (747.0).

(3) Corrected atrial septal defect (745.9) or patent foramen ovale (745.5) without residua.

(4) Corrected ventricular septal defect (745.4) without residua.

r. History of recurrent syncope and or presyncope (780.2), including black out, fainting, loss or alteration of level of consciousness (excludes vasovagal reactions with identified trigger such as venipuncture) unless there has been no recurrence during the preceding 2 years while off all medication.

s. Unexplained ongoing or recurring cardiopulmonary symptoms (to include but not limited to syncope, presyncope, chest pain, palpitations, and dyspnea on exertion) that impairs a physically active lifestyle.

t. History of rheumatic fever (390).

13. ABDOMINAL ORGANS AND GASTROINTESTINAL SYSTEM

a. Esophageal Disease

(1) Current or history of esophageal disease (530.0-530-9), including but not limited to ulceration, varices, fistula, or achalasia.

(2) Gastro-Esophageal Reflux Disease (GERD) (530.81), with complications~~, including stricture, or maintenance on acid suppression medication, other dysmotility disorders; or chronic or recurrent esophagitis (530.1)~~.

(a) Stricture or B-ring.

(b) Dysphagia.

(c) Recurrent symptoms or esophagitis despite maintenance medication.

(d) Barrett's esophagitis.

(e) Extraesophageal complications; reactive airway disease; recurrent sinusitis or dental complications.

~~(3) Current or history of reactive airway disease associated with GERD (530.81).~~

(~~4~~3) History of surgical correction *(fundoplication or dilation)* for GERD within 6 months ~~(P42 esophageal correction, P43 stomach correction, and P45 intestinal correction) (CPT 43257)~~*(45.89)*.

(~~5~~4) Current or history of dysmotility disorders ~~and chronic or recurrent esophagitis (530).~~*, to include diffuse esophageal spasm, nutcracker esophagus, non-specific motility disorder, and achalasia.*

(5) Eosinophilic esophagitis.

(6) Other esophageal strictures, for example lye or other caustic ingestion.

b. Stomach and Duodenum

(1) Current ~~gastritis, chronic or severe (535), or non-ulcerative dyspepsia that requires maintenance medication~~ *dyspepsia requiring medication; or history of dyspepsia lasting 3 or more consecutive months and requiring medication within the preceding 12 months.*

(2) ~~Current or history of ulcer of the stomach or duodenum confirmed by X-ray or endoscopy (533).~~ *Gastric or duodenal ulcers:*

(a) Current ulcer or history of treated ulcer within the last 3 months.

(b) Recurrent or complicated by bleeding, obstruction, or perforation within preceding 5 years confirmed by endoscopy.

(3) History of surgery for peptic ulceration or perforation (533.0-599.9).

(4) History of gastroparesis.

(5) History of bariatric surgery of any type (e.g., lap-band or gastric bypass surgery for weight loss).

(6) History of gastric varices.

c. Small and Large Intestine

(1) Current or history of inflammatory bowel disease, including but not limited to ~~unspecified~~ *indeterminate* (558.9), ~~regional enteritis or~~ Crohn's disease (555), ulcerative colitis (556), or ulcerative proctitis (556.2).

(2) Current infectious colitis not otherwise specified (009.1).

(~~2~~3) Current or history of intestinal malabsorption syndromes (579.9), including but not limited to *celiac sprue, pancreatic insufficiency,* post-surgical and idiopathic (579). Lactase

deficiency does not meet the standard only if of sufficient severity to require frequent intervention, or to interfere with normal function.

(~~3~~4) Current or history of gastrointestinal functional and motility disorders within the past 2 years, including but not limited to pseudo-obstruction, megacolon, history of volvulus, or chronic constipation (564.0) and or diarrhea (787.91), regardless of cause, persisting or symptomatic in the past 2 years.

(~~4~~5) History of gastrointestinal bleeding (578), including positive occult blood (792.1), if the cause has not been corrected. Meckel's diverticulum (751.0), if surgically corrected more than 6 months prior DOES meet the standard.

(~~5~~6) Current or history of irritable bowel syndrome (564.1) of sufficient severity to require frequent intervention *or prescription medication* or to interfere with normal function.

(~~6~~7) History of bowel resection (CPT 44202-44203).

(~~7~~8) Current or history of symptomatic diverticular disease of the intestine (562).

(9) Personal or family history of familial adenomatous polyposis syndrome or hereditary non-polyposis colon cancer syndrome.

d. Hepatic-Biliary Tract

(1) Current acute or chronic hepatitis, hepatitis carrier state (070), hepatitis in the preceding 6 months or persistence of symptoms after 6 months, or objective evidence of impairment of liver function.

(2) Current or history of cirrhosis (571), hepatic cysts (573.8), abscess (572.0), or sequelae of chronic liver disease (571.3).

(3) Current or history of symptomatic cholecystitis (575.10), unless successfully surgically corrected~~, acute or chronic, with or without cholelithiasis (574)~~; postcholecystectomy syndrome; or other disorders of the gallbladder and biliary system (576). Cholecystectomy DOES meet the standard if performed more than 6 months prior to examination and patient remains asymptomatic. ~~Fiberoptic~~ *Endoscopic* procedure to correct ~~sphincter dysfunction or cholelithiasis~~ *choledocholithiasis*, if performed more than 6 months prior to examination and patient remains asymptomatic, MAY meet the standard.

(4) History of sphincter of Oddi dysfunction.

(5) Choledochocyst.

(6) Primary biliary cirrhosis or primary sclerosing cholangitis.

(~~4~~7) Current or history of pancreatitis, acute (577.0) or chronic (577.1).

(8) Pancreatic cyst.

(9) History of pancreatic surgery.

(~~5~~*10*) Current or history of metabolic liver disease, including but not limited to hemochromatosis (275.0), Wilson's disease (275.1), or alpha-1 anti-trypsin deficiency (273.4). *Gilbert's syndrome DOES meet the standard.*

(~~6~~*11*) Current enlargement of the liver from any cause (789.1).

e. Anorectal

(1) Current anal fissure or anal fistula (565).

(2) Current or history of anal or rectal polyp (569.0), prolapse (569.1), stricture (569.2), or fecal incontinence (787.6), within the last 2 years. *History of removal of juvenile or inflammatory polyp DOES meet the standard.*

(3) Current hemorrhoid (internal or external), when large, symptomatic, or with a history of bleeding (455) within the last 60 days.

~~f. Spleen~~

~~(1) Current splenomegaly (789.2).~~

~~(2) History of splenectomy (P41.5) (CPT 38100-38129), except when resulting from trauma.~~

~~g~~*f*. Abdominal Wall

(1) Current hernia (except for small or asymptomatic umbilical hernias), including but not limited to uncorrected inguinal (550) and other abdominal wall hernias (553).

(2) History of open or laparoscopic abdominal surgery (CPT 22900-22999, 43500-49999) during the preceding 6 months (P54). Uncomplicated laparoscopic appendectomies (CPT 44970) meet the standard after 3 months.

~~h~~*g*. Obesity. History of any gastrointestinal procedure for the control of obesity (CPT 43644-43645, 43770-43775, 43842-43848, 43886-43888) or artificial openings, including but not limited to ostomy (V44).

14. FEMALE GENITALIA

a. Current or history of abnormal ~~uterine bleeding (626.2)~~ *menstruation unresponsive to medical management within the last 12 months*, including but not limited to menorrhagia, metrorrhagia, or polymenorrhea.

b. ~~Current unexplained~~ *Primary* amenorrhea (626.0).

c. Current unexplained secondary amenorrhea (626.0).

~~cd~~. Current ~~or history of~~ dysmenorrhea (625.3) that is *unresponsive to medical therapy and is* incapacitating to a degree recurrently ~~necessitating~~ *requiring* absences of more than a few hours from routine activities.

~~de~~. ~~Current or history of e~~*E*ndometriosis (617) *that is unresponsive to medical therapy.*

~~ef~~. History of major abnormalities or defects of the genitalia ~~such as~~ *including but not limited to* change of sex (P64.5) (CPT 55970, 55980), hermaphroditism, pseudohermaphroditism, or pure gonadal dysgenesis (752.7).

~~fg~~. ~~Current or history of~~ *Persistent or clinically significant* ovarian cyst(s) (620.2) ~~when persistent or symptomatic~~.

h. Polycystic ovarian syndrome (256.4) with metabolic complications.

~~gi~~. ~~Current p~~*P*elvic inflammatory disease (614) ~~or history of recurrent pelvic inflammatory disease. Current or history of chronic pelvic pain or unspecified symptoms associated with female genital organs (625.9)~~ *within the preceding 30 days.*

j. Chronic pelvic pain or unspecified symptoms associated with female genital organs (625.9).

~~hk~~. ~~Current p~~*P*regnancy (V22), ~~until~~ *through* 6 months after the ~~end~~ *completion* of the pregnancy (CPT 59150, 59151, 59400, 59409, 59510, 59514, 59610, 59612, 59812-59857).

~~i. History of congenital absence of the uterus (752.3).~~

~~jl~~. ~~Current~~ *Symptomatic* uterine enlargement due to any cause (621.2).

~~km~~. Current or history of genital infection or ulceration, including but not limited to herpes genitalis (054.11) or condyloma acuminatum (078.11), if of sufficient severity ~~requiring~~ *to require* frequent intervention or to interfere with normal function. *Herpes does not meet the standard if:*

(1) Current lesions are present.

(2) Chronic suppressive therapy is needed.

(3) There are three or more outbreaks per year.

(4) Any outbreak in the past 12 months interfered with normal function.

(5) Treatment included hospitalization or intravenous therapy.

~~l~~*n.* ~~Current or history of a~~*A*bnormal gynecologic cytology *within the preceding 2 years*, including but not limited to unspecified abnormalities of the Papanicolaou smear of the cervix (795.0), excluding atypical squamous cells of undetermined significance without human papillomavirus (079.4) and confirmed low-grade squamous intraepithelial lesion (622.9). For the purposes of this Instruction, confirmation is by colposcopy or repeat cytology.

15. MALE GENITALIA

a. Absence of one or both testicles, congenital (752.89) or undescended (752.51). ~~Unilateral loss of a testis, unrelated to cancer, DOES meet the standard.~~

b. Current *or history of* epispadias (752.62) ~~or hypospadias (752.61), when accompanied by evidence of urinary tract infection, urethral stricture, or voiding dysfunction~~.

c. Current or history of surgery for proximal hypospadias (752.61).

d. Distal (coronal) hypospadias without history of surgery DOES meet the standard.

e. Distal (coronal) hypospadias treated with surgery when accompanied by evidence of urinary tract infection, urethral stricture, or voiding dysfunction.

~~e~~*f.* Current enlargement or mass of testicle ~~or~~, epididymis (608.9), *or spermatic cord.*

~~d~~*g.* Current *or history of recurrent* orchitis or epididymitis (604.90).

~~e~~*h.* History of penis amputation (878.0) (CPT 54125, 54130-54135).

i. Current penile curvature if associated with pain.

~~f~~*j.* Current or history of genital infection or ulceration, including but not limited to herpes genitalis (054.13) or condyloma acuminatum (078.11), if of sufficient severity to require frequent intervention or to interfere with normal function. *Herpes does not meet the standard if:*

(1) Current lesions are present.

(2) Use of chronic suppressive therapy is needed.

(3) There are three or more outbreaks per year.

(4) Any outbreak in the past 12 months interfered with normal function.

(5) Treatment included hospitalization or intravenous therapy.

k. Current or history of urethral condyloma acuminatum.

~~g~~*l*. Current acute prostatitis (601.0) ~~or~~, chronic prostatitis (601.1), *or chronic pelvic pain syndrome*.

~~h~~*m*. Current hydrocele (603) ~~with greatest dimension of 4 centimeters or greater or symptomatic~~ *or spermatacele associated with pain or which precludes a complete exam of the scrotal contents.*

~~i~~*n*. Left varicocele (456.4), if *painful or* symptomatic, or associated with testicular atrophy, or varicocele larger than the testis.

o. Left varicocele (456.4) that does not reduce or decompress completely when supine.

~~j~~*p*. ~~Any~~ *Bilateral or* right varicocele (456.4).

~~k~~*q*. Current or history of chronic *or recurrent* scrotal pain or unspecified symptoms associated with male genital organs (608.9).

~~l~~*r*. History of major abnormalities or defects of the genitalia such as change of sex (P64.5) (CPT 55970, 55980), hermaphroditism, pseudohermaphroditism, or pure gonadal dysgenesis (752.7).

16. URINARY SYSTEM

a. Current ~~cystitis,~~ or history of chronic ~~or~~/ recurrent cystitis (595), *interstitial cystitis, or painful bladder syndrome*.

b. Current urethritis, or history of chronic or recurrent urethritis (597.80).

c. History ~~of enuresis (788.30) or incontinence of urine (788.30), or the control of it with medication or other treatment past the 15th birthday.~~ *or treatment of the following voiding symptoms within the previous 12 months:*

(1) Urinary frequency or urgency more than every 2 hours on a daily basis.

(2) Nocturia more than two episodes during sleep period.

(3) Enuresis (788.30).

(4) Incontinence of urine, such as urge or stress.

(5) Urinary retention.

(6) Dysuria.

d. History of need for urinary catheterization with intermittent or indwelling catheter for any period greater than 2 weeks.

e. History of bladder augmentation, urinary diversion, or urinary tract reconstruction.

~~d~~*f.* Current ~~hematuria (599.7), pyuria, or other findings indicative of urinary tract disease (599).~~ *or history of abnormal urinary findings:*

(1) Gross hematuria (599.7).

(2) Microscopic hematuria (3 or more red blood cells per high-powered field on 2 of 3 properly collected urinalyses).

(3) Pyuria (6 or more white blood cells per high-powered field in 2 or 3 properly collected urinalyses).

~~e~~*g.* Current or recurrent urethral *or ureteral* stricture (598) or fistula (599.1) *involving the urinary tract*.

~~f~~*h.* Conditions associated with the kidneys, including:

(1) Current absence of one kidney, congenital (753.0) or acquired (V45.73) (CPT 50220-50236).

(2) Asymmetry in size or function of kidneys.

(3) History of renal transplant.

(~~2~~*4*) Current *chronic or recurrent* pyelonephritis (590.0) ~~(chronic or recurrent),~~ or any other unspecified infections of the kidney (590.9).

(~~3~~*5*) Current or history of polycystic kidney (753.1).

(~~4~~*6*) Current or history of horseshoe kidney (753.3).

(~~5~~*7*) Current or history of hydronephrosis (591).

(~~6~~*8*) Current or history of acute (580) *nephritis* or chronic (582) ~~nephritis~~ *kidney disease* of any type.

(9) History of acute kidney injury requiring dialysis.

(~~7~~*10*) Current or history of proteinuria (791.0) ~~greater than 200 milligrams in 24 hours or~~ *with* a protein-to-creatinine ratio greater than 0.2 in a random urine sample~~, if greater~~ *more* than 48 hours after strenuous activity~~, unless consultation determines the condition to be benign orthostatic proteinuria~~. *Benign orthostatic proteinuria MEETS the standard.*

(~~8~~*11*) Current or history of *symptomatic* urolithiasis (592) within the preceding 12 months. ~~Recurrent calculus, nephrocalcinosis, or bilateral renal calculi at any time.~~

(12) History of stone(s) greater than 4mm in size, recurrent calculus, nephrocalcinosis, or bilateral renal calculi at any time.

(13) History of urolithiasis requiring surgical treatment or intervention requiring hospitalization.

17. SPINE AND SACROILIAC JOINTS

a. Ankylosing spondylitis or other inflammatory spondylopathies (720).

b. Current or history of any condition, including but not limited to the spine or sacroiliac joints, with or without objective signs, if:

(1) It prevents the individual from successfully following a physically active vocation in civilian life (724), or is associated with local or referred pain to the extremities, muscular spasms, postural deformities, or limitation in motion.

(2) It requires external support.

(3) It requires limitation of physical activity or frequent treatment.

c. Current deviation or curvature of spine (737) from normal alignment, structure, or function if:

(1) It prevents the individual from following a physically active vocation in civilian life.

(2) It interferes with the proper wearing of a uniform or military equipment.

(3) It is symptomatic.

(4) There is lumbar or thoracic scoliosis greater than 30 degrees, or kyphosis and lordosis greater than 50 degrees when measured by the Cobb Method.

d. History of congenital fusion (756.15) involving more than two vertebral bodies or any surgical fusion of spinal vertebrae (P81.0) (CPT 22532-22812).

e. Current or history of fracture or dislocation of the vertebra (805).

(1) Vertebral fractures that do NOT meet the standard:

(a) Compression fractures involving more than or equal to 25 percent of a single vertebra.

(b) Compression fractures involving less than 25 percent of a single vertebra occurring within the past 12 months or it is symptomatic.

(c) Any compression fracture that is symptomatic.

(2) Vertebral fractures that DO MEET the standard:

(a) Compression fractures involving less than 25 percent of a single vertebra if it occurred more than 1 year before the accession examination and the applicant is asymptomatic.

(b) A history of fractures of the transverse or spinous process IF the applicant is asymptomatic.

f. History of juvenile epiphysitis (732.6) with any degree of residual change indicated by X-ray or kyphosis.

g. Current herniated nucleus pulposus (722) or history of surgery to correct (CPT 63001-63200). A surgically corrected asymptomatic single-level lumbar or thoracic diskectomy with full resumption of unrestricted activity DOES meet the standard.

h. Current or history of spina bifida (741) when symptomatic, when there is more than one vertebral level involved, or with dimpling of the overlying skin. History of surgical repair of spina bifida.

i. Current or history of spondylolysis congenital (756.10-756.12) or acquired (738.4).

j. Current or history of spondylolisthesis congenital (756.12) or acquired (738.4).

18. UPPER EXTREMITIES

a. Limitation of Motion. Current active joint ranges of motion less than:

(1) Shoulder (726.1)

(a) Forward elevation to 90 degrees.

(b) Abduction to 90 degrees.

(2) Elbow (726.3)

(a) Flexion to 130 degrees.

(b) Extension to 15 degrees.

(3) Wrist (726.4). A total range of 60 degrees (extension plus flexion), or radial and ulnar deviation combined arc 30 degrees.

(4) Hand (726.4)

(a) Pronation to 45 degrees.

(b) Supination to 45 degrees.

(5) Fingers and Thumb (726.4). Inability to clench fist, pick up a pin, grasp an object, or touch tips of at least three fingers with thumb.

b. Hand and Fingers

(1) Absence of the distal phalanx of either thumb (885).

(2) Absence of any portion of the index finger.

(3) Absence of distal and middle phalanx of the middle or ring finger of either hand irrespective of the absence of the little finger (886).

(4) Absence of more than the distal phalanx of any two of the following: index, middle, or ring finger of either hand (886).

(5) Absence of hand or any portion thereof (887), except for specific absence of fingers as noted in subparagraphs 18.b.(1)-(4).

(6) Current polydactyly (755.0).

(7) Intrinsic paralysis or weakness of upper limbs, including but not limited to nerve paralysis, carpal tunnel and cubital syndromes, lesion of ulnar, median, or radial nerve (354), sufficient to produce physical findings in the hand such as muscle atrophy and weakness.

c. Residual Weakness and Pain. Current disease, injury, or congenital condition with residual weakness or symptoms that prevents satisfactory performance of duty, including but not limited to chronic joint pain associated with the shoulder (719.41), the upper arm (719.42), the forearm (719.43), and the hand (719.44); or chronic joint pain as a late effect of fracture of the

upper extremities (905.2), as a late effect of sprains without mention of injury (905.7), and as late effects of tendon injury (905.8).

19. LOWER EXTREMITIES

a. General

(1) Current deformities, disease, or chronic joint pain of pelvic region, thigh (719.45), lower leg (719.46), knee (717.9), ankle and or foot (719.47) that have interfered with function to such a degree as to prevent the individual from following a physically active vocation in civilian life, or that would interfere with walking, running, weight bearing, or the satisfactory completion of training or military duty.

(2) Current leg-length discrepancy resulting in a limp (736.81).

b. Limitation of Motion. Current active joint ranges of motion less than:

(1) Hip (due to disease (726.5) or injury (905.2))

(a) Flexion to 90 degrees.

(b) No demonstrable flexion contracture.

(c) Extension to 10 degrees (beyond 0 degrees).

(d) Abduction to 45 degrees.

(e) Rotation of 60 degrees (internal and external combined).

(2) Knee (due to disease (726.6) or injury (905.4))

(a) Full extension to 0 degrees.

(b) Flexion to 110 degrees.

(3) Ankle (due to disease (726.7) or injury (905.4) or congenital)

(a) Dorsiflexion to 10 degrees.

(b) Planter flexion to 30 degrees.

(c) Subtalar eversion and inversion totaling 5 degrees.

c. Foot and Ankle

(1) Current absence of a foot or any portion thereof (896).

(2) Absence of a single lesser toe or any portion thereof that is asymptomatic and does not impair function DOES meet the standard.

(3) Deformity of the toes (735.9) that prevents the proper wearing of military footwear or impairs walking, marching, running, maintaining balance, or jumping.

(4) Symptomatic deformity of the toes (acquired (735) or congenital (755.66)), including but not limited to conditions such as hallux valgus (735.0), hallux varus (735.1), hallux rigidus (735.2), hammer toe(s) (735.4), claw toe(s) (735.5), or overriding toe(s) (735.8).

(5) Clubfoot (754.70) or pes cavus (754.71) that prevents the proper wearing of military footwear or causes symptoms when walking, marching, running, or jumping.

(6) Rigid or symptomatic pes planus (acquired (734) or congenital (754.61)).

(7) Current ingrown toenails (703.0), if infected or symptomatic.

(8) Current or history of recurrent plantar fasciitis (728.71).

(9) Symptomatic neuroma (355.6).

d. Leg, Knee, Thigh, and Hip

(1) Current loose or foreign body in the knee joint (717.6).

(2) History of uncorrected anterior (717.83) or posterior (717.84) cruciate ligament injury.

(3) History of surgical reconstruction of knee ligaments (P81.4) (CPT 27427-27429) DOES meet the standard if 12 months has elapsed since reconstruction, and the knee is asymptomatic and stable.

(4) Recurrent ACL reconstruction (CPT 27427, 27407).

(5) Symptomatic medial (717.82) or lateral (717.42) meniscal injury. The following DOES meet the standard if asymptomatic and released to full and unrestricted activity:

(a) Meniscal repair (CPT 27403), more than 6 months after surgery.

(b) Partial meniscectomy (CPT 27332-27333) more than 3 months after surgery.

(6) Meniscal transplant (CPT 29868).

(7) Symptomatic medial (844.1) and lateral (844.0) collateral ligament instability.

(8) Current or history of congenital dislocation of the hip (754.3), osteochondritis of the hip (Legg-Calve-Perthes Disease) (732.1), or slipped capital femoral epiphysis of the hip (732.2).

(9) Hip dislocation (835) within 2 years preceding examination. Hip dislocation after 2 years DOES meet the standard if asymptomatic and released to full unrestricted activity.

(10) Symptomatic osteochondritis of the tibial tuberosity (Osgood-Schlatter Disease) (732.4) within the past year.

(11) Stress fractures (733.95, V13.52), recurrent or single episode during the past year.

20. MISCELLANEOUS CONDITIONS OF THE EXTREMITIES

a. Current or history of chondromalacia (717.7), including but not limited to chronic patello-femoral pain syndrome and retro-patellar pain syndrome (719.46), osteoarthritis (715.3), or traumatic arthritis (716.1).

b. Current joint dislocation if unreduced, or history of recurrent dislocation, subluxation or instability of the hip (835), elbow (832), ankle (837), or foot.

c. History of any dislocation, subluxation or instability of the knee (718.86) or shoulder.

d. Current or history of osteoarthritis (715.3) or traumatic arthritis (716.1) of isolated joints that has interfered with a physically active lifestyle, or that prevents the satisfactory performance of military duty.

e. Fractures

(1) Current malunion or non-union of any fracture (733.8) (except asymptomatic ulnar styloid process fracture).

(2) Current retained hardware (including plates, pins, rods, wires, or screws) used for fixation that is symptomatic or interferes with proper wearing of equipment or military uniform. Retained hardware is not disqualifying if fractures are healed, ligaments are stable, and there is no pain.

f. Current orthopedic implants or devices to correct congenital or post-traumatic orthopedic abnormalities (V43).

g. Current or history of contusion of bone or joint (923, 924), ; an injury of more than a minor nature that shall interfere or prevent performance of military duty, or shall require frequent or prolonged treatment, without fracture, nerve injury, open wound, crush, or dislocation, that occurred in the preceding 6 months and recovery has not been sufficiently completed or rehabilitation resolved.

h. History of joint replacement or resurfacing of any site (V43.6) (CPT 24363, 27130-27132, 27447).

i. Current or history of neuromuscular paralysis, weakness, contracture, or atrophy (728) of sufficient degree to interfere with or prevent satisfactory performance of military duty, or requires frequent or prolonged treatment.

j. Current symptomatic osteochondroma or history of multiple osteocartilaginous exostoses (727.82).

k. Current osteoporosis (733.0) as demonstrated by a reliable test such as a dual energy x-ray absorptiometry scan (DEXA).

l. Current osteopenia (733.9) until resolved.

m. Current osteomyelitis (730.0) or history of recurrent osteomyelitis.

n. Current or history of *osteochondral defect, formerly known as* osteochondritis dissecans (732.7).

o. History of cartilage surgery, including but not limited to cartilage debridement, chondroplasty, microfracture, or cartilage transplant procedure (CPT 20910, 20912, 21230, 21235, 27412, 27415, 29866-29867).

p. Current or history of any post-traumatic (958.9) or exercise-induced (729.7-79) compartment syndrome.

q. Current or history of avascular necrosis of any bone.

r. Current or history of recurrent tendon disorder, including but not limited to tendonitis, tendonopathy, tenosynovitis.

21. VASCULAR SYSTEM

a. Current or history of abnormalities of the arteries (447), including but not limited to aneurysms (442), arteriovenous malformations, atherosclerosis (440), or arteritis (such as Kawasaki's disease) (446).

b. Current or medically managed hypertension (401). Hypertension is defined as systolic pressure greater than 140 mmHg and or diastolic pressure greater than 90 mmHg confirmed by manual blood pressure cuff averaged over two or more properly measured, seated, blood pressure readings on each of 2 or more consecutive days (isolated, single-day blood pressure elevation is not disqualifying unless confirmed on 2 or more consecutive days).

c. Current or history of peripheral vascular disease (443.9), including but not limited to diseases such as Raynaud's Disease (443.0) and vasculidities.

d. Current or history of venous diseases, including but not limited to recurrent thrombophlebitis (451), thrombophlebitis during the preceding year, or evidence of venous incompetence, such as large or symptomatic varicose veins, edema, or skin ulceration (454).

e. Current or history of deep venous thrombosis (453.40).

f. History of operation or endovascular procedure on the arterial or venous systems, including but not limited to vena cava filter, angioplasty, venoplasty, thrombolysis, or stent placement (CPT 34001-37799).

g. History of Marfan's Syndrome (759.82).

22. SKIN AND CELLULAR TISSUES

a. Current diseases of sebaceous glands including severe and or cystic acne (706), or hidradenitis suppurativa (704-705), if extensive involvement of the neck, scalp, axilla, groin, shoulders, chest, or back is present or shall be aggravated by or interfere with the proper wearing of military equipment. Applicants under treatment with systemic retinoids, including, but not limited to isotretinoin (Accutane®), do not meet the standard until 8 weeks after completion of therapy.

b. Current or history of atopic dermatitis (691) or eczema (692.9) after the 12th birthday.

(1) Atopic Dermatitis. Active or history of residual or recurrent lesions in characteristic areas (face, neck, antecubital and or popliteal fossae, occasionally wrists and hands).

(2) Non-Specific Dermatitis. Current or history of recurrent or chronic non-specific dermatitis to include contact (692) (irritant or allergic), or dyshidrotic dermatitis (705.81) requiring more than treatment with over the counter medications.

c. Cysts if:

(1) The current cyst (706.2) (other than pilonidal cyst) is of such a size or location as to interfere with the proper wearing of military equipment.

(2) The current pilonidal cyst (685) is evidenced by the presence of a tumor mass or a discharging sinus, or is a surgically resected pilonidal cyst (CPT 11770-11772) that is symptomatic, unhealed, or less than 6 months post-operative.

d. Current or history of bullous dermatoses (694), including but not limited to dermatitis herpetiformis, pemphigus, and epidermolysis bullosa, (757.39). Resolved bullous impetigo DOES meet the standard.

e. Current or chronic lymphedema (457.1).

f. Current or history of furunculosis or carbuncle (680) if extensive, recurrent, or chronic.

g. Current or history of severe hyperhidrosis of hands or feet (705.2, 780.8) unless controlled by topical medications.

h. Current or history of congenital (757) or acquired (216) anomalies of the skin, such as nevi or vascular tumors that interfere with function, or are exposed to constant irritation. History of Dysplastic Nevus Syndrome (232).

i. Current or history of keloid formation (701.4), including but not limited to pseudofolliculitis and keloidalis nuchae (706.1), if that tendency is marked or interferes with the proper wearing of military equipment.

j. Current lichen planus (cutaneous and/or oral) (697.0).

k. Current or history of neurofibromatosis (Von Recklinghausen's Disease) (237.7).

l. History of photosensitivity (692.72), including but not limited to any primary sun-sensitive condition, such as polymorphous light eruption or solar urticaria, or any dermatosis aggravated by sunlight, such as lupus erythematosus.

m. Current or history of psoriasis (696.1).

n. Current or history of radiodermatitis (692.82).

o. Current or history of scleroderma (710.1).

p. Current or history of chronic urticaria lasting longer than 6 weeks or recurrent episodes of urticaria (708.8) within the past 24 months not associated with angioedema, hereditary angioedema (277.6), or maintenance therapy for chronic urticaria, even if not symptomatic.

q. Current symptomatic plantar wart(s) (078.19).

r. Current scars (709.2), or any other chronic skin disorder of a degree or nature that requires frequent outpatient treatment or hospitalization, which in the opinion of the certifying authority shall interfere with proper wearing of military clothing or equipment, or which exhibits a tendency to ulcerate or interferes with the satisfactory performance of duty.

s. Prior burn (949) injury involving 18 percent or more body surface area (including graft sites), or resulting in functional impairment to such a degree, due to scarring, as to interfere with the satisfactory performance of military duty due to decreased range of motion, strength, or agility.

t. Current localized types of fungus infections (117), interfering with the proper wearing of military equipment or the performance of military duties. For systemic fungal infections, refer to paragraph 24.~~wq~~. of this enclosure.

23. BLOOD AND BLOOD-FORMING TISSUES

a. Current hereditary or acquired anemia, which has not been corrected with therapy before appointment or induction. ICD-9 codes for diagnosed anemia include hereditary hemolytic anemia (282), sickle cell disease (282.6), acquired hemolytic anemia (283), aplastic anemia (284), or unspecified anemias (285).

b. Current or history of coagulation defects (286), including but not limited to von Willebrand's Disease (286.4), idiopathic thrombocytopenia (287), or Henoch-Schönlein Purpura (287.0).

c. Current or history of diagnosis of any form of chronic or recurrent agranulocytosis and/or leukopenia (288.0).

d. Spleen

(1) Current splenomegaly (789.2).

(2) History of splenectomy (P41.5) (CPT 38100-38129), except when accomplished for trauma or conditions unrelated to the spleen or for hereditary spherocytosis (282.0).

24. SYSTEMIC

a. Current or history of disorders involving the immune mechanism, including immunodeficiencies (279).

b. Presence of human immunodeficiency virus or serologic evidence of infection (042, V08) or false-positive screening test(s) with ambiguous results on confirmatory immunologic testing.

~~c. Current or history of lupus erythematosus (710.0) or mixed connective tissue disease variant (710.9).~~

~~d. Current or history of progressive systemic sclerosis (710.1), including Calcinosis, Raynaud's phenomenon, Esophogeal dysmotility, sclerodactyly, telangiectasia (CREST) Variant.~~

~~e. Current or history of Reiter's disease (099.3).~~

~~f. Current or history of rheumatoid arthritis (714.0).~~

~~g. Current or history of Sjögren's syndrome (710.2).~~

~~h. Current or history of vasculitis, including but not limited to polyarteritis nodosa and allied conditions (446.0), arteritis (447.6), Behçet's (136.1), and Wegener's granulomatosis (446.4).~~

~~i~~*c*. Tuberculosis (010)

(1) Current active tuberculosis or substantiated history of active tuberculosis in any form or location, regardless of past treatment, in the previous 2 years.

(2) Current residual physical or mental defects from past tuberculosis that shall prevent the satisfactory performance of duty.

(3) Individuals with a past history of active tuberculosis more than 2 years before appointment, enlistment, or induction meet the standard if they have received a complete course of standard chemotherapy for tuberculosis.

(4) Current or history of untreated latent tuberculosis (positive Purified Protein Derivative with negative chest X-ray) (795.5). Individuals with a tuberculin reaction in accordance with ATS and United States Public Health Service (USPHS) guidelines are eligible for enlistment, induction, and appointment, provided they have received chemoprophylaxis in accordance with ATS and USPHS guidelines. A negative QuantiFERON®-TB Gold (QFT®-G) with a positive tuberculin skin test DOES meet the standard.

~~j~~*d*. Current untreated syphilis (097).

~~k~~*e*. History of anaphylaxis (995.0).

(1) History of anaphylaxis to stinging insects (989.5). A cutaneous only reaction to a stinging insect under the age of 16 DOES meet the standard. Applicants who have been treated for 3-5 years with maintenance venom immunotherapy DO meet the standard.

(2) History of systemic allergic reaction to food or food additives (995.60-995.69). Systemic allergic reaction may be defined as a temporally related, systemic, often multi-system, reaction to a specific food. The presence of a food-specific immunoglobulin E antibody without a correlated clinical history DOES meet the standard.

(3) Oral allergy syndrome.

(4) Hypersensitivity to latex (V15.07).

(5) Exercise-induced anaphylaxis (with or without food).

(6) Idiopathic anaphylaxis (995.0).

(7) Acute, early, or immediate anaphylactic onset.

(8) History of systemic allergic reaction or angioedema.

~~f~~*f.* Current residual of tropical fevers, including but not limited to fevers, such as malaria (084) and various parasitic or protozoan infestations that prevent the satisfactory performance of military duty.

~~mg~~*g.* History of malignant hyperthermia (995.86).

~~nh~~*h.* History of industrial solvent or other chemical intoxication (982) with sequelae.

~~oi~~*i.* History of motion sickness (994.6) resulting in recurrent incapacitating symptoms or of such a severity to require pre-medication in the previous 3 years.

~~pj~~*j.* History of rheumatic fever (390).

~~qk~~*k.* Current or history of muscular dystrophies (359) or myopathies.

~~rl~~*l.* Current or history of amyloidosis (277.3).

~~sm~~*m.* Current or history of eosinophilic granuloma (277.8) and all other forms of histiocytosis (202.3). Healed eosinophilic granuloma, when occurring as a single localized bony lesion and not associated with soft tissue or other involvement, DOES meet the standard.

~~tn~~*n.* Current or history of polymyositis (710.4) or dermatomyositis complex (710.3) with skin involvement.

~~uo~~*o.* History of rhabdomyolysis (728.88).

~~vp~~*p.* Current or history of sarcoidosis (135).

~~wq~~*q.* Current systemic fungus infections (117). For localized fungal infections, refer to paragraph 22.t. of this enclosure.

25. ENDOCRINE AND METABOLIC

a. Current ~~or history of~~ adrenal dysfunction (255).

b. ~~Current or history of diabetes mellitus (249.xx, 250.xx).~~ *Diabetes mellitus (250) disorders, including:*

(1) Current or history of diabetes mellitus (250).

(2) Current or history of pre-diabetes mellitus defined as fasting plasma glucose 110-125 milligrams per deciliter (mg/dL) and glycosylated hemoglobin greater than 5.7 percent.

(3) History of gestational diabetes mellitus.

(4) Current persistent glycosuria, when associated with impaired glucose tolerance (250) or renal tubular defects (271.4).

c. Current or history of pituitary dysfunction (253), *to include history of growth hormone use. Non-functional microadenoma (less than 1cm) DOES meet the standard.*

d. Current or history of ~~gout (274).~~ *diabetes insipidus.*

e. Current or history of hyperparathyroidism (252.0) or hypoparathyroidism (252.1).

f. The following thyroid disorders:

(1) Current goiter (240). *Symmetrical simple goiter less than two times normal size with no nodules by ultrasound and normal thyroid function tests DOES meet the standard.*

(2) Thyroid nodule (241.0). A solitary thyroid nodule less than 5mm or less than 3cm with benign histology or cytology DOES meet the standard.

(~~2~~3) Current hypothyroidism (244) ~~uncontrolled by medication~~. *Individuals with two normal thyroid stimulating hormone tests within the preceding 6 months DOES meet the standard.*

(~~3~~4) Current or history of hyperthyroidism (242.9). *In remission off of anti-thyroidal medication with normal thyroid function tests for a minimum of 12 months and without evidence of thyroid associated ophthalmopathy DOES meet the standard.*

~~(4) Current thyroiditis (245).~~

g. Current nutritional deficiency diseases, including but not limited to beriberi (265.0), pellagra (265.2), and scurvy (267).

~~h. Current persistent glucosuria, when associated with impaired glucose tolerance (250) or renal tubular defects (271.4).~~

~~i.~~*h.* Current or history of acromegaly, including but not limited to gigantism (253.0), or other disorders of pituitary function (253).

~~j.~~*i.* Dyslipidemia ~~on medical management requiring more than one medication.~~ *with low-density lipoprotein (LDL) greater than 200mg/dL or triglycerides greater than 400 mg/dL. Dyslipidemia requiring more than one medication or LDL greater than 190 mg/dL on therapy.* All those on medical management must have demonstrated no medication side effects (such as myositis, myalgias, or transaminitis) for a period of 6 months.

~~k.~~*j.* Metabolic syndrome beyond the 35th birthday. Metabolic syndrome is defined in accordance with NHLBI and American Heart Association (2005) as any three of the following:

(1) Medically controlled hypertension or elevated blood pressure of greater than 130 mmHg systolic or greater than 85 mmHg diastolic.

(2) Waist circumference greater than 35 inches for women and greater than 40 inches for men.

(3) Medically controlled dyslipidemia or triglycerides greater than 150 mg/dl.

(4) Medically controlled dyslipidemia or high-density lipoprotein less than 40 mg/dl in men or less than 50 mg/dl in women.

(5) Fasting glucose greater than 100 mg/dl.

k. Metabolic bone disease.

(1) Osteopenia, osteoporosis, or low bone mass with history of fragility fracture.

(2) Paget's disease.

(3) Osteomalacia.

(4) Osteogenesis imperfecta.

l. Male hypogonadism.

m. Current or history of islet-cell tumors, nesideoblastosis, or hypoglycemia.

26. RHEUMATOLOGIC

a. Current or history of lupus erythematosus (710.0) or mixed connective tissue disease variant (710.9).

b. Current or history of progressive systemic sclerosis (710.1), including calcinosis, Raynaud's disease or phenomenon, esophogeal dysmotility, sclerodactyly, telangiectasia (CREST) variant.

c. Current or history of Reiter's disease (099.3).

d. Current or history of rheumatoid arthritis (714.0).

e. Current or history of Sjögren's syndrome (710.2).

f. Current or history of vasculitis, including but not limited to polyarteritis nodosa and allied conditions (446.0), arteritis (447.6), Behçet's (136.1), and Wegener's granulomatosis (446.4). Henoch-Schonlein Purpura occurring before the age of 19 with 2 years remission and no sequelae DOES meet the standard.

g. History of congenital fusion (756.15) involving more than two vertebral bodies or any surgical fusion of spinal vertebrae (P81.0).

h. Current or history of gout (274).

i. Current or history of inflammatory myopathy including polymyositis or dermatomyositis.

j. Current or history of non-inflammatory myopathy to include but not limited to metabolic myopathy such as glycogen storage disease, lipid storage disease, and mitochondrial myopathy.

k. Current or history of fibromyalgia, myofascial pain, or chronic wide-spread pain.

l. Current or history of chronic fatigue syndrome.

m. Current or history of spondyloarthritis including ankylosing spondyloarthritis, psoriatic arthritis, reactive arthritis, or spondyloarthritis associated with inflammatory bowel disease.

n. Current or history of joint hypermobility syndrome.

o. Current or history of hereditary connective tissue disorders including but not limited to Marfan's syndrome, Ehlers-Danlos syndrome, and osteogenesis imperfecta.

267. NEUROLOGIC

a. Current or history of cerebrovascular conditions, including but not limited to subarachnoid (430) or intracerebral (431) hemorrhage, vascular stenosis, aneurysm, stroke, transient ischemic attack or arteriovenous malformation (437).

b. History of congenital or acquired anomalies of the central nervous system (742) or meningocele (741.9).

c. Current or history of disorders of meninges, including but not limited to cysts (349.2). Asymptomatic incidental arachnoid cyst demonstrated to be stable by neurological imaging over a 6-month or greater time period DO meet the standard.

d. Current or history of neurodegenerative disorders, including but not limited to those disorders affecting the cerebrum (330), basal ganglia (333), cerebellum (334), spinal cord (335), peripheral nerves (337), or muscles (728).

e. History of headaches (784.0), including but not limited to migraines (346) and tension headaches (307.81) that:

(1) Are severe enough to disrupt normal activities (such as loss of time from school or work) ~~of~~ more than twice per year in the past 2 years.

(2) Require prescription medications more than twice per year within the last 2 years.

f. Migraine (346) or migraine variant (346.2) associated with neurological deficits other than scotoma.

g. Cluster headaches (339.0).

h. History of head injury (854.0) if associated with:

(1) Post-traumatic seizure(s) occurring more than 30 minutes after injury.

(2) Persistent motor, sensory, vestibular, visual, or any other focal neurological deficit.

(3) Persistent impairment of cognitive function.

(4) Persistent alteration of personality or behavior.

(5) Unconsciousness of 24 hours or more post-injury

(6) Amnesia or disorientation of person, place, or time of 7 days duration or longer post-injury.

(7) Cerebral traumatic findings, including but not limited to epidural, subdural, subarachnoid, or intracerebral hematoma on neurological imaging until resolved and 12 months has elapsed since injury.

(8) Associated abscess (326) or meningitis (958.8).

(9) Cerebrospinal fluid rhinorrhea (349.81) or otorrhea (388.61) persisting more than 7 days.

(10) Penetrating brain injury to include radiographic evidence of retained foreign body or bony fragments secondary to the trauma and/or operative procedure in the brain.

i. History of moderate head injury (854.03).

(1) Moderate head injuries are defined as:

(a) Unconsciousness of more than 30 minutes but less than 24 hours, or

(b) Amnesia, or disorientation of person, place, or time, alone or in combination, more than 24 hours but less than 7 days duration post-injury, or

(c) Linear skull fracture.

(2) After 12 months post-injury, applicants may be qualified if neurological examination shows no residual dysfunction or complications.

j. History of mild head injury (854.02).

(1) Mild head injury is defined as:

(a) Unconsciousness of less than 30 minutes post-injury.

(b) Amnesia or disorientation of person, place, or time, alone or in combination, of less than 24 hours post-injury.

(2) After 1 month post-injury, applicants may be qualified if neurological examination shows no residual dysfunction or complications.

k. History of persistent post-concussive symptoms (310.2) that interfere with normal activities or have duration of more than 1 month. Such symptoms include but are not limited to headache, vomiting, disorientation, spatial disequilibrium, impaired memory, poor mental concentration, shortened attention span, dizziness, or altered sleep patterns.

l. Current or history of infectious processes of the central nervous system, including but not limited to meningitis (322), encephalitis (323), neurosyphilis (094), or brain abscess (324), if occurring within 1 year before examination, required surgical treatment, or if there are residual neurological defects.

m. Current or history of paralysis, weakness, lack of coordination, chronic pain (including but not limited to chronic regional pain syndrome or neuralgias), or sensory disturbance or other specified paralytic syndromes (344), including but not limited to Guillain-Barre Syndrome (357.0).

n. Any seizure occurring beyond the 6th birthday, unless the applicant has been free of seizures for a period of 5 years while taking no medication for seizure control, and has a normal sleep-deprived electroencephalogram and normal neurology evaluation while taking no medications for seizure control.

o. Chronic nervous system disorders, including but not limited to myasthenia gravis (358.0), multiple sclerosis (340), tremor (333.1), and tic disorders (307.20) (e.g., Tourette's (307.23)).

p. Current or history of central nervous system shunts of all kinds (V45.2).

q. Syncope or atraumatic loss of consciousness. History of recurrent syncope or presyncope (780.2), including blackout, fainting, loss or alteration of level of consciousness (excludes single episode of vasovagal reaction with identified trigger such as venipuncture), unless there has been no recurrence during the preceding 2 years while off all medication for treatment of this condition.

278. SLEEP DISORDERS

a. Chronic insomnia (780.5). Within the past year, had difficulty sleeping, or used medications to promote sleep for more than 3 nights per week, over a period of 3 months.

b. Sleep-related breathing disorders (327). Current diagnosis or treatment of sleep-related breathing disorders, including but not limited to sleep apnea (327.2).

c. Current or history of narcolepsy, cataplexy (347-347.11), or other hypersomnia disorders (327.13-19).

d. Circadian rhythm disorders requiring treatment (307.45).

e. Current or history of parasomnia (327.44, 327.49), including but not limited to sleepwalking, enuresis, or night terrors (307.46), after the age of 15.

f. Current diagnosis or treatment of sleep-related movement disorders to include restless leg syndrome (327.5).

289. LEARNING, PSYCHIATRIC, AND BEHAVIORAL

a. Attention Deficit Hyperactivity Disorder (ADHD) (314) UNLESS the following criteria are met:

(1) The applicant has not required an Individualized Education Program or work accommodations since the age of 14.

(2) There is no history of comorbid mental disorders.

(3) The applicant has never taken more than a single daily dosage of medication or has not been prescribed medication for this condition for more than 24 cumulative months after the age of 14.

(4) During periods off of medication after the age of 14, the applicant has been able to maintain at least a 2.0 grade point average without accommodations.

(5) Documentation from the applicant's prescribing provider that continued medication is not required for acceptable occupational or work performance.

(6) Applicant is required to enter service and pass Service-specific training periods with no prescribed medication for ADHD.

b. History of learning disorders (315), including but not limited to dyslexia (315.02), UNLESS applicants demonstrated passing academic and employment performance without utilization of academic and or work accommodations at any time since age 14.

c. Pervasive developmental disorders (299 series) including Asperger Syndrome, autistic spectrum disorders, and pervasive developmental disorder-not otherwise specified (299.9).

d. Current or history of disorders with psychotic features such as schizophrenic disorders (295), delusional disorders (297), or other and unspecified psychoses (298).

e. History of bipolar disorders (296.4-7) and affective psychoses (296.8).

f. History of depressive disorders, including but not limited to major depression (296), dysthymic disorder (300.4), and cyclothymic disorder requiring outpatient care for longer than 12 months by a physician or other mental health professional (to include V65.40), or any inpatient treatment in a hospital or residential facility.

g. Depressive disorder not otherwise specified (311), or unspecified mood disorder (296.90), UNLESS:

(1) Outpatient care was not required for longer than 24 months (cumulative) by a physician or other mental health professional (to include V65.40).

(2) The applicant has been stable without treatment for the past 36 continuous months.

(3) The applicant did not require any inpatient treatment in a hospital or residential facility.

h. History of a single adjustment disorder (309) within the previous 3 months, or recurrent episodes of adjustment disorders.

i. Current or history of disturbance of conduct (312), impulse control (312.3), oppositional defiant (313.81), other behavior disorders (313), or personality disorder (301).

(1) History (demonstrated by repeated inability to maintain reasonable adjustment in school, with employers or fellow workers, or other social groups), interview, or psychological testing revealing that the degree of immaturity, instability, of personality inadequacy, impulsiveness, or dependency shall likely interfere with adjustment in the Military Services.

(2) Recurrent encounters with law enforcement agencies (excluding minor traffic violations) or antisocial behaviors are tangible evidence of impaired capacity to adapt to military service.

j. Encopresis (307.7) after 13th birthday.

k. History of anorexia nervosa (307.1) or bulimia (307.51).

l. Other eating disorders (307.50; 52-54) including unspecified disorders of eating (307.59) occurring after the 13th birthday.

m. Any current receptive or expressive language disorder, including but not limited to any speech impediment or stammering and stuttering (307.0) of such a degree as to significantly interfere with production of speech or *the ability* to repeat commands.

n. History of suicidal behavior, including gesture(s) or attempt(s) (300.9) or history of self-mutilation or injury used as a way of dealing with life and emotions.

o. History of obsessive-compulsive disorder (300.3) or post-traumatic stress disorder (309.81).

p. History of anxiety disorders (300.01), anxiety disorder not otherwise specified (300.00), panic disorder (300.2), agoraphobia (300.21, 300.22), social phobia (300.23), simple phobias (300.29), other acute reactions to stress (308) UNLESS:

(1) The applicant did not require any treatment in an inpatient or residential facility.

(2) Outpatient care was not required for longer than 12 months (cumulative) by a physician or other mental health professional (to include V65.40).

(3) The applicant has not required treatment (including medication) for the past 24 continuous months.

(4) The applicant has been stable without loss of time from normal pursuits for repeated periods even if of brief duration; and without symptoms or behavior of a repeated nature that impaired social, school, or work efficiency for the past 24 continuous months.

q. Current or history of dissociative, conversion, or factitious disorders (300.1), depersonalization (300.6), hypochondriasis (300.7), somatoform disorders (300.8), or pain disorder related to psychological factors (307.80 and .89).

r. Current or history of psychosexual conditions (302), including but not limited to transsexualism, exhibitionism, transvestism, voyeurism, and other paraphilias.

s. Current or history of alcohol dependence (303), drug dependence (304), alcohol abuse (305.0), or other drug abuse (305.2 thru 305.9).

t. Current or history of other mental disorders (all 290-319 not listed) that, in the opinion of the civilian or military medical examiner, shall interfere with or prevent satisfactory performance of military duty.

u. Prior psychiatric hospitalization for any cause.

~~29~~30. TUMORS AND MALIGNANCIES

a. Current benign tumors ~~(M8000)~~ or conditions that interfere with function, prevent the proper wearing of the uniform or protective equipment, shall require frequent specialized attention, or have a high malignant potential, such as Dysplastic Nevus Syndrome.

b. Current or history of malignant tumors (V10).

c. Skin cancer (other than malignant melanoma) that is removed with no residual DOES meet the standard.

3~~0~~1. MISCELLANEOUS

a. Current or history of parasitic diseases, if symptomatic or carrier state, including but not limited to filariasis (125), trypanosomiasis (086), schistosomiasis (120), hookworm (uncinariasis) (126.9), or unspecified infectious and parasitic disease (136.9).

b. Current or history of other disorders, including but not limited to cystic fibrosis (277.0) or porphyria (277.1), that prevent satisfactory performance of duty, or require frequent or prolonged treatment.

c. Current or history of cold-related disorders, including but not limited to frostbite, chilblain, immersion foot (991), or cold urticaria (708.2).

d. Current residual effects of cold-related disorders (991.9), including but not limited to paresthesias, easily traumatized skin, cyanotic amputation of any digit, ankylosis, trench foot, or deep-seated ache.

e. History of angioedema, including hereditary angioedema (277.6).

f. History of receiving organ or tissue transplantation (V42).

g. History of pulmonary (415) or systemic embolization (444).

h. History of untreated acute or chronic metallic poisoning, including but not limited to lead, arsenic, silver (985), beryllium (985.3), or manganese (985.2), or current complications or residual symptoms of such poisoning.

i. History of heat pyrexia (992.0), heatstroke (992.0), or sunstroke (992.0).

j. History of three or more episodes of heat exhaustion (992.3).

k. Current or history of a predisposition to heat injuries (992.0-992.8), including disorders of sweat mechanism (705.0-705.9), combined with a previous serious episode.

l. Current or history of any unresolved sequelae of heat injury (992.0-992.8), including but not limited to nervous, cardiac, hepatic, or renal systems.

m. Current or history of any condition that, in the opinion of the medical officer, shall significantly interfere with the successful performance of military duty or training (should use specific ICD code whenever possible, or 796.9).

n. Any current acute pathological condition, including but not limited to acute communicable diseases, until recovery has occurred without sequelae.

GLOSSARY

PART I. ABBREVIATIONS AND ACRONYMS

ADHD	Attention Deficit Hyperactivity Disorder
ANSI	American National Standards Institute
ASD(HA)	Assistant Secretary of Defense for Health Affairs
ATS	American Thoracic Society
AV	atrioventricular
CPT	Current Procedural Terminology
CREST	Calcinosis, Raynaud's phenomenon, Esophogeal dysmotility, sclerodactyly, telangiectasia
dB	decibel
DEP	Delayed Entry Program
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DUSD(MPP)	Deputy Under Secretary of Defense for Military Personnel Policy
ECG	electrocardiograph
GERD	Gastro-Esophageal Reflux Disease
HCPCS	Healthcare Common Procedure Coding System
HHS	Department of Health and Human Services
ICD	International Classification of Diseases
LASEK	laser epithelial keratomileusis
LASIK	laser-assisted in situ keratomileusis
LDL	*low-density lipoprotein*
LTBI	latent tuberculosis infection
MEDPERS	Medical and Personnel Executive Steering Committee
mg/dl	milligrams per deciliter
mmHg	millimeters of mercury
NHLBI	National Heart, Lung, and Blood Institute
NIH	National Institutes of Health
PRK	photorefractive keratectomy
PDASD(HA)	Principal Deputy Assistant Secretary of Defense for Health Affairs
PDES	Physical Disability and Evaluation System
PDUSD(P&R)	Principal Deputy Under Secretary of Defense for Personnel and Readiness

QFT®-G	QuantiFERON®-TB Gold
ROTC	Reserve Officer Training Corps
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
USPHS	United States Public Health Service
WPW	Wolff-Parkinson-White

PART II. DEFINITIONS

Unless otherwise noted, these terms and their definitions are for the purpose of this Instruction.

anemia. A hemoglobin level of less than 13.5 for males and less than 12 for females.

Department of Health and Human Services (HHS). The U.S. Government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves.

Military Department. Defined in Joint Publication 1-02 (Reference (j)).

Military Service(s). Defined in Reference (j).

NHLBI. An agency within the National Institutes of Health (NIH) that provides global leadership for a research, training, and education program to promote the prevention and treatment of heart, lung, and blood diseases and enhance the health of all individuals so that they can live longer and more fulfilling lives.

NIH. An agency within the HHS that serves as the steward of medical and behavioral research for the Nation. Its mission is science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability.

QFT®-G. An in vitro laboratory diagnostic test using a whole blood specimen. It is an indirect test for Mycobacterium tuberculosis-complex (i.e., M. tuberculosis, M. bovis, M. africanum, M. microti, M. canetti) infection, whether tuberculosis disease or latent tuberculosis infection (LTBI). It cannot distinguish between tuberculosis disease and LTBI, and is intended for use in conjunction with risk assessment, radiography, and other medical and diagnostic evaluations.

Department of Defense

INSTRUCTION

NUMBER 6485.01
June 7, 2013

USD(P&R)

SUBJECT: Human Immunodeficiency Virus (HIV) in Military Service Members

References: See Enclosure 1

1. PURPOSE. In accordance with the authority in DoD Directive (DoDD) 5124.02 (Reference (a)), this instruction reissues DoD Instruction (DoDI) 6485.01 (Reference (b)) to establish policy, assign responsibilities, and prescribe procedures for the identification, surveillance, and management of members of the Military Services infected with HIV and for prevention activities to control transmission of HIV.

2. APPLICABILITY. This instruction applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD.

3. POLICY. It is DoD policy to:

a. Deny eligibility for military service to persons with laboratory evidence of HIV infection for appointment, enlistment, pre-appointment, or initial entry training for military service pursuant to DoDI 6130.03 (Reference (c)).

b. Periodically screen Service members for HIV infection.

4. RESPONSIBILITIES. See Enclosure 2.

5. PROCEDURES. See Enclosure 3.

6. RELEASABILITY. **Unlimited**. This instruction is approved for public release and is available on the Internet from the DoD Issuances Website at http://www.dtic.mil/whs/directives.

7. EFFECTIVE DATE. This instruction:

a. Is effective June 7, 2013.

b. Must be reissued, cancelled, or certified current within 5 years of its publication in accordance with DoDI 5025.01 (Reference (d)). If not, it will expire effective June 7, 2023 and be removed from the DoD Issuances Website.

Jessica L. Wright
Acting Under Secretary of Defense for
Personnel and Readiness

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ENCLOSURE 1

REFERENCES

(a) DoD Directive 5124.02, "Under Secretary of Defense for Personnel and Readiness (USD(P&R))," June 23, 2008
(b) DoD Instruction 6485.01, "Human Immunodeficiency Virus," October 17, 2006 (hereby cancelled)
(c) DoD Instruction 6130.03, "Medical Standards for Appointment, Enlistment, or Induction in the Military Services," April 28, 2010, as amended
(d) DoD Instruction 5025.01, "DoD Directives Program," September 26, 2012
(e) DoD Directive 6490.02E, "Comprehensive Health Surveillance," February 8, 2012
(f) DoD Instruction 6025.19, "Individual Medical Readiness (IMR)," January 3, 2006
(g) DoD Instruction 6490.03, "Deployment Health," August 11, 2006
(h) DoD Instruction 6025.13, "Medical Quality Assurance (MQA) and Clinical Quality Management in the Military Health System (MHS)," February 17, 2011
(i) DoD 6025.13-R, "Military Health System (MHS) Clinical Quality Assurance Program (CQA) Regulation," June 11, 2004
(j) DoD Instruction 6490.07, "Deployment-Limiting Medical Conditions for Service Members and DoD Civilian Employees," February 5, 2010
(k) DoD Instruction 1332.38, "Physical Disability Evaluation," November 14, 1996, as amended
(l) Section 705(c) of Public Law 99-661, "National Defense Authorization Act for Fiscal Year 1987," November 14, 1986
(m) DoD 5400.11-R, "Department of Defense Privacy Program," May 14, 2007
(n) DoD 6025.18-R, "DoD Health Information Privacy Regulation," January 24, 2003

ENCLOSURE 2

RESPONSIBILITIES

1. UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS (USD(P&R)). The USD(P&R) provides overall policy implementation guidance for:

a. The personnel management of Service members with laboratory evidence of HIV infection.

b. Compliance with host-nation requirements for screening and related matters for Service members.

2. ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS (ASD(HA)). Under the authority, direction, and control of the USD(P&R), the ASD(HA) provides overall policy implementation guidance for the medical management of Service members with laboratory evidence of HIV infection and for health education programs to prevent the transmission of HIV.

3. UNDER SECRETARY OF DEFENSE FOR POLICY (USD(P)). The USD(P):

a. Identifies or confirms host-nation HIV screening and other related requirements and transmits this information to the USD(P&R).

b. Coordinates matters involving host-nation screening and other related requirements with the Department of State.

4. SECRETARIES OF THE MILITARY DEPARTMENTS. The Secretaries of the Military Departments:

a. Implement this instruction and any guidance issued under the authority of this instruction.

b. Report HIV test results to the Defense Medical Surveillance System pursuant to DoDD 6490.02E (Reference (e)).

c. Direct health care personnel providing medical care to follow the recommendations of the Centers for Disease Control and Prevention for preventing HIV transmission in health-care settings.

ENCLOSURE 3

PROCEDURES

1. TESTING AND SCREENING

a. Applicants for appointment, enlistment, or individuals being inducted into the Military Services will be screened for laboratory evidence of HIV infection in accordance with Reference (c).

b. Applicants to the U.S. Service Academies, the Uniformed Services University of the Health Sciences, and other officer candidate programs will be tested for laboratory evidence of HIV within 72 hours of arrival to the program and denied entry to the program if such test is positive. Reserve Officer Training Corps program cadets and midshipmen must be tested for laboratory evidence of HIV not later than during their commissioning physical examination, and denied a commission if they test positive.

c. All Service members will be screened periodically for laboratory evidence of HIV infection.

(1) Active duty (AD) and Reserve Component (RC) Selected Reserve (SELRES) personnel will be routinely screened every 2 years unless more frequent screenings are clinically indicated.

(2) Members of the SELRES will be screened at least once every 2 years. RC personnel will be screened when called to a period of AD greater than 30 days if they have not received an HIV test within the last 2 years.

(3) Testing for laboratory evidence of HIV for pre- and post-deployment must be conducted in accordance with DoDI 6025.19 (Reference (f)) and DoDI 6490.03 (Reference (g)).

d. A serum sample from all HIV force screenings will be forwarded to the DoD Serum Repository as directed by Reference (e).

2. MANAGEMENT

a. Clinical management of an AD Service member and an RC Service member on AD for a period of more than 30 days with laboratory evidence of HIV infection will be conducted consistent with standard of care, evidence-based HIV clinical practice standards, and medical management guidelines, as described in DoDI 6025.13 and DoD 6025.13-R (References (h) and (i)).

b. In accordance with DoDI 6490.07 (Reference (j)), the cognizant Combatant Command surgeon will be consulted in all instances of HIV seropositivity before medical clearance for deployment.

c. An AD Service member with laboratory evidence of HIV infection will be referred for appropriate treatment and a medical evaluation of fitness for continued service in the same manner as a Service member with other chronic or progressive illnesses in accordance with DoDI 1332.38 (Reference (k)). An AD Service member with laboratory evidence of HIV infection determined to be fit for duty will be allowed to serve in a manner that ensures access to appropriate medical care.

d. An RC Service member with laboratory evidence of HIV infection will be referred for a medical evaluation of fitness for continued service in accordance with Service regulations, and in the same manner as an RC Service member with other chronic or progressive illnesses. Eligibility for active duty for a period of more than 30 days will be denied to those RC Service members with laboratory evidence of HIV infection (except under conditions of mobilization and on the decision of the Secretary of the Military Department concerned). RC Service members who are not on active duty for a period of more than 30 days or who are not on full-time National Guard duty, and who show laboratory evidence of HIV infection, will be transferred involuntarily to the Standby Reserve only if they cannot be used in the SELRES.

e. AD and RC Service members with laboratory evidence of HIV infection who are determined to be unfit for further duty will be separated or retired pursuant to Reference (k).

3. TRANSMISSION CONTROL. Transmission of HIV will be controlled through aggressive disease surveillance and health education programs for Service members. A Service member with laboratory evidence of HIV infection will receive training on the prevention of further transmission of HIV infection to others and the legal consequences of exposing others to HIV infection.

4. ADVERSE PERSONNEL ACTION. Information obtained during or primarily as a result of an epidemiologic assessment interview will not be used to support any adverse personnel action against the Service member in accordance with section 705(c) of Public Law 99-661 (Reference (l)). This prohibition does not apply to the use of such information for otherwise authorized rebuttal or impeachment purposes.

5. PRIVACY. The privacy of a Service member with laboratory evidence of HIV infection will be protected consistent with DoD 5400.11-R and DoD 6025.18-R (References (m) and (n)).

GLOSSARY

PART I. ABBREVIATIONS AND ACRONYMS

AD	active duty
ASD(HA)	Assistant Secretary of Defense for Health Affairs
DoDD	DoD Directive
DoDI	DoD Instruction
HIV	human immunodeficiency virus
RC	Reserve Component
SELRES	Selected Reserves
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
USD(P)	Under Secretary of Defense for Policy

PART II. DEFINITIONS

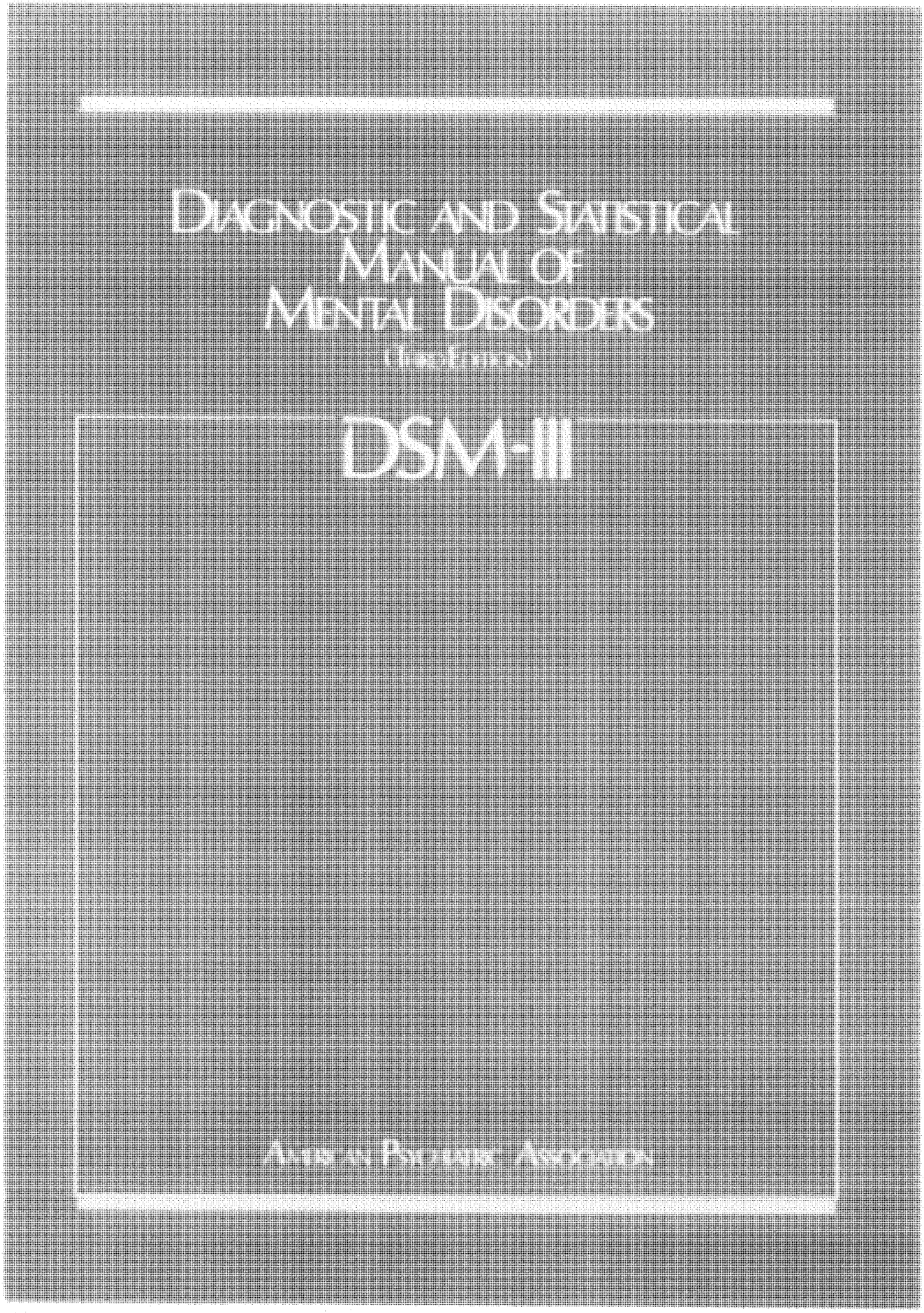
These terms and their definitions are for the purposes of this instruction.

adverse personnel action. A court-martial, non-judicial punishment, involuntary separation for other than medical reasons, administrative or punitive reduction in grade, denial of promotion, an unfavorable entry in a personnel record (other than an accurate entry concerning an action that is not an adverse personnel action), or a bar to reenlistment other than for medical reasons.

epidemiologic assessment interview. Questioning of a Service member who has been confirmed by DoD to have laboratory evidence of HIV infection for purposes of medical treatment or counseling or for epidemiologic or statistical purposes.

HIV. The virus(es) associated with the acquired immune deficiency syndrome (commonly referred to as "AIDS").

laboratory evidence of HIV infection. A reactive and confirmed serologic result, and/or, reactive or quantitative nucleic acid result for HIV infection according to a Food and Drug Administration-approved test.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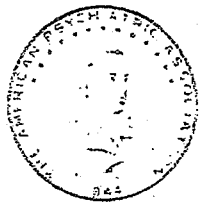

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Psychosexual Disorders

The name for this diagnostic class emphasizes that psychological factors are assumed to be of major etiological significance in the development of the disorders listed here. Disorders of sexual functioning that are caused exclusively by organic factors, even though they may have psychological consequences, are not listed in this classification. For example, impotence due to spinal-cord injury is coded on Axis III as a physical disorder, and the psychological reaction to that condition could be coded as an Adjustment Disorder, or some other suitable category, on Axis I.

The Psychosexual Disorders are divided into four groups. The Gender Identity Disorders are characterized by the individual's feelings of discomfort and inappropriateness about his or her anatomic sex and by persistent behaviors generally associated with the other sex. The Paraphilias are characterized by arousal in response to sexual objects or situations that are not part of normative arousal-activity patterns and that in varying degrees may interfere with the capacity for reciprocal affectionate sexual activity. The Psychosexual Dysfunctions are characterized by inhibitions in sexual desire or the psychophysiological changes that characterize the sexual response cycle. Finally, there is a residual class of Other Psychosexual Disorders that has two categories: Ego-dystonic Homosexuality and a final residual category, Psychosexual Disorders Not Elsewhere Classified.

GENDER IDENTITY DISORDERS

The essential feature of the disorders included in this subclass is an incongruence between anatomic sex and gender identity. Gender identity is the sense of knowing to which sex one belongs, that is, the awareness that "I am a male," or "I am a female." Gender identity is the private experience of gender role, and gender role is the public expression of gender identity. Gender role can be defined as everything that one says and does, including sexual arousal, to indicate to others or to the self the degree to which one is male or female.

Disturbance in gender identity is rare, and should not be confused with the far more common phenomena of feelings of inadequacy in fulfilling the expectations associated with one's gender role. An example would be an individual who perceives himself or herself as being sexually unattractive yet experiences himself or herself unambiguously as a man or woman in accordance with his or her anatomic sex.

302.5x Transsexualism

The essential features of this heterogeneous disorder are a persistent sense of discomfort and inappropriateness about one's anatomic sex and a persistent wish

to be rid of one's genitals and to live as a member of the other sex. The diagnosis is made only if the disturbance has been continuous (not limited to periods of stress) for at least two years, is not due to another mental disorder, such as Schizophrenia, and is not associated with physical intersex or genetic abnormality.

Individuals with this disorder usually complain that they are uncomfortable wearing the clothes of their own anatomic sex; frequently this discomfort leads to cross-dressing (dressing in clothes of the other sex). Often they choose to engage in activities that in our culture tend to be associated with the other sex. These individuals often find their genitals repugnant, which may lead to persistent requests for sex reassignment by surgical or hormonal means.

To varying degrees, the behavior, dress, and mannerisms are those of the other sex. With cross-dressing, hormonal treatment, and electrolysis, a few males with the disorder will appear relatively indistinguishable from members of the other sex. However, the anatomic sex of most males and females with the disorder is quite apparent to the alert observer.

Associated features. Generally there is moderate to severe coexisting personality disturbance. Frequently there is considerable anxiety and depression, which the individual may attribute to inability to live in the role of the desired sex.

Course and subtypes. The disorder is subdivided according to the predominant prior sexual history, which is coded in the fifth digit as 1 = asexual, 2 = homosexual (same anatomic sex), 3 = heterosexual (opposite anatomic sex), and 0 = unspecified. In the first, "asexual," the individual reports never having had strong sexual feelings. Often there is the additional history of little or no sexual activity or pleasure derived from the genitals. In the second group, "homosexual," a predominantly homosexual (object choice is same anatomic sex) arousal pattern preceding the onset of the Transsexualism is acknowledged, although often such individuals will deny that the behavior is homosexual because of their conviction that they are "really" of the other sex. In the third group, "heterosexual," the individual claims to have had an active heterosexual life.

Without treatment, the course of all three types is chronic and unremitting. Since surgical sex reassignment is a recent development, the long-term course of the disorder with this treatment is unknown.

Individuals who have female-to-male Transsexualism appear to represent a more homogeneous group than those who have male-to-female Transsexualism in that they are more likely to have a history of homosexuality and to have a more stable course, with or without treatment.

Age at onset. Individuals who develop Transsexualism often evidenced gender identity problems as children. However, some assert that although they were secretly aware of their gender problem, it was not evident to their family and friends. The age at which the full syndrome appears for those with the "asexual" or "homosexual" course is most often in late adolescence or early

adult life. In individuals with the "heterosexual" course, the disorder may have a later onset.

Impairment and complications. Frequently social and occupational functioning are markedly impaired, partly because of associated psychopathology and partly because of problems encountered in attempting to live in the desired gender role. Depression is common, and can lead to suicide attempts. In rare instances males may mutilate their genitals.

Predisposing factors. Extensive, pervasive, childhood femininity in a boy or childhood masculinity in a girl increases the likelihood of Transsexualism. Transsexualism seems always to develop in the context of a disturbed parent-child relationship. Some cases of Transvestism evolve into Transsexualism.

Prevalence. The disorder is apparently rare.

Sex ratio. Males are more common than females among people who seek help at clinics specializing in the treatment of this disorder. The ratio varies from as high as 8:1 to as low as 2:1.

Familial pattern. No information.

Differential diagnosis. In **effeminate homosexuality** the individual displays behaviors characteristic of the opposite sex. However, such individuals have no desire to be of the other anatomic sex. In **physical intersex** the individual may have a disturbance in gender identity. However, the presence of abnormal sexual structures rules out the diagnosis of Transsexualism.

Other individuals with a disturbed gender identity may, in isolated periods of stress, wish to belong to the other sex and to be rid of their own genitals. In such cases the diagnosis Atypical Gender Identity Disorder should be considered, since the diagnosis of Transsexualism is made only when the disturbance has been continuous for at least two years. In **Schizophrenia**, there may be delusions of belonging to the other sex, but this is rare. The insistence by an individual with Transsexualism that he or she is of the other sex is, strictly speaking, not a delusion since what is invariably meant is that the individual *feels like* a member of the other sex rather than a true belief that he or she *is* a member of the other sex.

In both **Transvestism** and **Transsexualism** there may be cross-dressing. However, in Transvestism that has not evolved into Transsexualism there is no wish to be rid of one's own genitals.

Diagnostic criteria for Transsexualism

A. Sense of discomfort and inappropriateness about one's anatomic sex.

B. Wish to be rid of one's own genitals and to live as a member of the other sex.

C. The disturbance has been continuous (not limited to periods of stress) for at least two years.

D. Absence of physical intersex or genetic abnormality.

E. Not due to another mental disorder, such as Schizophrenia.

Fifth-digit code numbers and subclassification. The predominant prior sexual history is recorded in the fifth digit as:

1 = asexual
2 = homosexual (same anatomic sex)
3 = heterosexual (other anatomic sex)
0 = unspecified

302.60 Gender Identity Disorder of Childhood

The essential features are a persistent feeling of discomfort and inappropriateness in a child about his or her anatomic sex and the desire to be, or insistence that he or she is, of the other sex. In addition, there is a persistent repudiation of the individual's own anatomic attributes. This is not merely the rejection of stereotypical sex role behavior as, for example, in "tomboyishness" in girls or "sissyish" behavior in boys, but rather a profound disturbance of the normal sense of maleness or femaleness.

Girls with this disorder regularly have male peer groups, an avid interest in sports and rough-and-tumble play, and a lack of interest in playing with dolls or playing "house" (unless playing the father or another male role). More rarely, a girl with this disorder claims that she will grow up to become a man (not merely in role), that she is biologically unable to become pregnant, that she will not develop breasts, or that she has, or will grow, a penis.

Boys with this disorder invariably are preoccupied with female stereotypical activities. They may have a preference for dressing in girls' or women's clothes, or may improvise such items from available material when genuine articles are unavailable. (The cross-dressing never causes sexual excitement.) They often have a compelling desire to participate in the games and pastimes of girls. Dolls are often the favorite toy, and girls are regularly the preferred playmates. When playing "house," the role of a female is typically adopted. Rough-and-tumble play or sports are regularly avoided. Gestures and actions are often judged against a standard of cultural stereotype to be feminine, and the boy is invariably subjected to male peer group teasing and rejection, which rarely occurs among girls until adolescence. In rare cases a boy with this disorder claims that his penis or testes are disgusting or will disappear, or that it would be better not to have a penis or testes.

Some children refuse to attend school because of teasing or pressure to dress in attire stereotypical of their sex. Most children with this disorder deny being disturbed by it except as it brings them into conflict with the expectations of their family or peers.

Associated features. Some of these children, particularly girls, show no

other signs of psychopathology. Others may display serious signs of disturbance, such as phobias and persistent nightmares.

Age at onset and course. Three-fourths of the boys who cross-dress begin to do so before their fourth birthday; playing with dolls begins during the same period. Social ostracism increases during the early grades of school, and social conflict is significant at about age seven or eight. During the later grade-school years, grossly feminine behavior may lessen. An as yet undetermined proportion of boys, perhaps one-third to one-half, become aware of a homosexual orientation during adolescence.

For females the age at onset is also early, but most begin to acquiesce to social pressure during late childhood or adolescence and give up an exaggerated insistence on male activities and attire. A minority retain a masculine identification and some of these develop a homosexual arousal pattern.

Complications. In a small number of cases, the disorder becomes continuous with Transsexualism.

Impairment. Peer relations with members of the same sex are absent or difficult to establish. The amount of impairment varies from none to extreme, and is related to the degree of underlying psychopathology and the reaction of peers and family to the individual's behavior.

Prevalence. The disorder is apparently rare.

Sex ratio and familial pattern. No information.

Predisposing factors. Extreme, excessive, and prolonged physical and emotional closeness between the infant and the mother and a relative absence of the father during the earliest years may contribute to the development of this disorder in the male. Females who later develop this disorder have mothers who were apparently unavailable to them at a very early age, either psychologically or physically, because of illness or abandonment; the girl seems to make a compensatory identification with the father, which leads to the adoption of a male gender identity.

Differential diagnosis. Children whose behavior merely does not fit the cultural stereotype of masculinity or femininity should not be given this diagnosis unless the full syndrome is present. **Physical abnormalities of the sex organs** are rarely associated with Gender Identity Disorder; when they are present, the physical disorder should be noted on Axis III.

Diagnostic criteria for Gender Identity Disorder of Childhood

For females:

A. Strongly and persistently stated desire to be a boy, or insistence that she is a boy (not merely a desire for any perceived cultural advantages from being a boy).

B. Persistent repudiation of female anatomic structures, as manifested by at least one of the following repeated assertions:

(1) that she will grow up to become a man (not merely in role)
(2) that she is biologically unable to become pregnant
(3) that she will not develop breasts
(4) that she has no vagina
(5) that she has, or will grow, a penis

C. Onset of the disturbance before puberty. (For adults and adolescents, see Atypical Gender Identity Disorder.)

For males:

A. Strongly and persistently stated desire to be a girl, or insistence that he is a girl.

B. Either (1) or (2):

(1) persistent repudiation of male anatomic structures, as manifested by at least one of the following repeated assertions:

(a) that he will grow up to become a woman (not merely in role)
(b) that his penis or testes are disgusting or will disappear
(c) that it would be better not to have a penis or testes

(2) preoccupation with female stereotypical activities as manifested by a preference for either cross-dressing or simulating female attire, or by a compelling desire to participate in the games and pastimes of girls

C. Onset of the disturbance before puberty. (For adults and adolescents, see Atypical Gender Identity Disorder.)

302.85 Atypical Gender Identity Disorder

This is a residual category for coding disorders in gender identity that are not classifiable as a specific Gender Identity Disorder.

PARAPHILIAS

The essential feature of disorders in this subclass is that unusual or bizarre imagery or acts are necessary for sexual excitement. Such imagery or acts tend to be insistently and involuntarily repetitive and generally involve either: (1) preference for use of a nonhuman object for sexual arousal, (2) repetitive sexual activity with humans involving real or simulated suffering or humiliation, or (3) repetitive sexual activity with nonconsenting partners. In other classifications these disorders are referred to as Sexual Deviations. The term Paraphilia is

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307.53 Rumination Disorder of Infancy

The essential feature of this disorder is repeated regurgitation of food, with weight loss or failure to gain expected weight, developing after a period of normal functioning. Partially digested food is brought up into the mouth without nausea, retching, disgust, or associated gastrointestinal disorder. The food is then ejected from the mouth or chewed and reswallowed. A characteristic position of straining and arching the back, with the head held back, is observed. The infant makes sucking movements with his or her tongue and gives the impression of gaining considerable satisfaction from the activity.

Associated features. The infant is generally irritable and hungry between episodes of regurgitation.

Age at onset. The disorder usually appears between 3 and 12 months of age. In children with Mental Retardation, it occasionally begins later.

Course. The disorder is potentially fatal. A mortality rate from malnutrition as high as 25% has been reported. In severe cases, although the infant is apparently hungry and ingests large amounts of food, progressive malnutrition occurs because regurgitation immediately follows the feedings. Spontaneous remissions are thought to be common.

Impairment. If failure to gain expected weight or severe malnutrition develops, developmental delays in all spheres often occur, and impairment can be severe.

Complications. A frequent complication of this disorder is that the caretaker becomes discouraged by failure to feed the infant successfully, and then becomes alienated from the child. The noxious odor of the regurgitated material may cause the caretaker to avoid the infant, which results in understimulation.

Predisposing factors and familial pattern. No information.

Prevalence. The disorder is apparently very rare.

Sex ratio. The disorder is equally common in males and in females.

Differential diagnosis. Congenital anomalies, such as pyloric stenosis, or infections of the gastrointestinal system, can cause regurgitation of food, and need to be ruled out by appropriate physical examinations and laboratory tests.

Diagnostic criteria for 307.53 Rumination Disorder of Infancy

A. Repeated regurgitation, without nausea or associated gastrointestinal illness, for at least one month following a period of normal functioning.

B. Weight loss or failure to make expected weight gain.

307.50 Eating Disorder Not Otherwise Specified

Disorders of eating that do not meet the criteria for a specific Eating Disorder.

Examples:

(1) a person of average weight who does not have binge eating episodes, but frequently engages in self-induced vomiting for fear of gaining weight
(2) all of the features of Anorexia Nervosa in a female except absence of menses
(3) all of the features of Bulimia Nervosa except the frequency of binge eating episodes

GENDER IDENTITY DISORDERS

The essential feature of the disorders included in this subclass is an incongruence between assigned sex (i.e., the sex that is recorded on the birth certificate) and gender identity. Gender identity is the sense of knowing to which sex one belongs, that is, the awareness that "I am a male," or "I am a female." Gender identity is the private experience of gender role, and gender role is the public expression of gender identity. Gender role can be defined as everything that one says and does to indicate to others or to oneself the degree to which one is male or female.

Some forms of gender identity disturbance are on a continuum, whereas others may be discrete. When gender identity disturbance is mild, the person is aware that he is a male or that she is a female, but discomfort and a sense of inappropriateness about the assigned sex are experienced. When severe, as in Transsexualism, the person not only is uncomfortable with the assigned sex but has the sense of belonging to the opposite sex.

Disturbance in gender identity is rare, and should not be confused with the far more common phenomena of feelings of inadequacy in fulfilling the expectations associated with one's gender role. An example of the latter would be a person who perceives himself or herself as being sexually unattractive yet experiences himself or herself unambiguously as a man or a woman in accordance with his or her assigned sex.

Although people who first present clinically with gender identity problems may be of any age, in the vast majority of cases the onset of the disorder can be traced back to childhood. In rare cases, however, an adult will present clinically for the first time with a gender identity problem and report that the first signs of the disturbance were in adult life.

302.60 Gender Identity Disorder of Childhood

The essential features of this disorder are persistent and intense distress in a child about his or her assigned sex and the desire to be, or insistence that he or she is, of the other sex. (This disorder is not merely a child's nonconformity to stereotypic sex-role behavior as, for example, in "tomboyishness" in girls or "sissyish" behavior in boys, but rather a profound disturbance of the normal sense of maleness or femaleness.) In addition, in a girl there is either persistent marked aversion to normative feminine clothing and insistence on wearing stereotypic masculine clothing, or persistent repudiation of her female anatomic characteristics. In a boy, there is either preoccupation with female stereotypic activities, or persistent repudiation of his male anatomic characteristics. This diagnosis is not given after the onset of puberty.

Girls with this disorder regularly have male companions and an avid interest in sports and rough-and-tumble play; they show no interest in dolls or playing "house" (unless they play the father or another male role). More rarely, a girl with this disorder refuses to urinate in a sitting position, claims that she has, or will grow, a penis, does not

want to grow breasts or menstruate, or asserts that she will grow up to become a man (not merely in role).

Boys with this disorder usually are preoccupied with female stereotypic activities. They may have a preference for dressing in girls' or women's clothes, or may improvise such items from available material when genuine articles are unavailable. (The cross-dressing typically does not cause sexual excitement, as in Transvestic Fetishism.) They often have a compelling desire to participate in the games and pastimes of girls. Female dolls are often their favorite toy, and girls are regularly their preferred playmates. When playing "house," the role of a female is typically adopted. Rough-and-tumble play or sports are generally avoided. Gestures and actions are often judged against a cultural stereotype of femininity, and the boy is usually subjected to male peer group teasing and rejection, whereas the same rarely occurs among girls until adolescence. Boys with this disorder may assert that they will grow up to become women (not merely in role). In rare cases a boy with this disorder claims that his penis or testes are disgusting or will disappear, or that it would be better not to have a penis or testes.

Some children refuse to attend school because of teasing or pressure to dress in attire stereotypical of their assigned sex. Most children with this disorder deny being disturbed by it, except that it brings them into conflict with the expectations of their family or peers.

Associated features. Some of these children, particularly girls, show no other signs of psychopathology. Others may display serious signs of disturbance, such as social withdrawal, separation anxiety, or depression.

Age at onset and course. The majority of the boys with this disorder begin to develop it before their fourth birthday. Social ostracism increases during the early grades of school, and social conflict is significant at about age seven or eight. During the later grade-school years, grossly feminine behavior may lessen. Studies indicate that from one-third to two-thirds or more of boys with the disorder develop a homosexual orientation during adolescence.

For females the age at onset is also early, but most give up an exaggerated insistence on male activities and attire during late childhood or adolescence. A minority retain a masculine identification, and some of these develop a homosexual orientation.

Whereas most adult people with Transsexualism report having had a gender identity problem during childhood, prospective studies of children with Gender Identity Disorder of Childhood indicate that very few develop Transsexualism in adolescence or adulthood.

Complications. In a small number of cases, the disorder becomes continuous with Transsexualism or Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type.

Impairment. Positive peer relations with members of the same sex are absent or difficult to establish. The amount of impairment varies from none to extreme, and is related to the degree of associated psychopathology and the reaction of peers and family to the person's behavior.

Prevalence. The disorder is apparently uncommon.

Sex ratio. In clinic samples there are many more boys with this disorder than girls. The sex ratio in the general population is unknown.

Familial pattern. No information.

Predisposing factors. Studies indicate that characteristics of the child, the parents, or of other social agents, such as parental substitutes and siblings, may be predisposing factors for the development of the disorder. In boys, the characteristics may include "feminine" physical features, an aversion to rough-and-tumble play, separation anxiety, and a history of early hospitalization. The relevant characteristics of parents and other influential people in the child's environment may include weak reinforcement of normative gender-role behavior, absence or unavailability of a father, and encouragement of extreme physical and psychological closeness with her son by a mother. In girls, a strong interest in rough-and-tumble play on the part of the child and weak reinforcement of normative gender-role behavior by the parents may contribute to the development of the disorder.

Differential diagnosis. Children whose behavior merely does not fit the cultural stereotype of masculinity or femininity should not be given this diagnosis unless the full syndrome is present. **Physical abnormalities of the sex organs** are rarely associated with Gender Identity Disorder of Childhood; when they are present, the physical disorder should be noted on Axis III.

Diagnostic criteria for 302.60 Gender Identity Disorder of Childhood

For Females:

A. Persistent and intense distress about being a girl, and a stated desire to be a boy (not merely a desire for any perceived cultural advantages from being a boy), or insistence that she is a boy.

B. Either (1) or (2):

(1) persistent marked aversion to normative feminine clothing and insistence on wearing stereotypical masculine clothing, e.g., boys' underwear and other accessories

(2) persistent repudiation of female anatomic structures, as evidenced by at least one of the following:

(a) an assertion that she has, or will grow, a penis
(b) rejection of urinating in a sitting position
(c) assertion that she does not want to grow breasts or menstruate

C. The girl has not yet reached puberty.

For Males:

A. Persistent and intense distress about being a boy and an intense desire to be a girl or, more rarely, insistence that he is a girl.

B. Either (1) or (2):

(1) preoccupation with female stereotypical activities, as shown by a preference for either cross-dressing or simulating female attire, or by an intense desire to participate in the games and pastimes of girls and rejection of male stereotypical toys, games, and activities

(continued)

Diagnostic criteria for 302.60 Gender Identity Disorder of Childhood continued

(2) persistent repudiation of male anatomic structures, as indicated by at least one of the following repeated assertions:

(a) that he will grow up to become a woman (not merely in role)
(b) that his penis or testes are disgusting or will disappear
(c) that it would be better not to have a penis or testes

C. The boy has not yet reached puberty.

302.50 Transsexualism

The essential features of this disorder are a persistent discomfort and sense of inappropriateness about one's assigned sex in a person who has reached puberty. In addition, there is persistent preoccupation, for at least two years, with getting rid of one's primary and secondary sex characteristics and acquiring the sex characteristics of the other sex. Therefore, the diagnosis is not made if the disturbance is limited to brief periods of stress. Invariably there is the wish to live as a member of the other sex. In the rare cases in which physical intersexuality or a genetic abnormality is present, such a condition should be noted on Axis III.

People with this disorder usually complain that they are uncomfortable wearing the clothes of their assigned sex and therefore dress in clothes of the other sex. Often they engage in activities that in our culture tend to be associated with the other sex. These people often find their genitals repugnant, which may lead to persistent requests for sex reassignment by hormonal and surgical means.

To varying degrees, the behavior, dress, and mannerisms become those of the other sex. With cross-dressing and hormonal treatment (and for males, electrolysis), some males and some females with the disorder will appear relatively indistinguishable from members of the other sex. However, even after sex reassignment, many people still have some physical features of their originally assigned sex that the alert observer can recognize.

Cross-culturally, the Hijra of India and the corresponding group in Burma may have conditions that, according to this manual, would be diagnosed as male-to-female Transsexualism. The Hijra, however, traditionally undergo castration, not hormonal and surgical feminization (creation of a vagina).

Associated features. Generally there is a moderate to severe coexisting personality disturbance. Frequently the person experiences considerable anxiety and depression, which he or she may attribute to the inability to live in the role of the desired sex.

Course. Without treatment, the course of the disorder is chronic, but cases with apparently spontaneous remission do occur. The long-term outcome of combined psychiatric, hormonal, and surgical sex-reassignment treatment is not well known. Many people function better for years after such treatment, but a number of cases in which re-reassignment has been desired have also been reported.

People who have female-to-male Transsexualism appear to represent a more homogeneous group than those who have male-to-female Transsexualism in that they are more likely to have a history of homosexuality and a more stable course, with or without treatment.

Age at onset. People who develop Transsexualism almost invariably report having had a gender identity problem in childhood. Some assert that they were secretly aware of their gender problem, but that it was not evident to their family and friends. Although onset of the full syndrome is most often in late adolescence or early adult life, in some cases the disorder has a later onset.

Impairment and complications. Frequently, social and occupational functioning are markedly impaired, partly because of associated psychopathology and partly because of problems encountered in attempting to live in the desired gender role. Depression is common, and can lead to suicide attempts. In rare instances, males may mutilate their genitals.

Predisposing factors. Extensive, pervasive childhood femininity in a boy or childhood masculinity in a girl increases the likelihood of Transsexualism. It seems usually to develop within the context of a disturbed relationship with one or both parents. Some cases of Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type, evolve into Transsexualism.

Prevalence. The estimated prevalence is one per 30,000 for males and one per 100,000 for females.

Sex ratio. Males seek help at clinics specializing in the treatment of this disorder more commonly than do females. The ratio varies from as high as 8:1 to as low as 1:1.

Familial pattern. No information.

Differential diagnosis. Some people with disturbed gender identity may, in isolated periods of stress, wish to belong to the other sex and to be rid of their own genitals. In such cases a diagnosis of **Gender Identity Disorder Not Otherwise Specified** should be considered, since the diagnosis of Transsexualism is made only when the disturbance has been continuous for at least two years. In **Schizophrenia** there may be delusions of belonging to the other sex, but this is rare. The insistence by a person with Transsexualism that he or she is of the other sex is, strictly speaking, not a delusion, since what is invariably meant is that the person *feels like* a member of the other sex rather than truly believes that he or she *is* a member of the other sex. In very rare cases, however, Schizophrenia and Transsexualism may coexist.

In both **Transvestic Fetishism** and **Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type**, there may be cross-dressing. But unless these disorders evolve into Transsexualism, there is no wish to be rid of one's own genitals.

Types. The disorder is subdivided according to the history of sexual orientation, as asexual, homosexual (toward same sex), heterosexual (toward opposite sex), or unspecified. In the first, "asexual," the person reports never having had strong sexual feelings. Often there is an additional history of little or no sexual activity or pleasure derived from the genitals. In the second group, "homosexual," a predominantly homosexual arousal pattern preceding the onset of the Transsexualism is acknowledged, although often such people deny that the orientation is homosexual because of their conviction that they are "really" of the other sex. In the third group, "heterosexual," the person claims to have had a heterosexual orientation.

Diagnostic criteria for 302.50 Transsexualism

A. Persistent discomfort and sense of inappropriateness about one's assigned sex.

B. Persistent preoccupation for at least two years with getting rid of one's primary and secondary sex characteristics and acquiring the sex characteristics of the other sex.

C. The person has reached puberty.

Specify history of sexual orientation: **asexual, homosexual, heterosexual,** or **unspecified.**

302.85 Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type (GIDAANT)

The essential features of this disorder are a persistent or recurrent discomfort and sense of inappropriateness about one's assigned sex, and persistent or recurrent cross-dressing in the role of the other sex, either in fantasy or in actuality, in a person who has reached puberty. This disorder differs from Transvestic Fetishism in that the cross-dressing is not for the purpose of sexual excitement; it differs from Transsexualism in that there is no persistent preoccupation (for at least two years) with getting rid of one's primary and secondary sex characteristics and acquiring the sex characteristics of the other sex.

Some people with this disorder once had Transvestic Fetishism, but no longer experience sexual arousal with cross-dressing. Other people with this disorder are homosexuals who cross-dress. This disorder is common among female impersonators.

Cross-dressing phenomena range from occasional solitary wearing of female clothes to extensive feminine identification in males and masculine identification in females, and involvement in a transvestic subculture. More than one article of clothing of the other sex is involved, and the person may dress entirely as a member of the opposite sex. The degree to which the cross-dressed person appears as a member of the other sex varies, depending on mannerisms, body habitus, and cross-dressing skill. When not cross-dressed, the person usually appears as an unremarkable member of his or her assigned sex.

Associated features. Anxiety and depression are common, but are often attenuated when the person is cross-dressing.

Age at onset and course. Age at onset and course are variable. In most cases, before puberty there was a history of some or all of the features of Gender Identity Disorder of Childhood. However, by definition, GIDAANT is diagnosed only once puberty has been reached. The initial experience may involve partial or total cross-dressing; when it is partial, it often progresses to total. Cross-dressing, although intermittent in the beginning, often becomes more frequent, and may become habitual. A small number of people with GIDAANT, as the years pass, want to dress and live permanently as the other sex, and the disorder may evolve into Transsexualism.

Impairment. Unless there is another diagnosis in addition to GIDAANT, the impairment is generally restricted to conflicts with family members and other people regarding the cross-dressing.

Complications. The major complication is Transsexualism.

Predisposing factors. As noted above, both Gender Identity Disorder of Childhood and Transvestic Fetishism sometimes evolve into GIDAANT.

Prevalence. Although its prevalence is unknown, the disorder is probably more common than Transsexualism.

Sex ratio. The disorder is more common in males.

Familial pattern. No information.

Differential diagnosis. In **Transvestic Fetishism**, the cross-dressing is for the purpose of sexual excitement. In **Transsexualism**, there is a persistent (for more than two years) wish to get rid of one's primary and secondary sex characteristics and acquire the sex characteristics of the other sex. In those rare instances in which a person with GIDAANT develops Transsexualism, the diagnosis of GIDAANT is changed accordingly.

Subtypes. The disorder is subdivided according to the history of sexual orientation, as asexual, homosexual (toward same sex), heterosexual (toward opposite sex), or unspecified. In the first, "asexual," the person reports never having had strong sexual feelings. Often there is an additional history of little or no sexual activity or pleasure derived from the genitals. In the second group, "homosexual," a predominantly homosexual arousal pattern preceding the onset of the GIDAANT is acknowledged. In the third group, "heterosexual," the person claims to have had a heterosexual orientation.

Diagnostic criteria for 302.85 Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type (GIDAANT)

A. Persistent or recurrent discomfort and sense of inappropriateness about one's assigned sex.

B. Persistent or recurrent cross-dressing in the role of the other sex, either in fantasy or actuality, but not for the purpose of sexual excitement (as in Transvestic Fetishism).

C. No persistent preoccupation (for at least two years) with getting rid of one's primary and secondary sex characteristics and acquiring the sex characteristics of the other sex (as in Transsexualism).

D. The person has reached puberty.

Specify history of sexual orientation: **asexual, homosexual, heterosexual,** or **unspecified.**

302.85 Gender Identity Disorder Not Otherwise Specified
Disorders in gender identity that are not classifiable as a specific Gender Identity Disorder.

Examples:

(1) children with persistent cross-dressing without the other criteria for Gender Identity Disorder of Childhood
(2) adults with transient, stress-related cross-dressing behavior
(3) adults with the clinical features of Transsexualism of less than two years' duration
(4) people who have a persistent preoccupation with castration or peotomy without a desire to acquire the sex characteristics of the other sex

TIC DISORDERS

Tics are the essential feature of the three disorders in this subclass: Tourette's Disorder, Chronic Motor or Vocal Tic Disorder, and Transient Tic Disorder. There is evidence from genetic and other studies that Tourette's Disorder and Chronic Motor or Vocal Tic Disorder represent different symptomatic expressions of the same underlying disorder. However, they are included in this manual as separate disorders because they generally involve different degrees of impairment (the former being more disabling) and they have different treatment implications.

A tic is an involuntary, sudden, rapid, recurrent, nonrhythmic, stereotyped, motor movement or vocalization. It is experienced as irresistible, but can be suppressed for varying lengths of time. All forms of tics are often exacerbated by stress and usually are markedly diminished during sleep. They may become attenuated during some absorbing activities, such as reading or sewing.

Both *motor* and *vocal tics* may be classified as either *simple* or *complex*, although the boundaries are not well defined. Common *simple motor tics* are eye-blinking, neck-jerking, shoulder-shrugging, and facial grimacing. Common *simple vocal tics* are coughing, throat-clearing, grunting, sniffing, snorting, and barking. Common *complex motor tics* are facial gestures, grooming behaviors, hitting or biting self, jumping, touching, stamping, and smelling an object. Common *complex vocal tics* are repeating words or phrases out of context, coprolalia (use of socially unacceptable words, frequently obscene), palilalia (repeating one's own sounds or words), and echolalia (repeating the last-heard sound, word, or phrase of another person, or a last-heard sound). Other complex tics include echokinesis (imitation of the movements of someone who is being observed).

Associated features. Discomfort in social situations, shame, self-consciousness, and depressed mood are common, especially with Tourette's Disorder.

Predisposing factors. A controversy exists as to whether or not the onset of some cases of Tic Disorders is precipitated by exposure to phenothiazines, head trauma, or the administration of central nervous system stimulants. It is estimated that in one-third of cases of Tourette's Disorder, the severity of the tics is exacerbated by administration of central nervous system stimulants, which may be a dose-related phenomenon.

Impairment. Social, academic, and occupational functioning may be impaired because of rejection by others or anxiety about having tics in social situations. In addition, in severe cases of Tourette's Disorder, the tics themselves may interfere with daily activities, such as reading or writing. Although most people with Tourette's Disorder do not have marked impairment, in general the impairment is more severe than in Chronic Motor or Vocal Tic Disorder. Impairment in Transient Tic Disorder rarely is marked.

Differential diagnosis of tics. Tics should be distinguished from **other movement disturbances.** *Choreiform movements* are dancing, random, irregular, nonrepetitive movements. *Dystonic movements* are slower, twisting movements interspersed with prolonged states of muscular tension. *Athetoid movements* are slow, irregular, writhing movements, most frequently in the fingers and toes, but often involving the face and neck. *Myoclonic movements* are brief, shocklike muscle contractions that may affect parts of muscles or muscle groups, but not synergistically. *Hemiballismic movements* are intermittent, coarse, large amplitude, unilateral movements of the limbs. *Spasms* are stereotypic, slower, and more prolonged than tics, and involve groups of muscles. *Hemifacial spasm* consists of irregular, repetitive, unilateral jerks of facial muscles. *Synkinesis* consists of movements of the corner of the mouth when the person intends to close the eye, and its converse. *Dyskinesias*, such as tardive dyskinesia, are oral-buccal-lingual masticatory movements of the face and choreoathetoid movements of the limbs.

Stereotyped movements (see Stereotypy/Habit Disorder, p. 93), such as head-banging, rocking, or repetitive hand movements, are apparently intentional behaviors and are often rhythmic. **Compulsions**, as in Obsessive Compulsive Disorder, are differentiated from tics in that they are intentional behaviors, whereas tics are involuntary.

307.23 Tourette's Disorder

The essential features of this disorder are multiple motor and one or more vocal tics. These may appear simultaneously, or at different periods during the illness. The tics occur many times a day, nearly every day or intermittently throughout a period of more than one year. The anatomic location, number, frequency, complexity, and severity of the tics change over time.

The tics typically involve the head and, frequently, other parts of the body, such as the torso and upper and lower limbs. The vocal tics include various sounds such as clicks, grunts, yelps, barks, sniffs, and coughs, or words. Coprolalia, a complex vocal tic involving the uttering of obscenities, is present in up to a third of cases. Complex motor tics involving touching, squatting, deep knee bends, retracing steps, and twirling when walking are often present.

In approximately half the cases, the first symptoms to appear are bouts of a single tic, most frequently eye-blinking, less frequently tics involving another part of the face or the body. Initial symptoms can also include tongue protrusion, squatting, sniffing, hopping, skipping, throat-clearing, stuttering, uttering sounds or words, and coprolalia. Other cases begin with multiple symptoms, which may include any combination of the previously described tics, and various noises such as barks, grunts, screams, yelps, or snorts.

Associated features. There may be other symptoms, such as mental coprolalia (sudden, intrusive, senseless thoughts of socially unacceptable or obscene words, phrases, or sentences that differ from true obsessions in that no attempt is made to ignore, suppress, or neutralize the thoughts), obsessions, and compulsions.

In clinical samples, other mental disorders are frequently associated with Tourette's Disorder, particularly Attention-deficit Hyperactivity Disorder and Obsessive Compulsive Disorder. It is not clear if this co-morbidity also exists in representative community samples.

Age at onset. The median age at onset is 7 years, and the great majority have an onset before age 14. The disorder may appear as early as one year of age.

Course. The disorder is usually lifelong, though periods of remission lasting from weeks to years may occur. In some cases, the severity and frequency of the symptoms diminish during adolescence and adulthood, and the symptoms do not vary in severity over time as much as before. In other cases, the symptoms of the disorder disappear entirely, usually by early adulthood.

Complications. Complications include physical injury, such as blindness due to retinal detachment (from head-banging or striking oneself), orthopedic problems (from knee-bending, neck-jerking, or head-turning), skin problems (from picking), and, in rare cases, self-mutilation (from head-banging).

Prevalence. The estimated lifetime prevalence rate is at least 0.5 per thousand.

Sex ratio. The disorder is at least three times more common in males than in females.

Familial pattern. Tic Disorders are more common among first-degree biologic relatives of people with Tourette's Disorder than among the general population. Evidence suggests that Tourette's Disorder and Chronic Motor or Vocal Tic Disorder may be inherited as a single autosomal dominant disorder.

In addition, there is some evidence that Obsessive Compulsive Disorder is more common in first-degree biologic relatives of people with Tourette's Disorder than in the general population and is another expression of the same underlying disorder.

Differential diagnosis. See differential diagnosis of tics, page 79. **Amphetamine Intoxication, many neurologic disorders (such as cerebrovascular accidents, Lesch-Nyhan syndrome, Wilson's disease, Sydenham's chorea, Huntington's chorea, and multiple sclerosis), Organic Mental Disorders,** and **Schizophrenia** may present with abnormal motor movements. These disorders can readily be differentiated from Tourette's Disorder because they have distinguishing symptoms, signs, clinical course, and physiologic abnormalities as revealed by laboratory tests; and none of them involve vocalizations similar to the clicks, grunts, yelps, barks, sniffs, coughs, and words of Tourette's Disorder.

Diagnostic criteria for 307.23 Tourette's Disorder

A. Both multiple motor and one or more vocal tics have been present at some time during the illness, although not necessarily concurrently.

B. The tics occur many times a day (usually in bouts), nearly every day or intermittently throughout a period of more than one year.

C. The anatomic location, number, frequency, complexity, and severity of the tics change over time.

D. Onset before age 21.

E. Occurrence not exclusively during Psychoactive Substance Intoxication or known central nervous system disease, such as Huntington's chorea and postviral encephalitis.