

Reducing Medical Attrition: The Role of the Accession Medical Standards Analysis and Research Activity

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This paper illustrates how adding an epidemiologic perspective to medical accession policy development allows the Department of Defense to address unacceptably high rates of premature attrition, lost duty time, avoidable medical care costs, sick leave, disability, and various wasteful, inefficient practices. The Accession Medical Standards Analysis and Research Activity is a major new epidemiologic entity. Historically, military medical accession policy and waiver deliberations were based heavily on expert opinion. A common limitation of expert opinion is that although experience teaches much about individuals with certain conditions who develop problems, it does not teach about individuals with the same conditions who remain well. The Accession Medical Standards Analysis and Research Activity produces the analyses of epidemiologic data necessary for the joint personnel and medical flag-level Department of Defense Accessions Medical Standards Steering Committee to make evidence-based accession policy decisions.

Accession medical standards should identify from the pool of potential service members those individuals who are most capable, from a medical standpoint, of fulfilling the needs of the military. The first specific regulations governing the physical condition of recruits, issued in 1814, followed the thinking that "free able-bodied men between the ages of 18 and 35 years who were active and free from disease were welcomed into the Army, but their healthiness had to be demonstrated."¹ Screening physical examinations were meant to ensure that recruits "had perfect use of every joint and limb and that there were no tumors, diseased enlargement of bones or joints, sore legs, or rupture."¹ From 1814 to 1986, medical standards for all of the U.S. military services were set by the Army, but today they are taken from Department of Defense Directive 6130.0.² Each of the five services (Army, Navy, Air Force, Marine Corps, and Coast Guard) has the ultimate responsibility to determine which individuals will enter that service. The objectives of the screening medical examination are to prevent the entrance of individuals with contagious diseases or conditions that would lead to excessive treatment, hospitalization, or separation and to ensure that

individuals are capable of completing training, performing duties, and remaining geographically adaptable.³

Service members are the foundation on which the armed forces are built. There are more than 300,000 enlisted accessions per year (Defense Manpower Data Center, Seaside, CA). Approximately 30 to 35% of all enlistees who enter the services separate before completion of the first term of service, and 10 to 15% are actually discharged in the first 6 months of duty.⁴ These rates are similar across the services. There are more than 6,000 medical discharges annually just for conditions that existed before enlistment. Commonly, these discharges are for asthma, orthopedic conditions, and psychiatric conditions. In fiscal year 1993, the Office of the Under Secretary of Defense for Personnel and Readiness estimated that the cost of recruiting, screening, and training an individual in the basics and initial skills was approximately \$20,000. The General Accounting Office calculates that if the services could reduce 6-month attrition by 4%, short-term savings as a result of transporting, feeding, clothing, and paying fewer recruits would be \$4.8 million, with \$12 million saved by a 10% reduction in 6-month attrition.⁴ The savings would increase over time because the infrastructure needed for recruiting and training could be reduced.⁴

In view of this costly attrition, a movement is taking place, with the support of the General Accounting Office and both the military personnel and medical communities, toward more evidence-based, scientifically valid medical standards. This movement is, at least in part, in response to an increasing awareness of the problem of attrition. The effort to develop and use evidence-based standards has objectives at multiple levels.

Recruiters want to ease the difficulty and reduce the cost of accessing high-quality volunteers by relaxing standards that they hope will be found to be needlessly strict. They also hope that by understanding predictors of successful completion of full tours of duty, premature losses can be reduced, along with the number of new recruits needed every month. Trainers hope to reduce injuries and improve the graduation rate by working with candidates who are more likely to succeed in training. They can also devise better training if existing physical or mental conditions are identified. Line commanders ultimately may suffer less loss-of-duty time to medical problems and enjoy improved worldwide deployability and a higher level of readiness among their personnel who are increasingly well suited for the job. The Department of Defense may reduce the risk young men and women face for disability discharge or long-term medical problems, sparing service members a degree of risk and saving the government some portion of the billions of dollars currently consumed by long-term disability and medical liability.

There is a clear benefit to setting policies and standards that are supported by the best available evidence and not by selected

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opinion or historical precedent alone. Such policy decisions are more easily defended, and the effect of such decisions can be more accurately predicted and carefully monitored and understood than under the older medical standards philosophy.

Medical accession processing is handled primarily by two organizations: the U.S. Military Entrance Processing Command (USMEPCOM) and the Department of Defense Medical Evaluation Review Board (DODMERB). The USMEPCOM determines if an applicant is qualified for enlistment into the armed forces based on standards set by each service. DODMERB is primarily responsible for evaluation of individuals applying for the service academies and the reserve officer training corps.

It remains a service-specific prerogative, however, to either accept or decline individual applicants. An individual who is disqualified by USMEPCOM or DODMERB according to the Department of Defense standard may still be accepted if a service waiver authority grants a waiver.

The Accession Medical Standards Steering Committee was established by the Under Secretary of Defense (Personnel and Readiness) to integrate the medical and personnel communities so that they could provide policy guidance and establish standards for accession requirements. These standards will stem from evidence-based information provided by analysis and research. The committee is co-chaired by the Deputy Assistant Secretary of Defense (Military Personnel Policy) and the Deputy Assistant Secretary of Defense (Clinical and Program Review). Its members include representatives from the Office of the Assistant Secretary of Defense (Force Management Policy), Office of the Assistant Secretary of Defense (Health Affairs), Office of the Assistant Secretary of Defense (Reserve Affairs), Offices of the Service Surgeons General, Offices of the Service Deputy Chiefs of Staff for Personnel and Chief of Personnel and Training, and Headquarters U.S. Coast Guard.

The Accession Medical Standards Working Group is a subordinate working group that reviews accession policy issues. This group is composed of representatives from each office listed above.

The Accession Medical Standards Analysis and Research Activity (AMSARA) was established in 1996 within the Division of Preventive Medicine at the Walter Reed Army Institute of Research, U.S. Army Medical Research and Materiel Command, to support the efforts of the Accession Medical Standards Working Group. AMSARA's mission is to support the development of evidence-based accession standards by guiding the improvement of medical and administrative databases, conducting epidemiologic analyses, and integrating into policy recommendations relevant operational, clinical, and economic considerations. AMSARA has six objectives: (1) evaluate current and proposed standards; (2) validate assessment techniques; (3) assure quality; (4) improve assessment techniques; (5) track the impact of policies, procedures, and waivers; and (6) recommend changes to enhance readiness, protect health, and save money.

Within this context, future medical standards will be based on rigorous studies, including careful evaluation of evidence and methodologically appropriate analysis of data. These studies will be performed by AMSARA to develop various evidence-based policies and procedures.

It is recognized that the current standards need validation. Survival analyses can be conducted on individuals entering the

service with asthma, for example, to determine whether the granting of waivers to certain people disqualified for asthma is a reasonable decision deserving of systemization. Assessment techniques and instruments must be reviewed and optimized. For example, understanding the sensitivity (the ability to detect individuals with asthma) and specificity (the ability to accurately identify individuals without asthma) of the methacholine challenge test as a predictor of asthma in the relevant population is vital. Longitudinal follow-up of recruits discharged for diagnoses determined to have existed before service will allow for quality assurance of the individual waiver authorities and separate medical examination sites. Cost-benefit and cost-effectiveness analyses will be used to rigorously and quantitatively assess policy options, such as whether to continue syphilis screening of enlisted recruit applicants. In addition, prospective trials and various other types of research studies will be conducted to answer questions and develop policies pertaining to accession medical standards. After a change in policy is instituted, the effect on outcomes such as attrition and hospitalization must be tracked. The quality of experimental designs, the ability to generalize findings from the general medical literature to our target military population, and the presence of bias and confounding variables will be more carefully considered. There will be instances in which it will be appropriate to rely on expert opinion. In such cases, standard methods with increased reliability, reproducibility, and validity (e.g., the Delphi method) should yield more supportable results. By using this process, AMSARA will produce recommendations to enhance readiness, protect health, and save money.

Quality data are needed for respectable results and policy recommendations. It is crucial for individuals in positions requiring them to record timely and correct service member administrative and medical information to take seriously this vital task. In its first year, AMSARA has focused on finding complete data relevant to accessions, such as entrance medical examination, waiver, hospitalization, and premature and disability discharge data. AMSARA's efforts have already resulted in more accurate data in useful form being available more rapidly.

Routine systematic evaluation of current pertinent databases has led to important findings thus far. AMSARA has found that once granted a medical waiver, individuals older than 25 years (26-30: odds ratio [OR] 0.89, 0.9% confidence interval [CI] 0.87-0.91; 30 and older: OR 0.84, 95% CI 0.80-0.87) and individuals with a college degree (OR 0.86, 95% CI 0.75-0.98) were less likely to access. Studying why they do not access after receiving a medical waiver has the potential to save substantial amounts of money by eliminating unnecessary recruiting and processing while increasing the number of individuals entering the service after getting a waiver. AMSARA also found that among individuals with less than 1 year of service, females were more than twice as likely to be hospitalized as males (OR 2.42, 95% CI 2.35-2.49). Determining why females are hospitalized and how the admissions can be prevented may lead to findings that influence training and decrease the high costs involved with inpatient care. The most common reasons for a discharge for a medical condition that existed before service were asthma, back pain, and psychological disorder, with rates of discharge per 100,000 population accessed of 146, 80, and 65, respectively, for the latter half of 1995. The loss rates varied significantly

clude studying the discharges and hospitalizations of individuals waived for orthopedic knee problems, asthma, and attention-deficit/hyperactivity disorder compared with individuals without these conditions. The discharges and hospitalizations of individuals who passed through military entrance processing stations that disqualify many people for certain conditions are being compared with those of individuals passing through military entrance processing stations that disqualify few people for those conditions to determine whether the standards are warranted or erroneous. AMSARA is also studying recruits discharged for psychological reasons that existed before service. A cost-effectiveness study of syphilis screening in military recruit applicants has already been completed. Policies on hepatitis C and radial keratotomy/photorefractive keratectomy are examples of other research topics of interest.

In summary, AMSARA is an ongoing activity that supports the development of evidence-based accession medical standards through improving databases, conducting epidemiologic analyses of existing and field study data, and making evidence-based policy recommendations. Efforts have already resulted in more accurate data in useful form being available more rapidly. With continuous improvements in the data, AMSARA will be able to continue to perform routine, systematic epidemiologic evaluations, noting potentially modifiable problem areas, tracking trends, and examining the effects of policy changes, to reduce medical attrition and save money and resources on a regular basis. Increasing awareness of this important effort may improve recording of medical and administrative data and invite collaboration.

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