Department
of
Defense

Population Health Improvement Plan and Guide

DoD TRICARE Management Activity
December 2001

"It is a distortion, with something profoundly disloyal about it, to picture the human being as a teetering, fallible contraption, always needing, watching and patching, always on the verge of flapping to pieces."

Lewis Thomas, *The Lives of a Cell*, 1974

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For more information about the DoD Population Health Improvement Plan and Guide or to access Population Health documents online, visit:
http://www.tricare.osd.mil/mhsophsc/DoD_PHI_Plan_Guide.pdf

Foreword

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MEMORANDUM FOR SURGEON GENERAL OF THE ARMY
SURGEON GENERAL OF THE NAVY
SURGEON GENERAL OF THE AIR FORCE

SUBJECT: Department of Defense (DOD) Population Health Improvement (PHI) Plan and Guide

The Military Health System (MHS) is making significant progress toward optimizing clinical and business practices as guided by the MHS Optimization Plan (February 1999) and endorsed in the OASD(HA) Memorandum for Lead Agents (March 1, 2000). The foundation of o optimization efforts is population health improvement. The MHS Optimization Plan called for the creation of a Population Health Improvement Plan. A first draft of the DoD PHI Plan was published in April 2000 for reference and comments.

The first edition of the DoD PHI Plan and Guide has now been finalized to provide implementation guidance. This memorandum is to announce its release and to encourage its wides dissemination and use. The PHI Plan and Guide, particularly the seven key process elements for population-based health care, will be useful to all DoD personnel as a reference for planning and improving DoD healthcare delivery programs. The Plan and Guide also provides a strategic overview for those in leadership positions as well as those performing the tasks. The overview provides a conceptual framework for population health improvement and a discussion on how to make population health improvement a reality in the DoD. Experts from the three Services, TRICARE Management Activity and other DoD offices contributed to the final version of the PHI Plan and Guide. It has been extensively reviewed to create a comprehensive final document.

The complete PHI Plan and Guide, or any of its parts can be viewed and downloaded at http://www.tricare.osd.mil/mhsophsc/DoD_PHI_Plan_Guide.pdf. With the vast array of resources identified in the PHI Plan and Guide, the Services can accelerate their planning and implementation strategie to improve population health programs in a more concerted and coordinated manner across the MHS.

While the Services are responsible for their specific implementation policies for populatior health improvement, the PHI Plan and Guide is the resource that will ensure a consistent benefit ar unity of effort to achieve population health for all military communities.

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Thomas F. Carrato

Acknowledgments

The DoD Population Health Improvement Plan and Guide was prepared under the supervision of the Military Health System (MHS) Population Health Integration Team, with oversight provided by the MHS Optimization Team. This first edition of the Plan and Guide is an expansion of the draft Population Health Improvement Plan and Guide written by the MHS Population Health Working Group and released in April 2000. Experts from the Center for Health Promotion and Preventive Medicine (CHPPM, U.S. Army), Navy Environmental Health Center (NEHC, U.S. Navy), Population Health Support Directorate (PHSD, U.S. Air Force) and Office of the Special Assistant for Optimization, TRICARE Management Activity, contributed valuable direction, content and technical assistance for writing this edition. A special thanks is extended to the many people across the MHS who critically reviewed the final draft.

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Executive Summary

The Military Health System (MHS) mission is to provide health services to the full range of military deployments and to maintain the health of members of the armed forces, their families and others. This can be accomplished through the MHS goals to protect military forces from medical threats, employ a comprehensive health plan, use health promotion and prevention, and optimize clinical outcomes. The MHS, however, is a large and unique integrated health system that is part of the larger Department of Defense (DoD) and all its surrounding communities. Within the MHS, DoD and surrounding communities, are those programs and activities that can be employed to improve the health of military communities; Force Health Protection, worksite and community-based, and TRICARE health plan programs. Programs in each of these areas contribute to the DoD strategy for population health improvement.

Population health improvement (PHI) is the balancing of awareness, education, prevention and intervention activities required to improve the health of a specified population. This model unites self-care, MTF, worksite and community-based wellness and prevention activities and medical interventions into a comprehensive paradigm centered on primary, secondary, and tertiary prevention to reduce morbidity and premature mortality and improve health. These activities, in concert with strategies that optimize the appropriate use of health services, can reduce the gap that exists between forecasted demand and the capacity currently within the health care system. The strategies are to modify personal disease and injury risk, effectively change behaviors to optimize health and enhance fitness, allow health services providers to render necessary care while reducing unwarranted treatment variation, and achieve measurable improvements in performance and health status. This broad scope of activities and strategies is the responsibility of the DoD and, more specifically, the MHS.

Department of Defense activities for population health improvement are in three areas: Force Health Protection, worksite and community-based programs, and TRICARE health plan programs. These programs are combined in DoD to cover the core functions of public health, health care services of large managed health plans and military-unique operations. The balance of health improvement activities within these areas should address those factors that influence health—the determinants of health. Determinants such as individual behaviors and the physical and social environment must be addressed in DoD programs, as well as access to traditional health care services. Also, interventions must be balanced to target the most health impacting determinants through comprehensive primary, secondary and tertiary prevention strategies.

Making population health improvement a reality in the DoD requires that a systematic approach be taken for population health improvement. Community health planning, policy-making and programming must be methodical and ongoing. Plans,

policies and programs must reflect sound population health principles. The first principle is to explicitly define the populations targeted for interventions. Next, the use of applied epidemiology should drive the identification of community health problems, their risk factors and appropriate interventions. The interventions chosen should be evidence-based clinical and business interventions to ensure the best health outcomes that are also the most cost-effective. The greatest positive impact on population health will come from programs that leverage evidence-based primary, secondary and tertiary prevention strategies that emphasize primary disease and injury prevention and early diagnosis whenever possible and treatment and rehabilitation when necessary. The fourth principle is to manage information to support ongoing health status assessment, planning, and performance monitoring and improvement. Actionable information must be provided to all levels of the organization—providers, MTFs, Regional Lead Agent offices, Managed Care Support Contractors and Service Headquarters. Finally, knowledge about what works and how to do it must be managed to ensure thorough analysis and dissemination to all functional units in DoD.

Plans, policies and programs are effective only when the right resources are in place to implement them. The DoD must build the capacity to implement population health improvement initiatives. Health promotion and disease and injury prevention programs require renewed emphasis. Primary care capacity must be sufficient to ensure clinical preventive services can be delivered. The increasing need for health data collection, analysis and interpretation drives new functions in DoD health programs. As population health improvement activities mature, many traditional programs such as Utilization Management will be integrated into population health improvement processes and will not continue as separate entities.

Planning and programming for the broad portfolio of health programs affecting military communities is complex. Increasing technology and service costs and increasing demands for health services mean priority needs typically exceed available resources. And, like other large health systems, the MHS must continually improve health services while achieving greater efficiency. To this end, the MHS Optimization Plan was drafted to outline the key tasks that, if coordinated and integrated, will improve the quality and cost-effectiveness of services provided by the MHS. A cornerstone of the Optimization Plan is its focus on population health. The population health imperative is to develop and implement a plan and model to "optimize clinical outcomes across the MHS" and improve health by shifting from an emphasis on disease and injury intervention to prevention and health promotion.

The DoD Population Health Improvement Plan and Guide provides the conceptual framework for improving the health of populations and will guide users to specific actions and tools that will help to build healthy communities. It also provides guidance in support of a uniform health care system based on systematic clinical and business decision processes. The PHI Plan and Guide includes an extensive catalogue and links to offices and tools to support the implementation of population health initiatives. It is the resource that will ensure fidelity to sound population health principles and processes and bring unity of effort to achieve population health improvement to all military communities.

This document is divided into several parts that cover the breadth of a framework and the principles of population health improvement and the depth of implementation concepts, processes and tools. The introduction describes how the PHI Plan and Guide was chartered by the MHS Optimization Plan. It also introduces readers to the sections of the Plan so they can easily navigate to those sections they want to read now and those they want to return to later.

Section I provides a comprehensive strategic and academic overview of population health improvement. It describes how Force Health Protection, worksite and community-based programs, and TRICARE health plan programs are integrated in DoD. It also provides a primer on population health that includes definitions and discussions of how to measure population health, the determinants of health, and primary, secondary and tertiary prevention strategies.

Force Health Protection (FHP) is the doctrine that describes how DoD will protect the health of fighting forces. Section II introduces the FHP doctrine and the pillars—healthy and fit force, casualty prevention, and casualty care and management.

The Military Health System can have a significant positive effect on population health through worksite and community-based programs. The scope of interventions that can be implemented in worksite and community-based venues is very broad. Worksite and community-based programs for population health improvement (Section III) should address areas of health promotion and protection (including environmental health), disease and injury prevention and screening, and public health surveillance.

The Military Treatment Facility (MTF) Implementation Guide, Section IV, describes the strategy and seven key process elements that will drive the MHS implementation of population health improvement activities through the TRICARE health plan. The key process elements are:

1. Identify the population
2. Forecast demand
3. Manage demand
4. Manage capacity
5. Evidence-based primary, secondary & tertiary prevention
6. Community outreach
7. Analyze performance and health status

A detailed discussion of the concepts, functions, roles, and tools is presented for each process element. Also, links are included to program offices, reference materials and tools so that readers can develop and implement process elements.

This PHI Plan creates functions and structure that will enable the MHS to implement population health improvement programs across the MHS. Regional Lead Agent population health offices (Section V) will facilitate communication between MTFs, Managed Care Support Contractors and enterprise-level planners, policymakers and programmers. The MHS will operate as a learning organization supported by the MHS Optimization and Population Health Support Center (OPHSC) (Section VI) that merges concepts of evidence-based decision-making with lessons learned and disseminates them across the system.

Education and assimilation of these principles throughout the MHS is compulsory. The strength of the MHS is its control over the military clinicians' educational process from undergraduate to professional, and from basic military education through technical training. In particular, clinic level personnel must have the skill to use the tools described in this document. This will require a concerted effort across the MHS.

Population Health Improvement Plan and Guide

Population Health Improvement and the Military Health System (MHS) Optimization Plan

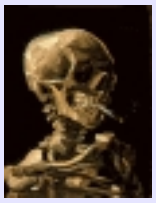
The Military Health System (MHS) is a large and unique integrated health system. Like all health systems, the MHS must continually improve health services while effectively managing limited resources. To this end, the MHS Optimization Plan (http://www.tricare.osd.mil/mhsoptplan/optim/MHSOT_optim.html) was drafted to outline the key tasks that, if coordinated and integrated, will improve the quality and cost-effectiveness of services provided by the MHS. A cornerstone of the Optimization Plan is its focus on population health. The population health imperative is to develop and implement a plan and model to "optimize clinical outcomes across the MHS" and improve health by shifting from an emphasis on disease and injury intervention to prevention and health promotion. The targets for population health initiatives include all members of the military community; Active Duty, Guard and Reserve Forces and their families, and military retirees and their families.

This plan and guide provides the conceptual framework for improving the health of populations and will guide users to specific actions and tools that will help to build healthy communities. It also provides guidance in support of a uniform health care system based on systematic clinical and business decision processes. The PHI Plan and Guide is not intended to include every detail required for successful implementation. Rather it is intended to provide guiding principles, key processes, tools and resources that can be used in developing the population health improvement strategies and programs necessary for successful Service and MTF implementation.

How to Use This Plan & Guide

The Population Health Improvement (PHI) Plan and Guide will be useful to each user in a unique way. The following descriptions of the sections in the Plan will help readers easily identify those sections that they want to use now and those sections they may use at another time. For example, personnel involved in traditional clinical care may immediately benefit by first reading Section IV and reading Section I after they have assimilated the content in Section IV. Leaders and staff responsible for plans, programs and resources at Headquarters, Service intermediate commands, Regional Lead Agent offices, and Military Treatment Facilities (MTFs) will benefit from the strategic concepts and tactical principles presented in Section I. All readers will enjoy the text boxes that use smoking as a major health issue to exemplify the principles and processes presented.

Boxes like this one are used throughout the Plan to elucidate how the many principles and processes presented can be applied to an important health issue.



Smoking rates among military personnel continue to be high compared to the overall population. Smoking is the leading cause of preventable mortality in the United States. Given the huge burden of smoking-related morbidity and mortality, it is reasonable to assume that smoking is a major factor in many of the health problems that will be addressed by MHS programs. Therefore, smoking is an appropriate issue to use for demonstrating the application of principles and processes of population health improvement presented in this document.

The picture that accompanies the examples for smoking as a population health problem is from the painting titled Skull and Burning Cigarette. *Vincent van Gogh painted the picture in 1885, roughly eighty years before release of the first U.S. Surgeon General's report on smoking.*

Summary of the Sections

Section I. Overview of Population Health Improvement

The overview provides a conceptual framework for population health improvement from planning through performance monitoring and improvement. This framework incorporates the processes used by well managed and forward thinking health plans and of public health programs. Population heath and population health improvement are defined and a discussion of those factors, or determinants, that impact health is presented. The overview provides an academic and a strategic discussion of population health improvement in the Military Health System and introduces four principles for improving the health of military communities:

1. *Define the populations targeted for interventions*
2. *Use applied epidemiology*
3. *Use evidence-based clinical and business interventions, and*
4. *Manage information to support ongoing health status assessment, planning, and performance monitoring and improvement*

The following sections provide readers a more detailed "how to" guide for tasks for population health improvement.

Section II. Force Health Protection

Population health improvement activities will directly support the military mission. Force Health Protection doctrine describes these activities in three parts, or pillars; *healthy and fit force, casualty prevention* and *casualty care and management.* Whether targeting troops "in garrison" or forces in operational and deployed status, population health improvement principles can be applied. Section II provides an introduction to the three pillars of Force Health Protection in the context of population health improvement.

Section III. Worksite and Community-Based Programs

Worksite and community-based programs include many activities that occur outside traditional health care settings. They can be ideal settings for a number of health-impacting initiatives. This section outlines worksite and community-based programs that should be included in MHS population health improvement strategies. Resources for existing programs in the three Services are identified as well.

Section IV.
Health Plan: Military Treatment Facility Implementation Guide

The Military Health System's greatest impact on the health of populations will result from a shift in emphasis from interventional (individual) to preventive (population-based) services in MTFs, combined with worksite and community-based prevention and wellness programs. This section provides definitions and detailed discussions of the seven key process elements of population health improvement that have been identified for implementation throughout the MHS. The seven key process elements are:

1. *Identify the population*
2. *Forecast demand*
3. *Manage demand*
4. *Manage capacity*
5. *Evidence-based primary, secondary & tertiary prevention*
6. *Community outreach*
7. *Analyze performance and health status*

Military Treatment Facilities are targeted in Section IV as leverage points for making this critical shift in emphasis through implementation of population-based processes for delivering the TRICARE benefit and other services. Section IV also includes examples of tools and programs that support population health improvement activities at the MTF.

Section V.
Regional Lead Agent Population Health Offices

Regional Lead Agent offices provide support through geographic alignment of MTFs and can directly support MTFs in population health initiatives. This section provides a framework for the evolving role of these offices to support population health improvement and outlines the functions and infrastructure needed to support MTFs and Managed Care Support Contractors and collaborate on MHS population health initiatives.

Section VI.
MHS Optimization and Population Health Support Center (OPHSC)

This section describes the functions and structure of the MHS OPHSC that is being developed to support Regional Lead Agent, Service Headquarters, Service intermediate command, and MTF population health offices and clinic teams. Until the MHS OPHSC is fully operational, questions and comments about the principles, processes, tools and resources in the PHI Plan and Guide can be communicated to the contacts at http://www.tricare.osd.mil/opt_int/PHIT_Member.htm.

Section VII.
Tables of Population Health Functions and Tools

Tables are provided to serve as a quick reference to the functions associated with the key process elements of population health improvement, to tools that support each process element, and to points of contact for further information.

Guidance for Accessing Internet Sites and Other Resources

There are numerous Internet links and resource offices referenced throughout this document. Every effort will be made to ensure the current Internet addresses and resource contacts are provided. If an Internet site is not opened by clicking on the link in the text, copy the address and paste it into the address window of your Internet browser. Please call the MHS Optimization and Population Health Support Office at (703) 681-3637 (DSN 761) if any of the offices, Internet sites or references cannot be contacted with the information that has been provided.

Text Boxes

Text boxes are used throughout the Plan to provide examples that further explain principles and processes and to present information that augments the main

Section I.

Overview of Population Health Improvement

A Conceptual Framework for Population Health Improvement

Combining Military-Unique Programs, Public Health Functions and Health Plan Best Practices

The Department of Defense (DoD) has responsibility for a comprehensive portfolio of health programs to support the national defense strategy and to improve the health of military communities. These programs are very diverse, ranging from traditional health care services provided in hospitals and clinics to environmental health and disease surveillance in remote locations. Health protection, health promotion, treatment and rehabilitative services, and assessing and monitoring health status are all DoD responsibilities.

The programs within the DoD can be considered using a number of different organizational structures. For example, programs can be grouped as those directed by the Army, Navy, or Air Force. A more useful structure for considering programs as they impact population health categorizes programs into three areas; military-unique programs (*Force Health Protection*), programs that are worksite or community-based (*Worksite and Community-Based Programs*), and traditional health insurance and managed health plan programs (*Health Plan: TRICARE Benefit*). This structure is depicted in Figure 1.

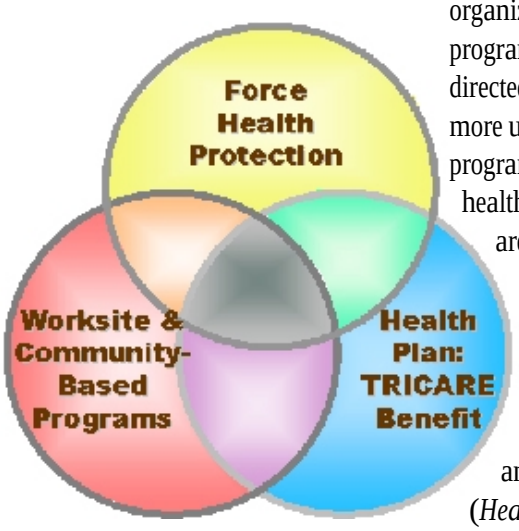


Figure 1. Three areas of DoD

***Force Health Protection* (FHP)** programs include those health services activities that are intended to explicitly enhance military operations. They are targeted primarily at Active Duty, Guard, and Reserve service members. Force Health Protection is a Joint Force strategy that moves beyond traditional medical support for contingency operations to a new doctrine that emphasizes fitness, health promotion and wellness, and the prevention of casualties (http://www.dtic.mil/jcs/j4/divisions/mrd/). Force Health Protection integrates three pillars: *a fit and healthy force*, *casualty prevention*, and *casualty care and management*. While the concepts in the three pillars are not new, current military medical doctrine now clearly articulates how all three must be in place and operating effectively during peacetime and in operational contingencies to fully support deployed fighting forces.

Worksite and community-based programs include the many functions and services that are provided outside of traditional health care settings. Worksite programs may be in an industrial setting such as a shipyard, in an office, or in a unique setting such as a military training center. Occupational health services and health promotion activities at worksites can be among the most effective programs available for impacting individual and community health. Many community-based programs have typically been considered to be the responsibility of public health agencies and specialized service organizations. The core functions and essential services of public health effectively capture the scope of DoD activities for population health improvement (see Textbox). The core functions are health assessment, policy development, and assuring that health services are provided (IOM 1988; Public Health Functions Steering Committee 1995). Examples of worksite and community-

based programs within the DoD include base safety and health committees, environmental and occupational health, family support services, worksite wellness programs, Health and Wellness Centers (HAWCs), fitness centers, health-related education programs, and the Women, Infants and Children (WIC) program for overseas families. These and other worksite and community-based programs play a critical role in improving health in military communities.

Worksite and community-based programs can directly and indirectly impact the health of military communities. Some programs that focus on the non-medical determinants of health can greatly contribute to community health improvement but are not under the direct jurisdiction of military health programs. Health authorities commonly provide advice or collaborate on such programs.

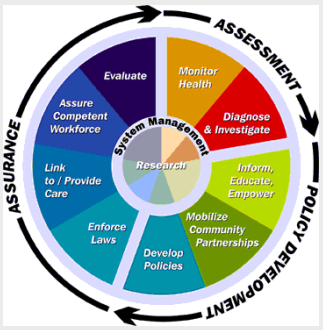
The ***military health plan***, as defined by TRICARE, includes programs that are targeted to active and retired military service members and their families. Health care services under TRICARE are provided through either the arrangement of care provided by civilian providers or delivery of services directly in military treatment facilities. Arranging and directly providing health care services are functions analogous to those of commercial health plans. Military Health System programs that are defined by the TRICARE health plan are directly comparable to programs managed by commercial indemnity and managed care health plans.

Health care services are defined by the benefit package to which individuals or groups have contractually agreed. The federal government, like large commercial health plans, both manages the financial risk for the benefit and serves as the primary provider for services for the military beneficiary population. Furthermore, the DoD is a major purchaser of health services through Managed Care Support Contracts and through the indemnity plan, TRICARE Standard.

The three areas of health programs and the services and functions within them clearly overlap and interact. For example, in executing traditional health services such as acute and chronic disease care under the TRICARE health plan, some of the requirements for maintaining a fit and healthy force are met. Worksite programs that improve the work environment and health of troops also support force health protection and manage demand placed on the health plan. The MHS, in coordination with military departments, must establish the plans, policies, and programs necessary to achieve the mission and must execute programs effectively or assure that health programs are executed by other responsible agencies.

While the MHS is mandated to support military operations and provide or assure health services defined by the TRICARE health plan, it must do so in an environment with increasingly constrained resources. The MHS can meet the challenge to improve value in all services and improve the health of military communities by adopting and adapting the best practices of both public health agencies and model health plans.

Core Functions and Essential Services of Public Health (Public Health Functions Steering Committee 1995)



Assessment includes activities necessary for community health diagnosis. Surveillance, identifying and analyzing problems, collecting and analyzing data, and evaluation of outcomes are some activities of assessment. Through assessment the MHS understands community health needs. Policy development is the function that connects ways and means for solving health problems. It includes processes for making decisions, setting goals, and allocating resources. Assurance is the critical public function to make sure things that should be done get done, doing the right things, and that they are done correctly; that is, doing things right. It makes sure necessary services are provided to reach goals and includes directly providing services if necessary.

The scope of the MHS is broad when conceptualized as a combination of functions core to public health agencies and functions carried out by large health plans today. Add to this the execution of these functions in military-unique environments and a picture unfolds of a health system with a scope and reach that is unparalleled in the world. To put these functions into operation requires an understanding of the factors that impact health, the systematic planning required to prioritize programs, and the concepts and processes of population health improvement at the MTF, Region, and DoD levels.

Defining and Measuring the Health of Populations

What is Health?

The World Health Organization defines *health* as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO 2001). This is perhaps the broadest context for defining the health of individuals or groups of people in a community. Health may be viewed differently from various perspectives. For example, having healthy military troops might mean that personnel are in maximum physical and mental condition to achieve peak performance and to prevent illness and injury. Children's health may be considered differently. Healthy children are not only physically and mentally well but also are growing, learning, and thriving socially.

Health among individuals varies greatly and represents a continuum from one extreme of wellness to the other of illness or impairment. Health can be qualitatively and quantitatively measured and the result is often referred to as *health status*. There are many measures for individual health status such as presence or absence of disability, quality of life, and presence or absence of specific diseases or risk factors.

Population health is "the aggregate health outcome of health adjusted life expectancy (quantity and quality) of a group of individuals, in an economic framework that balances the relative marginal return from the multiple determinants of health" (Kindig 1997). It is also commonplace to describe the health status of the community at large, or population. Life expectancy, for example, is a global measure of the cumulative effect of many factors on a population's health and is a type of survival analysis done only at the population level. Similarly, mortality rates are a global measure of the risk of dying in a population. Community level measures of quality of life or functional status represent the "average" of these measures taken for individuals in the community. The proportion of individuals in the population that have a certain disease or risk factor at a given time yields a prevalence rate for a disease, injury, or risk factor. Other global measures of health include Quality Adjusted Life Years (QALYs), Years of Potential Life Lost (YPLLs), and Disability Adjusted Life Years (DALYs). Any of these measures alone or in combination may be used to describe the health of populations.

Population health improvement is the balancing of awareness, education, prevention and intervention activities required to improve the health of a specified population. This model unites self-care, MTF, worksite and community-based prevention and wellness activities, and medical interventions into a comprehensive paradigm centered on primary, secondary, and tertiary prevention to reduce morbidity and premature mortality and improve health. The objective of population health improvement is to achieve measurable gains in the health of a defined population over some defined period of time. Because community health status can be periodically measured and new knowledge brings improved services and programs, initiatives to build healthy communities will be ongoing. To achieve population health improvement objectives, a systematic approach must be employed at all levels of the MHS to establish, implement and improve population-based plans and programs.

Measuring the Health of Populations

Assessing, or measuring, the health status of populations to support the development of policies and programs in the MHS must be ongoing, comparable among various populations, and must measure effects of the interventions over the interval between assessments. The periodic use of population-based measures must demonstrate not only current health status but also trends and progress made on priority health issues (HHS 1993). Health data from military communities should be comparable among military communities and to other communities to facilitate benchmarking and so that data can be aggregated at Regional levels.

Figure 2.
The health continuum

While counting health events (e.g., illnesses and injuries) is a common activity in medical and public health practice, the systematic use of health data

to improve community health requires measuring lifestyle and behavioral risk factors and the burden of chronic diseases in populations. The identification, investigation and analysis of risk factors require population-based measures. Population-based measures are rates of events in a population. A rate is calculated by dividing the number of events over a specific period of time by the population of interest (e.g., persons at risk for that event). Population health rates, then, use health events in the numerator and the population of interest in the denominator. For a given measure, the time period for counting events and for measuring the population should be the same e.g., one calendar year (Tyler and Dicker 1997). An important requirement of population health measures used to support data-driven population health decisions is to clearly define the numerator and denominator of each measure.

For population health measures to support surveillance and performance measurement they should be measured periodically over time and comparable among measurement periods to support trend analysis (HHS 2000). The frequency at which each measure is collected should be determined by the interval over which meaningful change can be expected and be linked to long, intermediate, and near-term objectives for health programs (see *Using Objectives for Improving Health Status and for Monitoring Performance*).

Determinants of Health

To improve the health of individuals and of whole communities, one must start with an understanding of the factors that impact on both individual and community health. These factors are commonly referred to as *determinants of health* (Figure 3). Healthy People 2010 (http://www.health.gov/healthypeople/), the national initiative for health promotion and disease prevention, presents an overview of how individuals' behaviors, biology, and physical and social environments interact to positively and negatively impact health (HHS 2000). Healthy People 2010 also describes how policies, programs and access to quality health care directly and indirectly influence the health status of individuals and communities.

An individual's *biology* is a result of their genetic makeup and the cumulative effect of exposures and other events that can cause permanent or temporary alterations in health. Some biological attributes positively impact health while others have negative impacts. For example, specific genes in women confer increased risk for breast cancer while other genetic factors contribute to a lower risk for coronary artery disease.
Behaviors and conditions in the physical and social environment can also affect health. Some behaviors, such as a physically active lifestyle, have positive health effects. Other behaviors, such as smoking, have negative effects. Exposure to polluted air, high noise levels without hearing protection and extreme environmental conditions (e.g., hot, cold or dry conditions) without proper protection are examples of factors in the *physical environment* that can adversely impact the health of individuals.
The presence of family, a strong social network, or religious association are examples of healthy factors in one's *social environment*. Associating with a group of friends that binge drink alcohol is an example of an unhealthy factor in

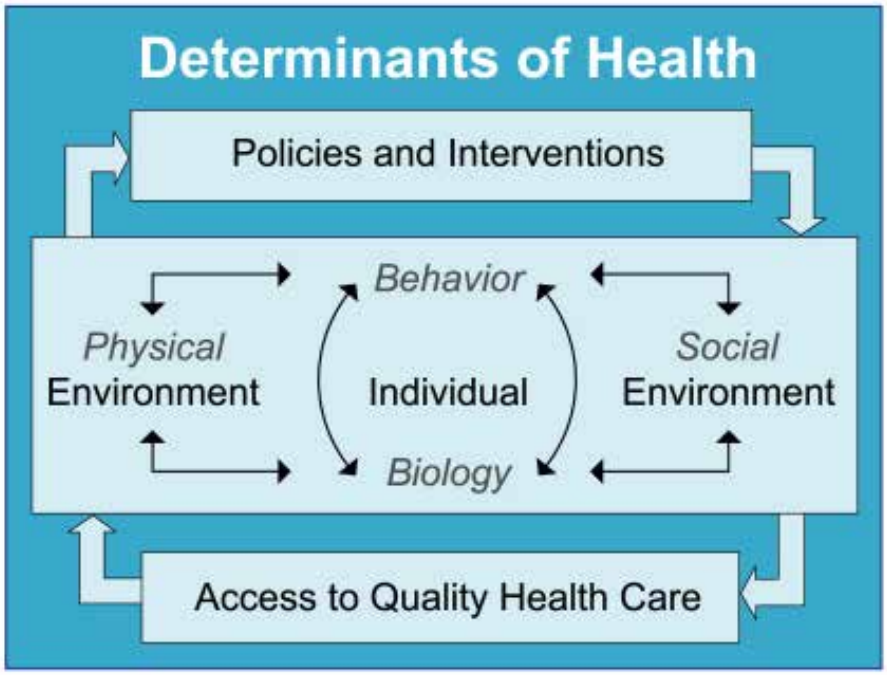


Figure 3.
Determinants of health (HHS 2000)

one's social environment. The key point is that all these determinants interact to influence the health of individuals and communities.

The presence or absence of factors that can impact health can be assessed in individuals, at worksites, and in military communities. *Policies and interventions* can be targeted to specific populations to mitigate factors that increase the risk for disease or injury. Policies requiring immunization of children prior to entry into school and legislation to reduce driving under the influence of alcohol are two examples.

Specific policies and interventions can also be developed to increase the prevalence of factors that improve health or decrease the risk for disease or injury. For example, community programs to discourage binge drinking of alcohol can be targeted to those groups where such behavior is most prevalent. Also, a meningococcal vaccine program might target military units that are deploying to a location where the risk for the vaccine-preventable disease is high.

Access to quality health care is of paramount importance to ensure that all persons receive effective health services when and where it is needed. For example, children must have access to care to receive appropriate immunizations and failure to receive apprropriate immunizations places entire communities at increased risk for disease.

It is important to consider the relative importance of various determinants of health in MHS population health improvement initiatives. The graphs in Figure 4 show that the leading disease-specific causes of death in the United States have behavioral, lifestyle and environmental *actual causes of death* (the direct contributing factors that lead to the diseases that cause deaths). The ten leading causes of death represent the pathophysiological conditions present at the time of death rather than the internal and external factors that were the causes of the pathophysiological conditions. The actual causes of death show that most of the burden of chronic and acute disease and injury is the consequence of identifiable risk factors. Many of the risk factors can be attributed to health risking behaviors and preventable infections and injuries. While treating the pathophysiological conditions in individuals is of great importance in population health, decreasing risk for disease by mitigating risky behaviors and protecting communities from infectious and toxic agents will contribute even more to population health by preventing disease, injury and disability and improving both quality of life and longevity.

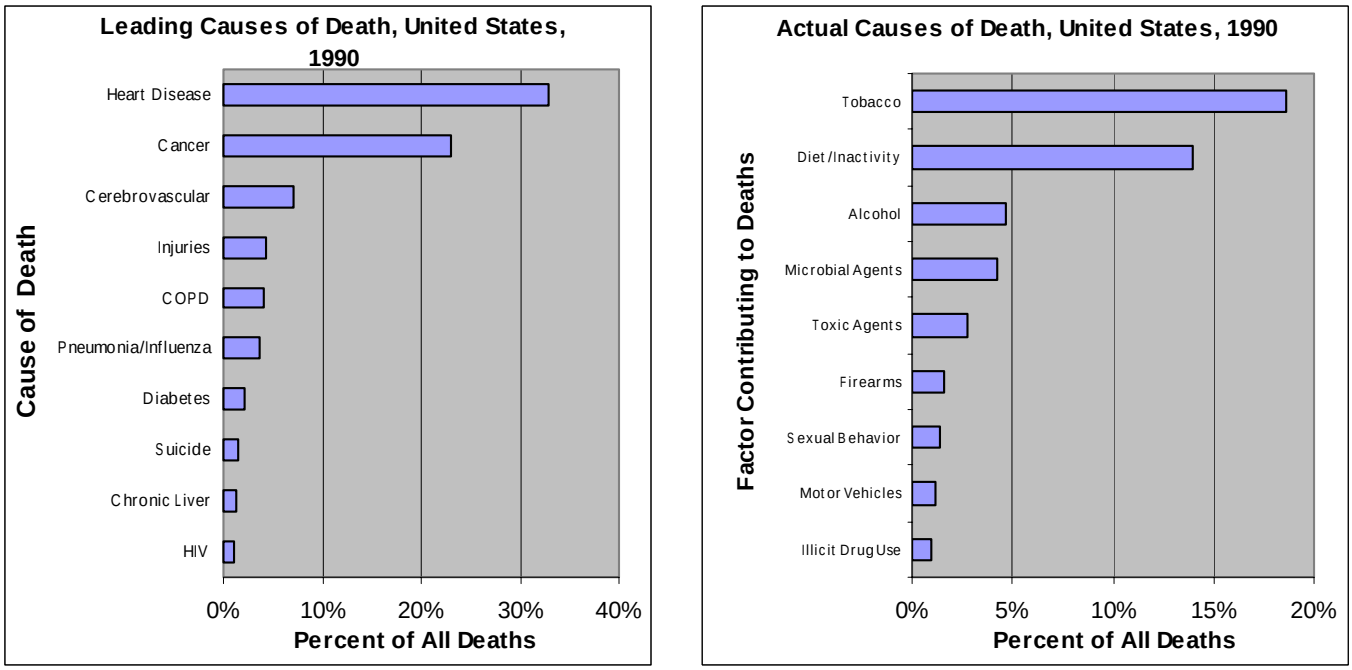


Figure 4.
Comparing leading and actual causes of death (McGinnis and Foege 1993)

Primary, Secondary, and Tertiary Prevention Strategies

The health continuum can be used to conceptualize the potential for individuals' health status to progress from good health to at-risk for disease or injury to diseased or injured to impaired. It is possible for individual health status to move toward health as well. This conceptual progression illustrates three intervention points to target strategies to prevent individuals from moving toward illness and move some toward wellness. The three intervention points are when individuals are well or have identified risk factors for diseases or injuries; when individuals have early, asymptomatic diseases or injuries; and when individuals have symptomatic diseases or injuries. The three strategies that can target these points are referred to as *primary prevention*, *secondary prevention*, and *tertiary prevention* (Turnock 1997). Figure 5 illustrates the relationship between the health continuum, intervention points and prevention strategies.

Primary prevention is the strategy to prevent disease or injury through two approaches; reducing risk factor levels and reducing exposure to potentially harmful agents or conditions. *Health promotion* is the term used to describe those activities that reduce risk factor levels by modifying behaviors that can affect exposure to harmful agents or conditions. Examples of health promotion activities in the clinical setting at an MTF include diet and exercise counseling and health education. Health promotion activities at worksites or in the community may include policies that promote physical activity or provision of recreational facilities, and housing and building standards. *Health protection* activities attempt to decrease the likelihood for harmful interactions between individuals and toxic factors and to increase resistance to potentially harmful factors. Environmental policies, industrial hygiene programs, and immunizations are examples of activities that protect groups from harmful effects of toxic or virulent agents (Turnock 1997).

Secondary prevention refers to early detection and prompt treatment of diseases or injuries when they are at an *early, typically asymptomatic, stage*. By detecting diseases and injuries early, secondary prevention may return individuals to a state of health, or significantly limit the damage to individuals' health, and prevent recurrence. Community-based, worksite and clinic-based screening programs are examples of secondary prevention activities. The MHS is putting a high priority on integrating secondary prevention into routine clinical activities. A program to detect latent tuberculosis infection (positive PPD) in high-risk individuals is an example of case finding as a secondary prevention activity (Turnock 1997).

Tertiary prevention includes familiar clinical activities such as *treatment of symptomatic acute and chronic diseases and injuries* to limit further damage to health and restore function (Turnock 1997). It includes rehabilitation where damage has already occurred. Increasingly, individual case and condition/disease management programs are used to achieve increased effectiveness and efficiency from tertiary prevention services.

Within the DoD programs for Force Health Protection, worksite and community-based population health, MTFs and TRICARE health plan, prevention strategies must be employed in a balance that optimizes population health. Force Health Protection is not only about casualty care, a tertiary prevention strategy, but puts renewed emphasis on primary and secondary prevention strategies to prevent disease and injury and improve health. For example, Force Health Protection is about ensuring that troops are protected from hazards such as vaccine-preventable infections and are in top physical and mental condition to remain resilient to injury and illness.

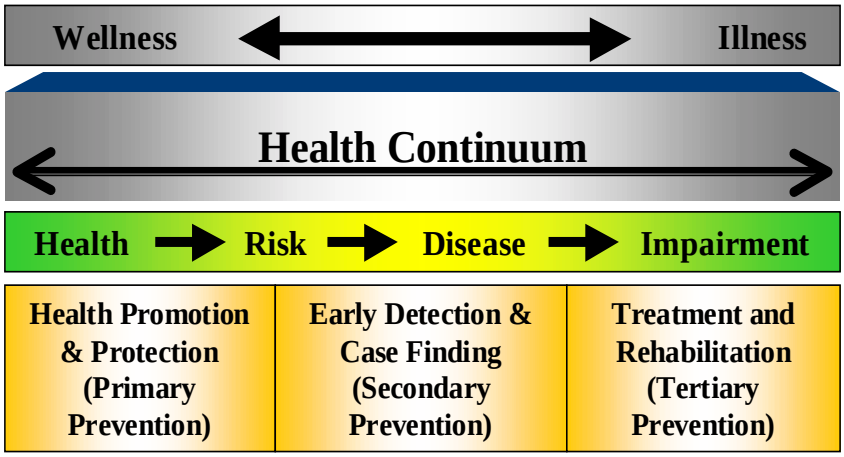


Figure 5.
The relationship between the health continuum, intervention points, and primary, secondary, and tertiary prevention strategies

Worksite and community-based programs emphasize health promotion and protection and can also present good venues for secondary prevention activities. Finally, though the current TRICARE health plan is directed mostly at diagnosis and treatment of established diseases and injuries, coverage is increasing for primary and secondary prevention services. Military Health System programs are putting more emphasis than ever before on ensuring that MTF and contract providers improve delivery of recommended preventive services to promote wellness, prevent disease and injury, and thereby extract the best value from clinical capacity.

The imperative to maximize primary prevention wherever possible is exemplified by the burden of illness from lung cancer. Cancer is the second leading cause of death in the United States and carcinoma of the lung is the number one cause of cancer deaths for both women and men. The overall death rate from lung cancer peaked around 1990 and has declined slightly since (Figure 6) (Fielding, Husten and Eriksen 1998). This success, however, is not due to progress in secondary or tertiary prevention. In fact, the 5-year survival rate for lung cancer has remained at less than 13% for many years, and there is not an effective method of screening for lung cancer (U.S. Preventive Services Task Force 1996). Smoking is the leading preventable cause of deaths overall, including deaths from lung cancer. Eighty-three percent of lung cancer deaths are attributable to smoking (Fielding, Husten and Eriksen 1998). Environmental tobacco smoke has been proven to cause lung cancer in non-smokers as well. Health promotion and protection activities to prevent smoking initiation, assist smokers to quit, and to protect non-smokers from tobacco smoke have been credited with the recent decline in lung cancer death rates in men (CDC 1999).

The story for lung cancer is an example of the potential of primary prevention strategies to impact a leading cause of premature morbidity and mortality. Using a systematic approach based on knowledge of the health status and distribution of determinants of health in populations will ensure that DoD organizations develop and execute effective policies and interventions to improve the health of military communities.

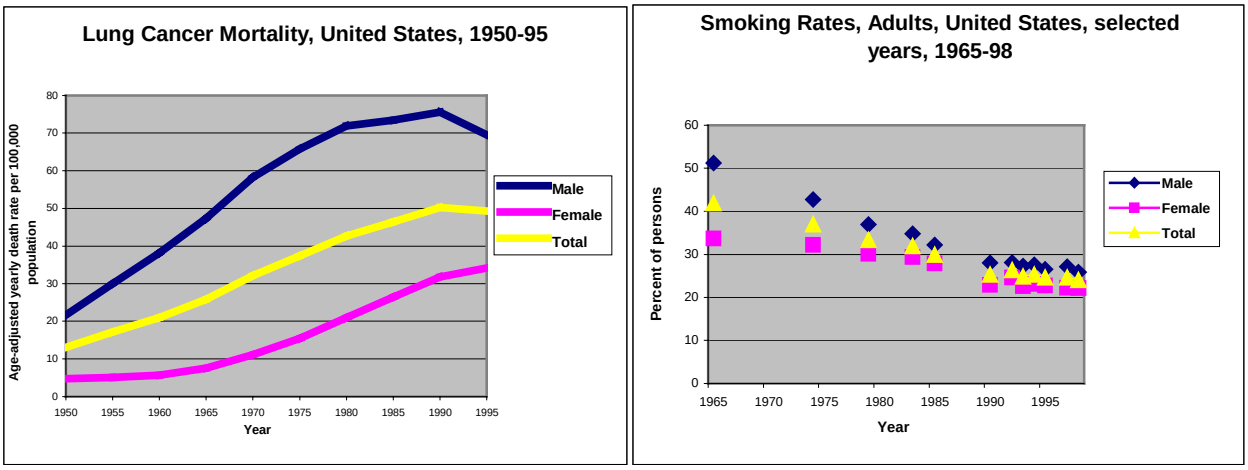


Figure 6.
Lung cancer mortality (CDC 1993; NCI 2001) and smoking trends (NCHS 2000)

Making Population Health Improvement a Reality in Department of Defense

A Systematic Approach

A systematic approach to population health improvement implies that activities are derived from organizational goals and objectives, use population-based health methods to plan, resource and implement policies and programs (including health care services), and achieve measurable gains in the health status of military communities.

Starting at the highest levels of the organization and cascading to the local level, activities must be aligned with the Department's mission, vision and goals. The mission is what the organization is currently doing. The vision is where it wants to be in 5-10 years. The goals can be used to develop a strategic plan for how the vision will be reached. Within the strategic plan are short-, intermediate-, and long-term goals that are measured quantitatively with specific objectives. In population health, the vision is healthy people, healthy worksites, and healthy communities. The local strategic plan should describe how to reach goals and objectives that reflect the best possible health status for individuals, worksites, and military communities.

The DoD enterprise, TRICARE Regions, Services, and MTFs should all employ a systematic and evidence-based approach for developing health plans, policies and programs. Integrated approaches that combine the best evidence-based disease and injury prevention and intervention paradigms will be the most successful.

Planning and prioritization should be driven by population health data and by other priorities set forth by leadership. The planning process and resultant policies and programs should reflect the application of population-based epidemiologic methods. Also, organizations should align the measurement of program performance with pre-established objectives for population health improvement. This requires an overall information management strategy that links the plans and priorities to operational activities. A gap analysis should be completed to identify changes needed to implement population health improvement plans. Finally, plans and programs should drive resource requirements so that the right capacity and capability of personnel and appropriate space, funding, and materiel are employed to achieve population health improvement objectives.

Plans, Policies, and Programs

At any given time, the responsibilities of the MHS are being met through established programs that address previously identified and prioritized problems. However, the health of a population and the political and scientific bases for health service activities are very dynamic. New health issues continue to emerge, new interventions are found for problems already targeted by established programs, and new information about the distribution and determinants of health problems in the population suggest the need for new priorities or other approaches. Therefore, each organization must have ongoing mechanisms for health planning and programming that capture the dynamic nature of population health improvement. An analysis of the performance in core public health functions by over 2800 local health departments in the United States showed that departments that used a formal

Military Health System Mission, Vision, and Goals

MISSION

The Military Health System (MHS) mission is to support the Department of Defense (DoD) and our nation's security by providing health services for the full range of military deployments and by sustaining the health of members of the armed forces, their families and others.

VISION

The MHS is responsive and accountable to DoD, line leadership, and our beneficiaries to ensure force health protection and optimize the health of MHS beneficiaries by providing best value health services using best clinical and business practices.

GOALS

- Protect our forces from medical threats anywhere in the world under any circumstances.
- Employ a comprehensive health plan for those entrusted to DoD's care.
- Create healthy communities through the use of health promotion and prevention activities.
- Fully optimize clinical outcomes across the MHS.

planning process had higher performance scores for the eight public health functions analyzed (Suen, Cooper and Taylor 1995). Agencies using a formal planning tool had the best performance scores for health-related data collection, surveillance, and outcome monitoring and for investigation and control of diseases and injuries.

Several community-based models have been developed to help with community health assessments and planning. Three examples of such planning models are found in the following tools (see references for links to these):

- Assessment Protocol for Excellence in Public Health (APEX/PH) (NACCHO 1991)
- Planned Approach to Community Health (PATCH) (HHS 1993)
- Healthy Communities 2000: Model Standards (APHA 1991)

All three planning tools have similar models for integrating health assessment and surveillance in community health planning. In developing and monitoring a community health plan, health problems are identified and analyzed based on epidemiologic methods that link health problems to possible interventions. The organization should have data to describe the burden and distribution of health problems in the population. The overall burden of health problems in the community can serve as a starting point for prioritizing and analyzing health problems. Health problems are then prioritized to dictate policies and programs based on available resources. These and other formal health planning tools can prove helpful to MTFs and other organizations when conducting regular and periodic health planning.

To improve the health of military communities, the DoD must continuously plan and develop policies and programs using a cyclical approach. The cycle includes all these steps; assessing the health status of beneficiaries, identifying risk factors for disease and injuries under the framework of determinants of health, prioritizing health problems, developing and implementing programs, and then reassessing the health status of beneficiary populations.

Principles Guiding Population Health Plans, Policies, Programs

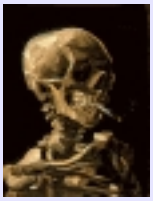
In all DoD activities—those in Force Health Protection, worksite and community-based programs, and TRICARE—plans, policies, and programs will be most effective at improving population health if four population health principles are employed. The principles are:

- Define the populations targeted for interventions,
- Use applied epidemiology,
- Use evidence-based clinical and business interventions, and
- Manage information to support ongoing health status assessment, planning, and performance monitoring and improvement.

Defined Populations

The first step in developing health policies, programs and interventions is to *define the population* that is at-risk for health altering events, such as diseases or injuries. There are innumerable ways to define populations but a practical starting point is to use the health assessment that identified the problems in the community. For example, if back injuries have been identified as a priority problem among active duty troops on base then the population could be defined by the base active duty population. Larger populations might be considered when planning health services under the TRICARE health plan. The population might be identified as those beneficiaries living in the catchment area for purposes of planning services and resources to provide care in the MTF and through contract services in the local community.

Smoking rates among military personnel have been higher than the overall US rates for the past 20 years. The overall smoking rate among Active Duty military personnel in 1998 was 30 percent, well above the national rate of 24 percent. Smoking is the leading preventable cause of premature mortality in the United States. It causes morbidity and mortality from cardiovascular, cerebrovascular and respiratory disease, cancers and other diseases. Given the high smoking rates among military personnel and the huge burden of smoking-related morbidity and mortality throughout the US population, it is not surprising that smoking is a major risk factor for many of the health problems and chronic diseases treated by military providers. Therefore, smoking may exemplify a high priority health problem to target in MHS programs. Similarly, smoking rates and other measures of the results of programs targeting smoking can be periodically assessed.



Smoking as a health problem and smoking prevention and cessation as interventions are realistic and tangible examples for presenting the principles and processes of population health improvement.

A specialized diagnostic or therapeutic service provided by a Center of Excellence might define the population as those living within the TRICARE Region, or even the entire MHS beneficiary population.

A deployable Army unit or the crew on a ship may be the population for a Force Health Protection activity such as an immunization program for troops likely to go to the Middle East. For MTF activities to implement the TRICARE health plan, the MTF enrolled population can be used to define the population for planning MTF-specific policies and programs. Defining the populations assigned to individual Primary Care Managers (PCMs) i.e., the patient panel, is perhaps the most useful way to identify groups of beneficiaries that are small enough to target patient-specific primary, secondary and tertiary prevention interventions. Worksite and community-based planning for policies, programs, and interventions may want to include all TRICARE beneficiary groups (TRICARE enrollees as well as those not enrolled) in defining populations at risk for acute or chronic diseases and injuries and lifestyle or behavioral risk factors.

Applied Epidemiology

Epidemiologic methods are used to describe the distribution and determinants of disease and injury in the population and of the risk factors and underlying causes of diseases and injuries. They also help in identifying possible interventions to resolve problems. Health information used at all levels for population health improvement must accurately represent the distribution of morbidity and mortality in the community and their causes. Surveillance of a wide array of health data sources is necessary for the identification of health events or trends that may warrant action. The population health information must be acquired and applied based on the science of epidemiology (Tyler and Dicker 1997).

The following terms are important in using principles of applied epidemiology in planning population health policies and programs:

- *Health problems* are any health issues that the community defines as problems. Health problems are typically undesirable conditions such as death, disease, or disability (NACCHO 1991). Epidemiologic methods for identifying and investigating adverse health events can support data-driven problem definition. For example, disease-specific death rates in a sub-population of the community or injury rates within a geographic area may be used to describe problems for action.

- *Risk factors* are "Scientifically established factors (determinants) that *relate directly to the level of a health problem*" (NACCHO 1991). There may be numerous risk factors for a given health problem and, conversely, any given risk factor may contribute to numerous health problems.

- *Direct and indirect contributing factors.* Factors that have been scientifically established to directly affect the level of a risk factor are *direct contributing factors*. Those community-specific factors that affect direct contributing factors are *indirect contributing factors* (NACCHO 1991).

Epidemiology is applied in population health programs through four tasks: surveillance, investigation, analysis, and evaluation. *Surveillance* is the ongoing collection and analysis of health data for the support of health planning, programming and evaluation. Monitoring the overall health status of the population or sub-populations to identify possible health problems is part of surveillance. Epidemiologic *investigations* study health problems to identify characteristics of health events and risk factors or contributing factors. *Analysis* is the formal task of taking data about health problems and converting it to information that will lead to interventions. Investigation and analysis identify risk factors and direct and indirect contributing factors of health problems. *Evaluation* is the assessment of health policies and programs against their intended objectives in addressing problems.

The epidemiologic tasks of surveillance, investigation and analysis are used in health planning and all depend heavily on population-based health data. The tasks result in a series of hypotheses about a health problem. These hypotheses eventually lead to interventions for addressing the problem. Figure 7 shows how a health problem identified through ongoing surveillance can be investigated to identify risk factors and then analyzed for direct and indirect contributing factors. The analysis continues with the identification of interventions for possible implementation.
The applied epidemiology process can directly support the need to manage services provided under the TRICARE health plan. The need to effectively

match health services capacity with demand for services requires a process to *forecast demand*. Through the application of epidemiologic methods, information about known health status or projected health problems in populations can be used to project the timing, scope, and quantity of each type of service or intervention that will be requested or needed by the target population. This should include proactive identification and delivery of all recommended clinical preventive services. Also, this approach is used to determine the need, or demand, for Force Health Protection, worksite, community-based, and MTF programs.

Evidence-based Interventions

There is a growing demand in public health and medical practice to use explicit evidence-based information to improve the effectiveness of health services in achieving population health improvement objectives. Evidence-based medicine is a term used to describe the use of practices and interventions that have been derived from explicit scientific methods for proving effectiveness. Evidence-based principles that include systematic reviews of scientific evidence have been used in developing prevention guidelines beginning with the early work done by the Canadian Task Force on the Periodic Health Examination and the U.S. Preventive Services Task Force (Wallace 1998). The terms *evidence-based medicine* (EBM) and *evidence-based health care* (EBHC) are sometimes used to describe evidence-based principles and practices applied in direct patient care (EBM) and in worksites, communities, and populations (EBHC).

Evidence-based practices, as they apply to MHS population health improvement and optimization, can be considered in two categories: 1) *evidence-based primary, secondary, and tertiary prevention*, and 2) "evidence-based" *business practice*. By using evidence-based prevention strategies the MHS will ensure that all health programs targeting individuals and populations are "doing the right thing" to improve community health. Sound business practices, though not necessarily proven using scientific methods, are about using valid management and business practices to ensure that health programs are "doing things right" to get the best value from health programs.

Evidence-based primary, secondary, and tertiary prevention

The application of systematic methods to review and analyze scientific evidence on health interventions has led to the development of guidelines that describe the best population health and clinical approaches to specific risks, diseases and injuries. The intention in developing guidelines is to systematically apply what is known and not known about preventing, diagnosing, and treating diseases and injuries to identify for health professionals the interventions that are most effective. In addition, this system-

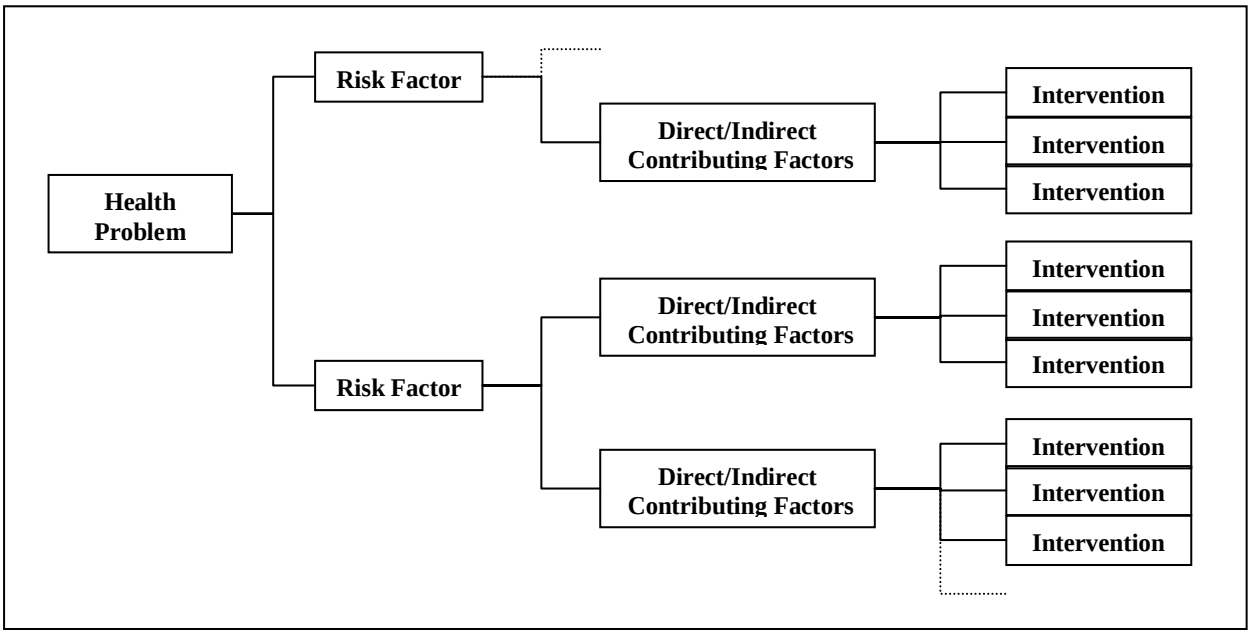


Figure 7.
Applied epidemiology process (NACCHO 1991)

atic process identifies areas where further research is needed to fill gaps in the evidence.

Primary and secondary prevention guidelines have been developed for clinical settings and are described in the *Guide to Clinical Preventive Services* (http://www.odphp.osophs.dhhs.gov/pubs/guidecps/), developed by the U.S. Preventive Services Task Force (1996). This "clinical guide" provides recommendations and discussion for clinicians on how to prevent and screen for numerous priority diseases and injuries and provides guidelines based on age group and risk stratification.

Guidelines for prevention activities in the community setting are being developed and released in phases as the *Guide to Community Preventive Services* by the Task Force on Community Preventive Services (2000). This "community guide" will provide recommendations for population-based interventions for health promotion, specific disease and injury prevention, and health protection.

Many guidelines are available that recommend tertiary prevention (treatment and rehabilitation) interventions. Disease treatment and rehabilitation guidelines are called *clinical practice guidelines (CPGs)*. Most CPGs target specific diseases, conditions, or symptoms. A Department of Defense and Veterans Administration Workgroup has developed CPGs for asthma, diabetes, and a variety of other health conditions (http://www.cs.amedd.army.mil/qmo/Home.htm). Developing CPGs is a complex task; therefore, it is not surprising that there is only a handful of *evidence-based* guidelines available today (see Evidence-based Primary, Secondary, and Tertiary Prevention, in Section IV).

"Evidence-based" business practice

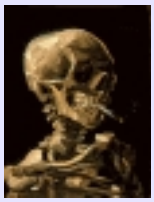
Setting standards for business practice requires the use of proven business and program management tools. In the past, standard operating procedures for managing health services were often based on military and civilian inspection criteria. We now know that this is not enough. Business tools, models, and experience can help organizations effectively meet and manage the demand of their populations. The MHS Health Care Reengineering Program (http://www.tricare.osd.mil/hcr) is a forum for sharing and retrieving experiences with health services innovation. Within this guide are tools to help organizations *forecast demand* for products, resources, and services (see Forecast Demand, Section IV). *Demand management* tools help MTFs and other organizations manage demand for health services using methods proven in commercial and government health plans (see Manage Demand, Section IV). Resource management tools such as business case analysis and workload models help MHS organizations to *manage capacity*, project future needs, and make long-term realignment decisions. A few of the many business and cost analysis models are cost/benefit analysis, cost/utility analysis, cost minimization, and cost-effectiveness analysis (see below).

A limited discussion of business analysis and management models in the context of population health improvement is presented under Manage Capacity, in Section IV. Interested readers can learn more about specific business analysis tools for health services management in the health management literature.

Cost-effectiveness

Cost-effectiveness analysis in population health is a method of combining clinical

An MTF planner finds that *acute exacerbation of asthma* is among the most common diagnoses resulting in acute visits to the outpatient clinics. Further analysis reveals that most patients presenting acutely and who are diagnosed with asthma are children. In the process of planning to address this problem, the target population is identified as children enrolled to the MTF and who are between ages 1 and 18 years. The epidemiologic process determines several risk factors for acute asthma including upper respiratory tract infection, exposure to environmental tobacco smoke, ineffective use of prescribed preventive medications, and even active smoking by some youth.



In pursuing exposure to environmental tobacco smoke as a risk factor for possible intervention, factors are identified that directly and indirectly contribute to children being exposed to environmental tobacco smoke.

A direct contributing factor for some children is that they live with an adult who smokes in the home. An indirect factor that is modifiable is that many adults are not aware of the effects their smoking inside the home has on a child's asthma. The planner is now close to identifying potential interventions for addressing the health problem in the identified population.

effectiveness with costs of health interventions. Cost-effectiveness analysis allows comparisons of various interventions by developing measures of the cost per amount of "health" gained from an intervention (using units such as lives saved or cases prevented) (Turnock 1997). The increasing application of cost-effectiveness analysis in population health research is building a body of information about the impact of interventions on the health of populations as a function of the cost of implementing health programs. Clearly, this information will be highly valuable to health planners faced with prioritizing programs (Maciosek 2001).

In summary, Force Health Protection, worksite and community-based, and TRICARE health plan programs can all incorporate evidence-based interventions. Force Health Protection programs can employ evidence-based primary, secondary, and tertiary prevention in each of the three pillars—fit and healthy force, casualty prevention, and casualty management. Military doctrine provides the "business" evidence for how to apply evidence-based prevention the "right way" in military settings. The use of evidence-based information, often in the form of guidelines, will help the health plan ensure that they are providing effective and efficient services for beneficiaries. Finally, evidence strongly supports the importance of assuring a full complement of services is available to achieve population health improvement objectives for military communities. Worksite and community-based programs can be developed using evidence-based interventions. Some of the most effective programs will be provided by helping agencies that are outside the MHS programs and either on base or in the nearby community (http://www.thecommunityguide.org). *Community outreach* is needed to extend beyond the boundaries of programs managed within the MHS to partner with the many community-based services that so greatly impact the health of military populations.

Information Management

Information management is critical to population health. Assessing the health status of populations is a data-rich and information-intensive process. Planning must link information about health problems in the community with information about available resources; and the cyclical process is repeated using periodic performance monitoring and reassessment. Population health information management must provide *actionable information that is data-driven and that drives data* and *knowledge management and transfer*. Throughout the DoD, organizations should have an information management strategy that incorporates high quality data collection, proper epidemiologic and biostatistical analysis, interpretation, and dissemination; collection and transfer of knowledge on best practices; and comprehensive education.

Actionable Information

There is a growing demand for data-driven plans, policies and programs in health agencies. The rapidly expanding availability of health data and better tools for collecting and analyzing data both drives this demand and makes achieving data-driven health operations more challenging. Health agencies must be able to effectively analyze and interpret data to identify community health problems, establish policies and programs to address problems, and measure progress in resolving problems. There is also an established management axiom "what gets measured gets done" (American Society of Public Administration 1998). Combining the demand for data-driven operations by health agencies with the management axiom creates an imperative for acquiring and utilizing population health data: *if what gets measured gets done, then what needs to be done must be measured*. The challenge is to translate the plethora of health data available today into actionable information that is useful at the level where policies and programs are developed, resourced, and implemented. Figure 8 depicts the iterative nature of population health information management, which directly mirrors population health planning and performance measurement. Health data on individuals and communities are collected through information management tools. These data include the distribution of diseases, injuries, behaviors, occupation, demographics, business and other characteristics related to health and health services. The data are retrieved, analyzed, and interpreted to synthesize health information for dissemination. Information that is disseminated to providers such as PCMs in primary care clinics, community program managers, or forward deployed health protection teams, must be actionable at the level the providers impact individual, worksite (unit or command), and community health. Actionable information will allow providers to determine who needs what services, and when and where the services are needed. Providers use the population health information to develop and deliver health services to individuals and

communities. Similarly, the health data are retrieved, analyzed, and interpreted to support aggregation of information from many communities to develop enterprise level metrics. Enterprise level metrics include measures of health status across DoD communities, business measures such as expenses and revenue, and performance measures that elucidate overall quality and efficiency of services provided. Senior leadership at the intermediate and headquarters levels use metrics to develop the highest level plans, policies and programs that cascade back to providers at the "deck plate."

Using Objectives for Improving Health Status and for Monitoring Performance

If the health status of a population is to be improved then there must be identified objectives for health that policies and programs are designed to achieve. *Objectives* are quantifiable measures of the desirable effects of interventions that are to be achieved by a certain point in time. The Healthy People initiative and similar State and local efforts have embraced the use of health objectives to prompt action and measure progress in addressing health problems (McGinnis and Maiese 1997). Health organizations must use population-based objectives to plan, resource, implement, and evaluate programs to improve individual, worksite, and community health. Progress measurement can be easily linked to the planning process when interventions have carefully developed objectives. These objectives should be measures of population health. Healthy People 2010 is a national initiative to advance a comprehensive health promotion and disease prevention agenda that includes 467 population-based objectives (HHS 2000). The MHS, Regions, and MTFs may adopt some of the objectives to target health problems or develop unique objectives.

Leading Health Indicators and National Objectives for Improving Health

Healthy People 2010: Objectives for Improving Health (http://www.health.gov/healthypeople/document) presents a comprehensive set of health objectives that captures objectives for morbidity and mortality and objectives for risk factors and direct and indirect determinants of disease, injury, and disability. Healthy People 2010 objectives are intended to aid local health initiatives, foster development of increas-

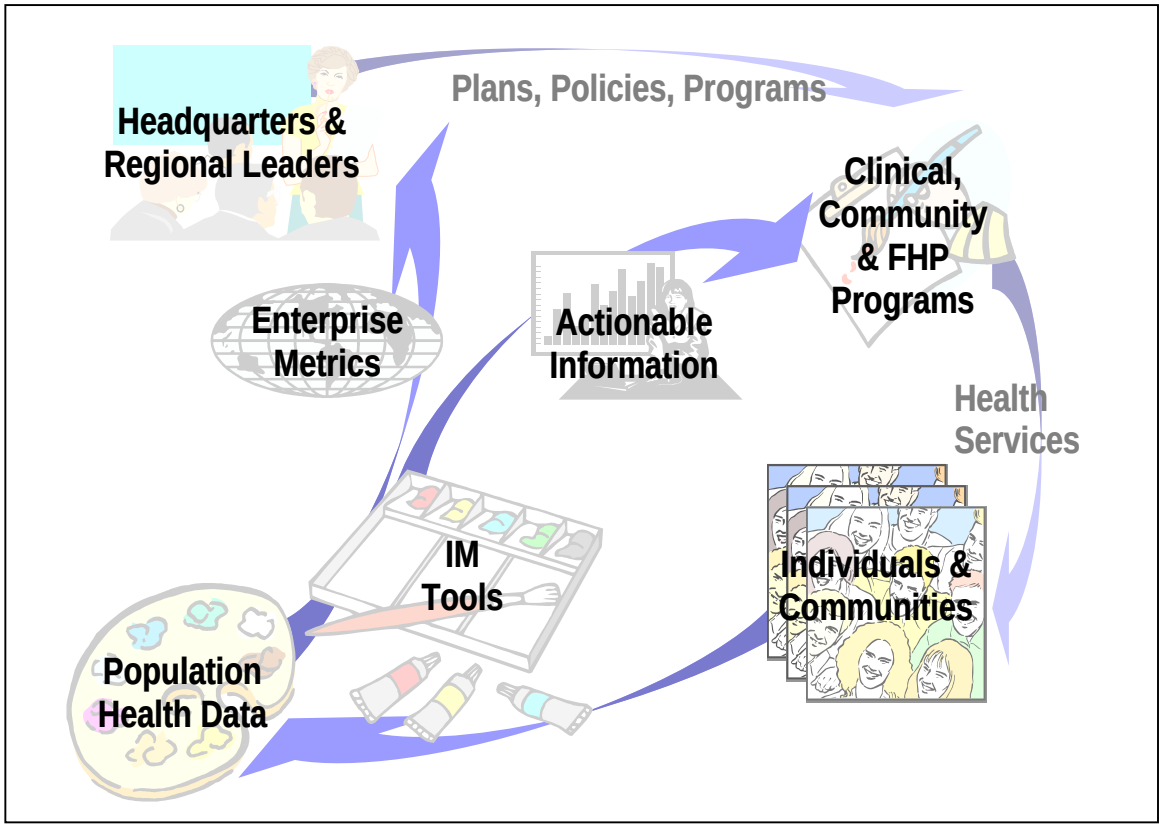


Figure 8.
Population health information management

ingly detailed data, and measure progress. However, there is no implied priority for the objectives and communities and health organizations will use objectives based on their specific priorities (HHS 2000).

To create a snapshot view of progress toward meeting the health objectives for the nation, ten Leading Health Indicators (Figure 9) were created to represent a small subset of the 467 objectives in Healthy People 2010. The 21 objectives in the Leading Health Indicators are examples of the comprehensive Healthy People 2010 objectives that can be adopted or adapted for local population health programs.

Population-based objectives that have clearly defined numerators and denominators will drive programs to demonstrate results and allow measurement of progress in population health. The numerator must describe the health event the intervention will modify, for example, the number of children and adolescents at Scott AFB who are overweight or obese. The denominator must clearly describe the target population for the intervention, the number of children and adolescents enrolled to Scott AFB. Objectives also must include the direction the intervention is intended to move the measure from its baseline, or current level, and must be linked to a target to achieve by an established time. The Healthy People 2010 objective for overweight and obesity in children and adolescents is: *Reduce the proportion of children and adolescents who are overweight or obese*. The national baseline is 11 percent and the target for the year 2010 is 5 percent (HHS 2000). Each objective must have a source for appropriate numerator and denominator data to measure and improve health. Sources for data should support periodic measurement to monitor progress over time. While it can be difficult to find reliable ongoing sources of data for many health problems, the imperative to address a problem can drive the identification and development of the data that are needed.

Outcome, Impact and Process Measures

Community health efforts must be monitored and evaluated for short, intermediate, and long-term effectiveness. Measuring the results of programs is important to reinforce and improve performance. In health programs, it is how progress toward the vision for community health is monitored. Processes for monitoring and evaluation can be divided into three levels, *outcome, impact, and process objectives* (NACCHO 1991; HHS 1993).

Health data used in assessment, surveillance and planning can be linked to methods of evaluation through population-based objectives. In other words, data used during the planning process to develop objectives for interventions can be the same data that support evaluation and monitoring with objectives. Health *outcome objectives* are typically measured using long-term measures that include life expectancy, quality of life, and mortality and morbidity rates. It may take a very long time to demonstrate changes in health status outcomes because much of the current burden of mortality and morbidity is related to chronic diseases (Rohrer 1999). While in many cases, changes in morbidity and mortality outcomes, such as communicable disease and injury morbidity and mortality rates, can be demonstrated over much shorter intervals. Programs, both MHS-wide and local should develop true outcome objectives for programs that target health problems such communicable disease and injury morbidity and mortality (Rohrer 1999).

Impact objectives incorporate intermediate and short-term measures of changes in risk factors and direct and indirect contributing factors for disease or injury. Impact objectives may necessitate measuring prevalence or incidence rates of behaviors, environmental risks, and biological risks such as hypertension and hyperlipidemia. The time interval for measuring changes in impact measures may be as long as 3-5 years (NACCHO 1991).

There are two different ways to consider *process objectives*. One type of process objective is monitored by measuring the services provided to populations over a specific period of time; yielding population-based rates (NACCHO 1991). An example would be measuring the proportion of children who have received recommended immunizations over a 12-month interval. Receiving recommended immunizations is a process of health services, and some would call its measure a process measure.

Another way to consider process measures is to look at processes as the activities (or tasks) within a program. In this context, process objectives describe expected counts of activities in an intervention rather than population-based rates (HHS 1993). Both types of process objectives are very useful for monitoring and evaluating programs at the local level and should be measurable at intervals of 1-2 years (NACCHO 1991).

The most frequently collected population

Leading Health Indicators and Corresponding Healthy People 2010 National Objectives

Leading Health Indicator	*Corresponding Objectives*
Physical Activity	22-7. Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion. Target: 85%; baseline: 64% 22-2. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. Target: 30%; baseline: 15%
Overweight and Obesity	19-3c. Reduce the proportion of childhood and adolescent who are overweight or obese. Target: 5%; baseline: 11% 19-2. Reduce the proportion of adults who are obese. Target: 15%; baseline: 23%
Tobacco Use	27-2b. Reduce cigarette smoking by adolescent. Target: 16%; baseline: 36% 27-1a. Reduce cigarette smoking by adults. Target: 12%; baseline: 24%
Substance Abuse	26-10a. Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days. Target: 89%; baseline: 77% 26-10c. Reduce the proportion of adults using any illicit drug during the past 30 days. Target: 3%; baseline 6% 26-11c. Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month. Target: 6%; baseline: 16%
Responsible Sexual Behavior	25-11. Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active. Target: 95%; baseline: 85% 13-6. Increase the proportion of sexually active persons who use condoms. Target: 50%; baseline: 23%
Mental Health	18-9b. Increase the proportion of adults with recognized depression who receive treatment. Target: 50%; baseline 23%
Injury and Violence	15-15. Reduce deaths caused by motor vehicle crashes. Target: 9 per 100,000; baseline: 15.8 per 100,000. 15-32. Reduce homicides. Target: 3.2 per 100,000; baseline: 7.2 per 100,000
Environmental Health	8-1a. Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone. Target: 0%; baseline: 43% 27-10. Reduce the proportion of nonsmokers exposed to environmental tobacco smoke. Target: 45%; baseline 65%
Immunizations	14-24. Increase the proportion of young children who receive all vaccines that have been recommended for universal administration for at least 5 years. Target: 80%; baseline: 73% 14-29a & b. Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease. Target (influenza): 90%; baseline: 63%. Target (pneumococcal): 90%; baseline: 43%
Access to Health Care	1-1. Increase the proportion of persons with health insurance. Target: 100%; baseline: 86% 1-4a. Increase the proportion of persons who have a specific source of ongoing care. Target: 96%; baseline: 86% 16-6a. Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy. Target: 90%; baseline: 83%

Figure 9. Healthy People 2010 Leading Health Indicators (HHS 2000)

health performance measures should be those that discern the effects of local programs on near-term health objectives, typically the priority impact or process measures. Less frequent measures, such as overall health status or health outcome measures, should be emphasized in less frequent, long-term program evaluations. MTFs and local communities may not be able to demonstrate how interventions result in changes in long-term health outcomes. Therefore, measuring progress toward impact and process objectives for interventions may be sufficient if interventions that are known to improve health outcomes are chosen (i.e., evidence-based interventions) (APHA 1991).

Increasingly, health data are being used to support population-based health planning and measurement of progress (HHS 2000). Demonstrable changes can be found in the Healthy People initiative coordinated by the U.S. Department of Health and Human Services. In the succession of decennial health objectives for the Nation included in Healthy People reports, there has been increasingly robust epidemiologic information about the distribution and causes of disease and disability in the United States. There also have been an increasing number of health objectives to reflect the breadth and depth of health problems among communities in the United States. More states and local jurisdictions are using the approach of Healthy People to support health planning and to establish their own health objectives.

The use of outcome, impact, and process objectives, and performance measures, or *metrics*, is the "medium" or "language" of conducting quality clinical, worksite, and community-based services and Force Health Protection. Quality health services are in the hands of each provider. Providers typically practice based on the information they learned in training. The explosion of information availability has opened incredible opportunities for bringing current, critically analyzed information to providers in a manner that is immediately relevant and useful in making health services decisions. Therefore, use of knowledge management principles and continuous monitoring of performance effectiveness are crucial to ensuring the quality of all health services in the MHS. Health status and program measures that are derived from objectives are the best tools to accurately describe and monitor effectiveness of health services provided.

Knowledge Management and Transfer

The MTFs, Regions, and other offices within the MHS and DoD can operate as learning organizations by seeking out and adopting or avoiding practices based on the experience of others. This requires that knowledge be collected, organized and disseminated within the MHS agencies and between MHS offices and peer organizations in the private and government sectors.

The explosion of information technology over the last quarter century has ensured that there is no shortage of health information from which to learn and improve. Population health improvement must benefit from the dawning knowledge age. The MHS and DoD can employ enterprise level knowledge management and transfer strategies that ensure system-wide visibility to population health "knowledge." The strategies will include methods for collecting lessons learned and best practices, analyzing and evaluating the experiences of others and new research to identify what will and will not work in MHS programs. The population health knowledge that is collected will be managed to maintain currency and to make it easy for others to find and utilize the knowledge. It will be disseminated, or pushed, out to appropriate levels of the enterprise to benefit from every opportunity to learn.

Finally, a major strength of the MHS is the control of educational process. To cope with change and foster a learning organization, while rapidly changing the culture of the organization, a comprehensive program of formal education needs to be established. Such a curriculum must impart knowledge to all levels of the organization as well as to suppliers and customers. Education in the principles, processes and tools for population health improvement must be incorporated into each Service's education programs. The basic tenets must be taught to the widest audience and role-specific education and training are required for each member of the health services team. Military and civilian staff members and managed care support contractors must understand the basic principles of population health improvement and the specific goals. The investment of time, money and effort toward these education and orientation goals will be returned many-fold in the form of facilitated start-up as well as better clinical outcomes and quality of care.

Resources for Population Health Improvement

Population health improvement in the DoD cannot become a reality unless resources (staff, space, money, etc.) are aligned with population health improvement policies and programs. Resources must be distributed among the policies and programs under the areas of Force Health Protection, worksite and community-based, and MTF programs and the TRICARE health plan so that each program area maximally contributes to improving the health of military communities. It takes unrelenting planning and difficult decision-making to ensure that scarce resources are provided to develop and implement those programs that are most effective in achieving population health objectives.

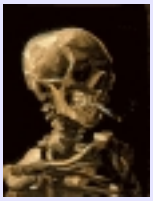
The current portfolio of programs has been developed over many years of planning, programming and budgeting. Medical readiness programs have appropriately continued as a top-priority in support of the National Defense Strategy. However, the current Force Health Protection doctrine may drive new programs to ensure the three pillars of *healthy and fit force*, *casualty prevention*, and *casualty care and management* are all in place.

Resource requirements to maintain and improve programs under the TRICARE health plan have put continued pressure on the funding for all programs in the MHS. This pressure will continue indefinitely as the beneficiary population ages and as health care technology drives cost increases ahead of overall inflation. Public law mandates TRICARE benefits and therefore many of the programs under the TRICARE health plan drive "must pay" resource requirements. Such requirements threaten to squeeze out new programs for population health improvement and programs that are not mandated by law. For example, many worksite and community-based programs that might be more cost-effective than some under the TRICARE benefit may not receive adequate resources to be effective or may, unfortunately, receive no funding at all.

There are several components of population health improvement outlined in this plan and guide that require new or renewed attention in the resource prioritization processes. In addition to the redirection of resources to new Force Health Protection programs, enhanced primary and secondary prevention benefits under TRICARE, and worksite and community-based programs, **the DoD must build a population health improvement capacity** at each level of the enterprise. The functions and benefits of population health support activities needed at the MHS and Region level are described in following sections. A plethora of functions needed to support population health at MTFs are described in detail in Section IV. Some of the key functions of population health support that must be inculcated in programs and funded accordingly include information management, education, community health planning, applied epidemiology, health services research to identify effective evidence-based interventions, and function-driven information technology.

The MHS must also increase the employment of distinct professional skills in order to build a population health improvement capacity. For example, professionals who have skills in data development and analysis, applied epidemiology, health education, health services research, program evaluation, and community health planning are required at the MHS and Region levels.

Smoking has been identified as the major risk factor for not just one but many of the top health problems in the local military community. Numerous direct and indirect contributing factors and possible interventions to mitigate them have also been identified. The next challenge is to review the evidence on possible interventions to find effective, evidence-based activities to include in smoking reduction programs on and near the base. The evidence will show, for example, that no single intervention is, by itself, sufficient to greatly impact smoking in a community. In fact, the best approach is to use a portfolio of clinic-based, worksite, and community-based policies and programs (examples are presented in the sections below). It is essential to set achievable near and intermediate term objectives for the programs and identify sources for baseline data and for data that will be used to monitor progress. Objectives from Healthy People 2010 can be adapted, for example:



1. Reduce the proportion of active duty personnel who smoke cigarettes. Target (3 yrs): 25%; baseline 30%.

2. Increase smoking cessation during pregnancy for enrolled women. Target (1 yr):

MTFs and other program offices need additional prevention and population health trained professionals such as preventive medicine and public health specialists, community health educators, health promotion specialists, biostatisticians, and data analysts.

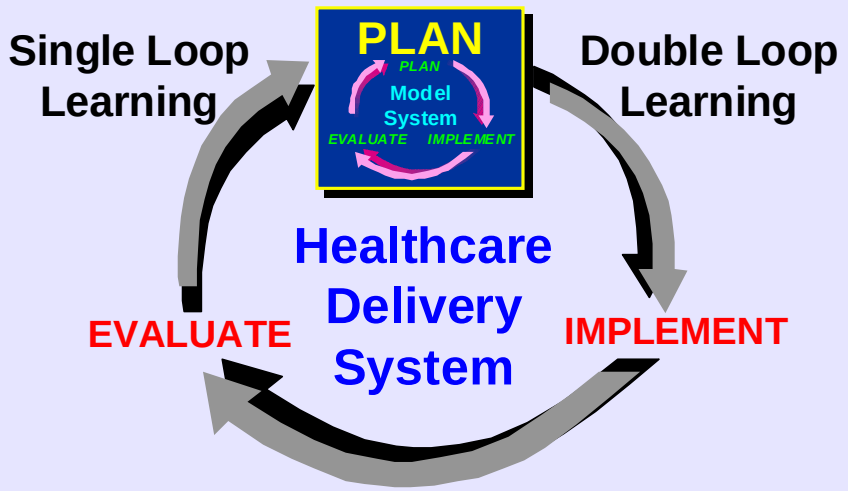
Inspection Item

An effective means for ensuring that population health improvement initiatives become a reality across the MHS is to insert the core activities into each Service's health services inspection program. This is consistent with the dynamic progression of inspections to remain ahead of the best principles and practices in the health services industry and MHS-specific requirements. A set of population health process criteria used during inspections at AF MTFs is available through the Population Health Support Office (https://phsd.afms.mil/PHSO/).

Incorporating Utilization Management and Review

Some readers may recognize that many of the principles, processes, and tools discussed have evolved from earlier concepts of utilization management (UM) and utilization review (UR). Utilization Management and Utilization Review plans and processes currently in place should be continued where they have proven valuable (Health Affairs Policy http://tricare.osd.mil/policy/fy98/umpd9831.html). Selected elements of UR and UM are key tools for improving the health of the MHS beneficiaries (see Forecast Demand, Manage Demand, and Manage Capacity, Section IV). These elements must be included in population health improvement programs. Under TRICARE, population health improvement plans in the Direct Care System must be integrated with the Managed Care Support Contract (MCSC) network as well as other MTFs in the region, including coordination with Centers of Excellence (COE). For population health improvement to be effective, implementation strategies must be comprehensive, systematic, and ongoing throughout the continuum of care. Integrated strategies should include all aspects of medical, surgical, and mental health care, both inpatient and outpatient, encompassing all clinical and community services that impact on population health.

Utilization management programs can further evolve to effective population health improvement programs through the use of evidence-based, best clinical and business practices (benchmarking). Implementation of these practices must be tailored to the facilities and the population they support. One goal is to reduce unwarranted variation in the management of acute and chronic diseases and injuries in the enrolled



Current research shows that environmental stimuli perceived as a problem leads individuals (and organizations and other systems) to learn something new to solve that problem. There is a problem identified; one then gathers the necessary information and applies it to correct the problem. In a simpler example: the thermostat is set at 75°F, the ambient temperature is 70°F, so the furnace is turned on. In such cases, we apply information to get the "right outcome." This is the case of single loop learning.

In the case of double loop learning, we question the paradigm. Is the way that we are solving the problem the correct way? More simply, is the thermostat set at the right temperature? Double loop learning is all about thinking about what we do to explore the underlying patterns we use to learn and solve problems. Double loop learning is a reflective practice.

If we are to understand and improve how we learn and solve problems, we must be able to step out of the subjective realm of experiencing the problem and objectively observe ourselves learning and applying the problem solving style we use. We must watch what we do, how we do it, and how we feel as we do it, all while we

population. Population health improvement plans will use the best of UM and UR. Patient and staff education will be essential. There will be an increased focus on health promotion and prevention of disease and disability. Primary care managers (PCMs) will be required to identify sub-populations within their panels of patients. There must be feedback to PCMs on the individual and aggregate health of their patients and the appropriate use of medical resources to accomplish this.

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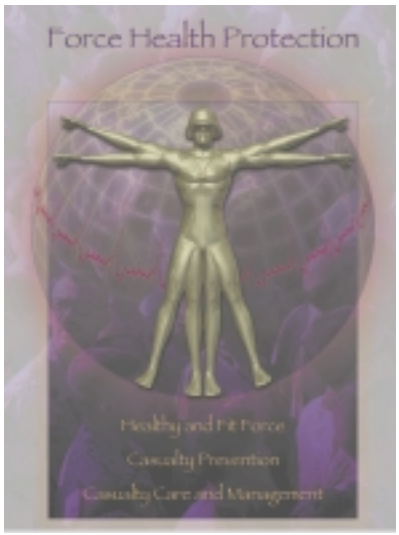
Force Health Protection



Force Health Protection (FHP) is the vision for the portfolio of programs that are needed to protect fighting forces. It is based on the concept of total life-cycle health support. The total life-cycle support concept embraces the challenge to improve the health of servicemen and women from their first entrance into the military through their entire military service, including deployments. The FHP vision also recognizes that the most valuable and complex weapon systems in the U.S. military are its Soldiers, Sailors, Airmen, and Marines.

Force Health Protection doctrine describes three inter-related pillars—*healthy and fit force*, *casualty prevention*, and *casualty care and management*. It also outlines the infrastructure that must be in place to achieve the FHP objectives under each of the pillars.

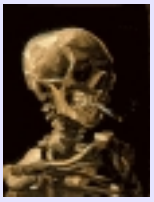
A healthy and fit force must be maintained as a given status for military forces. This requires programs in the areas of disease and injury prevention, health promotion (including mental health), and occupational health. Some of the functions needed include physical training, family support, periodic health assessments and clinical preventive services. It also requires that service members and their families have ready access to the TRICARE health plan.

Casualty prevention is designed to counter two types of threats; those from environmental and occupational health hazards and threats posed directly by enemy actions. Environmental and occupational health hazards have consistently caused the greatest numbers of casualties in military operations. Casualty prevention programs target disease and non-battle injury (DNBI). Casualty prevention to counter threats from enemy action relies on efforts to reduce enemy capabilities before casualties occur.

While FHP is no longer centered just on medical care for ill or injured forces, casualty care and management programs must ensure the best medical capabilities are in place to treat DNBI and combat casualties. Casualty care involves a continuum for stabilizing casualties. The continuum spans from first response through a critical-care-capable evacuation system.

The FHP capstone document (http://www.dtic.mil/jcs/j4/divisions/mrd/) provides extensive detail for FHP activities. MHS FHP links are found at http://www.tricare.osd.mil/readiness/forcehlth.html.

Active Duty service members who are worldwide deployable do not typically manifest clinical symptoms of some of the common chronic diseases that result from



smoking. This is not to imply, however, that smoking is not a threat to military operations. Force Health Protection doctrine calls for a fit and healthy force and this means that health-risking behaviors must be addressed. This is critical to improving the resistance and resiliency of military troops. In the theater of operations, disease and non-battle injury (DNBI) causes more casualties than does combat. Upper respiratory tract infections have been among the leading DNBI mission-impacting health events in all major military contingencies. Smoking is associated with an increased incidence of upper respiratory tract infections and with increases in lost duty days from many other illnesses.

Smoking can be a major health threat in the context of Force Health Protection programs. Commanders and medics must engage to prevent smoking initiation by troops and to help smokers quit. These should be mission-essential initiatives for unit readiness and for the health of servicemen and women.

Section III.

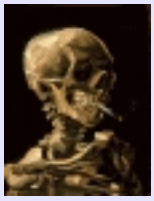
Worksite and Community-based Programs

Scope

The Military Health System can have a significant positive effect on population health through worksite and community-based programs. The scope of interventions that can be implemented in worksite and community-based venues is very broad. Programs to reduce unhealthy behaviors, protect against exposure to toxins, and conduct disease and injury surveillance may be part of occupational health activities at worksites. Environmental health services, school-based physical activity and nutrition programs, and media campaigns to promote healthy lifestyles are examples of community-based programs organized by public health, community health, and private agencies. Worksite and community-based programs for population health improvement should address areas of health promotion and protection (including environmental health), disease and injury prevention and screening, and public health surveillance.

This edition of the Population Health Improvement Plan and Guide does not describe the depth and breadth of MHS worksite and community-based programs or provide specific guidance for developing and implementing such programs. Some examples of specific interventions, in a few key areas, are outlined to increase momentum for building capacity in worksite and community-based programs across the MHS. Resources for information about many of the existing worksite and community-based programs in the three Services are provided as well.

To reduce smoking related illness requires a portfolio of measures that prevent initiation of smoking, promote smoking cessation and protect non-smokers from harmful tobacco smoke. Recent emphasis has been placed on the importance of effective worksite and community-based programs to reduce smoking. Worksite policies that limit where smoking is allowed contribute to the negative image of smoking and protect non-smokers from exposure to environmental tobacco smoke. Employer-sponsored policies and programs can provide incentives to smokers who successfully quit smoking. Community laws and enforcement programs can restrict access to cigarettes by youth. School-based and faith-based education programs help teach children how to resist the temptation to experiment with cigarettes. Media campaigns effectively counter tobacco marketing and tobacco taxes can increase the price of cigarettes to reduce tobacco consumption.



Finally, worksite and community-based programs can help connect smokers with clinical services to assist with smoking cessation. (Task Force on Community

Examples of Interventions

Changing risky behaviors

- School-based physical activity programs for all age groups
- Physical activity programs for 65 years old and older adults
- Initiatives addressing availability of safe recreation and fitness sites (e.g., parks, trails, fitness centers)
- Community-wide nutrition education programs in schools, restaurants, shopping sites
- Traffic safety programs
- Tobacco use prevention and cessation programs

Reducing specific conditions, diseases, injuries and impairments

- Community-baseed programs providing age-specific clinical screening, counseling and immunizations
- Community support programs for mentally disabled, physically disabled, disadvantaged, older adults, and those with chronic or disabling conditions

- Unintentional injury prevention programs (e.g., motor vehicle accidents, falls, drowning, fire, poisoning, head and spinal cord injuries)
- Drug and alcohol treatment programs
- Tobacco use prevention and cessation programs
- Chronic disease prevention and screening programs (e.g., cancer, heart disease, and diabetes)
- Family planning
- Maternal and infant health
- Oral health (dental and periodontal)
- Societal health issues associated with school drop-outs, homicides, suicides, physical and mental abuse, violence in the schools
- Occupational safety and health programs

Addressing environmental and ecosystem challenges

- Water borne and food borne illnesses
- Air pollutants (e.g., environmental tobacco smoke)
- Toxic agents
- Solid-waste contamination
- Recycling programs

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Service Resources

Health Promotion

Army: http://chppm-www.apgea.army.mil/dhpw
Navy: http://www-nehc.med.navy.mil/hp/index.htm
Air Force: https://www.afms.mil/op_prev/hlthprom.cfm

Environmental Health

Army: http://chppm-www.apgea.army.mil/services/dehedir.htm
Navy: http://www-nehc.med.navy.mil/ep/index.htm
Air Force: https://www.afms.mil/occ_env/indexnew.htm
DoD: http://www.denix.osd.mil/denix/welcome.html

Occupational Health

Army: http://chppm-www.apgea.army.mil/services/dohsdir.htm
Navy: http://www-nehc.med.navy.mil/occmed/index.htm
Air Force: https://www.afms.mil/occ_env/indexnew.htm

Community Health

Air Force: https://www.afms.mil/occ_env/indexnew.htm

Section IV.

Military Treatment Facility Implementation Guide

Military Treatment Facilities (MTFs) have the majority of responsibility for providing services mandated under TRICARE. In this regard, MTFs are essentially the operational units for the military health plan. This section is intended to provide guidance to MTFs on the key processes, roles and tools to implement the principles of population health improvement.

Military Treatment Facility Population Health Offices

One approach to consider at the MTF is to designate an office for population health activities. This office would function to coordinate, for the Commander, the various programs and processes of population health improvement. The population health office would likely interface with Regional Lead Agent, parent Service, and Service intermediate command population health offices and would collaborate with other MTF population health offices.

A critical role for the population health office is to identify and develop the information management capacity needed to implement population health improvement activities. The office will help personnel at the base level to use health information to support planning, implementing, and evaluating health improvement programs. Also, the population health office can take the lead in developing and managing a worksite and community-based health plan, including specific objectives for the near and intermediate term.

The MTF must have an office that is responsible for knowledge management as well. The MTF will want full visibility and participation as successes and failures are shared across the enterprise, new tools are developed and deployed, and new interventions are published.

Introduction to MTF Key Process Elements

The Population Health Improvement process schematic (Figure 10) shows how seven *key process elements* work in sequence to support the overall concept of population health improvement at the MTF. The process elements represent major functional areas of health service delivery within the MHS. In simplistic terms there are two factors to the equation; the demand on the system and the capacity of the system to complete the mission. Basic laws of economics state that a gap will exist between these two factors. Doctrine or management paradigms exist to minimize this gap.

To develop effective policies, plans, and programs, the target populations must be known (Element 1: *Identify the Population*). This population is then grouped into sub-populations based upon various characteristics that differentiate health service needs. These sub-populations are then identified, flagged and tracked through the system to optimize their health status. Enrollment is one way to identify and define the population. Standardization of the enrollment process is required to assure continuity of care and to minimize inefficiencies across the vast geographic and service regions.

Having identified the target populations, the future health service needs of the populations are estimated (Element 2: *Forecast Demand*). Forecasting demand identifies what types and amounts of primary, secondary, and tertiary prevention services will be health promotion and health education, determine the staffing

and resources necessary to provide individual, worksite, and community-based health promotion and health education.

Once the population has an assessment of current health status, to include projected intervention and prevention needs, appropriate providers can be assigned and a forecast of expected clinical demands can be created and modeled. These forecasts will help to determine the various strategies and tools required in managing demand (Element 3: *Manage Demand*). This is one side of the equation for optimizing the MTF.

Demand management focuses on efficient and effective use of limited resources by reducing inappropriate demand and increasing appropriate demand for services. Unmanaged demand creates unnecessary bottlenecks that slow the delivery of health care. In the short term there are management strategies that can decrease the demand for health care. In the long term there are self-care and wellness activities that will reduce the overall need for health care. To balance the system, strategies of risk reduction and chronic disease and condition management must address the needs of the population while maximizing the efficiencies of the system.

The next process component is the capacity of the system to provide intervention and prevention services. In this process (Element 4: *Manage Capacity*), limited resources must be prioritized and allocated to minimize the gap that exists between the demand and the resources. It is at this point that previous efficiency efforts were directed. These include UM and UR. Tools to help decrease the over-utilization of scarce resources are then identified in process element four.

Element 5 is *Evidence-based Primary, Secondary, and Tertiary Prevention*. Many preventable acute and chronic conditions place great demand on the MHS. The goal is to move from expensive tertiary interventions to less costly primary and secondary prevention strategies. Tools such as clinical practice guidelines (CPGs), clinical pathways, disease and condition management, and discharge planning will be essential in the transition to a prevention-based health system.

It must be acknowledged that the greatest impact on the health of communities has been made through population health efforts that involve many facets of the community and not just the medical care system (e.g., the recent decrease in suicide rate within the USAF). Community involvement (Element 6: *Community Outreach*) brings the leaders of a community together to solve health issues that require a cooperative effort.

Finally, for any system to excel and remain on course, comprehensive measures of the processes, impacts, and outcomes that lead to success must be developed (Element 7: *Analyze Performance and Health Status*). Ideally metrics collected within the system should validate models of the system and provide actionable information to stakeholders that allows for course corrections and system improvement.

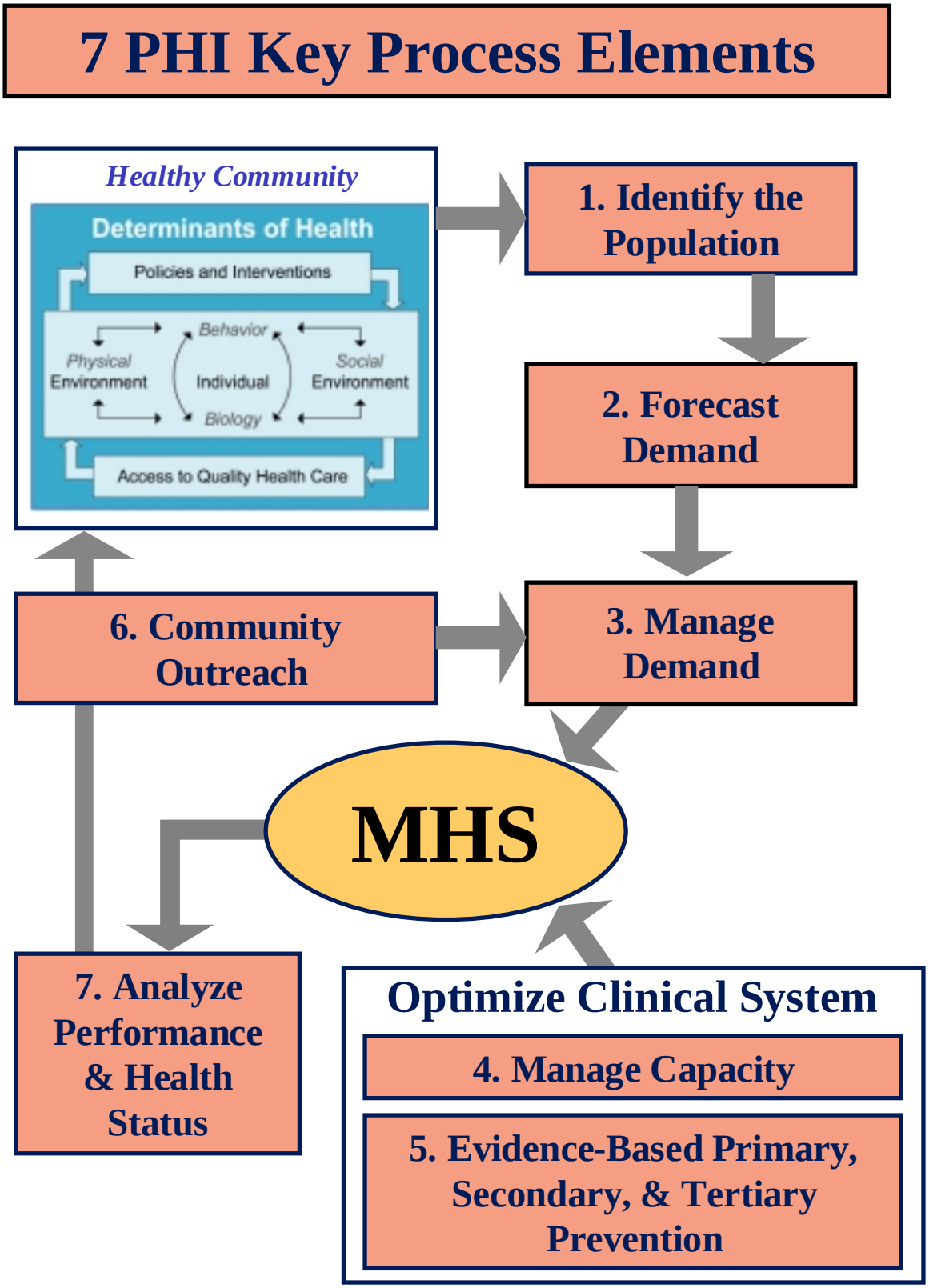


Figure 10. 7 PHI Key Process Elements

Identify the Population

Concepts

The foundation of population health improvement doctrine is the accurate identification of populations, association of individual beneficiaries with accountable providers, and health assessment of all individuals within the community. The MHS has established a policy for enrollment of TRICARE beneficiaries to MTFs (OASD[HA} Policy 00-001, *Policy to Improve Military Treatment Facility (MTF) Primary Care Manager Enrollment Capacity*: http://www.tricare.osd.mil/policy/ha00pol/clin00_001.html). At MTFs, the population of interest may be the TRICARE enrollees who are enrolled to MTF providers. Military Treatment Facilities may also be interested in the population of "users" or potential "users" of MTF services, both enrollees and beneficiaries who are not enrolled. To achieve the levels of effectiveness in improving health and managing health resources that are seen in the best health plans, three processes must be in place:

- Processes to promptly enroll beneficiaries
- Assignment to an individual Primary Care Manager (PCM)
- Health assessment and stratification processes

All three processes are necessary to accurately identify individuals and groups for MTF, worksite, and community-based programs and to have a reliable assessment of the distribution of lifestyle, behavioral, and environmental risk factors and diseases and injuries.

Processes

Enrollment Processing: The enrollment process begins when an eligible beneficiary chooses to receive healthcare under the auspices of TRICARE Prime. Enrollment is a collaborative process between base/post, MTF, Managed Care Support Contractor (MCSC), and the beneficiary. The enrollment process has two steps. The first is administrative enrollment and should be accomplished within the first two weeks of arriving on station (Active Duty). Administrative enrollment involves completion of the Enrollment Application and assignment of a PCM by name. There are efforts underway to automate administrative enrollment for active duty. Enrollment at a new station will trigger the transfer of enrollment from the previous station. The second step, Health Evaluation Assessment Review (HEAR) Survey completion, should be completed within 60 days of arriving on station. Ideally, completion of the HEAR Survey is accomplished at the time of administrative enrollment to aid in the assignment of a PCM.

Enrollment processes are much more uniform and timely since the deployment of the National Enrollment Database (NED) program in July 2001. NED brings new enrollment forms, enrollment computer applications, and enrollee identification cards that achieve uniformity across the MHS. NED facilitates the portability of enrollment when enrollees move within and between TRICARE Regions. NED policies and procedures minimize the steps necessary to maintain enrollment when individuals and families move from one Region to another.

Assignment to PCMs: Primary care manager assignment is the cornerstone for population health management at the MTF. The PCM is responsible for managing the health of a group of individuals throughout the continuum of care. Assignment of a PCM should reflect a consideration of who is best suited to oversee the necessary interventions and prevention needs of that individual. A primary care manager is typically a family practitioner, internist, pediatrician, obstetrician/gynecologist, or general practitioner; however, with appropriate supervision by a designated privileged provider, a nurse practitioner, nurse midwife, physician assistant, resident physician, or independent duty corpsman may also serve as a PCM. Physician specialists can serve as PCMs if they have been designated to do so by the Commander. This makes sense for patients with significant illnesses that will require the majority of their care to be provided by the specialist (e.g., oncology patients and renal dialysis patients). Designated specialist PCMs must affiliate with PCMs who are able to provider or coordinate the routine care that the specialist would not otherwise provide.

Current MHS policy encourages maximum flexibility for enrollees to choose a PCM based on personal preference and any unique health needs they may have. Primary care manager assignment is not uniform, however, and each MTF has specific protocols, processes and constraints that must be considered at the time of enrollment and PCM assignment. Region Lead Agents strive to maintain current lists of available PCMs at MTFs.

Military Health System policy requires a by-name designation of a PCM for every enrollee (DoD(HA) Policy 99-00033, Individual Assignments to Primary Care Managers by Name [http://www.tricare.osd.mil/policy/ha99pol/clin9933.htm]). Primary Care Manager by Name (PCMBN) drives the need for a

process at every MTF for reassigning enrollees to a new PCM when providers move to a new duty station. The process should be as transparent to enrollees and providers as possible. The objective is to maintain continuity and quality of services throughout the enrollment period. The process must continue to maximize enrollee preferences and unique health care needs when reassignment to another PCM is necessary.

Health Assessment: Completion of a health assessment survey is an essential part of the enrollment process. The current MHS strategy to gather information on the health status and risk factors on every enrollee is to use *self-reporting tools* (SRTs). Self-reporting tools let individuals or their guardians provide personal health information to the MHS including demographic, disease and injury, and risk factor data. The SRT currently employed in conjunction with enrollment is the Health Evaluation Assessment Review, or HEAR. The HEAR survey is a tool that assists the health plan and individuals' PCMs in reviewing individual health status and also managing care for their enrolled populations. This tool provides information related to health risk behaviors and projects demand for services, to include the need for prevention, case management, and disease management programs.

Roles

Many offices have a part to play in enrollment processing, assignment of PCMs, and completing health assessments. The following outline lists many of the specific tasks that are the responsibility of the involved offices.

Base Responsibilities:

- TRICARE Prime enrollment will be included in base inprocessing for active duty and their family members as available.
- Enrollment will be included in the inprocessing/outprocessing checklist.

Military Treatment Facility Responsibilities:

- Compose and maintain an enrollment memorandum of understanding (MOU) with the contractor
- Ensure that Lead Agent has reviewed the contract and Memorandum of Understanding (MOU)
- Oversee the enrollment process
- Provide an up to date PCM provider list to the MCSC per MOU
- Ensure that the HEAR Survey is in the patient's record and have a process to ensure review of this document

Managed Care Support Contractor/ Enrollment Agent Responsibilities:

- Be on site at the base inprocessing center to the extent possible
- Have a process in place to capture all beneficiary enrollments
- Provide guidance to the enrollee on selection of a PCM based on the current PCM provider list
- Assign PCMs as needed per MOU
- Assign enrollees to PCMs at the MTF until the maximum capacity is reached in accordance with the MOU
- Be present at base orientations
- Use the standardized TRICARE enrollment application form for all enrollments and transfers
- Use Defense Eligibility Enrollment Review System (DEERS) Desktop application to process enrollments, dis-enrollments, and transfers
- Provide and encourage completion of the HEAR Survey while enrolling
- Process and analyze HEAR data and send reports to individuals and PCMs
- Provide HEAR data in electronic form to Regional Lead Agent offices
- Provide each beneficiary with fulfillment material per regional contract (i.e. summary of benefits, self-care books

Beneficiary Responsibilities:

- Active Duty personnel must transfer enrollment during base inprocessing by completing the Enrollment Application and select or receive a PCM assignment by name.
- Complete administrative enrollment within the first two weeks of arriving on station.
- Family members of AD are encouraged to make an informed choice concerning enrollment and learn about the TRICARE program.
- Complete the HEAR Survey within 60 days of arriving at a new station

Tools

Many tools are available to help planners and providers at MTFs, Region Lead Agent offices, Headquarters, and program management agencies with identifying populations, enrollee beneficiaries, and assessing the distribution of health problems and risk factors within populations.

Information about the ***National Enrollment Database (NED)***, tools that support enrollment processes, is available at http://www.tricare.osd.mil/pmo/programs/programs_main.html.

Business rules for enterprise-wide assignment and *toolkits* to assist with the PCMBN assignment process and provide resources for the transition to primary care management are available from Regional Lead Agent offices.

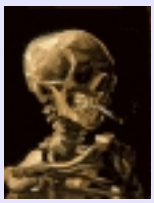
Health Evaluation Assessment Review (HEAR) is a survey designed to support MTFs in assessing the population and in forecasting the demand for required health care and resources. HEAR implementation and usage varies across regions and MTFs, and is generally associated with the enrollment process and Managed Care Support Contractor. OASD(HA) Policy 97-003, Policy for TRICARE Health Enrollment Assessment Review Survey (http://tricare/policy/fy97/hear9703.html), mandates use of the HEAR as the TRICARE Prime health assessment tool.

Population Health Operational Tracking and Optimization (PHOTO) supports the measurements identified by the Tri-Service metrics working group to assess the progress of the MHS toward achieving the end states of the MHS Optimization Plan. The metric categories include customers, business, clinical, force protection and health. While these metrics are aggregated to support all levels of the MHS enterprise, specific focus is being placed at the MTF and PCM level. The MHS has acknowledged the role of the PCM as pivotal because this is the level at which change can occur and this is where health care is truly managed. Although some metrics are already developed (Phase I) others are still being developed. Phase I metrics are expected to be released across the MHS by late 2001, with Phases IIA and IIB to follow. More information is available at http://photo.tma.osd.mil. Access is password protected and a password can be gained via the Website.

Survey of Health Related Behaviors: This 1998 survey is the seventh in the series of confidential, anonymous standardized surveys which asks active duty service members about various health behaviors, including the use of illegal drugs, alcohol, tobacco, and at-risk sexual behavior. The survey also assesses selected national health status goals from the Department of Health and Human Services' Healthy People 2000 objectives, the mental health status of the force, and specific health concerns of military women. More than 17,000 service members, randomly selected to represent men and women in all pay grades of the active force throughout the world, completed the survey. More information is available at http://www.tricare.osd.mil/tricaresurveys/surveys01.htm.

All-Region Server (ARS) Bridge is a powerful tool used to obtain summary and detailed views of population, clinical, and financial data from all MHS regions. The ARS Bridge includes MTF and purchased care data integrated with eligibility and enrollment data. The ARS Bridge is the source of data for the Population Health Navigator (PHN).

There are several key populations to consider for targeting smoking reduction interventions. Active duty personnel (AD) should be identified at the base and unit levels. Military service members have higher overall rates of smoking compared to national rates. Also, the potential impacts of smoking on personal fitness and resistant to illness make smoking a Force Health Protection issue. MTF enrollees may be identified as a population targeted by smoking cessation programs and programs to provide educational materials. Each PCM will want to identify smokers among his or her assigned enrollees and target them for individualized assistance with smoking cessation. The MTF may want to target outreach efforts to beneficiaries in the catchment area who aren't enrolled but who are smokers. Children with asthma may live with smokers. Pregnant women can be another identifiable and (often motivated) population to target.



The HEAR survey will identify smokers. All enrollees should complete a HEAR survey. Also, it is standard of care to ask patients who present for care if they smoke and then to counsel and assist smokers. Many other surveys and data systems have information on smoking status in populations.

Access to the ARS Bridge is limited, but facilities will generally have from 1 to 6 personnel who have been granted access. If you need more data than is provided through the use of other tools and local resources, you may want to contact a person at your facility who has this access. Information is available at http://www.eids.ha.osd.mil.

Defense Medical Surveillance System (DMSS): The DMSS is an executive information system whose database contains up-to-date and historical data on diseases and medical events (e.g. hospitalizations, ambulatory visits, reportable diseases, and health risk appraisals) and longitudinal data on personnel and deployments. It is operated by the Army Medical Surveillance Activity (AMSA). AMSA publishes the *Medical Surveillance Monthly Report* (MSMR) which contains summary reports of notifiable diseases, trends of illness of special surveillance interest, and field reports describing outbreaks and cases occurrences. Information about DMSS is available at http://www.amsa.army.mil.

Service-Specific Tools:
Navy personnel should contact NMIMC regarding the Population Health Navigator (CDR Mark Turner at mailto:mdturner@us.med.navy.mil). Air Force enrollment support information is available at https://phsd.afms.mil/PHSO/ (click on PCO).

Forecast Demand

Concepts

In the context of health care, a demand forecast is defined as an estimate of the volume of care (primary, secondary, and tertiary prevention) required by a given population. Demand is typically expressed in workload units. Examples of such units include, but are not limited to, number of visits by provider type, number of mammograms required, number of immunizations required, bed-days by bed type, surgeries by type, and hospital dispositions. Forecasting a population's demand is an essential component of the process of improving that population's health. Each MTF and Region must develop accurate demand forecasts that establish the anticipated needs of the MHS population, based on best clinical and business practices, for Force Health Protection, TRICARE, and MTF, worksite, and community-based programs, at the Region, catchment area, and facility levels.

Demand forecasts are needed in order to:

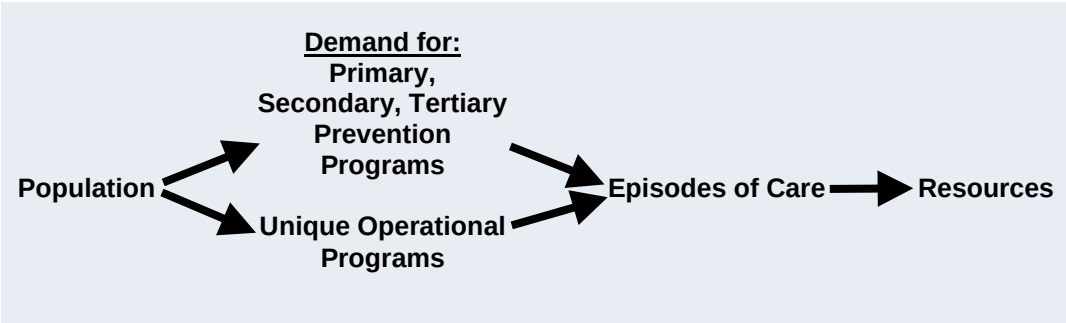
- Ensure facilities are appropriately sized to serve the population,
- Ensure facilities are adequately staffed (in both numbers and mix of providers and other personnel),
- Establish the need for special activities such as immunization programs.
- Ensure sufficient resources are allocated to perform clinical preventive services, provide health promotion and education programs, and conduct condition, disease and case management programs
- Formulate managed care requests for proposals and contracts,
- Formulate bid price adjustments,
- Establish budgetary documents such as the medical Program Objective Memorandum (POM)

Data that drive demand forecasting include clinical preventive services guidelines, prevalence of diseases and injuries within a given population, clinical practices used to treat a given disease, and the system or operationally defined required care. Demand forecasts are singularly important as input for determining the gap relative to the capacity of a medical treatment facility to provide health care. Forecasts are also fundamental to establishing realistic methods of calculating system costs, such as capitation rates. It is critical that the data that supply demand forecasts be accurate to assure that facility sizing and staffing decisions are appropriate, resulting in maximal value i.e., optimal quality with highest possible efficiency.

The management of a population-focused health care system, especially in an environment of constrained resources, is complex. The tools required to make resource decisions must recognize the health status of the population and the appropriateness of the clinical and administrative decisions used to provide health services to that population. In economic terms, it is critical to understand and manage the production function. The simple production function outlined below hints at the complexity of the problem:
This model states that a given population generates a level of illness and injuries or a need for interventions to prevent illness and injuries, and that there are inherent operational health care requirements in the military. These platforms drive health care resource requirements either at the MTF or within the Managed Care Network. To know how many resources to provide to an MTF, ward or clinic, or to accurately negotiate the best value capitation rate in the MCSC, management must have some understanding of the anticipated needs for health care resources. Forecasting the demand for health care is the first step in the active management of resources.

Processes

System-Based Processes: Data on population demographics, pre-existing health conditions and chronic diseases, health risk behaviors, past medical history, and the perception of health status will forecast the demand in the population for direct care services along high volume, high cost, and high risk, problematic disease states. To forecast the demand for health care resources to meet operational needs (e.g., pre-deployment requirements), MTFs must again have an accurate profile of the active duty and reserve



population. An additional data requirement is the anticipated/actual deployment schedule for the MTF population.

Consumer-Focused Forecasting Processes: Accurate demand forecasting is critically dependent on accurate population identification. Following the model outlined in this MHS PHI Plan (integrating the population data from the first step, identification of population and enrollment), an MTF will get an accurate profile of the population eligible for care. To forecast demand the following data, at a minimum, must be retrieved:

- *Defense Eligibility Enrollment Review System* (DEERS) population profile by:

1. Health plan or program (Prime, Extra, Standard, Medicare)
2. Beneficiary location
3. Provider location
4. Age and gender

- *HEAR Survey* data

1. Past medical history and pre-existing and chronic diseases
2. Marital Status
3. Education level
4. Perceived health status
5. Health risk behaviors

- Location-specific (e.g., regional) prevalence of conditions, diseases, injuries, and risk factors, and
- Deployment information and status of personnel

A common method for forecasting demand in the health system is to use historical utilization data. Utilization data are easily obtained from within the MTF and from normative utilization rates for the community or for comparable MTFs. There are limitations when using historical data and normative data. The utility of historical data is limited by the necessary assumption that past utilization of health services was appropriate. In other words, using historical utilization tends to reinforce the status quo rather than the transition to a prevention-based health system. Normative data are limited because there are population differences within the community and norms may not be applicable to a specific MTF (Rohrer 1999).

The results of demand forecasting by individual MTFs will be submitted and coordinated at the Regional Lead Agent offices and relevant Service intermediate commands. It is crucial that these offices work together to conduct regional forecasts and address the demands on the military direct care system and the resultant impact on the Managed Care Support Contract. The regional forecasts will be used by the Services in developing the appropriate funding and staffing levels based upon the demand for services.

Roles

Military Treatment Facilities have the primary responsible for forecasting demand. There are easy-to-use tools available to assist in the forecasting effort (see below). The ***MHS Optimization and Population Health Support Center (OPHSC)*** will be able to assist in this endeavor. ***Regional Lead Agents***

Encounter Coding

Diagnostic and procedure codes constitute the language of reimbursement for clinical care in health care. While MTFs use this same language to bill private insurance, the information captured by coding MTF and contractor-provided services is perhaps equally important for population health improvement processes. Diagnostic codes (International Classification of Diseases [ICD]) and procedure codes (Current Procedural Terminology [CPT], and evaluation and management [E&M]) generated and captured for each encounter provide a wealth of useful information about the types of diseases and injuries in a population and the types of services provided to meet demand. Coding data are used extensively to forecast demand and manage capacity. Similarly, by analyzing the history of services provided, reports can be generated to proactively identify individuals who are due for preventive services or who are potential targets for worksite, community-based, and disease management programs.

Tools such as the Ambulatory Data System (ADS), and eventually CHCS II, support MTF clinic teams in coding of encounters. Because of the importance of proper coding to population health, MHS personnel need to be adept with coding tools and processes. One tool is the encounter "superbill" which allows clinic support staff to enter ICD, CPT, and E&M codes into information systems, thereby freeing providers to spend more time with patients.

Coding templates, superbills and toolkits can be found by clicking programs/tools at https://phsd.afms.mil/PHSO/. More information about ADS is available at http://citpo.ha.osd.mil/index.htm and http://imcenter.med.navy.mil/ads (Navy).

and ***Service intermediate commands*** are responsible for aggregating demand information by geographic region or functional area. They have the primary responsibility for using information about local health services demand to distribute resources among MTFs and the Managed Care Support Contractors in their jurisdictions.

Tools

Health Evaluation Assessment Review (HEAR) is a survey tool designed to support MTFs in identifying the population and in forecasting the demand for required health care and resources. HEAR implementation and usage varies across regions and MTFs, and is generally associated with the enrollment process and MCSC. The role of the MCSC in the HEAR process is expected to decrease and that of the MTF to increase when the HEAR program is revised.

***Utilization Review* (UR)** processes have been extremely useful for demand forecasting. Utilization Review provides historical utilization information that will continue to play a significant role in how organizations analyze and forecast demand. Guidelines for utilization management and utilization review are in the OASD (HA) Policy: Revised Utilization Management Policy for the Direct Care System (http://tricare.osd.mil/policy/fy98/umpd9831.html).

Air Force forecasting tool: The Air Force has developed tools to forecast demand for clinical preventive services for defined populations. Information is available at https://phsd.afms.mil/PHSO/.

Navy Population Health Navigator: A CD-ROM database created by NMIMC to provide Navy MTFs with population-based analysis capabilities. The tool enables MTFs or clinics to describe the demographics, needs, and health status of the enrolled and not-enrolled population, and to manage medical and disease conditions. For more information contact CDR Turner at mailto:mdturner@us.med.navy.mil.

Demand Forecasting Models: Information from historical utilization of medical services by the population provides some indication of future demand. However, future demand can be expected to deviate from past demand for a number of reasons:

- The population might be changing in size (e.g., via homeport reassignments, active duty unit-level movements, or active duty reduction in force programs).
- The population might be changing in composition (e.g., it might be aging).
- Eligibility rules might be changing (e.g., via Medicare subvention and TRICARE For Life).
- Clinical practice might be changing (e.g., via adoption of disease management practices).
- Changes in enrollment and reimbursement strategies might cause changes in access to care (e.g., via changes in deductibles and co-payments).
- Changes in market areas might cause changes in access to care (e.g., via creation of Centers of Excellence).
- Technological changes might be increasing access to care (e.g., via telemedicine) or improving the efficiency or quality of care (e.g., through introduction of new diagnostic equipment).
- Operational requirements for FHP might change (e.g., pre-deployment requirements).

Methods are therefore needed to project future demand in the context of a changing environment, changing clinical capabilities, and changing clinical and business practices. Expert judgment provides one potential means for estimating changes in the demand for care in a changing world. However, human beings have limited ability to synthesize the effects of changes in the inputs to a complex process (such as health care delivery) on the outputs of the process. Mathematical models such as simulations, econometric models, and other analytic tools provide a means to assist experts and decision-makers in such synthesis. Models can synthesize information about factors such as population size and demographics, incidence and prevalence of disease, wellness programs, screening programs, medical readiness requirements, access to medical care, clinical protocols, provider efficiency, substitutability of providers, and equipment capabilities to predict the demand for medical resources.

Figure 11 is a simplified illustration of a model-based approach to forecasting demand. The process begins by developing a projection of the sizes of future beneficiary and enrolled populations. Historical utilization rates (such as average per-capita numbers of visits and bed-days) by each demographic group in this population (grouped by age, gender, beneficiary category, etc.) are then established. These historical rates are modified to account for the effects of changes in clinical capabilities and clinical and business practices. Application of these utilization rates to the population results in an estimate of future demand.

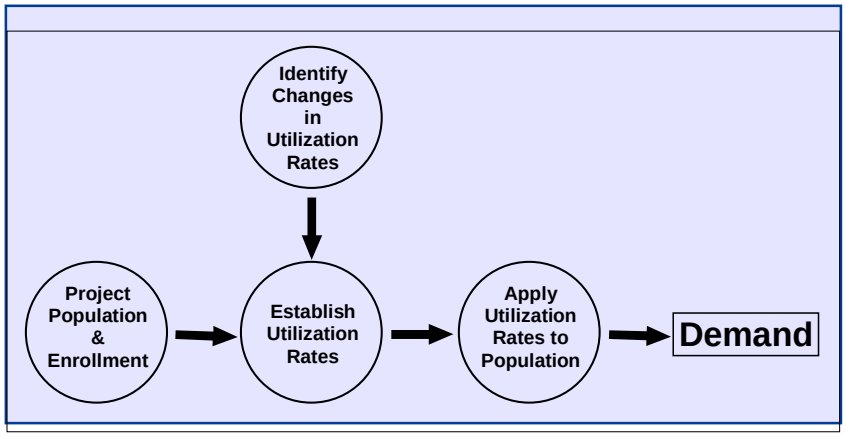
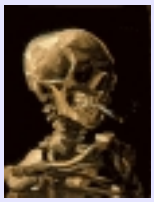


Figure 11. Summary of model-based demand forecasting

The ***Managed Care Forecasting and Analysis System*** **(MCFAS)** is a decision support system that supports this modeling process, while accounting for many complexities of the MHS that are not addressed in this simplified depiction of the process. MCFAS is developed and maintained by the Corporate Executive Information System Program Management Office (http://www.eids.ha.osd.mil).

Healthcare Complex Model **(HCM):** HCM describes the workload requirements and performance characteristics of the virtual health care system under alternative assumptions about resource allocation, technology integration, workload, and case mix. As a simulation model, HCM offers the kind of flexibility to experiment unavailable in other models but it does not determine an optimal solution. Rather, the user will seek a "good" solution by examining and comparing multiple cases. The Healthcare Complex Model is designed to be used at the Region level and is currently being tested. For information about this tool contact a representative at http://www.tricare.osd.mil/opt_int/PHIT_Member.htm.

Using health assessment data and other data on the prevalence of smoking in various MTF populations, forecasts of the demand for smoking reduction programs can be accomplished. In addition, historical data can help with forecasting the demand for services needed to address smoking. For example, attendance rates at smoking cessation programs, the usage rates for nicotine replacement and other appropriate therapies, and the diagnostic and therapeutic services needed to treat smoking-related illness all contribute to demand forecasting at the MTF. Formal demand modeling tools incorporate smoking data to create sophisticated models of future demand. These models consider changing trends in smoking, effectiveness of interventions, and other assumptions in building detailed demand forecasts.



The worldwide burden of smoking related illnesses is growing. Smoking rates are increasing among youth in the U.S. and among all ages in developing countries. This burden will result in a demand for health resources that is far greater than historical levels (Fielding, Husten and Eriksen 1998).

References

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Manage Demand

Concepts

Demand management is a collection of proactive interventions focused on reducing unnecessary health care utilization while simultaneously encouraging the appropriate use of health care resources. Demand management reflects the activities of a health system designed to create a healthy environment, decrease morbidity and mortality, and encourage the use of effective decision-support and self-management tools; thus, enabling beneficiaries to use health care resources appropriately. Use of demand management strategies will decrease the need for urgent, episodic care. Its ultimate goal is to manage the health of individuals and populations with a focus on prevention of illness and injury. It includes primary prevention services for healthy people and secondary prevention services for individuals who already have early disease. Some prefer to call this combination of interventions *demand improvement*.

There are several components to a comprehensive demand management strategy. Some components are:

- Assess, monitor and encourage the demand for primary, secondary, and tertiary prevention services in the population.
- Reduce the use of unnecessary or marginally effective health care.
- Reduce and, where possible, eliminate environmental conditions and lifestyle behaviors contributing to morbidity (health protection and health promotion)
- Reduce temporary and permanent disability and impairment associated with symptoms, clinical conditions, diseases or injuries.
- Eliminate delays in seeking medical advice where appropriate.
- Monitor the health of the beneficiaries through a comprehensive surveillance system.
- Engage non-medical leadership in community health efforts.

Processes

Individual, Consumer-Focused Processes: Demand management strategies begin as the beneficiary is enrolling into the system and continue throughout the enrollment addressing current and anticipated future health care needs. During the enrollment process, a timely, thorough assessment of the enrollee's subjective (self-reported) and objective (enrollee's medical record) health needs will be completed. This data will be reviewed by a health care professional with the enrollee, addressing individual and family issues. An individual health improvement plan is then developed by the health care provider/provider team and enrollee and implemented throughout the enrollment period. The specific processes are:

- Promptly enroll and assign enrollees to PCMs (see Identify the Population). These initial steps are important for developing a relationship between enrollees and the health system.
- Distribute HEAR Survey to active duty and individual family members. Primary care team member will review information and discuss findings with the individual.
- Educate beneficiaries about primary care triage systems and self-care programs (such as nurse triage, advice lines, health information lines, web-based approaches and age-specific self care books).
- Utilize patient-based preventive care tools; shared decision-making programs; practice guidelines; the Put Prevention Into Practice (PPIP) initiative; and Preventive Health Care Application (PHCA) or similar computer-based tool.
- Establish a central access point to ensure beneficiaries have access to advice and appropriate care through phone or in-person (sometimes called telemanagement)
- Establish a surveillance system for tracking the health status of individuals overall and during deployment.

Pre-deployment, deployment and post-deployment health issues need to be integrated into the active duty member's medical record and reviewed by the health care provider at redeployment. A seamless system of health services between garrison and deployment is critical. Several directives mandate surveillance:

- Guidance mandate: Public Law 105-85; states "The Secretary of Defense shall establish a system to assess the medical condition of members of the armed forces ... who are deployed outside the United States or its territories or possessions as part of a contingency operation (including an humanitarian operation, peacekeeping operation or similar operation) or combat operations." This is accomplished through the DoD Prevention Council
- Assistant Secretary of Defense of Health Affairs (ASD-HA) Policy for Pre and Post Deployment Health Assessments and Blood Samples,

dated 6 Oct 1998

- Joint Chiefs of Staff Memorandum, 4 December 1998, "Deployment Health Surveillance and Readiness"
- DODD 6490.2 "Joint Medical Surveillance," 30 August 1997
- DODI 6490.3, "Implementation and Application of Joint Medical Surveillance for Deployments," 7 August 1997

Population/System Processes: Population health includes population-specific health needs, which must be addressed by worksite and community-based interventions as well as by practitioner interventions in the MTF. Populations could consist of a provider's patients, or active duty members assigned to specific units, not just patients with a common condition. When populations also have a common community, demand-management strategies need to be oriented to the needs of the population within that community environment. Strategies might include activities such as limiting places where people can smoke, limiting access to tobacco products, creating facilities for exercise, creating a variety of opportunities for mental and spiritual health enhancement, and ensuring recreation activities conducive to healthy lifestyle. Such efforts require the involvement of community leaders and health professionals (see Community Outreach).

Key Implementation Processes:

a. Train and educate staff

§ Train all levels of clinical staff on available resources for support (i.e., clinical practice guidelines, web-sites, self-care manuals, and posters) and their roles in managing demand. Supplies can be ordered through AHCPR Publications Clearinghouse, P.O. Box 8547, Silver Spring, MD 20907 or http://www.ahcpr.gov/ppip/pporder.htm.

- Primary focus is to change the culture to incorporate education on prevention into every opportunity; (e.g., clinic visits, school curricula, commissary events, health fairs, and media events).

b. Utilize data from a variety of sources to establish population trends and target priority training programs (see Analyze Performance and Health Status)

c. Maximize appointment efficiency

- Assess allocated appointment time and beneficiary check-in processes in order to maximize opportunities to implement PPIP components (for example, prevention training of beneficiaries by medical aides, review of family profiles by nurses, etc.).
- Coordinate efforts among staff to provide a multidisciplinary approach for screening medical record information to ensure requirements of PPIP are met and to maximize appointment efficiency.

d. Document health information

- Before, during, and after deployments, record all health interventions (e.g., immunizations, exposures, etc.) for the individual or unit in the individual's medical record.

Roles

The entire health team is responsible to manage demand. The personnel responsible for the many components of demand management are identified in the processes described above.

Tools for the Continuum of Demand Management

Initial Health Assessment Using the Health Evaluation Assessment Review (HEAR): It is critical to ensure that all beneficiaries are enrolled in a timely manner. The enrollee databases between the MTF, contractor, and local base personnel administration offices (Personnel Support Detachment (PSD), Out-processing Site, etc.) need to be thoroughly integrated and coordinated to enhance enrollment and survey completion.

The initial health assessment tool is the HEAR. [Guidance mandated: DoD (HA) Policy 97-003, https://www.tricare.osd.mil./policy/fy97/hear9703.html]. This is an age-appropriate survey distributed to all TRICARE PRIME (including active duty) beneficiaries by the TRICARE Contractor when the member enrolls. Age-appropriate self-care books are distributed with the HEAR. The Self-Reporting Tools Working Group, a subcommittee of the Prevention, Safety and Health Promotion Council, serves as a reference source for issues pertaining to the successful deployment of the HEAR. The HEAR survey is available as a PC-based automated tool. It will eventually be incorporated into Composite Health Care System II (CHCS II).

The HEAR summary report for each individual should be distributed by the contractor to the MTF, and with the enrollee's medical record, should be analyzed by an enrollment "team". Under the concept of "PCM by name" the

beneficiary is enrolled to a specific health care provider based on identified health care needs. The provider then develops a health improvement plan for the individual. A member of the health care team meets with the enrollee, discusses the data and proposed health improvement plan, and finalizes the plan with input from the enrollee. During this meeting, the team member provides information to the enrollee on; the self-care book, identification of potential behavioral, lifestyle, environmental risk reduction and health care needs pertinent to that individual; and other system "demand management" tools such as the Health Care Information Line (addressed below). The responsible health care provider, for purposes of efficiency, may delegate the initial health improvement plan to another team member. However, oversight and an early face-to-face introduction with the health care provider are necessary. These interventions with individuals to review findings provide a key opportunity to initiate care, provide clinical education, and to introduce the enrollee to the health care system and its capabilities. No HEAR summary report will be placed in an individual's medical record until reviewed by an authorized medical staff member.

In addition, the contractor, if distributing the HEAR, can provide a summary population profile on non-MTF enrollees who reside on the installation. These population profiles can be used as a basis for discussions at Installation Population Health Council meetings to address community needs.

Primary care triage systems and self-care programs:

a. A comprehensive system of advice lines, health information lines, web-based approaches and self-care books, and educational interventions will enhance demand management. (Guidance mandate: SECNAVINST 6100.5, OPNAVINST 6110.1D, SECNAVINST 5100.13A, DoD Directive 1010.10)

b. Ideally, a patient will have a single point of contact for care access and management. For the near future a central access number will be provided with a minimum of three access options:

§ Health Care Information Line. The TRICARE contractor is responsible for implementing and maintaining Health Care Information Lines (HCIL) 24 hours a day to provide guidance to beneficiaries. Guidance includes self-care options and/or sources for health care services. [DoD (HA) Policy 97-049, http://www.tricare.osd.mil/policy/fy97/hcil9749.html, provides guidance regarding documentation of HCIL information forms in patient medical records.]

§ Triage health care professional. A triage health care professional can assess a patient's condition based on approved protocols and refer the patient as appropriate (to appointment section, to emergency department, to HCIL, etc.) He/she should have access to patients' medical records for review of patient health conditions and enrollment information. He/she should also have immediate access to a PCM for consultation.

- Message center for PCM. To leave a message for the PCM or PCM's team.

c. It is important to have early health care intervention to decrease the probability of a condition worsening as well as to monitor for appropriate system usage. The access system should have computerized ability to track the incidence of patient calls by name or social security number, reason for call and referral option provided (HCIL, triage, appointment, message). It should be able to aggregate demand data for specific threshold levels. For example, based on clinical protocols, it would be able to aggregate data for patients who are over 60 years old making more than 4 calls in a month due to respiratory-associated illnesses. Once threshold levels are reached, an automatic referral to the case manager should be generated; the case manager should contact the patient for further evaluation within 48 hours of the last call. In addition, the system should track types of calls by geographic location or other population group determination (for example by troop units). Summary data on population usage should be reviewed by the case manager and referred to clinic and MTF planners.

Put Prevention into Practice (PPIP): [Guidance mandate: DoD (HA) Policy 98-

Smoking presents an excellent example for how demand management activities can be employed and of their impact. The initial health assessment for each enrollee should identify smokers. Smokers and non-smokers at risk for initiating smoking (e.g., adolescents) can be advised and assisted when they first meet with their PCM to discuss their personal health plans. This leverages the power of demand management that comes from intervening before disease occurs or progresses. PPIP tools helps remind members of the clinic team to ask about smoking and take appropriate action when smokers are identified. Worksite and community-based programs provide education and counseling to reduce smoking, thereby contributing to demand management. There is strong evidence that smokers at all ages use more health care services than non-smokers and that demand for health services decreases promptly after smokers quit.

The imperative is strong for intervening in the number one preventable cause of premature morbidity and mortality to improve demand for health services. Primary prevention of smoking initiation should be a priority demand management and population health improvement strategy.

027, 31 Mar 98, http://www.tricare.osd.mil/policy/fy98/ppip9827.html]. PPIP is a national campaign developed by the Office for Disease Prevention and Health Promotion, Department of Health and Human Services, to improve the delivery of clinical

preventive services in primary care settings. It is a comprehensive approach targeting health promotion and disease prevention throughout the life cycle, and thus a critical demand management approach.

Oversight responsibility for implementation by each service:
Navy - Naval Environmental Health Center (NEHC), http://www-nehc.med.navy.mil/hp/ppip
Army - Center for Health Promotion and Preventive Medicine (CHPPM), http://chppm-www.apgea.army.mil/.
Air Force - Population Health Support Division (PHSD), see programs/tools at https://phsd.afms.mil/PHSO/.

Preventive Health Care Application (PHCA) (Guidance mandate: None. http://www.tmssc.brooks.af.mil/TMSSC/PHCA, or http://www.nmimc.med.navy.mil/phca, or https://phsd.afms.mil/PHSO/) is a comprehensive system for addressing the on-going health care needs of enrollees and is a critical element to a thorough demand management program. Systems such as PHCA and CHCS II will prove helpful for tracking the health status of individuals and populations. Information about CHCS II is available at http://citpo.ha.osd.mil/projects/chcsii/chcsii-main.htm.

The PHCA is a Tri-Service Medical Systems Support Center (TMSSC) tool that enables the clinician to deliver and track appropriate and timely preventive services for all enrolled military members. Additionally, clinical and management staff can use PHCA to retrieve, maintain, manipulate, and analyze clinical data, and to display and print timely, accurate, and accountable clinical preventive services and immunization reports.

PHCA was developed to automate the PPIP program through the integration of HEAR 2.0, CHCS information, and immunization data from the Immunization Tracking Module (ITM). A phased implementation schedule was initiated in March 1999 but will not proceed to all MTFs as PHCA will be replaced by CHCS II. Limitations of the current program are being addressed at various levels; however, support for the system will continue until it is subsumed by the automated HEAR or CHCS II.

The ***Air Force Population Health Data CD*** provides MTFs and PCMs with quarterly reports of performance in delivering needed clinical preventives services. The reports identify enrollees who have not had recommended preventive services and provides contact information (see Data info at https://phsd.afms.mil/PHSO/). This information is accessible only to those providers and managers to whom enrollees are enrolled.

Navy Population Health Navigator: A CD-ROM database created by NMIMC to provide Navy MTFs with population-based analysis capabilities. The tool enables MTFs or clinics to describe the demographics, needs, and health status of the enrolled and not-enrolled population, and to manage medical and disease conditions. For more information contact CDR Turner at mailto:mdturner@us.med.navy.mil.

Periodic Health Assessment Using the HEAR: The HEAR survey can be repeated periodically as a surveillance activity.

Manage Capacity

Concepts

To manage capacity is to optimally match the quantity and quality of interventional (individual) and prevention (population-based) health services provided by the MTF with the appropriate demand of the population. Random House defines capacity as 1) the ability to receive or contain; 2) volume; 3) actual or potential ability to do something. The challenge facing the MTF is to link the management of workload (i.e., population demand and clinical practice) to the management of the capacity (i.e., funding, staffing, facilities, and equipment) necessary to meet that workload. This link is critical because capacity decisions directly influence cost and access. Resource management tools allow leaders to understand the resource implications of decisions related to demand, clinical practice, and capacity. In addition, MTF capacity must be linked to best clinical and business practices. Improving clinical and business outcomes depends on active management of patient volume, clinical practice, facility size, and staffing. A detailed discussion of health services management principles, practices, and tools is beyond the scope of this plan and guide. Some of the salient facets of capacity management in the context of population health activities at the MTF are outlined below.

Processes

Capacity optimization in the MHS can occur through two strategies: 1) reduce the excess capacity of the direct care system where appropriate, or 2) increase throughput of the direct care system, thus reducing dependence on the managed care contractor. Managing capacity is the key to meeting access and resource goals.

Consumer-Focused Processes:

- Forecast population demand for direct care system and operationally required health care
- Employ demand management strategies

System-Based Processes:

- Identify gaps between forecasted needs and health service capacity and develop strategies to close gaps
- Establish explicit performance targets
- Resource MTFs based on best clinical and business practices to meet population needs
- Practice evidence-based care (do the right thing)
- Improve efficiency (do things right)

Military Treatment Facility Enrollment Capacity Factors: The capacity of an MTF to enroll its beneficiaries is affected by many factors, the primary one being the numbers of PCMs that are available at that MTF. A review of civilian literature and work done within the Services suggests that a reasonable goal within the MHS is 1500 enrollees per PCM. To accomplish this goal requires reengineering of our primary care clinics.

The PCM ratio depends primarily on four factors: demand, productivity, availability, and readiness considerations, and each of these factors needs to be managed to produce optimal results in terms of quality, access and cost. Quite simply, to reach 1500 enrollees per PCM will require significant reductions in the average number of primary care visits per enrollee through the use of nurse advice lines and nurse triage systems, self-care books and pamphlets and prevention measures (i.e., demand management strategies). It will require greater productivity using appropriate support staff, examination rooms, scheduling techniques, and practice patterns. It will also require the availability of assigned PCMs and dedicated support staff to staff primary care clinics for the vast majority of their work week. Primary care team members should be available in their clinics at least 75% of their duty time. Finally, it will have to be balanced by the unique demands that are incurred by the MHS readiness mission.

Military Treatment Facility Throughput Capacity Factors: Primary care efficiencies are not accomplished in isolation from other services performed at an MTF. Subspecialty care, ancillary services and administrative functions must also assimilate the concepts of population health as the paradigm for the entire system. Those resources that can be utilized to off-load the demand of critical bottlenecks must be employed to alleviate the stress on the critical rate limiting resource within the MTF.

Roles

The detailed work of aligning the right quantity and quality of resources to the appropriate demand by the population is the responsibility of mid-level clinic managers and resource managers, under the direction of clinic and MTF leaders. The tasks can be technically intense requiring MTFs to have capabilities in budget analysis, personnel and manpower, logistics, and facilities management.

Tools

A substantial portion of MHS expenditures is fixed in staffing, facilities, and equipment. The active management of this

fixed capacity is complex and requires decision support tools that allow managers to understand the ramifications of decisions they make. These tools must do the following:

- Analyze the complexities of disease management product-lines and the practice of evidence-based medicine
- Support "best" practices over the status quo
- Empower the clinical leadership
- Effectively conduct business case analyses

The decision support tools necessary will come from the fields of industrial engineering and operations research. At the MTF they are likely to include: simulation, survey analysis, descriptive statistics, and tests of statistical significance. Decision support tools such as these allow strategic goals to be linked to operational processes.

The ***Template Analysis Tool (TAT)*** is a powerful tool to help MTFs manage appointments prospectively and to ensure capacity is used efficiently and effectively. See http://www.tricare.osd.mil/tools.

Business planning tools are available at https://bumed.med.navy.mil/med03/tools/default.asp (Navy) and https://phsd.afms.mil/PHSO/ (Air Force).

Primary Care Management: The Keystone of Capacity Management

Integrating Concepts, Processes, Roles and Tools for PHI

High quality primary care is one of the principal foundations for population health improvement. At the same time, health policy choices around primary care are often framed as "either-or" propositions such as "Do patients value primary care, or do they value specialty care?" The answer for most is that they value both! The challenge for the MHS is to create a practice environment that promotes and fosters the beneficiary-primary care team relationship. This is the objective for the Services' initiatives in *primary care reengineering* and *primary care optimization* (PCO). The primary care team is not only a member of the MTF health care team, but has a central leadership role. The primary care team must have the appropriate amount and degree of clinical support and a personal "ownership and investment" in the relationship. As such, essential elements of primary care include the following:

- Accessibility and accountability (with the first-contact point of entry into the MHS),
- Continuity of care (with established patient loyalty and excellence in service),
- Comprehensiveness of care (with the right mix of PCM and other staff),
- Coordination of referrals (both inside the Direct Care System and in the MCS Network),
- Understanding of demand management objectives (and timely access to triage services), and
- Understanding the member, military family and community's expectations for "health"

Components of Primary Care

The desirable features of primary care include:

1. First contact: Primary care is frequently perceived as the point of first contact with the MHS. This could involve an assessment by a PCM or PCM team member at separate MTFs. The key to the first-contact process involves an adequate evaluation, prioritized assessment and therapeutic plan initiated by the

Open Access Appointing

One innovation that is gaining substantial favorable attention is open access appointing of primary care visits. Open access appointing is a practice wherein patients are seen the same day that they call for an appointment, regardless of the nature of their care needs. Clinics keep the majority of appointments available to be booked for same-day visits. A small percentage of appointments are booked in advance to accommodate patients' desires to schedule in advance. The principle driving the move to open access is that it is most efficient and satisfying to "do today's work today" (Murray and Tantau 2000).

There is a challenging transition period in getting to an open access practice but patients, providers, and clinic staff report increased satisfaction once their clinic has achieved open access. Patients get care when they need it and when they want it. Clinic providers and staff spend much less energy juggling issues such as patient care priorities and resultant complaints and frustrations.

There are many variations in how to implement open access. Some MTFs have transitioned to open access and are enjoying the many benefits.

PCM team in a manner where patient-level data are documented and appropriate access to additional providers is readily achieved. In the civilian sector, it is estimated that annually 75-85% of individuals require only primary care services. In other words, referrals to secondary care settings or short-term consultations account for only 10-15% of patient services, and referral to tertiary-care settings only 5-10% annually.

2. Continuous or longitudinal care: The second important component of primary care is that of the continuity of ongoing care, that is, person-focused care over a period of time.
3. Comprehensiveness requires that the primary care provider offer a range of services broad enough to meet all the common needs in the population.
4. Coordination of health care services requires an information system that contains all of the patients' relevant health care data. At present, a referral is frequently made by means of hard copies documents, but the speed at which information and data processing is done today would indicate a need for restructuring. Nevertheless, it is key for the provider to be involved in the coordination role.
5. Individual and family-centered strategy requires a carefully constructed infrastructure that supports active duty members and their families in both a deployed and home-based environment. With increasingly higher degrees of "op tempo," strategies are needed that provide best use of time to meet professional and personal goals, both at work and at home. This will yield a more effective and healthy Soldier, Sailor, Marine or Airman. As with any large civilian or military organization attempting to deliver state-of-the-art health care, patient satisfaction is frequently proportional to the effectiveness and personal nature of the last patient encounter. In meeting the community's needs through a population-focused health care system, the degree to which "all health care is personal" must not be diluted by the need to standardize.
6. Community-orientation: The natural extension of a family-centered health care approach must reflect the unique opportunities, challenges, and resources offered to members of the larger community of Army, Navy, Air Force or Marine Corps.
7. Accountability: Finally to be addressed in more detail is the issue of accountability by both beneficiary and provider.

Expectations and Responsibilities of the Beneficiary, PCM and Clinic Staff

Responsibilities of beneficiaries enrolling in TRICARE Prime, PCMs and clinical staff must be communicated adequately and must include at a minimum:

Beneficiaries:

- Responsibilities to understand processes and comply with requirements governing access and referrals.
- Responsibility to assist the PCM and other clinical staff by completing HEAR forms, using demand management services, and limiting use of Emergency Medical Services when more appropriate primary care activities are available.
- Responsibility to care for oneself and develop a healthy lifestyle.
- Right to be treated respectfully, to be listened to, and to have needs addressed by competent and compassionate professionals at all levels, in clean and well-maintained facilities.

Primary Care Managers (PCMs):

- Explain in simple terms TRICARE benefits, the responsibilities of the TRICARE system, and the rights and responsibilities of beneficiaries
- Assure that the beneficiaries' risks and benefits are understood. Primary care managers must assure that beneficiaries who enroll in TRICARE Prime understand the procedures for getting care. They must assure that the patient understands these responsibilities, and must provide adequate reference materials.
- Ensure access to comprehensive

primary care services and other enhanced benefits.

- Assure patients have access to PCMs and demand management tools twenty-four hours a day and that clinics meet the appointment access standards. Twenty-four hour access means patients can reach a PCM or a member of a pre-established team familiar to them whenever they wish.

- Develop individual integrated evaluation and treatment plans based upon HEAR and clinical assessments for empanelled patients.

- Reengineer clinics to foster enhanced productivity by clarifying PCM team roles and responsibilities.

Clinic Managers: Each MTF has the responsibility to identify the number of PCMs they have employed. This would include active duty and civil service primary care physicians, PAs, NPs, as well as providers who are under some form of personal service contractual arrangement. A complete listing of fully trained physicians within the MTF setting, branch clinics, physicians in-training, and providers who are part of an internal partnership or resource sharing agreement must be maintained. The number of enrolled beneficiaries distributed among providers must also be kept up to date.

Many management decisions can be made once the number of potential PCMs and beneficiaries is known:

1. How many PCMs are needed for the number of beneficiaries enrolled in TRICARE Prime,
2. How many PCMs would be required to recapture beneficiaries using TRICARE Standard,
3. What mix of providers constitutes the pool of PCMs within a clinic,
4. How primary care services are organized and what model best serves the needs of the population,
5. Define the population-based needs of the entire empanelled practice and develop strategies to meet those needs,
6. What percentage of time is committed from each provider who performs Primary Care activities and what percentage of full time equivalent (FTE) activities is directed toward specialty care, administrative or operational activities, and
7. How best to utilize current and future clinic designs to achieve efficiencies of patient flow

Primary care clinical and administrative support staff must be available in sufficient numbers to optimize the time that clinicians spend with patients. Appropriate support staff should perform functions before, during, and after appointments that do not require the unique capabilities of a provider.

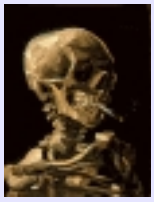
Primary Care Ratios and Enrollment Model

The number and mix of primary care providers must satisfy demand and ensure access to all necessary services. Ratios will vary among Regions based on enrollee demographics, epidemiologic data and personnel resources. Adjustments should be made as appropriate. Request for Proposal language in TRICARE managed care support contracts specifies, "The PCM requirement is a ratio of one PCM to every 1,500 enrollees." One approach to determining enrollment ratios for PCMs can be found in the text box at the end of this section.

Variables that must be considered during development of PCM panel sizes include:

- Professional competence, team composition, patient case-mix, and

Having established the demand for primary, secondary, and tertiary prevention strategies to address smoking and smoking related illness, the appropriate capacity must be in place to meet the demand. It can be anticipated that every MTF will want to provide printed and other materials to support smoking prevention and cessation education. In addition, they will need to either have a high quality smoking cessation program or assure that beneficiaries can access programs in the nearby community. Smokers must have access to PCMs and other providers who are trained to provide counseling and to manage adjunct pharmacotherapy. Providers must be available to follow-up with smokers. Adequate numbers of support staff capable of advising smokers are required as well. The MTF must ensure the resources are available to provide nicotine replacement and other medications used to both help smokers quit and treat smoking related illnesses.



Capacity is required to meet the demands for diagnosis and treatment for smoking-related illnesses. MTFs need capacity to support worksite and community-based smoking reduction programs and to serve on related base and community committees.

enrollee needs and preferences,

- Distribution of diseases and injuries in the population and the frequency with which these diseases and injuries need to be encountered for practitioners to maintain their competence,
- Administrative, medical readiness, and other military-unique demands on providers,
- Calculation of "full-time equivalents" (FTEs) of primary care providers ,
- Maintain a balance - high ratios impact on provider practice patterns (more referrals to specialists, for example), staff morale, and patient satisfaction; lower ratios may result in decreased productivity and financial risk to the organization,
- Support staff capabilities, and
- State law, professional practice acts and standards of care.

Integrating Workplace Health in Primary Care

Traditionally, privileged providers in the primary care setting have concentrated on diagnosis and treatment of illness and injuries. A comprehensive health care plan, such as the PHI Plan, must include health promotion and wellness, disease and disability prevention, timely diagnosis, treatment, rehabilitation, counseling and advocacy, all in support of "return to function, return to work." This issue must be emphasized separately in any new model to clearly identify to the Line Commanders in particular and to beneficiaries in general, that treatment is not complete or successful until the patient's return to gainful employment or to previous function has been accomplished.

Primary Care Education

It is clear that communication skills and the response to patients' needs are vital to the current practice of medicine. Health professions education must focus on teaching practitioners how to form caring relationships with their patients and their communities.

Educational goals need to include the acquisition of technical skills such as the tools necessary to carry out practice-based research, in addition to teaching health care practitioners to evaluate their skills and set goals for future improvement and learning. By using worksite and community-based health care sites to carry out needs assessments, conduct health promotion and health education programs, and to evaluate outcomes, an ideal teaching and learning environment is created.

Information about Air Force education programs in epidemiology, primary care optimization (PCO), and others is available at https://phsd.afms.mil/PHSO/.
Army information: http://www.cs.amedd.army.mil/AMEDDCS/default.htm.
Navy information: https://bumed.med.navy.mil/MED53.

Reference

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Estimating PCM Enrollment Rates

The capacity of a Military Treatment Facility (MTF) to enroll its beneficiaries is affected by many factors, the primary one being the number of Primary Care Managers (PCMs) available at that MTF. Simply put, the number of enrollees that can be enrolled to a PCM can be calculated by the following equation:

Enrollees/PCM = Enrollees/Visit X Visits/Hour X Hours/FTE X FTE/PCM

Enrollees/Visit: The higher the average number of visits, the fewer number of beneficiaries can be enrolled. To manage more enrollees, demand for care needs to be managed. Nurse advice lines, self-help pamphlets, prevention measures, and limited repeat visits are some of the tools used to reduce the visit rate. Historically, the MHS has had particularly high visit rates. Some portion of these high rates is due to the intrinsic nature of the military; some portion is due to nature of the benefit that for MTFs is free of co-payments; and some portion is simply due to the way in which the military counts visits. For the purposes of this model, visits will only mean those seen in an ambulatory setting, not telephone consults or prescription refills. For the most part, these will be appointed or acute visits that are seen for the equivalent of an appointment.

The true target for the visit rate will depend on multiple factors, including: age, sex and health status of the enrolled population, incidence/prevalence of disease, preventive care measures, monitoring and treatment of chronic diseases (such as asthma or diabetes), practice patterns for follow-up appointments for acute illnesses (such as urinary tract infection), and policies for referral to specialists. Current estimates for military visit rates to primary care range from 4 to 5 visits per enrollee per year. Civilian estimates are from 3 to 4 primary care visits per person per year. Milliman and Roberts ambulatory criteria suggest that the rate should not be higher than 3.2 visits per person per year.

Provider Visits/Hour: Historically, clinics within MTFs have had limited support staff and exam rooms relative to the number of providers. As a result, the number of patients that could be seen in an hour was considerably fewer than optimal. Industry norms report support staff ratios on the order of 3 to 3.5 support staff for each provider. Two to three exam rooms per provider are not uncommon. These allow administrative and some clinical tasks to be done before the provider enters the exam room and allow patients to be seen in overlapping blocks of time. Current estimates on the number of visits within MTFs are significantly fewer than 3 per hour per PCM. On the other hand, PRIMUS clinics, with support staff ratios of 3:1 to 3.5:1, typically handle 3.5 to 4 visits per hour. With the right support staff and rooms, PCMs should be able to schedule 3 to 4 visits per hour.

Available Hours/FTE: The more inpatient or administrative responsibilities a provider has, the fewer number of hours can be spent in the clinic seeing patients. This translates into a reduction in the number of beneficiaries that may be enrolled. Leave, holidays, training, temporary duty assignments, and moves will all impact the time a provider has available to see patients. Given inpatient and administrative responsibilities, clinic appointment hours might average 35 hours per week. Starting with 52 weeks, there are four weeks of leave plus three weeks for holidays, sick leave, and TADs/TDYs. Thus, a full time clinician might be expected in the clinic for approximately 45 weeks out of the year. This equates to 1,575 hours per year per FTE PCM that are available for appointments.

FTEs/Assigned PCM: The last factor is to account for the unique mission that military providers must also fulfill. Exercises, deployments, mission-related training, and administrative duties reduce the amount of time that a military provider is available to provide patient care. This factor is perhaps the most locally sensitive. The Tri-Service Readiness Costing Working Group uses an estimate of 90% i.e., military providers spend an average of 10% of their time on readiness-related tasks.

Concepts

As discussed previously, wellness and illness are two widely separated points on the health continuum. *The primary goal of the MHS is to optimize the health of all our beneficiaries. To optimize health, "our focus will shift from providing primarily interventional services to better serving our beneficiaries by preventing injuries and illness, improving the health of the entire population while reducing demand for the more costly and less effective tertiary treatment services"* (MHS 1999). Associated with varying levels of health along the health continuum are levels of prevention: primary, secondary and tertiary.

Primary prevention strategies prevent the occurrence of disease and injury. Primary prevention measures are of two types: general health promotion measures and specific health protection measures. Both types of measures are included in the DoD definition of health promotion as "any combination of health education and related organizational, social, economic or health care interventions designed to facilitate behavioral and environmental alterations that will improve or protect health. It includes those activities intended to support and influence individuals in managing their own health through lifestyle decisions and self-care" (DoDD 1010.10). Examples of health promotion measures include physical fitness, stress management and tobacco cessation programs. Examples of health protection measures include immunizations, environmental sanitation and protection against accidents and occupational hazards. ***Secondary prevention strategies*** provide for the early detection and prompt treatment of disease and injury (i.e., case finding). Examples of secondary prevention activities include clinical preventive service delivery (e.g., HTN screening, pap smears) and occupational surveillance.

Tertiary prevention strategies involve the treatment and management of individuals with existing clinical disease and include rehabilitation where residual damage has already occurred. Examples of tertiary prevention include insulin therapy for patients with diabetes and anti-inflammatory medications for patients with asthma.

Although many of the comments in this section will be addressed to healthcare providers in MTFs and clinical units of the operational forces, everybody can and should provide or support health promotion and health protection initiatives. These initiatives are vitally important, because they serve as primary prevention strategies for many of the conditions and diseases that ultimately adversely affect the health of military populations and strain resources.

The Green H Award

Many ships and commands of the Navy Surface Forces have seen an increase in the number of health assessments performed and a significant decrease in the rates for tobacco usage, failure to meet weight standards, failure to pass the physical readiness test and alcohol-related events. This is attributed to their competition for the "Green H" award. Applications for this award are submitted by Commanding Officers and include a description of the unit's health promotion goals, activities and measures of effectiveness; the results of physical readiness testing for the preceding two cycles; the number of health risk appraisal assessments completed; an assessment of crew education/counseling and monitoring for nine health promotion areas and a description of a best practice that could be instituted fleet-wide. Winners of the Force Commander Annual Wellness Unit Award are authorized to paint a Green "H" on their bridge wing—something for which they "will fight long and hard." This is an example of a policy that rewards health promotion activities and ultimately decreases risk factors. For more information see COMNAVSURFPACINST 6100.1.

Processes

A variety of processes are used to improve the quality and appropriateness of health service delivery and to therefore contribute to improved health, lessened disease, improved patient and staff satisfaction, increased capacity and (ultimately) lessened demand for healthcare service—in short, to an optimized MHS.

Evidence-Based Medicine (EBM) "is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett 1998). It should be the basis of not only preventive service and condition/disease management programs but also all that we do.

Evidence-Based Clinical Practice Guidelines (CPG) are available for

many recommended preventive services and condition/disease management programs. They provide practitioners with a decision-making tool for determining appropriate health care for specific clinical circumstances. They offer an opportunity to improve health care delivery processes by reducing unwanted variation. As recommended by the Institute of Medicine, practice guidelines should be valid, reliable, and reproducible; clinically applicable and flexible; multidisciplinary; reviewed on a scheduled basis; and well documented. The DoD/VA Guidelines are available at http://www.cs.amedd.army.mil/qmo/Home.htm. The National Guideline Clearinghouse (http://www.guideline.gov) has links to many guidelines as well.

Clinical Preventive Services: The Assistant Secretary of Defense (Health Affairs) has written that;
"Services shall develop strategies and systems to successfully implement PPIP at all MTFs and DTFs worldwide," and "MHS implementation of PPIP supports the transformation of healthcare delivery focus from treatment of illness and injuries to health promotion and wellness, prevention of illness or injuries, and improving the health of TRICARE PRIME enrollees" (OASD[HA] 1998).

Put Prevention Into Practice (PPIP) is a national campaign developed by the office for Disease Prevention and Health Promotion, Department of Health and Human Services and currently administrated by the Agency for Healthcare Research and Quality (http://www.ahrq.gov/clinic/ppipix.htm). PPIP is designed to improve the delivery of clinical preventive services in primary care settings, including immunizations, screenings, and health counseling.

Health Promotion and Risk Reduction: Health promotion is "any combination of health education and related organizational, social, economic or health care interventions designed to facilitate behavioral and environmental alterations that will improve or protect health. It includes those activities intended to support and influence individuals in managing their own health through lifestyle decisions and self-care. Operationally, health promotion includes smoking prevention and cessation, physical fitness, nutrition, stress management, alcohol and drug abuse prevention, and early identification of hypertension" (DODD 1010.10). Risk reduction refers to interventions designed to facilitate behavioral and environmental alterations that will decrease risk factors that adversely affect health and safety.

Clinical Case Management is a collaborative process which assesses, plans, implements, coordinates, monitors, and evaluates options and services to meet an individual's or populations' health needs through communication and available resources to promote quality cost-effective outcomes (adapted from CMSA, 2000). Clinical case management may be applied across the entire health care continuum. TRICARE Management Activity (TMA) has established a Broad-spectrum Case Management Program (BCMP) to address the spectrum of patient needs. Needs range from patients who are currently disease free but are demonstrating unhealthy behaviors, to patients who are acutely ill,

The Challenge

As new health technologies and prevention strategies are identified, the challenge is to change individual practice so that the most effective interventions are utilized. Stated differently:

How does one get a group of physicians or providers to provide the desired preventive service to a target population so that the majority of the population most likely to benefit from the services actually receives it at appropriate intervals?

There is a two-fold answer to this question:

1. Information is not enough as new technologies on drugs and other advances are produced, efficacious treatments diffuse quite slowly through communities, through the social and professional interactions of physicians in their local meeting places. Consequently, considerable effort must be made to target health care leaders with the introduction of such topics to generate enthusiastic support within the local professional community for such treatments. In addition, rarely do new technologies replace or supplant old technologies. Information in the form of linkages and new algorithms of clinical practice must continue to test activities and practice patterns that are comfortable. Preventive services in the medical communities provide for such opportunities.

2. Incentives affect the organization and delivery of preventive health care. Remuneration may come in several forms to include monetary, professional clinical and educational satisfaction, and use of time both at work and home.

to patients who are at high risk. More information may be found at the TMA Case Management Website at http://www.tricare.osd.mil/opt_int/Clinic_ProvInf.htm. Along this continuum are:

- *Population-Based Case Management (PBCM)* includes interventions such as health promotion, risk factor reduction counseling and clinical preventive service delivery. Some of these interventions may be performed by health promotion personnel, food service or other ancillary personnel or by worksite and community-based health program personnel. Other of the interventions will be performed by members of the clinic team; some by the primary care provider and others by other members of the team. Population-based Case Management targets a subset of the total population that demonstrates unhealthy behaviors or is at high risk for specific disease categories.

- *Condition and Disease Management:* The following descriptions will be used in this document and are the ones that will be used by TRICARE Management Activity. Condition and Disease Management are prospective, condition or disease-specific approaches to delivering health care that span all encounter sites (inpatient, outpatient, ER, home care) and cross the continuum of care. Condition Management includes care of patients with transient physiological states such as pregnancy, behavioral or lifestyle conditions (risk factors) such as tobacco use, and chronic conditions such as obesity. Disease Management includes managing the care of patients with specific illnesses or disorders.

Both Condition Management and Disease Management augment credentialed providers with non-credentialed providers who specialize in the target conditions and provide patients with additional education and manage the effects of their conditions. Both target high-cost, high-volume, chronic, and complex conditions. Both include clinical algorithms depicting decisions and interventions that are based upon evidence from scientifically rigorous studies. Ideally both Condition Management and Disease Management should extend beyond merely implementing clinical practice guidelines (CPG) and clinical/critical pathways. They should be customer-focused and proactive while promoting efficient, effective services. They are designed to reduce unwarranted variation in practice, improve clinical outcomes, satisfy accreditation requirements and should ultimately improve enrollee and staff satisfaction. They also offer a great opportunity to ensure that services throughout the MTF (including health promotion and occupational health) are integrated with worksite and community programs.

- *Individually-based Case Management* (ICBM) includes interventions ranging from Care Coordination to Individual Case Management (ICM) by a clinical case manager. Care Coordination is provided by any member of the health care team for patients who needs assistance in navigating the health care system, are at-risk or high-risk or have complex problems. Individual Case Management is provided by case managers for patients who are at the highest risk, have the most complex problems, or have an extraordinary condition.

- *Persons with Extraordinary Conditions (ICMP-PEC)* : A specific program in which designated case managers target a very specific population. DoD mandates consideration for Case Management patients with the following diagnosis and procedures: head trauma, spinal cord injury, HIV infection/AIDS, neoplasm, NICU admission, bone marrow procedures and burns. The coordination of services for patients with specified extraordinary conditions has been contracted to the Managed Care Support Contractors.

Roles

Health Promotion Program Officer/Team (or equivalent): A Health Promotion Program Officer/Team coordinates a systematic approach to health promotion and establishes or ensures establishment of health promotion programs IAW DoD Directive 1010.10 and Service-specific instructions (i.e., OPNAVINST 6100.2, BUMED Instruction 6110.13; Air Force Health Care Integrator functions, see PCO at https://phsd.afms.mil/PHSO/). Individual, worksite, and community-based health promotion and health education programs must be planned, resourced, and implemented to improve the health

of populations.

Condition/Disease Management Teams: Multidisciplinary teams (typically led by a credentialled provider) formulate and administer Condition and Disease Management Programs. The steps to be taken by the team are to: identify and assess the population, choose several possible targets, prioritize targets, acquire data, choose an appropriate CPG, implement the CPG and evaluate the effectiveness of the CPG. Detailed information about this process is available in numerous publications and at several websites referenced in the Tools section under Evidence-Based Medicine and Clinical Practice Guidelines.

Utilize staff members other than privileged providers to provide education, care and follow-up as appropriate using approved protocols. Ensure that duties and responsibilities are clarified, that protocols, scripted dialogues, and roles are written and approved and that all personnel are being used to their fullest potential. Several articles have been published on examples of nurse managed clinics (Health Care Reengineering Review 2000 and Savage 2000). Consider alternatives to traditional visits such as group appointments (Masley, Sokoloff and Hawes 2000), telephone consultations, e-mail communication, and web-based offerings to increase efficiency and access as well as increase patient satisfaction. Consider subscribing to (and sharing your innovations through) *The Reengineering Review* (http://www.tricare.osd.mil/hcr/) to keep informed about innovations in the MHS. Consider how worksite care providers (many of whom have their own condition/disease management programs) and community-based resources can work with MTF-based teams (including health promotion personnel) to offer well-rounded, comprehensive and user-friendly programs. Ensure your program addresses primary prevention (what activities are in place to prevent the condition/disease from occurring) and secondary prevention (what activities are in place to provide early detection and prompt treatment of the condition/disease). Plan into your program how you will measure and analyze outcomes.

Clinical Case Manager: MTFs should have a designated Clinical Case Manager to whom patients (either inpatients or outpatients) who meet specific criteria are referred for management. Personnel at the clinic or worksite level should also provide a version of clinical case management (which may be less formalized) for patients who do not meet criteria for referral but for whom special attention is warranted. Often the nurse will fulfill this role. However, a social worker or, in the case of small units, the sole medical representative might perform the role. Examples of patients warranting special attention include those with clinic utilization rates higher than expected; multiple stressors (e.g. new to the area, spouse deployed, no support system, financial difficulties and new onset disease) and multiple diseases (e.g. diabetes, hypertension and asthma).

Tools

Health Promotion: Information is available on Service-specific programs at:
Army: http://chppm-www.apgea.army.mil/dhpw
Navy: http://www-nehc.med.navy.mil/hp/index.htm
Air Force: https://www.afms.mil/op_prev/hlthprom.cfm

Evidence-Based Medicine (EBM): In addition to a variety of books (Eddy 1996; Muir Gray 1999; Sackett 1998 and Handley 2000) there are also on-line sources of information such as the Center for Evidence-Based Medicine at http://cebm.jr2.ox.ac.uk. The three Services have more information. Navy personnel should contact https://bumed.med.navy.mil/med03/ebm. Air Force information is found at https://phsd.afms.mil/PHSO/. Army contact: http://www.cs.amedd.army.mil/qmo/Home.htm.

Put Prevention Into Practice (PPIP): Extensive information, references and tips for implementation (including an on line version of the Clinician's Handbook of Preventive Services) are available at http://www.ahrq.gov/clinic/ppipix.htm. A full description of the studies upon which the PPIP guidelines were developed is available in print (U.S. Preventive Services Task Force 1996) or at http://www.ahcpr.gov/clinic/cpsix.htm. Use of age-specific approved DD Forms (e.g. DD 2766) will facilitate continuity of care throughout the MHS. The Navy's website and information about their training course is available at http://www-nehc.med.navy.mil/hp/ppip/index.htm. Information about PPIP in the Air Force can be found at programs/tools at https://phsd.afms.mil/PHSO/. Information about PPIP in the Army can be found at http://chppm-www.apgea.army.mil/dhpw/.

Clinical Practice Guidelines (CPG) describe what care a patient with a given condition/disease should be provided. A variety of CPGs exist ranging from those that are explicitly evidence-based to those that are based only on expert opinion or consensus. Due to the investment required to develop, adapt and maintain guidelines, and to ensure continuity of care across the system, DoD/VA CPGs are recommended when appropriate for the local population and specific disease management programs. DoD/VA Guidelines and additional information are available at http://www.cs.amedd.army.mil/qmo/Home.htm. Preferential consideration is given those conditions that have been identified as being high cost, high volume, high risk and/or problem prone in both systems. To date, DoD/VA Guidelines are available for Tobacco Cessation, Low Back Pain, Cardiovascular Disease (Hypertension and Hyperlipidemia), Asthma, Chronic Obstructive Pulmonary Disease, Diabetes Mellitus, Depression and Uncomplicated Dysuria in Women. They include tools for implementation. The National Guideline Clearinghouse (http://www.guidelines.gov) provides a catalogue of a variety of guidelines, however be advised that no critical appraisal of the guidelines is provided. Army information is available at http://www.cs.amedd.army.mil/qmo/Home.htm. Navy personnel may also contact https://bumed.med.navy.mil/med03/ebm for more information. Air Force support for CPGs is at programs/tools at https://phsd.afms.mil/PHSO/.

National Asthma Education and Prevention Program

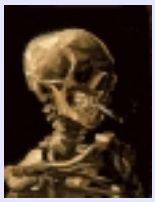
The National Asthma Education and Prevention Program (NAEPP) is administered and coordinated by the National Heart, Lung, and Blood Institute (NHLBI). The NAEPP works with intermediaries including major medical associations, voluntary health organizations, and community programs to educate patient, health professionals, and the public. The ultimate goal of the NAEPP is to enhance the quality of life for patients with asthma and decrease asthma-related morbidity and mortality. The NAEPP Website is http://www.nhlbi.nih.gov/about/naepp/index.htm.

Clinical Pathways describe the local "who, where, when and how" for the implementation of the "what" in the CPG. ***Critical Pathways*** are similar but geared toward inpatient care and also include expected milestones.

Case Management: More information is available at http://www.cmsa.org (The Case Manager's Society of America) or in the Case Manager's Toolkit, which is available from your Service Representative. Army should contact Pam Harris at (210) 221-6195 or DSN 471. Navy should contact https://bumed.med.navy.mil/med03/clinical. Air Force support is located at programs/tools, PCO, and education at https://phsd.afms.mil/PHSO/.

Web Sources of Health/Illness Information: A variety of web resources are available for patient and healthcare personnel information about a variety of conditions and diseases. Browse through http://www.healthlinkusa.com, http://www.firstgov.gov/ or http://www.healthfinder.gov to see a sample of what is available online.

Systematic evidence reviews have been completed that identify effective programs both for tobacco use prevention and control and for tobacco cessation (U.S. Preventive Services Task Force, 1996). There is sufficient evidence to support a multifaceted approach that includes worksite and community-based programs and clinical interventions. The VHA/DoD Clinical Practice Guideline "Tobacco Use Cessation in the Primary Care Setting" provides guidance for primary care interventions targeting current tobacco users, for assessing the risk of a non-tobacco user to start using tobacco products, and for assessing the risk of a former tobacco user to resume using tobacco products. This guideline, an implementation toolkit, and patient and provider education materials are available at http://www.cs.amedd.army.mil/qmo/smoke/smoke.htm.



The "Clinician's Handbook of Preventive Services" provides a detailed outline of the basics of smoking cessation counseling. It also includes information about nicotine replacement and other pharmacological agents for smoking cessation (U.S. Public Health Service, 1997).

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Concepts

To review, communities are collections of people that can be described by geographic (people in specific geographic boundaries) and/or functional (common interests, association, occupation services) characteristics. A healthy community creates a psychological sense of connection, develops resources and opportunities for meeting individual and collective needs, offers opportunities for personal and group development, and adequately responds to external threats. A healthy community has the capability to continually improve the physical and social environment of its members, and is committed to modifying behavioral, social and physical environmental factors that impinge on one's health.

Community outreach is essential if we are to achieve the Service Delivery System End State Vision of a population health focus as set forth in the MHS Optimization Plan. The vision states that "The health of the population will be paramount—we will move from focusing primarily on interventional services to better serving our beneficiaries by preventing illnesses and injuries through their full life cycle. Prevention and screening programs will be fully deployed and measurable. Beneficiaries will be full partners in all their health decisions" (MHS 1999).

Community outreach addresses educational, policy and environmental strategies within a variety of settings (schools, health care facilities, worksites, places of worship, etc.). These interventions target the multiple determinants of individual and community health which include such things as local environmental quality and hazards; quality of housing, education and transportation, spiritual, cultural, and recreational opportunities; social support services and structures; employment opportunities; and effective mechanisms for collectively addressing community concerns.

Participants involved in developing a healthy community should come from a broad variety of installation and civilian community leaders and stakeholders. A team approach integrating the efforts of all is critical.

Processes

Community outreach has processes that are analogous to improving the health of a defined beneficiary population. However, the concepts extend beyond medical interventions focused on individuals or a population with a given disease. They include local environmental quality and hazards; quality of housing, education, and transportation; spiritual, cultural and recreational opportunities; social support services; diversity and stability of employment opportunities; effective local government; etc. Impacting these elements requires long-term and dedicated planning and cooperation between the local military commanders and civilian community leaders. Such efforts should be modeled after successful cooperative programs already developed by local, state and federal governmental health agencies; schools of public health and other academic institutions; local business coalitions; community action groups; etc. Similarly, already developed community health outcome metrics (e.g., Healthy People 2010 available at http://www.health.gov/healthypeople/document) should be evaluated for adoption.

Community health status and needs must be assessed, prevention and condition management interventions applied, outcomes monitored for effectiveness, and methods established for addressing ongoing basic community issues/problems.

Roles

To accomplish the above in the Department of Defense communities involves work at several levels.

At the DoD level, The Prevention, Safety and Health Promotion Council is a Tri-Service council whose charter is to "advance health and safety promotion and injury/illness prevention policy initiatives that are consistent with Department of Defense readiness requirements and the MHS Strategic goals of (a) a constantly fit and ready force and (b) healthy communities at home and abroad, in peacetime and in conflict." It addresses community needs and resources, as well as the deployment of the Health Enrollment Assessment Review, Put Prevention into Practice, and other such programs. It also addresses policy, ensuring effective system-wide communication of all approved health promotion and injury/illness prevention policies and implementation instructions. The subgroups of this council include:

- Put Prevention into Practice Program Implementation Advisory Committee
- Joint Preventive Medicine Policy Group
- Alcohol Abuse/Tobacco Use Reduction Committee
- Self-reporting Tools Work Group
- Sexually Transmitted Disease Prevention Committee
- Injury/Occupational Illness Prevention Committee

To manage the overall health of a community-installation, *at the local level*, a Community/Installation Population Health Council needs to be developed. Representation on the council should include: line/command, health care providers and agency representatives responsible for activities related to such areas as safety, morale, welfare, spiritual fitness, recreation, transportation, housing, and fire and police services. The following subtasks should be included in developing a healthy geographic and functional community:

- Identify key stakeholders and community support organizations. Ensure those within the community as well as those who support the community externally are included.
- Obtain stakeholder and organizational commitment to developing a healthy community.
- Assess the community—address strengths, weaknesses, opportunities, and threats. Assess measures of community resilience, cohesion and capacity.
- Review the population assessment (see sections *Identify the Population* and *Evidence-based Interventions*).
- Identify and prioritize community needs. Examples may include decreasing risk behaviors (especially those related to tobacco and alcohol use); reducing specific diseases, injuries, and impairments; targeting specific health needs of the population; providing activity and nutrition programs; enhancing mental and spiritual health or addressing environmental and ecosystem challenges. The Guide to Community Preventive Services and Healthy People 2010 (both listed below as resources) may provide additional population needs for the council's consideration.
- Obtain consensus by members and stakeholders on these needs.

Community Involvement Example of the Integrated Delivery System for Suicide Prevention

BACKGROUND: In early 1996 the Air Force Vice Chief of Staff commissioned an Integrated Product Team (IPT) to study and develop recommendations on suicide prevention. A deliverable of the IPT on suicide prevention was the development of the Integrated Delivery System (IDS). The IDS centralizes helping functions from both the Line and Medical functions into one delivery system for providing prevention services to the community.

COMMUNITY IDS MODEL: The goal of the IDS is to be a seamless, central point of help for the community and to be effective in the delivery of collaborative preventive services. There are four primary functions of the IDS:

1. Centralized information and referral source
2. Provide assessment of community risk factors
3. Delivery of prevention services to the community at large
4. Collaborative marketing

SUICIDE PREVENTION RESULTS: The Air Force Active Duty community has continued to see a decline in the number of suicides over the past five years and most dramatically over the past year. As of 16 December 1999, there have been 19 suicides in CY 99 for a total rate of 5.6/100,000 in comparison to 33 suicides at this time in CY 98 for a total rate of 9.6/100,000. The overall rate has declined over 40% in this time and 78% since CY 94.

PLAN FOR THE FUTURE: Improve on "Community Capacity" of Air Force communities. Community Capacity is defined as those informal networks, community agencies, and unit leaders that impact on community results. The concept of "Community Capacity" is the extent to which community members:

§ Demonstrate a sense of shared responsibility for general welfare of community and its members

§ Show collective competence in taking advantage of opportunities addressing community needs and confronting situations that threaten integrity of the community and safety and well being of its members

STRATEGIES FOR IMPROVING COMMUNITY INVOLVEMENT:

§ Adopt "Community Capacity" as key factor in IDS initiatives (IDS is the "how" and Community Capacity is the "what")

§ Develop and track key indicators of "Community Capacity"

§ Educate installation organizations and Commanders

§ Implement action plans through total community approach

- Develop community-wide action plans to address these identified needs with specific measures for evaluation of the intervention. Programs should target the proactive delivery of primary and secondary prevention services as well as interventions targeting condition/disease management. Ideal metrics should be outcome-oriented, or those evaluating the effect of the interventions. However, process metrics, such as evaluating the quality and quantity of the processes implemented to achieve the outcome might be the only valid metrics available initially. For example, to address a problem of teen violence in the neighborhood, a process metric might be the number of teens enrolled in after-school programs whereas the target metric - the rate of teen violence - is the outcome metric. In addition, metrics should be objective as well subjectively targeted, ensuring perceptions, feelings, etc. are simultaneously measured with objective measures such as statistical changes.
- Implement the action plans through a total community approach, continually collecting appropriate data for metric evaluation. Provide educational and community-based programs that are age and culturally specific and which involve the entire community. Use available community resources: think "out of the box" (e.g., work with local churches and schools to help them develop exercise classes for seniors).
- Evaluate the interventions, ensuring a variety of stakeholders and members analyze the data and subsequently determine modifications to the community action plan.
- Establish a mechanism to continually evaluate the community and to analyze trends to identify actual as well as potential/evolving health complications developing in the community/population.

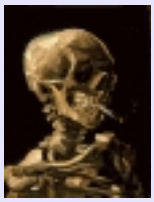
Tools/Resources

Healthy People 2010 is a comprehensive, nationwide health promotion and disease prevention agenda. It is designed to serve as a roadmap for improving the health of all people in the United States during the first decade of the 21st century. It is grounded in science, built through public consensus, and designed to measure progress. It is available at http://www.health.gov/healthypeople/document.

Guide to Community Preventive Services addresses a variety of health topics important to communities, public health agencies and health care systems. It summarizes what is known about the effectiveness and cost-effectiveness of population-based interventions designed to promote health, prevent disease, injury, disability and premature death as well as exposure to environmental hazards. More information about the "Community Guide" is available at http://www.thecommunityguide.org including chapters on tobacco product use prevention and vaccine preventable diseases as well as the tentative publication dates for future chapters (motor vehicle occupant injury May 2001 and physical activity and diabetes June 2001).

Examples of ***Air Force programs*** that link medical programs and community outreach include the Health and Wellness Centers (information available at Health Promotions, http://www.afms.mil/op_prev/hlthprom.cfm and Family

Preventing the innumerable adverse health effects attributed to tobacco use requires a comprehensive approach targeting three areas: 1) reduce exposure to environmental tobacco smoke, 2) reduce tobacco use initiation, and 3) increase tobacco use cessation. There is substantial evidence showing that a comprehensive approach would include worksite and community-based programs as well as clinical interventions. The Task Force on Community Preventive Services has identified recommendations, supported by evidence, that target the three areas listed above (Task Force on Community Preventive Services 2001). Some of the key recommendations that require community or worksite interventions are: 1) smoking bans and restrictions for designated areas ranging from individual worksites to entire communities, 2) increasing the price of tobacco products and, 3) mass media campaigns to inform and motivate children and adolescents to remain tobacco-free.



Military Health System programs can partner with military installation and civilian community programs to ensure a comprehensive approach is used to reduce tobacco

Advocacy, http://www.afms.mil/com_prev).

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Concepts

Standardized performance measures will be used to analyze the performance of the health care delivery system, the health of the population, and the quality of the clinical services provided to our beneficiaries. Performance-based measurement is essential to evaluate the effectiveness of the health system in meeting goals and objectives. Performance measures will include clinical measures for direct comparison to other health care systems. Health status measures of the population reflect the orientation of the organization and are crucial for successful clinical management decisions. Also, timely, data-oriented feedback on critically selected performance measures will be given to providers and facilities to assist them in improving clinical processes. At the enterprise level, aggregate measures of performance, or *metrics*, will be used to evaluate the progress of population health improvement initiatives.

To put performance assessment into action, the MHS should utilize an enterprise-wide core set of standardized performance measurements. Examples are TRICARE Operational Performance Statement (TOPS) and Population Health Operational Tracking and Optimization (PHOTO) (see Tools below). The use of National Committee on Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS®) performance indicators allow for standardized comparison across the MHS system and with other health care systems. Special interest and/or Service specific metrics may be added to this common core.

Military Treatment Facilities and Regional Lead Agent population health offices will utilize current resources, where available, to capture information and decrease redundant efforts among MTFs and Managed Care Support Contractors. Services will attempt to integrate preventive services and condition management measures with indicators already required and collected for other quality assurance programs such as Joint Commission on Accreditation of Healthcare Organizations (JCAHO) ORYX, HEDIS®, the DoD National Quality Management Program and other mandated programs. Eliminating duplicative efforts is essential, and reports should address specific goals and objectives for the improvement of health care services.

Performance and Health Status Measurement: Measures must be developed that describe the population's health status and support periodic measurement to track progress toward improving health and delivery system performance. Categories to measure include clinical impact and process measures, patient-centered outcomes, and system-performance outcomes. Measures must also be helpful in focusing on a prioritized set of predetermined questions that will support or justify resource allocation under a set of predetermined assumptions. Patient-level measures that can be aggregated to the provider, the MTF, and the Region are ideal.

Process measures are used to assess the processes of health services delivery. They must be developed to answer meaningful questions related to clinical and business processes. Examples of the questions that can be answered by carefully developed measures are: How effectively are diabetics being identified and tested for hemoglobin A1C levels and urine protein, or receiving annual eye and foot exams? How is the MTF doing at completing recommended cervical cancer screening for enrolled women and how does the MTF performance compare with benchmark health plans?

Clinical ***impact measures*** reflect the status of disease or injuries, risk factors, contributing factors, surrogate indicators in a population, or absolute results of clinical values for a study or procedure. For example: the average hemoglobin A1C for the diabetic population of X provider is 8.2, with a normal range of 6-8; incidence of head injuries in children 6-12 years of age decreased from p/1000 to y/1000; Zung depression scores average Y on patients being treated for depression with antidepressants.

Patient-centered ***outcomes*** focus on an enrollee's viewpoint, the self-perceived value of a service or the quality-of-life impact of interaction with the system. Examples include: 98% of female enrollees considered their gynecological care to be good or excellent; 22% of men age 55 to 64 were able to walk without pain for one mile or more two months after hip surgery.

System-performance measures are more comprehensive than the process and impact measures. Many of these indicators should be taken from inspection worksheets from the various agencies that certify hospitals, clinics and health plans in order to reduce duplication of effort at the MTF level. All target values are subject to periodic validation and benchmarking to civilian and military unique specifications. The following are examples to clarify this discussion:

- Access: Target would be 90 % of enrollees who tried to make a routine appointment were able to do so within one week. The actual time period may be different based on severity of the problem and whether the appointment is with a PCM or a subspecialist.
- Continuity: Target would be 70 % of patients enrolled to clinic XX were able to see the same provider at least two or more times in succession over a 12-month period if they require that frequency of visit.
- Quality: 99% of eligible providers in clinic XX have their specialty board certification.
- Financial: 80% of clinics within XX MTF produce episodes-of-care costs equivalent to outsourcing costs.
- Training: 98% of individuals providing direct patient care within the facility have their BLS certification.

Processes

It is important to measure the use of critically analyzed, evidence-based medicine practices in clinical practice. Performance measurements will drive the delivery of evidenced-based clinical services. Evidence-based practice is aimed at maximizing health outcomes for the population within the constraints of limited resources. Services will guide facilities in identifying and closing gaps between current clinical practices and optimal practices. Clinical decisions will be based on best available evidence that is critically appraised and summarized, and conclusions will be used to assist providers and patients in making health care decisions. Performance will be continuously monitored at the provider level. Measures evaluate both effectiveness of interventions (clinical effectiveness) and effectiveness of the system implementation of evidenced-based practice (implementation).

Performance measures at the local level will be designed to assess the health of the population, the quality and cost effectiveness of the delivery system, and the impact of clinic practice on the individuals treated. Measures selected will reflect performance targets that are meaningful to the customer and provider, and which can be used directly to improve performance. Clinical measures may be health outcomes, impact measures, or process measures. Facilities will be able to:

- Identify and prioritize clinical areas requiring reengineering.
- Conduct critical analysis of the health needs of their enrolled population.
- Define performance measures that ensure process improvement.
- Define these measures so the patient understands them.
- Utilize the measures effectively to improve clinical outcomes.

Utilization Management: The Military Health System (MHS) is moving from what has been seen as "prescriptive" utilization management (UM) to a population-based health management model that incorporates key elements of UM within the population health improvement process. In the past, UM has often been mistakenly equated with one UM tool - utilization review - which may result in a negative reputation for appearing to focus only on reducing bed days, denying care, and constraining provider practice.

But utilization management has always been more than just utilization review. The best models of utilization management have recognized that UM must be linked to quality management (QM) to support the readiness mission and deliver "best value" health care that balances customer service, high technical quality, and lower costs. The model combining QM and UM includes many elements, such as epidemiological assessment, capacity management, demand management, health promotion and prevention, case management, disease management, education, practice guidelines, discharge management, and performance and outcome measures. Finally, the best models have recognized that a combination QM and UM program is not just a set of tools but an over-arching philosophy that can achieve a cultural shift in the entire organization, a shift to a performance-based, accountable health system whose goal is to improve the health of its population.

Roles

Service Medical Departments and ***TRICARE Management Activity*** will be held accountable to support this population health initiative. They will ensure implementation of processes within their facilities that reflect evidence-based clinical practice. To accomplish this, MHS and Region level offices will analyze aggregate measures of performance within and among Regions. Performance measures for MTFs should be compared with aggregate rates to identify MTFs that have benchmark results as well as those that need to improve. Similar Region-to-Region comparisons should be made. Finally, MHS-wide results should be compared with results from other large health systems such as the Veterans Administration or large managed health plans. Using standardized measures such

as those found in HEDIS® facilitate such comparisons (Rohrer 1999).

Facility commanders are responsible to develop an internal process to identify and prioritize clinical and business areas for improvement and/or reengineering. Factors to consider include evidence supporting practice, patient satisfaction, cost, volume, impact on capacity, risk of harm, potential for resource shifting, etc. This medical chain of command will be held accountable for this process. A person trained in epidemiology should facilitate and guide this process. If not available, commanders should provide appropriate training to responsible staff.

Commands will participate in provider information or profiling reporting processes. The provider support report will provide performance measurement by provider and clinic/department for use by the facility commander. The information gathered will be used at the local level to measure effectiveness of clinical interventions in meeting targeted objectives and to identify areas for improvement. The information will be used as feedback in a non-punitive, professional manner. Information reported from the MTF to the Service and enterprise level will be aggregated, allowing comparisons between facilities only.

The ***MHS Optimization and Population Health Support Center (OPHSC)*** will facilitate data analysis and feedback to improve MTF performance. The MTF executive board should then review the data to provide appropriate feedback to the clinics needed to improve provider performance.

Population Health Operational Tracking and Optimization (PHOTO) Metrics

Customer Responsiveness

- Overall Satisfaction with Care Received at MTF (All Users)
- MTF Outpatient Visits Meeting the Wait Time AT Appointment Standard
- MTF Outpatient Visits Meeting the Wait Time FOR Appointment Standard (Prime Enrollees for urgent and routine care in Primary Care Clinics Only)

Force Health Protection

- Active Duty Qualified for Deployment for Dental Health (Dental Classes 1 & 2)
- Active Duty Immunizations for Deployment

Population Health Improvement

- Breast Cancer Screening (HEDIS)
- Cervical Cancer Screening (HEDIS)
- Prenatal Care in the First Trimester (HEDIS)
- Childhood Immunization Status (HEDIS)

Best Clinical Practices

- Eye Exams for People with Diabetes (HEDIS)
- Follow-Up After Hospitalization for Mental Illness (HEDIS)
- Check-Ups After Delivery (HEDIS)
- Beta Blocker Treatment After a Heart Attack (HEDIS)
- Asthma Management
- Preventable Admission Rates for 9 Diagnoses Identified in the ASD(HA) Performance Contract

Best Business Practices

- Per Member (User) Per Month (PMPM) Financial Metric
- Outpatient Visits PMPM/PMPY
- Specialty Referrals PMPM/PMPY
- Pharmacy Costs PMPM/PMPY
- World Wide Workload (WWR) to SADR Visit Count
- Discharges/1000 Enrollees
- Average Length of Stay
- Emergency Room Visits PMPM/PMPY
- Percent of Users Enrolled in Catchment Area
- Percent External Customer Workload

The, ***OPHSC, Service Headquarters, Service intermediate commands, Regional Lead Agent offices and Managed Care Support Contractors*** should attempt to integrate metrics to decrease the measurement burden facing MTFs. This includes integrating preventive services and condition management metrics with metrics already required and collected for quality assurance programs such as JCAHO, ORYX, HEDIS, and the DoD National Quality Management Program and other mandated programs.

Military Treatment Facilities should utilize, at a minimum, the targeted metrics selected and distinct thresholds as the basis for their quality improvement activities. As conditions merit, an expanded use of metrics may be encouraged and narrower thresholds utilized to optimize performance. In all instances, these improved tools should be communicated to Service intermediate commands, Regional Lead Agent offices, and the Tri-Service Agency Executive Board in standardized methods (to be developed) for consideration in applying them to the MHS as a whole. Ideally metrics will be patient-level measures that can be aggregated to the provider, MTF, Service intermediate command, Managed Care Support Contractor and Regional levels. Service intermediate commands and Regional Lead Agent offices will use MTF profiling, while provider performance reports will be utilized by MTFs.

Tools

The ***Population Health Operational Tracking and Optimization (PHOTO)*** System is a highly visible first step toward an MHS-wide set of outcome measures that addresses both business and clinical practices, and focuses on improving clinical care processes. It is also the first visible step toward demonstrating the projected utility and value of the MHS Data Repository (MDR). The metrics that result from PHOTO are a subset of the Tri-Service Common Core Metrics. Planned PHOTO metrics are listed in the accompanying text box. PHOTO metrics can be accessed at http://photo.tma.osd.mil/.

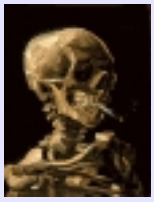
Clinical Practice Guidelines: The use of evidenced-based clinical practice guidelines for highest prioritized areas of care is strongly encouraged (See key process Evidence-based Primary, Secondary and Tertiary Prevention). For each guideline that is implemented, at least one performance outcome related to the practice guideline will be measured.

Provider Information or Profiling Reports: Profiling is the collection, collation and analysis of clinical utilization data to develop provider specific information for resource consumption and outcomes for episodes of care. These profiles should be used to produce provider feedback reports to help the providers modify and improve practices, produce performance-based incentives and perform resource or economic modeling.

TRICARE Operational Performance Statement (TOPS) captures and tracks a number of the measures reported annually to the Defense Management Council as part of the Defense Health Program Performance Contract. Much of the data is reported down to the MTF level; at this time only the data quality measure is reported to the clinic level (see http://www.tricare.osd.mil/reptcard/tops/topsrept.html).

Air Force Metrics: The AF Surgeon General has established a performance measurement program (http://p2r2va.tma.osd.mil) as an essential step in promoting continuous process improvement throughout the Air Force Medical Service. The idea is to measure

Healthy People 2010 has 21 objectives related to tobacco use and exposure to environmental tobacco smoke (Hopkins, 2001). While the objectives are mostly long-term outcomes, they outline where organizations, such as MTFs, can target processes to interrupt tobacco-related morbidity and mortality. Clinics and MTFs can measure performance in areas such as counseling smokers to quit, achieving smoking cessation in pregnant women, and assessing the risk of tobacco use initiation among non-users. Clinics may set near-term objectives for performance in these and other areas outlined in the tobacco-related objectives. All MTFs should review and evaluate health assessment information to identify tobacco users in their populations and at health behavior surveys to analyze trends in tobacco use in these populations. Reports should be provided to the clinic and provider level to prompt action.



Consistent with Healthy People 2010 objectives, military communities can achieve lower rates of tobacco use among all age groups. The proof of effectiveness of MTF efforts will be a reduction in smoking-related morbidity and mortality and the ultimate outcome will be improved health status.

success in the operation of the 79 Air Force MTFs that can be used to establish baselines - or "benchmarks" - for continuous process improvement throughout the organization.

The ***Air Force*** Population Health Support Division generates ***quarterly MTF data products*** targeting AFMS primary care optimization metrics for preventive services. The data sets are generated from systems available at the MTF as well as databases which cannot be accessed at the MTF such as enrollees accessing care at other AF MTFs, sister service MTFs, and network care. More information is available at https://phsd.afms.mil/PHSO/.

Navy Population Health Navigator: A CD-ROM database created by Navy Medical Information Management Center (NMIMC: http://navmedinfo.med.navy.mil/) to provide Navy MTFs with population-based analysis capabilities. The tool enables MTFs or clinics to describe the demographics, needs, and health status of the enrolled and not-enrolled population, and to manage medical and disease conditions. For more information contact CDR Turner at *mailto:mdturner@us.med.navy.mil*.

Army Medical Information Management products are available at: Patient Administration Systems and Biostatistics Activity (PASBA): http://www.pasba.amedd.army.mil/
U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM): http://chppm-www.apgea.army.mil/

TRICARE Operations Center (TOC): The TOC provides access to the Template Analysis Tool and enrollment and other TRICARE reports. It is designed primarily for use by military medical staffs in the day-to-day management of their peacetime medical operations. See http://www.tricare.osd.mil/tools.

Various ***MHS performance measures*** such as HEDIS© MTF report cards and TMA Statistical Reports, many of which have MTF-level data, can be accessed at http://www.tricare.osd.mil/reptcard/mhssperf.html.

MHS data quality measures are linked at http://www.tricare.osd.mil/dataquality/reports.htm.

Health Care Survey of DoD Beneficiaries (HCSDB): Conducted annually since 1995 and sponsored by the TRICARE Management Activity, the HCSDB is a mail survey of a representative sample of MHS beneficiaries investigating opinions regarding their health status, use of health services focusing particularly on preventive health services, sources of health care, health insurance coverage, satisfaction with health care provided by military and civilian facilities, access to health care, and their knowledge and understanding of TRICARE. Responses from the survey provide a comprehensive look at how military beneficiaries view their health care. Results of the surveys and explanations of methods and results are available at http://www.tricare.osd.mil/survey/hcsurvey/default.htm.

Private Sector Care Reports: These reports, when used in conjunction with other internal patient management reports (e.g., ADS and referral reports), will help MTFs identify the types and amounts of services provided to their enrollees by providers in the private sector. The reports that are currently available have been formatted to assist in targeting inpatient and outpatient workload for recapture to MTFs. Aggregate and MTF-specific reports can be accessed at http://199.208.1.220.

Utilization Review (UR): Utilization review is not abandoned in the PHI model, but remains a valuable tool to scrutinize undesirable outcomes and trends that warrant further analysis and action to maximize quality and efficiency and ensure limited resources are appropriately utilized. But the best way to manage utilization is to manage health; thus the health care system should focus first on prevention, health promotion, and condition management, and implement appropriate utilization review activities when outcomes indicate an opportunity for improvement. Guidelines for utilization management and utilization review are in the OASD (HA) Policy: Revised Utilization Management Policy for the Direct Care System (http://tricare.osd.mil/policy/fy98/umpd9831.html).

References

Hopkins, DP, et al. 2001. Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *American Journal of Preventive Medicine* 20(2S):16-66. Available at http://www.thecommunityguide.org/.

Rohrer JE. 1999. *Planning for Community-Oriented Health Systems*. Washington, DC: American Public Health Association.

Section V.

Regional Population Health Offices

Concept

Regional Lead Agent population health offices should directly support population health activities at MTFs and by Managed Care Support Contractors and serve to coordinate MTF and Managed Care Support Contractor activities with MHS and Service Headquarters offices and programs that affect population health and optimization.

Functions

Support MTF population health activities

Within a Region, MTF and Managed Care Support Contractor activities can be coordinated to effectively and efficiently utilize resources and achieve mission success. Regional Lead Agent population health offices can interact with MTFs in the Region and Managed Care Support Contractors to identify common issues in geographically defined populations and facilitate the development of local solutions. Similarly, Regional Lead Agent population health offices can analyze resource and policy issues in these populations and support MTFs and Managed Care Support Contractors in developing and deploying solutions.

Actionable information to MTFs

One of the most powerful functions of Regional Lead Agent population health offices is to develop, synthesize, and disseminate actionable information on the health status and health service needs of specific populations within their jurisdiction. By providing actionable information to the accountable MTFs, there will be clarity in regard to preventive services, condition/disease/case management, data administration, and other tasks required to improve the health status of the population. In response to needs of MHS enterprise and MTFs, the Regional Lead Agent population health office may extract and analyze population health data or may use existing or future capability in various Service and MHS agencies to develop population health information (see MHS Support Center). Regional Lead Agent population health offices can serve the equally important functions of identifying health information needs for the Region and its MTFs, disseminating and interpreting relevant information, and assuring that appropriate action is taken.

The Regional Lead Agent population health office also will function to establish clinical regions wherein two or more MTFs' populations overlap and the MTFs share clinical capacity in providing comprehensive primary and specialty services to these populations. Such overlapping populations create a unit of analysis for population health that is larger than the MTFs but smaller than the geographic region. Two commonly sited examples of areas where discrete military populations access multiple MTFs for care are the Seattle-Tacoma area in Region 11 and San Antonio in Region 6. In areas like these, health service needs of enrollees should be considered not only by each MTF, but also by analyzing and aligning resources and health information among the co-located MTFs that act as a clinical region. Clinical regions that integrate delivery systems for population health become effective and efficient.

Support reporting to enterprise

Regional Lead Agent population health offices can serve another important function by developing Region-level population health data that support the

role-up or aggregate enterprise-level metrics for decision support at the most central offices of the MHS. This same Region-level data can be used to compare among Regions. Such inter-Region comparisons facilitate benchmarking, a driver of Region-level optimization and population health improvement. These comparisons also aid in identifying opportunities to realign resources to promote enterprise optimization.

Knowledge transfer

Regional Lead Agent population health offices must support knowledge transfer among MTFs, between Regions, and both to MTFs from Headquarters and to Headquarters from MTFs. Effective sharing of lessons learned, whether good or bad, is critical for the success of population health improvement initiatives in the large, diverse, and complex MHS.

Roles

Regional Lead Agent population health offices should facilitate population health working groups with within their Regions with representatives from MTFs in the Region. They will be invited to join the planned MHS Population Health Work Group. A list of Regional Lead Agent office population health representatives can be found at http://www.tricare.osd.mil/opt_int/PHIT.htm.

The capabilities needed for Region population health offices include population health information management, workgroup coordination and management, program management, and health policy. The offices must have expertise in health measure definition, data extraction, analysis, and evaluation, and information dissemination.

Section VI.

Military Health System Optimization & Population Health Support Center (OPHSC)

Concept

The OPHSC is currently under development. The following represents the planned concept of operations.

The OPHSC will respond to information and resource needs from all levels of the MHS. Its scope includes facilitating and supporting the development of MHS-wide programs for optimization and population health improvement, including population health educational programs for patients, MTF personnel, and leadership. Ultimately, it will proactively research and disseminate information to support performance improvement across the enterprise. Until the MHS OPHSC is fully operational, questions and comments about the principles, processes, tools and resources in the PHI Plan and Guide can be communicated to the contacts at http://www.tricare.osd.mil/opt_int/PHIT_Member.htm.

The OPHSC will provide a single interface to the customer for supporting and implementing the programs, tools, and surveillance systems designed to measure and improve the health of MHS beneficiaries. It will integrate a number of currently separate, but related, population health data, surveillance, and program management activities. Efficiencies are to be achieved by consolidating and reducing administrative and IM/IT support, eliminating duplicative missions and functions, and ensuring that the various MHS population health programs and tools operate together seamlessly.

While the OPHSC will provide feedback and recommendations to higher authorities for planning, research, and policy development, its primary mission will be program execution and field support. To achieve this mission, it will work closely with other population health agencies (e.g., DoD Pharmaco-Economic Center [PEC], U.S. Army Center for Health Promotion and Preventive Medicine [CHPPM], the USAF Population Health Support Division [PHSD], USAF Institute for Environmental, Safety, and Occupational Health Risk Analysis [IERA], Navy Environmental Health Center [NEHC], Uniformed Services University of Health Sciences [USUHS], and TMA, among many others) operating within the MHS. Activities supporting a total community approach to population health will be added to the MHS OPHSC after initial stand-up.

Functions

Knowledge Management and Transfer

The OPHSC will provide centralized population health program support to the MTF staff (primary customer), MCS contractors, Service intermediate commands, Regional Lead Agent offices, and the Service Surgeons General. It will maintain a central clearinghouse for population health knowledge. It will make available information on current programs, policies, and points of contact for population health and optimization activities across the MHS. The Center will also collect and share population health and optimization innovations. These functions will be accomplished through a web-page and by telephone access to OPHSC personnel.

The OPHSC will provide essential support for the Population Health Improvement Plan by:

- Identifying, evaluating and disseminating clinical and business tools,

- Operating a robust information center,
- Procuring and disseminating population health and condition and disease management tools, and
- Assisting MTFs with health data and information needs (turning data into information).

Primary activities will include:

1. Operating a centralized help desk (three-tiered) as a single entry point of service to assist MTF commanders and staff in implementing best clinical and business practices, to most effectively and efficiently meet the needs of beneficiaries.

a) Tier one - telephone/e-mail/Web-based resource support
b) Tier two - research and networking support
c) Tier three - on-site support for training and implementation guidance

2. Assisting MTFs in selecting the best implementation strategies for their installation.
3. Assisting MHS leadership and DoD-level policy-makers responsible for making evidence-based, population-health management decisions, by accessing or centrally acquiring (when necessary) pertinent data, analyzing and interpreting the data, and providing timely recommendations. Relevant information will be "pushed," via Web-based technology and other electronic means to MTFs, Regional Lead Agent offices, Service intermediate commands, and higher headquarters.
4. Providing functional input to the MHS IM/IT communities

a) Facilitating centralized MHS data collection, maintenance, analysis, and reporting for HEAR 1.0/2.0, immunization tracking, and PPIP.
b) Serving as the coordination center for health-surveillance systems (in garrison and during deployment).
c) Facilitating development and implementation of methodologies that improve MHS population-health data quality.

Support for Regional Lead Agent Population Health Offices

The MHS OPHSC will facilitate the MHS Population Health Work Group comprised of representatives from each Region. It will cascade relevant information and issues through Regional Lead Agent and Service intermediate command population health offices to MTFs. It will also collect, analyze and evaluate issues

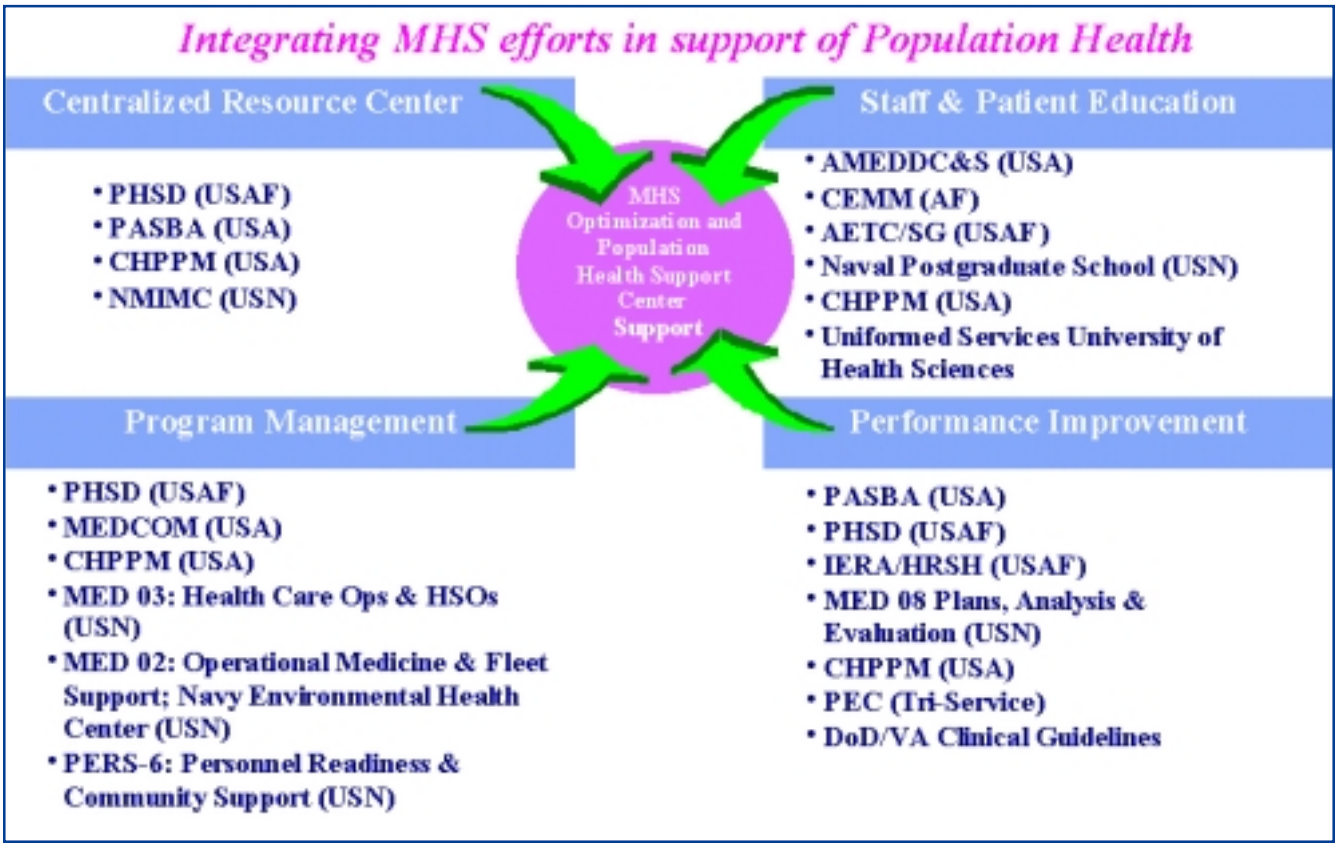


Figure 12. Integrating and Coordinating Enterprise Population Health Improvement Support Capacity

from Region and intermediate command offices for communication to MHS and Service leadership.

Program Management

The OPHSC will integrate or coordinate many of the programs aimed at improving the delivery of preventive services and the management of clinical and disease conditions. Examples of existing programs to develop or implement tools for MHS-wide use include Self-Reporting Tools/Health Evaluation Assessment Review (HEAR), Put Prevention Into Practice (PPIP), VHA/DoD Clinical Practice Guidelines (CPG), and disease and condition management. Integrating and coordinating these and future programs will require OPHSC to perform several functions:

1. Establishing a centralized activity for selecting, adapting, coordinating, implementing, and sustaining tools and resources throughout the MHS;
2. Assuring compliance with programs and recommendations of the Prevention, Safety, and Health Promotion Council (PSHPC);
3. Coordinating with ASD/HA, TMA, and Surgeons General regarding policy;
4. Planning, budgeting, and monitoring program activities;
5. Developing the infrastructure to identify and adapt interventions and tools, identify outcomes, measure change, and sustain program development;
6. Providing consultation to Regional Lead Agent offices, MTFs, Services, Service intermediate commands, Managed Care Support Contractors, and others;
7. Documenting and aggregating needs from the field;
8. Coordinating and partnering with newly developing MHS "Centers of Excellence" and other benchmark organizations and leveraging their lessons learned, innovations, marketing strategies, and education/training capabilities.

Patient and Staff Education

Changing individual behavior is difficult at best. The majority of medical conditions seen today are a result of unhealthy lifestyle choices. Patient education is essential to modifying risk factors that adversely impact health. Clinical re-engineering and local implementation of population health improvement efforts require just-in-time education of clinical personnel in condition/disease management, patient education, and health care integration skills. Activities include:

1. Evaluating the effectiveness of existing officer and enlisted training in teaching principles of population health;
2. Identifying assessment tools to measure knowledge, attitudes, and skills of health-care workers in population health;
3. Identifying and implementing, in cooperation with Service education and training agencies, required pipeline and just-in-time training courses in population health, disease/condition management, and other topics, as required;
4. Providing MTF decision support personnel with central and on-site training in all aspects of population health as needed to develop local expertise, possibly using the train-the-trainer approach;
5. Utilizing web-based technology to provide distance learning in selected population health areas; develop a library of courses as the needs are identified.

Performance Improvement: Actionable Information to Regions and MTFs

Finally, the OPHSC will ensure that health status and performance measurement reports are disseminated to Regional Lead Agent offices and MTFs for their enrolled populations. By coordinating many of the population-health data collection, analysis, and reporting functions, the OPHSC will help track trends in population health status, health risks, preventive services delivery, utilization, reportable diseases, occupational injuries and illnesses, etc.

Once developed and approved, specific condition and disease management outcomes will also be tracked and reported. The OPHSC will provide recommendations for policy development, research and special studies and program refinement, based on continuous monitoring of the various population health data sources. Activities will include:

1. Facilitating development of Provider Support Reports (PSR) to enhance the health-care delivery process; training local staff in this process as needed for local data access;
2. Coordinating IM/IT development and data issues;
3. Coordinating clinical practice improvement strategy development through integration of research and development programs within the MHS, to include demonstration projects and automation implementation endeavors in support of clinical practice (i.e. DoD/VA CPG

IPT);

4. Providing periodic updates to MTFs regarding data trends, metrics improvements, systems requirements, program changes, and related issues;
5. Monitoring the health care environment for performance improvements and best clinical practices for dissemination across the MHS;
6. Facilitating and supporting the development of population health marketing strategies;
7. Identifying education and training requirements for new population health programs, tools, or initiatives, in coordination with education/training agencies for each Service; facilitating central just-in-time training programs on population health, as needed;
8. Evaluating health services delivery systems within DoD and the civilian sectors to identify opportunities for system optimization within the MHS; and
9. Consulting for questions/concerns from MTFs and intermediate commands regarding expanding the roles of nurses, enlisted medical personnel, and other ancillary services personnel so they may function at the optimal level within their scope of practice.

Enterprise-wide Health Improvement Capacity

There is a great capacity in the MHS to support population health improvement and optimization activities described in this plan. This capacity is distributed among numerous offices in Headquarters, Regional Lead Agent offices, and other offices. Figure 12 displays some of the offices where this great capacity resides. A challenging function for the OPHSC is to facilitate integrating and coordinating the capacity across the enterprise to get the best health outcomes for the entire MHS beneficiary population.

Section VII.

Tables of Population Health Key Process Element Tools

Key Process Element 1. Identify the population	
TOOLS	
TITLE / DESCRIPTION	CONTACT
National Enrollment Database (NED)	http://www.tricare.osd.mil/pmo/programs/programs_main.html
Primary Care Manager By Name (PCMBN)	HA Policy: http://www.tricare.osd.mil/policy/ha00pol/clin00_001.html
Health Evaluation Assessment Review (HEAR)	HA Policy: http://tricare/policy/fy97/hear9703.html Implementation information is available under tools at https://phsd.afms.mil/phso/.
Population Health Operational Tracking and Optimization (PHOTO)	http://photo.tma.osd.mil
Survey of Health Related Behaviors	http://www.tricare.osd.mil/tricaresurveys/surveys01.htm
All-Region Server (ARS) Bridge	http://www.eids.ha.osd.mil
Defense Medical Surveillance System (DMSS)	http://www.amsa.army.mil
Air Force Assistance With Enrollment	Air Force enrollment support available under tools at https://phsd.afms.mil/phso/.

Key Process Element 2. Forecast Demand	
TOOLS	
TITLE / DESCRIPTION	CONTACT
Health Evaluation Assessment Review (HEAR)	HA Policy: http://tricare/policy/fy97/hear9703.html Implementation information is available under tools at https://phsd.afms.mil/phso/.
Utilization Review (UR)	HA Policy and Guide: http://tricare.osd.mil/policy/fy98/umpd9831.html
Air Force forecasting Tool	https://phsd.afms.mil/phso
Navy Population Health Navigator	Navy personnel should contact NMIMC regarding the Population Health Navigator (CDR Mark Turner at mailto:mdturner@us.med.navy.mil).
Managed Care Forecasting and Analysis System (MCFAS)	http://www.eids.ha.osd.mil
Healthcare Complex Model	Contact service representative at: http://www.tricare.osd.mil/opt_int/PHIT_Member.htm
All-Region Server (ARS) Bridge	http://www.eids.ha.osd.mil

Key Process Element 3. Manage Demand	
TOOLS	
TITLE / DESCRIPTION	CONTACT
Telephone Advice	HA Policy: http://www.tricare.osd.mil/policy/fy97/hcil9749.html
Put Prevention Into Practice (PPIP)	HA Policy: http://www.tricare.osd.mil/policy/fy98/ppip9827.html Implementation information: http://www.ahcpr.gov/clinic/ppipix.htm
Air Force Population Health Data CD	https://phsd.afms.mil/phso/
Navy Population Health Navigator	Navy personnel should contact NMIMC regarding the Population Health Navigator (CDR Mark Turner at mailto:mdturner@us.med.navy.mil).
Health Evaluation Assessment Review (HEAR)	HA Policy: http://tricare/policy/fy97/hear9703.html Implementation information is available under tools at https://phsd.afms.mil/phso/.

Key Process Element 4. Manage Capacity	
TOOLS	
TITLE / DESCRIPTION	CONTACT
Template Analysis Tool (TAT)	http://www.tricare.osd.mil/tools
Navy tools	Available through: https://bumed.med.navy.mil/med03/tools/default.asp
Air Force tools	Available through: https://phsd.afms.mil/phso/
Health Care Reengineering	http://www.tricare.osd.mil/hcr
Primary Care Manager, By Name (PCMBN)	HA Policy: http://www.tricare.osd.mil/policy/ha00pol/clin00_001.html
DOD/VA Clinical Practice Guidelines (CPGs)	http://www.cs.amedd.army.mil/qmo/Home.htm

Key Process Element 5. Evidence-Based Primary, Secondary, and Tertiary Prevention	
TOOLS	
TITLE / DESCRIPTION	CONTACT
Health Promotion	Army: http://chppm-www.apgea.army.mil/dhpw Navy: http://www-nehc.med.navy.mil/hp/index.htm Air Force: https://www.afms.mil/op_prev/hlthprom.cfm
Evidence-Based Medicine	http://cebm.jr2.ox.ac.uk
Put Prevention Into Practice (PPIP)	HA Policy: http://www.tricare.osd.mil/policy/fy98/ppip9827.html Clinicians Handbook: http://www.odphp.osophs.dhhs.gov/pubs/guidecps/ Army program: http://chppm-www.apgea.army.mil/dhpw Navy program: http://www-nehc.med.navy.mil/hp/index.htm Air Force program: https://phsd.afms.mil/phso/
DOD/VA Clinical Practice Guidelines (CPGs)	http://www.cs.amedd.army.mil/qmo/Home.htm Army implementation: http://www.cs.amedd.army.mil/qmo/Home.htm Navy implementation: https://bumed.med.navy.mil/med03/ebm Air Force implementation: https://phsd.afms.mil/phso/
National Guidelines Clearinghouse	http://www.guidelines.gov

Key Process Element 6. Community Outreach	
TOOLS	
TITLE / DESCRIPTION	CONTACT
Healthy People 2010	http://www.health.gov/healthypeople/
Guide to Community Preventive Services	http://www.thecommunityguide.org
Air Force Health and Wellness Centers	http://www.afms.mil/op_prev/hlthprom.cfm
Air Force Family Advocacy	http://www.afms.mil/com_prev

Key Process Element 7. Analyze Performance and Health Status	
TOOLS	
TITLE / DESCRITION	CONTACT
Population Health Operational Tracking and Optimization	http://photo.tma.osd.mil/
TRICARE Operational Performance Statement (TOPS)	http://www.tricare.osd.mil/reptcard/tops/topsrept.html
DOD/VA CPG's	http://www.cs.amedd.army.mil/qmo/Home.htm
Air Force Metrics	http://p2r2va.tma.osd.mil
Air Force quarterly MTF data products	https://phsd.afms.mil/phso/
Population Health Navigator	Navy personnel should contact NMIMC (http://navmedinfo.med.navy.mil/) regarding the Population Health Navigator (CDR Mark Turner at mailto:mdturner@us.med.navy.mil).
Army Medical Information Management products	Patient Administration Systems and Biostatistics Activity (PASBA): http://www.pasba.amedd.army.mil/ U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM): http://chppm-www.apgea.army.mil/
TRICARE Operations Center (TOC)	http://www.tricare.osd.mil/tools.