

Clinical Epidemiology and the Next Generation of TRICARE Contracts

CAPT Stephen G. Hooker, MC, USN
CAPT Richard L. Buck, MC, USN
CAPT Bruce R. Christen, MC, USN
Genice H. Beightol

The summer of 2003 marked the fifth anniversary of the Navy Clinical Epidemiology Program (CEP). This program is a unique effort to facilitate the use of epidemiological principles and data to assist in optimizing Navy medicine. The importance of this program will increase as we look to the next generation of TRICARE contracts.

History

There were a number of key individuals involved in the birth of clinical epidemiology. CAPT Richard Buck, currently the commanding officer of Naval Hospital Pensacola, proposed this concept in 1996. With the advocacy of people such as RADM Robert Higgins, MC (Ret.), who served as the Deputy Surgeon General of the Navy, and RDML Robert D. Hufstader, the current Medical Of-

ficer of the Marine Corps, the concept developed a firm foundation of support. The first clinical epidemiologist was assigned to Naval Hospital Bremerton in 1998.

Clinical epidemiology applies principles of epidemiology to assist in optimizing medical services. A proper understanding and use of data and information maximizes the efficiency and effectiveness of healthcare programs leading to improved outcomes and better management of resources. Clinical epidemiology's combination of data and programmatic expertise allows this specialty to consult and collaborate with virtually every department within a healthcare organization. In particular, clinical epidemiology is a valuable tool for addressing disease management programs, clinical practice guidelines, JCAHO's ORYX* core measurements, provider-specific

performance measures, infection control, risk management, patient safety, credentials, and other key functions of a healthcare organization. A summary of roles and responsibilities for clinical epidemiology are listed below.

Table 1. Roles and Responsibilities of a Clinical Epidemiology Office/Department

A clinical epidemiology office can provide support and consultation for:

- Managing data to include appropriate ways of collecting, analyzing, and utilizing data.
- Understanding and utilizing data programs such as Population Health Operational Tracking and Optimiza-

*ORYX® is the name of the Joint Commission's initiative to integrate performance measures into the accreditation process. The ORYX® initiative is a data-driven, continuous survey and accreditation process that complements JCAHO's standards-based assessment.

tion (PHOTO)* and the Population Health Navigator.

- Assisting the medical staff in identifying practice patterns and variations.

- Developing, implementing, and managing disease management programs and evidence-based clinical practice guidelines.

- Developing provider-specific performance measures.

- Assisting utilization management, case management, quality management, risk management, patient safety, and credentials.

- Collaborating on infection control, preventive medicine, and health promotion programs, particularly, as they relate to surveillance and response.

- Interpretation and utilization of JCAHO ORYX® data and special studies from the National Quality Management Program (NQMP).

The following examples illustrate the principles of clinical epidemiology in action: collecting and analyzing data from a population of patients and implementing a program to improve the health of the individual and the population.

Example 1. In 1998 a random record review at Camp Lejeune revealed that only 47 percent of the enrolled female population over the age of 50 had received a mammogram in the past 2 years. After implementing a local data warehouse, processes to extract data from the Composite Healthcare System (CHCS) and a patient contact strategy, the rate of mammogram compliance has in-

*A new metrics driven datamart designed to provide MHS personnel easy access to performance measurement information identified by the Tri-Service Metrics Workgroup in managed care, readiness, and wellness/prevention.

creased to near 70 percent and continues to climb. Reminder letters are sent to enrolled women over age 50 in their birth month who have not had a mammogram in the past 18 months. Patient level data is also provided directly to the primary care team related to mammogram compliance on their enrolled population.

47 percent over the age of 50 had received a mammogram in 1998

70 percent over the age of 50 had received a mammogram in 2003

Example 2. In 1999 Naval Hospital Pensacola implemented a clinical practice guideline for acute dysuria which included a nurse triage protocol. This effort was coordinated by the clinical epidemiology office and several members of the medical staff. The benefits of this disease management program included improved quality of care and resource management. For example, from October 1999 through March of 2002, there was a 36 percent reduction in pharmacy and lab costs for an estimated savings of \$11,690.

Example 3. The Diabetes Management Program was established at Naval Hospital Bremerton (NHB) in April 2001. The program has identified about 1,000 diabetics at NHB that are cared for in a multi disciplinary team approach. In a little over 2 years the results have been outstanding. The outcomes at NHB are better than 90 percent of all health plans that report to the National Committee for Quality Assurance in all of the outcomes measured for diabetes. A list of the measurements and the improvements that have occurred since the program began are in the Example 3 table.

The above examples represent interventions involving a clinical preven-

Medical Treatment Facility	Clinical Epidemiologist in Billet
National Naval Medical Center	No
Naval Hospital Bremerton	Yes
Naval Hospital Camp Pendleton	No
Naval Hospital Great Lakes	Yes
Naval Hospital Jacksonville	Yes
U.S. Naval Hospital Okinawa	No
Branch Medical Clinic Pearl Harbor	Yes
Naval Hospital Pensacola	Yes
Naval Medical Center Portsmouth	Yes
Naval Medical Center San Diego	Yes

tive service, an acute illness, and a chronic disease—an important balance as we seek to prevent diseases, intervene early in illnesses, and mitigate the effects of chronic diseases. Many other disease and injury prevention and management programs and initiatives have been implemented at medical treatment facilities (MTFs) throughout the Navy—and many more can be. These efforts are helping to improve the quality of care given to our beneficiaries and the management of our resources. Clinical epidemiology has played a vital role in coordinating, facilitating, and supporting many of these efforts.

EXAMPLE 3	PERCENT APRIL 01	PERCENT MAY 03
HgbA1c tested in past 12 mos	84	92
HgbA1c > 9.5 percent (lower is better)	17	15
LDL tested in past 24 mos	75	98
LDL < 130 in past 24 mos	55	76
Dilated retinal exam in past 12 mos	60 (Nov 01)	75
Microalbuminuria tested in past 12 mos	68 (Dec 02)	75

Current Status

The Navy CEP is managed by the Navy Environmental Health Center (NEHC) in Portsmouth, VA. NEHC has provided leadership through training, marketing, and recruitment. Every year NEHC sponsors medical informatics training for those working in clinical epidemiology.

Currently, 7 of the 10 clinical epidemiologist billets located in Navy MTFs are filled (Table 2). Most of these positions are occupied by physicians from the general preventive medicine community. However, Medical Corps officers from any specialty who have a graduate degree in public health or a comparable degree are eligible for these billets.

The Future

There are many exciting challenges in the future. These challenges are currently being addressed by the clinical epidemiology leadership and include:

- *Clarifying the purpose and role of clinical epidemiology.* The concept and implementation of clinical epidemiology needs to be clearly pre-

sented to senior leadership and the medical and administrative staffs of MTFs. An improved model and more aggressive marketing will help to communicate the potential value of this program.

- *Organizational Placement.* MTFs have placed the clinical epidemiology function in different areas in the organization. Ideally, wherever it is placed, a clinical epidemiology office or department should be allowed to serve as a consultant throughout the healthcare organization and as a bridge between administrative and clinical services.

- *Manpower.* The Navy CEP needs a source for manpower. As a part of a specialty community, such as preventive medicine, the program could compete for training billets. Also, civilian and contracted epidemiologists and healthcare data analysts are a source of manpower for clinical epidemiology offices and departments.

- *Training.* Clinical epidemiology is a relatively new and revolutionary discipline. Therefore, it is essential to provide "crest of the wave" training in evidence-based medicine,

healthcare epidemiology, healthcare management, and data management and analysis to those working in this field.

- *Leadership.* NEHC will continue as the program manager leading in program development, training, and marketing. Working with groups, such as the BUMED Evidence-Based Health Care Advisory Board, Healthcare Support Offices, and specialty communities, such as preventive medicine, can facilitate the development and the contributions of the Navy CEP.

Summary

The CEP is only 5 years old. Yet, it has demonstrated an ability to improve the performance of Navy MTFs by using epidemiological skills to help build and manage programs throughout the healthcare spectrum. With greater changes to the healthcare system on the horizon, clinical epidemiology can become an increasingly valuable resource to the future of Navy medicine. As CAPT Buck observes, "As successful as the clinical epidemiology program has been in its first 5 years, its services will be even more valuable as we enter into the next stage of TRICARE contracts." □

Dr. Hooker is assigned to the Clinical Epidemiology Department, Naval Hospital Pensacola, FL.

Dr. Buck is Commanding Officer, Naval Hospital Pensacola, FL.

Dr. Christen is assigned to the Clinical Epidemiology Department, Naval Hospital Bremerton, WA.

Ms. Beightol is Head, Health Promotion Department, Naval Hospital Camp Lejeune, NC.