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US Public Health Service Commissioned Corps Nurses: Responding in Times of National Need

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- US Public Health Service Emergency preparedness
- Disaster response Public health service nursing
- Commissioned Corps

THE US PUBLIC HEALTH SERVICE

The overarching mission of the Commissioned Corps of the US Public Health Service (PHS) is to protect, promote, and advance the health and safety of the nation. The Corps comprises more than 6400 active-duty public health professionals who develop and implement a broad range of public health programs. Being one of America's 7 uniformed services (**Box 1**), it fills essential public health leadership and service roles within major federal agencies and programs. The Corps is a vital component of the PHS, the largest public health program in the world. This article presents an overview of the PHS and how Commissioned Corps officers respond during times of national and global need.

Disclaimer: The views expressed in this article do not necessarily represent the views of the US Department of Health and Human Services, US Public Health Service, Food and Drug Administration, or the National Institutes of Health or the US government.

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Box 1

The 7 uniformed services of the United States^a

- US Army (1775) (Department of Defense)
- US Marine Corps (1775) (Department of Defense)
- US Navy (1775) (Department of Defense)
- US Coast Guard (1790) (Department of Defense)
- US Public Health Service (1798) (Department of Health and Human Services)
- National Oceanic and Atmospheric Administration (1807) (Department of Commerce)
- US Air Force (1947) (Department of Defense)
- ^a Based on chronology of founding.

A Historical Overview of the PHS and the Commissioned Corps

Like other uniformed services, the PHS has a long and impressive history. The federal focus on public health began in 1798 when an act of the Fifth Congress of the United States established the Marine Hospital Service (1798–1902), whose purpose was to provide health care for sick and diseased seamen. In 1870, it was reorganized by combining all its hospitals under a centralized administration headquartered in Washington, DC. John Maynard Woodworth was appointed as the first supervising surgeon of the Marine Hospital Service; this position later became the US Surgeon General. Woodworth adopted a military model for his physicians, requiring them to wear uniforms and pass examinations.

In 1889, the Commissioned Corps was officially authorized, and initially only medical officers were permitted to join; later it was expanded to allow the admission of other health professionals. The officers were given the same titles and pay as officers in other uniformed services, in accordance with the US Army and US Navy pay scales. The Marine Hospital Service evolved into the Public Health and Marine Hospital Service (1902–1912), and the official name was changed to Public Health Service in 1912.³

PHS Commissioned Corps Nurse Category

The Public Health Services Act of 1944 authorized the commissioning of nurses and other health care professionals to the Corps.² Restructuring of the PHS in 1949 created the position of Chief Nurse Officer (CNO) with the rank of Assistant Surgeon General (Rear Admiral) in the Office of the Surgeon General (OSG). Lucile Petry Leone became the first nurse to serve in this position and the first woman to achieve flag rank in the PHS or in any other uniformed services of the United States.⁴ In addition to serving as the chief professional officer for the nurse category, the CNO, at present, provides advice to and works with the US Surgeon General on policy issues related to nursing and public health and represents the OSG and the PHS at groups at the state, national, and international levels and at professional societies concerned with these areas.

The different health professions are organized into sections called "categories." The nurse category is the largest in the Commissioned Corps. As of July 9, 2009, there were 1504 Corps nurse officers holding positions in the United States and abroad. Most of them are assigned to operating divisions within the Department of Health and Human Services (DHHS); the rest are detailed to other federal agencies

(non-DHHS). The DHHS and non-DHHS agencies, descriptions of the nurses' duties, and the number of nurses assigned are outlined in **Box 2** and in **Table 1**. Nurse officers provide direct care or perform administrative duties. For example, they provide direct clinical care in the Indian Health Service (IHS) and community health centers, the Department of Justice's Federal Bureau of Prisons (BOP), and US Marshals Service and the Department of Homeland Security's Division of Immigration Health Services. About 30% of PHS nurses have previous military experience. They transfer from other uniformed services, such as the Army or Navy, through a mechanism known as an "interservice transfer."

To qualify as an officer in the Corps, PHS nurses must have at least a baccalaureate degree in nursing. Unlike the military services, the PHS has no enlisted members. Career progression is encouraged. To be competitive for promotion to higher ranks, nurse officers are advised to pursue advanced degrees and training in nursing or health-related disciplines, such as public health.

THE NATION'S HEALTH DEPARTMENT

"The Department of Health and Human Services is the US federal government's principal agency for protecting America's health by providing essential human services, especially to those Americans who are least able to help themselves."

The PHS is the primary division of the DHHS. The DHHS consists of the Office of the Secretary, staff offices, and 11 operating divisions (also known as agencies). Staff offices and operating divisions report directly to the secretary for health and human services. The DHHS includes approximately 300 programs, covering a wide spectrum of public health and science activities, such as health and social science research to prevent disease and to assure food and drug safety, and the Medicare and Medicaid programs. Most nurses are assigned to the operating divisions. In addition, the DHHS is responsible for medical preparedness for emergencies, including potential terrorist attacks.

Box 2 Examples of Commissioned Corps nurses' duties

- Perform traditional clinical services, including inpatient and outpatient care, ranging from newborn care to geriatric services, from obstetrics to orthopedics, from prevention services to chronic disease care or acute disease management
- Conduct research
- · Manage the review and approval of drugs and medical products
- Respond to public health emergencies
- Develop and implement national health policies
- Develop and implement clinical practice guidelines and evidence-based reports on health
- Coordinate prevention and education efforts on various public health issues
- Develop nursing training and education programs for basic and advanced practice nurses
- In some assignments, the focus is on improving clinical care for an entire community of
 patients. Although there is plenty of direct patient care, there are opportunities to work on
 organized national disease prevention and health promotion programs that can make an
 impact on disease rates, health disparities, and lives of individual patients

Name of DHHS Agency (Number of Nurses Assigned)	Agency Mission	Name of Non-DHHS Agency (Number of Nurses Assigned)	Agency Mission
Administration of Children and Families (ACF) (3)	The ACF within the DHHS is responsible for federal programs that promote the economic and social well-being of families, children, individuals, and communities	Federal Bureau of Prisons (BOP) (291)	The BOP is responsible for the custody and care of more than 204,000 federal offenders Approximately 82% of these inmates are confined in its operated facilities, whereas the remaining are confined in secure, privately managed or community-based facilities and local jails
Agency for Healthcare Research and Quality (AHRQ) (3)	AHRQ's mission is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans Information from AHRQ's research helps people make informed decisions and improve the quality of health care services. AHRQ was formerly known as the Agency for Health Care Policy and Research	Department of Homeland Security (DHS) (190)	The DHS's overriding and urgent mission is to lead the unified national effort to secure the country and preserve our freedom
Agency for Toxic Substances and Disease Registry (ATSDR) (3)	The ATSDR serves the public by using the best science, taking responsive public health actions, and providing trusted information to prevent harmful exposures and diseases related to toxic substances	Department of Defense (DOD) (10)	The DOD, which includes the Army, Navy, Marines, Coast Guard, and Air Force, serves to protect and defend the citizens and the Constitution of the United States
Centers for Disease Control and Prevention (CDC) (48)	The CDC collaborates to create the expertise, information, and tools that people and communities need to protect their health—through health promotion; prevention of disease, injury, and disability; and preparedness for new health threats	Environmental Protection Agency (EPA) (1)	EPA leads the nation's environmental science, research, education, and assessment efforts. Its mission is to protect human health and the environment. Since 1970, EPA has been working for a cleaner, healthier environment for the American people

Centers for Medicare and Medicaid Services (CMS) (47)	The mission of the CMS is to ensure effective, up-to-date health care coverage and to promote quality care for beneficiaries	US Marshals Service (USMS) (23)	The USMS is the enforcement arm of the federal courts, and as such, it is involved in virtually every federal law enforcement initiative. Nurses serve to promote prisoner health
Food and Drug Administration (FDA) (141)	The FDA protects consumers and enhances public health by maximizing compliance of its regulated products and minimizing the risk associated with them		
Health Resources and Services (HRSA) (51)	HRSA provides national leadership, program resources, and services needed to improve access to culturally competent, quality health care		
Indian Health Service (IHS) (506)	Responsible for providing federal health services to American Indians and Alaska natives		
National Institutes of Health (NIH) (110)	NIH is the nation's medical research agency, making important medical discoveries that improve health and save lives		
Office of the Secretary (OS) (46)	The OS covers the mission of the DHHS, as well as the oversight for its more than 300 programs		
Program Support Center (PSC) (21)	The PSC has a long tradition of providing support services to all components of the DHHS and other federal government agencies worldwide The PSC's broad range of more than 60 service and product offerings includes administrative operations, financial management, occupational health, human resources, and strategic acquisitions		
Substance Abuse and Mental Health Services Administration (SAMSHA) (10)	The focus of SAMSHA is on building resilience and facilitating recovery for people at risk for mental or substance abuse disorders		

To understand the role of Corps nurses, one must be familiar with the structure of the DHHS. They work in billeted positions that are related to the mission of the organization. For example, most nurses are assigned to the IHS (n = 506) and the BOP (n = 291). In the IHS, nurses work in clinical nursing jobs, providing care to members of the tribal organizations. In the BOP, most nurses are advanced practice nurses, and they provide primary care to the inmate populations.

How the Commissioned Corps Nurses Respond in Times of Need

Since 1798, the PHS has responded to domestic and global emergencies. Earlier, responses focused on epidemics and contagious diseases, such as smallpox, yellow fever, and cholera. At present, multidisciplinary teams respond to domestic and international humanitarian missions. Recent events include caring for Kosovo refugees as they arrived on US soil; workers at the site of the September 11 terrorist attacks in New York, New York (Fig. 1); and victims of the 2004 and 2005 tsunamis and earthquakes in Indonesia, as well as the 2005 hurricanes, Katrina and Rita.

How Deployments are Authorized Within DHHS

Different offices within the DHHS collaborate to provide assistance during disasters. Descriptions follow regarding 3 of the offices and their roles.

The Office of the Assistant Secretary for Preparedness and Response

Members of the Office of the Assistant Secretary for Preparedness and Response (ASPR) are the DHHS secretary's principal advisory staff for bioterrorism issues and other public health emergencies. ASPR coordinates interagency activities between DHHS, other federal departments, agencies, and offices and state and local officials



Fig. 1. A PHS nurse cares for a steel worker during the September 11 terrorist attacks in New York, New York (September 2001).

who are responsible for emergency preparedness and for protecting civilians from acts of bioterrorism and other public health emergencies.

The Offices of the Surgeon General and Public Health and Science

Within the Office of Public Health and Science is the OSG. It is within this office that the Commissioned Corps officers execute the emergency response component of their role in the PHS and the US government.

The Office of Force Readiness and Deployment

Housed in the OSG, the Office of Force Readiness and Deployment (OFRD) is responsible for training and deploying Corps officers during times of national and international public health need. OFRD has 3 major purposes:

- Build, monitor, and maintain the readiness capacity within the Corps;
- Ensure that officers are trained, protected, and ready to address urgent public health and medical needs; and
- Provide a rapid and effective response to domestic and international public health emergencies.

To ensure basic readiness to respond during times of national need, all Corps officers must meet readiness standards. To be qualified for deployment, minimum requirements must be met. The Corps officers must (1) have a current professional nursing license, (2) have a current Basic Life Support (BLS) certification, (3) have completed the Readiness Training Modules, (4) have received a current physical examination and medical history, (5) have received current immunizations, and (6) have passed the annual physical fitness test.

Nurses have a primary obligation to their assigned agency, but they also have responsibilities to the Corps. In addition to daily agency work, nurse officers are called to serve in temporary assignments. These may occur during war, such as backfilling as staff for deployed Department of Defense nurses at military treatment facilities, or in response to a national or public health emergency declared by the US president or the secretary of DHHS. Other occasions might include a response to an urgent public health need, such as critical staffing shortages causing a threat to the public health of a state, tribe, or local community, or a national security event declared by the secretary of Homeland Security.

COMMISSIONED CORPS RESPONSE TEAMS

The OFRD manages emergency response teams that are an essential part of the Corps and the PHS. Examples of such teams include a Rapid Deployment Force (RDF), an Applied Public Health Team (APHT), and an Incident Response Coordination Team.

The RDF provides mass casualty care that includes primary care, mental health, and public health services for a sheltered population. These teams may staff a Federal Medical Station (FMS) or a point-of-distribution operation where they provide mass prophylaxes and vaccinations. Other duties encompass providing medical surge capacity for local or state hospital or health facilities, isolation and quarantine prehospital triage, community outreach, and worldwide humanitarian assistance.

The APHT is composed of experts in public health assessments, environmental health, infrastructure integrity, food safety, vector control, epidemiology, and surveillance. The Incident Response Coordination Team performs liaison functions involving administration and finance logistics, communications, and planning.

Examples of services provided by the Commissioned Corps response teams during times of national and international need include

Public health initiatives

Immunizations;

Food, water, and wastewater system assessments;

Veterinary services; and

Epidemiologic/public health consultation

Direct medical care

Primary/consultative care for children and adults;

Dental care (eg, sealants, varnishes, restorations, and extractions); and

Pharmacy support

Infrastructure support

Basic biomedical repair and training; and

Environmental engineering

· Public health education

Basic nursing skill training;

Hand hygiene; and

Basic life support, advanced cardiac life support, and pediatric advanced life support.

The OFRD designed a 4-tiered structure to deploy these teams. Teams in Tiers 1 and 2 include the RDF, the APHT, and the Mental Health Team (MHT). Tier 3 includes Corps officers who augment teams or mobilize as individual units when necessary. Tier 4 consists of Inactive Reserve and Medical Reserve Corps officers. **Table 2** depicts the tier structure and responsibilities within each tier.⁵

ROLE OF THE STRATEGIC NATIONAL STOCKPILE AND THE NATION'S FEDERAL MEDICAL STATIONS

Through DHHS, the Centers for Disease Control and Prevention (CDC) operate the Strategic National Stockpile (SNS). The SNS contains large quantities of medicine and medical supplies to protect the public when local supplies are depleted in case of a severe health emergency. Once federal and local authorities agree that the SNS is needed, medications and supplies can be delivered to any state within 12 hours. Each state is required to develop plans to receive and distribute the provisions to local communities as quickly as possible.

The CDC also maintains a cache of the FMSs, which are mobile units of medical supplies, equipment, and health care providers that provide medical care for evacuees with special needs. Each medical station has beds, supplies, and medicine to treat 250 people for a period determined by state and local needs without drawing resources from the host community.

As an integral part of emergency response, the FMSs provide surge capacity to undergird medical and public health systems that may be overwhelmed by mass casualties or displaced persons. The FMSs were originally intended to provide deployable medical capabilities (eg, equipment, materials, and pharmaceuticals) to assist hospitals in meeting surge requirements. Federal personnel staff the stations when deployed in support of regional, state, or local venues. Even when FMSs were in the early developmental stages, they were used in response to hurricanes Katrina and Rita. Ten 250-bed adaptations of the stations were created within days of Hurricane Katrina. Although the FMSs were designed to be staffed by federal personnel, they were adapted during the hurricanes to support state-run medical needs shelters. Current plans

Table 2 Commiss	Table 2 Commissioned Corps response team structure						
Tier	Team Characteristics and Responsibilities						
Tiers 1 and 2	The RDF teams: Report within 12 h On call every 5 mo 125 officers on the team (with specialists in clinical health, mental health, and applied public health)	The APHTs: Report within 36 h On call every 5 mo, with half the team serving as primary contacts 47 officers on each team	The MHTs: Report within 36 h On call every 5 mo 26 officers on each team				
Tier 3	 Officers not assigned to Tier 1 or 2 teams Have technical and subject matter expertise Are "mission critical" employees—those designated by their agency to be nondeployable except in catastrophic circumstances 						
Tier 4	Inactive Reserve Corps • Exists to provide surge capacity during times of acute need and to fill critical staffing shortages that may impair the service's ability to carry out the mission	Medical Reserve Corps • Exists to improve the health and safety of communities across the country by organizing and using public health, medical, and other volunteers					

are to expand the program to include stations that are specifically designed to support the states in providing care to evacuee populations with chronic medical conditions. As FMSs continue to develop, there is ongoing discussion regarding their use as quarantine stations in the event of a pandemic influenza epidemic.

COMMISSIONED CORPS NURSES DEFENDING THE PUBLIC HEALTH—ACTUAL DEPLOYMENTS

Since 1944, Commissioned Corps nurses have responded to domestic and international emergencies. **Table 3** shows examples of recent historic responses.

One of the largest PHS deployments to date occurred during 2005 in response to Hurricane Katrina in New Orleans, Louisiana. Hurricane Katrina was forecast to arrive on shore as a Category 5 storm. The Saffir-Simpson Hurricane Scale defines this type of hurricane as one with sustained winds greater than 155 mph. Fortunately, it weakened to a strong Category 4 storm before making landfall, with sustained winds of 125 mph. The PHS teams were deployed from Washington, DC, and Atlanta, Georgia, the day before the storm hit. An 800-bed field hospital was set up at the Pete Maravich Assembly Center, Louisiana State University in Baton Rouge, Louisiana, where the PHS nurses cared for more than 6000 patients during a period of 10 days. Hypertension and diabetes mellitus were the frequently diagnosed conditions. Nurses provided

Table 3 Examples of US PHS support missions	
PHS Missions	Date
Rwanda, Africa	1994
September 11 terrorist attacks, New York, New York	2001
Anthrax attacks, Washington, DC	2001
Fourth of July Celebration, National Capitol region, Washington, DC	2002
Tsumani, Southeast Asia	2002–2003
Winter Olympics, Salt Lake City, Utah	2002
Severe acute respiratory syndrome outbreak	2002–2003
Joint missions with the Department of Defense, Mercy Corps (a nongovernmental organization), current missions in South America	
Hurricane Katrina, Gulf States	2005
Hurricane Rita, Gulf States	2005
Hurricane Gustav, Texas and Gulf States	2008
2009 Presidential Inauguration, Washington, DC	2009
2009 State of the Union Address, Washington, DC	2009
H1N1 swine flu outbreak, Mexico and the world	2009

all levels of nursing care, from treating the most critical to the least critical, and caring for those with special needs.

The PHS also deployed Corps nurses to areas devastated by hurricanes like and Gustav in 2008.

One of the Corps nurses described the situation as follows:

"All of the PHS RDF teams deployed to hurricanes lke and Gustav serving people in Louisiana, Texas, and Mississippi. RDF 1 set up and staffed the Federal Medical Station in College Station, Texas. At times the census of these high acuity patients was over 330. Team members, regardless of discipline, worked together to provide care to all evacuees. PHS nurses provided nursing care, including triage, physical assessment, medication administration, wound care, IV access and fluid administration, and activities of daily living. The patient population was diverse with many chronic medical problems, such as heart disease, hypertension, diabetes, renal disease, asthma, and chronic obstructive pulmonary disease (COPD). There were numerous individuals who were non-ambulatory, as well as those who were morbidly obese and unable to perform self care.

Nurses were scheduled for 12-hour shifts, providing around-the-clock care and monitoring for all evacuees, with many individuals working more than their scheduled shifts. Evacuees arrived at all times of the day or night. They came by the busload, private auto, as well as ambulance. Several busloads of people arrived within minutes of each other, which caused a tremendous surge of people seeking care.

Prior to the team's arrival, a complete 'hospital' was shipped from the Strategic National Stockpile. When the team arrived, it had all of the supplies, ie, beds, pharmacy, laboratory equipment, ventilators, to get the Federal Medical Hospital up and running. The medical station was restocked as necessary in accordance with the ability to get supplies to the station" (Braun Michelle, Hurricane Gustav Deployment, Personal Quotation, 2008).

Recently, the PHS nurses served as team members during the 2009 presidential inauguration in Washington, DC (Fig. 2). The PHS deployed 256 officers from all



Fig. 2. The PHS nurses work side by side with Department of Defense and National Park Service personnel as they care for the 2009 presidential inauguration attendees.

disciplines to various locations, including the US Capitol grounds, along the National Mall, the headquarters of the DHHS, and assorted undisclosed locations. The primary on-site team was a PHS Tier 2 team, with additional staff assigned as needed. Approximately 100 members of this team were nurse officers who staffed first aid stations on the Mall or the US Capitol grounds. Others were assigned to medical stations in the DHHS building to distribute medication. In addition, the PHS nurses operated roaming BLS teams, walking in designated areas of the US Capitol and Mall. Teams were ready to provide needed care to thousands of people who attended the event. Given the diversity of the population, as well as the frigid weather conditions, the teams saw numerous cardiac, diabetic, hydration, and cold injuries. Approximately 750 patients were seen; Corps officers treated 697 of these patients, and 48% of the injuries were cold related.

The Corps also supports interservice, interagency health diplomacy initiatives as illustrated by its participation in Pacific Partnership 2009. This mission increased the operational capacity of US government personnel in delivering humanitarian assistance, which was given to developing countries and which focused on health promotion through performing public health assessments, conducting public health infrastructure repair, and providing training for indigenous health care workers.

In the past, the nurses were also part of the US Navy mission, Continuing Promise. During this humanitarian and civic assistance mission, Navy ships brought health care and other relief services to 8 Latin American and Caribbean nations. Humanitarian teams who served on the USS Kearsarge and USS Boxer provided medical care to 71,000 patients and conducted 348 surgeries and renovation projects. One of the participating nurses stated:

"During the fall of 2008, I was privileged to serve aboard the USS Kearsarge in support of Operation Continuing Promise 08. The USS Kearsarge was diverted from its original mission that was to the Dominican Republic. Instead, we helped with USAID relief efforts in Haiti after Hurricane Ike devastated the island. PHS officers performed health assessments; assessed water, supplies and sanitation; and immunized

children. Other teams were flown to remote sites to provide primary medical care and immunizations to populations in the countries visited.

In October, we resumed our original mission with Continuing Promise and went to the Dominican Republic. There we worked side by side local military and civilian providers, nongovernment offices, partner military, and civilian professionals to provide medical, dental, optometry, and veterinary care at several sites throughout the island. During the 14-day operation, we conducted nearly 750 dental exams, 35 surgeries aboard the ship, and more than 2100 optometry exams. We also saw more than 16,000 patients for primary medical care and filled over 31,600 prescriptions." (Braun, USPHS)

In April 2009 United States faced an outbreak of swine flu (H1N1) virus. As a consequence of confirmed cases of swine influenza A (swH1N1) in California, Texas, Kansas, and New York, the acting secretary of the DHHS determined that a public health emergency existed nationwide and that the virus had significant potential to affect national security. This threat continues and is expected to remain at the forefront of the 2009 to 2010 influenza season. Corps nurses will respond as ordered by the Surgeon General to assist with efforts to contain and minimize the effects of such an epidemic.

SUMMARY

The Commissioned Corps of the PHS is one of 7 uniformed services whose mission is to protect, promote, and advance the health and safety of the United States. The PHS has a long history of delivering health promotion and disease prevention programs to all Americans and promoting the nation's public health. Corps nurses are the largest health profession represented in the PHS and are called on to deploy and respond with identified teams to national and international crises and disasters. Nurse officers serve in leadership positions in agencies of DHHS and the federal government and continue to standby to protect and defend the public health of the nation. Like individuals enlisted in sister military services with unique missions, the PHS nurse may serve "in harm's way" to protect and defend public health during times of need. Times of need are exemplified by past national emergencies, such as the terrorist and anthrax attacks of 2001, the 2004 to 2005 tsunamis and earthquakes in Indonesia, Hurricane Katrina, and the continuing threat of the H1N1 virus (swine flu). The PHS nurses demonstrate readiness through proper training. They are ready and willing to deploy in clinical and administrative roles to augment and support existing infrastructure and communities.

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