

Vaccines, What NCOs Need to Know

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NCO Journal

Dec. 29, 2017



Spc. Michael Martinez, licensed practical nurse, 28th Combat Support Hospital, dons gloves prior to preparing influenza vaccines for Soldiers of Charlie Company, 2nd Brigade, 502nd Infantry Regiment, 101st Airborne Division, at the 28th CSH near Baghdad, Iraq, Nov. 9, 2016. The 28th CSH influenza vaccine campaign inoculated more than 300 Service members and was an important public health effort to maintain the health of Coalition forces working to weaken and defeat the Islamic State in Iraq. (U.S. Army photo by Capt. Erick Thronson)

Vaccines are among the most important accomplishments in medicine. Vaccines have saved more lives throughout the world than any other medical invention, including antibiotics or surgery. Only clean water has saved more lives than vaccines.¹

Historically, vaccines have been a part of Army life since the Revolutionary War. Today, Soldiers continue to receive a variety of immunizations against infectious diseases to maintain mission readiness.

Immunizations & the Army

George Washington gave the first immunization order for soldiers of the Continental Army because of the threat of infection and death from smallpox. British soldiers, having encountered the virus in Europe, were mostly immune to the disease but militiamen began dying in such large numbers that Washington went against his concerns over how long it took soldiers to recover and ordered his men to be inoculated.²

Soldiers also died in alarming numbers from Yellow fever during the Spanish-American War. Having ravaged harbor cities along America's east coast, starting in the 1600s, it is said that Napoleon Bonaparte sold the Louisiana Territory to the U.S. because of it. In 1897, President William McKinley established a scientific commission to study how to eradicate the disease because of its effects on Soldiers deployed to equatorial parts of the world.

Maj. Walter Reed, an Army physician who studied typhoid's effects on Soldiers in Cuba in 1900, headed the commission and established that mosquitos transmitted the virus. This discovery eventually led to the development of a vaccine, a variant which is still in use today.³

The Army continues to research the development of vaccines for diseases affecting Soldier readiness. They include dengue, hepatitis, E. malaria, and the human immunodeficiency virus 1.⁴

Preventative Medicine

Vaccines for a variety of diseases are a regular part of preventative medical procedures outlined in *Army Regulation 40-562, Immunizations and Chemoprophylaxis for the Prevention of Infectious Diseases*.

At a minimum, Soldiers on active duty are to be immunized against tetanus, diphtheria, pertussis, hepatitis A and B, varicella or chicken pox, measles, mumps, rubella, polio, and meningococcal.⁵ Of these shots, the TDAP immunization must be repeated every ten years in order to prevent lockjaw, heart failure, paralysis and the whooping cough caused, respectively, by tetanus, diphtheria, and pertussis. The meningococcal immunization must be administered every five years to prevent meningitis.

Since influenza has the ability to "shift" or "drift," as the Center for Disease Control refers to it, Soldiers are immunized annually against influenza.⁶ Shifting is a result of genetic and antigenic changes (i.e. the mixing of genetic material) among the four known flu viruses. These changes result in new flu virus strains every flu season, requiring the development of an updated vaccine to prevent infection.

Other immunizations Soldiers can receive, based on personal and occupational "risks" while on deployment, include anthrax, haemophilus influenza type b, Japanese encephalitis, pneumococcal, rabies, smallpox, typhoid and Yellow fever.⁷

NCO Responsibilities

It is a Soldier's duty to keep immunizations current in order to maintain personal readiness. NCOs are responsible for helping their Soldiers accomplish this by emphasizing the importance of immunizations as part of their in-processing brief.

Since not all NCOs have ready access to their Soldiers' health records, and in order to avoid having to monitor multiple Medical Protection System dashboards when they do, NCOs should consider asking their Soldiers to make a list of immunization dates for them to add to a spreadsheet for tracking.

- Health Tracker spreadsheet (/Portals/7/nco-journal/docs/Health-Tracker-Spreadsheet.xlsx) sample

"The purpose of MEDPROS is to monitor and maintain medical aspects of a Soldier's deployability. It promotes readiness, ensures compliance and maintains awareness of Soldiers' medical readiness status," said Capt. Estacy Porter, chief of Preventative Medicine, Munson Army Health Center, Fort Leavenworth, Kansas.⁸

NCOs should reinforce the need for their subordinates to regularly monitor their MEDPROS screen and review their personal "Overall Readiness Status." They should note that if the status reads either amber or red, their command chain is aware that they are not "fully medically ready."

Soldiers should also review MEDPROS after receiving an immunization in order to review the newly uploaded information for mistakes, help to maintain the correct readiness status, and avoid unnecessary immunizations.

Medical Readiness Profile for [redacted]

Overall Readiness Status: Green

Medical Readiness Indicators
■ DNA
■ Dental Readiness
■ HIV
■ Immunization Profile
■ Periodic Health Assessment
■ Vision Readiness
■ Hearing Readiness
■ DLC Indicator

Forms
■ Electronic Immunization Record
■ IMR Record
■ Hearing Record
■ DA 7655 - Vision Summary
■ Download My Profile (DA 3349)

Self-Service Links
■ 68W
■ Deployment Health Assessments



Herd Immunity

The principal known as "herd immunity" explains the importance of individual immunizations. According to the U.S. Department of Health & Human Services, "When a critical portion of a community is immunized against a contagious disease, most members of the community are protected against that disease because there is little opportunity for an outbreak."⁹

Porter gave an example of what occurs when the importance of "herd immunity" is ignored:

In 1974, Japan had a successful pertussis (whooping cough) vaccination program, with nearly 80 percent of Japanese children vaccinated. That year only 393 cases of pertussis were reported in the entire country, and there were no deaths from pertussis. But then rumors began to spread that pertussis vaccination was no longer needed and that the vaccine was not safe, and by 1976 only 10 percent of infants were getting vaccinated. In 1979 Japan suffered a major pertussis epidemic, with more than 13,000 cases of whooping cough and 41 deaths. In 1981 the government began vaccinating with acellular pertussis vaccine, and the number of pertussis cases dropped again.¹⁰

Being current with immunizations also supports the Army doctrine of survivability outlined in Army Doctrine Publication 4.0, which states that, "Survivability consists of a quality or capability of military forces which permits them to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission."¹¹

"Viruses don't respect borders, and they don't need visas," said World Health Organization's director general, Tedros Adhanom Ghebreyesus.¹²

An ounce of Prevention ...

It is sobering to consider that, in 2009, an influenza pandemic killed between 151,700 and 575,400 people.

Porter, drawing on information from the National Vaccine Information Center, emphasized the importance and fragility of the vaccine barrier separating the healthy from potential infection:

Every year, federal health agency officials try to guess which three flu strains are most likely to be prevalent in the U.S. the following year to determine which strains will be included in next year's flu vaccine. If they guess right, the vaccine is thought to be 70 to 90 percent effective in temporarily preventing the flu of the season in healthy persons less than 65 years old. For those over 65 years old, the efficacy rate drops to 30 to 40 percent but the vaccine is thought to be 50 to 60 percent effective in preventing hospitalization and pneumonia and 80 percent effective in preventing death from the flu.¹³

As Benjamin Franklin said, "An ounce of prevention is worth a pound of cure."¹⁴ Soldiers should take advantage of available preventative measures in order to avoid illness.

Notes

1. n.a., "Vaccine Preventable Diseases," *Health.mil*, n.d., <https://health.mil/Military-Health-Topics/Health-Readiness/Immunization-Healthcare/Vaccine-Preventable-Diseases?page=2#pagingAnchor> (<https://health.mil/Military-Health-Topics/Health-Readiness/Immunization-Healthcare/Vaccine-Preventable-Diseases?page=2#pagingAnchor>).
2. Andrew W. Artenstein, Jason M. Opal, Steven M. Opal, Col. Edmund C. Tramont, Georges Peter and Phillip K. Russell, "History of U.S. Military Contributions to the Study of Vaccines against Infectious Diseases," *Military Medicine* 170, 4:3 (2005): 3-4.
3. Andrew W. Artenstein, "History of U.S. Military Contributions," 6-7.
4. Andrew W. Artenstein, "History of U.S. Military Contributions," 10-11.
5. *AR 40-562, Appendix D*, (Washington, D.C.: Headquarters Departments of the Army, the Navy, the Air Force, and the Coast Guard, 2013).
6. "How the Flu Virus Can Change: "Drift" and "Shift," *Centers for Disease Control and Prevention*, n.d., <https://www.cdc.gov/flu/about/viruses/change.htm> (<https://www.cdc.gov/flu/about/viruses/change.htm>).
7. *AR 40-562, Appendix D*.
8. Capt. Estacy Porter.
9. "Community Immunity ('Herd Immunity')," *U.S. Department of Health & Human Services*, n.d., <https://www.vaccines.gov/basics/protection/index.html> (<https://www.vaccines.gov/basics/protection/index.html>).
10. Capt. Estacy Porter, Chief of Preventative Medicine, Ft. Leavenworth, Kansas e-mailed response to interview questions from the author, November 2017.
11. "Principles of Sustainment," *ADP 4.0*, (Washington, D.C.: Headquarters Department of the Army, 2009), 3.
12. "Global Health Gets a Checkup: A Conversation with Tedros Adhanom Ghebreyesus," *Foreign Affairs*, September/October 2017. <https://www.foreignaffairs.com/interviews/2017-08-15/global-health-gets-checkup> (<https://www.foreignaffairs.com/interviews/2017-08-15/global-health-gets-checkup>).
13. Capt. Estacy Porter.
14. Benjamin Franklin, writing as the Old Citizen, "On Protection of Towns From Fire," *Pennsylvania Gazette*, Feb. 4, 1735. <https://founders.archives.gov/documents/Franklin/01-02-02-0002> (<https://founders.archives.gov/documents/Franklin/01-02-02-0002>).