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Influenza Detection Kit Helps AFHSC Identify Outbreaks Before They Start

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Captain Kevin Russell

Navy Capt Kevin Russell is the Director of the [Armed Forces Health Surveillance Center \(AFHSC\)](#). The AFHSC works to promote, maintain and enhance the health of the military and military-associated populations by providing relevant, timely and comprehensive surveillance information.

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The recently-released movie "Contagion" could easily be dismissed as purely Hollywood fantasy about a pandemic that kills millions of people in a few months. Yet, many of us at federal agencies know first-hand the panic and devastation that can ensue when a pandemic like the swine flu-scare a few years back grips the world.

At the [Armed Forces Health Surveillance Center \(AFHSC\)](#), one of our primary goals is to support global health surveillance and response to emerging infectious diseases. Effective global disease surveillance, timely detection of outbreaks and appropriate responses to control epidemics are the essential tools to our service members and the global health community.

That's why AFHSC, through its division of [Global Emerging Infections Surveillance and Response System \(GEIS\)](#), recently funded the development of two new kits cleared by the Food and Drug Administration that will increase the speed and accuracy of diagnosing influenza among military personnel in deployed settings.



The Joint Biological Agent Identification and Diagnostic System initially received FDA-clearance to test several biological select agents such as anthrax. Now, JBAIDS will be used to test influenza A and Influenza B – two subtypes of the virus that causes seasonal epidemic flu. (Photo Courtesy the Joint Project Management Office for Chemical Biological Medical Systems)

Just in time for the start of the 2011 influenza season, the kits will become a part of the Joint Biological Agent Identification and Diagnostic System (JBAIDS) that received prior FDA clearance on several biological select agents such as anthrax. The Influenza A/B Detection Kit will be used for testing Influenza A and Influenza B – two subtypes of the virus that causes seasonal epidemic flu. The second kit will allow for the detection and differentiation of subtypes of influenza that includes A/H1, A/H3 and 2009 A/H1.

Many medical facilities in deployed settings don't have the clinical tools available that allows personnel to rapidly diagnose infections – such as influenza – in humans. With the JBAIDS influenza kits, lab technicians can load samples into a carousel within the analyzer, which then identifies a specific strain of influenza or indicates a positive result for influenza that cannot be typed based on current [assays \(PDF\)](#).

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The JBAIDS, a 40-pound device small enough to slip into a rucksack, will be able to identify influenza viral nucleic acids isolated and purified from nasal swabs and nasal washes from patients who display signs and symptoms of respiratory infection. If utilized, the kits could provide early warning of a new influenza virus that we might not have heard about through traditional surveillance mechanisms for perhaps another week or month. Detecting new, drifted influenza viruses as early as possible can help us prevent the spread of the virus, and produce an updated vaccine in a timely manner.

The device, which comprises a laptop connected to an analyzer, increases the Department of Defense's ability to test and identify emerging infectious diseases for influenza in deployed setting. More than 300 JBAIDS systems have been distributed to all branches of the services, including deployed units around the world.



Lab technicians can load samples into a within an analyzer connected to a laptop, which then identifies a specific strain of influenza. (Photo Courtesy the Joint Project Management Office for Chemical Biological Medical Systems)

The development of the kits would not have been possible without collaboration among federal agencies that included the [Joint Project Management Office for Chemical Biological Medical Systems](#) with the [Centers for Disease Control and Prevention](#), [U.S. Army Medical Research Institute of Infectious Disease](#), [Edgewood Chemical Biological Center](#) and the [U.S. Army Medical Materiel Development](#).

When there's real trouble, it will be efforts like these that will be the foundation on which the federal government responds to, and ultimately, contains the next pandemic.

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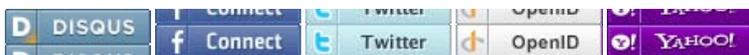
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