Navy Medical Research begins study to test E. coli vaccine

By Doris Ryan,
Naval Medical Research Center Public Affairs

The Naval Medical Research Center (NMRC) will soon begin a study to test a new vaccine that could help eliminate diseases that cripple armies, put travelers in sick beds and cause millions of child deaths in undeveloped countries.

The Seattle-based group Program for Appropriate Technology and Health (PATH) and NMRC will collaborate to conduct laboratory toxicology testing of the vaccine to prevent diseases that cause debilitating stomach illnesses.

Testing is usually required by the U.S. Food and Drug Administration (FDA) before a vaccine is tested in humans.

"Clearly, a highly effective vaccine against enterotoxigenic E. coli (ETEC) would solve a large part of the problem of infectious diarrhea among the military, civilian travelers and children around the globe," said Capt. Stephen Savarino, leader of the NMRC research team that invented and put into practice the new vaccine technology. "We believe this vaccine candidate has the potential to curtail the number and severity of food-borne illnesses due to ETEC. It may also decrease the risk of post-infectious irritable bowel syndrome, which afflicts one in 10 who experience travelers' diarrhea."

According to the NMRC research team, food borne diseases, including travelers' diarrhea, have been a scourge of military operations throughout history. These diseases represent a very common communicable threat to United States and coalition forces deploying to Iraq and Afghanistan, with the potential to degrade force health and operational readiness.

These diseases also afflict 40 percent to 60 percent of the 64 million who travel from industrialized countries to lesser developed countries each year. According to the World Health Organization, acute gastroenteritis is also a serious child health threat in the developing world, accounting for 1.5 million deaths annually. In each of these settings, ETEC is the most common cause of bacterial diarrhea and in severe cases can lead to dehydration and shock when not treated promptly and effectively.

A laboratory technologist checks a specimen in the "stat lab" of the USNH Yokosuka Laboratory Department. Laboratory technologists conduct the tests that give healthcare providers the information they need to diagnose diseases. The hospital's laboratory is accredited by the College of American Pathologists, the American Association of Blood Banks, and the Food and Drug Administration.
Photo by Tom Watanabe

For several years, ETEC has been the focus of research by the NMRC team. NMRC announced this past March, a research and licensing agreement with Sanofi-Pasteur to further advance preclinical development of the adhesin-based ETEC vaccine technology. If the first-in-human clinical trials show that the vaccine is safe and elicits good immune responses, it will enable further development of a multivalent adhesin-based ETEC vaccine.

"We are pleased to see the collaboration with PATH accelerate our clinical development of this vaccine. PATH is committing their expertise and resources to ensure that this study is done to the highest standard and to advance a vaccine candidate that also has the potential to reduce the burden of diarrheal disease among children in the developing world," said Capt. Richard L. Haberberger Jr., NMRC commanding officer. "In today's research environment, partnering with organizations like this is often needed to advance development of our products through the paces of clinical testing."

Protecting your skin: Don't let too much sun spoil your fun

By Dr. Jack Smith, TRICARE Management Activity

Cold weather, short days and big coats are a thing of the past. Summer is here and time to enjoy warm weather, long sun-filled days and light, airy clothes.

But nothing can ruin summer fun quite like a sunburn. Not only is sunburn a painful condition, the skin damage is often permanent and can have serious long-term health effects.

According to the National Institutes of Health (NIH), significant problems are experienced by millions of sunburned people each year.

TRICARE wants you to be informed of potential risks and ways to protect yourself and family members when outside enjoying the summer days.

The Centers for Disease Control and Prevention (CDC) recommends that you protect your skin from sun exposure everyday, not just on sunny days. Exposed skin should be protected from excessive sun exposure to the sun's damaging ultraviolet (UV) rays. Many are unaware that UV rays can cause harm on cloudy and hazy days as well as bright and sunny days.

We have all observed that sunburn can occur in a very short time in light-skinned individuals with midday sun exposure. And although a dark-skinned person may be less sensitive, sun exposure can burn and damage dark skin, too. Whether light or dark-skinned, a sunburn can be very harmful. The skin becomes red, painful and tender to touch. Blisters may develop hours, to days later. The skin may also peel on sunburned areas after several days. For a serious sunburn, you may need to seek medical attention.

One serious long-term health problem is the heightened risk of developing skin cancer. The NIH reports that skin cancer usually appears in adulthood, but is caused by sun exposure and sunburns that began as early as childhood. Unprotected sun exposure can also cause premature aging of the skin.

So don't let too much sun exposure spoil your summer fun. To prevent damage, the CDC recommends these measures for sun protection:

• Use sunscreen with sun protective factor (SPF) 15 or higher –look for both UV-A and UV-B protection. Apply it generously, and remember that many brands require periodic reapplication if you're sweating or swimming.

• Wear clothing to protect exposed skin.

• Wear a hat with a wide brim to shade the face, head, ears and neck.

• Wear sunglasses that wrap around and block as close to 100 percent of both UV-A and UV-B rays as possible.

• Stay in the shade, especially during midday hours.

To help beneficiaries catch potential problems early, TRICARE covers skin cancer screening exams for individuals with a family or personal history of skin cancer, increased occupational or recreational exposure to sunlight or clinical evidence of precursor lesions.

Learn more about sunburn and sun safety at http://emergency.cdc.gov/disasters/extremeheat/heat_guide.asp.

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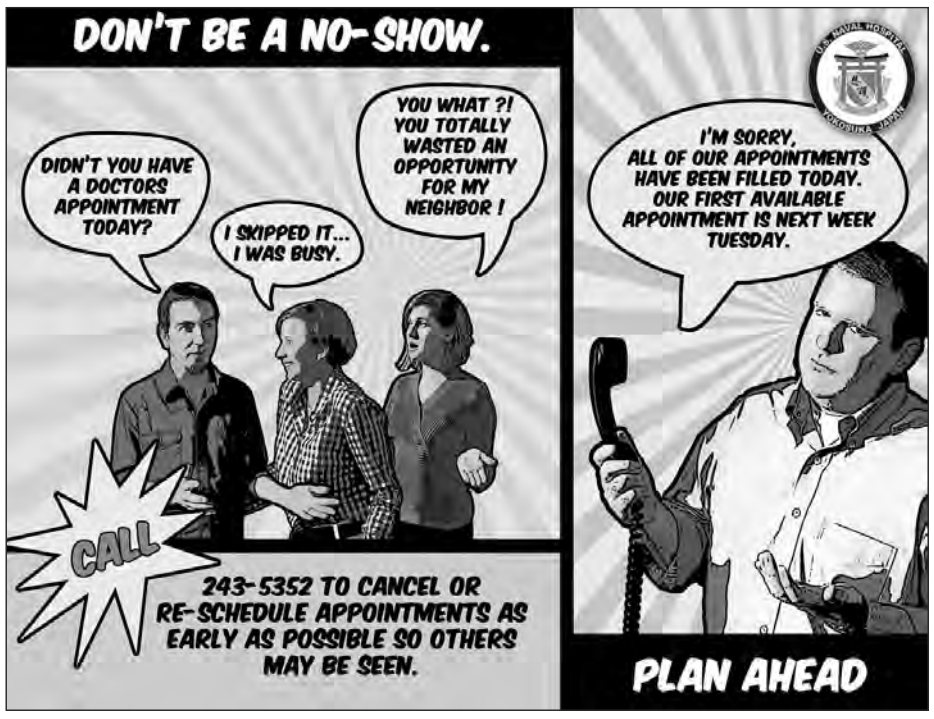
Spouses currently enrolled in the program can continue their participation through Oct. 21, when MyCAA will ramp down and prepare for the Oct. 25 launch. As of Oct. 25, those spouses who fall within the eligible pay grades can continue their program participation. Spouses who no longer are eligible for financial aid still can participate by accessing career and education counseling services.

"There are still opportunities," Stanley said. "This one program is just one small part of the overall equation of taking care of our family members. It's an important part, but it's a small part."

To fund the program, officials have budgeted about $210 million for 2010 with an increase to $250 million for 2011 due to an expected spike in enrollments. For future years, officials are estimating a budget of about $190 million per year.

To ensure the vitality of the program, Military OneSource counselors will encourage spouses to explore other funding resources, including federal benefits. And staffing levels have been increased to handle the anticipated call volume and enable more one-on-one counseling with spouses. Officials also will monitor the program much closer now to ensure they can maintain it.

"The program became wildly popular before, mainly through word of mouth," Stanley said. "People heard about the program and immediately recognized it was a good deal. It's still a good deal. We always tend to look at the glass as half empty. We are doing the best we can with what we have – I wish we had a lot more money, but we don't - but this glass is still half full."

Spouses can learn more about MyCAA on Military OneSource at www.militaryonesource.com.