



THE POINT

A newsletter for and about the people of the
U.S. Army Medical Research and Materiel Command

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Demo showcases advanced technologies

Telemedicine aficionados at Fort Detrick took their wares on the road Feb. 3 to show the White House Medical Unit the latest breakthroughs in medical advanced technologies.

At the Eisenhower Executive Office Building next door to the White House, attendees showcased PDA-based programs that create electronic medical records, environmental disease surveillance systems that take data gathered from sensors to pinpoint abnormal events and a digital ambulance that lets emergency medical personnel consult with an emergency room physician while providing en route care.

"We are trying to make sure we understand what technologies are available that can help us do our mission in taking care of the president and the White House," said Bill Lang of the White House Medical Unit, the event organizer. "This is a technology overwatch to see what's out there that might be of use to us" in taking care of the president, vice president, their families, the cabinet and the assistants to the president.

The advanced technologies displayed were representative of the work managed by the Army's Telemedicine and Advanced Technology Research Center. The center has partnered to create items like the NOMAD head-mounted display that not only gives Stryker brigade members in Iraq situational awareness by showing allied and enemy positions on a digital map but also lets brigade medics see patient records. The digital ambulance was originally designed so physicians can telementor emergency medical personnel when they have to transport seriously injured patients from rural America to a hospital.

"Basically we're allowing the physician to intervene earlier in the care of a patient,"

said James Wall of the Texas Center for Applied Technology. For the military it permits "the medical expert that you wish were at the scene but is not there to be there. We've used communications and cameras and physiological telemetry to be able to virtually bring the physician there to assist in the treatment," he said.

One technology developed at TATRC the White House is already using is the Battlefield Medical Information System-Telemedicine. The BMIS-T is "a point-of-care diagnostic tool for first responders—be it a medic, a physician's assistant or a doctor—that captures basic data from a medical encounter," said inventor Tommy Morris of TATRC. "They put in the symptoms, and it comes up with a treatment plan based on the user's skill level."

Lang said the White House Medical Unit is also working with the center to develop a handheld medical facilities locator that uses the global positioning system so the White House medical staff, which performs a great deal of travel medicine, will know at all times where the nearest medical center is and what capabilities it has.

The day's presenters made no sales pitches, but were enthusiastic demonstrators of their advances to visitors from the White House Medical Unit and the Interagency Medical Council who visited the stations in the building's 126-year-old Indian Treaty Room. The council comprises the medical directors of several major government organizations, primarily in the national capital region.

"Rather than taking all of us up to Detrick multiple times to see the projects, it's easier to bring them all together in one spot," Lang said, adding that it's not often he invites groups to showcase their projects.

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“Demo,” continued

Dr. Steve Dawson of CIMIT walks a user through a chest-tube insertion simulator during a demonstration Feb. 3 at the Eisenhower Executive Office Building.

Specializing in rapid prototyping—or taking an invention and tweaking it to meet user needs—TATRC is “blessed with working with some of the best partners from around the country,” said TATRC Deputy Director Col. Dean Calcagni. “They’re the fuel that feeds into this rapid prototyping process.”

One room at the demonstration was packed with mobile computing applications that can feed into the BMIS-T. With a trend toward wireless applications, devices like the electronic information carrier demonstrated by Maj. Tim Rapp, will one day serve as a collection point for transmitting information from sensors to the BMIS-T. And the sensor-packed glove called the MIDDAS (for Mobile Integrated Diagnostic and Data Analysis System) gathers a victim’s vital signs almost instantly upon touch and can also wirelessly transmit to the BMIS-T.

“Much of this technology is truly spectacular. A lot of the technology is slightly different versions of trying to do the same thing, but it’s nice to have these different types of redundancies and different approaches,” said

Rear Adm. Steve Ostroff, assistant surgeon general of the United States and deputy director for the National Center for Infectious Diseases at the Centers for Disease Control.

Ostroff, also the president of the Armed Forces Epidemiologic Board, was especially interested in advanced technologies that hit on that area.

“Some of the epidemiologic issues that we have been looking at like heat stress in recruits, these (programs on PDAs) are fabulous to be able to monitor these people in real time as they come through their training,” he said. “By looking at the patterns, you can identify circumstances and situations where the signals should go up that that’s probably something that you need to change. You can monitor in real time and collate and congregate all the information.”

Getting real time epidemiology data is the goal of PureSense, an environment monitoring system that uses a central server to collate sensor data for water, air, weather and pathogens and integrates that information with public health data to spot trends. If the system detects an unusual pattern, it calls the user’s cell phone and the user can visit a secure Web site and see that data live.

“We take sensors and provide the technological glue and intelligence to bring that data back and make intelligent decisions about it to be able to alert people and disseminate that information easily and to correlate these things together,” said Kevin Montgomery, technical director of the National Biocomputation Center at Stanford University Medical Center. “What’s really cool about the system is it detects what’s normal and detects very quickly what’s not.”

Program protects Soldiers from blast wave injuries

When Soldiers fire a weapon like a howitzer, they know to stay the heck away from the front of it. But decades of research on injuries caused by blast waves, known as blast overpressure, have shown that precisely where Soldiers stand when a weapon fires can mean the difference between life and death.

“Because of the complexity of blast waves, individual crew members can receive different levels of exposure to blast overpressure depending on their position when they fire the weapon,” said Mike Leggieri, of the Army’s Military Operational Medicine Research Program at Fort Detrick, Md. “But the bottom line is that Soldiers are exposed to blast overpressure when they fire high-powered weapon systems, and if the level is high enough, serious injuries can occur, including injuries to internal organs.”

For years researchers have known that blast waves can damage hearing, but they’ve also studied what happens to the internal organs in a blast wave. Air-filled organs, like the lungs and the gastrointestinal tract, are the first to be injured by blast overpressure, Leggieri said. If the level is very high, then solid organs, like the liver, are next in line for damage.

Back in the 1980s, researchers supporting the Army Surgeon General’s Health Hazard Assessment Program set out to find a way to catalog the spectrum of injuries caused by blast overpressure exposures. Their goal: develop a model that would tell them if a Soldier was at risk for an injury from exposure to blast overpressure.

“The ultimate goal of our research was to develop a biomedically based tool that could guide weapon system developers to design effective weapon systems that won’t injure the Soldiers who use them,” he said. “If you’ve got a

howitzer crew firing a weapon, and the very first time they fire it, they’re all coughing up blood, that’s bad.”

Today INJURY, a software application containing the Military Operational Medicine Research Program’s blast overpressure injury model, prevents that scenario from occurring. The model is based on data from extensive blast injury studies that were conducted by the program’s researchers on large animals in the 1980s and 1990s.

After Dr. Jim Stuhmiller and his staff at Titan Corporation—the Military Operational Medicine Research Program’s injury modeling support contractor—developed and validated the model, Stuhmiller and staff packaged it in a user-friendly software application that can compute the probability and severity of a blast injury within seconds. The software was officially released in September 2004.

“It all sounds very simple in the end, and the software is quick, like a snap of a finger,” Leggieri said. “But to get to those injury curves, it took almost two decades of research.”

Using INJURY is fairly simple. Testers place a blast test device—an aluminum cylinder that’s about a yard tall and has four pressure sensors in the front, back, and on both sides—where a Soldier would be and



INJURY, a software program developed by researchers who study military operational medicine, helps determine if Soldiers can safely fire a weapon and not become blast-injury victims.

See “Blast,” page 4

Recruit vaccine re-creation on track

Researchers have known for decades that two particular viruses thrive in military training environments and



Today, a recruit going through basic training, has a 15 to 20 percent chance of being hospitalized with acute respiratory disease—and most of that is from adenovirus.

consistently land basic trainees in the hospital.

They also know how to make vaccines that combat the viruses called adenovirus types 4 and 7.

And since the military's stock of the adenovirus vaccines ran out in 1999, they

know the virus has again caused outbreaks, both large and small, in the nation's military training centers.

"If you go through basic training, you have a 15 to 20 percent chance of being hospitalized with acute respiratory disease—and most of that is from adenovirus," said Col. Wellington Sun of the Walter Reed Army Institute of Research.

Wyeth Laboratories produced the original vaccines but warned the Defense Department of its intention to stop making it because the Food and Drug Administration wanted Wyeth to upgrade its production facility. When the DoD—the only customer for the vaccine—didn't offer to help finance the upgrades, Wyeth stopped

See "Adenovirus," page 4

"Demo," continued

then fire the weapon. The sensors collect the blast overpressure data, the data is fed into the program and the software determines if the chance of a lung injury is slight, moderate or high.

The Health Hazard Assessment Program at the Center for Health Promotion and Preventive Medicine gets data at least once a month from weapon test centers in Yuma, Ariz., or Aberdeen, Md., and runs it through INJURY. Leggieri said INJURY has helped identify hazardous situations for particular crew members when new weapon systems were being tested.

"We discovered that if you put a person where you said you were going to put them, there's a high probability they will be injured," he said. "That

made the weapon developers rethink how they were going to field that weapon, and that led to a change."

In fact, said Don Goddard, an ergonomist at CHPPM, testing at Aberdeen Proving Ground recently upended some traditional thinking behind blast.

"The ear is more sensitive to the blast wave, so it's typically going to be injured first. In the past we assumed that was always going to be the case, but we had a recent case in a weapons test where it looks like the blast overpressure is the more potentially damaging part of the equation," he said. "With that being a potential factor, if we would have gone by the hearing protection thresholds alone, we probably wouldn't have protected adequately for BOP (blast overpressure)."

The next step for INJURY is using it to help develop body armor to protect Soldiers from novel explosive threats, such as thermobaric weapons, which are designed to kill via blast.

"These weapons exist, they are proliferating and it's possible that our Soldiers could be exposed to them. The problem is there is no tool available for body armor developers, for example, to evaluate their body armor to see if it provides any protection against blast," Leggieri said. "If you don't have a tool, you can't develop a good blast protection system."

Military occupational medicine researchers are now in the process of providing INJURY and the blast test device to the Natick Soldier Center staff in Natick, Mass., so they can evaluate blast protection armor.

“Adenovirus,” continued

production in 1996.

Soon after basic trainees stopped taking the vaccine tablets, adeno came back. In 1997 an epidemic swept through basic trainees at Fort Jackson, S.C., for eight months, according to a 1999 article in *Emerging Infectious Diseases*. One thousand soldiers ended up in the hospital; 66.1 percent of them had adenovirus 4.

When the viruses re-emerged, discussions began on the need to re-create the vaccines that had been so effective for nearly three decades. Since 2001, the Army and Barr Laboratories have allied themselves in that cause. By reformulating the old vaccine and conducting clinical trials, the Army hopes to have the vaccines licensed for military trainees by 2008.

Jump starting the effort was Wyeth’s willingness to turn over its recipe to Barr for making the vaccine. The technology transfer put the team leaps ahead of where they’d be if they had to start from scratch, but there were still a few delays, said Capt. Eric Midboe, the Army’s product manager for the vaccines who works at the U.S. Army Medical Materiel Development Activity.

“We expected the recipe to be complete, and we would be able to simply go from there. What we found was that some of the sources for the virus weren’t documented well enough to be able to use them so we had to re-make the sources” and subject them to modern tests, he said.

In the meantime, Barr completed construction of an adenovirus tableting facility in Forest, Va.; BioReliance in Glasgow, Scotland, started producing the virus for the tablets and large-scale clinical trials; and researchers Lt. Col. Art Lyons and Col. Jenice Longfield started Phase I clinical trials to test the new version of the old vaccine.

The study to show the vaccines are safe took place at the Army Medical Department Center and School in San Antonio. There, researchers from WRAIR and Brooke Army Medical Center received “enthusiastic support” from the 232nd Medical Training Battalion, 32nd Medical Brigade whose combat medics were volunteers for the study, Sun said.

“We needed a place where we could have access to a fairly large number of people in a relatively short amount of time ... and it would have to be in a military population because the vaccine is for use in the military,” he said.

Before the trial could start researchers had to get an idea of how many Soldiers already had antibodies for the two adenoviruses. Having this information would tell researchers how many Soldiers they would have to screen to get to their target enrollment number of 60 volunteers. Anyone infected could not participate.

The results surprised them. While they knew prevalence rates would be high for type 4, they didn’t expect them to be 90 percent. Expecting the rates for type 7 to be much lower than 4, researchers were also surprised that those rates ran from 80 to 90 percent as well.

“So we knew we would have to basically screen 10 people to get one recruit,” Sun said. In the end, researchers screened about 800 people to get 59 volunteers.

From Aug. 11 to Sept. 12, 2004, 59 Soldiers of Company A, B and C of the 32nd Medical Brigade participated in the study and received either adenovirus tablets or placebos.

The Phase I trial showed the tablets are safe and there were no significant side effects, Sun said.

“The prime objective is to show that the new vaccine—even though it’s an old vaccine—is safe to give to people,” he said. “We certainly have established that.”

The trial’s researchers took their work a step further to see if the vaccine produces antibodies, which is more of a Phase II study endeavor. By the spring, researchers will have that answer after examining results of Soldiers’ blood tests.

“We’re hoping the results will tell us the vaccine is as good as the one used before,” Midboe said. If the results are as promising as they hope, the vaccine team will ask the Food and Drug Administration’s permission to go straight to a Phase III trial, the final type of trial needed before filing to have the vaccine licensed by the FDA.

USAMITC sets bar for migration

This year, Microsoft presented their Microsoft Active Directory/Exchange Deployment Award to the U.S. Army Medical Information Technology Center and the Army Medical Department as the first Army agency to have completed migration to Active Directory and Exchange 2003 in native mode.

When the USAMITC first walked into the Army's Technical Working Group to discuss Microsoft's "Active Directory," its latest technology, they had no idea they would set the bar in implementing it.

Just one month before this meeting, Microsoft released Active Directory and the Army mandated that all commands upgrade to Active Directory on Windows 2003 and Exchange 2003. Since then, USAMITC, the AMEDD's information technology acquisition and operations execution arm, has led the way in researching, planning, testing, documenting, deploying and sustaining the Active Directory and electronic messaging systems and environment for the AMEDD.

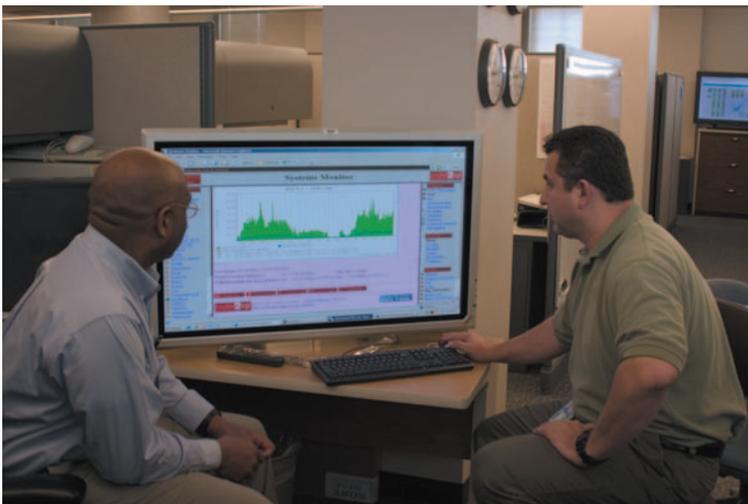
Within five years of planning and

deployment, USAMITC has successfully upgraded the AMEDD from NT4 and Exchange 5.5 to Active Directory on Exchange 2003. During this time, USAMITC migrated more than 79,000 user accounts, 1,800 servers and 69,000 workstations as well as moved 70,000 mailboxes into a centrally-managed e-mail system.

Prior to the migration, the Army's medical activities managed and implemented their own IT resources and messaging systems. In today's environment USAMITC, in partnership with Army NETCOM, manages the root of the Active Directory structure, while the local activities continue to control their local resources. With elevated management and security for e-mail, server and network systems can meet Army enterprise levels and remain consistent across the globe. These additional security controls guarantee a safe, secure, HIPAA-compliant environment for the command IT tasks.

Although the entire AMEDD will recognize these benefits, what can users expect to see with Active Directory? For one, system administrators will have to manage and maintain less hardware. Centralizing the e-mail system ensures security compliance of all hardware, firmware, and network operating systems. USAMITC will also maintain warranty information and ensure expeditious hardware repairs or replacements.

With Active Directory, end-users' IT files, documents and even mailboxes can easily be moved from their old duty stations to their new ones. Accounts will not have to be deleted and recreated when an employee simply moves to a new job within



Engineers from the U.S. Army Medical Information Technology Center's Core Technologies Division monitor the Tier2/Tier 3 e-mail screen.

See "Migration," page 7

Approved test detects 'leish' faster

One of the Army's specialized labs got a firmer leash on diagnosing "leish" after it gained approval for a quicker test for the parasite.

This winter the College of American Pathologists approved a new diagnostic test that detects parasite DNA to diagnose Leishmania. Developed by the Walter Reed Army Institute of Research, the test is based on polymerase chain reaction to give definitive results in one hour instead of the weeks a diagnosis can sometimes take.

"We can basically project this service anyplace that can reach us by FedEx. We get the package with the sample, we prepare the mixture, we run the assay and we can e-mail the response back to the physician," said Col. Alan Magill, an expert on leish-

maniasis and science director at WRAIR. "It allows us to project this capability very far forward, albeit with some logistic constraints."

After more than 800 servicemembers from Operation Iraqi Freedom were sent back to the States for treatment for weeping sores that



Caroline Liebig works in the Leishmania Diagnostic Lab at the Walter Reed Army Institute of Research.

See "Test," page 8

"Migration," continued

the command. One day Active Directory will enable the entire Army enterprise to seamlessly transition personnel—even to tactical locations and stations and provide core IT services in a more efficient manner.

In addition, command management gains a situational awareness view of its IT resources. Active Directory's centralized management enables the command to ensure availability, integrity, and reliability. Active Directory also affords integration capabilities with other commands, such as Training and Doctrine Command and Forces Command and Army Reserve activities. These commands also participated with the Army's enterprise architecture plans

and have enabled the technical capability of sharing resources across commands with what is termed a "trust" between the independent Active Directory structures. The Surgeon General is also able to directly e-mail medical troops deployed within other commands.

Perhaps the biggest benefit of Active Directory is how it supports the Army's mission to become a "One Army Enterprise." Reducing resources and centralizing functions parallels the Army's enterprise vision. MEDCOM is leading the way for the transition by stretching out ahead of Army's deployment by more than 50 percent. This places the AMEDD in the lead in the Army's IT future.

Although the migration is

complete, USAMITC still has many more milestones to cross on the Active Directory path. Further integration with other technologies and Joint services, interfaces to medical and clinical systems and additional on-demand IT capabilities are yet to be deployed that will help us achieve a truly net-centric computing environment. However, USAMITC is getting closer to meeting its ultimate goal of providing the command with a grassroots understanding and knowledge of all products and services managed under the command umbrella.

—Cynthia Hernandez
U.S. Army Medical Information Technology Center

Malaria vaccines show progress



Lisa Ware, left, and Sally Robinson look at a malaria vaccine antigen at the Walter Reed Army Institute of Research.

A clinical trial in Mozambique once again shows that the work the Army's done on a malaria vaccine for servicemembers is headed in the right direction.

The vaccine trial, conducted by Pedro Alonso of the University of Barcelona, was sponsored by the

Malaria Vaccine Initiative from April 2003 to May 2004 and involved 2,022

children who were one to four years old. In the end, the vaccine protected 30 percent of the children who received it for more than six months while also reducing the amount of severe, or deadly, malaria by 58 percent in the children who were vaccinated.

Those results delighted researchers at the Walter Reed Army Institute of Research who had originally demonstrated the safety and protective effect of the vaccine in adults in 1996.

WRAIR's vaccine program dates

See "Malaria," page 9

"Test," continued

just would not heal—a sure sign of leishmaniasis—the WRAIR Leishmania Diagnostic Lab was operating at a capacity it had never before witnessed.

During the onslaught of leishmaniasis cases, either the WRAIR lab or the Armed Forces Institute of Pathology looked at every leish sample coming in from Iraq to provide diagnosis. While AFIP experts looked for the parasite in tissue samples and smears, cultures and PCR samples were sent to the WRAIR lab that's directed by Lt. Col. Pete Weina, a key player in combating the leish outbreak when he was deployed in Iraq in 2003.

The WRAIR lab could run the unapproved PCR assay that researcher Lt. Col. Glenn Wortmann developed in the late 1990s, but physicians couldn't make treatment decisions based on the results because the test hadn't been validated.

Now that the test is CAP approved, the lab and its customers are benefiting from its strengths. Because the approved PCR can handle 16 samples at one time and gives results in one hour, having the approved diagnostic speeds up the lab's workload and gets results faster to the field. A second test, expected to be complete in early March, will also tell if the species is *Leishmania Major*—the type of leish acquired in Iraq—so physicians can make informed decisions about treatment.

When treatment options for various forms of leish can include up to 20 days of an intravenous drug, waiting weeks to find out what kind of leish a person has is just too long, said Magill, also an infectious disease physician at the Walter Reed Army Medical Center.

"That's been one of the problems with Leishmania therapeutics: We've been unable to

get the species diagnosis to the clinician in a meaningful time-frame, so we were stuck with a one-size-fits-all therapy, which is not good," he said. "With PCR we're basically able to say, 'Here's what it is,' and it allows a clinician to make optimal treatment decisions."

Gaining approval for the test was a six-month endeavor, said Lisa Hochberg, who spearheaded getting the test validated from April 2004 until the evaluators visited in October.

Among other tasks, she and her team had to run the test over and over to determine how many parasites the test could detect and ensure it didn't give a positive for anything else but leish or a negative for any type of leish.

All the while the lab was still regularly processing samples coming into the lab from overseas.

"It's very lab and paperwork intensive," Hochberg said.

Institute celebrates 50-year tradition

With a birthday cake and a little fanfare, the U.S. Army Medical Research Institute of Infectious Diseases recently celebrated a milestone: 50 years of research to develop medical countermeasures for protecting military servicemembers.

The institute, which remains the nation's lead biodefense research laboratory, acquired its present name in 1969 as the United States was dismantling its offensive biological warfare research program at Fort Detrick. However, its roots extend back to 1955, when a research project called "CD-22" began.

CD-22 was the first study to be conducted under a unique program called "Operation Whitecoat." This program was designed to determine the extent to which humans are susceptible to

infection with biological warfare agents to develop vaccines and treatments.

In some studies, Army volunteers were exposed to potentially serious but treatable diseases, like Q fever and tularemia, to understand how these illnesses affected the body. To protect study participants, the project was carefully managed by the U.S. Army Medical Unit—the agency that later became USAMRIID—under the direction of



Operation Whitecoat volunteers were trained as medics and many participated as clinical clerks and phlebotomists (wearing white coats) during one study and then as subjects (wearing bathrobes) during another.

See "Research," page 10

"Malaria" continued

to the 1980s when it, together with researchers at New York University and the National Institutes of Health, cloned the protein in the vaccine that acts as the basis of protection against *Plasmodium falciparum*, the most deadly species of malaria. In 1986, WRAIR researchers reported the first recombinant protein malaria vaccine trial, and later, joined forces with GlaxoSmith-Kline Biologicals to develop the RTS,S vaccine.

RTS,S a protein, "has been shown to have an impact on disease in kids in Africa," said Dr. Melinda Moree, director of the Malaria Vaccine Initiative. "There's really no other vaccine that has been shown to do that. That's what puts RTS,S into a very different category than anything else that we have

going right now. It's not just full of potential; it's actually realized that potential."

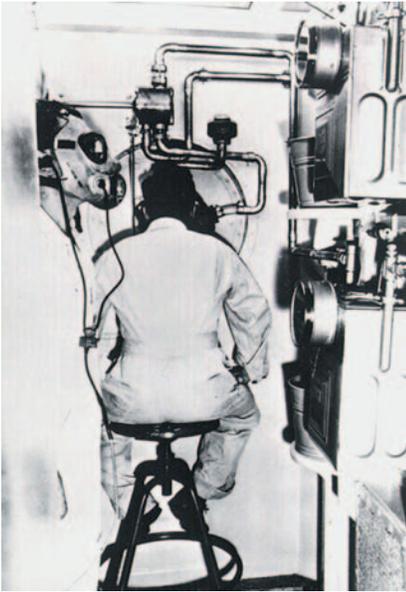
Though the Army's real pursuit is a vaccine that prevents malaria in more than 80 percent of servicemembers for one year and limits the severity of disease in individuals who develop malaria, the pediatric trial in Southeastern Africa helped quash critics who didn't believe the military's approach to a malaria vaccine could work.

"We're using the RTS,S vaccine to train the immune system to intercept the malaria parasite and kill it before it gets in (the liver, where it incubates then emerges and infects the blood five to seven days later) by making lots of antibodies that act like a Patriot missile shooting down incom-

ing parasites," said Col. Gray Heppner, director of the Army's malaria vaccine program. "If the malaria parasite gets in the liver, the other part of the RTS,S vaccine response directs white blood cells to recognize and destroy the incubating infection in the liver."

The study showed the military's goal was achievable.

"What they showed with this study is a pre-blood stage vaccine, remarkably, could prevent disease and prevent severe disease. It's a theory now, but it may prove out that such a vaccine can reduce the number of blood stage infections that occur and space them out so that young children at greatest risk may develop long-term immunity against severe disease," Heppner said.

“Research” continued

The one-million-liter test sphere, nicknamed the “Eight Ball,” was a cloud chamber used to study static microbial aerosols. During Operation Whitecoat, the volunteers breathed metered aerosols of Q fever or tularemia organisms through ports along the perimeter of the sphere.

the Army Surgeon General. Throughout the program’s history, from 1954 to 1973, there were no fatalities and no long-term injuries among Whitecoat volunteers.

Operation Whitecoat served as a model for the ethical use of human subjects in research, according to Col. Arthur O. Anderson, M.D., chief of USAMRIID’s Office of Human Use and Ethics. In particular, the process of “informed consent”—by which research subjects become familiar with the purpose and scope of a study to understand the risks involved before agreeing to participate—was successfully implemented from the program’s inception.

Each medical investigator prepared a protocol that

was extensively reviewed and modified to comply with each of the 10 ethical principles of the Nuremberg Code. When the committee determined that ethical requirements and scientific validity were assured, it was approved by Army officials. Next, potential volunteers were briefed as a group on the approved protocol and attended a project interview with the scientist where they could ask questions about the study.

Informed consent documents would be signed after an obligatory waiting period that ranged from 24 hours to four weeks, depending on the presumed risks of the study. The volunteer was encouraged to discuss the study with family members, clergy and his personal physician before making a final decision.

Whitecoat Soldiers were not required to participate in any of the studies, only to be present for protocol briefings. In fact, about 20 percent of the men did not participate in any studies during their tenure at Fort Detrick.

Operation Whitecoat volunteers largely consisted of Seventh-Day Adventists, who were trained as medics but whose religious convictions forbade combat. Under an agreement between the Army and church leaders, about 2,300 of these men fulfilled their military obligation by electing to serve with Operation Whitecoat. The program itself was never secret, although some of the volunteers held jobs elsewhere at Fort Detrick where their work was secret.

Several vaccines were developed as a result of Operation

Whitecoat, according to project records. Many of these vaccines are used today by industry and laboratory workers, including USAMRIID personnel who receive special immunizations to work in Biosafety Level 3 containment laboratories. Licensed vaccines (approved by the Food and Drug Administration) include those for yellow fever and hepatitis. Investigational new drug vaccines, used under approved clinical protocols for research or immunization of laboratory personnel, include those for Q fever, Venezuelan equine encephalitis, Rift Valley fever and tularemia.

“In addition to the advances made in vaccine development,” Anderson said, “Operation Whitecoat contributed to a better understanding of the signs, symptoms and clinical parameters of biological warfare pathogens in human disease.”

Operation Whitecoat ended in 1973. Col. Phillip R. Pittman, M.D., chief of USAMRIID’s Division of Medicine, completed a long-term follow-up study of Fort Detrick workers who received multiple immunizations to protect them from the risk of laboratory acquired infections. That study also was extended to Operation Whitecoat volunteers, whose immunization histories usually were more limited to the two- or three-year period of their assignment to Fort Detrick between 20 and 40 years ago.

—Caree Vander Linden,
U.S. Army Medical Research Institute of Infectious Diseases

Quick survey at right time helps Soldiers

Asking most Soldiers who have just returned home from a deployment if they're feeling "downhearted and blue" is probably premature.

Asking them three or four months later seems to be the ticket to getting warfighters the help they need for combat-related depression, said Lt. Col. Paul Bliese, commander of the U.S. Army Medical Research Unit-Europe in Heidelberg, Germany. The research unit screened returning troops in Italy first at reintegration and again at 120 days and found that more Soldiers needed help after they had been home for a while.

"They spent a year in Iraq, they're back, they're alive, there's a huge celebration. Then, three months into it, life intervenes. All of a sudden they're having to deal with going to work every day and having to deal with the responsibilities of being a parent, spouse and a Soldier," he said. "I think that's when these problems really start to come out."

A study reported in the *New England Journal of Medicine* in July 2004 said that 15.6 to 17.1 percent of military members who served in Iraq or Afghanistan typically screened positive for a mental disorder when they were surveyed three or four months after they got back to their home base. The study was conducted by researchers at the Walter Reed Army Institute of Research, parent organization to the U.S. Army Medical Research Unit-Europe.

While conducting research on a psychological screening tool, the research team from Heidelberg, led by Dr. Kathleen Wright, surveyed troops within their first two weeks of returning to Italy after serving in Iraq. They came up with a 6.5 percent positive rate for mental disorders for the 1,604 Soldiers they screened.

Warfighting commanders noted that something just wasn't right with those numbers, said Col. Richard F Trotta, commander of the clinic at Vincenza, Italy.

So Trotta asked the research unit to screen the Soldiers again 120 days after their return.

"We did that and, not surprisingly, those rates went back up to something closer to what was published" in the *New England Journal of Medicine*, Trotta said.

In fact, the rates were exactly 15 percent, Bliese said, adding that to be fair some of the increase might reflect the fact that different procedures were used at the latter time. The best indication of how Soldiers' responses changed came from 509 Soldiers who provided data both times.

The responses from these Soldiers showed marked increases in psychological symptoms.

"Overall, 80 to 85 percent of the people do fine, but 15 to 20 percent of people fairly consistently seem to be showing some problems at 90 to 120 days," Bliese said. "These are resolvable, so in no way do we think we're going to lose 15 to 20 percent of our population on redeployment. But these 15 to 20 percent are saying 'My relationship with my spouse has really gone to hell since I've been back; I've started to drink too much and I need to dry out.'"

To quickly screen hundreds of



Soldiers returning from duty in Iraq to the Southern European Task Force in summer 2004 complete mental health screens to detect symptoms of post-combat depression.

See "Screen," page 12

People in the News

Aviator receives Purple Heart

Maj. Jeffrey H. Warren was presented the Purple Heart on Dec. 20 by Col. James McGhee, commander, U.S. Army Aeromedical Research Laboratory, Fort Rucker, Ala., for injuries received during Operation Just Cause.

Warren was deployed in 1989 from the 7th Infantry Division (Light), Fort Ord, Calif., to the Republic of Panama as a member of Task Force Hawk. He was sent in support of the U.S. Southern Command to augment aviation capabilities during worsening political and civilian conditions experienced under Gen. Manuel Noriega.

On March 2, 1990, following cessation of combat operations, conditions in the Canal Zone had improved and Warren and several colleagues went into downtown Panama City to a club. In a terrorist attack, a Noriega supporter threw a grenade into the club through a front window. The grenade rolled under a table and stopped within two feet of where Warren was sitting.

When the grenade exploded, Warren said “it sent everyone close to it flying.”

Six U.S. Soldiers and several Panamanian civilians were killed.

Warren received numerous



Col. James McGhee presents the Purple Heart to Maj. Jeffrey Warren, accompanied by his wife Cindy.

shrapnel wounds in his hip and legs.

—Linda Burt
U.S. Army Aeromedical
Research Laboratory,

“Screen,” continued

Soldiers, the Heidelberg researchers used their psychological screening tool that could be completed and scored quickly before and after deployments.

The team started with research scales that had been tested and validated in the civilian world, and then put together a two-page questionnaire that hit the topics of traumatic stress, depression and problems with relationships, anger and alcohol.

“We’re sensitive to the fact that Soldiers don’t like filling out page after page after page of surveys,” said Capt. Jeffrey Thomas, who worked at the Heidelberg unit before moving to WRAIR. “We’re going with ... the least number of items that we can have to tap into the areas of stress.”

Soldiers can complete the “short screen” in 10 minutes or less, and mental health personnel can score it in a tenth of that time.

“I like to think of it as a triage filter, because the Army ... does not have the resources to give every single Soldier a clinical interview,” Thomas said. “But short of doing that, what we can do is develop a very lean, efficient stubby-pencil version of the screening triage survey to

help direct resources that are pretty limited to begin with.”

If Soldiers test “hot” for either the suicide or homicide question on the short screen, they’re immediately referred to a mental health professional. Others whose scores indicate they should get help can be contacted confidentially by mental health professionals on post.

“One item we like on the screen is essentially: Do you want to see a counselor? They say yep, and we get them in,” Bliese said.

He likens this approach to mental health to the way the military now delivers fuel.

“They used to wait for a unit to request fuel and then (suppliers) would send it out to them. Now the idea is you push the fuel to them,” Bliese said.

“This is pushing mental health services, ... making it absolutely completely available so they don’t have to seek it, it’s just there, with the hope that it will really help these people who are having a little rough go,” he said.

The researchers at the U.S. Army Medical Research Unit-Europe hope to be able to hand off the short screen to the Army Medical Department in the next year or two.

People in the News



Maturey

Maturey receives NCO honor

Recently, Staff Sgt. Christopher L. Maturey, the noncommissioned officer in charge of the Comparative Medicine Division, U.S. Army Medical Research Institute of Chemical Defense, received a special honor, one that surpasses many others earned by an NCO in the Army: Maturey was inducted into the Sergeant Audie Murphy Club.

Like the World War II Soldier for which the club is named, members epitomize the qualities professionalism, excellence and, most especially, leadership. A SAMC NCO is the type of individual who truly cares about the welfare of his soldiers and their families and who understands how to motivate and train his Soldiers, and how to get the mission done.

The first club was established in the mid-1980s in Fort Hood, Texas, within the III Corps and expanded to other III Corps installations in the early 1990s. By the mid-1990s the program had spread Army-wide.

Though the ceremony was held at MRICD, Maturey was inducted into the SAMC established at Fort Detrick, Md. As is customary, he received a 2-inch round, silver-colored medallion, which is suspended by a broad powder-blue ribbon so that the medal can be worn around the neck on the outside of the Class A or Dress Blue uniform for official functions or Sergeant Audie Murphy Club meetings. Also, in attendance was Maturey's wife of 13 years, Roni, who was honored with a bouquet of flowers.

Along the lines of the procedures established by many of the SAMCs, Maturey was first nominated for membership by the commander of MRICD, Col. Gennady E. Platoff. He then went before two boards: a screening board and a final board, the latter made up of command sergeant

majors who are themselves SAMC members.

"It was not like any other board, I've ever gone before," Maturey said. "It was much more freestyle. You were asked situational questions that covered a broad range of things in the military that an NCO should know. You had to think quickly and remember how you had answered previous questions."

The interview before the final board took about an hour, and a decision was made after about 25 minutes of deliberation by the board members, all of whom had to agree on whether he should be admitted into the club.

At MRICD Maturey is also an instructor in the institute's Field Management of Chemical and Biological Casualties Course, the unit's equal opportunity representative, and the unit prevention leader. He will now have additional duties as a SAMC member. The Army's regulation on the club recommends that club members be invited as guest speakers at command information classes and seminars, attend selected command briefings, participate in various ad hoc committees within a unit, and greet VIPs visiting local commands. It is also recommended that they, among other things, be interviewed as possible officer candidate school or warrant officer candidates, that they be given leadership positions that will develop their skills, and that they be assigned to instructor positions to teach NCO development program classes.

Involvement in community activities is also encouraged. Maturey already volunteers as a coach for the Edgewood/Joppatown Recreation program as well as with the Edgewood Boy Scout pack.

—Cindy Kronman
U.S. Army Medical Research

Model Soldiers

The lobby of the U.S. Army Medical Research and Materiel Command's headquarters turned into a photo studio Feb.

11 when an artist turned four Detrick Soldiers into models for a commissioned painting.

Painter Larry Selman is working on a painting of Army sergeants major uniforms since 1778 for the next graduating class of the Sergeants Major Academy at Fort Bliss, Texas. Transforming his work from sketches to a painting required him to shoot photographs of people in the different uniforms. To find models for Korean War-era, Vietnam War-era, female and Buffalo Soldiers, he turned to his long-time friend and sometime model David Spencer of the U.S. Army Medical Research Institute of Infectious Diseases.

"We chose the models for their height, size and faces," Spencer said.

Sgt. Maj. Ben Scott of the 6th Medical Logistics Management Center and a June 2004 graduate of the Sergeants Major Academy, was tapped to be the Buffalo Soldier.

"I was really flattered (to be asked)," he said. "I was happy to help in any way I can," said Scott.

Though the actual painting takes three weeks, conceptualizing, researching and getting approval on sketches for this type of piece can take months,

Selman said.

"I really should have this (sergeants major piece) done by the end of the month," he said. "But I have a little bit of time built in, in case I need it."

Selman, whose father spent his last assignment as a sergeant major with the military police at Fort Ritchie, Md., specializes in military art. His work hangs in galleries in the United States and Canada and has also graced the covers of paperback books.

For the Detrick models, Selman hauled in his plastic bins and khaki bags of uniforms and equipment to make the piece authentic, like the Vietnam-era uniform modeled by Command Sgt. Maj. Domingo Costa of the U.S. Army Medical Research and Materiel Command and the Korean War-era uniform donned by Command Sgt. Maj. Eugene Jeffers of the U.S. Army Garrison.

After two and one-half hours of shooting, Selman said the Detrick models were naturals.

"They were very comfortable in front of the camera in all the different poses," he said. "Even Sergeant Major Scott, who ended up standing on his toes because the boots I had were too small."

Spc. Sara Lessard of the U.S. Army Medical Research Institute of Infectious Diseases was chosen to represent the women of the 1980s and 1990s and was permitted to impersonate a sergeant major for the morning shoot.

"I've never done anything like this before, so I thought it would be neat," the Maine native said. "I just don't want to look bad."

Each Soldier who modeled for Selman will receive a copy of the final print, he said, and they will be able to recognize themselves in the painting that will hang at the Sergeants Major Academy.



Representing the women of the 1980s and 1990s, Spc. Sara Lessard of the U.S. Army Medical Research Institute of Infectious Diseases poses for the painting being created by artist Larry Selman.

People in the News

Soldiers named command's finest

Extensive travel and environmental extremes marked this year's NCO and Soldier of the Year Competition held Jan. 26-30 in blustery Maryland and toasty Florida.

Nine competitors from six of the command's subordinate units started their march toward the title with weigh-ins at Fort Detrick as the sun set Jan. 26. The team met again for an early Army physical training test held at Walter Reed Army Medical Center.

From there, the crew headed for Fort Meade, Md., to demonstrate their knowledge of common soldiering tasks in below freezing temperatures. Soldiers demonstrated they could maintain an M-16, camouflage themselves and their equipment and, ironically, treat a patient's suffering from a heat injury.

"Other than the cold, the CTT was pretty standard. We do this every year as Soldiers, so this is nothing out of the ordinary, it's just a different type of environment that we're placed in to do it," said Staff Sgt. Terrance Alligood of the U.S. Army Medical Materiel Center-Europe. "The cold doesn't help a lot, though."

Master Sgt. Ian Trotman of the Walter Reed Army Institute of Re-

search took on the task of organizing all the events in Maryland and D.C.

"They're all doing really well so far," he said at the CTT event. "I expected them to."

Between tasks, chilled competitors took breaks by sipping hot soup or sitting in WRAIR's red bus, its diesel engine chugging to keep the heat flowing inside.

"I'm just trying not to think about the cold," said Spc. Dedrick Botley, competing on behalf of the U.S. Army Medical Information Technology Center in San Antonio.

All of the Soldiers said they had to balance their work and personal lives while preparing for the competition.

"I know that my e-mails are piling up and the work is backing up," said Alligood of USAMMC-E. "There are a lot of units down range that are ordering sets, kits and outfits now."

As the WRAIR team broke down the outdoor event, the competitors exercised their mental dexterity with a written test before heading outdoors again for the night land navigation portion of the contest.

With general knowledge questions on military history and the Army, the oral board held in Florida "was a lot like the written test," Botley said.

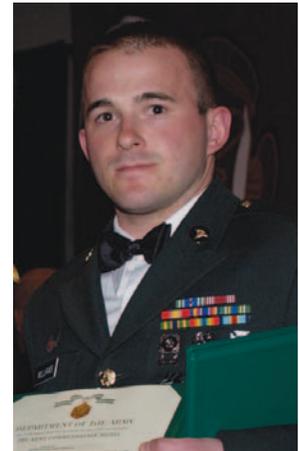
Once the board concluded, the Soldiers were free to attend the commanders' conference of the U.S. Army Medical Research and Materiel Command.

Winners were announced Feb. 2 at the conclusion of the conference. Going on to compete at the U.S. Army Medical Command competition in June are Sgt. Edward Williams of WRAIR and Spc. John Michael Rosario of the U.S. Army Medical Research Institute of Infectious Diseases. Runners up were Staff Sgt. Terrance Alligood of USAMMC-E and Pfc. Jeremy Ball of USAMMCE.

"I did not expect to be the winner," Rosario said. "It was so overwhelming. I knew that the competition was close and that all the other candidates were all very proficient in the events."

Williams echoed Rosario's sentiments.

"I thought, in my heart and mind, that all of the candidates had a chance," he said. "Why should I be any different? I hoped that I would be the winner, but had doubts as well."



Williams



Rosario

People in the News

New motto

“Protect the warrior. Sustain the force” is the new motto for the U.S. Army Medical Research and Materiel Command. The command motto was introduced Feb. 2 at the annual Commanders’ Conference. Units from throughout the command submitted 17 suggested mottoes, which were considered and refined to come up with the final version.

Retention awards

The following units received recognition Jan. 31 at the U.S. Army Medical Research and Command Commanders’ Conference for attaining 100 percent of their retention quotas for the first quarter of fiscal year 2005:

- ▲ Headquarters, U.S. Army Medical Research and Materiel Command
- ▲ Walter Reed Army Institute of Research
- ▲ U.S. Army Medical Research Institute of Infectious Diseases
- ▲ U.S. Army Research Institute of Environmental Medicine
- ▲ U.S. Army Medical Information Technology Center
- ▲ U.S. Army Medical Research Institute of Chemical Defense
- ▲ U.S. Army Medical Materiel Center-Europe
- ▲ U.S. Army Medical Materiel Agency
- ▲ U.S. Army Aviation Research Lab
- ▲ U.S. Army Institute of Surgical Research

Achievers

The following officers received Army Achievement Medals Feb.



Capt. Brad Nindl, a research scientist from the U.S. Army Research Institute of Environmental Medicine met Secretary of Defense Donald Rumsfeld during the secretary’s surprise visit to Iraq in February. Nindl served as a member of a team that is helping to train the new Iraqi Army.

1 at the U.S. Army Medical Research and Command Commanders’ Conference to recognize them for their outstanding leadership at the junior officer level:

- ▲ Capt. Matthew Moser, U.S. Army Medical Research Institute of Chemical Defense
- ▲ Capt. Eric Midboe, U.S. Army Medical Materiel Development Activity
- ▲ Capt. Melba Stetz, U.S. Army Medical Research and Materiel Command
- ▲ Capt. Cassandra McFadden, U.S. Army Medical Materiel Agency
- ▲ Capt. Joseph Morzinski, U.S. Army Medical Materiel Agency

“If you have not figured it out, this is the future of MRMC,” said Maj. Gen. Lester Martinez-Lopez after presenting the awards.

People in the News



Military Medical Merit

The following individuals received the Order of Military Medical Merit Feb. 2 at the U.S. Army Medical Research and Materiel Command Commanders' Conference:

▲ Lt. Col. Timothy K. Adams of the U.S. Army Medical Research Institute of Infectious Diseases

▲ Lt. Col. Carl Hover of the U.S. Army Medical Research and Materiel Command

▲ Col. Gaston Bathalon of the U.S. Army Research Institute of Environmental Medicine

▲ Robert deTreville U.S. Army Medical Research and Materiel Command (not present)

▲ Paul Michaels of the U.S. Army Medical Research Acquisition Agency

▲ Dale VanderHamm of U.S. Army Medical Research and Materiel Command

▲ Lt. Col. Mary Parker of the U.S. Army Medical Research and Materiel Command

The Order of Military Medical Merit recognizes excellence and promotes fellowship and esprit de corps among Army Medical Department personnel. Mem-

bership in the order is limited to Army Medical Department commissioned officers, noncommissioned officers and civilians, with honorary memberships extended to civilians and officers and non-commissioned officers of non-medical branches.

News from the North

The American College of Sports Medicine named Dr. Andrew J. Young, a research physiologist at the U.S. Army Research Institute of Environmental Medicine, to be editor-in-chief of the organization's monthly journal, "Medicine & Science in Sports & Exercise."

The National Institute for Occupational Safety and Health asked Dr. Margaret Kolka, USARIEM, to chair two Special Emphasis Panel Meetings at a meeting in March.



U.S. Army Research Institute of Environmental Medicine runners—from left to right, Col. Beau Freund, William Tharion, Spc. Michael Tapia, Peter Frykman, Dr. Scott Montain, and Catherine O'Brien — won second place in the Government Agency Section of the annual Army 10-Miler Race held in Washington in October 2004.

News to use

News Web site

The USAMRMC Office of Research Protections has an improved Web site on the USAMRMC Home page. Formerly the Office of Regulatory Compliance and Quality, the Office of Research Protections recently renovated its site to provide intramural and extramural customers with improved access to the information they need in a greatly enhanced, user-friendly format.

Investigators and others seeking guidance on USAMRMC regulatory issues can now visit the “Regulatory Offices” at <https://mrmc.detrick.army.mil>.

Features on the site include:

▲ A new “Investigator’s Toolkit” section, where customers can query the system by indicating whether the research effort is Extramural or Intramural, and click on selections such as Assurances, Research Guidelines, Informed Consent and others to obtain desired information.

▲ Customers are also provided with access to relevant HSRRB policies, MRMC policies, and Federal regulations.

▲ A “Frequently Asked Questions” section has been added, as well as a redesigned section providing links to other government

organizations, training and education sites, and other useful resources.

The effort to redesign the ORP Web site is a work in progress. As additional documents will be added as they become available.

Contact Andrea Kline, chief, Research Administrative Support, at andrea.kline@us.army.mil with any questions.

Credit card scam

Army personnel have received numerous e-mail scams that you may also have received or soon get.

The e-mail appears as a letter from Bank of America or other banks asking individu-

als to log on to a Web site and enter customer data in order for the Bank to “fix” something such as to proceed with a software upgrade. These are scams.

Any request from anyone that suggests an individual has to provide data that the institution should already have should be viewed suspiciously and reported to the Bank of America using the Worldwide number on the back of the card (1-800-472-1424).

Bank of America never requests this type of information from its cardholders.