

Camp Bucca encompasses 29 independent compounds that can hold as many as 15,000 detainees at once. Here, SGT Albert Grant, Alpha Troop, 102 Cavalry Squadron, 50th Infantry Brigade Combat Team, New Jersey National Guard, patrols the perimeter of Camp Bucca. (U.S. Army photo by SSG Shawn Morris.)

MC4 Reforms Wire Medicine at Detainee Combat Support Hospital

CPT Ken Sturtz

Checkpoints, concertina wire, and guard towers canvas the horizon at the largest internment facility throughout the U.S. Central Command (CENTCOM)—Camp Bucca, Iraq. What has doctors and nurses looking up, however, are 3 miles of newly entrenched fiber-optic cables that save them hours of work at the end of their 12-hour shifts.

Spanning 1 square mile and located at the southern border of Iraq, Camp Bucca encompasses 29 independent compounds that can hold as many as 15,000 detainees at once. Since the beginning of *Operation Iraqi Freedom*, more than 100,000 detainees have been held at this location.

Not apparent from its formidable surroundings, Camp Bucca houses a state-of-the-art medical facility, the 115th Combat Support Hospital (CSH), which provides the highest level of care on a nonstop basis to a diverse detainee population. “Our patients usually do not speak English, so we have to use the services of translators so we can communicate with each other,” said SFC Robert Callahan Jr., 115th CSH Noncommissioned Officer-in-Charge of wire medicine. “Our patients are escorted by guards and they also have primary care medical issues. It’s not the typical mission our medics are trained to support before they arrive here.”

Atypical is an understatement, given the location’s layout and history. Each of the 29 compounds has its own primary care facility, known as a compound treatment room. In each of these rooms, medics and primary care providers perform “wire medicine” around the clock. The term was originally coined to describe the medical care administered to insurgents, which included a wire fence separating medical personnel

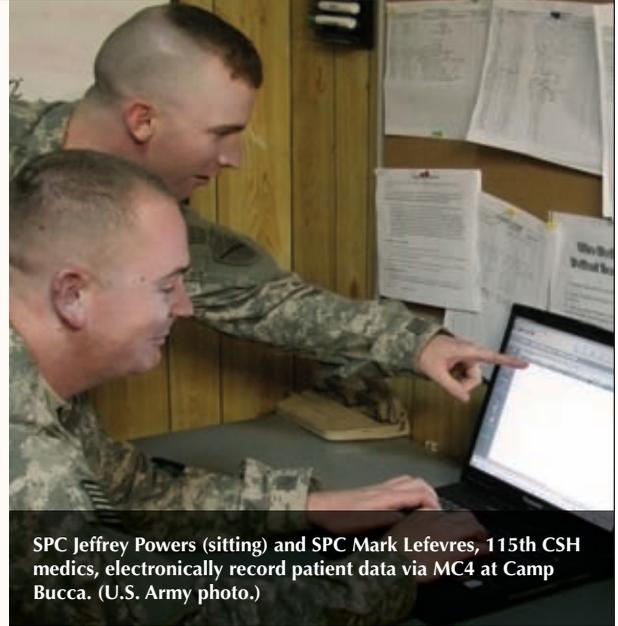
and patients. While a fence no longer exists between patient and medical personnel, additional barriers have made care difficult.

Evolution From Paper to Electronic Records

Originally, wire medicine at Camp Bucca was captured on field medical cards—the same paper forms that were first used on the battlefield during World War II. The problem with any paper medical record, regardless if the patient is a detainee or service member, is that the information can easily be lost while an individual is in transit to another facility for additional care. The lack of information delays the health care process, requiring staff to conduct repeated tests and procedures to determine a patient’s malady.

To eliminate this delay, the 31st CSH, the medical unit that immediately preceded the 115th CSH at Camp Bucca from 2007 to 2008, took the first step in moving its medical recording practice into the 21st century. The first solution involved installing laptop computers in the main hospital facility.

Regardless of who received care, the 31st CSH committed to digitally documenting patient data by employing the same system used to chart medical information for U.S. service members in combat—the Army’s Medical Communications for Combat Casualty Care (MC4) system. This permitted medics to transcribe handwritten encounter notes onto computers at the end of their shifts. However, the addition of another step tasked to providers, who traverse half-mile walkways from



SPC Jeffrey Powers (sitting) and SPC Mark Lefevres, 115th CSH medics, electronically record patient data via MC4 at Camp Bucca. (U.S. Army photo.)

treatment rooms to hospitals several times a day, did not win over new users.

To lighten the workload, MC4 hand-held devices were introduced, reducing the amount of typing required by the medical staff. Medics could record information into their personal digital assistants and synch it with an MC4 laptop, transferring records into a centrally available location.

To enhance data transfer from the hand-helds to the MC4 network, the 31st CSH established wireless access points throughout the internment facility to every treatment room. The wireless network then allowed medical personnel to upload patient data from the 29 different compounds, collected via hand-held devices immediately following patient care.

“When we took over the mission at Camp Bucca, we used more than 100 hand-held devices to capture and upload thousands of patient encounters within a few months of our arrival,” said Callahan. “We really liked the hand-helds. They’re easy to use. We were able to enter the information quickly, and our young Soldiers were familiar with them since the devices are similar to hand-held organizers used in CONUS.”



SPC Victoria Krause, CPL Sheri Simpson, and PFC Amanda Johnson, 115th CSH patient administration personnel, use the MC4 system to review patient data at Camp Bucca. (U.S. Army photo.)

Shift From Wireless Network to Fiber-Optic Cable

While the use of MC4 hand-helds in a wireless network setting bridged the change from paper to computers, the network could not handle the workload and hand-helds posed unforeseen challenges. The 115th CSH accounts for approximately 20 percent of all digital patient encounters (7,000 per month) captured via MC4 in CENTCOM, making it one of the busiest treatment facilities in theater. As such, a growing patient population coupled with a taxed network meant the need for change yet again.

The network was not robust enough to transmit patient encounter tasks in an efficient manner, thus causing delays in detainee care. The hand-held devices would not allow providers to co-sign notes initiated by medics. Additionally, at the end of a long shift, medical personnel were unable to determine if every encounter had transmitted to the network. The 115th CSH realized that the use of the hand-helds and transferring data via the wireless network was not making the grade and the infrastructure needed to be upgraded.

After months of planning and hundreds of hours of hard work, more than three miles of fiber-optic cable was added to the network infrastructure. The 115th CSH coordinated permission to dig and run the cable throughout the internment facility after procuring, configuring, and installing more than 30 fiber switches so that the new network could efficiently carry patient data throughout the facility. Ultimately, a large portion of data that traveled over the Nonclassified Internet Protocol Router Network at Camp Bucca was transitioned over to the MC4 network,

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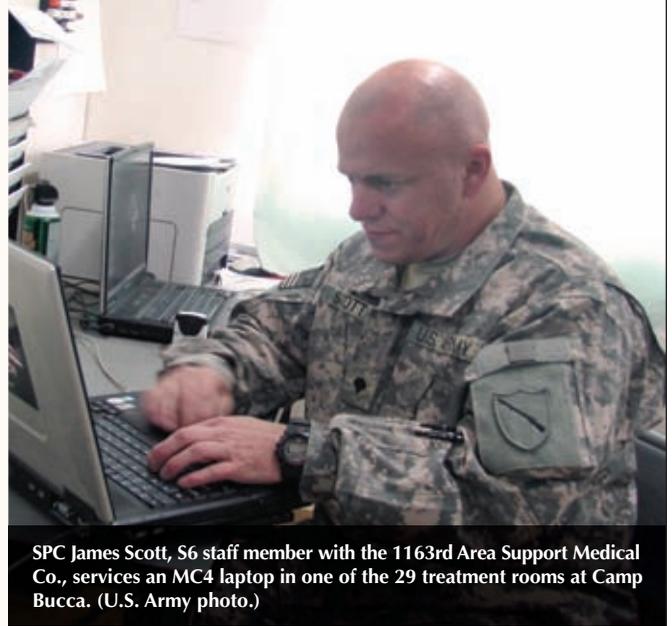
improving overall network performance.

Upon switching to a fiber-optic network, the hand-held devices were removed from the compound treatment rooms and replaced with new MC4 laptops. Today, medical personnel throughout Camp Bucca have access to the full suite of medical applications on the MC4 systems without the concern of bandwidth restrictions.

“Technology played a central role in the evolution of health care at Camp Bucca,” said LTC Stephen Wooldridge, Task Force 115 South Deputy Commander for Administration. “Under the direction of our commander, COL John McGrath, we have transitioned our efforts from paper documentation to electronic records. We took on this role from the moment we assumed this mission.”

Replacing hand-helds with more MC4 laptops has since provided medical personnel with an unexpected benefit. The 115th CSH is able to track the medical care that detainees receive as they move throughout the numerous compounds, as well as at other medical facilities for follow-on care. By using laptops instead of hand-helds, users have a type of patient visibility not possible with hand-helds.

“It is critical to be able to view the health care administered to our patients, regardless of the location,” said CPT Sara Wilson, Task Force 115 South



SPC James Scott, S6 staff member with the 1163rd Area Support Medical Co., services an MC4 laptop in one of the 29 treatment rooms at Camp Bucca. (U.S. Army photo.)

Chief of Patient Administration. “MC4’s interface with the Theater Medical Data Store allows each treatment room and internment facility to electronically view patient encounters. Providers can track the medical progress of their patients, as well as the efficacy of the medications dispensed in near-real time. This is an incredibly difficult task to accomplish without the advantage of a robust medical network.”

The 115th CSH has overcome a number of changes since taking on the mission at Camp Bucca and, in the process, significantly improved the network infrastructure used to collect patient data. As a result of their efforts, they have enabled the medical team to rapidly treat and diagnose thousands of detainees every month, improving the level of care administered at Camp Bucca.

For more information on how medical information is being captured and shared in theater, visit www.mc4.army.mil.

CPT KEN STURTZ is the S6 and Information Management Officer for the 115th CSH at Camp Bucca. He holds a B.S. in biology from the University of Colorado. Sturtz is Level I certified in information management.