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TATRC Holds Telesurgical Consultation Test During MISL Evaluation Event

The U.S. Army Medical Research & Materiel Command's Telemedicine and Advanced Technology Research Center (TATRC), held a telesurgical consultation test and evaluation event at TATRC, 4-7 September 2018. TATRC conducted a proof-of-concept capabilities study to meet research objectives on multiple systems to perform tactical telemedicine & communications integration testing, as well as operational and technical proof-of-concept research objectives for Prolonged Care.

The overall research objective is the potential of conceptually demonstrating a variety of medical sensors to provide actionable, "time sensitive" medical information to a medic's End User Device (EUD) using close range wireless communications technologies with low electronic signatures. The operational medical information systems evaluation event tested virtual health systems designed to be used in the operational environment by medical personnel. The research team designed medical scenarios simulating tactical combat casualty care and prolonged care.

The tools tested were telemedicine capabilities that enable a physician located at a distance to provide medical direction and guidance to a medic in the field. The research will be used to analyze future concepts and emergent technologies to inform senior DoD medical leadership of potential capability improvements that decrease gaps in future military medical care.

The simulated casualty environment allowed field medics to test the equipment in a lifelike, real-world scenario. The field medic was presented with a patient that possibly needed an escharotomy—a surgical procedure used to treat third-degree circumferential burns. In the scenario, the field medic needed to perform an emergency escharotomy with coaching from a doctor.

Field medics use telemedicine technology capabilities to connect to the doctor for specialized assistance with an escharotomy at TATRC, Fort Detrick, 7 September.

The technology allowed the field medics to have real-time support from a doctor at a distance, as well as send photos, have face-to-face video conversations, and more.

These teleconsultation capabilities included Remote Health Solution's Virtual Exam Room, and Remote Diagnostic Technologies' Tempus Pro with i2i software solution.

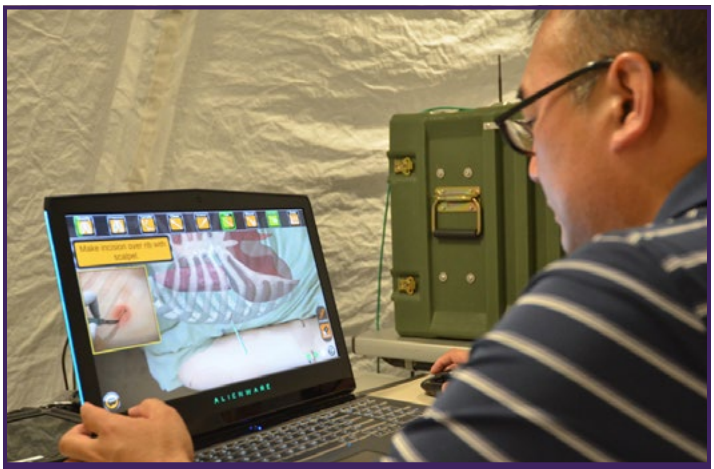
Video Telestration Capabilities included ATC-NY's TELTAN. High Bandwidth Communications Capabilities included Cornet Technologies' 4G LTE Manpack Radio with a video teleconferencing application. This result and connections with industry are supported by several TPCI, CRADAs, and SBIRs.

The research event focused on a proof-of-concept evaluation on how these systems performed and communicated over a secure tactical network. Each of the different Teleconsultation systems were evaluated and tested on each of the different wireless radio connections. The Tactical network consisted of a mobile 4G base station, a tactical wireless Wi-Fi, and MPU-5 radios with the dismounted medic. For the long range back haul, TATRC used the Persistent Systems' Wave Relay Mobile Ad-Hoc Network to connect to the medical provider at the simulated Brigade Medical Company.

The testing of the tool is only one piece of the project. The other half of the project consists of evolution of data flows involving packets and bandwidth requirements.

"If you can't tell, we are all very

Field medics perform a simulated escharotomy using the Remote Diagnostic Technologies i2i Solution (Tempus Pro) at TATRC, Fort Detrick, 7 September.



Dr. Raymond Fang assists medics in the field with an escharotomy using telemedicine teleconsultation capabilities at TATRC, Fort Detrick on 7 September. After testing, feedback was provided to vendors.

excited about this," said Mr. James Beach, Operational Telemedicine Project Manager. "We want to put research findings into the hands of Warfighters." The final day of research and testing was Friday, 7 September.

Feedback from this event will be provided to the vendors so that they can adjust and improve the product as needed. Phase 2 will involve validating research, collecting additional feedback, and more testing.

Mr. Carl Manemeit, Deputy Lab Manager of TATRC's Medical Intelligent Systems Laboratory stated, "Hosting this year's research event for the first time ever right here in our own backyard at TATRC, demonstrated our capability to successfully establish a secure tactical network to conduct proof-of-concept tests on the network without ever having to leave Fort Detrick."