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TATRC Visits UK's Ministry of Defense to Establish a Collaborative Research Partnership



Group Photo from the HMS President on the Thames River with the Tower Bridge in the background. Personnel from left to right are: 2LT Matt Dickinson, Mr. James Beach, Lt Col Bartels, Dr. Gregory Burnett, Mr. Jeff Luciano, and 2LT Corey Mack.

ast fall, TATRC personnel packed Jup and headed off to visit the United Kingdom's Ministry of Defense (MOD) Surgeon's Office to collaborate with the United Kingdom's military telemedicine lead, Lt Col Oliver Bartels. Mr. James Beach, Project Manager from TATRC's Medical Intelligent Systems Lab traveled as part of a multi-Service delegation, along with Dr. Greg Burnett from the U.S. Air Force Research Laboratory (AFRL) and Mr. Jeff Luciano from the Program Management Office, Special Operations Forces Support Survival Equipment Systems. Over the course of four days hosted at the MOD's main building and the HMS President in London, the group met with 46 MOD personnel to conduct capability demonstrations with the Battlefield Assisted Trauma Distributed Observation Kit (BATDOK[™]), and to discuss TATRC's research roadmap for Virtual Health. The British participants

were medics, physicians, regimental surgeons, military exercise planners, capability developers, and acquisition personnel from across the three single Services (British Army, Royal Navy and Royal Air Force) and Joint Forces Command.

Lt Col Bartels conducted various briefings about the United Kingdom's telemedicine development activity (Project LARA) that he leads as a military anesthesiologist with extensive operational experience. His team is already integrating several capabilities including the Tempus Pro Physiological Status monitor that is commonly found in the Tactical Combat Casualty Care kits provided to U.S. Special Forces Organizations. Through Project LARA, Lt Col Bartels has demonstrated telemedicine capabilities and is actively pursuing research efforts that are similar to the USAMRDC research efforts led by TATRC. These briefings served as

an introduction to each group for MOD telemedicine research and development efforts for both UK and U.S. personnel.

Dr. Burnett, along with 2LT Corey Mack and 2LT Matt Dickinson, conducted multiple BATDOK demonstrations that included hands-on practicums to allow for the MOD personnel to evaluate the BATDOK capability for potential use within the United Kingdom's Armed Services. The UK personnel were able to become extremely familiar with the BATDOK capabilities for local patient monitoring and documentation for prehospital care. Dr. Burnett also discussed how the capability could easily be adapted to address specific UK pre-hospital medical documentation requirements.

Mr. James Beach briefed on current TATRC Virtual Health research and the Virtual Health Roadmap and discussed potential collaborative research opportunities for telemedicine interoperability between the United Kingdom and United States at each session involving key United Kingdom capability development and acquisition personnel. This TATRC briefing discussed the transformation of BATDOK into a fully-fledged pre-hospital telemedicine system in partnership with Dr. Burnett and Mr. Jonnie Johnson at the Combat Capability Development Center Aviation Missile Center through the Joint Program Committee-One funded Medical Data Cloud research. The linkage of this research and resultant data collection capabilities for the Clinical Decision Support Systems (CDSS) and Artificial Intelligence (AI) development was also discussed to introduce U.S. Military concepts for CDSS and AI Virtual Health Systems. The mechanisms to collect sufficient proper clinical data to inform the development of CDSS and AI systems do not currently exist. Mr. James Beach also provided information on how this research will further progress into robotic and autonomous systems to augment medics

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on the ground to reduce the reliance of communications.

Lt Col Bartels stated, "It was a pleasure to host this visit to the United Kingdom by five colleagues from across the U.S. Armed Forces. The opportunity to meet and discuss virtual health and digital pre-hospital patient management systems, with a view to future collaboration was incredibly useful. The visit allowed the teams from AFRL, TATRC and SOCOM to brief 46 UK MOD personnel over three days on their programmes of work to help shape the UK's understanding of which telemedicine and virtual health technologies we will need going forward to achieve interoperability. A great visit in all respects and we are looking forward to building on these relationships formed."

As a result of this visit, the UK telemedicine lead and TATRC are staffing a draft Cooperative Research and Development Agreement (CRADA) focusing on how information systems and virtual health can support interoperability. Research opportunities will focus on more than technology integration. For telemedicine interoperability, larger issues revolve around differences in partner nation clinical practices, combat medic scope of practice, human-to-human communications, and medical record legislation for provisioning of care in a multi-national environment. The CRADA will focus on using current prototypes in research and in advanced development to demonstrate technology interoperability. In addition, the cooperative research relationships established offer enhanced technology surveillance capability for Virtual Health technologies that covers both sides of the Atlantic Ocean. Through proper coordination and collaboration, the United Kingdom and United States will be able to demonstrate options to clinically support each other in multi-national operations, even in cases where there is no appetite to put boots on the ground for mutual support.