On September 27, 2018, the Assistant Secretary for Preparedness and Readiness (ASPR) awarded two $3 million grants to investigate and develop regional disaster health response systems (RDHRS). Massachusetts General Hospital (MGH) in Boston, Massachusetts, received one of the two grants to conduct a pilot project that demonstrates the potential effectiveness and viability of an RDHRS in Massachusetts/Region 1 (MA/R1). A major goal of the RDHRS project is to develop a novel telemedicine system to rapidly expand access to various clinical subject matter experts (SME) that may be needed in disasters. In the prototype system model, a national registry of expert teleconsultants would be rapidly activated and deployed to provide on-demand, virtual clinical support for regional field sites at the point of need. In Year One of the RDHRS project, MGH partnered with Brigham and Women’s Hospital, Boston Medical Center, the American Burn Association (ABA), and other state and local healthcare organizations to conduct a large simulation exercise to demonstrate functionality of the newly developed MA/R1 RDHRS and the prototype telemedicine system model. This simulation demonstrated the feasibility of an RDHRS and highlighted access to disaster telemedicine services as a critical system component.

As part of the MA/R1 RDHRS year two work, the RDHRS telemedicine team requested assistance from NETRC to develop a rapidly deployable, device agnostic, easy to use, and flexible telemedicine platform that could expand access to SMEs during disasters. The multidisciplinary, multi-institutional RDHRS telemedicine team consists of experts in emergency medicine, emergency systems, and public health.

In February, 2020 the team visited the Boston 911 emergency call center, the MGH TeleStroke program, and the Dartmouth Hitchcock TeleED and TeleICU program to assess existing telehealth systems and what elements were critical to a disaster telemedicine platform. Ultimately, the team determined that the RDHRS platform needed to automate as much of the disaster telemedicine system workflow as possible. The team reached out to Bluestream Health (BSH) to determine if the BSH Tele-interpreter platform could be modified from language experts to medical SMEs. BSH was interested in developing the platform. Then the COVID-19 PHE was declared...

The COVID-19 PHE prodded the RDHRS telemedicine team and BSH to accelerate the project timeline to help address the rising health crisis. The telemedicine team and BSH met to discuss the necessary components of the telehealth prototype and assess if development was possible to provide COVID-19 support. The telemedicine team went to work assessing CMS waivers, and options to deal with longstanding telemedicine implementation barriers, such as: medical licensing and practicing across state lines, requesting organization credentialing policy, and liability coverage for SME’s.
The team also identified and trained volunteers from the Society for Critical Care Medicine (SCCM) to provide expert support to recruited field site hospitals. By early June the RDHRS telemedicine team and BSH were ready to conduct a pilot test launch of the platform. While the pilot missed the peak need as numbers were dropping and care protocols had been established, feedback from SME’s was excellent and showed great promise for addresses disasters moving forward. Launching the pilot helped identify key steps that needed to be addressed prior to implementing an RDHRS program. Participating healthcare organizations’ IT security concerns/restrictions, technical limitations, training materials, platform needs and feature modifications, willingness of SME’s to volunteer services, and call data were all gathered to provide a path forward for improving the platform.

The RDHRS telemedicine team and BSH have continued development of the platform and improving the prototype capabilities based on pilot feedback and the initial vision of being able to provide multi-specialty expertise. Improvements in launch and access, patient intake form development, system intuitiveness improvements, and multiple notification options have greatly improved the platform. In early December, 2020 another simulation exercise was conducted with the ABA. Feedback from both requesting sites and SME’s was positive and the simulation was successful. Additional input was obtained that will be helpful in continuing to improve the telemedicine component of the RDHRS platform in 2021.

See the graphic below for an example of how the platform has been developed with end users in mind.

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