Sensitivity to patient needs makes clinicians the primary source of adaptive capacity, or resilience, in the intensive care unit (ICU). Work setting complexities and contingencies make cognitive work in this setting particularly challenging. A IT-based system to support individual and team decisions and communication would increase clinicians’ capacity to adapt.

We report on a 3-year project now underway to develop such a system. During the first year, our research team used Cognitive Systems Engineering (CSE) methods to reveal characteristics of the work setting, goals, barriers, and individual and team initiatives to overcome barriers. Our data analyses identified requirements for the IT system that were embodied in use cases, as well as in first draft prototypes of the system architecture and user interface. Our team is currently evaluating the interface prototype for face validity and refining details prior to starting programming. Interactive prototypes will be evaluated against criteria identified in field research to ensure validity. The resulting system is expected to improve staff decision making ability and communications with an expected improvement in unit adaptability.

Shared decisions based on better information about procedures and resources are expected to improve staff efficiency and decrease missteps, lapses, delays in care, and the occurrence of morbidities including wrong medication/dose, infections, and unanticipated emergencies such as cardiac arrest. [Abstract of 214 words]