

## **Overview of Human Factors and Ergonomics Activities to Support the Ongoing COVID-19 Response**

Research and design efforts conducted by Human Factors and Ergonomics experts are available to support the ongoing COVID-19 response, as well as preparation and response efforts for future public health threats. These efforts are critical for enhancing effectiveness and avoiding errors by healthcare professionals and patient/family members as they quickly learn new procedures, share rapidly changing information, and make tough decisions over the coming months.

As healthcare providers and personnel are responding to COVID-19 they are facing new challenges in fulfilling their daily responsibilities, including increased workload, screening of individuals prior to entering healthcare facilities, reallocating personnel and cross-training in new departments, expediting testing procedures, and donning/doffing personal protective equipment more frequently.

Areas where Human Factors can offer support and expertise include<sup>1</sup>:

1. Developing guidelines and training materials for protecting health care workers; supporting good team performance when operating with Personal Protective Equipment (PPE), and PPE cleansing/reuse.<sup>2</sup>
2. Developing and evaluating checklists and tools for safely and effectively conducting needed patient care activities.
3. Developing and evaluating decision support tools for health care professionals when assessing patients and ordering tests and medications<sup>3</sup>.
4. Evaluating new devices (e.g. masks, test equipment) and technologies (e.g., telehealth) for usability and effectiveness.
5. Proactive risk assessment and risk mitigation strategies for new tools, methods and workflows<sup>4, 5</sup> to reduce the likelihood and severity of harm.
6. Workflow and process design to support the smooth coordination of the many different organizations and individuals (including patients and family members) critical for pandemic and public health threat responses, including COVID-19.
7. Effective online communication of rapidly changing processes and procedures across healthcare organizations and the public.
8. Designing tools and communication materials (e.g. discharge instructions for a COVID + patient, patient instructions for how to set up for video visits) to support patient & family actions.
9. Selecting equipment and processes that reduce the risk of physical injury to healthcare workers when repositioning and mobilizing patients<sup>6</sup>, while also reducing the number of staff required to be in contact with the patient.
10. Evaluation and design of patient placement layout and viewability considerations to support effective monitoring of patients.

Human factors and ergonomics experts are currently at work across the healthcare system, and are available to support state health organizations and the Centers for Disease Control as they confront this crisis.

### **About HFES**

With over 4,600 members, HFES is the world's largest nonprofit association for human factors and ergonomics (HF/E) professionals. HFES members include psychologists and other scientists, designers, and engineers, including researchers, practitioners, and federal agency officials, all of whom have a common interest in working to develop safe, effective, and practical human use of technology, particularly in challenging settings. HFES has a particularly strong expertise pertaining to the safe and effective use of medical technology, in order to ensure the safety of patients and healthcare workers.

### References

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