Applying Sociotechnical Systems Models to Healthcare Technology Safety

Dr. Sarah Coppola
Assistant Teaching Professor
Department of Human Centered Design & Engineering
University of Washington

Abstract: Technology is supposed to make life easier and more efficient, but its negative effects on clinical cognitive decision making and the human musculoskeletal system are important to consider.
Similarly, healthcare technology has often focused on improving documentation and billing without considering its impact on providers' workload and medical error. Using cognitive systems analysis, we can investigate how technology supports healthcare work processes and examine how handoff communication contributes to a significant amount of medical error. By understanding the healthcare sociotechnical system, we can design better tools and user interfaces that improve work and make healthcare safer. In this talk I will describe applications of the Systems Engineering Initiative for Patient Safety (SEIPS) model for improving anesthesia medication safety and pediatric trauma patient care and coordination.

Bio: Sarah Coppola is an Assistant Teaching Professor the Department of Human Centered Design & Engineering at the University of Washington. Dr. Coppola is an educator and researcher whose work focuses on how technology and systems design affects people's performance and health.

Coppola's research explores bias in technology and how to measure and quantify its impact. She has studied sex/gender differences caused by interface designs to better understand why women have clinically higher rates of technology-related musculoskeletal injury and pain. Her more recent work examines how healthcare sociotechnical systems contribute to human error. She has taught a variety of interdisciplinary courses, including human factors in design.

Coppola joined the Department of Human Centered Design & Engineering as an assistant teaching professor in September 2020. Before that, she was a postdoctoral fellow in Human Factors Engineering at the Johns Hopkins University School of Medicine. She holds a doctorate in Ergonomics/Environmental Health from Harvard T.H. Chan School of public health, a MS in Human Factors Engineering from Tufts University, and a BS in Mechanical Engineering from Northwestern University.