OPTIMIZATION OF PATIENT FLOW AND PROCESS FOR A PRIMARY CARE CLINIC DURING THE COVID-19 PANDEMIC

HUMAN-CENTERED DESIGN FOR DEMENTIA CARE

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SOCIOTECHNICAL SYNTHESIS

Inefficient healthcare settings do not effectively meet patients' needs and create difficult, stressful work environments for healthcare professionals. Out-patient hospital clinics have struggled to efficiently adapt protocols to COVID-19 while ensuring their operations meet standards and patients' needs. UVA's Suite 2100 primary care clinic has suffered issues including long patient wait times, provider stress, difficulty managing patient flow and more. The technical project observed patient arrivals at the clinic and analyzes trends in patient flow to identify areas for improvement. The STS paper focuses on the quality of dementia care spaces and their ability to meet the complex needs of individuals with dementia, arising from symptoms that impact executive functioning. The STS paper explores potential built environment solutions and the complexities of technological solutions to problems in dementia care. Both out-patient hospital clinics and dementia care spaces have the challenge and opportunity to improve their operation and design to better support the complex needs of all relevant users.

With shifts in operations and nurse staffing, providers at Suite 2100's primary care clinic struggle to balance problems such as burnout, long wait times, delayed appointment starts, and more. The technical research project engaged in an initial qualitative period of observing clinic operations in the waiting room and interviewing nurses and healthcare providers. Our data analysis used yearly Cadence data containing anonymous appointment information for 20-minute and 40-minute appointments. The team found that as the day progresses cycle times increase, median cycle times vary by year likely due to the pandemic, and patients are spending more time in the room than allotted. For example, the data showed that patients spend a median of 40 minutes in the room for a 20-minute appointment, which may stretch clinic resources. Overall, the technical research highlights areas such as resource allocation and healthcare provider

scheduling that the clinic can improve on in the future. This research can hopefully be applied to other out-patient primary care clinics looking to identify problems in patient flow and develop appropriate solutions.

The STS paper turns to focus on the dementia care space. The prevalence of dementia will rapidly increase in the coming decades, which places stress on the remainder of the population to provide widespread, quality dementia care spaces. The STS paper answers the question, how can we implement human-centered design to create spaces that provide quality care to dementia patients while accommodating the needs of all relevant social groups? The research uses the Social Construction of Technology framework developed by Pinch and Bijker in 1984 to identify and evaluate the relationship between the dementia care space and its relevant social groups, such as individuals with dementia and caregivers. For at-home and residential care settings, built environment solutions such as open floor plans, amber-lighting, and high contrast can improve wayfinding abilities, while safe access to outdoor spaces can improve patient autonomy, sleep, and anxiety. Caregivers indicated that big windows, bright lights, short walks, and organized resources at residential care settings are beneficial to their work environment and job satisfaction. Technological developments, such as intelligent conversational assistants, home sensors, and video conferencing, can help caregivers with tasks and monitoring, however we must thoroughly evaluate technology's uses, implications, costs, and ethics in dementia care.

The technical research paper focuses on challenges in patient flow at UVA's primary care clinic, while the STS paper centers on built environment and technological solutions to provide accessible, quality care to individuals with dementia. The future of healthcare spaces is bright as challenges in out-patient primary care clinics and dementia care spaces alike spur evaluation and innovation in their ability to meet the complex needs of relevant users.

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