Analyzing Quality of Care in Outpatient Clinics with Sociometric Badges

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Abstract Smooth patient flow through outpatient clinics promotes timely, effective, and safe care while delays and bottlenecks might lower ratings of patient and provider satisfaction, increasing the risk for errors that may affect patient outcomes. However, no studies have been undertaken to analyze how human interactions affect clinic efficiency and quality of care. The goal of our project is to investigate the impact of human interaction on the quality and efficiency of the service provided comparing quality of care with interpersonal interaction measured through body-worn sensors called sociometric badges.

The research was conducted within three outpatient clinics at the Division of Gastroenterology, Hepatology and Nutrition at Cincinnati Children's Hospital. Our dependent variables included touch time/total visit time, perceived quality and stress measured after each visit, and waiting time. Independent variables included turntaking, proximity, energy and consistency levels in the communication. The control variables were the type of provider (role) and the complexity of the case (clinic type).

Physicians, nurses, social workers, dieticians, fellows, medical assistant and clinical researchers wore sociometric badges during clinic hours, while patients were excluded from the study.

Preliminary results indicate that there was no relationship between clinic type and perceived difference in the experience (stress or quality), while the appointment length differed significantly between complex and non-complex cases. We did not observe a significant difference in the percentage of speaking time vs listening time between roles. When we analyzed the proportion of turns each person took during an appointment, MDs and RNs were most engaged in conversation.