Thesis Portfolio

Development of a System to Improve the Communication and Delivery System of Medications in a Hospital Setting

(Technical Report)

What are the Roles, Responsibilities, and Errors that Occur in the Stakeholder Groups for Administering Medication

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
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Sociotechnical Synthesis

Medical administration errors (MAEs) and adverse drug events (ADEs) are both two measure which a hospital will use in order to judge their treatment and effectiveness for each patient. In other words, the more of these errors and events that occur, the more issues they are having internally with communication, connectivity, and treatment. More specifically, examples of these errors or events include, giving a patient the wrong dosage or wrong medication, prescription error, incorrect timing, or failing to understand a patient's history and the effect a drug might have on them. In my STS research paper, I evaluate the communication methods and practices in a healthcare setting by using the categories set forth by, "Unintended Consequences of Information Technologies in Health Care—An Interactive Sociotechnical Analysis" (Michael I. Harrison et al., 2007). In other words, the categories for my research paper will consist of understanding the "sociotechnical systems through research documents, the social subsystems (people, roles, requirements), technical subsystems (technologies, task performance methods, work setting), and the social and organizational environments. Then I will extend this knowledge from my research paper to propose a new system or methods we can use in order to facilitate the communication and transparency between doctors, pharmacists, and nurses. By understanding the specific roles and responsibilities of each of these individuals, I will create a specific timeline of the process of when a medication is ordered until it is administered to a patient and determine the flaws in this system. By creating this timeline, I hope to propose a new system that will allow the members of this stakeholder group to interact with one another easier allowing them to focus on providing quality care to each patient rather than dealing with delays and backlog.