In many healthcare situations, waiting patients must be selected from a queue to receive or continue receiving service. When inconsistent criteria are used to order waiting patients within the queue, the result can be inadequate patient care, excessive patient waiting, unnecessary physician interruptions, and other symptoms of poor system performance. As part of a larger effort to build a workflow management system for radiology, we undertook an effort to develop an algorithm that could replicate in a normative fashion the mental heuristics that physicians use when determining who in a queue of waiting patients should receive their attention next. This research examines the process by which we developed and validated that approach towards automating the patient sorting task, which was recently awarded a US patent. One particular challenge was determining which radiologists’ expertise and preferences should be used to influence the resulting algorithm. Also, using a multi-stage system measurement approach, we examine the effectiveness of the overall workflow management system, of which the triage algorithm was a key component, to reduce patient waiting times and improve overall operational effectiveness within the radiology department. This presentation will include both a discussion of the research processes involved in developing the triage algorithm and an empirical examination of the system's benefits when implemented in practice.

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