

Abstract

Event delivery architectures can collect streams of events from sensors for processing to infer critical medical events in real time. However, to address cardiac patient flow, it is critical to also incorporate business process activity events. Our work seeks to improve cardiac patient flow by integrating events from a wide spectrum of sources within a hospital using complex event processing to support fine grained monitoring of patient flow. In this paper, we use a case study from a large community hospital in Ontario, Canada to illustrate the problem and demonstrate our approach which includes: an analysis of cardiac patient flows in order to understand where the patient could be waiting; a data architecture for collecting and processing basic events from multiple sources in order to create complex events delivered to a real-time dashboard; and a detailed analysis of the complex event processing required to support fine grained monitoring.