



MASTER'S THESIS DEFENSE
**Engineering an HL7 Interface and Wireless
Infrastructure to Improve the Efficiency of ECG
Analysis at Hartford Hospital**

By
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Abstract:

Hartford Hospital currently uses General Electric's (GE) Marquette Universal System for Electrocardiography (MUSE) software for electrocardiogram (ECG) analysis and acquisition. While the software, as configured, was effective for physicians reviewing a patient's ECG waves, the system, as it was, had no way of interfacing with the hospital's ordering software, Sunrise Clinical Manager (SCM). With this lack of communication between SCM and MUSE, many physicians have been reading, confirming, and processing ECGs for billing that have no associated order. This current workflow has created many concerns at Hartford Hospital in regards to reimbursement and especially compliance.

In order to ameliorate this problem, a Health Level Seven Standard Interface (HL7) was implemented into Hartford Hospital's current ECG system. The HL7 interface brings together the hospital's existing orders, ADT, and results and billing software. Upon completion of this integration, every ECG taken in the hospital can be effortlessly associated with an order when an ECG is performed electronically from the mobile ECG device. The implementation of a wireless transmission component was also developed so that completed ECGs can be instantaneously sent to the ECG software directly from the ECG machine, where the analysis was performed. Through this unique fabrication of the HL7 and wireless components, Hartford Hospital can more efficiently and effectively associate patient demographic and ECG data to improve patient care.