

## Case Study: Automated Intelligent Queries Promote Efficiencies in Emergency Department



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### Categories:

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- ◆ Pharmacy
- ◆ Care Coordination
- ◆ Labs/Radiology

### About the Organization

**LTPAC Organization Name:**  
Erie County Medical Center (ECMC)

**Main Contributor:**  
Dr. Anthony J. Billittier,  
Emergency Department Physician

**LTPAC Organization Type:**  
Acute Care Hospital and Level 1  
Adult Trauma Center

**Organization Description:**  
The ECMC Corporation includes an advanced academic medical center with 573 inpatient beds, on- and off-campus health centers, more than 30 outpatient specialty care services, and a 390-bed long-term care facility. ECMC is Western New York's only Level 1 Adult Trauma Center, as well as a regional center for burn care, behavioral health services, transplantation, medical oncology, head and neck cancer care, and rehabilitation.

### Mode of Interoperability

Health Information Exchange (HIE)/Regional Health Information Exchange (RHIO)

### Trading Organization Name

HEALTHeLINK

### Trading Organization Type

Health Information Exchange entity (HIE) that utilizes NextGen's Mirth Results and Mirth Connect integration engine products and HIE's own Intelligent Query Gateway (IQG).

### Trading Organization Description

HEALTHeLINK is a collaboration among hospitals, physicians, health plans, and other health care providers in the eight counties of western New York State to securely exchange clinical information to improve the quality of care, enhance patient safety, and mitigate health care costs. HEALTHeLINK is certified by New York State as a Qualified Entity and part of the Statewide Health Information Network for New York (SHIN-NY), which enables providers to access their patients' data from across the state.

### Project Description

Using intelligent query, HEALTHeLINK launched an Emergency Department (ED) Summary Report with Erie County Medical Center (ECMC). With this functionality, HEALTHeLINK immediately generates specific queries from IQG using the HL7 FHIR (Fast Healthcare Interoperability Resources) standard for a predefined set of data and sends to the hospital's EHR when a patient is registered at ECMC's Emergency Department.

### Implementation Approach

Because intelligent queries are system-generated queries designed to request specific data elements from HEALTHeLINK, the team first had to work with ECMC's emergency providers to select the predefined set of data points that are most crucial to care. For the ED Summary Report, data elements including patient demographics, allergies, immunizations, medications, conditions social history, abnormal lab and other test results, and vital signs are generated as a PDF upon a patient's registration and delivered to ECMC's EHR using the FHIR standard. An affirmative HEALTHeLINK patient consent is also required for the ED Summary Report to be delivered. A user does not need to be logged in to HEALTHeLINK, and the summary report retrieves only the predefined information as opposed to returning the entire patient record.

## Outcomes

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HEALTHeLINK utilizes and pulls from all its participating data sources when compiling the ED Summary Reports, so providers have access to the full breadth of clinical data available via the HIE.

Since going live in October 2021, HEALTHeLINK has seen an approximately 40% decrease in user-generated patient record lookups from ECMC's Emergency Department. This is a positive result and attributed to the automated queries, which are improving provider workflow by having the predefined set of data elements automatically sent directly to their EHR. HEALTHeLINK sends approximately 5,000 ED Summary Reports to ECMC emergency providers monthly.

According to Dr. Anthony J. Billittier IV, FACEP, an Emergency Department physician at ECMC, "Having immediate access to clinical information in a care setting when timing can be crucial has been a real game changer. As most patients that I see are new to me, the ED Summary Report is improving the overall workflow of the Emergency Department as information needed to provide the most effective treatment decisions is easily obtained."

"This is revolutionary for those of us providers who practiced with paper charts. Previously, the only way to get a patient's medical history was to send someone down to medical records to pull, often thick, volumes of paper and then spend significant time trying to find the pertinent information, which was only from one hospital setting," continued Dr. Billittier. "Today, only a few clicks are needed to access patient information to significantly increase quality of care and potentially reduce duplicate testing and unnecessary costs."

## Lessons Learned/Advice to Share with Others

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While statistically speaking, automated queries are resulting in a significant decrease in ECMC emergency providers directly accessing HEALTHeLINK for patient clinical information, the ED Summary Report functionality is enhancing the participant's overall HIE experience. The clinical information, which before they would be manually looking up via HEALTHeLINK, is now automatically being generated into their EHR, saving time.

To be most effective with this functionality, there needs to be a predefined set of data; each automated query cannot be personalized based on the treating physician. Because of this, HEALTHeLINK needed to work with the providers to drill down to the data elements they collectively wanted and would be most useful universally.

HEALTHeLINK is working to expand this functionality to other participating Emergency Departments. Similar technology can also be tailored to other health care settings and is being utilized for primary care practice pre-visit planning queries, and in the future, pre-surgical clearance.