CASE STUDY

The patient matching challenge

> We knew we had a quality problem with our data. We had hundreds of thousands of records from different providers that needed to be linked to the right patients, who now all fell under the BHS umbrella. You can't manage populations of any kind or make decisions regarding how to allocate resources if you don't have data integrity.

Thomas McGill, M.D.
VP Quality and Chief Medical Information Officer
Butler Health System

Background

Butler Health System (BHS) serves a seven-county region in Pennsylvania. The system encompasses Butler Memorial Hospital, a 296-bed hospital in business for nearly 120 years; 36 ambulatory locations for lab, imaging, cardiology and other outpatient services; and more than 50 primary and specialty physician offices.

Challenge

In recent years, BHS has experienced rapid growth, adding multiple physician practices to its system. Bringing these disparate EMRs together into a single data source required linking and matching patient records and resolving duplicates. Performing this task manually would have taken years, which was far longer than BHS could afford to wait. BHS needed a faster solution so they could provide optimal patient care while protecting patient safety.

Additionally, BHS was preparing to kick off population health initiatives in order to succeed in value-based payment models by lowering costs and improving quality. Accurate data would be a necessity for identifying high-risk patients and detecting trends. To do that, data integrity among patient records was a critical factor to success.

After multiple physician practice acquisitions, Butler Health System had 1.3 million patient records representing approximately 740,000 unique patients, split across six different EMR source systems. Accurately matching those records was a foundational step in the health system's enterprise analytics and patient safety initiatives.

Pressing issues

In addition to the upcoming population health initiative, several other critical factors were forcing BHS to take swift action:

1. Patient Safety – Physicians needed to see complete records to correctly diagnose and treat their patients. Duplicate records could mean a patient's information was spread across multiple records in one EMR. Physicians would have had no way of knowing they were seeing only part of the picture. If critical details such as medication allergies or lab results were missing from a patient's file, the physician could have made an incorrect and potentially harmful treatment decision.

2. New Information System – BHS was planning to replace its hospital information system in 2018. That task alone was daunting, but trying to resolve disparate data was proving even more difficult. Having a vendor clean the data prior to the move could have been extremely costly. Resolving the tasks manually in-house would have taken too long or involved hiring additional staff.

3. Future Mergers and Acquisitions – BHS expected to continue growing its health system by acquiring practices in its service area. With each new addition, the patient-matching and duplicate records problem became more complex.

Many of the acquired practices had problematic data. Practices with multiple locations in close proximity often had duplicate records for patients who had visited more than one location. Duplicate records could make a practice appear bigger than it was, which might have skewed decision-making.

4. Payment Reform – In the evolving value-based healthcare system, claims reimbursement rates could potentially drop in favor of incentive payments. Provider compensation was and is increasingly being tied to performance and quality data instead of fee for service. BHS wanted the ability to use its own real-time data to be proactive in assessing its performance. Without accurate patient records data, it would have been unable to make informed decisions regarding how to improve and reduce costs.

5. Gain-Sharing Risk – BHS intended to increase its use of gain-sharing contracts with physician practices. Performance data was critical to its negotiations. BHS needed accurate counts for the number of patients and the cost of their care in order to determine fair value.

Solutions

BHS turned to Occam's enterprise Master Patient Index (eMPI) platform for help in identifying common patients across the six separate EMR systems and to streamline the administrative tasks associated with cleaning up duplicate records.

Occam's eMPI is a patient identity platform for high quality, automated patient matching, registration data stewardship and deep integration. Occam's Research Automation module is built on LexisNexis® Health Care proprietary linking technology, LexID®, to automate patient identification where the data would not otherwise support it. The LexID utilizes dynamic, statistically-based proprietary linking technology and vast referential data to assign a unique identifier to each individual patient.

> We chose to partner with LexisNexis Health Care to build LexID into our EMPI solution because they can make identity decisions where the data just wouldn't support it otherwise. Together, we're able to automate an incredible number of matching decisions with very little manual intervention.
>
> – Lee Prosch
> CEO
> Occam Technologies

Results

Occam's EMPI, layered with LexisNexis LexID, took 1.3 million disparate records down to 740,000 unique patient identities, which meant avoiding an additional 105,000 research tasks. BHS now had a far more accurate view of its patient populations.

97%
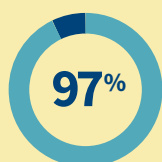
Going forward, it also has the means to automatically identify and resolve **97%** of unmatched records.

Accurate

If additional practices are added to the system, BHS has the ability to scrub massive patient datasets to remove redundancies and identify duplicate records. Finally, BHS can move to its new hospital information system without the need to cleanse, process or store redundant information, reducing costs.

> " The confidence level we now have in our data is far better than we've ever had before. Occam eMPI layered with LexisNexis LexID, has helped us get a whole lot closer to 100% accuracy. "
>
> – Dr. McGill
> Butler Health System

To learn more about LexisNexis Health Care solutions, call 866.396.7703 or visit risk.lexisnexis.com/healthcare/provider

LexisNexis RISK SOLUTIONS | Health Care

OCCAM

About LexisNexis Risk Solutions

LexisNexis Risk Solutions harnesses the power of data and advanced analytics to provide insights that help businesses and governmental entities reduce risk and improve decisions to benefit people around the globe. We provide data and technology solutions for a wide range of industries including insurance, financial services, healthcare and government. Headquartered in metro Atlanta, Georgia, we have offices throughout the world and are part of RELX Group (LSE: REL/NYSE: RELX), a global provider of information and analytics for professional and business customers across industries. RELX is a FTSE 100 company and is based in London. For more information, please visit www.risk.lexisnexis.com and www.relx.com.

Our healthcare solutions combine proprietary analytics, science and technology with the industry's leading sources of provider, member, claims and public records information to improve cost savings, health outcomes, data quality, compliance and exposure to fraud, waste and abuse.