

## CASE STUDY

# Enterprise Patient Matching Helps KeyHIE Establish Integrated Network of Accurate, Accessible Health Records



### AT A GLANCE

- Product: EMPI
- Large HIE serving Pennsylvania and New Jersey
- Covering 59 counties
- 5.8 Million Patients
- Over 4,000 healthcare providers across 500+ member organizations

### Outcomes:

- ▶ NextGate's EMPI technology enabled KeyHIE to link over 10 million EHR records across 59 counties.
- ▶ Automated patient matching capabilities drove KeyHIE's duplicated record rate down to less than 1 percent.
- ▶ EMPI implementation has saved 743 manual remediation hours per month.
- ▶ The EMPI's intelligent automated technology enhances physician productivity and instills trust and confidence from providers in data quality and accuracy.
- ▶ NextGate's market experience, leading-edge technology and superior customer service provide critical support to KeyHIE.

One of the nation's longest-running and most successful health information exchanges, KeyHIE, partnered with NextGate to align 5.8 million unique patients across 59 counties for improved care management, clinical workflow, and a consolidated record of each patient using an Enterprise Master Patient Index (EMPI).

### Overview

As one of the oldest and largest Health Information Exchanges, Pennsylvania's Keystone Health Information Exchange (KeyHIE) is a national model of success for fully-connected care, serving more than 5.8 million patients through a diverse network of 29 hospitals, 369 physician practices, 35 home health locations, 90 long term care facilities, 18 pharmacies and 19 urgent care clinics. Founded by Geisinger Health System in 2005, KeyHIE prides itself on interoperability, offering patient-consented access to over 10 million electronic health records across 59 counties in Pennsylvania and New Jersey through a secure, single online login.

Fundamental to KeyHIE's commitment to coordinated patient-centered care, was to create an integrated network of accurate and accessible patient data. To achieve this goal, KeyHIE partnered with NextGate to implement an Enterprise Master Patient Index (EMPI). The vendor-agnostic EMPI enables data from multiple disparate sources across complex healthcare environments to be correctly linked to the same individual, eliminating duplicate records and giving providers a consolidated enterprise view of any given patient.

Goals of the project included:

- Provide an automated, stand-alone interface to reconcile, de-duplicate and link medical records across all clinical and financial systems for cross-platform patient identification.
- Establish KeyHIE as a fully integrated network for seamless health information exchange and a longitudinal view of a patient's care history.
- Obtain an understanding of who and where individuals in the community are being treated.
- Assure data integrity for accurate dissemination of information and record retrievals; enhanced care coordination and clinical-decision making; greater provider and patient satisfaction; and improved quality and outcomes.

## Challenge

For health information exchanges, the goals of expanding network participation and driving effective collaboration between members hinge on the ability to provide timely, accurate and up-to-date patient data.

Like many evolving HIEs, KeyHIE's need for an enterprise-level patient matching partner grew, in part, due to the scores of EHR applications, and the resulting number of duplicate and incomplete patient records. According to Kim Chaundy, Sr. Director of Operations at KeyHIE, the network not only needed to improve patient identification and record matching accuracy, but also to enhance its ability to share data among participants.

"True interoperability is making sure we can transition a patient into the community, that the succeeding care team has access to their data with a full understanding of that individual's care history, and effectively complete the cycle of treatment," she said. "It's critically important to

integrate these EHR systems so that all of the community data comes together."

"It not only reduces costs," she continued, "but more importantly improves the overall care provided to the patient because the clinician or care team member is presented with a timely, accurate and complete view of everything that happened previously with that individual."

## Solution

To realize its vision of a sustainable, connected network, KeyHIE needed an enterprise data integration and identity management partner to reconcile patient records across its growing number of participants and to provide on-demand access to millions of patient records. To that end, KeyHIE implemented an Enterprise Master Patient Index (EMPI) solution from NextGate.

Built on the MatchMetrix® master identity platform, the NextGate EMPI automatically links the right patient to the right record by assigning each individual a global unique patient identifier.

The solution provides a centralized location of trusted patient demographics with capabilities that include:

- A single source of reference for patient identity management across all EHR systems
- Automated, real-time patient record matching across disparate systems and settings of care.
- Seamless integration of new and existing legacy applications to provide fluid data exchange without sacrificing clinical or administrative workflow.
- De-identification processes for population-based analytics and quality reporting.

“The EMPI is really the foundation of the HIE. It's making sure we're doing all of the little things right to make the big things happen.”



**Kim Chaundy**  
Sr. Director of Operations  
KeyHIE



Keystone Health Information Exchange®

The EMPI’s ability to provide a centralized and reliable index of patient health data and enable vendor-neutral cross-platform interoperability allows KeyHIE to provide real-time delivery of information.

“That means faster service and improved customer satisfaction,” said Chaundy.

Uniquely identifying patient data from multiple providers and sources gives KeyHIE participants an enterprise-level view of a patient’s care record at the time it matters most, resulting in improved clinical decision-making, quality and safety, and patient-provider experience.

“It was important for us that the EMPI be a foundational tool in supporting the downstream benefits of population health management and accountable care,” said Chaundy. “With NextGate, we are able to match patient data at an enterprise level and connect the dots from various stakeholders across the community to support value-based care delivery and positively influence the health of our citizens.”

Using NextGate’s EMPI to map one’s entire care history, KeyHIE is able to identify at-risk patients and trends and close care gaps. For example, the HIE can send information on a diabetic patient seen by a foot specialist over to the individual’s primary caregiver for streamlined coordination and cohesive person-centered care.

“For a small family practice doctor, it can be incredibly difficult to know what’s going on with the patient throughout the community. The HIE is leveraging the EMPI to communicate that a patient received care elsewhere for highly-collaborative care and better decision-making,” Chaundy said.

### Results

Since implementing the EMPI, KeyHIE has been able to save 743 hours of manual remediation labor per month and has reduced its duplicate record rate down to less than one percent.

“Each one of those is a potential risk,” said Chaundy, “so the impact on care quality and an organization’s reputation is significant.”

During NextGate’s initial record clean-up for KeyHIE, over 12 million disparate and duplicated patient records were resolved into single enterprise unique identifiers (EUIDs).

“We were amazed how many possible duplicates there were,” said Chaundy. “We knew we had issues, but it was quite an eye-opening experience to discover that our data wasn’t as clean as we thought it was.”

Now whenever a patient receives services in the community, KeyHIE matches that up with the patient and the medical record of the ordering site.

## NEXTGATE EMPI SOLUTION OVERVIEW



### AUTOMATED PATIENT RECORD MATCHING

Vendor-neutral platform correlates patient IDs across multiple systems for a single record of care.



### REDUCED COSTS, IMPROVED OPERATIONAL EFFICIENCIES

Prevents duplication of service and diagnostic testing and reduces administrative waste.



### BETTER CARE COORDINATION & INTEROPERABILITY

Timely access to a single, reliable record of one’s complete medical history.

The EMPI performs this function automatically, adding the information to the metadata header and transferring it across via HL7 messaging directly into the patient's chart, along with a notice to the provider.

Previously the information would be faxed, where five to six people worked to pull it up, read it, match it and put it into the patient's record, taking about one minute per document.

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Kim Chaundy  
Director of Operations  
KeyHIE

“It's the responsibility of any organization collecting patient data from multiple systems and sites of care to have an EMPI in place, and it's extremely important to have one that has market maturity behind it,” Chaundy said. “Experience and market longevity allow you to

collaborate your lessons learned and make a stronger platform, and that's exactly what NextGate has done.”

Chaundy added that NextGate has been an effective and dynamic partner in working with KeyHIE to maximize the extent of the platform.

“Our strong partnership with NextGate has allowed us to support our vision of a totally digital healthcare system environment,” said Chaundy. “They have a very robust tool, they're experienced, innovative and they're good at what they do.”



OF MANUAL REMEDIATION  
SAVED PER MONTH

Having a longitudinal view of patient records improves nearly every aspect of care delivery for KeyHIE and the more than 4,000 healthcare providers across its 500+ member organizations.

“The EMPI is really the foundation of the HIE,” said Chaundy. “It's making sure we're doing all of the little things right to make the big things happen.”



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NextGate's market-leading technology in patient and provider identification connects the healthcare ecosystem to provide a complete and accurate record of care across the enterprise. Involved in managing 300 million lives across the globe, NextGate's Enterprise Master Patient Index (EMPI) is deployed by the most successful health systems, hospitals and HIEs. We help organizations overcome the clinical, operational and financial challenges that result from duplicate records and fragmented information in healthcare for seamless data exchange, enhanced clinical decision-making, and better care collaboration. For more information, visit [www.NextGate.com](http://www.NextGate.com).