

## Enterprise Master Patient Index

A centralized, comprehensive, and trusted directory to manage and share patient information across healthcare settings, applications, and organizations

## Benefits

- Greatest accuracy in the capture and exchange of patient data
- Create a panoramic view of patient data
- Support Meaningful Use requirements to improve patient care and service
- Enable more informed clinical decisions
- Enable faster participation in HIEs and other exchange initiatives
- Improve regulatory compliance
- Lowest Total Cost of Ownership

## MatchMetrix EMPI

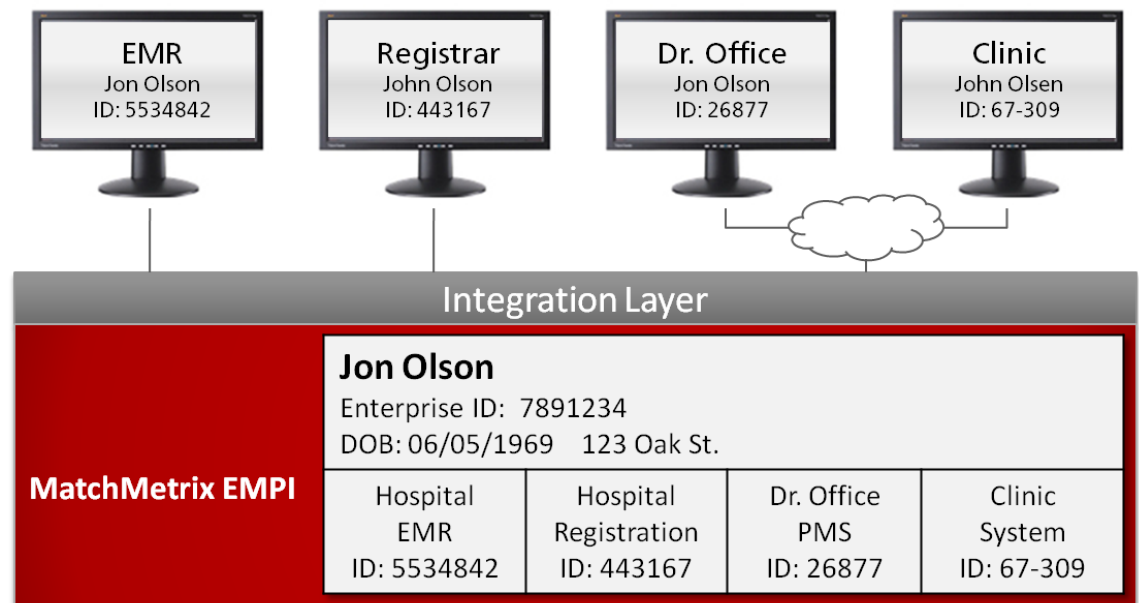
Today's health care environment requires immediate, accurate, and secure access to patient information. The widespread distribution of patient data complicates the process, especially since each system maintains its own method of identifying a patient. The role of an Enterprise Master Patient Index (EMPI) is to link together the various local identifiers under a single Enterprise ID, enabling precise and efficient exchange of data.

The NextGate® MatchMetrix® EMPI is a proven application that manages the intricate logic of correlating patient data. Capitalizing on nearly two decades of experience deploying enterprise index solutions, NextGate designed the MatchMetrix EMPI to accommodate healthcare's specific challenges.

The EMPI uses intelligent matching algorithms to identify, compare, and link related patient records from any source, and assigns the enterprise ID. The matching process can

detect duplicate records and automatically merge or reconcile them based on user defined rules, or flag them for manual review. User-friendly stewardship screens and facility-based reporting make it easy to manage the quality of content. Strict access controls limit access to authorized users and record every activity, ensuring HIPAA and other privacy regulations are complied with. Additional registries extend the functionality of the EMPI to maintain encounter, insurance, and consent information.

The result is a clean, trusted enterprise index of patient data. With the MatchMetrix EMPI, it is now easier to exchange information across the healthcare ecosystem and to construct a panoramic view of patient data. The solution helps organizations achieve the ever present goals of improving patient safety, enhancing the quality of care, and reducing the costs of healthcare delivery.





## Technical Overview

Based on the NextGate MatchMatrix MDM Platform, the EMPI delivers a sophisticated mechanism to compare and correlate various patient records within a healthcare environment. The EMPI is comprised of the MatchMatrix Server, management GUIs, APIs, and a database. The application can be deployed on any Java runtime platform, utilize popular databases, and integrate with any middleware or service bus environment.

During implementation, a detailed analysis of the target population helps the organization define matching thresholds. Using probabilistic algorithms, the Server assigns a weight to each data element and compares the aggregate score against the thresholds to determine which records are unique, which

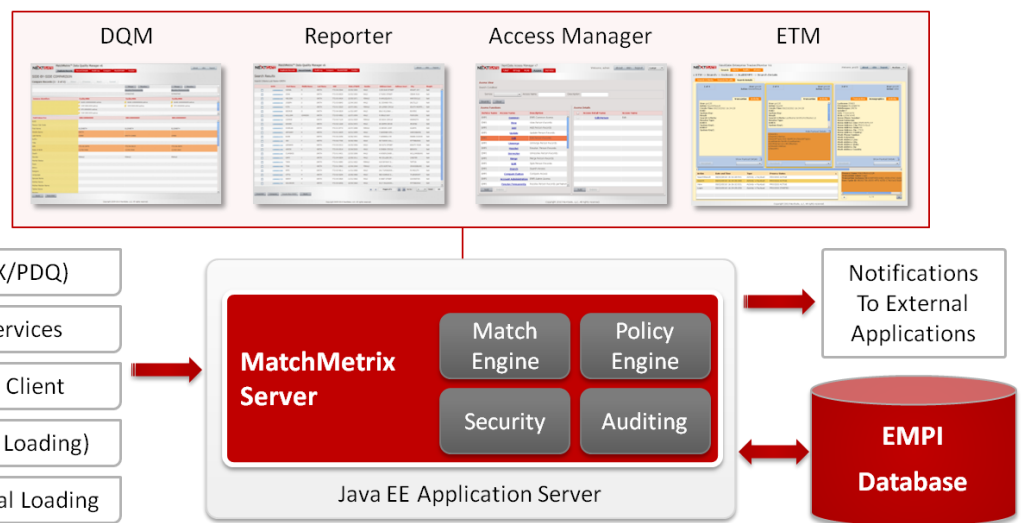
should be merged automatically, or which are potential duplicates that require manual review.

APIs provide easy access to the index for data loading, real-time updates, querying, searching, and building extensions. Notifications can be sent to external systems to inform them of updates. Authorization capabilities enforce proper access, and auditing features record every interaction and activity.

The EMPI can be deployed in centralized and federated instances to accommodate multi-facility and multi-partner architectures, like Health Information Exchanges (HIEs) or NHIN. Engineered for high performance, the EMPI can scale to support millions of records.

### Features

- Optimized matching algorithm to compare and standardize patient populations
- Data model pre-configured for healthcare attributes
- Standard reports display activity and operational statistics
- Screen flows designed for efficiency
- Audit trails record every access activity
- Extensions for site specific requirements
- Integrates into existing environments through APIs
- PIX/PDQ profiles
- IHE compliant
- Fastest to deploy



MatchMatrix EMPI High Level Architecture

## EMPI Extensions

The modular design of the EMPI makes it easy to add these and other feature extensions that amplify its purpose, capabilities, and value.

The MatchMatrix Encounter Registry promotes improved clinical workflows by storing visit or encounter data. The MatchMatrix Insurance Registry adds insurance and guarantor relationships. The MatchMatrix Location Registry supports the development

of location aware services. The MatchMatrix Relationship Registry defines relationships between parties, such as patient/provider, or entity/organization.

These extensions enable a more complete, panoramic view of a patient's interaction with the health care system, streamlining financial transactions and improving coordination of care.



## Stewardship Functions

- Search
- Review potential duplicates
- Compare records
- Merge records
- Un-merge records

## Search Types

- Demographic with varying levels of attributes
- Local Identifier
- Unique Identifier (e.g. SSN or Driver's License Number)
- Statewide Identifier

## Related Products

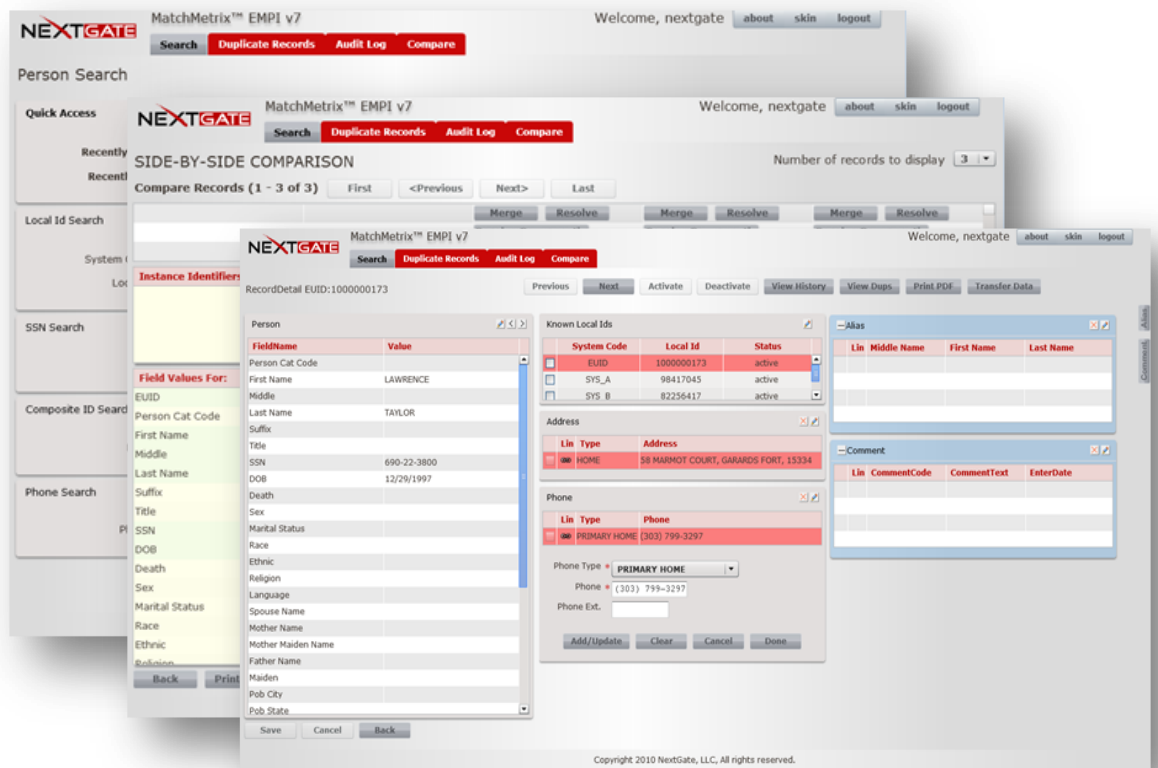
- MatchMatrix Encounter Registry
- MatchMatrix Insurance Registry
- MatchMatrix Location Registry
- MatchMatrix Relationship Registry
- MatchMatrix Provider Registry
- MatchMatrix Terminology Registry

## Data Quality Manager

The Data Quality Manager (DQM) provides the web-based management interface for searching, viewing, editing, merging, un-merging, and tracking records within the EMPI.

The DQM is typically used by the Health Information Management department, but its functionality can also be integrated into the workflow of existing front-end applications, like registration or scheduling, so that an enterprise search for a patient can be conducted before a potential duplicate record is created.

The search engine uses a variety of demographic fields to search for patients, and accommodates common user errors like misspellings and transposed characters. To help with record reconciliation, up to five records can be compared side-by-side, with highlights indicating field level differences. Each organization that contributes data to the EMPI can choose to have individual fields in the DQM masked for privacy. The functionality and efficient layout of the screen flows make it easy to manage the data contained within the EMPI.



Data Quality Manager

## Access Manager

The Access Manager supports the strict concerns of healthcare security, privacy, and data ownership by controlling user and system access to the EMPI. Utilizing Role-Based Access Control (RBAC), LDAP credential stores, consumer opt-in and opt-out settings, and PKI-based security, only authenticated users are capable of interacting with the contents, functions, and GUIs of the index. With granular precision, all data fields are restricted

according to the roles of authorized users, protecting sensitive data from disclosure. Comprehensive audit capabilities track every time a record is viewed or changed, including before and after images, and the user ID. This feature is particularly helpful in the context of HIPAA and HIEs, giving participating enterprises confidence that their data is not generally available to any EMPI user.



## Reporter

The Reporter generates practical reports to help maintain a clear operational understanding of the EMPI from both a data quality and user activity perspective. The Reporter GUI allows end users to create standard reports or build ad-hoc reports against any data element in the EMPI. Reports can be displayed on a browser or saved in PDF, XLS or CSV formats for distribution. Most importantly, the reports can focus on a single facility or user, or span the entire EMPI.

## Standard Reports

- Potential Duplicate by Facility
- Automatic Match by Facility
- SSN Duplication or Change
- Potential Overlay
- Transaction Activity

## Leveraging the EMPI

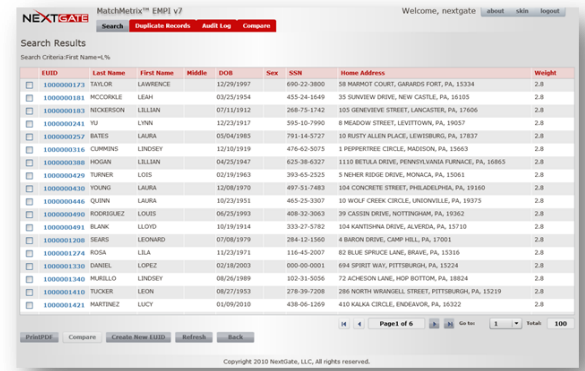
- ePrescribing
- Lab results
- Radiology reports
- Medication history
- Clinical summaries
- Eligibility verification and claims submission
- Hospital discharge summaries
- Quality reporting

## Event Tracker & Manager

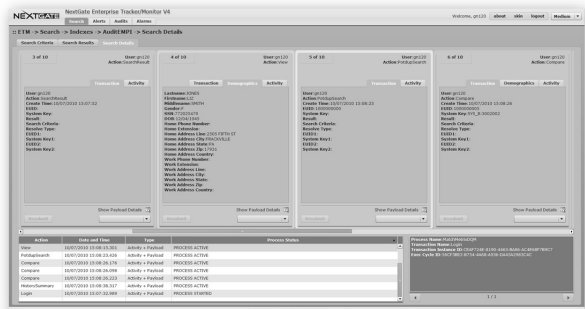
The Event Tracker and Manager (ETM) provides centralized tracking and auditing of event traffic across distributed applications, even non-NextGate systems. This detailed scrutiny captures the “who, what, when, and where” of transactions so that administrators can find out the “why”. The ETM creates a comprehensive picture of the state of the entire system and makes it easier to troubleshoot issues, fix and resend transactions, track activity from all participating organizations, identify users that could benefit from additional education, and compile reports that examine policy compliance such as HIPAA disclosure, security provisions, and site specific initiatives.

## Implementation Resources

NextGate has been designing, implementing, testing, and rolling out EMPI solutions since the early 1990’s when the founders developed healthcare’s first vendor independent EMPI. Our team of experts knows the subtleties, benefits, and consequences inherent in the implementation of an index, and has earned a distinguished track record of success. This elite team is comprised of solution and product architects, engineers, QA analysts, and project managers, each with an extensive knowledge of the entire index implementation process.



Reporter



Event Tracker and Manager

## About NextGate

NextGate, the enterprise master index and registry leader, offers products and services for the precise management of information. With an extensive background in Enterprise Master Person Index, Enterprise Application Integration, and Service Oriented Architecture technology, NextGate is a trusted advisor and innovator in the delivery of creative, robust and simple solutions that make data management easier.