



BETTER OUTCOMES, LOWER COSTS: HOW EMPIS ARE TRANSFORMING HEALTHCARE

DISRUPTIVE PRESSURES DEMAND ACCURATE HEALTHCARE DATA

During each workday, the average clinician spends 28.2 minutes searching for medical records.¹ But since both patient safety and claims approval hinge on accurate data, that time is a necessary investment. One of the biggest parts of the challenge is discerning who, exactly, the patient is across the many locations and systems that collect patient data.

Population health, consumer engagement, and value-based payment endeavors are raising the stakes for timely, consistent accuracy. Meanwhile, many organizations are in the midst of pilots that seek to transform healthcare through blockchain, artificial intelligence, and machine learning.

But if the source data can't be trusted, neither can the results and outputs of these pilots.

86% of clinicians have observed a medical error that was a direct result of misidentification²

33% of all denied claims stem from misidentification, costing the average hospital \$1.5 million per year³

The average healthcare organization relies on **18** different EHR vendors⁴

EHR patient match rates can be as low as

80% within a facility — and as low as

50% when data is shared from external entities⁵

¹ <https://www.healthitoutcomes.com/doc/national-patient-misidentification-report-0001>

² <https://www.healthitoutcomes.com/doc/national-patient-misidentification-report-0001>

³ <https://www.fiercehealthcare.com/finance/patient-matching-technology-costs-1-5-million>

⁴ <https://www.healthcareitnews.com/news/why-ehr-data-interoperability-such-mess-3-charts>

⁵ <https://www.pewtrusts.org/en/research-and-analysis/reports/2018/10/02/enhanced-patient-matching-critical-to-achieving-full-promise-of-digital-health-records>

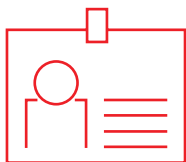
3 BIG IDENTITY CHALLENGES MUST BE SOLVED

Next-generation healthcare initiatives hinge on accurate identification. Without it, they will struggle to improve outcomes and better manage populations.



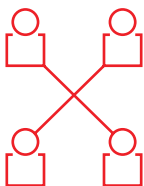
PERSON/PATIENT IDENTIFICATION

Organizations must answer, “Who is this patient? Which systems have relevant data that should be linked to ensure a holistic, trusted view of all this patient’s data?” Varied definitions of consumer, guarantor, and digital identity make this long-standing challenge particularly sticky.



PROVIDER IDENTIFICATION

Providers can include primary care physicians, specialists, referring physicians, nurse practitioners, and physician assistants. Provider data often suffers from a lack of standards, multiple layers of identification (NPIs and TINs), and inconsistent definitions. Provider profiles must include practice locations and hours, new patient acceptance, and which insurance plans are accepted – and must remain accurate amidst frequent changes.



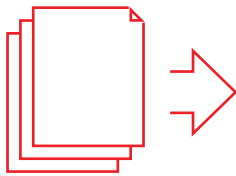
MAPPING THE RELATIONSHIPS

An increasing array of patient, provider, and beneficiary/consumer data is part of nearly every healthcare operation, but organizations must understand how they relate to each other. The average person with a chronic condition – about a third of Americans – sees more than 10 different physicians in the course of a year.⁶ To truly coordinate care, each provider and payer, plus the healthcare system, must grasp how they fit together.

⁶ <https://www.pewtrusts.org/en/research-and-analysis/reports/2018/10/02/enhanced-patient-matching-critical-to-achieving-full-promise-of-digital-health-records>

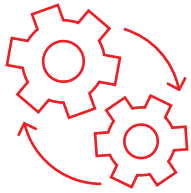
3 WAYS EMPIS MAKE THE FUTURE POSSIBLE

*An EMPI links data across multiple datasets, both internal and external, to create a longitudinal record that provides a **trusted single view** of each patient and their entire history.*



AN EMPI REDUCES DUPLICATES

A 2018 study by Black Book Research found that organizations had an average duplicate rate of 18% prior to implementing an EMPI, costing \$1,950 per inpatient stay. Hospitals using EMPIS improved their average patient matching accuracy rate to 93% for registrations,⁷ reducing costs of resolving duplicates while decreasing denied claims and redundant testing.



AN EMPI PROVIDES A PLATFORM FOR OTHER NEEDS

An EMPI's customizable machine learning algorithms and thresholds can be adjusted to fit each organization's specific, evolving needs. After initial design, the flexible architecture can accommodate various adjunct features, such as third-party address verification or standardization, with minimal rework. Organizations can set unique thresholds for research, population health, care delivery, and market analysis. The data can be easily exported and confidently shared in a standardized, cost-effective fashion.



AN EMPI BOOSTS FUTURE AGILITY

An EMPI eases the evolution to future initiatives, providing accurate data for regional integrations, patient wearables, clinical trials, AI-driven clinical discovery and diagnosis, digital front door, social determinants of health, and consumer engagement. Machine learning and automation help the EMPI continually improve.

⁷ <https://ehrintelligence.com/news/duplicate-patient-ehrs-cost-hospitals-1950-per-inpatient-stay>

THE IMT APPROACH

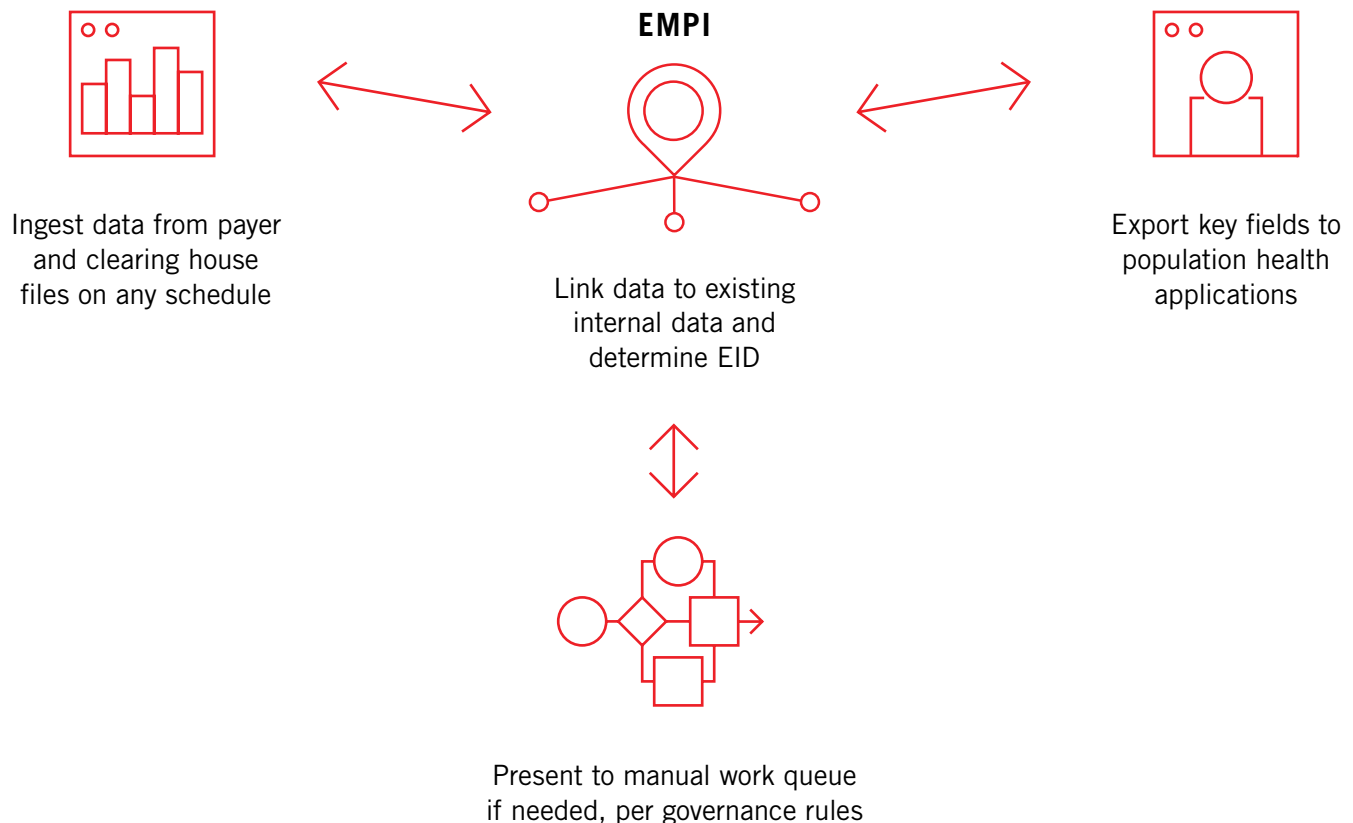
IMT MASTER:ID IS PROVEN TO PROVIDE A SINGLE, TRUSTED PATIENT VIEW

- Creates an enterprise view of patients to streamline the EHR's initial load of current and historical data
- Auto-links legacy records through a precise matching algorithm with optimized thresholds, eliminating manual handling for a secure and complete result
- Administers the enterprise ID to serve as the foundation for analytics across domains and relationships, and extended data models – all essential to AI and machine learning initiatives

IMT CLIENTS SEE RESULTS:

- **77% fewer data quality issues**, with a standardized data stewardship process that prevents future duplicates from propagating in the EHR
- **66% reduction in task volume**, freeing up data analysts for more important initiatives
- **Trusted data that can be activated** to improve care across the healthcare spectrum while meeting value-based care requirements

HOW AN EMPI MANAGES DATA FOR POPULATION HEALTH



EMPIS ARE IMPROVING CARE – AND THE BOTTOM LINE

1. POPULATION HEALTH: A LIFETIME PATIENT RECORD ENHANCES CARE DELIVERY

Population health initiatives aim to coordinate care throughout a system to improve outcomes. But that takes tracking populations to understand metrics like 30-day readmissions.

An EMPI empowers population health initiatives by feeding aggregated and linked data to quality reporting systems. When accurate data is united by an enterprise patient ID, case managers can follow up on a patient's care – ultimately improving relationships and outcomes.

Organizations are applying increasingly sophisticated predictive models built on artificial intelligence and machine learning. When applied to longitudinal records, these models can predict readmissions or occurrences like breast cancer, falls, or sepsis. Longitudinal records also associate providers with their outcomes.

Moving forward, clinical trials and population-based research will require integrating other types of data, such as location, services, or insurers. EMPIS make this possible.

Case Studies



PROMOTING CLINICAL INTEGRATION POST-MERGER

Two recently merged health systems together manage 27.2 million records across 29 systems. The Master:ID EMPI creates a single person view that enables population health initiatives while improving value-based care results.

Clinical integration: Readmissions have **dropped by 30%** among one million patients in the system's clinical integration program. This program activates a care transition team, integrated care managers, and nurse navigators who guide patients into social determinant of health programs for follow-up care.

Medicare Shared Savings Program: The health system has **saved \$61 million** through the MSSP program – **3.9% better than the benchmark** – while earning a 97% quality score.

Claims delegation risk: The EMPI matches patient data against 15 unique payer files, handling capitation and full risk medical management to drive down costs.

EMPIs ARE IMPROVING CARE – AND THE BOTTOM LINE

2. VALUE-BASED CARE: BOOST PAYMENTS BY DELIVERING MORE EFFECTIVE CARE

Payers now provide incentives for high quality care at low costs, with penalties for missing those goals. And patients are demanding more effective care as they shoulder more costs on high-deductible plans.

For example, the Medicare Shared Savings Program refunds a percentage of savings to Accountable Care Organizations that meet benchmarks for high-quality, coordinated care. In 2018, this program generated \$739.4 million in net savings while 93% of participating ACOs earned quality improvement reward points.⁸

The CMS Bundled Payments for Care Improvement Initiative incentivizes providers to coordinate care for 48 common clinical episodes. So far, participating orthopedics programs reduce costs by an average of 4% with no negative impact on readmissions or other quality measures.⁹

Provider roster management programs are improving claims acceptance rates by helping providers prove their patient is the same person as a payer's beneficiary. These programs (also called "attribution") reconcile data across systems in two ways: comparing third-party beneficiary rosters with the provider, and reviewing the patient data associated with the provider. Once again, EMPIs make this possible.

Case Studies



BUILDING THE FOUNDATION FOR FUTURE INITIATIVES

A large academic institution uses an EMPI to connect 10 registration systems serving nearly 1.5 million outpatients and 50,000 inpatients annually. The future-ready platform is driving better clinical outcomes and helping meet value-based care goals.

Each month, the institution's Master:ID manages at-risk contracts by comparing 12 unique third-party beneficiary rosters with existing patient data. Without Master:ID, the EHR would only identify about half of the applicable population, creating 50,000 potential duplicates requiring costly, time-intensive manual review. The organization first worked with a third-party data provider for reconciliation, but the data was not accurate – and came at a \$150,000 monthly cost. Instead, IMT did a minimal amount of work to leverage the existing EMPI.

Meanwhile, the EMPI enables population health initiatives by using machine learning to integrate social determinant data, aggregate data for research initiatives, and leverage consumer technologies such as patient wearables.

⁸ <https://www.healthaffairs.org/doi/10.1377/hblog20190930.702342/full/>

⁹ <https://idi.upenn.edu/brief/current-state-evidence-bundled-payments>

EMPIs ARE IMPROVING CARE – AND THE BOTTOM LINE

3. CONSUMER ENGAGEMENT: IMPROVE TREATMENT PLAN COMPLIANCE

Patients expect to see all their relevant data when they log on to a patient portal – and it better be accurate. Linking demographic and clinical data enables a range of digital front door initiatives, from self-scheduling and online bill payment to finding a provider who accepts new patients AND a certain insurance plan.

Better yet, an engaged consumer is more empowered to improve their own wellness by following a treatment plan, taking recommended medications, and attending follow-up visits. Consumers expect to increase this engagement as wearable technology grows – and EMPIs can help integrate the data into their existing patient records.

Case Studies



IMPROVING THE PATIENT EXPERIENCE WITH A DIGITAL FRONT DOOR

One organization's IMT Master:ID EMPI connects 15 EHRs containing 28.9 million person records across 50 hospitals and hundreds of care sites. The EMPI creates 18.8 million enterprise IDs, each uniting all of a unique person's records. The EMPI has improved data quality and patient safety while reducing data stewardship tasks by 60%.

This health system relies on its EMPI for:

One-time registration: Patients register just once. At future encounters, they confirm the accuracy of their information rather than completing duplicate paperwork.

One bill: Consumers receive a single itemized bill for all services and providers surrounding an episode of care – even contracted services – delivered within 30 days of the encounter.

Personalization: Care plans are designed around clinical data, preferences, and personal health goals. Patients are paired with providers who share their communication style.

⁸ <https://www.healthaffairs.org/doi/10.1377/hblog20190930.702342/full/>

⁹ <https://idi.upenn.edu/brief/current-state-evidence-bundled-payments>

EMPIS AND AI ARE UNLOCKING THE FUTURE OF HEALTHCARE

An MIT Sloan survey finds 85% of enterprises see AI as a tool to unlock the full value of their data.¹⁰ Healthcare is no different.

AI and machine learning are automating processes and decisions while improving both the provider and the patient experience. Longer term, AI can predict – and even shape – outcomes, particularly when applied to population health and consumer engagement projects.

Reaching AI's full potential takes effort, but it must begin with trusted, accurate data. When an EMPI actively manages data to provide this trusted view, organizations can begin applying analytics, machine learning, and truly transformative AI.

Early pilots prove that even the most sophisticated AI tools are hampered by poor data quality, insufficient information architecture, and weak data governance. No matter where in the system the data resides, it must be current, accessible – and accurate. An EMPI makes it all possible.

Get ready for your next initiatives

*Are you actively managing your data to prepare for these initiatives?
Find out how IMT can help deliver an accurate, consistent data view
that's ready for anything.*

IMT.CA



IMT is recognized as a leader in providing innovative data management solutions in Healthcare eGovernment, and Law Enforcement. IMT is an IBM Gold Business Partner in Unified Governance & Information, and certified in Healthcare & Life Sciences Industry as well as Master Data Management Specialists. IMT maintains the highest commitment to client success and takes pride in 200+ registry and interoperability deployments.

¹⁰ <https://sloanreview.mit.edu/projects/reshaping-business-with-artificial-intelligence/>



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