# Executive Summary

Extending the Business Impact of EMPI

Does Your EMPI Deliver?

Interoperability to enable communication across the continuum of care

Quality and depth of identity matching

Extensibility to manage enterprise master data beyond the patient

Smarter analytics to deliver insight into relationships

Moving Toward Interoperability

Building a Business Case

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Executive Summary

With so much uncertainty and change, staying competitive in today’s healthcare market requires you to meet a shifting set of challenges. Healthcare coverage has evolved to be performance-based. Choice of services has become largely driven by customer preference, and costs have continued to escalate at an alarming rate. Health systems that once controlled a local market find themselves in a hyper-competitive environment with patient and physician satisfaction at the top of their priority list to sustain growth.

The current economic climate exaggerates this challenge as budget cuts result in contraction and consolidation of vital resources. In this environment, many organizations are working to maximize the value of existing technology assets and improve financial and clinical performance under tight fiscal constraints.

This paper examines the business impact of extending enterprise master person index (EMPI) technology to serve multiple initiatives across an organization. It profiles how the technology can grow with your business and serve as a building block for interoperability without requiring a significant capital investment.

Extending the Business Impact of EMPI

To expand the role of an enterprise master person index (EMPI) within your organization, criterion should not be limited to how the technology can reduce duplicate records and improve patient identification. Instead, it should extend to include additional opportunities for business improvement, such as:

- Increased referrals - Extend registration and information sharing capabilities to EMR and physician practices outside your four walls
- Improved physician satisfaction – Provide a system-wide view of medications, problems and allergies, accessible from inpatient and outpatient applications, including clinical portals
- Increased EMR adoption – Improve user confidence by removing duplicate records and including information from additional contributing sources
- Improved patient satisfaction – Provide quick and comprehensive point-of-service search during the registration process across all facilities and affiliated clinics
- Identification and retention of high-value referring physicians – Create a system-wide view of providers and relate them to patient interactions and procedures

An extensible EMPI supports the long-term vision of interoperable health and is a foundation for realizing these goals. Connecting people and organizations to all of their associated data across all disparate clinical and administrative systems will improve operational processes and identify opportunities for increased revenue and improved quality.

Before a case can be made for extending the EMPI, it’s important to remove any technological and business misperceptions about the capabilities required to achieve long-term interoperability goals.
Does Your EMPI Deliver?

Many organizations rely on embedded enterprise master patient indexes that are bundled with “single-solution” hospital information systems. These embedded EMPIs are typically tied to the architecture of the underlying HIS and are limited to managing communication within that system; they struggle to enable the cross-application communication required for interoperability.

When evaluating whether your EMPI will meet the demands of your long-term goals, you should consider the following:

- Can my EMPI enable communication of information across the continuum of care?
- Does my EMPI provide accurate identity matching to improve reliability of the data?
- Is my EMPI extensible enough to manage enterprise master data beyond the patient, including providers, organizations and members?
- Does my EMPI provide analytics to deliver insight into relationships within and across entities?

In the following sections we examine each of these questions and provide examples to describe the qualifications of each.

Challenging EMPI: Interoperability to Enable Communication Across the Continuum of Care

With the constant growth and evolution of the business, few if any healthcare organizations have homogenous technology environments. Consider the numerous specialty systems – cardiology, oncology and radiology, to name a few – that exist within your health system or outpatient systems used by affiliated and referring providers.

To enable the communication of information across the continuum of care, the ability to accurately reconcile identity across extended systems requires capabilities beyond what the embedded EMPI can deliver. An embedded EMPI’s core function is to interact with applications from the same vendor. An enterprise-class EMPI is technology-agnostic and able to aggregate identity data across information systems regardless of the unique approach for data type and format.

Challenging EMPI: Quality and Depth of Identity Matching

An embedded EMPI is typically limited to simplistic methods for identification and does not extend beyond the patient. It usually employs a deterministic matching system, which can be problematic depending on the size and complexity of the environment. The larger and more complex the environment, the less capable is the embedded EMPI.

An interoperable EMPI employs a probabilistic matching engine which is well suited for complex organizations with numerous disparate systems and databases. The probabilistic approach leverages statistical theory and data analysis to pinpoint variation and capture the nuances to a finer degree to establish more accurate links.
Challenging EMPI: Extensibility to manage enterprise master data beyond the patient

The ability to track everyone who is part of your ecosystem, including patients, providers, business partners or members of a health plan, is the extensibility component of an enterprise solution that is not found in an embedded EMPI. For example, an enterprise-wide view of your providers improves your ability to create targeted programs or specialized contracts to increase referrals from high-value physicians. Accurately identifying providers across organizations allows you to analyze activity across facilities, associate providers to outcomes, track providers operating with more than one NPI, and validate credentials from third-party sources to detect illegal activity.

Embedded EMPIs do not provide this extensibility, and as a result cannot support true interoperability initiatives that expand and grow your business. An interoperable EMPI creates system-wide views of entities that can be used by clinical and administrative systems to solve business challenges involving patients, providers, members and organizations that impact quality of care, billing/revenue cycle, provider management and health plan management.

Further, many vendors of interoperability platforms, integrated EMR solutions and clinical portals rely on the ability to effectively aggregate data across disparate systems to deliver their intended value. Many are now offering an interoperable EMPI as part of their solution, as they recognize that advanced functionality is required to enable effective data aggregation.

Explicitly, Initiate® Interoperable Health is being used at the foundation of the dbMotion SOA interoperability platform at the University of Pittsburgh Medical Center (UPMC) to enable clinical information sharing.

Case Study: Carolinas HealthCare System

Carolinas HealthCare System, which comprises 10 hospitals and more than 80 affiliated physician practices, previously used two embedded EMPIs to register patients for inpatient and outpatient settings. Carolinas installed Initiate® Interoperable Health to improve the patient experience at registration by providing a comprehensive, patient-centric view across 200 points of registration. Carolinas also leverages the technology to enable its system-wide EMR to deliver longitudinal medical records to clinicians practicing within the hospital or from an office or clinic.
EMPI: A Building Block for Interoperability

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Challenging EMPI: Smarter analytics to deliver insight into relationships

In addition to extending beyond the patient, many organizations seek to understand the clinical and business relationships that are hidden in the data. For example, analyzing the relationships between care teams and patients can help frame the continuum of care for a subset of specialists as well as their performance outcomes. This can be useful for chronic disease management, delivering transparency or pay-for-performance metrics.

Sophisticated analytics and data stewardship tools enable the healthcare organization to govern the data more proactively. For example, fraudulent activity can be detected through analytics tools, and records that are questionable matches can be evaluated and updated to prevent blind record overlay that could cause downstream issues. Unreliable sources that may be delivering low-quality data into your data stream can be quickly detected and managed. Further, the ability to set tolerance thresholds that govern when matches are made is only available with a sophisticated EMPI, not the embedded EMPI.

Case Study: Ochsner Health System

Ochsner Health System is the largest healthcare delivery system in Louisiana, with locations throughout the state. To improve the patient experience and care for the displaced population from Hurricane Katrina, Ochsner implemented Initiate® Interoperable Health to break down the walls between the in-patient and out-patient systems and aggregate information to deliver a single patient identity. The existing EMPI was not scalable to accurately match patient records across systems and deliver reliable data for real-time, point-of-service searching. With the enterprise-wide solution in place, patients are now recognized from any of Ochsner’s seven hospitals or 35 health centers throughout the region, resulting in improved customer service and reduced administrative expense for managing inaccurate patient records.

Case Studies: Baylor Health Care System and Presbyterian Hospital

Baylor Health Care System is extending the use of Initiate® Interoperable Health beyond the patient to create an enterprise provider identity to confirm credentials for referring providers, reduce duplicate record creation across systems, and improve physician relations by persisting provider information in the revenue cycle systems for claims processing.

Presbyterian Hospital is using Initiate Interoperable Health not only to provide a single call-center for patient interactions, but also to understand their health plan member population to track participation.

An embedded EMPI does not provide a user interface that allows a data steward, such as an informatics team member, to analyze trends in the data or be alerted to and correct data errors in real time. This lack of data governance results in a pervasive data quality problem that has far-reaching consequences throughout the organization.
Moving Toward Interoperability

Interoperability is a set of technologies and business strategies that establishes links between disparate information systems to share data. It has been proven to enable better decision making in the care process and can result in numerous operational efficiencies. An interoperable health platform with an EMPI at the core, ties together multiple facets of the health information technology architecture so healthcare enterprises can create customer-centric views at the point of interaction to deliver more effective services.

Effective interoperability is achieved using an analyzed and incremental approach, especially in today’s economic climate where many organizations are taking a “blocking and tackling” approach – managing costs by adding systems and technology only for the most needed projects. One cost-effective approach toward achieving interoperability in this climate is to leverage a sophisticated EMPI to address business challenges one at a time.

Case Study: Sutter Health

Sutter Health has an array of systems consuming patient and provider information linked by Initiate®, including an enterprise data warehouse, clinical portal, cardiology, radiology, picture archiving and a clinical reporting tool. Midas Plus – the clinical reporting tool – can now perform sophisticated analysis on cases, quality and risk. The system was historically limited because it required a single provider record to perform its analysis, which was not available before the Initiate solution was in place.

Building a Business Case

Delivering a compelling business case for EMPI is tantamount to project success. An effective case will demonstrate short-term value while outlining big picture incremental value for minimal cost over time.

An incremental business case allows you to:

- Fund an interoperability infrastructure that will yield long-term gains with minimal incremental investment
- Provide executives and stakeholders with a vision of short-term gain they can clearly grasp, while understanding long-term goals
- Provide project teams with defined and attainable objectives centered around value while planning for additional objectives to sustain involvement and productivity
- Create realistic project plans that outline reasonable project commitment dates and set clear, obtainable milestones

To create your business case, some of these key questions should be answered:

- Are there investments that have been made in clinical applications that are not yielding the return we expected? What can I do to maximize return?
- Where can I streamline operations to reduce costs? Are there resources that would be better used elsewhere in the organization?
- Would we be better positioned to protect and grow market share by making it easier to do business with our organization?
- Are we in a position to integrate with community exchanges or take advantage of new government funding for interoperable environments?
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Competitive advantage depends on how well you can mitigate costs and increase market share. Sustaining growth in an uncertain market requires organizations to make the most of the current assets while carefully making investments to ensure future growth. EMPI helps your organization sustain a competitive advantage and sustain growth. It provides a foundation for healthcare ecosystem interoperability, allowing you to use of the data currently locked in departmental systems as a strategic advantage. Interoperability provides connections outside your four walls for the effective exchange of information to help increase the value of your EMR and portal applications as well as increase physician referrals.

Initiate Systems provides a high-performance, production-tested EMPI as part of its Initiate® Interoperable Health solution set that can provide a baseline for Interoperability within your organization. With more than 150 healthcare customers, we have helped organizations understand how to:

- Extend the use of their existing Initiate investment to drive additional value across their business
- Build a business case to justify investment in the technology as part of other valuable initiatives
- Quantify the need for data quality within their organization

For more information on how software from Initiate Systems can help with your master data management efforts, visit www.Initiate.com.

Case Study: Sentara Healthcare

Sentara Healthcare is a not-for-profit health system with seven hospitals and 100 sites of care. Their approach for using their EMPI to achieve interoperability is measured and deliberate – adding capabilities over time to impact the business.

**Phase I:** Initiate® Interoperable Health was implemented system-wide to reduce duplication rates – an 18% duplication rate was reduced to less than 4%.

**Phase II:** Sentara integrated the out-patient system to extend connectivity to affiliated physicians through active search of the Sentara network at the point of registration.

**Phase III:** Sentara began to share clinical information and effectively established a network-wide EMR platform by propagating accurate patient information to extended source systems

**Phase IV:** Initiate Interoperable Health integrates with all ambulatory clinics, ERs and inpatient clinics to deliver complete patient information to enable increased referrals from the extended care community

**Phase V:** Sentara will facilitate image sharing by integrating with departmental RIS/PACS