

**INGENIX<sup>®</sup>**

**Formula for Long-term HIE Sustainability, Better Health Care**

The HIE Gateway Model, Part II: Return Model for HIE  
Value-Add Advanced Analytics Services





## Executive Summary

Health care reform is requiring that all health care entities from lawmakers to consumers do more with less in difficult economic conditions. Against this backdrop, the transformative power of health information technology, including health information exchange (HIE), is taking center stage. It is clear that the goals of HIE—improving patient care, avoiding duplicative testing, checking dangerous drug interactions, decreasing administrative costs and eliminating redundant manual processes—must be met to enable true change in the U.S. health care system.

Although there is consensus that HIE is an integral part of reducing health care costs and improving efficiency and patient care, each state is charged with developing a model that will work best for its stakeholders and citizens while addressing the challenges that come with the HIE concept. Chief among these challenges is HIE sustainability, which only a few HIEs and Regional Health Information Organizations (RHIOs) have been able to achieve.

Questions surrounding HIE sustainability include:

- How will American Recovery and Reinvestment Act of 2009 (ARRA) funds be allocated to make progress while covering the most significant expenses?
- Can an HIE business model accommodate a slow HIE adoption rate?
- Is it possible for the HIE to provide easy access to its constituents at a reasonable cost?
- Will the HIE deliver value that results in measurable care benefits to the community and contributes to ongoing financial stability for the HIE?
- How can HIEs evolve beyond basic exchange and continue to deliver value to the community for the long-term?

To both survive and deliver on the promise of improved patient care and lower costs, HIEs need to answer these questions with a business model that can show definitive value for stakeholders, reasonable compensation for the value delivered, and a solid return on investment for stakeholders and the community as a whole.

“Right now, HIEs are struggling with how to show value to their constituents,” according to Bill Thornburg, Vice President, Product Management, Health Management Solutions, Ingenix. “They can show reduced testing redundancies, lower utilization, and fewer administrative costs, but they haven’t been able to show that improved patient outcomes or overall quality improvements make the HIE data worth paying for.” This is a problematic situation for HIEs, which cannot fulfill their mission of transforming patient outcomes and lowering costs through data exchange if they are not financially stable.

Advanced Analytics is the linchpin to defining an HIE value proposition centered on improved patient outcomes. Advanced Analytics can be employed immediately to start delivering revenue streams that both fuel short-term HIE growth and foster long-term sustainability. Advanced Analytics create meaningful information necessary to facilitate change that results in real health care savings. In particular, Advanced Analytics can help providers and payers target patients who are not managing chronic conditions and therefore will require more procedures and more expensive medical treatment if not brought into compliance with proven care guidelines. When proactive intervention results in better disease management, significant cost savings can accrue.

A new model introduced by Ingenix, **The HIE Gateway Model**, demonstrates the financial benefits that an HIE community could create by providing value-add services. Part I of the financial model supporting **The HIE Gateway Model** was published in the March 2010 Ingenix white paper, “*The HIE Sustainability Formula: Using Analytics and HIPAA Transactions to Fund Current Operations Today*.” This paper detailed the short-term funding stream that HIEs could receive if physicians redirected administrative transaction exchange spend in support of HIE operations.

This white paper, Part II, develops **The HIE Gateway Model** further by detailing the value derived from the production of Advanced Analytics. With Advanced Analytics, HIEs can help providers, hospitals, payers, employers, governments, and additional stakeholders take better care of patients and

## FEDERAL GOVERNMENT AWARDS BEACON GRANTS TO COMMUNITIES TO DEMONSTRATE THE VALUE OF ANALYTICS FOR HIE

The federal government continues to believe in and support the promise of health care IT and HIE. In May 2010, Vice President Joe Biden and Department of Health & Human Services Secretary Kathleen Sebelius announced that 15 communities had been selected to receive \$220 million in awards to forward health information technology initiatives through the Beacon Community Program.<sup>1</sup> These funds, awarded as part of ARRA, will bring “doctors, hospitals, community health programs, federal programs and patients together to design new ways of improving quality and efficiency to benefit patients and taxpayers.”<sup>2</sup>

For example, the Indiana Health Information Exchange (IHIE) will receive roughly \$16 million to expand the country’s largest HIE. The IHIE Central Indiana Beacon Community Program vision is to improve healthcare quality, efficiency and population health in their expanded region by implementing health information technology-enabled strategies that can be replicated in other communities throughout the nation. One goal of the program will be to improve the proportion of diabetic patients whose blood sugar or cholesterol is controlled.

The 15 pilot programs “will be expected to build on an existing infrastructure of interoperable health IT and standards-based information exchange to show the promise for health IT,” according to David Blumenthal, M.D., M.P.P., national coordinator for health IT. “The Beacon Communities will offer evidence that widespread adoption of health IT and exchange of health information is both feasible and improves care delivery and health outcomes,” Blumenthal stated.

Exchange enables the compilation of the data needed to do the analytics necessary to pinpoint where specific patients and whole populations can benefit. The Beacon Community Program awards demonstrate that the Federal Government is committed to promoting the expansion of proven exchange and value-add analytics.

<sup>1</sup> “Vice President Biden, HHS Secretary Sebelius Announce Selection of 15 Health Pilot Communities through Recovery Act Beacon Community Program,” White House Press Release (May 4, 2010).

<sup>2</sup> *Id.*

reduce costs—by providing the evidence-based medicine (EBM) insights necessary to develop intervention programs, do community outreach, measure performance, compare providers, and stakeholder requested analytics. HIEs can then establish a fee for Advanced Analytics based on the value derived from the analytics for their community. This white paper provides the **Return Model for HIE Value-Add Advanced Analytics Services** that can help HIEs evaluate the adoption of Advanced Analytics as a potential value-add service to provide sustainability.

## The HIE Gateway Model Generates Cash Flow and Savings

**The HIE Gateway Model**, as introduced by Ingenix, enables HIEs with administrative transactions exchange capabilities to capture the revenue typically associated with administrative exchange into a funding stream for the HIE to support the build-out of the clinical exchange infrastructure.

**The HIE Gateway Model** supports sustainability because it eliminates redundant data exchange services for administrative transaction services and reduces fees paid by physicians. This model fosters administrative efficiencies because it represents a reduction in fees, but it also expands the pool of data available for analysis to include both clinical and administrative data.

“The use of administrative and clinical transactions together makes the system more efficient and provides a single point of data aggregation so analytics can be applied efficiently and effectively from the start,” according to Kepa Zubeldia, M.D., Senior Vice President, Interoperability Technologies, Ingenix. “The data collected by an HIE will show a broader view of the patient’s health status, because when a payer looks only at its own claims, it can’t see dental, optical or pharmacy claims or lab results that might be handled by another payer, or those services that were paid for in cash,” he said.

The baseline business case for **The HIE Gateway Model** also asserts how HIEs can provide more value (e.g., a reduction of provider clearinghouse fees by up to 50 percent) to their physician network while gaining a funding stream to build

clinical data exchange. The incremental revenue from all stakeholders, based on an HIE with 5,000 providers in its network and 21 million transactions annually, potentially could provide \$3.5 million in revenue per year.

**The HIE Gateway Model** yields solid returns to fund HIE operations by supporting administrative transactions, such as HIPAA transactions (in accordance with HIPAA privacy regulations). However, to fund, grow, and achieve sustainability, HIEs will need to provide value beyond basic exchange. **By integrating analytics, HIEs can transform existing electronic information into useful, actionable data to improve outcomes and provide physicians with precision tools to employ when caring for their patients.**

## Richer Data = Better Analytics

Advanced Analytics capture raw data from disparate sources and databases and transform those data into information and insight that can be used proactively to assist the clinical team and filter data to make informed choices at the point of care. In an HIE Gateway Model environment, administrative claims data as well as clinical data would fuel the analytics.

Advanced Analytics provide care management professionals with transparent predictive modeling, evidence-based medicine, and tailored clinical and business rules to identify, stratify and assess patients' health status and risk score. This information and insight enables physicians and clinical teams to identify gaps in care at the point of care, support and design new programs, initiate new interventions, understand patients' comprehensive use of health care resources and assess physician care delivery within a network.

Although analytics are not new to the health care industry, they have new meaning in the context of an HIE because the results are more complete when a multi-source, comprehensive data repository is used. For example, the Wisconsin Health Information Organization's (WHIO's) Health Analytics Exchange, a data repository of payers' health claims data, currently receives data from more than 15 organizations and uses Ingenix Advanced Analytics tools to deliver reporting to multiple WI stakeholders including providers, payers, employers, and the State.

The richness of the WHIO data—from 1.6 million Wisconsin residents and 72 million claims—is helping payers and providers in the state answer questions about quality, cost, and relative performance based on hard data. Indeed, WHIO recently announced that its data demonstrated that treatment for congestive heart failure in certain cities costs significantly less than the statewide average, which indicates that those areas are more efficient at caring for that disease.<sup>3</sup> Findings such as these will help the state learn from its own success stories.

Ultimately, the longitudinal data (both administrative and clinical, as it becomes available) held by an HIE could be interpreted through analytics, enabling stakeholders to:

- Enhance patient and population management
- Improve care quality
- Evaluate trends in clinical outcomes
- Detect inaccurate, inappropriate, or fraudulent claims
- Evaluate populations based on risk-adjusted data
- Increase office productivity and improve administrative functions.

"This information is available through the HIE, regardless of the form of payment," Zubeldia explained. "HIEs would offer the health care community data continuity where, eventually, a patient's information over a lifetime would be available, regardless of the payer. A local, state or regional database would create a fantastic data pool—including administrative and clinical information—that would provide a 360-degree view of a patient's health care profile."

### Spotlight: Michigan Uses Advanced Analytics to Improve Programs and Save \$200 Million Annually

HIEs and other health care stakeholders do not have to look far to determine whether analytics—in tandem with comprehensive databases—can enhance care quality and save money. For example, the State of Michigan has achieved dramatic results in improving health outcomes and reducing costs by maximizing information technology, including sophisticated data warehousing strategies and advanced analytics.

<sup>3</sup> Gallagher, Kathleen; "Wisconsin Analytics Database Helps Keep Local Health Costs Down," *Inside Tech/Milwaukee Journal Sentinel* (Nov. 17, 2009).

The Michigan Department of Information Technology (MDIT) and the Michigan Department of Community Health (MDCH), in partnership with Ingenix, integrated data from 15 separate health-related program areas—41 different data sources—into a single, unified data warehouse environment. With Ingenix support, the MDCH worked with the MDIT to apply Advanced Analytics to assess care and costs across multiple state programs and examine statewide health issues.

Using Advanced Analytics, Michigan was able to reduce the number of children with lead poisoning and identify children at risk of flu complications so they could receive vaccinations. Michigan also used analytics to create an HIV/AIDS Reporting System Registry, improve foster care management by measuring progress, and provide more comprehensive epidemiology services that depend on the HIPAA Health Care Model for analysis and trends. Further, the state uses analytics to link court and vital records, analyze mental health services and analyze and reconcile payments made for various Department of Community Health Programs. Significantly, with Ingenix Advanced Analytics, Michigan has eliminated approximately \$200 million annually from the state's health care programs since 2005, based on efficiencies and improved health outcomes.

## All Stakeholders Benefit from Analytics

Using Advanced Analytics to help render HIEs sustainable is a win-win situation for both stakeholders and HIEs, because in providing stakeholders with actionable information that improves care, HIEs are creating a service that has distinct market value. Other health care organizations are showing solid returns from the use of analytics for care measurement, care gap analysis, disease management programs, and related activities. Combining a successful fee-based information exchange with the powerful value-added analytics capabilities will result in HIEs that can sustain themselves over time and provide significant strides toward more informed decision making at the point of care.

“When adding analytics to **The HIE Gateway Model**, you see some revenue from charging a fee for analytics, but the biggest value is in reducing costly and acute health events or complications that can arise when evidence-based medicine is not followed,” Zubeldia said. “This is a value that can be measured by reducing obesity or hypertension

and by preventing asthma attacks and ER visits across the community.”

Advanced Analytics can provide ongoing and evolving value to stakeholders and an additional revenue stream to HIEs, helping them to achieve long-term sustainability. “Value derived from analytics is worth paying for,” Zubeldia said. “The payments are quickly offset by healthier patients and better outcomes.”

Advanced Analytics also provide specific value to providers because they can help providers demonstrate that they have achieved or exceeded “meaningful use” of health care technology under ARRA provisions that incent physicians to install and use electronic health records (EHRs). Although a final definition for meaningful use has not yet been issued, it is likely that physicians will need to demonstrate improved health outcomes, increased transparency and efficiency and an ability to study and enhance care delivery. “Analytics will be able to deliver those results and HIEs can help,” according to Zubeldia.

For health plans and government payers, HIE analytics can be used to:

- Run reports comparing physician outcomes and develop performance-based programs or new models for compensation
- Help physicians report on Meaningful Use compliance
- Improve patient and beneficiary outcomes using population-based programs
- Lower costs by targeting treatment to the highest-risk populations
- Identify public health concerns to contain and stop the spread of contagious disease
- Develop concrete data as a source for discussion regarding cost variations for specific treatments.

HIE analytics services also will be particularly useful to smaller payers, states and providers, which may not have access to large databases or have the tools to conduct large-scale analyses, and provide another revenue stream for HIEs. Consumers largely would benefit from better health outcomes and access to the standards by which physicians and treatments would be measured.

## ADVANCED ANALYTICS TOOL BOX

Advanced Analytics are available today to help HIEs and all health care stakeholders use existing data to improve patient health outcomes and cut health care costs. *Ingenix provides industry-leading EBM-based tools and episodic groupers that enable analytical insight.* The Ingenix Advanced Analytics “tool box” includes proven, widely-used, sophisticated analytics tools that allow HIEs to deliver valuable information to employer plans, hospitals and payers.

Ingenix Advanced Analytics includes products such as The Impact Suite that uses predictive modeling and care management analytics to help care managers assess patient risk and find new intervention opportunities for members, assess the efficacy and quality of intervention programs and understand patients’ use of health care resources. Ingenix Advanced Analytics products also combine leading-edge decision support technology with proven analytic methodologies to boost the quality and performance of health plans, enhance the health and well-being of plan members, optimize plans’ provider networks, and promote the health plan/employer relationship.

Ingenix Advanced Analytics also includes the industry-leading grouper, The Ingenix Symmetry™ Suite, that enables health care entities to measure value, understand the services rendered by networks and providers, and assess risks for more than 60 conditions. The Symmetry Suite includes illness classification methodology used to build episodes of care that can serve as the basis for valid comparisons; for tracking care demand, organizational performance and trends; for establishing disease management strategies; and for understanding how medical treatments compare with treatment guidelines and protocols. The Symmetry Suite also includes a powerful analytics tool that enables better adherence to evidence-based medicines.

Advanced Analytics benefit physicians and patients because they perform a surveillance function “by alerting physicians to information that they normally would not see,” said Bill Thornburg, Vice President, Product Management, Health Management Solutions, Ingenix, “Almost everything that improves the patient’s health reduces the cost of health care—to whoever is paying. If you get patients into compliance, the potential savings are in the millions.”

## Analytics Spur Savings by Targeting Costly Chronic Conditions

Advanced Analytics help stakeholders identify gaps in care, increase preventative care to attain improved health status, and avoid the higher cost of unchecked chronic and acute conditions. By targeting patients with these conditions to encourage compliance with evidence-based medicine protocols, a certain percentage of those patients would achieve compliance and avoid expensive medical procedures and hospital stays.

“When you identify gaps in care and can close those gaps—even for a relatively small percentage of the population—you can avoid bad outcomes that have significant costs associated with them,” Thornburg said.

Logic dictates that achieving this end would save money that would cover operating costs for analytics, but until now, there has not been a business model demonstrating that scenario. To determine whether providing analytics to achieve better and less costly outcomes is a cost-effective option for health care stakeholders and HIEs, Ingenix developed the groundbreaking **Return Model for HIE Value-Add Analytics Services**.

“The Ingenix Advanced Analytics Model looks at just three conditions with poor outcomes and demonstrates how a quite low close rate on EBM gaps in care can cover the costs of analytics, which every HIE will be able to attain,” according to Thornburg, who developed the model.

Ingenix examined the financial impact of applying two types of Advanced Analytics (1) gaps in care, and (2) care measurement to the following chronic conditions:

1. **Coronary artery disease (CAD)**. CAD is the leading cause of death among both men and women. In 2009, CAD is estimated to have cost the United States more than \$475.3 billion in medical expenses according to the American Heart Association.<sup>4</sup> Research indicates that statins cause a 25 percent reduction in first cardiac events, including death, myocardial infarction, stroke and revascularization. At-risk patients who are not on statin therapy can increase costs significantly.

<sup>4</sup> American Heart Association 2009 statistic, <http://www.americanheart.org/presenter.jhtml?identifier=4475>

## The Numbers Add Up for the Return Model for HIE Value-Add Analytics Services

The HIE Gateway Model supports sustainability because it creates health care information efficiencies by eliminating redundant data exchange services and fees from clearinghouses, redirecting clearinghouse fees to support clinical data exchange and reducing physician administrative transaction expenses. The Return Model for HIE Value-Add Analytics Services breaks new ground by showing the bottom-line benefit of utilizing analytics through HIEs for three chronic conditions—coronary artery disease (CAD), diabetes and congestive heart failure (CHF). Diabetes alone cost the U.S. health care industry \$174 billion as of 2007.<sup>7</sup>

“The goal here is to improve the quality of life of the HIE community by delivering care in a way that targets those who need more care, provides the right services and interventions that allow patients to better manage their diseases or conditions, and saves money for all stakeholders in the long run,” according to Thornburg.

### What Does the HIE Return Model Measure?

The HIE Return Model calculates the total financial benefit the health care system in a particular community would accrue based on reduced utilization of services for CAD, diabetes and CHF when a percentage of the patients with those conditions become compliant with evidence-based guidelines for managing their conditions.

The model is based on an HIE community consisting of 5,000 providers, 2.5 million patients, five hospitals with an average of 50,000 patients per hospital, and an annual administrative transaction volume of 21 million transactions.

Return Model for HIE Value-Add Advanced Analytics Services			
Detail Example for CAD/Statins			
Prevalence per 1000		8.5	
Noncompliance		48%	
\$ Savings Components per 1000 members			
	Myocardial Infarction	\$2,197	
	Stroke	\$256	
	Revascularization	\$2,578	
	Total \$ saved per 1000	\$5,031	
	Total potential \$ saved if all gaps closed	\$12,577,120	
Abbreviated Example for Additional Conditions			
	Diabetes/ ACE/ARBs	CHF/Beta Blockers	
Prevalence per 1000		6.8	17.86
Noncompliance		60%	64%
	Total Potential \$ saved if all gaps closed	\$11,981,119	\$27,405,000

The savings are based on the financial impact of avoiding more expensive procedures based on evidence-based medicine (EBM) guidelines and medical conditions that are common when patients with chronic conditions do not follow preventative and evidence-based guidelines for managing their diseases. Based on the total benefit, HIEs can then calculate the operating costs for supplying the information to the community and base support fees on the financial return provided to the various stakeholders in the community. Importantly, this model can be used to help establish Advanced Analytics as a value-add service model.

Based on the Advanced Analytics Return Model, just a 3-percent close rate of EBM gaps in care achieves a break even point on the services provided by an HIE. The break-even point for the delivery of analytics would be even lower if they were applied to the full array of more than 60 conditions for which the Ingenix Symmetry Suite and the Ingenix Impact Suite solutions have EBM standards. Although additional expenses associated with non-compliant patient outreach would be incurred, access to analytics that provide opportunities to improve patient care over time would transform both the way medicine is practiced today and the cost of that care.

Cumulative Effect Considering Multiple Conditions			
% of Non-compliance that Must Close to Cover Analytics Infrastructure Costs			
Analytics Type	One Condition	Two Conditions	Three Conditions
Gaps in Care	5%	2%	2%
Care Measurement	7%	4%	3%



## The Numbers Add Up for the Return Model for HIE Value-Add Analytics Services (continued)

Because HIEs often are local, with very different patient populations, the model also includes a population-based comparison for cost-coverage points (see below) for states of different sizes.

Bottom line, the model provides HIEs with both a baseline to use for cost coverage as well as a baseline measure for the projected

value they will provide to the HIEs constituents from which to determine payment—whether that payment be membership-based, subscription-based, per member per month or per analytic service provided.

### By State Population: Cumulative Effect Considering Multiple Conditions

State Populations	Patients in Model	Physicians (500 to 1)	Transactions	% of Non-compliance that Must Close to Cover Analytics Infrastructure Costs	
				Two Conditions	Three Conditions
Small, (under 3 M) 20: 1.6 M average population	1.6	3,200	13,440,000	3%	2%
Medium 26 - (3-12 M): 6.7 average population	6.7	13,400	56,280,000	1%	1%
Large 4 - (18-36 M): average pop - 24.7	24.7	49,400	207,480,000	1%	1%

Please see the Appendix for a complete summary of the baseline incremental revenue available with The HIE Gateway Model.

2. **Diabetes.** Approximately 70 percent of mortality among diabetes patients is attributable to cardiovascular causes. Research shows that angiotension-converting enzyme (ACE) inhibitors reduce risk of myocardial infarction by 20 percent, stroke by 32 percent and overall mortality by 16 percent for diabetes patients with at least one additional cardiovascular risk factor. Increasing compliance with ACE inhibitors would generate savings and reduce cardiovascular events.<sup>5</sup> Use of angiotension receptor blockers (ARBs) also may improve cardiovascular outcomes for specific diabetics.

3. **Congestive heart failure (CHF).** Approximately 6.4 million people in the United States have CHF and nearly 300,000 die from this condition each year. Research shows that beta-blockers can reduce the risk of death and the combined risk of death or hospitalization. Beta-blocker therapy results in a 30 percent reduction in hospitalizations due to worsening CHF. In 2008, the estimated total cost of heart failure in the United States was \$37.2 billion. This represents 1-2% of all healthcare expenditures.<sup>6</sup>

“When analytics are in place, an HIE can deliver all of the information about gaps in care for all populations,” Thornburg said. “The total amount saved if all gaps are

closed is not a particularly relevant number, because it is unlikely that all of the gaps will be closed or that all of the noncompliant people will be made compliant. However, what the model demonstrates is that even if only a very small percentage of noncompliant patients become compliant, substantial savings can be calculated by the HIE Chief Financial Officer.”

## Spotlight: Illinois Advanced Analytics Saves State Millions

Illinois also is using Advanced Analytics to improve birth outcomes, analyze health care services for senior citizens, conduct a hospital assessment and reimbursement project, and implement a preferred drug list. The net result of these activities is estimated to save the state millions of dollars.

Additionally, the Illinois Department of Healthcare and Family Services (HFS) announced in the fall of 2009 that it would distribute bonus payments to physicians who meet or exceed performance standards in five key areas that are critical for public health: child immunizations, child developmental screenings, asthma management, diabetes management and breast cancer screening.<sup>8</sup>

<sup>5</sup> “Improving Costs and Outcomes for Diabetic Patients with Cardiovascular Disease or Ephrothy,” Symmetry EBM Connect.

<sup>6</sup> “Ioana Dumitru, MD, and Mathue Baker, MD, “Heart Failure,” updated Jan 22, 2010, <http://emedicine.medscape.com/article/163062-overview>.

<sup>8</sup> “State of Illinois Paying Bonuses to Best-Performing Doctors,” Illinois/Ingenix News Release (Sept. 30, 2009).

One limitation to this pay-for-performance strategy is the dearth of data regarding physician use of standards and outcomes assessment. To execute its program, Illinois worked in partnership with Ingenix to develop measurement methodologies for physician performance based on claims data, immunization data and other demographic information. Data mining and analysis were conducted using the state's Medicaid data warehouse, which was implemented by Ingenix to help manage the Illinois Medicaid program.

## HIE Advanced Analytics Can Achieve Multiple Health Care Goals

Health care reform provisions call for innovative ways of conducting health care delivery and payment, such as pay-for-performance, accountable care organizations (ACOs) and medical homes. As these care concepts see broader adoption, HIE leaders should be aware that there will be a growing need for analytics to provide data that evaluate how effective these programs are, because only with analytics can it be clear that care improvement is taking place.

"In theory, pay-for-performance means that if providers follow certain protocols, patients are healthier, but without analytics, providers are being paid for conformance or for compliance and it is not clear whether the end result is healthier patients," Zubeldia remarked.

"Incentives for provider performance must be based on the results of the analytics," he said. "The same is true for ACOs, which seek to keep patients healthier and share in the cost savings. For this to work, we need to examine not only what the stakeholders are doing, but how the patient is really faring," he continued. "Analytics are a very real and valuable tool to fund HIEs and drive improvements to the health care system overall, and can be delivered right to the physicians desktop." Specific Advanced Analytics needed to address these needs are available including:

- Clinical Management
- Decision Support
- Gaps in Care
- Cost Containment

The goal for HIE stakeholders is a shared one: to provide—through simplified data exchange and analytics—improved care and better quality of life at reduced cost.

The **Return Model for HIE Value-Add Analytics Services** shows that all stakeholders—payers, employers, governments, and providers—will find that it is cost-effective to pay HIEs for information about their patients and find new innovative ways to keep people healthy. Those funds in turn will provide a substantial revenue stream to HIEs which can use them to both expand functionality and interoperability as well as achieve long-term success and sustainability.

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### Appendix: The HIE Gateway Model Summary

In two white papers, Ingenix has detailed the two components of The HIE Gateway Model to demonstrate the annual revenue that could be derived by providing additional value-add services to the HIE community. Minimal value-add services could provide immediate funding for the HIE while providing significant value to the community by identifying opportunities for improvement in patient care and care delivery while driving out millions in potential future costs to the community as a whole.

#### Ingenix HIE Gateway Model Summary\*

Incremental Revenue from HIPAA Transaction Services	\$3,480,000
Value-Add Advanced Analytics Operating Expenses	- \$822,150
Annual Incremental Revenue from all Services	\$2,657,850

*(Based on community with 5,000 providers sending 21 million transactions annually. Does not include annual operating expenses.)*

#### Baseline services delivered:

- HIPAA Transaction for HIE Physicians
- Gaps in Care Reporting for 3 Chronic Conditions
- Care Measurement for 3 Chronic Conditions\*\*

*\*\*Ingenix tools include EBM standards for more than 60 chronic conditions.*

That's just the beginning. Once in place the HIE could be a significant contributor to providing intelligence to the community—through desktop tools in real-time—with additional Value-add Services include:

- Outcomes Measurement
- Meaningful Use Reporting
- Decision Support Analytics
- Fraud, Abuse and Inappropriate Payment Identification and Prevention
- Population Health Analysis
- Clinical Research Reporting

It is clear that making smart use of analytics within an HIE can be a critical hub in driving real change in the health care system, real change that costs less and benefits every individual.

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Bill Thornburg leads the product development for the Health Management Solutions business at Ingenix. He has over 20 years of experience in software product development, management and marketing, including commercialization of software products for health care, datacenter operations, software development tools, computer peripherals, and electronic publishing. Bill's career spans large, established organizations including Chevron and Ingenix, as well as start-ups, several of which went public including EPI, Dataware and Rational Software. He holds undergraduate degrees in math and computer science from Colorado State University and an MBA from the University of Colorado.

### **Kepa Zubeldia, M.D.**

*Senior Vice President, Interoperability Technologies, Ingenix, and Sr. Ingenix Fellow*

Dr. Kepa Zubeldia is senior vice president of interoperability technologies for Ingenix. In this role, he creates strategies for the industry's next generation of health care information exchange. Zubeldia joined Ingenix in May 2006 through the acquisition of his company, Claredi. As founder and president of Claredi, he established the nation's first commercial provider of HIPAA EDI compliance testing and certification services and led the development of pioneering health care transaction management, connectivity and information exchange technologies.

Zubeldia has been involved with health care information exchange technologies for more than 20 years and has participated in a number of industry bodies, including serving as co-chair of the Security Policy Advisory Group

of the Workgroup for Electronic Data Interchange (WEDI) and chair of the Association for Electronic Health Care Transactions (AFEHCT). From 1999 to 2004, he served on the National Committee on Vital and Health Statistics (NCVHS). In 2002, Zubeldia received the Ed Guilbert E-Commerce Professional Award and the Leadership in Technology WEDI Award.

Additional contributions were made by Art Glasgow, Dogu Celebi, Rita Cramer, Tristan Van Horne, Cheri DiGiovanni, Maureen Sheehan, and Rebecca Kane.

## About Ingenix

Ingenix, a wholly-owned subsidiary of UnitedHealth Group (NYSE: UNH), transforms organizations and improves health care through information and technology. Ingenix contributions to advancing health care information and technology are vast, and includes providing industry leading measurement methodologies and tools; reducing administrative costs and overpayment at every step of the payment cycle; empowering providers with actionable intelligence and tools at the point of care; leading EMR solutions and services to automate the clinical setting; and advanced analytics to drive comparative effectiveness research—that is just the start. Organizations rely on Ingenix innovations, products, services and consulting to improve the delivery and operations of their business. More information about Ingenix is available at [www.ingenix.com](http://www.ingenix.com).

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