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Return on Investment for Health Information Exchange Participation

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What is the return on investment (ROI) for participating in a health information exchange (HIE)? As the Executive Director of one of the most successful HIEs in the nation, I am often asked this question. I admit I am challenged to answer, as there are several ways to define ROI, and it can mean different things to different people.

Simply stated, ROI measures the benefit (or return) an investment will generate in relation to the cost of the investment. So, if it costs X to participate in the HIE, what is the financial return to a practice or facility?

While the ROI calculation for some is framed in strictly financial performance terms, for others it can mean increased productivity and efficiency, minimal disruption to workflow, and improvements in care. As part of an Accountable Care Organization (ACO), or another alternative delivery model, the HIE ROI question will be impacted by resulting improvements in risk adjustment scores and quality metrics. For a payer, the question is whether the HIE will be able to provide data to improve HEDIS scores and STAR ratings. For a patient, the question is simply will the HIE improve my care or my child's care, and can I access my health records?

Inherently, the HIE ROI is puzzling because the answer is different for each organization. I have heard time and again, "why should a healthcare organization (hospital, physician, payer, therapist, FQHC, mental health provider, post-acute care provider, etc.) pay to provide something of value, such as clinical data, to an HIE?"

This is the "chicken or the egg" question of which comes first. In order for an HIE to have a significant ROI for its members, a certain level of scale or participation by healthcare providers has to occur. One doctor or hospital participating singularly in an HIE does not create much HIE ROI value, however, when all of the healthcare providers in a community, region, or state participate in a HIE, the ROI is noticeably impacted.

With robust clinical data available, the basic HIE ROI for physicians starts with reducing the time the physician or staff spend gathering the patient's medical information from disparate sources. A conservative estimate is at least 15 minutes a day of searching and securing medical records can be saved by using the HIE. This 15 minutes allows the physician to see one additional patient daily. One additional patient per day in a fee-for-service model conservatively results in $10,000 annually ($50 x 5 days x 40 weeks). In a three-physician practice this adds $30,000 annual revenue.

HIE fees for a small practice would be approximately $3,000 annually, with a $10,000 one-time-fee for necessary interfaces. For example, in the first year the practice could realize a $17,000 gain, or an ROI of $1.30 for every $1.00 invested. In the second year and thereafter, the practice could realize a $27,000 gain, or $9.00 for every $1.00 invested.

The ROI is different for hospitals. For a PPS hospital with diagnosis related groupings (MS-DRGs), the additional information provided by the HIE may significantly increase the hospital's case mix index (CMI).

A recent hospital study demonstrated patients receiving care at a small hospital visited 10 other

healthcare facilities in the calendar year reviewed. Analysis of the hospital's problem list (after de-duplication) indicated only 25% of the total problems found in the HIE were present in the hospital EHR and billing. This finding significantly impacts the hospital's bottom line. Overall the inclusion of the HIE data resulted in a 227% increase in potential ICD-10 codes over what was available in the hospital's EHR, with an average CMI increase of .44 and an annual increase in MS-DRG payments of $90,000.

The participation fee for a small hospital HIE is approximately $15,000 annually, with a onetime interface cost of $30,000. This results in a 1:1 first year ROI, with significant returns 5:1 in subsequent years of $5.00 for every $1.00 invested.

If this same hospital also participated in some form of alternative payment model (APM) the ROI example could be even greater. In most APMs, patient risk scores and the associated payments are based on the complexity of a patient's health conditions. Each patient is assigned a risk score. This score is based on the problem list for the patient that is included in the billing submitted to the payer. If the problem list is incomplete and reflects only 25% of the total problems patients have been diagnosed with, then the hospital may receive a significantly lower level of reimbursement.

Utilizing the same small hospital example with Medicare Advantage patients only, the risk adjustment factor (RAF) score increased by 75% when the HIE problem list data was added into the claim. The overall population RAF score increased by 88%. Based upon an estimated monthly $600-$800 risk bonus premium, this results in an overall revenue opportunity of $350,000-$500,000 annually per 1000 Medicare Advantage patients.

An ACO or Advanced APM may realize a similar ROI on a larger scale.

Finally, the ROI for patients cannot be evaluated through the same financial performance lens the provider community applies. If the available HIE data saves a patient's life, either by informing care or preventing a medical error, it may be impossible (or inappropriate) to calculate a traditional ROI, however, the benefit returned has immense value. This is the core patient safety imperative delivered by HIEs across the nation.

Carolina eHealth Network recognizes this opportunity, and offers a free personal health record to all South Carolina patients through mySCHealtheRecords. The personal health record is connected to the HIE which allows patients to have simple and secure access to all of their health information in one location. In addition, there is ROI for patients in the value of time and money saved when eliminating duplicative testing and the re-creation of patient history for providers.

In conclusion, as the Centers for Medicare and Medicaid move forward with their proposed rule to rename and realign Meaningful Use as Promoting Interoperability www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/ehrincentiveprograms/30_Meaningful_Use.asp and as the Office for the National Coordinator puts the finishing touches on TEFCA (Trusted Exchange Framework and Common Agreement) www.healthit.gov/sites/default/files/draft-trusted-exchange-framework.pdf and as Congress puts penalties in place for organizations that block and refuse to share patient medical information as required by the 21st Century Cures Act www.congress.gov/bill/114th-congress/house-bill/34/ the ROI for health information exchange may be significantly impacted by regulation, legislation and the overwhelming patient safety imperative caused by siloed health systems that do not share data.