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? I am often asked this question as the Executive Director of one of the more successful HIEs in the nation. I have to admit I am often challenged to answer this question, as there are several ways to define ROI, and it can mean different things to different people. However, simply stated, ROI measures the benefit (or return) that 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 my 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. If you are part of an Accountable Care Organization, or some other 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 can be whether the HIE will be able to provide data that will 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 have access to my health records?

I understand that inherently, the HIE ROI is confounding because the answer is different for each organization. I have heard it 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, namely clinical data, to an HIE? For me this is a bit like the "chicken or the egg" question of which comes first. In order for an HIE to have a significant ROI for any of its members a certain level of scale or participation by healthcare providers has to occur. One doctor or hospital participating by themselves in a HIE does not create much HIE ROI value, but all of the healthcare providers in a community, region, or state participating in a HIE does indeed positively impact the ROI. With robust clinical data available, the basic HIE ROI for physicians can start with reducing the time the physician, or his/her staff spend gathering the patient's medical information from disparate sources. A conservative estimate is that 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 results in a conservative $10,000 annually ($50 x 5 days x 40 weeks). In a practice with three physicians this would result in $30,000 of additional revenue annually. HIE fees for a small practice would be approximately $3000 annually, with a $10,000 onetime-fee for necessary interfaces. In this example, in the first year the practice would realize a gain of $17,000, or an ROI of $1.30 for every $1.00 invested. In the second year and thereafter, the practice would realize a gain of $27,000, 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 can significantly increase the hospital's case mix index (CMI). One recent hospital study our HIE participated in showed that the patients receiving care at the small hospital visited 10 other healthcare facilities in the calendar year studied. Analysis of the problem list from the hospital indicated only 25% of the total problems (after de-duplication) that were found in the health information exchange were present in the hospital EHR and billing. This finding has a significant impact on a 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 HIE participation fee for a small hospital HIE is generally $15,000 annually, with a onetime interface cost of $30,000. This results in a 1:1 first year ROI, but a significant return in subsequent years of $5 for every $1 invested. If this same hospital also participated in some form of alternative payment model (APM) the ROI example above could be even greater. In most APMs patient risk scores and the associated payments are based on the complexity of the 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 only reflects 25% of the total problems that patients have been diagnosed with, then the hospital will receive a significantly lower level of reimbursement than it should have received.

Utilizing the same small hospital in the above example and looking at Medicare Advantage patients only, the risk adjustment (RAF) score was increased by 75% when the HIE problem list data was added into the claim, and 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 per 1000 Medicare Advantage patients annually.

An Accountable Care Organization or Advanced Alternative Payment Model could realize a similar ROI as the small hospital example above, just on a significantly larger scale.

Lastly, the ROI for patients cannot be viewed through the same financial performance lens that the provider community might utilize. If the data available in the health information exchange saves a patient's life, either by providing critical medical information to the physician that informs care or prevents a medical error, while it might be impossible (or inappropriate) to calculate a traditional ROI, there certainly has been a benefit returned that has immense value. This is the core patient safety imperative that health information exchanges across the nation are meeting. CTHealthLink recognizes this obligation, and takes it a step further by offering a free personal health record to all Connecticut patients. This personal health record is connected to the HIE which allows patients to have access to all of their health information in one location. One patient recently shared that having access to all of their health information is "priceless".

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.