



Return on Investment and Community Health Improvement: An Examination of the Role of Hospitals

**Background Paper
Health Systems Learning Group
June 2012**

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Overview

This background paper is intended to serve as one of the next steps in the dialogue that has been underway since the gathering of Health Systems at the White House in September 2011. The impetus for that meeting was a site visit by the Federal Health and Human Service (HHS) and White House (WH) Centers for Faith and Neighborhood Partnerships to Memphis to see a unique partnership between a faith-based health system and hundreds of congregations. In the course of the visit, they also discovered other innovative partnerships between communities and other health systems in the Memphis metropolitan area to improve health in the community. In short, participants discovered the seeds of a movement; one where hospitals engage diverse community stakeholders in ongoing problem solving to address issues of shared concern. A second meeting in Washington, DC organized with support from the HHS Partnership Center in February 2012 brought together representatives of a total of 30 leading edge health systems to share emerging lessons from community partnerships and to explore options to advance this movement in the field.

A series of four regional meetings have been proposed by diverse stakeholders in the conversation to support further dialogue that focuses on strategies to advance the movement. The first regional meeting is hosted by Loma Linda University Medical Center in Loma Linda, California on June 28 and 29, 2012. The central theme to be explored in the meeting is Return on Investment (ROI), with particular attention to emerging models in community health improvement and the potential contributions of hospitals and community partners.

The hospitals and health systems engaged in this initiative are mission-driven organizations, and are among the largest employers and economic engines in their communities. As such, their decisions about how to deploy resources and evaluate their financial commitments have significant implications for the economic, social, and physical health of their particular communities. The meeting in Loma Linda begins a focus on how to describe the ROI opportunity; not only in monetary and institutional terms, but in a way that illuminates broader returns for the full spectrum of stakeholders. In this way, we can construct a model that enables hospitals to evaluate investments in community health alongside other financial commitments.

Adapting the concept of return on investment is an obvious step, but one fraught with both conceptual and operational challenges. This paper explores some of those issues in order to allow the participants in Loma Linda—coming from at least 16 health systems across the nation—to engage these ideas and push them forward as the urgent learning among these colleagues moves to other sites.

The paper opens with a description of the concept of return on investment and its traditional application. It is then introduced to the hospital context, with particular attention to its influence on investments in community health improvement. The paper then examines the complexities of applying return on investment (ROI) analysis in health care and the broader population health arena, provides examples of innovative approaches, and provides an overview of emerging models grounded in the perspectives of community stakeholders.

ROI: The Basic Model

ROI is a set of measures that describe the financial performance of an investment. In business finance, ROI measures include return on assets, return on capital, and return on invested capital. Each measure captures the value of a gain or loss attributed to an investment decision. ROI is usually expressed as a percentage, allowing comparison to other measures used in financial analysis. Given that business investment decisions are rarely based on a single measure, uniform reporting that allows for comparative analysis is desirable. ROI can also be expressed as a ratio indicating the amount returned on one dollar invested.

ROI was first used by DuPont in 1912 to compare returns across several lines of business the company had acquired after first making its name with explosives.¹ Applying the skills of economists and statisticians, the new form of accounting enabled DuPont to compare its investments in automobiles, lacquer, nylon, and other innovations. Applying ROI analysis made it possible to compare vastly different lines of business using a common measure. Today more complex ROI analysis is applied in the development and management of mutual funds where computer models predict the best combination of individual stocks with varying ROIs that minimize risk for fund clients.

As a decision making exercise, ROI analysis can be conducted prospectively or retrospectively. The prospective approach entails making assumptions about resources and outcomes, both tangible and intangible. The retrospective approach uses data collected after making off an investment or during the implementation of a project. The ROI analysis is no longer based on assumptions because the investment is generating returns or a project is reporting results of implementation. In both approaches, there are several formulas that describe ROI.

The simplest formula is the difference between the initial investment and the final investment divided by the initial investment. A more complex approach to ROI uses a continuously compounded or logarithmic rate of return and multi-period arithmetic and geometric average rate of return calculations. Each formula has advantages and disadvantages and can result in vastly different yields. Table 1 illustrates the difference between a logarithmic and simple arithmetic ROI for a \$10 dollar investment with different returns.

Table 1
Logarithmic and Simple Arithmetic ROI Comparison

Initial Investment	\$10.00	\$10.00	\$10.00	\$10.00
Return	\$0.00	\$5.00	\$10.00	\$20.00
Gain or Loss	-\$10.00	-\$5.00	\$0.00	\$10.00
Arithmetic ROI	-100%	-50%	0%	100%
Logarithmic ROI	- Infinity	-69.31%	0%	69.31%

¹ DuPont Corporation. 1919 DuPont, GM & Cars. Retrieved from http://www2.dupont.com/Phoenix_Heritage/en_US/1918_detail.html

Implicit in the retrospective and prospective ROI measures is the *time value* of money. A discount factor reflects the cost of capital and is used to calculate the net present value of an investment in today's dollars. In the business sector, new products or services are evaluated over a three to five year time period. A one-year time horizon is extremely rare. The ROI formula that incorporates risk and time appears below:

$$ROI = \left(\frac{\sum_{t=1}^n \frac{V_t}{(1+D)^t}}{V_i} - 1 \right) * 100$$

t = Time period n = Number of time periods
 V_i = Initial investment D = Discount rate

The range of ROI formulas makes it a versatile measure. At its simplest, it takes the value of any input, subtracts the output, and divides the result by the input. The complexity of the formula depends on what costs and benefits an organization selects for inclusion in the calculation and the method selected to determine the value of costs and benefits. As a result, ROI can be modified to suit a wide range of inputs and outputs defined by an organization and decision scenarios.

ROI in the Hospital Context

The most common translation of ROI in the hospital setting is an improvement in the hospital's (or health system's) bottom line. Given the current dominance of a fee for service reimbursement structure, a likely ROI in the broadest terms would focus on increasing bed occupancy and both the number and efficiency of medical procedures. That, of course, assumes that the target populations are covered by the standard indemnity health care coverage. If they are, then a proposed investment would focus on beating competitors to the punch and getting commercially insured prospective patients to come to your facility.

A similar imperative plays out for individuals charged by hospitals and health systems with the responsibility to partner with communities to improve health. If the residents of proximal communities are for the most part insured populations, then it may be prudent to focus on health fairs and health education classes on hospital campuses and/or commercial centers most likely to lure prospective patients. In this scenario, the introduction of new insured patients may yield significant returns beyond the investment in the fairs and education classes. If, on however, the responsibility to partner with communities to improve health is a mission-driven function and there are few uninsured and underinsured residents in the immediate proximity of the hospital, identifying interventions that will produce an ROI may be difficult.

On the other hand, if a hospital is located in a geographic region where there are concentrations of uninsured and underinsured populations with significant health disparities, there are significant opportunities to achieve an ROI that is of immediate relevance to hospital leadership. In this situation, for example, there are likely a high volume of uninsured and underinsured residents who come in through the emergency department (ED), often for treatment of preventable illnesses. For that hospital, and for the community health manager, ROI considerations should lead to a focus on care management and prevention strategies that

reduce the demand for ED and inpatient treatment of preventable conditions among these populations.

A growing number of hospitals across the country are engaged in efforts to address these ambulatory care sensitive conditions (ACSC), as framed by John Billings² or more recently described by Agency for Healthcare Research and Quality (AHRQ) as Prevention Quality Indicators (PQIs). ACSCs are diagnoses resulting in hospitalizations that are judged to be preventable with timely access to quality primary care and preventable services. In a study published in 2007, the Agency for Health Research and Quality (AHRQ) estimated the costs for preventable hospitalizations at \$29 billion, or 10 percent of total hospital expenditures.³ Numerous studies have documented higher concentrations of these conditions among uninsured, underinsured and/or racially and ethnically diverse populations.^{4,5}

A growing number of studies have also demonstrated substantial reductions in ACSC admissions associated with the implementation of care management strategies in clinical and community based settings.^{6,7,8} It should be noted that a growing number of hospitals and health systems across the country are implementing these strategies; not as part of health service research initiatives, but as practical efforts to reduce costs and redirect charitable resources to more effective and far reaching endeavors.

In the course of their efforts to reduce ACSCs, community health managers often become sensitized to environmental conditions in communities that impede efforts to change health behaviors and improve health. Hospitals generally lack the expertise and resources to address these conditions, and should not be expected to address these complex challenges on their own. Even if they did, it would be difficult to justify such investments in ROI terms. Collaboration with diverse stakeholders, however, offers the potential to design and implement more comprehensive strategies that expand the concept of ROI beyond economic returns for an individual institution. Movement in this direction opens the door to a broader model of ROI.

For hospitals not located in the proximity of uninsured and underinsured populations, it is nevertheless appropriate to consider what can be done to contribute to efforts to reduce health disparities in the broader region. The lack of financial burden associated with high

² Billings, J., Teicholz, N., 1990, Uninsured patients in District of Columbia hospitals, *Health Affairs*, (Millwood), 9(4); 158-65.

³ Russo, Allison, et al, 2007, Trends in Potentially Preventable Hospitalizations Among Adults and Children, 1997-2004, *Statistical Brief #36*, Healthcare Cost and Utilization Project, Agency for Healthcare Research & Quality.

⁴ Oster, A., and Bindman, A., 2003, Emergency department visits for ambulatory care sensitive conditions: Insights into preventable hospitalizations, *Medical Care*, Vol. 41, Issue 2, pp. 198-207.

⁵ Laditha JN and Laditha SB, 2006, Race, Ethnicity, and Hospitalization for Six Chronic Ambulatory Care Sensitive Conditions in the USA, *Ethnicity and Health*, Vol. 11, Issue 3

⁶ Bindman, A., et al, 2005, The impact of Medicaid Managed Care on Hospitalizations for Ambulatory Care Sensitive Conditions, *Health Services Research*, Vol. 40, Issue 1, pp. 19-38.

⁷ Fedder, DO, et al, 2003, The Effectiveness of a Community Health Worker Outreach Program on Health Care Utilization of West Baltimore City Medicaid Patients with Diabetes, With or Without Hypertension, *Ethnicity and Disease*, Vol. 13, pp. 22-27

⁸ Carrillo, J.E., Shekhani, N.S., Deland, E.L., Fleck, E.M., Mucaria, J., Buimento, R., Kaplan, S., Polf, W.A., Carrillo, V.A., Paredes, H., Corwin, S., 2011, A Regional Health Collaborative Formed by New York-Presbyterian Aims to Improve the Health of a Largely Hispanic Community. *Health Affairs*, Vol. 30

volumes of uninsured and underinsured visits to ED and inpatient settings should create an imperative for these hospitals to explore creative investments that yield broader returns for other communities in the region with health disparities.

The inexorable movement towards global budgeting in health care financing gives new urgency to hospital application of ROI in the community health arena. Some health systems, such as Kaiser Permanente, already operate a global budget environment, where their ROI is directly tied to their ability to keep populations healthy. Increasingly, however, the expansion in enrollment will move into communities where environmental conditions impede the ability of residents to adopt health behaviors. In this context, and given the limits to what can be accomplished in the delivery of clinical services, it will become increasingly important for hospitals to build partnerships with diverse community stakeholders. ROI in this context has the potential to contribute to the long term economic viability of hospitals, the health status of populations, and the social, economic, and physical vitality of communities.

In summary, while use of traditional ROI models by hospitals to evaluate the impact of targeted clinical interventions may be appropriate, they are not readily applicable to evaluate investments in comprehensive approaches to community health improvement. Nevertheless, there are dozens of innovative health systems that are already engaged in these more complex activities. As such, there is an imperative to provide new language and analytic tools to better evaluate, guide and build upon activities already underway. The tools are needed in part to gain the sustained support of others within our organizations less familiar with the body of community health improvement practice that is the target of the investments and thus the work that needs to show the return on that investment.

Conceptually, the challenge is to expand the ROI model. ROI in financial circles is about profit, or at least margin. We need a positive corollary that can be applied in a manner that is relevant to hospital investment in community health improvement. A model that addresses both the monetary dimension of ROI and broader returns at the community (and societal) level will enable mission-based organizations to validate current investments and feel the ache of missed opportunities. We should feel the pain of the lazy charity that currently rings up in the emergency room, and consider the millions of dollars that could be spent with far greater returns, both to the hospital and the broader community. The failure to calculate the monetary and broader returns on investment perpetuates the organizational lethargy that allows unapplied science rest on the shelf for year after year when the money needed to get it off the shelf is being spent on much lower return activities.

ROI, and Health Reform

Langabeer asserts that ROI models are not broadly applied in the health care sector:⁹

“Other industries follow strict financial modeling techniques to clearly identify the expected changes in cost and revenue cash flows and net present value (NPV) formulas. These models help quantify decisions and allow management to understand the bottom-line impact of its decisions in terms of the net economic value that is being contributed. More sophisticated healthcare organizations also follow ROI models, but they are not significantly deployed throughout the industry.”

While the previous section closed with a call for models of ROI that can accommodate more comprehensive approaches to community health improvement, the lack of ROI application even in the more narrow realm of health service delivery suggests similar challenges with complexity. Traditional ROI analysis requires detailing cash flows from several payer sources, making it difficult to accurately quantify the timing of those cash flows. In addition to timing cash flows, reaching agreement on cost allocation across several functions and discount rates over time would be challenging. Also, the highly dynamic and competitive operating environment complicates scenario development and testing variables and constraints.

These hurdles have not prevented some health care actors from evaluating potential and actual returns on interventions. Groundbreaking work by the Institute for Healthcare Improvement (IHI) and the passage of the Patient Protection and Affordable Care Act (ACA) are driving the consideration of a variety of models to quantify progress in quality improvement across the continuum of care. IHI was one of the first organizations to recognize the importance of incorporating W. Edward Demings’ philosophy and practice of continuous improvement into patient care delivery processes. Although the Joint Commission on the Accreditation of Healthcare Organization (JCAHO) recognized the Deming cycle, root cause analysis, and other quality improvement tools as evidence to meet accreditation standards in early 1990s, IHI is the recognized leader in the movement to systematically disseminate healthcare process measurement, assessment, and improvement practices to health care organizations.

IHI’s collaborative learning model set in motion process redesign initiatives in large health systems such as the Veterans Health Administration and safety net clinics across the nation. The ACA reflects the basic principles of IHI’s Triple Aim with its emphasis on patient population health measures, cost, and the patient experience. ACA funding for accountable care organizations, payment reform initiatives, and health information technology (HIT) aims to redesign health care delivery and improve quality. ACA’s emphasis on health system transformation and quality improvement may explain support for the development of quantitative tools to determine ROI by major healthcare foundations.

⁹ Langabeer, III. J.R., 2008, *Health Care Operations Management: A Quantitative Approach to Business and Logistics*, Sudbury, MA, Jones and Bartlett . 188-189.

The Commonwealth Fund and the Robert Wood Johnson Foundation (RWJF) have been instrumental in using ROI analysis to make the business case for quality. A project funded by Commonwealth documented four case studies involving the use of ROI models, including a lipid clinic, a diabetes management program, a smoking cessation in three separate integrated health systems, and a worksite wellness program for General Motors employees.¹⁰ In 2008 RWJF's Diabetes Initiative delineated steps in the development of the business case for self-management support. The ten step exercise (see Table 2) includes selecting the perspective for the analysis, an important factor in identifying the appropriate set of inputs and outputs incorporated in the analysis. Selecting a rate of return, a measure that is not always included in ROI analysis of health interventions, is also included in the list of steps.¹¹

Table 2
Return on Investment Analysis Steps

1. Determining the perspective
2. Describing the QEI
3. Identifying the effects of the intervention on structure, process or outcome measures associated with improved quality of care
4. Designing the study
5. Identifying and measuring cash flows
6. Reporting the effects of capacity constraints
7. Selecting a measure of return on investment
8. Determining the time horizon
9. Determining the "right" discount rate
10. Adjusting costs and savings for inflation

From Building the Business Case for Diabetes Self-Management: A Handbook for Program Managers by Kerry Kilpatrick, and Carol Brownson, 2008

In 2008 the ROI Calculator was developed by the Center for Health Care Strategies, with funding from RWJF, to aid health sector stakeholders' efforts to assess the financial impact of quality improvement activities. The ROI Calculator is an online tool that allows users to enter target patient population data, costs, and anticipated changes in utilization based on data from published studies incorporated in the Calculator's database. In addition to weighing proposed quality improvement initiatives, the tool has been used by a state agency in its negotiations with potential contractors for a chronic care management program.¹²

¹⁰ Leatherman, S., Berwick, D., Illes, D., Lewin, L.S., Davidoff, F., Nolan, T., & Bisognano, M., 2003, The Case for Quality: Case Studies and an Analysis. *Health Affairs*, 22, 17-30. doi: 10.1377/hlthaff.22.2.17

¹¹ Kilpatrick, K.E. & Brownson, C.A., 2008, Building the Business Case for Diabetes Self Management: A Handbook for Program Managers. (Accessed 2012, May 24). Retrieved from www.diabetesinitiative.org/documents/BusinessCasePrimerFINAL.pdf

¹² Hamblin, A., April 2008, Using ROI Forecasting to Maximize the Value of Medicaid Investments. (Accessed 2012, May 22). Retrieved from <http://www.rwjf.org/files/research/roicalculatorbriefapril2008.pdf>

While movement towards improving the health of populations in the community context is an emerging and important part of health reform, the primary focus at present is on quality improvement in the delivery of clinical services. Payment reform is expected to push health care organizations to deliver higher quality care by bearing more risk and receiving a financial reward for hitting their marks. However, current models that penalize hospitals for failure to meet benchmarks are inadequate, primarily because they do not effectively integrate external factors that may significantly impact clinical outcomes. As documented extensively by McGinnis and colleagues,¹³ the interaction between behavior, environmental conditions, and social circumstances represents approximately 60% of factors contributing to early death, genetic predisposition contributes 30%, and shortfalls in medical care contributes only 10%. This is not to say that accountability for quality of care in clinical settings is not important; rather, that our models for evaluation of investments and interventions must more effectively reflect the complex interaction of factors that contribute to differential outcomes.

An example of the inadequacy is the prescribed 30 day window for readmission penalties for hospitals. While it does offer the potential to encourage more robust implementation of care management strategies, the most significant factors impeding the adoption of the practices may be poor living conditions, a lack of local support systems, and maladaptive behavioral patterns. Readmission penalties may be particularly problematic with chronic diseases with negative prognostic trajectories, like congestive heart failure (CHF). Such a model neglects the reality that such patients will be returning to the hospital, often for reasons that lie outside the domain of a hospital's ability to control. This is particularly true when caring for patients from lower socioeconomic and/or racial and ethnic backgrounds who are more likely to experience health disparities that are driven primarily by factors external to access and quality of care.

We suggest that hospitals should be rewarded when they can manage to lengthen the cycle of care (or time in between readmissions beyond a reasonable benchmark) for a population of patients with CHF, especially when the patients are stage 3 or 4 in their disease process, manifest high levels of multiple chronic co-morbidities and/or are under-served. The complexity that may explain current variation in ROI approaches will persist; however, methodology may become more standardized in specific intervention categories.

Accounting for the passage of time remains another troublesome factor in the calculation of ROI. Currently RWJF is setting the standard for ROI calculation of quality improvement initiatives using a discount rate. As the ROI calculator is refined and used more widely, the body of evidence regarding its predictive ability will increase as retrospective ROI analyses are conducted. Even if a calculator's predictive value is verified over a three year period, the operating environment will be undergoing rapid change, making another prospective ROI calculation at end of year three a challenge.

¹³ McGinnis, M.J., Williams-Russo, P., and Knickman, J.R., The Case for More Policy Attention to Health Promotion, *Health Affairs*, 2002, Vol. 21, No. 2, pp. 78-93

ROI and Population Health: Expanding the Model

In addition to driving quality improvement in the delivery of clinical services, ACA has helped create an environment where prevention is increasingly understood to be central to successful health care system transformation, including strategies that improve community conditions that promote health. In the Signature Leadership Series report, *Managing Population Health: The Role of the Hospital*, creating healthier communities is identified as a population health management strategy through ACA. The report identifies several factors and influences, including housing conditions, open space and the availability of parks for physical activity, and health literacy—a proxy for level of education.¹⁴ These factors and influences would be identified if a JCAHO-recognized *root cause analysis* were conducted. For example, the proximate cause for a diabetic patient's hyperglycemia may be failure to take medication as directed and/or poor self-management skills; however, a root cause may be lack of safe and convenient locations for a daily walk.

Population health in the community context employs strategies that improve, restore, or maintain health for a specific group that is at risk for *or* is experiencing consequences of a health condition or injury. As a result, population health interventions benefitting entire communities rarely include medical care. The classic example is the 1854 cholera outbreak in London's Soho district. By the end of 1853 10,675 Londoners had died from cholera. In August of the following year, 127 people died on the last three days of the month and all lived on or near Broad Street.¹⁵ A local physician, John Snow, traced the source of the bacteria that causes cholera to a well on Broad Street dug only three feet from a cesspool that was leaking fecal matter into the water supply. The pump handle was removed and the outbreak subsided. More recent and less colorful examples of efforts that made significant contributions to improving the health of specific populations include reduced auto crash fatalities among drivers who wear seat belts and reduced dental disease in a population in a geographic area with a fluoridated water supply.

Application of ROI analysis to population health interventions above would require the same ten step process prescribed by the RWJF. Each of the examples above could be examined from the perspective of several stakeholders. The shopkeepers who lost business as a result of residents fleeing Soho out of fear would value the cost of a remedy differently than the owner of the local pub where water is probably not the drink of choice. Application of ROI analysis in population health can be challenging due to the potential number stakeholders perspectives present in any activity that requires community engagement.

Despite the challenges of applying ROI analysis to these complex sets of variables, leaders in the public health community have begun to make the case that a healthy nation is good for business. In 2006 Georges C. Benjamin, Executive Director of the American Public Health

¹⁴ Health Research & Educational Trust, April 2012, *Managing Population Health: The Role of the Hospital*. (Accessed 12, May 23). From http://www.hpoe.org/resources-and-tools/resources/Population_Health.pdf

¹⁵ Brody, H., Rip, M.R., Vinten-Johansen, P. Paneth, N., & Rachman, S., 2000, Map-making and mythmaking in Broad Street: the London cholera epidemic, 1854. *The Lancet*, 356, 64-68
doi:10.1016/S0140-6736(00)02442-9

Association, wrote: “The real ROI for a country is not just the dollars it invests and the direct financial return it achieves but, rather, the total economic return to communities, which includes economic attainment, reduced crime, improved financial status, and greater business productivity.” The term has migrated from rhetoric to practice: ROI analysis is being applied to childhood obesity and tobacco control interventions, and its utility has been explored as a metric for interventions targeting health disparities.^{16, 17}

The ROI analysis task is, as the previous examples illustrate, is far from straight-forward. A recent literature review offers a sampling of complex ROI analyses and tools/resources, a number of which are summarized in Table 3.

¹⁶ Dilley, J.A., Harris, J.R., Boysun, M.J., & Reid, T.R., 2012, Program, Policy, and Price Interventions in Tobacco Control: Quantifying the Return on Investment of a State Tobacco Control Program. *American Journal of Public Health*, 102, e22-e28.

¹⁷ Lurie, N., Somers, S.A., Fremont, A., Angeles, J., Murphy, E.K., & Hamblin, A., 2008, Challenges to the Business Case for Addressing Health Disparities. *Health Affairs*, 27, 334-338. doi: 10.1377/hlthaff.27.2.334

Table 3 – Sample of ROI Analyses and Resources/Tools

ROI Analyses		
Entity	Intervention(s)	ROI
Group Health Cooperative	Implement Patient-Centered Medical Homes ¹⁸	1.5 : 1
John Muir Health System	Mobile Health Clinic ¹⁹	6.2 : 1 (Quality Adjusted Life Years)
Johnson & Johnson	Worksite Wellness Program (30 years old) ²⁰	1.88 to 3.92 : 1
Literature review	32 Worksite Wellness Programs ²¹	3.48 : 1 (Avg. duration 3.25 years)
State of Washington	Tobacco control, policy, & price interventions 2000 – 2009 ²²	5 : 1
Wilder Research	Examination of ROI for supportive housing ²³ Sample: Treatment of chemically dependent veterans	5 : 1 (Benefits for every dollar in housing cost)
Washington State Institute for Public Policy	Review of taxpayer funded initiatives, ²⁴ including Early childhood education for 3 and 4 year olds Reading intervention programs Parent interactive therapy for disruptive behavior	7% 11 – 19% 31%
Jackson Healthcare and Calvin, Edwards, & Co.	Profile of 4 hospital community health interventions addressing challenges and strategies to measure ROI, ²⁵ including two health access initiatives (NE GA Medical Center and Mercy Health Partners and ProMedica Health System – Toledo, OH), a community food center/nutrition education program (Cabell Huntington Medical Hospital – WV), and a comprehensive neighborhood-based health improvement initiative (Bon Secours St. Francis Health System – SC).	
Resources/Tools		
Center for Healthcare Strategies	Developed a health home and medical home ROI forecasting calculator. ²⁶	
American College of Surgeons	National Surgical Quality Improvement Program developed an ROI calculator for costs avoided for specified surgical complications ²⁷	
Trust for America's Health	<i>Prevention for a Healthier America: Investments in disease prevention yield significant savings, stronger communities</i> ²⁸ offers ROIs for community-based interventions.	

¹⁸ Reid, RJ, et al, 2010, The Group Health Medical Home at Year Two: Cost Savings, Higher Patient Satisfaction, and Less Burnout for Providers, *Health Affairs*, Vol. 29

¹⁹ Lynch, J.E., Spring 2011, Strategic Plan: John Muir, Making the Case for Mobile Health, Retrieved from http://www.mobilehealthclinicsnetwork.org/pdf/John_Muir_Health_2011.pdf

²⁰ Henke, R.M., Goetzel, R.Z., McHugh, J., Isaac, F., 2011, Recent Experience in Health Promotion at Johnson & Johnson: Lower Health Spending, Strong Return on Investment. *Health Affairs*, Vol. 30, 495

²¹ Aldana, S.G., 2001, Financial impact of health promotion programs: a comprehensive review of the literature. *American Journal of Health Promotion*, Vol. 15, pp. 296-320.

²² Dilley, J.A., Harris, J.R., Boysun, M.J., & Reid, T.R., 2012, Program, Policy, and Price Interventions in Tobacco Control: Quantifying the Return on Investment of a State Tobacco Control Program. *American Journal of Public Health*, V. 102, e22-e28

²³ Wilder Research. (June 2007). Return on Investment analysis of supportive housing: Design and feasibility. Retrieved from <http://www.wilder.org/download.0.html?report=2024>

²⁴ Washington State Institute for Public Policy, July 2011, Return on Investment: Evidence-Based Options to Improve Statement Outcomes. (Accessed 2012, May 22). Retrieved from <http://www.wsipp.wa.gov/rptfiles/11-07-1201.pdf>

²⁵ Calvin Edwards & Company, 2011, Leveraging Your Story: Applying business acumen to hospital charitable service. Retrieved from http://www.jacksonhealthcare.com/media/16639/roig_ebk0212.pdf

²⁶ Amblin, A., McGinnis, T., Shearer, C. User's Guide to the ROI Forecasting Calculator for Health Home and Medical Home Programs, Retrieved from http://www.chcsroihealthhomes.org/ROI_Users_Guide.pdf

²⁷ American College of Surgeons, 2011, National Surgical Quality Improvement Program Multispecialty Case and SCR Calculator, Retrieved from site.acsnsqip.org/about/business-case/roi-calculator/

²⁸ Trust for America's Health, 2008, Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities, <http://healthyamericans.org/reports/prevention08/Prevention08.pdf>

Emerging Models

Collective Impact

Changing the nation's health outcomes requires a mindset and manner of execution that reflects recognition of the complex interactions between physical, social, economic, and political factors that contribute to poor health, particularly in low income, racially and ethnically diverse communities. Most of the interventions described in this paper, while worthwhile, are limited in their impact, in part because their approaches address one or more factors in the interactive process, while ignoring others. John Kania and Mark Kramer offer an approach that is both comprehensive in design and seeks to engage the full spectrum of stakeholders in pursuit of a shared set of outcomes. They assert that a singular, yet comprehensive focus by aligned organizations from many sectors is more likely to produce measurable and sustainable impacts.

Kania and Kramer's a Collective Impact model requires a common agenda, shared measures, contribution of best practices by each member of the collaborative to reinforce the contribution of stakeholders, continuous communication, and an independent project management organization.²⁹ The authors' calls upon funders to: "1) take responsibility for assembling the elements of a solution; 2) create a movement for change; 3) include solutions from outside the nonprofit sector; and 4) use actionable knowledge to influence behavior and improve performance."

Evidence supporting Collective Impact is provided in a profile of an educational attainment initiative. Over three hundred leaders from business, education, government, and law enforcement resolved to improve education in Cincinnati and northern Kentucky. The Strive initiative was created to reverse the direction of educational achievement, with an unprecedented level of commitment from chief executive officers from all sectors. Missing a meeting or sending a junior staffer substitute was unacceptable. In the midst of the Great Recession, partners in Strive were able to produce measurable improvements on 34 of Strive's 53 mutually agreed upon indicators.³⁰

Like Cincinnati, Somerville, Massachusetts trained its sites on single issue-childhood obesity. Between 2002 and 2005 the city experienced a statistically significant decrease in body mass among younger children. Relevant sectors were engaged. ShapeUp Somerville's interventions included a healthier school menu; sidewalk and street improvements to encourage walking to school; local eateries were eligible for special certification by the health department if their offerings included low-fat and low-sodium healthier options; and city employees were eligible for reduced health club memberships. These two programs contributed to the knowledge and evidence base aimed at efforts to create healthier communities. Programs in other communities are adopting the collective impact models implemented in Cincinnati and

²⁹ Kania, J., & Kramer, M, Winter 2011, Collective Impact, Stanford Social Innovation Review, Vol. 43. Retrieved from http://www.ssireview.org/articles/entry/collective_impact

³⁰ Ibid.

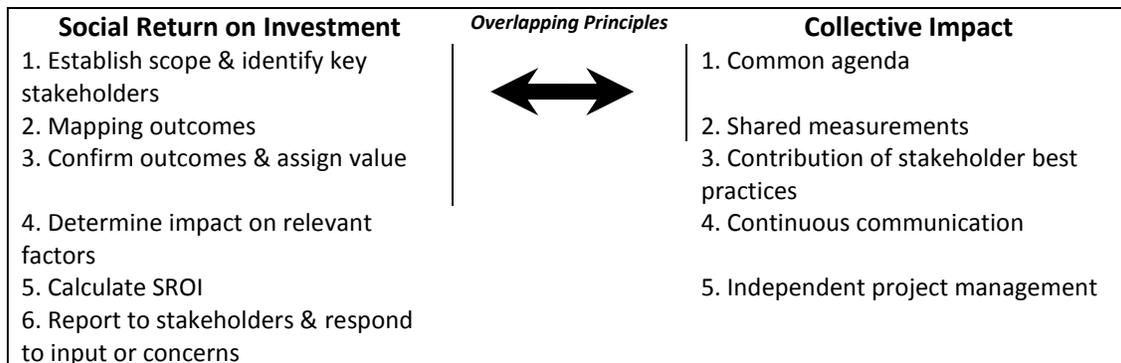
Somerville. The singularly focused interventions implemented by the two projects achieved results in the short term and may result in better health over the life course of children and families living in those communities.

Social Return on Investment

The success of interventions in Cincinnati and Somerville included a range of community processes and dialogues. Cincinnati’s “cradle to career” focus required caregiver participation and attentiveness to their concerns in order to support learning. In Somerville parents were actively engaged in the development a Safe Routes to School program to encourage walking. Community engagement is central to an emerging ROI measure-social return on investment (SROI). SROI calculation methodology was introduced in 2000 by the San Francisco-based Roberts Enterprise Development Fund. Today SROI has been adopted as a practice in the United Kingdom’s charity and social service sector. The methodology was refined over time initially with funding from the William and Flora Hewlett Foundation and later the government of Scotland.

SROI like ROI places a value on an intervention; however, social and environmental impacts are added to economic impact. Outcomes are mapped to create a logic model. Involving the community in determining what is measured and how it is measured is one of the seven principles associated with SROI. Another principle entails determining what has changed as a result of the intervention. Intended and unintended changes are identified, particularly in a retrospective analysis. Assigning financial value to measures and erring on the side of conservatism are additional principles, as is transparency that allows all stakeholders to validate the calculated SROI. Valuation in SROI is difficult. It requires assigning a monetary figure to non-monetary outcomes. Assigning monetary value to increased use of a new neighborhood park may require factoring in the potential increase in housing values over time and the reduction in law enforcement expenditures to due elimination of criminal activity.³¹

Figure 1
Comparison of Collective Impact and Social Return on Investment Principles



³¹ The SROI Network, January 2012, A Guide to Social Return on Investment. Retrieved from http://www.thesroinetwork.org/publications/doc_details/241-a-guide-to-social-return-on-investment-2012

Key Stakeholders & Contributions

There is growing evidence that confirms what experienced community health practitioners have surmised: improving community health requires expertise and engagement, not only beyond the hospital campus, but beyond the health sector. Root cause analysis identifies intervention points where comprehensive strategies can be designed by a stakeholder collective. The collective should reflect the breadth of experience, skill sets, and knowledge required to address the dynamic, complex, and interacting factors that contribute to an unacceptably high rate of preventable disease and injury. Emerging models suited to stakeholder-driven ROI offer a structured approach to identifying and assigning value to inputs and outputs.

In an operating environment where outcomes will be tied to value-based payment programs, financial viability may depend on meaningful engagement of stakeholders from sectors identified in the April Signature Leadership Series report referenced previously. Hospitals are anchor assets in many communities. In metropolitan areas, they may have existing partnerships with public health departments and higher education through health profession training programs. In smaller communities, hospitals may be leading employers and a care site through arrangements with the local health agency or community clinic. Aside from their brick and mortar presence, hospitals can be trusted and respected entities that can give voice to evidence pointing to the important contribution non-health sectors can make to creating healthier communities with economically sustainable assets.

Data is essential to problem identification. Hospitals, public health departments, schools, and law enforcement have valuable data that can be mapped in order to visually pinpoint the location and extent of contributing factors to poor health. Higher education brings not only access to the latest analytical techniques, research, and emerging practices, it brings a student workforce that can be deployed across various stakeholder organizations to train trainers who are local residents in order to staff ongoing community engagement activities. Community and faith-based organizations are incubators for emerging and informal local leaders who are skilled negotiators and gatekeepers with access to the groups and individuals who know the unspoken history and culture of neighborhoods down to the block level. Data, interpreted by those who live the experience data can depict, are key to identifying problems, causes, and validating the improvement effort to a community. This participatory action research and analysis approach is key to the work undertaken by the HSLG: honoring and integrating the “blended intelligence” of often under-represented and/or marginalized community stakeholders.³²

The business community is increasingly recognized as a critically important stakeholder in comprehensive community health improvement. The persistence of health and social problems in local communities is inextricably linked to poverty and poor physical infrastructure, and the interaction of these factors impedes potential economic development and associated location

³² Gunderson, G., and Cochrane, 2012, *Religion and the Health of the Public: Shifting the Paradigm*, Palgrave MacMillan Press.

decisions by corporate interests. Economic firms recognize that continued rising costs in health care are negatively impacting their profitability, and a key factor in rising costs are continued growth in the burden of chronic diseases in these communities. Targeted economic investment by the public and private sector in areas such as small business development, youth leadership and career mentoring, and neighborhood revitalization are important complements to investments by the health and educational sectors. There is growing interest in strategic investment by banks in community development linked to community health improvement as part of meeting their Community Reinvestment Act responsibilities. The Robert Wood Johnson Foundation has partnered with the Federal Reserve Bank of San Francisco to facilitate dialogue between health and financial stakeholders across the country in pursuit of these investment strategies.

There is also increased interest among private philanthropy in *impact investing* as a complement and to leverage traditional grant making.³³ Impact investments enable foundations to expand their support and ability to help shape and drive social change, helping to bring innovations to scale and contribute to sustainability of achieved results. Also referred to as social investing or program-related investing, the approach enables foundations to recover the principal or earn a financial return, hence expanding their outlay within a particular year and recovering the funds for subsequent years. A small number of large health systems across the country have initiated impact investment strategies, as well, as a means of supplementing traditional charitable resource allocations. Examples of health system investments to date range from creating revolving loan funds for community health centers to micro-lending for small business development in inner city communities.

Summary

At its most basic, population health improvement is practical problem solving through the practice of dialogue. The problem should be defined by those who experience it and those who are part of the solution. The task is to identify the problem, find ways of correcting the problem, and determine how to prevent the problem from recurring. As the Strive example illustrates, a common agenda is required, but it cannot take shape without agreement on the problem in terms of how it manifests in the target population, its proximate cause, and the various levels of causes, where many different sectors are identified for potential best practices.

Integration and expansion of the ROI model to capture and quantify both monetary and social returns on investment is a fundamental part of fostering shared accountability for health in our communities. In the process, we have the opportunity to more effectively and creatively leverage our resources, and arrive at substantive returns that are relevant and important for the full spectrum of stakeholders. SROI and Collective Impact approaches ground returns on interventions in stakeholder agreements and accords, rendering traditional unilateral actions inefficient and obsolete in a health care environment that is committed to fundamental transformation.

³³ Richter, L., Guide to Impact Investing, May 2011, Grantmakers in Health, Retrieved from <http://www.gih.org>