

Return on Investment From Employment of Community Health Workers

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Abstract: Community Health Workers (CHWs) are gaining acceptance in the US health care system, but have been subject to challenges as to their “cost-effectiveness.” This situation is shifting, with a growing body of published evidence as to the effectiveness of CHWs, but much of the evidence of cost savings from employing CHWs is still unpublished. Return on investment analysis for CHWs must consider a range of possible CHW roles and stakeholder points of view. Current trends suggest we may be entering a new era of acceptance in which a generally lower threshold of evidence is required in proposing the employment of CHWs. **Key words:** *community health worker, cost-effectiveness, health care reform, return on investment*

COST control has been central to discussion of health care reform in the US. Descriptions of the problem inevitably include exhortations or promises to “rein in costs” or “bend the cost curve.” The “triple aim” reform mantra introduced by Dr. Donald Berwick while he was at the Institute for Healthcare Improvement includes improving the health of the population; enhancing the patient experience of care (including quality, access, and reliability); and reducing, or at least controlling, the per capita cost of care (Institute for Healthcare Improvement, 2011). The emphasis in cost control in this formulation, however, has been through system improvements, not cuts in coverage by payers.

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The authors have disclosed that they have no significant relationships with, or financial interest in, any commercial companies pertaining to this article.

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DOI: 10.1097/JAC.0b013e31822c8c26

Acceptance of Community Health Workers (CHWs) has grown in parallel to the reform debate, especially the idea of CHWs as an integral part of the system: historically, CHWs have often been isolated in “outreach departments” or in disease-specific special projects. I would posit that a growing body of evidence suggests that CHWs can help reduce costs by improving outcomes, and not by substituting CHW interventions for more expensive equivalent services.

Many of us in the CHW field have been frustrated by the persistence of the old question, “are CHWs cost-effective?” This question is asked of any proposed change from the status quo, and in the case of CHWs it really reflects limited understanding of CHW roles and capabilities by decision makers who think of personnel only as either clinical or administrative, when CHWs are neither (Gilkey et al., 2011).

This commentary assesses some of the unique concerns in considering return on investment (ROI) from employment of CHWs, looks at current trends in available data, and asks whether we have moved beyond that same old question—are we close to a stage

where acceptance of CHWs in the system is “the new normal?”

Definition of CHW: The American Public Health Association defines a CHW as “. . . a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support, and advocacy (American Public Health Association, 2009).”

Key issues in ROI for CHWs

I would propose that there are several key issues in discussing ROI from employment of CHWs. These include:

- the wide variation in roles and functions performed by CHWs,
- differing interests and points of view among stakeholders (mainly providers and payers) from which they will approach ROI,
- choice of time frames in designing interventions and calculating ROI, and
- opportunities to reconsider CHW roles and ROI under various new proposed financing structures for health care.

As noted in the APHA definition above, CHWs operate in a wide range of roles, from population health outreach, community advocacy, and education through care coordination and self-management support for individuals with chronic conditions. So, it is vital to get on the table from the outset that there is no single measure of ROI for employment of CHWs.

I would venture, however, that most interest in CHWs from health care systems would center on ROI from CHWs working with individuals and families on a sustained basis, independently or as part of a care team, rather than on CHWs in their community-wide population-health roles. This distinction

highlights the unique contribution and expertise of the CHW, namely their ability to establish trusting relationships with individuals and families and their understanding of the community, family, and cultural context of an individual’s health issues.

Another related issue is the wide variation in points of view and vested interests of the other stakeholders involved. These interests are intertwined with the organizational and payment structure of our health care “system.”

For example, as long as hospitals are paid for units of service (days of inpatient stay and procedures performed), hospitals are not going to be interested in ROI in terms of CHWs reducing avoidable hospitalizations except for uncompensated care. However, as hospitals are incentivized or penalized on the basis of preventable readmissions, they may come to value CHWs’ ability to reduce readmission rates. This example is instructive for the logic of the CHW’s contribution: as part of a team working on discharge planning and follow-up, the CHW can help clinicians understand the patient’s living situation and cultural patterns, help the patient and family understand discharge instructions and provide reassurance and support in follow-up visits, keeping the clinical team informed of the patient’s progress.

A crucial choice in ROI analysis is that of *time frame*. Assertions of ROI from primary prevention have always suffered in terms of time frame, because cost savings may materialize over a longer span of time than the next election or after an insured individual is no longer a customer of a given insurer. Recent data concerning CHW interventions are good news in this regard: there is evidence, for example, that CHWs can reduce overall cost of care for high utilizers of emergency departments (EDs) in both short-term and longer-term perspectives; that is to say, the short-term intervention can produce both short-term results and longer-term changes in behavior resulting in continued cost saving.

I would hypothesize that the proposed reforms in payment structures (medical homes,

accountable care organizations [ACOs], pay-for-performance, global or bundled payment systems) actually make the potential contributions of CHWs within the system more attractive, and that these new structures lend themselves to modeling and measuring ROI for CHW roles. In general, it is likely that the parties most interested in cost savings from CHW services will be those at risk for the total cost of care for a covered individual, which in many cases will mean a third-party payer. These decision makers face a host of design decisions and will be tempted to evaluate proposals on the basis of familiar criteria; the fact that CHWs are neither clinicians nor administrative personnel can be disorienting. We in the CHW field have found it advisable to focus discussion of specific forms of ROI with the specific audiences most likely to benefit from it.

EXAMPLES OF ROI FROM CHW INTERVENTIONS: WHAT WE KNOW

A number of systematic reviews of published CHW studies over the years have noted the lack of cost data (Brownstein et al., 2005; Lewin et al., 2006; Viswanathan et al., 2009). This is likely because studies published in peer-reviewed journals are conducted predominantly by academic researchers operating under grant funding. Unfortunately, administrators of ongoing clinical services are most likely to be interested in ROI calculations, but much less likely than academics to publish their results. Furthermore, findings from ongoing operations are generally not subject to the methodological rigor of the research environment, and indeed service providers are often ethically restricted from introducing features such as control groups. So, the lack of published cost data should not be surprising.

This leaves CHW advocates with a choice between reliance on a few narrowly focused published studies and seeking credible unpublished data. For a number of years we have relied heavily on three studies showing savings in total cost of care: a Baltimore diabetes study

showing annual savings of more than \$2200 per patient, a Hawaii asthma study showing a reduction of 75% in annual asthma-related costs, and a Denver study on a broader range of costs estimating a ROI of 2.28:1 (Beckham et al., 2004; Fedder et al., 2003; Whitley et al., 2006). According to leaders in Minnesota, these results were crucial in persuading legislators that authorizing CHWs as Medicaid providers would result in net savings to the State (Willaert, 2010).

More recently, however, demonstration projects have begun to influence policy decisions in the absence of published studies. Officials in Arkansas and Ohio have begun to expand CHW programs statewide on the basis of research data which were unpublished at the time of the decision to expand. In the case of Arkansas, dramatic savings in total Medicaid costs resulted for a long-term care eligible population from a CHW intervention connecting community-based services to enable the individuals to remain at home (Felix et al., 2011). In Ohio, a model CHW prenatal care intervention has resulted in a significant drop in low birthweight and premature deliveries and a virtual elimination of infant mortality in a high-risk population (Redding, 2011). These outcomes have reduced high-dollar Medicaid expenses such as neonatal intensive care, and although actual figures have not been released, the State's expansion of the program suggests that officials find the ROI attractive.

Increasingly, however, providers have been willing to come forward with their own internal calculations, which other providers have found persuasive even without rigorous research designs and peer-reviewed journals. Two separate hospital systems in East Texas have recently reported success employing CHWs working with ED patients; savings in total cost of care resulted in ROI ranging from 3:1 to more than 15:1. (PowerPoint presentation by CHRISTUS Health System and Memorial Hermann Hospital, 2010). A self-insured manufacturer in Georgia and a labor union in Atlantic City have shown returns as high as 4.8:1 with CHWs coordinating care and self-management for the employees with

the highest health care costs in their systems (Gawande, 2011; Miller, 2011). A hospital in New York has shifted CHWs from a grant-funded asthma project to their internal budget on the basis of reduction in inpatient admissions and length of stay, citing low payment rates for inpatient asthma care; the hospital plans to expand CHW services to serve patients with congestive heart failure (Nieto, 2011). The Children's Hospital of Boston Community Asthma Initiative produced a reduction of 65% in ED visits, and 81% in hospitalizations. On the basis of this evidence, state legislators introduced an amendment to the Medicaid budget to establish a bundled payment for the management of high-risk pediatric asthma patients, including home visits by CHWs (Centers for Disease Control and Prevention, 2011).

Occasionally, there is also significance in decisions that have been based on unreleased ROI data. A hospital in San Antonio, Texas recently decided to integrate several CHW positions into its core budget that had been funded by a state government pilot project, on the basis of significant cost savings affecting the hospital's bottom line. Hospital officials say they plan to expand the program from the children's ED to the adult ED (Pérez, 2011).

CROSSING A THRESHOLD? NEXT STEPS

On the basis of such recent data and policy actions, we may be seeing the beginning of an encouraging change, in which the inclusion of CHWs no longer requires a detailed justification. A recent Commonwealth Fund paper on Vermont's ACO demonstration notes without further comment that care coordination in their system may be performed by CHWs (Hester et al., 2010). The National Plan of Action to Eliminate Health Disparities notes roles for CHWs in a number of places without justification (Office of Minority Health, USDHHS, 2011).

Are we close to the point where health care organizations regard CHWs in health care teams as "the new normal?" As with so many sociological phenomena, accumulating examples and routine inclusion of CHWs in pro-

gram designs may be building momentum. As an observer of the policy scene, my subjective view is that the demand for randomized controlled trials and peer-reviewed journal articles on CHW effectiveness is diminishing. That said, I also believe that further research is still needed, and that future research about CHWs can help us better understand how CHWs achieve results and how best to help CHWs prepare for their work.

A crucial ingredient in achieving this shift is persuading actual employers, not just researchers, to share their findings. Recent experience suggests not only that successful employers of CHWs are willing to do so but also that other potential employers may be more willing to hear the news from their peers rather than from government officials or CHW advocates. Another crucial element is reassuring community members, CHWs themselves and other health care professionals that this evidence arises from the CHWs' unique roles, abilities and expertise, and not from taking responsibilities away from clinical personnel who may be more highly paid. As demand for CHW services grows, the evidence should also justify adequate compensation for CHWs commensurate with their contributions. As noted at the outset, cost savings should be achieved by improving methods, systems and results, and not by reducing benefits or cutting payments to providers—including CHWs.

In my opinion, this sea change is less about amassing the actual quantitative results produced by CHW interventions than it is about the gradual acceptance of the CHW approach as a conceptually different approach to the relationship among individuals, communities, and the health care system. I acknowledge the *Journal of Ambulatory Care Management* for giving concentrated focus to CHW issues, and note that at least two other prominent journals have announced themed issues on CHWs within the next year. Although we still need organizations to come forward with results, we must continue to educate decision makers on the advantages of CHWs over clinical approaches to producing those results in addressing persistent disparities and other unacceptable outcomes.

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