Pathways to a Healthy Bernalillo County
Return on Investment Analyses: HEALTH CARE HOME PATHWAY

**HIGHLIGHTS**

- 713 Pathways clients completed the health care home (HCH) pathway between late 2009 and spring 2016
- Completion of the HCH pathway produced an estimated $2.4 million in health care cost savings, net savings of $1.7 million and a benefit-cost ratio of 3.47

**How do social factors impact health?**

The circumstances of people’s lives, including their income, language ability, housing situation, immigration status, and education, have major impacts on their health. Providing health care to someone who is malnourished, lacks housing, or is experiencing domestic violence can temporarily relieve their symptoms, but cannot resolve the underlying causes of their ill-health. Such an approach to health care is also inefficient. Sustaining the health of vulnerable patients by ensuring that their most basic needs for shelter, safety, food security, and health care are consistently met is far less costly to the health care system and to society overall, than repeatedly treating the same preventable, acute problems in the emergency department (ED) while continuing to ignore the non-medical factors that continually compromise their health.

Social factors, including education, racial segregation, social supports, and poverty accounted for over a third of total deaths in the United States.¹

**What is Pathways to a Healthy Bernalillo County?**

Pathways to a Healthy Bernalillo County is a program that improves the health of Bernalillo County’s most vulnerable residents by training and deploying community health navigators to connect clients to the resources they need to improve their life circumstances and thus their health. Navigators are vital because the individuals most in need of help often have the greatest difficulty connecting with the social service and health care systems and trusting these systems to truly help them, having been failed in the past by the social “safety net.”

**The Pathways Approach**

Find and engage hard-to-reach county residents with unmet need for health care and/or service coordination

Measure and document outcomes including self-reported better health, improved quality of life, and more efficient use of the health care system

Connect clients to evidence-based services and confirm that services were received and produced beneficial change

Pathways are critical needs, like education, employment, and housing, that a client must meet in order to lead a better, healthier life. Clients identify their highest priority pathways and work toward them with the aid of a navigator. Clients can pursue up to three pathways simultaneously. Each pathway includes several action steps that the client and navigator take together. A pathway is complete when the client achieves their goal and the navigator verifies and documents the outcome.

The Pathways program reaches out to the community’s most underserved and disenfranchised members, many of whom qualify for a variety of support services that they are either unaware of, or unable to access without help. Thus, while Pathways does not provide housing or health care or food aid directly, it does connect providers of aid to the hardest to reach, most at-risk community members, ensuring that the programs that do provide those services realize the highest possible return on their investment.

**Linking hard-to-reach clients to resources, verifying positive outcomes, and following up to ensure that clients remain connected is the “value added” by Pathways.**
Preventable hospitalizations and use of emergency services are major drivers of health care costs. Numerous social factors have been shown to impact health and health care costs. By helping clients improve the circumstances of their lives, Pathways seeks to fortify the foundation of sustainable good health. Although saving money is not one of Pathways’ four primary objectives (see “key outcomes” in the box below), addressing the social determinants of health for at-risk patients has been shown to produce significant medical cost savings.

The Health Care Home Pathway
In Pathways, a health care home is defined as: “a clinic-based health care setting where vulnerable adult patients have a regular health care provider and where the care is coordinated, accessible, comprehensive, delivered with quality and safety, and patient-centered.”

Seven hundred thirteen (713) Pathways clients completed the health care home (HCH) pathway between October 2009 and March 2016.

In order to complete the HCH pathway, the client must have seen a provider at their new HCH at least twice and have obtained health coverage or established a financial assistance plan that will enable them to continue receiving services. For many clients, reconciling outstanding medical debt is a prerequisite to establishing a health care home. Navigators help clients negotiate with creditors (usually UNMH) to arrange affordable payment plans or have their outstanding balances forgiven.

Most Pathways clients establish health care homes at medical practices that have received Patient Centered Medical Home (PCMH) recognition. The PCMH is a model of primary care delivery that is:

1. Patient-centered: guided by patient needs, culture, values, and preferences and with the full participation of patients, families, and caregivers.
2. Comprehensive: a team of providers manages all aspects of a patient’s care, including prevention and wellness, acute care, and chronic care.
3. Coordinated: coordinates care across all elements of the broader health care system including specialty care, hospitals, home health care, community services, and long-term care supports.
4. Accessible: makes health care easier to obtain by reducing waiting times, extending hours, and facilitating 24/7 electronic or telephone access.
5. Quality and safety oriented: committed to on-going quality improvement and the use of data and health information technology to assist patients and families in making informed decisions about their care.

Medical homes can improve quality, reduce costs, and improve patients’ and providers’ experience of care.

Over half of Pathways HCH clients establish health care homes at a clinic in the UNMH system. Most of the remaining clients obtain health homes at First Choice Community Health Care, First Nations Community Health Source, or Albuquerque Health Care for the Homeless. All of these providers, including UNMH, have received PCMH recognition. About 20 percent of the Pathways clients who receive services through UNMH qualify for intensive care management through Care One, a program targeting the most expensive 1 percent of UNMH patients with enhanced and coordinated services.

Client Characteristics
Pathways to a Healthy Bernalillo County captures a great deal of client data, enabling the program to effectively target the highest-need clients, track their progress, document outcomes, and conduct continuous quality improvement. The database also makes it possible to analyze the client outcomes produced by specific pathways.

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1 The National Committee for Quality Assurance (NCQA) is the most widely utilized PCMH accrediting body. The NCQA awards three levels of PCMH recognition to practices based on the degree to which they have successfully implemented the PCMH model.
Risk assessment
Eligibility for Pathways is based on the results of a risk assessment. At the initial risk assessment, 42% of HCH completers and 41% of all other clients admitted to Pathways said they had gone to the emergency room or been admitted to the hospital three or more times in the past 12 months.

Exit interview
Pathways attempts to conduct an exit interview with clients shortly after they finish the program. Because few Pathways clients have a consistent phone number, only about 12 percent complete the exit interview. Ninety-one (40%) of the 226 clients who completed the exit survey had completed the health care home pathway. Although the questions asked on the risk assessment and exit interview differ somewhat, comparison of client responses suggests that completion of the HCH pathway may reduce ER utilization and hospital admission, at least in the short run. Sixteen percent of HCH completers and 24 percent of all other exit interviewees said they had used the ER or been admitted to the hospital at least once since they began participating in Pathways.

Seventy-six percent of HCH completers and 68 percent of other exit interviewees report being “totally satisfied” or “completely satisfied” with their Pathways experience. HCH completers are also more likely than other exit interviewees to feel that what they accomplished through Pathways will continue to benefit them (93% vs 85%) and report that their overall health has “improved” or “greatly improved” since they began Pathways (82% vs 73%). Despite improvements, 60 percent of HCH completers and 69 percent of other exit interviewees describe their post-Pathways health as “good,” “very good,” or “excellent.”

Other pathways
Many pathways are closely related. Clients generally work on three pathways simultaneously. Pursuing multiple, complimentary pathways increases the chances of completing each pathway and compounds their collective benefits, increasing the likelihood that the client will achieve enduring improvements in quality of life. Vision, Hearing, Food Security, and Dental are the pathways most commonly pursued in conjunction with the Health Care Home pathway. Although only 10 percent of HCH clients pursue the Medical Debt pathway, navigator notes suggest that dealing with outstanding balances at UNMH is a frequent prerequisite to establishing a health care home. Thus, many HCH clients actually complete four or more pathways, even though navigator organizations are compensated for only three.

### HCH Completers: Additional Pathways Pursued

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision &amp; Hearing</td>
<td>20%</td>
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<tr>
<td>Food Security</td>
<td>18%</td>
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<tr>
<td>Dental Care</td>
<td>16%</td>
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<tr>
<td>Legal Services</td>
<td>13%</td>
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<tr>
<td>Behavioral Health</td>
<td>12%</td>
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<tr>
<td>Employment</td>
<td>11%</td>
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<tr>
<td>Medical Debt</td>
<td>10%</td>
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<tr>
<td>Income Support (ISD)</td>
<td>10%</td>
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</tbody>
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1Exit interviewees are unlikely to be representative of the broader Pathways population because they are the relatively small subset of clients who could still be contacted by phone after exiting the program.

Barriers
Navigators confront numerous barriers in helping their clients establish health care homes. Most barriers are systemic, including scarcity of appropriate providers in the client’s community, lack of bilingual staff or medical translation services, and the inability of certain immigrants to obtain Medicaid coverage or services through UNM Care. Some barriers are specific to the individual client. Ironically, these barriers often arise from the multiple chronic and debilitating diseases from which they suffer, including mental illness and addiction, which limit their mobility and ability to attend scheduled appointments.
Return on Investment

Return on investment is calculated based on estimates from the published literature in conjunction with data from the Pathways client database, including the extensive documentation navigators include in each client record. A literature review was first conducted to identify high quality evaluations and research studies that estimated the impact on health care utilization, health outcomes, and health-related costs of programs similar to those that pathways navigators connect their clients to. Effect sizes derived from the most relevant studies was then applied to client data from the Pathways database. Only clients who completed the Pathways program were included in the analysis.

High needs patients typically have multiple chronic illnesses and use multiple providers, on a crisis-by-crisis basis, resulting in fragmented, less effective care. Inefficient health care delivery and lack of prevention can drive the cost of treating these patients far higher than it needs to be. Conversely, access to comprehensive, coordinated, patient-centered care may increase utilization of primary care, but is expected to reduce the total cost of care by reducing ED use, hospitalizations for ambulatory sensitive conditions, and hospital readmissions.6,7

**Health care home cost savings model**

Empirical evaluations of the PCMH model have yielded a broad range of results, but the majority of studies have found the model to be associated with at least some positive patient outcomes,8 and many have documented reductions in emergency department visits and inpatient hospitalization. More efficient and effective utilization of health care is expected to yield cost savings, and this is often the case. However, ED and hospital cost savings are sometimes offset, at least in the short run, by increased use of primary care, specialty care,9 and prescriptions.

There is evidence that a medical home generates the greatest benefits for the highest risk clients10,11,12,13 and, in so doing, helps to reduce health disparities related to socio-economic status.14 Use of PCMH practices by high-risk/high-cost patients has been shown to reduce in-patient hospital admissions resulting in significant net savings.15 Researchers have also found that low-income adults with health insurance and a medical home report fewer cost-related barriers to health care, more preventative screenings,16 and increased satisfaction with the quality of their care.17

Care One is an intensive care management program targeting the costliest one percent of patients utilizing the UNMH system. In addition to primary care, Care One patients receive prioritized access to specialty care, pharmacist-directed medication
management, ongoing support from a team that includes a physician, a social worker, a patient care coordinator, and a mental health therapist, and help accessing social services. A 2015 cost analysis that compared Care One participants to a control group of high utilizers whose costs, although quite high, did not reach the threshold for participation in Care One, found that Care One reduced annual per-patient billing charges by $44,504.18 UNMH billed charges are roughly twice the actual cost of services provided.19 Thus, Care One participation reduced health care costs by approximately $22,252 per patient per year. The cost study analyzed data from 2006 through 2012, thus the dataset likely included a number of Pathways clients. Costs for the UNMH patients whose costs were just below the threshold for Care One averaged $37,068 annually.

Based on navigator notes, 64 Pathways clients were placed in Care One and the remaining 649 clients established health care homes at one of several NCQA-recognized PCMHs.20 In a 2015 meta-analysis of randomized controlled PCMH cost studies from around the country, researchers at the Washington State Institute for Public Policy estimated that, for high risk patients, PCMH reduced total healthcare costs by 4 percent per year. Assuming pre-intervention health care costs for the Pathways clients not assigned to Care One were similar to those of the control group in the Care One study ($37,068/year) and enrollment in Care One reduced costs for Pathways clients by amounts comparable to those reported in the 2015 cost study ($22,252), one-year cost savings from establishing medical homes for 713 HCH pathway completers total $2,386,426.4

The per-patient cost of providing PCMH services varies considerably across different types of providers and patients and there is limited published information on the per-patient cost of providing PCMH services to high-risk, publicly insured adults in New Mexico. However, an approximation of PMPM costs can be made using the risk-stratified care management fees established by the Centers for Medicare and Medicaid Services Innovation Center as part of the Comprehensive Primary Care Plus (CPC+) initiative. CPC+ is an advanced primary care medical home model that pays participating providers care management fees of $6 to $100 PMPM based on the patient’s risk status. Assuming Care One clients correspond to the highest risk tier ($100/month) and other HCH clients correspond to the second highest tier ($30/month), the incremental cost of providing medical home services totals $1,200/year for Care One patients and $360/year for the other pathways HCH completers. The cost to providers and payers of providing medical home services to Pathways clients is then $310,440.6

The Pathways program spends an average of $1,600 per client, or roughly $530 per pathway for clients who complete three pathways. The estimated cost to Pathways of 713 completed HCH pathways is then $377,890 and total cost is $688,330.1

Subtracting total benefits from total costs yields net cost savings of $1,698,096 and a benefit-to-cost ratio of 3.47.

Returning Inmates: Can a medical home reduce recidivism?
Incarcerated people and those who cycle in and out of jail bear a higher disease burden than the general population.20 Incarceration is associated with high rates of chronic disease including HIV and hepatitis C.21 Inmates are more likely than the general population to have serious mental illness or addiction and many experience both conditions simultaneously. Eighty-five percent of returning inmates in Pathways report having legal problems as a result of substance abuse and 83 percent have been diagnosed with a mental illness. Medically under-served individuals with mental illness may self-medicating with alcohol and illicit drugs, which can exacerbate other chronic illness,22 create additional health problems, decrease healthcare access,23 and increase the likelihood of recidivism. Incarceration has also been shown to contribute, independent of other factors, to health disparities.24 Healthcare in jail and prison is often inadequate25 and some inmates leave jail sicker than when they went in.26

Eighty-five percent of returning inmates in Pathways report having legal problems as a result of substance abuse and 83 percent have been diagnosed with a mental illness.

Comprehensive health care can aid reintegration to the community.27 However, returning inmates, preoccupied with immediate needs such as housing and employment (See Figure 1), seldom seek out primary care28 and many use the ED as their usual source of health care.29 Forty-six percent of returning inmates in the Pathways program report having used the ED or having been admitted to the hospital three or more times in the past 12 months. There is also evidence that some formerly incarcerated people are deterred from accessing primary care by fear of being stigmatized.30 However, research indicates that chronically ill former inmates will utilize primary care if it is made readily available shortly after their release. Primary care-based care management has been shown to reduce ED utilization31 and linking recently released inmates to the health care system has

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1 The providers mentioned in navigator notes all have level two or three NCQA recognition.
2 $64\times22,252 + 649\times0.4\times37,068
3 $64\times1,200+649\times360
4 $310,440+377,890
5

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been shown to reduce recidivism. The use of community health workers who are former inmates also shows promise as a way to engage returning inmates in primary care.4

Medicaid coverage for very low-income adults can support access to care for returning inmates, but inmates must be contacted immediately upon release or while still incarcerated. Connecting former inmates to primary care therefore requires active coordination between the justice system and a network of community-based healthcare and support organizations.4

Figure 1: Pathways most frequently pursued by returning inmates

![Figure 1: Pathways most frequently pursued by returning inmates](image)

5 NCQA Recognized PCMH Comprehensive list http://recognition.ncqa.org


19 University of New Mexico Health Sciences Center. Cost to Charge Ratio Calculations or the fiscal years ended June 30 2013, 2014 and 2015 (unaudited). 12/07/2015

http://hospital.unm.edu/about/finances/summit_fy15/1a-report.pdf


