



**A NEW VISION FOR CALIFORNIA'S HEALTHCARE SYSTEM:
Integrated Care with Aligned Financial Incentives**

**Appendix VI. Patient-Centered Medical Homes
(Initiative Memorandum)**

APRIL 2013

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See “Appendix IV: Introduction to Appendices V-XI” for brief background on this Appendix.

Executive Summary

Individuals suffering from multiple or severe chronic conditions often receive healthcare that is disjointed and fragmented. Patient-Centered Medical Homes are a care delivery model targeted at individuals with chronic conditions that is designed to better manage their treatment by increasing the care appropriate for their conditions while reducing such common but usually unnecessary services as emergency department visits and hospitalizations. The purpose of a Medical Home is to improve primary care and provide better care prevention and management.

The Patient-Centered Medical Home intervention would provide payments on a per member basis to primary care practices that meet the criteria for a Medical Home. Our model estimates that Medicaid, Medicare and private payers would offer financial incentives to establish and maintain Medical Homes serving adult patients with the following common chronic conditions: coronary artery disease, congestive heart failure, hypertension, chronic obstructive pulmonary disease (COPD), asthma and diabetes. We model two policy options: The “Current Developments” scenario, which assumes that 50% of the California population with at least one chronic condition will participate in Medical Homes, and the “Forum Vision” scenario, which assumes an 80% enrollment. The enrollment will be phased in over four years (2013-2016), with the expectation that the enrollment will further increase between 2017 and 2022. We estimate that the annual cost per enrolled member will be between \$200 and \$300. We assume that both public and private payers are committed to financing the care for such patients, and that any net savings would result in a reduction in overall healthcare spending.

Under the Current Developments scenario, we estimate that the reduction in healthcare spending in current-year dollars will range from \$6 billion to \$17 billion from 2013 and 2022, depending on the cost of the intervention. This assumes a 1% to 4% reduction in hospitalizations, emergency department visits and pharmaceutical costs. Under the Forum Vision scenario, in which it is expected that 80% of Californians with at least one chronic condition will be enrolled in a Medical Home, the projected result is a reduction by 2022 of between 0.2% and 0.6% of total healthcare spending. The net expenditures reduction for 2013 to 2022 under the Forum Vision is between \$7.9 billion and \$25.2 billion.

The Underlying Situation

Many individuals suffering from multiple or severe chronic conditions often receive healthcare in a system that is fragmented and episodic. These individuals may have common chronic conditions, such as coronary artery disease, congestive heart failure, hypertension, COPD, asthma or diabetes, which can



require more than a dozen medications and/or specialists.¹ A Medical Home brings a team-based approach to these patients designed to increase appropriate use of medical care while reducing unnecessary services, especially emergency department visits, hospital readmissions and avoidable, non-urgent inpatient visits.² The goals of Medical Homes are to enhance wellness, prevention and chronic care management, and to increase coordination of care across the provider continuum (i.e., hospitals, specialists, nursing homes and community health centers).

Patient-Centered Medical Homes are designed to facilitate access to and coordination of the full array of primary and acute physical health services, behavioral healthcare and long-term community-based services and support.³ As outlined in the Affordable Care Act (ACA) in its initiative to provide a “health home” to Medicaid recipients, these health home services can come in three distinct types: A designated provider; a team of healthcare professionals that links to a designated provider; or a health team.⁴ We can use this definition in implementing the Patient-Centered Medical Home model in California for the Medicaid, Medicare and privately insured populations. We assume that designated providers will include physicians or physician practices, group practices, rural health clinics, Federally Qualified Health Centers, other community health centers, community mental health centers and home health agencies.

Previous Studies

Previous studies of Medical Home programs have shown that they can lead to a wide range of reduction in spending for hospitalization, emergency department visits and pharmaceutical costs. For example, a study focusing on Medical Homes in the “safety net” in California found that in a group of patients with complex needs and a history of high utilization, there was a 60% reduction in emergency department visits and a 40% reduction in inpatient hospital days.⁵ There are also models outside California that show that Integrated Delivery System PCMH Models are associated with 16% to 39% reduction in hospitalizations.⁶ Other PCMH programs have found 15% to 18% reductions in hospital inpatient days, 15% to 25% fewer hospital readmissions and 15% to 50% reductions in emergency department visits.⁷ A Medicaid-sponsored PCMH initiative found a 40% decrease in asthma-related inpatient admission rates and 17% fewer emergency department visits.⁸ It should be noted that studies examining prescription costs show mixed results. Although one study showed that a PCMH group had a smaller increase in

¹ Eibner, et al. (2009).

² Bohmer (2010).

³ Reinhard, et al. (2011).

⁴ Kaiser Family Foundation (2012).

⁵ California Association of Public Hospitals and Health Systems (2010).

⁶ Eibner, et al. (2009); Grumbach, et al. (2010); Nielsen, et al. (2012).

⁷ Nielsen, et al. (2012); Reid, et al. (2010).

⁸ Grumbach, et al. (2010); Kaiser Family Foundation (2009).



pharmacy expenses (6.5%) than the control group (14.5%), prescription costs were higher for individuals with chronic condition such as diabetes (an 11.3% increase).⁹

Proposed Initiative

We estimated the reduction in healthcare expenditures from a policy option to create Medical Homes for patients with chronic conditions in California.¹⁰ The option would provide payments on a per-member basis to the primary care practices that meet the criteria for a Medical Home. Medicaid, Medicare and private payers would offer financial incentives to establish and maintain Medical Homes serving adult patients with the following common chronic conditions: coronary artery disease, congestive heart failure, hypertension, COPD, asthma and diabetes. Evidence suggests that Medical Homes may reduce healthcare expenditures, owing to an increase in coordinated care and a resulting decrease in avoidable inpatient and emergency services.

Modeling Approach and Assumptions

We model two policy options. Under the “Current Developments” scenario, we estimate that 50% of the California population with at least one chronic condition will participate in Medical Homes. Under the Forum Vision scenario, an 80% enrollment is estimated. The enrollment will be phased in over four years, through 2016, with the expectation that enrollment will further increase from 2017 to 2022.

Number of Affected Patients

About 45% of the population in California has at least one chronic condition,¹¹ a figure we assume will not change by 2022. Individuals in both public and private plans are included.

Intervention Penetration Rates

We estimate that about 25% of individuals with chronic conditions are currently being treated in a Medical Home setting, and that the figure will increase incrementally through 2022. Under the Current Developments scenario, the Medical Home enrollment numbers are expected to increase to 50% by 2016. We estimate that there will be a 30% enrollment this year, a 35% enrollment in 2014, a 40% enrollment in 2015 and a 50% enrollment in 2016 and beyond.

Under the Forum Vision scenario, it is expected that 80% of Californians with at least one chronic condition will be enrolled in a Medical Home. It is assumed that the adoption rate will be higher under this scenario, reaching 80% in 2016 and remaining at that level to 2022. We estimate that there will be a 40% enrollment this year, a 50% enrollment next year, a 65% enrollment in 2015 and 80% enrollment after that.

⁹ Eibner, et al. (2009).

¹⁰ Our intervention was designed based on existing Medical Home programs in California and in other states. California Primary Care Association (2012); National Academy for Health Policy (2012); New York State Department of Health (2012).

¹¹ California Healthcare Foundation (2006).



Targeted Healthcare Expenditures

Based on a California Healthcare Foundation report on chronic disease in California, we estimate that the chronically ill population accounts for 75% of total state healthcare spending.¹²

We estimate that the intervention will have an impact on 52% of healthcare spending, with 36% from hospitalization, 3% from emergency care and 13% from prescription medicine. The estimates are based on data from Kaiser Family Foundation, Centers for Medicare and Medicaid Services (CMS) and the Medical Expenditure Panel Survey (MEPS).¹³

We assume different rates of reduction in spending for HMO and non-HMO enrollees. Since individuals covered under an HMO would have some degree of patient management already in place, we estimate that they would achieve one-quarter of the reduction in spending of the population not enrolled in HMO. We estimate 45% of the insured population are enrolled in an HMO this year and 47% will be from 2014 to 2022.¹⁴

Under the Current Developments scenario, we estimate that there will be a 4% reduction in healthcare spending from hospitalization, emergency department utilization and pharmaceuticals for non-HMO enrollees, and a 1% reduction for HMO enrollees.¹⁵ The reduction in healthcare spending will be gradual. For non-HMO enrollees, the reduction will be 1% this year, 2% next year, 3% in 2015 and 4% in 2016 and beyond. For the HMO enrollees, it will be 0.25% in this year, 0.5% in 2014, 0.75% in 2015 and 1% in 2016 and after.

Under the Forum Vision scenario, we estimate that non-HMO enrollees in Medical Homes will experience a 7% reduction in spending from hospitalizations, emergency rooms and pharmaceuticals. We estimate a 1.75% reduction in spending for HMO enrollees, occurring gradually.^{16,17} For the non-HMO enrollees, the reduction in expenditure will also be gradual, increasing 1% per year and reaching 7% by 2019.

We estimate that the cost of the intervention will be \$297 per enrollee per year for the lower bound estimate and \$198 per enrollee per year for the higher bound estimate. We estimate that about 50% of the target population has one chronic condition, 25% have two, 15% have three or four and 10% have more than four.¹⁸

¹² Ibid.

¹³ Berkeley Forum analysis using MEPS-Household Component, 2009; Centers for Medicare & Medicaid Services (2012); Kaiser Family Foundation (2009).

¹⁴ Cattaneo & Stroud Inc (2012).

¹⁵ Eibner, et al. (2009); Lewin Group (2010).

¹⁶ Paulus, et al. (2008).

¹⁷ The 7% estimate is based on an expected 20% reduction for hospital expenditures, a 20% reduction in emergency care expenditures and a 5% increase in prescription medication expenditures. The combination of these reductions in spending results in an average 7% reduction in total healthcare expenditures. That 7% reduction is similar to results in the Geisinger Health Systems study (Paulus et al. 2008)

¹⁸ California Healthcare Foundation (2006).



- For the lower bound estimate, we estimate an average yearly cost of \$297 by assuming that the cost will be \$180 per year for individuals with one condition, \$300 for those with two conditions, \$480 for three to four conditions and \$600 per year for individuals with more than four chronic conditions.
- For the upper bound estimate, we estimate an average yearly cost of \$198 by assuming that the cost will be \$120 per year for individuals with one condition, \$180 for those with two conditions, \$300 per year for three to four conditions and \$480 per year for individuals with more than four.

Estimated Impact

Tables 1 and 2 show the estimated reductions in spending for hospitalizations, emergency room and pharmaceuticals under the Current Developments and Forum Vision scenarios. Under the Current Developments scenario, the cost this year exceeds the reduction in spending. However, there will be a cumulative reduction in spending from 2013 to 2022. If we estimate that the cost of the intervention is \$297 per enrollee (the lower bound assumption), there will be a cumulative reduction in spending of about \$6.1 billion in current-year dollars over 10 years. If the cost of the intervention is \$198 per enrollee (the upper bound estimate), there will be a cumulative reduction in spending of about \$17.1 billion in current-year dollars, or 0.4% of projected healthcare spending from 2013 to 2022.

Under the Forum Vision scenario, the cost in 2013 exceeds the reduction in spending for the lower and upper bound estimates, resulting in expenditures of over \$400 million to \$1.1 billion. (Table 2) However, there is a reduction in spending for both lower and upper bound scenarios by 2022. The reduction in spending in 2022 is about \$2.7 billion for the lower bound and \$5.2 billion for the upper bound estimates. For the cumulative reduction in spending through 2022, the reduction is about \$7.9 billion for the lower bound estimate and \$25.2 billion for the upper bound estimate. Considering both the upper and lower bound, the mid-level reduction in spending estimate is \$16.5 billion.

Estimated Healthcare Expenditures (2013-2022)

Table 1: Healthcare Expenditure Reduction Estimates Under the Current Developments Scenario, 2013-2022

	2013		2022		2013 - 2022		
	Lower	Upper	Lower	Upper	Lower	Mid	Upper
Status Quo Expenditures (billions)	\$327.6		\$572.2		\$4,387.1		
Expenditure Reduction (billions)	-\$0.7	-\$0.2	\$1.1	\$2.7	\$6.1	\$11.6	\$17.1
Expenditure Reduction (%)	-0.2%	-0.1%	0.2%	0.5%	0.1%	0.3%	0.4%

Note: Lower penetration rate: 50% of the California population with ≥ 1 chronic condition enrolled in a PCMH



Table 2: Healthcare Expenditure Reduction Estimates Under the Forum Vision Scenario, 2013-2022

	2013		2022		2013 - 2022		
	Lower	Upper	Lower	Upper	Lower	Mid	Upper
Status Quo Expenditures (billions)	\$327.6		\$572.2		\$4,387.1		
Expenditure Reduction (billions)	-\$1.1	-\$0.4	\$2.7	\$5.2	\$7.9	\$16.5	\$25.2
Expenditure Reduction (%)	-0.3%	-0.1%	0.5%	0.9%	0.2%	0.4%	0.6%

Note: Higher penetration rate: 80% of the California population with ≥ 1 chronic condition enrolled in a PCMH

Discussion

As expected, the greatest reduction in spending is observed for the upper bound Forum Vision scenario. These estimates indicate that the cost of the intervention is the single biggest determinant of whether reductions in spending occur. As the intervention becomes more costly, the cost can exceed whatever savings are achieved. It is important to note that we observe greater reduction in spending under the Forum Vision because in addition to having more people participating in Medical Homes, this vision assumes there will be greater spending reductions (7% for the non-HMO enrollees and 1.75% for HMO enrollees). Our estimates indicate that the reduction in spending will vary when different assumptions are made. For example, if we estimate that Medical Homes will affect more than 52% of the healthcare spending, or that the PCMH enrollment will occur at a faster rate, the intervention could lead to an even greater reduction in spending. On the other hand, if we assume that the intervention cost will be higher, the reduction in spending may disappear. It is important to note that these are all preliminary estimates and to keep our assumptions in mind when contemplating them.

Estimates made by the RAND Corporation for Massachusetts and the Lewin Group for New York State also show that PCMHs can result in either a reduction or an increase in healthcare spending.¹⁹ Because our own estimations were not based on the same set of assumptions made in those studies, nor did they target the same population, direct comparisons are difficult. However, it is interesting to note that results can vary widely depending on a study's initial assumptions. For example, in RAND's Massachusetts analysis, which excluded the Medicare population, if the cost of intervention was estimated to be \$6 per member per month, a cost savings of 0.85% from 2010 to 2020 was predicted. However, when the estimated monthly cost per member doubled to \$12, total health expenditures during the same period actually increased, by 0.43%.

There are several limitations in modeling the intervention. First, the reduction in expenditure is based on the assumption that 80% of patients with at least one chronic condition will enroll in PCMH, which is more than three times today's enrollment. Second, the cost of the intervention is difficult to estimate, but the reduction in expenditure will decrease if the cost of the intervention is higher. Third, for the intervention to be effective, the PCMH model needs to be comprehensive in coordinating health and social services, which requires careful planning and implementation from individual organizations.

¹⁹ Eibner, et al. (2009); Lewin Group (2010).



Acknowledgements

We are very grateful for the comments we received on this memorandum from Paul A. Fishman, Ph.D, Scientific Investigator, Group Health Research Institute and Michelle Shaljian, Director of Communications at the Patient-Centered Primary Care Collaborative. These individuals do not necessarily endorse the contents of this memorandum.



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