



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

Appendix VII. Palliative Care (Initiative Memorandum)

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

Executive Summary

In 2007, the average California patient cost Medicare more than \$65,000 during the last two years of life, significantly more than the U.S. average. Total healthcare spending for California patients in their last couple of years of life is likely to be well over \$100,000 when including non-Medicare payment sources. The intense care provided to seriously ill patients is often at odds with patient or family preferences involving quality of life, including pain and symptom relief, practical, spiritual and emotional support, and the ability to die in a natural, peaceful setting.

Palliative care is specialized care that involves shared decision-making and advanced care planning as well as physical, emotional and social support for patients with a serious illness. It has been demonstrated to improve patient satisfaction, reduce healthcare expenditures and improve quality of life, symptoms and survival outcomes. Reduced healthcare expenditures due to palliative care interventions are generally a result of fewer and/or shorter hospitalizations with fewer ICU days, as well as reduced Emergency Room visits and increased selection of hospice care. Only 36% of California Medicare patients died in hospice in 2007, compared to the national average of 42%. Furthermore, the Medicare regulations that limit hospice to patients with a prognosis of six months or less and require that patients forgo life-prolonging care, often lead to very short stays or delayed hospice selection for those who do select hospice.

Based on several previous studies and existing programs, we modeled an intervention that would provide concurrent curative and outpatient, community-based palliative care (CPC) to patients with serious illnesses considered to be in their last year of life. We estimate that a CPC intervention under the “Current Developments” scenario would reduce healthcare expenditures by about \$4.9 billion in current-year dollars between 2013 and 2022, or 0.11% of total healthcare spending during this period. By 2022, when the intervention could be considered mature, the estimated annual reduction in healthcare expenditures is \$0.9 billion, or 0.16% of total spending in that year under the “Current Developments” scenario. Under the higher adoption rate and higher savings rate assumed under the “Forum Vision” scenario, CPC would reduce healthcare expenditures by about \$11.4 billion 2022, or 0.26% of total healthcare spending during this period. In the highest adoption year of 2022, at which point the intervention could be considered mature, CPC would reduce healthcare expenditures by an estimated \$2.3 billion, or 0.41%, under the “Forum Vision” scenario. Based on previous studies, we also expect better psychological health and quality of life for both patients and caregivers, as well as potential survival benefits to patients who are able to spend more time in the comfort of home, away from the stressful environment of a hospital or ICU.

Higher adoption rates for CPC would be facilitated by a reduction in fee-for-service reimbursement and a movement to more value-driven reimbursement methods, such as global budgets, shared-savings and



other risk-based payments. Uptake would also increase if there was greater public awareness of the many advantages of palliative care. Perhaps most importantly, California needs a significant investment in workforce capacity to effectively manage the growing demand for palliative care services. There is a great need for both general and specialized palliative care training for doctors, nurses, social workers and other healthcare providers.

The Underlying Situation

Over the last 10 years, healthcare providers and organizations have undertaken major efforts to better align the needs and wishes of seriously ill patients with the care they actually receive. California has experienced increased hospice uptake rates¹, a major expansion of inpatient palliative care services² and legal and implementation support for advanced care planning via Physician Orders for Life Sustaining Treatment (POLST).³ Nonetheless, California still has a significant opportunity to further improve the quality of care and the patient experience for the seriously ill. A California HealthCare Foundation study showed that a majority of Californians say they want lower intensity sites of care during the last stage of life; they also want that care to emphasize pain and symptom management, spiritual support and shared-decision making.⁴ In contrast to those clearly expressed public wishes, however, about 42% of California deaths⁵ still occur in the hospital, and only 36% of California Medicare deaths are served by hospice.⁶

Medicare spends approximately 25% of its budget on the 5% of U.S. beneficiaries who die during a given year, a ratio that did not change significantly between the late 1970s and the mid-90s.⁷ In 2007, the average adjusted Medicare reimbursement for patients with one of nine common chronic conditions in the last two years of life was \$73,032 in California and \$60,694 in the entire country.⁸ Total healthcare expenditures at the end of life are significantly greater when considering other payers, such as Medicaid, supplemental insurance payments and out-of-pocket spending. California fares worse than the rest of the country with regards to high intensity end of life care. For example, in 2007, California's fee-for-service Medicare population in the last six months of life had a higher number of inpatient days (10.6 vs. 10.3)⁹ and more patients with seven or more ICU days (20.3% vs. 15.2%) than the country as a whole.¹⁰ Medicare's hospice benefit, which provides comprehensive palliative care services, has generally been shown to result in expenditure reductions. A 2007 study of slightly under 2,000 Medicare beneficiaries suggested average cost-savings of 25%, or \$2,309 per hospice user, compared to a control

¹ Dartmouth Atlas of Healthcare (2012a).

² California HealthCare Foundation (2012).

³ Wenger, et al. (2012).

⁴ O'Malley, et al. (2012).

⁵ California HealthCare Foundation (2012).

⁶ Dartmouth Atlas of Healthcare (2012a).

⁷ Hogan, et al. (2001).

⁸ Dartmouth Atlas of Healthcare (2012d). Dartmouth Atlas data adjusts for age, sex, race, primary chronic condition and presence of more than one chronic condition.

⁹ Dartmouth Atlas of Healthcare (2012b).

¹⁰ Dartmouth Atlas of Healthcare (2012c).



group.¹¹ Nonetheless, Medicare's hospice benefit is limited to patients prognosticated to be in the last six months of life who agree to forgo curative care; pre-conditions which result in both relatively low and relatively late selection of hospice care. The median length of stay in hospice is only about three weeks, and one-third of Medicare patients are enrolled for less than a week prior to death.¹² At the other extreme, because hospice is a somewhat costly benefit with an average per diem rate of about \$160, having a patient receive hospice for longer than three or four months may actually lead to increased expenditures.¹³

The existing U.S. healthcare payment and delivery system discourages the widespread expansion of palliative care, which is defined as "patient and family-centered care that optimizes quality of life...[and] involves addressing physical, intellectual emotional, social and spiritual needs and facilitates patient autonomy, access to information, and choice."¹⁴ Palliative care has been demonstrated to improve patient satisfaction, reduce healthcare expenditures and improve quality of life and survival outcomes.¹⁵ A rough Forum assessment suggests that fewer than 20% of California patients with serious illness have access to sufficient palliative care services, including outpatient and community-based palliative care.¹⁶

Previous Studies

Palliative care has been demonstrated to improve patient satisfaction, reduce healthcare expenditures and improve quality of life, symptoms and survival outcomes.¹⁷ Reduced healthcare expenditures due to palliative care interventions are generally the result of lower and/or shorter hospitalizations and ICU stays, as well as reduced ER visits and increased selection of hospice care. Additionally, it is believed that embracing palliative care principles could reduce pressure to expand hospital capacity, thereby freeing up resources from capital-intensive building projects.

Kaiser has conducted several randomized controlled trials on care for seriously ill patients, involving inpatient and home-based palliative care as well as advanced illness care coordination. All showed improved outcomes for those in the study groups. In the home-based study, seriously ill patients with a prognosis of one year or less who had been in the hospital or ER during the previous twelve months received in-home palliative care in addition to standard care, for an average 196 days of intervention, versus 242 days for the control group. The patients who received palliative care showed significantly higher rates of patient satisfaction, were less likely to be hospitalized or have an ER visit and were much more likely to die at home. Overall adjusted cost per day of care was over 50% less for the study group

¹¹ Taylor, et al. (2007).

¹² Meier, et al. (2004).

¹³ Interview with Diane Meier, Director of the Center to Advance Palliative Care at the Mount Sinai Medical Center, December 2012.

¹⁴ Center to Advance Palliative Care.

¹⁵ Meier (2011).

¹⁶ See "Intervention penetration rates" section below for background on how we obtained this figure.

¹⁷ Meier (2011).



(\$95.30) than the control group (\$212.80).¹⁸ The patients in the intervention group cost \$7,552 on average less than the control group (CI=-\$12,411 to -\$780, p=0.03).

The Franklin Health Care Management project began in 1998 via a grant from the Robert Wood Johnson Foundation. A randomized control trial by the foundation tested the impact of palliative care services being provided in addition to the standard care management program for HMO patients with serious illness.¹⁹ Results included a 38% reduction in hospitalizations, a 22% increase in home care, a 62% increase in hospice services and an overall 26% reduction in costs over the four months the average patient stayed in the program.²⁰ Average care time per patient per month was 10 hours, including an average 14 calls and 1.8 in-person visits.

Sutter Health's Advanced Illness Management program provides home-based palliative care for patients with serious illness. Unpublished data for 96 patients who survived for at least 90 days after program enrollment showed that these patients incurred 63% fewer hospitalizations compared to the 90 day period before enrollment. Preliminary data suggests monthly direct care cost savings of \$2,000 per patient, not including savings from increased hospice enrollment.²¹ Unpublished data from Sharp Health's Transitions program for seriously ill patients showed reduction in average ER and hospital charges per enrolled patient of \$7,269 in fiscal 2009 and \$7,566 in fiscal 2008, based on comparing pre- and post-intervention spending.²²

The results from the above programs are summarized below. We give the Kaiser in-home palliative care study the most weight in our analysis, as it was a randomized controlled trial with published results. Because its data relies on proxy costs estimates for Kaiser-provided services that are thought to have a downward bias, the results may underestimate the program's true savings. From the studies listed below, only the Kaiser study contains detailed information on how its cost-savings were calculated. The others use such terminology as "charges," "direct medical costs" and "net costs," but are less clear about how such measures are defined. Finally, both the Sharp and Sutter data are based on comparison of pre- and post-intervention costs. Considering that healthcare spending is expected to increase as a patient progresses in a disease, these results may underestimate the impact of the intervention.

¹⁸ Brumley, et al. (2007).

¹⁹ Meier, et al. (2004).

²⁰ Meier (2012).

²¹ Meyer (2011).

²² Hoefer, et al. (2010).



Table 1: Estimated Expenditure Reductions from Selected CPC Programs

Program & Year	Results and intervention length	Per patient savings (\$)
Kaiser in-home PC (2002) ²³	<ul style="list-style-type: none"> • Approx. \$118 per day in savings (55% net reduction) • 196 day average intervention 	\$7,552 in medical care costs ¹
Franklin Home Health (1998 onwards) ²⁴	<ul style="list-style-type: none"> • 26% net reduction in costs • 4 months 	NA
Sharp Transitions (2009) ²⁵	<ul style="list-style-type: none"> • \$7,269 charges reduction per patient • NA 	\$7,269 in hospital/ER charges
Sutter AIM (2009/2010) ²⁶	<ul style="list-style-type: none"> • \$2,000 per month • Total of 185 patients: <ul style="list-style-type: none"> ○ 64 patients between 30 and 60 days; ○ 25 patients between 60 and 90; ○ 96 patients > 90 days. 	\$5,400 in direct medical costs ²

Notes: (1) Includes reimbursement to contracted non-Kaiser providers plus proxy costs for services delivered within the Kaiser HMO. Proxy costs calculated are significantly lower than for similar services contracted to non-Kaiser providers. (2) Berkeley Forum estimate based on weighted-average length of stay, with the assumption that patients enrolled for greater than 90 days averaged 105 days in the program.

In March 2012, the American Society of Clinical Oncologists issued an important Provisional Clinical Opinion that palliative care alongside standard care “should be considered early in the course of illness for any patient with metastatic cancer and/or high symptom burden.”²⁷ This opinion was based on the results of seven published randomized control trials. Perhaps the most significant of these trials, by Temel, et al., (N=151) was a randomized study that showed that patients who received community-based palliative care at the same time as intensive cancer care survived 2.7 months longer than those who received standard cancer care alone.²⁸ The increased survival was demonstrated even though the intervention group experienced significantly less aggressive end-of-life treatment, which was measured by chemotherapy provided within 14 days of death, lack of hospice selection and a hospice stay of fewer than four days. The intervention group also enjoyed significantly higher quality of life scores, such as a 75% reduction in major depression.

²³ Brumley, et al. (2007).

²⁴ Meier (2012).

²⁵ Hoefer, et al. (2010).

²⁶ Meyer (2011).

²⁷ Smith, et al. (2012).

²⁸ Ibid.



Proposed Intervention

The proposed intervention would provide CPC access to all patients with certain conditions with an approximate prognosis of one year or less of life. Conditions that would be covered include cancer, chronic obstructive pulmonary disease, congestive heart failure, dementia, ALS, cirrhosis and HIV. CPC would include advanced care planning based on patient and family goals, pain and symptom management, medication reconciliation and management, coordination of medical and non-medical care and 24/7 care team accessibility.

CPC would be provided via an interdisciplinary team, with staffing and teams varying by site. One sample program proposed by the Center to Advance Palliative Care included teams of palliative-care trained Community Health Workers (CHW), Registered Nurses, social workers, chaplains, Advanced Practice Nurses (APN) and physicians. The program would have an overall 20:1 ratio of patients to CHW staff, including a 40:1 ratio for RNs and a 60:1 ratio for social workers, along with one or two APNs and 0.1 to 0.2 MD full-time equivalents overseeing each main site of care.²⁹ The CPC intervention builds on Sharp Healthcare's Transitions, Sutter Health's Advanced Illness Management and the combined Kaiser in-home palliative care/advanced illness care coordination initiatives described above. The intervention focuses on the subset of the most fragile, highest-cost patients, and provides an intensive outpatient intervention.

While prognostication about a patient's health is invariably challenging for physicians, there are specific clinical and functional indicators can help identify not only the patients who would be best-served by palliative care, but also what that care should entail. CPC would help provide care in lower-cost settings such as the home. In many cases, it would also reduce the intensity of care, to match it with achievable medical goals and patient wishes. The intervention would be expected to result in fewer ICU days, hospitalizations and ER visits near the end of life, along with increased hospice selection. To facilitate implementation and achieve the highest return on investment, the intervention roll-out should focus on areas that have higher concentration of appropriate populations, particularly high care costs for seriously ill patients and a significant number of existing inpatient palliative care programs.

Modeling Approach and Assumptions

We modeled a scenario in which seriously ill patients in their last year of life, for cancer, COPD, congestive heart failure, dementia, ALS, cirrhosis and HIV -- in other words, "potentially appropriate patients" -- would receive community-based palliative care. We assumed that both public and private payers would be committed to financing concurrent care for such patients, and that any net savings would accrue as a reduction to overall healthcare spending. In practice, this expenditure reduction would likely be shared by various constituents, including Medicare, private payers, patients and providers. Below is a table of key assumptions used in modeling, followed by the methodology for arriving at the assumptions.

²⁹ Meier (2012).



Table 2: Key Assumptions for Modeling Expenditure Reductions Due to Community-Based Palliative Care Intervention

Key assumptions	2012	2017	2022
Deaths from considered medical conditions, 2009	129,258		
% of additional potentially appropriate patients	25%		
Total potentially appropriate patients, 2009	161,573		
Population growth rate	0.84%	0.84%	0.95%
Death rate growth rate	1.5%		
<i>Penetration rate among potentially appropriate patients</i>			
Baseline	10%		
Current Developments	10%	26%	30%
Forum Vision	10%	37%	50%
<i>Number of patients served annually</i>			
Baseline	17,362	19,567	22,125
Current Developments	17,362	50,873	66,375
Forum Vision	17,362	72,396	110,624
Average length of intervention	6 months		
Average healthcare spending in last six months	\$62,761	\$80,193	\$104,939
<i>Intervention net savings</i>			
Current Developments	15%		
Forum Vision	25%		
<i>Per patient savings</i>			
Current Developments	\$9,414	\$12,029	\$15,741
Forum Vision	\$15,690	\$20,048	\$26,235

Number of affected patients

“Deaths from considered medical conditions” is based on the number of deaths with the listed conditions in California (approximately 129,258 deaths, or about 56% of all 2009 California deaths).³⁰ Considering well-known challenges involving the recording of the accurate cause of death on death certificates, this figure may underestimate the number of patients with these conditions.³¹

There are many other patients with serious illness who could benefit from a similar intervention, including patients with the above conditions who are not in the last year of life, or patients with rarer conditions than those listed.³² Based on professional judgment, we thus add an additional 25% more patients each year (e.g. 32,315 patients in 2009) to the “Deaths from considered medical conditions” figure, to arrive at the “Total potentially appropriate patients” figure.

³⁰ California Department of Public Health (2012).

³¹ Interview with Diane Meier, Director of the Center to Advance Palliative Care at the Mount Sinai Medical Center, December 2012.

³² Interview with Lynn Spragens, Spragens & Associates, December 3, 2012. .



To project the number of potentially appropriate patients for each year, we adjusted the previous year's figure by the estimated change in the death rate due to an aging population. We assume that age-specific death rates will remain similar between 2010 and 2022. We also accounted for population growth as detailed in Appendix III: "California Cost Curve, Healthcare Expenditures, and Premium Projections (Methodology)".

Intervention penetration rates

We roughly estimate that about 20% of potentially appropriate patients currently have access to CPC. This figure is primarily based on Kaiser's market share among the Medicare and non-Medicare California population,³³ and assumes that all of Kaiser's "potentially appropriate" patients have access to CPC. It also includes an additional couple of percentage points to take into account the currently small number of Californians served by other CPC programs, such as Sutter's Advanced Illness Management, Sharp's Transitions and VA programs. Since there is minimal data on what percentage of potentially appropriate patients with CPC access are actually receiving the intervention, we assumed that about half of such patients do so. This figure is higher than the 36% hospice uptake rate among Medicare patients in California, since we expect that patients in these other programs more readily elect CPC because doing so does not require them forgo curative care, as is the case with hospice. Overall, we arrive at a 10% figure that represents the "baseline" penetration rate for comprehensive palliative care.

Under the "Current Development" scenario, growth is assumed to increase from the current 10% penetration to 30% by 2020. The adoption trajectory is such that there is slower growth in the first three years, but rapid growth in years four through six, leveling off in the last few years. This pattern is believed to be a similar trajectory to that experienced by inpatient palliative care programs in California.

Under the "Forum Vision" scenario, in which there is great proliferation of risk-based payments such as ACOs and global payments, we assume that CPC reaches 50% of potentially appropriate patients by 2020. The adoption occurs in a similar fashion to that in the "Current Developments" scenario, with uptake slow in the first three years, rapid in the next three years, and then leveling off. Achieving much more than a 50% penetration rate is expected to be difficult due to such challenges as the difficulty involved in accessing patients in rural communities, as well as unstable living environments (e.g. homeless patients), poor patient-provider communication or lack of patient education.

Targeted healthcare spending

Based on existing programs and professional judgment, we assume that the average patient spends six months in the program. Their healthcare spending during this period is known as the "target spending."

³³ Cattaneo & Stroud Inc. (2012b).



Based on Dartmouth Atlas data, average fee-for-service Medicare reimbursements for the last six months of life for a California patient were \$39,578 in 2007.³⁴ We estimate that Medicare paid for 74% of that figure, with the remaining contributed primarily from Medicaid, out of pocket spending and supplemental insurance. A 2001 study calculated that Medicare financed 61% of healthcare spending for those in the final year of life.³⁵ This estimate was done before the implementation of the Medicare Part D prescription drug benefit, which shifted financing for healthcare expenditures away from patients and towards Medicare. We arrive at the 74% figure by adjusting the 61% estimate upwards by 22%³⁶ to account for the larger share of spending financed by Medicare since the 2001 study.³⁷

These estimates lead to a 2007 total expenditures of \$53,343 in the last six months of life. We increase this figure at the annual rate of per capita increase in healthcare expenditures calculated in the Cost Curve Methodology, to arrive at \$62,761 in 2012 target spending. For each year through 2022, we arrive at the target spending by applying the projected per capita healthcare spending growth rate to the previous year's target spending.³⁸

Estimated expenditure reduction rate

The net expenditure reduction rate assumed was 15% for the lower bound and 25% for the upper bound. This translates to a \$9,800 - \$16,300 range in per patient savings this year.

The low-end assumption is based on Kaiser's 2002 cost-savings of almost \$8,000, extrapolated to 2013. The high end is based on the 26% net cost reduction from the Franklin Health study and the 25% cost reduction estimated for hospice patients.³⁹

These expenditure reduction rates are net of the cost of the palliative care intervention. The savings are expected to be shared among various constituents, including patients, providers and payers.

Estimated Impact

As described in the above assumptions, we examined the potential reduction in total healthcare spending under two scenarios. The first considers anticipated market trends and developments ("Current Developments"). The second, the "Forum Vision," assumes a California healthcare system with

³⁴ Dartmouth Healthcare Atlas (2012d). Dartmouth Atlas data is adjusted for age, sex, race, primary chronic condition and presence of more than one chronic condition.

³⁵ Hogan, et al. (2001).

³⁶ The original 2001 study calculated that Medicare financed 61% of healthcare spending for patients in their last year of life. The 1994 Medicare Current Beneficiaries Survey Data referenced in the study showed that Medicare financed 52.7% of healthcare for all Medicare beneficiaries. The share covered by Medicare is slightly higher for those in the last year of life compared to the average beneficiary, as care for the seriously ill shifts to more acute settings with lower cost-sharing. Following implementation of the Medicare Part D prescription drug benefit, the 2009 Medicare Current Beneficiaries Survey Data showed an increase in Medicare financing across all beneficiaries, to 64.1% of all spending. We thus estimate that on average, Medicare's share of spending increased by 22% (64.1% / 52.7%) across all beneficiaries after implementation of Part D. We apply this 22% increase to the original 61% estimated Medicare financing for patients in the last year of life, to arrive at the updated 74% estimate.

³⁷ Medicare Payment Advisory Commission (2009).

³⁸ As detailed in Appendix III: "California Cost Curve, Healthcare Expenditures, and Premium Projections (Methodology)".

³⁹ Taylor, et al. (2007).



a greatly increased role for integrated care systems that receive mostly risk-based payments (e.g. shared savings/loss or global payments.)

The “Current Developments” scenario estimates that 2,666 additional patients receive CPC this year, versus the estimated baseline figure of 17,774, and that the figure grows to 44,250 more patients than the baseline projection by 2022. This expansion of CPC leads to a reduction of between \$3.7 billion and \$6.1 billion in current-year dollars, or 0.08% to 0.14%, of total healthcare spending in California during the 2013 – 2022 period. By 2022, the midpoint expenditure reductions due to CPC under Current Developments is 0.16% of total healthcare expenditures. The increase is due to the growing adoption of CPC over the ten-year period, resulting in significantly more access to CPC than occurs today.

In the “Forum Vision” scenario, 3,555 additional patients would receive CPC this year versus the estimated baseline of 17,774. This figure would grow to 88,500 more patients in 2022 than in baseline projections. This higher adoption of CPC is estimated to reduce expenditures between \$6.9 billion and \$11.4 billion, or 0.16% - 0.26% of total healthcare spending during the 2013 – 2022 period. By 2022, the upper rate expenditure reductions due to CPC under the Forum Vision is 0.41% of total healthcare expenditures. This larger increase through the ten-year period is due to the more complete adoption of CPC, leading to a significant increase in the number of patients affected by the interventions by 2022.

Table 3: 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)	\$0.0	\$0.0	\$0.7	\$1.2	\$3.7	\$4.9	\$6.1
Expenditure Reduction (%)	0.01%	0.01%	0.12%	0.20%	0.08%	0.11%	0.14%

Table 4: 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)	\$0.0	\$0.1	\$1.4	\$2.3	\$6.9	\$9.2	\$11.4
Expenditure reduction (%)	0.01%	0.02%	0.24%	0.41%	0.16%	0.21%	0.26%

Given the expected per capita healthcare spending growth, the lower bound savings rate translates to a spending reduction of about \$9,800 per patient this year and \$15,700 in 2022. At the upper bound savings rate, the estimated reduction in healthcare spending per patient would be about \$15,700 this year, growing to approximately \$26,200 in 2022. Overall, we estimate a reduction of \$4.9 billion, or 0.11% of total healthcare spending, under the “Current Development” scenario based on CPC adoption rates and midpoint savings estimates. We estimate a reduction of \$11.4 billion, or 0.26% of total



expenditures, if California experienced even greater CPC adoption and the upper savings estimates as assumed under the “Forum Vision” scenario.

Discussion

Since seriously ill patients incur significant medical expenses as their conditions progress, community-based palliative care has the potential to significantly reduce healthcare expenditures in California. We estimate that a CPC Intervention under the “Current Developments” scenario would reduce healthcare expenditures by about \$4.9 billion in current-year dollars between 2013 and 2022, or 0.11% of total healthcare spending during this period. Under the “Current Developments” scenario, the reduction in healthcare expenditures in 2022 averages \$0.9 billion, or 0.16% of total spending. Under the higher adoption rate and savings estimate assumed under the “Forum Vision” scenario, CPC would reduce healthcare expenditures by about \$11.4 billion total over the ten years between 2013 and 2022, or 0.26% of total healthcare spending during this period. Under the Forum Vision, in the highest adoption year of 2022, CPC would see healthcare spending reduced by an even greater 0.41%.

CPC creates a scalable response to the targeted needs of some of California’s most expensive patients. Given both the growth in the elderly population and the large role that new technology plays in increasing healthcare spending, targeting this population could help reduce volatility in the overall medical budget. Payers and providers could reduce exposure to large cost increases associated with new technologies that may be of marginal impact to certain patients.

We would expect other benefits from such an intervention besides a reduction in healthcare spending. Based on previous studies, it is likely patients would spend fewer of their precious remaining days in the uncomfortable atmosphere of a hospital or ICU, and more time at home or in a hospice. As a result, these patients and their families would be in a better emotional and mental position to manage their difficult situation. Patients would be likely have a higher quality of life, without the depressive symptoms common in elderly, critically ill patients. And they would be more likely to die at home, usually their preferred location. The Temel study discussed above suggests that palliative care may even increase survival.

However, there are a number of barriers to rapid adoption of CPC. A main challenge today is fee-for-service reimbursement and traditional Medicare, which incentivizes provision of additional services rather than improved patient care. Adoption of CPC would be facilitated by a rapid shift towards population and global payment models, such as capitation, shared savings or bundled payments, all of which encourage value-driven care delivery. Adoption could be expedited by state or industry-regulatory mechanisms to define, certify and license, and then and monitor CPC services, to assure they are offered in an effective, ethical and high-quality manner.

California must increase the general public’s awareness of palliative care. The state also needs a significant investment in workforce capacity to effectively manage the growing demand for palliative care services. Needs include both generalist and specialized palliative care training for doctors, nurses, social workers and other providers. General education of the workforce would greatly assist in



acceptance, recognition, delivery of and referrals to palliative care among healthcare professionals. Furthermore, providers must develop and invest in systems for collecting and sharing vital patient information, such as changes in Activities of Daily Living (ADLs) or frailty markers that can help target appropriate patients for intervention. Finally, provider organizations must develop capabilities to partner with hospice or home health agencies to create new cost-effective, community-based palliative care programs. CPC effectiveness will also depend on providers' ability to improve coordination among the many community-based public and private services for the elderly.

While various studies have examined the effect of specific palliative care programs, the impact of a community based palliative care program on reducing state or regional healthcare expenditures has not been examined as closely. The Lewin Group estimated the potential healthcare expenditure reductions due to increasing inpatient palliative care access in New York to be about \$11 billion, or slightly under 0.5% of total New York healthcare spending over a ten-year period.⁴⁰ This result is roughly double our estimate under the "Forum Vision" of a 0.26% reduction in California healthcare expenditures over a ten-year period. However, the specific intervention modeled by the Lewin Group was more robust, in that it required all hospitals in New York to adopt a palliative care program and obtain certification that all of their chronically ill patients were offered the care. Lewin Group's different scenario and modeling approach resulted in a slightly lower per-case savings rate, but much higher number of patients served than in the Berkeley Forum analysis. A RAND Massachusetts study estimated that a policy to decrease "resource intensity at the end-of-life" would reduce state annual healthcare expenditures between 0.13% and 0.21% over the 2010 – 2020 period.⁴¹ The RAND modeling, however, was limited to people between the ages of 19 and 64. Furthermore, the intervention differed from the Berkeley Forum model because RAND's analysis was based on shifting end-of-life care to hospice and non-academic medical center settings.

We believe that our estimates provide a solid basis for understanding the potential impact of offering community-based palliative care interventions much more widely to those California patients needing them. Nonetheless, there are several limitations to our estimates. While our modeling approach assumes a single intervention type for all seriously ill patients, in practice, the palliative care model and services provided would vary by disease, illness stage, patient preferences and available resources. Our intervention relies heavily on appropriate identification of patients with serious illness who are likely to be in their last year of life. For some conditions, such as dementia, this type of identification and targeting is, at best, difficult. Our model includes an additional 25% more patients beyond those with the selected medical conditions. It is likely that many more patients with other diseases (e.g. curable cancer) or earlier in the course of a disease may benefit from palliative care. Some additional expenditure reductions for such patients would be likely, for example, through avoidance of hospitalizations. Although desirable, it is unclear whether six months is a realistic expectation for average patient enrollment in such a program, as it is on the higher end relative to the studies cited

⁴⁰ Lewin Group (2010).

⁴¹ Eibner, et al. (2009).



above. Finally, while our model estimates expenditure reductions, previous studies generally consider underlying care costs or charges. Thus, there is great uncertainty in terms of overall impact on expenditures.

Palliative care for seriously ill patients who may not be in the end of life (e.g. patients with curable cancers) could offer great benefits to patients as well as additional cost savings not included in this model, for example, through avoidance of hospitalizations. Aside from the relatively large expenditure reductions possible for the California healthcare system, we believe that care quality as well as patient and caregiver well-being would greatly improve with expanded access to community-based palliative care.

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