Annex D
Healthy Communities Background Research

Prepared by Gena Akers and Elizabeth Beachy, MHS

June 2015

Contents

Section 1. Project Overview ... 4

Background Research Objectives ... 4

Definition of Terms ... 5

Section 2. Medicaid Expansion in Colorado ... 8

Colorado Medicaid Enrollment Growth ... 9

Colorado Medicaid Spending ... 9

Spending per Medicaid Enrollee ... 10

Unmet Demand for Physicians Accepting Medicaid ... 11

Economic Benefits of Medicaid Expansion ... 13

Benefits of Colorado's EPSDT Investment ... 14

Section 3. Colorado's Health Delivery Reform Initiatives ... 16

Payment Reform Models ... 16

Evaluation of Models ... 17

Colorado's Accountable Care Collaborative Structure ... 19

ACC Pay for Performance Structure ... 20

Bringing Consistency to Colorado's Health Programs ... 21

Section 4. Other State Medicaid Programs ... 23

Strategies to Increase EPSDT Rates ... 23

1. HAWAII: Sports Physical Aligned with Well-Child Visits ... 24

2. TENNESSEE: Sports Physical, Expanded Access and Teen Outreach ... 25

3. WASHINGTON DC: Better Coding and Financial Incentives ... 26

4. CONNECTICUT: Data-Driven Partnerships, Outreach & Infoline ... 27

5. MAINE: Physician Profiles and Incentives ... 28

6. OKLAHOMA: Supporting Care Coordination through Electronic Data Transmittal System ... 29

GUNNISON COUNTY: Culture of Collaboration and Care ... 30

Lessons for Colorado ... 31

Section 5: Behavioral Influencers ... 32

Factors that Influence Preventive Health Behavior ... 32

Barriers to Well-Child Visits Among Medicaid Recipients ... 33

Enrollment as a Barrier to Care ... 33

Renewed Focus on Behavior Change 34
Financial Incentives for Behavior Change 34
Motivational Interviewing 35
Media Richness Theory 36
Section 6. Pay for Performance 38
Pay for Performance History 38
How Pay for Performance Works 39
Results from Pay for Performance 40
Other Factors to Consider with Pay for Performance 44
Section 7. Healthy Communities Compensation 46
Total Healthy Communities Program Budget 46
Healthy Communities Program Changes 47
Healthy Communities Incentive Structures 48
Incentives Option A - $500,000 Incentive Fund 49
Incentives Option B - $750,000 Incentive Fund 51
Additional Notes on Incentives 52
Section 8: References 54

Section 1. Project Overview

The Colorado Department of Health Care Policy and Financing (HCPF) manages the **Healthy Communities** program across the state, with the goal of improving health outcomes among Medicaid and CHP+ beneficiaries (children, youth age 20 and under, and pregnant women).

HCPF seeks to improve **Early and Periodic Screening, Diagnostic and Treatment (EPSDT)** outcomes of Medicaid beneficiaries age 20 and under through the Healthy Communities program. In support of this effort, Upleaf is conducting a short evaluation project to be completed in June of 2015.

The objectives of the evaluation project include:

1. Identifying activities that have the highest impact on well-child visits among Medicaid populations;
2. Refocusing the program on high-value activities and away from low-value activities;
3. Implementing a 'Pay-for-Performance' reimbursement model that represents as much as 25% of total contractor reimbursement;
4. Eliminating duplication of effort between Healthy Communities contractors and Regional Care Collaborative Organization (RCCO) contractors, and clarifying responsibilities of each program;
5. Adjusting the Healthy Communities CRM system as needed to reflect program changes.

Upleaf is exploring the questions above through interviews, surveys, a review of contracts and other relevant documents, and background research including a review of published articles and online resources. This report presents the findings of the background research conducted by Upleaf.

Background Research Objectives

Upleaf conducted a review of published articles and online resources to (a) better understand recent changes in healthcare delivery in Colorado and (b) identify which activities have been shown to increase preventive care among children on Medicaid through programs similar to the Healthy Communities program around the country.

The review examined reports from other states that have conducted related studies or program evaluations, reports from donors who have funded programs designed to improve health outcomes among Medicaid recipients, as well as additional relevant studies and evaluations available online. Key sources included:

- National Academy for State Health Policy
- Robert Wood Johnson Foundation
- Commonwealth Fund
- Center for Improving Value in Health Care

- Colorado Health Institute
- Colorado Health Foundation
- The Pew Charitable Trust
- MacArthur Foundation
- Henry J. Kaiser Family Foundation
- Center for Health Care Strategies, Inc.

We also conducted phone interviews with select program managers in other states and experts in Medicaid and EPSDT nationally. These interviews provided a broader view and context for successes and challenges in EPSDT implementation models.

This report specifically examines:

1. Background of Medicaid expansion in Colorado
2. Colorado's health delivery reform initiatives
3. Successes from other states in boosting EPSDT participation
4. Behavioral factors that influence how and why individuals seek health care
5. Pay-for-performance models to improve EPSDT participation rates

Definition of Terms

EPSDT. Since 1967, the purpose of the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program has been "to discover, as early as possible, the ills that handicap our children" and to provide "continuing follow up and treatment so that handicaps do not go neglected." EPSDT provides a comprehensive array of prevention, diagnostic, and treatment services for low-income infants, children and adolescents under age 21, as specified in Section 1905(r) of the Social Security Act. The EPSDT benefit is more robust than the Medicaid benefit for adults and is designed to assure that children receive early detection and care, so that health problems are averted or diagnosed and treated as early as possible. States share responsibility for implementing EPSDT, along with the Centers for Medicare & Medicaid Services (CMS). States have an affirmative obligation to make sure that Medicaid-eligible children and their families are aware of EPSDT and have access to required screenings and necessary treatment services. States also have broad flexibility to determine how to best ensure that these services are provided. No matter the structure, they must arrange for children to receive the physical, mental, vision, hearing, and dental services needed to treat health problems and conditions.[1]

Healthy Communities Program. A comprehensive county-based outreach program designed to assist low-income families, children and pregnant women in Colorado in getting the health care they need. Through this program financed by the Colorado Department of Health Care Policy and Financing

(HCPF), Family Health Coordinators connect families with resources to obtain treatment for medical, dental, vision, mental health and developmental problems. All families eligible for CHP+ or Medicaid are encouraged to use these services.

Healthy Communities focuses on the life cycle of a client, which includes all of the activities that must happen for the client to obtain coverage and access to health care services in an appropriate setting. Healthy Communities Family Health Coordinators serve as a link with other community and statewide programs and services, and are available as the first level of advocacy.

Accountable Care Organization (ACO). An ACO is a provider-led group of health care providers that agree to share responsibilities for the delivery of care to and health outcomes of a defined group of people and the cost of their care. The organizational structure of ACOs varies, but all ACOs include primary and specialty care physicians and at least one hospital.

Providers in an ACO are expected to coordinate care for their shared patients to enhance quality and efficiency, and the ACO as an entity is accountable for that care. An ACO that meets quality performance standards that have been set by the payer and achieves savings relative to a benchmark can share savings with the payer and distribute them among its providers. Some states that are pursuing ACOs for Medicaid beneficiaries are building on existing care delivery programs that already involve some degree of coordination among providers and may have some of the infrastructure necessary to support coordination among ACO providers. States use different terms for their Medicaid ACO initiatives.

Regional Care Collaborative Organization (RCCO). In Colorado, HCPF manages the Accountable Care Collaborative (ACC) Program to provide care to Medicaid recipients. Under this program, HCPF contracts with one Regional Care Collaborative Organization (RCCO) in each of Colorado's seven regions to create a network of Primary Care Medical Providers. Colorado Medicaid provides the RCCOs with support for care management and administration, and they in turn seek to ensure care coordination for Medicaid enrollees and better integrate their care with hospitals, specialists, and social services to improve quality and reduce costs.[2] RCCOs also help providers communicate with Medicaid clients and with each other, so Medicaid clients receive coordinated care. A RCCO will also help Medicaid clients get the right care when they are returning home from the hospital or a nursing facility, by providing the support needed for a quick recovery. RCCOs help with other changes, too, like moving from children's health services to adult health services.[3]

Medical Home. A model or philosophy of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety.[4] Colorado's medical home efforts began in 2001 with the Colorado Medical Home Initiative. This program, administered by the state's

Department of Public Health and Environment, was charged with ensuring that all children receive comprehensive coordinated care within a Medical Home. Colorado established the Accountable Care Collaborative to expand medical home services for their Medicaid population. Through this model, Primary Care Medical Providers contract with Regional Care Collaborative Organizations (RCCOs) to provide medical home services to Medicaid enrollees.[5]

Section 2. Medicaid Expansion in Colorado

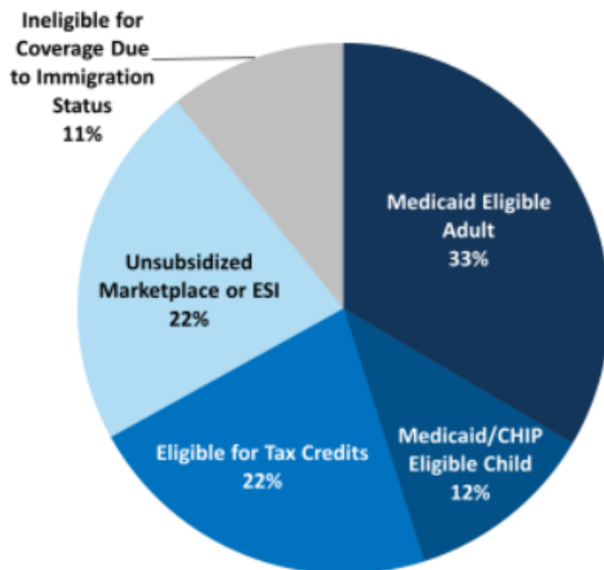
Colorado has experienced significant and rapid changes in health care delivery since 2009. While Colorado policymakers do have a strong history of proactively looking at ways to increase coverage, improve health outcomes, and decrease costs, many of the most recent changes can be attributed to the roll-out of the Affordable Care Act (ACA).

As part of the ACA, Medicaid expanded to cover nearly half of the nation's uninsured. Originally, the ACA mandated states to provide coverage, but a June 2012 Supreme Court ruling gave states the ability to opt-out of Medicaid expansion. Colorado was one of 28 states to opt-in.[6]

The ACA-mandated increase in availability of coverage (including Medicaid eligibility and enrollment) has provided an opportunity for Coloradans who were previously uninsured to now get health coverage and care. As of January 1, 2014 Colorado expanded Medicaid coverage for all individuals from 100% to 133% Federal Poverty Level (FPL). At the same time, Colorado transitioned children ages 6 to 18 with family incomes between 100 to 133% FPL from CHP+ to Medicaid.[7] More than 737,000 uninsured Coloradans benefited from the ACA, the vast majority of which became eligible for Medicaid.[8]

Figure 2

Eligibility for Coverage as of 2014 Among Currently Uninsured Coloradans



Total = 737,000 Uninsured Nonelderly Coloradans

Notes: People who have an affordable offer of coverage through their employer or other source of public coverage (such as Medicare or CHAMPUS) are ineligible for tax credits. Unauthorized immigrants are ineligible for either Medicaid/CHIP or Marketplace coverage.
SOURCE: Kaiser Family Foundation analysis based on 2014 Medicaid eligibility levels and 2012-2013 Current Population Survey.

[9]

This rapid expansion of coverage has raised many questions regarding how to contain health care costs while improving health outcomes, and how to ensure that enough primary care providers are in place. It has also posed significant problems for the Healthy Communities program, which is struggling to serve a much larger population with little to no increase in funding and personnel.

Colorado Medicaid Enrollment Growth

In January 2008, The Blue Ribbon Commission on Health Care Reform presented recommendations to Colorado's General Assembly to expand health coverage and decrease health care costs for Colorado residents.[10] In April 2009 Colorado passed the Colorado Health Care Affordability Act. It created a new health care funding mechanism and expanded Medicaid eligibility for children and adults. Between May 2010 and September 2013, the expansion provided health care coverage for 83,000 Coloradans.[11]

Colorado is one of seven states that have experienced significant Medicaid enrollment growth in FY 2014, exceeding 20%.[12] According to the Colorado Health Institute, this expansion has put a significant strain on the primary health care infrastructure across the state.[13] As of preliminary data from March 2015, over 1,200,000 Coloradans were enrolled in Medicaid or CHP+. That is a net increase of 57% when compared to average enrollment in July through September of 2013.[14]

The Healthy Communities program in particular has seen rapid increases in the number of children eligible for Medicaid. The Healthy Communities Medicaid caseload more than doubled from FY2007 to FY2014, from 227,296 to 519,368 respectively. In May of 2015 the total Healthy Communities caseload was already at more than 570,000, representing nearly 50% of all Medicaid enrollees.[15]

Colorado Medicaid Spending

Medicaid is an important part of Colorado's commitment to equal opportunity for all people.[16] Colorado has mobilized the health sector and invested heavily in getting people enrolled in Medicaid. As a result, Medicaid spending has also increased.

Average Annual Growth in Medicaid Spending[17]

	FY 1990-2001	FY 2001-2004	FY 2004-2007	FY 2007-2010	FY 2010-2013
United States	10.9%	9.4%	3.6%	6.8%	4.0%
Colorado	13.4%	7.0%	3.6%	11.4%	7.9%

If Medicaid funding is cut or capped, it could mean a loss of federal funds.[18] Colorado will lose $1.04 in federal matching funds for every $1.00 in state money cut from the Medicaid budget.[19] This could result in an increase in uninsured children as well as reduced quality of care across the state.

In practice, Medicaid has traditionally functioned almost as two separate insurance programs for low-income individuals: One for children and parents and the other for elderly and disabled individuals of all ages. Elderly and disabled individuals made up only 24% of all Medicaid enrollees in 2010, but they accounted for approximately 64% of spending on benefits because of complex health care needs. As a result of their high cost per capita, the proportion of a state's Medicaid beneficiaries who are elderly and disabled is a major driver of Medicaid spending. On average, Medicaid spends over 5 times more on the elderly and disabled than on parents and children with Medicaid coverage.[20]

State Budget Impact. Medicaid has a unique role in state's budgets because it is both an expenditure item and a source of federal revenue for states. In FY 2012, Medicaid accounted for 23.7% of total spending, but only 18.1% of all state general fund spending. This was a far second to spending on K-12 education, accounting for 35.3% of state general funding spending.[21] Since Medicaid expansion in Colorado however, Medicaid now accounts for a larger share of state general fund spending.[22]

As an expanding state, total Medicaid spending in Colorado will generally grow at a rate similar to enrollment growth. State spending for Medicaid will grow more slowly due to the higher federal match for newly eligible individuals. The federal government will pay 100% of Colorado Medicaid costs for those newly eligible for up to three calendar years, from 2014 to 2016. After that, the federal share decreases to 95%.[23]

The Federal Medical Assistance Percentage, FMAP, is calculated annually for each state using a formula set in the Social Security Act, which is based on a state's average personal income relative to the national average. Poorer states have higher FMAPs. According to the formula, FMAP in FY 2015 varies across states from a floor of 50% to a high of 73.6%. This means that every $1 in Medicaid spending is matched with at least $1 in federal funds.[24] By the same token, to save just $1 in state general fund spending on Medicaid, states must cut at least $2 in Medicaid spending.[25]

Total Medicaid spending in 2013 in Colorado was over $5 billion with a 50-50 federal fund share.[26]

Spending per Medicaid Enrollee

Each Medicaid-eligible child costs Colorado just $1,807 per year, on average, compared to average costs per adult Medicaid enrollee of $7,501.

Growth in Medicaid spending per enrollee from FY 2000 to FY 2011 was greater than GDP and Medical Consumer Price Index, CPI, in most states, but lower than the national health expenditures per capita and private health insurance spending per enrollee.[27]

Average Cost Per New Enrollee in Colorado (FY 2014 – FY 2015)[28]

Medicaid Enrollment Population	Average Cost/Enrollee, FY 14-15
Currently eligible children to 100% FPL & Children age 0-5 to 138% FPL	$1,423
Currently eligible children age 6-17 100% to 138% FPL	$1,529
Currently eligible parents to 60% FPL	$3,590
Currently eligible parents 60% to 100% FPL	$2,711
Newly eligible parents 100% to 138% FPL	$3,030
Newly eligible adults without dependent children to 100% FPL	$5,760
Newly eligible adults without dependent children 100% to 138% FPL	$3,840

The effective Per Member Per Month cost of the Healthy Communities program is currently $0.44 for FY15 (a total of $5.28 per year).

Unmet Demand for Physicians Accepting Medicaid

The large volume of newly insured in Colorado will make an estimated 256,010 to 432,420 additional annual visits to primary care providers, including physicians, nurse practitioners, and physician assistants. Due to this increased demand, The Colorado Health Institute estimated in 2011 that Colorado will need between 83 and 141 additional primary care providers by 2016.

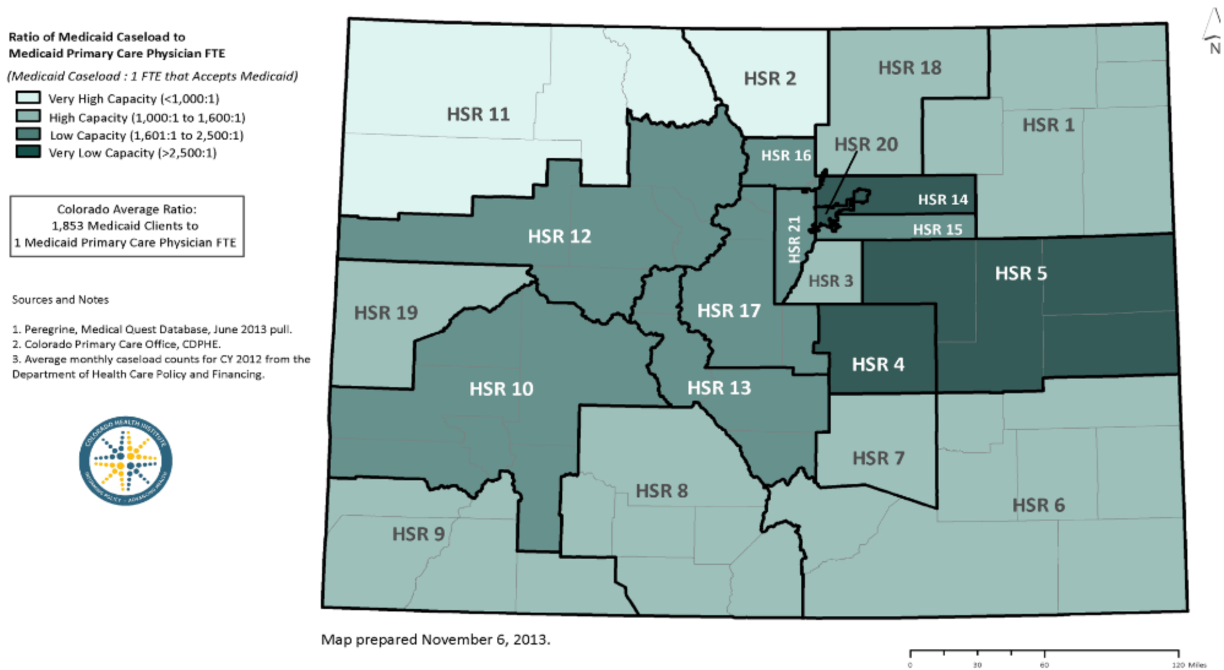
As of 2011, 56 of Colorado's 64 counties were designated as full or partial primary care Health Professional Shortage Areas, where there are 2,000 or more residents per primary care doctor. The increase in Medicaid enrollees will account for between 30 and 49 of the additional providers needed. This represents a workforce increase of 2-3%.[29]

Unfortunately, there is no magic number to determine how many primary care physicians are needed to provide adequate care. Comparing primary care physician FTEs to the population, while not a complete measure of access to health care, allows for direct comparisons across regions and provides an overall view of the state's primary care capacity.

As of 2014, there are 2,812 FTE practicing primary care physicians, establishing an **average panel size of 1,873 patients per physician.** The current average panel size for Medicaid primary care physician

FTEs is nearly the same as the benchmark panel size for the general population. However, variations are significant across the state.[30]

Ratio of Medicaid Caseload to Medicaid Primary Care Physician Full-Time Equivalents (FTEs), by Health Statistics Region, 2013



As shown in the above map[31], Eastern Colorado has the lowest primary care capacity. The Colorado Health Institute argues that a panel size of 1,500 Medicaid enrollees per Medicaid primary care physician FTE is more appropriate given that Medicaid enrollees generally have more acute health care needs than the great population. This panel size is also consistent with the panel size used by Federally Qualified Health Care Centers (FQHCs).[32]

These imbalances in physician availability are being addressed in a variety of ways.

- The University of Colorado has established a Rural Track program, creating medical training opportunities to underserved areas across the state.
- Colorado's Health Service Corps has provide over $14 million in loan repayment to health care trainees who agree to work in underserved urban and rural settings.
- Hub-and-spoke care: Clinicians travel to rural areas that do not have full-time clinicians to provide care, typically serving a few days a week.
- Policies have been established to support the increased use of telemedicine.[33]

Regions with the Worst (Highest) Ratios of Medicaid Enrollees to Medicaid Full-Time Primary Care Physicians

Rank	HSR	Counties	Additional FTEs Needed to Reach 1,500:1 Benchmark	Percentage Increase
1	HSR 5	Cheyenne, Elbert, Kit Carson, Lincoln	0.9	133%
2	HSR 4	El Paso	22.1	122%
3	HSR 14	Adams	18.8	85%
4	HSR 20	Denver	21.9	69%
5	HSR 15	Arapahoe	13.8	61%
6	HSR 12	Eagle, Garfield, Grand, Pitkin, Summit	1.4	23%
7	HSR 10	Delta, Gunnison, Hinsdale, Montrose, Ouray, San Miguel	1.1	19%
8	HSR 13	Chaffee, Custer, Fremont, Lake	0.7	17%
9	HSR 17	Clear Creek, Gilpin, Park, Teller	0.2	10%

Health Care Reform and the Health Care Workforce- The Massachusetts Experiment published in 2011 in the New England Journal of Medicine suggests that it is not only primary care physicians that are needed to accommodate the influx of newly ensured patients.[34] Massachusetts experienced a significant growth in the number of administrative personnel and patient care service navigators needed.

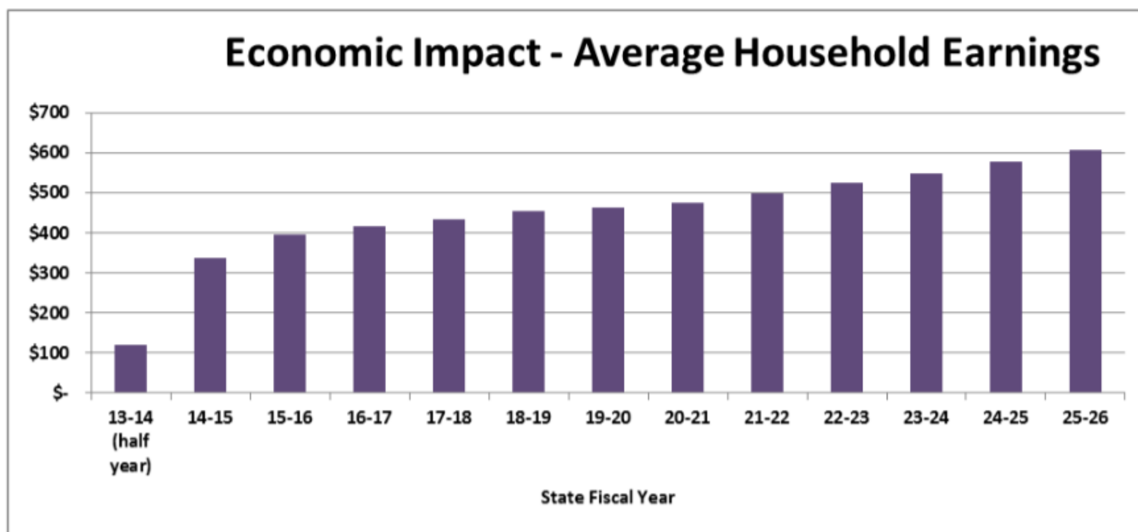
The study's authors speculate that insuring the additional 400,000 in Massachusetts in 2008 created a great deal of paperwork to enroll them, manage their cases, file claims, and comply with other regulatory requirements. It should be noted that Massachusetts currently has more physicians per capita than Colorado, meaning that they may have already been in a better position to provide medical care to the newly insured.[35]

Economic Benefits of Medicaid Expansion

While the cost of new enrollees varies, the increase in household earnings made possible through improved health and stability of the Medicaid population becomes significant over time. The Colorado Health Foundation estimates that this larger economic base will increase tax revenue from individual income tax, sales tax, use tax, and corporate income tax. Together, these taxes could generate an additional $128 million in FY 2025-26.

The Colorado Health Foundation's analysis suggests that in FY 2025-26 household earnings will be, on average, $608 higher as a result of Medicaid expansion.[36]

Annual Increases in Average Household Earnings Resulting from Medicaid Expansion[37]



This economic impact is already being shown in youth who benefited from Medicaid and CHP+ expansion in the 1980s and 1990s.[38] With administrative data from the IRS, researchers from the National Bureau of Economic Research calculated longitudinal health insurance eligibility from birth to age 18 for children in cohorts affected by these expansions to observe their longitudinal outcomes as adults. They found that children whose eligibility increased paid more in cumulative taxes by age 28. These children also collected less in EITC payments and women had higher cumulative wages by age 28.

Putting together government expenses and tax estimates, the National Bureau of Economic Research found that the government will recoup 56 cents of each dollar spent on children on Medicaid by the time the children reach age 60. This return on investment does not take into account other benefits, such as decreases in mortality and increases in college attendance.[39]

Benefits of Colorado's EPSDT Investment

The literature suggests that there are significant long-term and short-term financial benefits to investing in EPSDT. The findings regarding economic impact of youth on Medicaid suggest that improving EPSDT outcomes could have a significant economic impact in Colorado in the long-term. By helping ensure that children on Medicaid can get healthy and stay healthy, the State will spend less on Medicaid over time and generate more funds in taxes.

A 2001 study by Hakim and Bye in *Pediatrics* confirmed that when children were up-to-date for age on their schedule of well-child visits, they were less likely to have an avoidable hospitalization, which tends to be more costly. Even children who were not up-to-date, but had sporadic preventive care visits saw mild benefits. These effects held regardless of race, level of poverty, or health status.[40]

Kay Johnson and Jill Rosenthal writing for The Commonwealth Fund and National Academy for State Health Policy demonstrate that a "growing body of evidence suggests that prevention and early intervention are substantially less costly than life-long special education and treatment." Further, through early identification and intervention, providers and parents can better influence children's "development and readiness to learn at school, their risk of certain adult diseases, and their future social and economic productivity."[41]

All of these findings suggest that Colorado is wise to focus on increasing well-child visits, as there will be substantial cost savings down the road. Investing in the Healthy Communities program, particularly with a renewed emphasis on EPSDT outcomes, is a wise and cost-effective investment. Doubling the current budget to just under 1% of Medicaid spending could enable Healthy Communities case managers to in turn double or triple the number of households they educate and inform, which can help shift care from high-cost hospitalizations to lower-cost pediatrician and family practitioners' offices.

Section 3. Colorado's Health Delivery Reform Initiatives

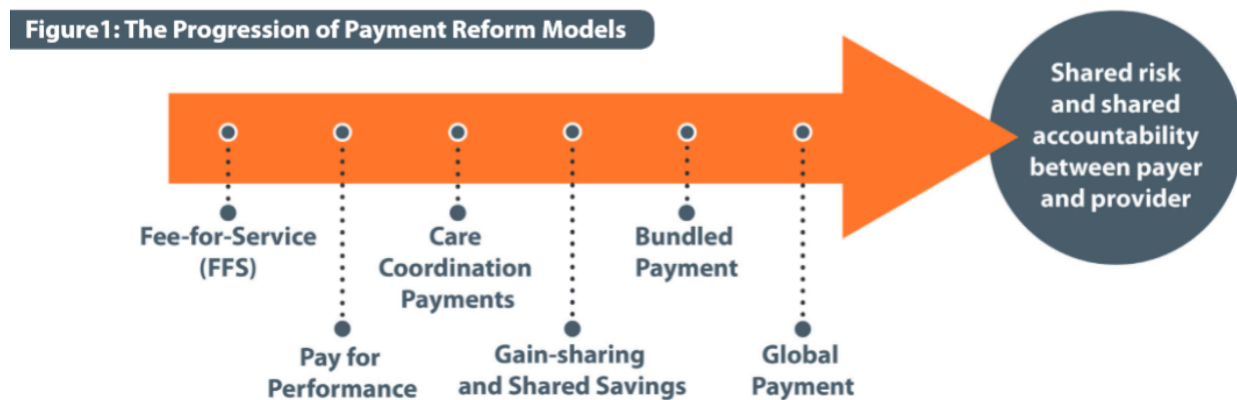
The Colorado Department of Health Care Policy and Financing (HCPF) has embraced pay-for-performance and overall payment reform as a way to control costs and improve quality outputs.

This is similar to what is happening in many states across the country, with mixed results. Below we will explore the different payment reform models in use around the country, in addition to the initiatives being rolled out in Colorado.

Payment Reform Models

There is a progression of payment reform models in place across the United States, from paying for volume to paying for value and outcomes. It is important to note that each payment model option engenders different behavioral changes in providers. Because of this, payment reform and delivery system reform are inextricably linked.[42]

Each model has its benefits and its risk. Although the payment reform options are usually discussed as if they were distinct models, future payment innovations will likely incorporate multiple approaches.[43] Generally as health care providers move along this path, they assume greater financial accountability as well as greater financial risk.[44] This is illustrated in the image below from the Center for Improving Value in Health Care and Colorado Health Institute.[45]



The table below displays provider risk, evidence base, and potential for reducing costs in each model, according to the Center for Improving Value in Health Care and Colorado Health Institute.[46]

Comparison of Health Delivery Payment Reform Models

Reform Model	Provider Risk	Evidence Available	Potential for Reducing Costs
Fee for Services	Low	High	Low
Pay for Performance	Low	High	Low
Care Coordination Payments	Medium	Medium	Medium
Gain-Sharing/Shared Savings	Low	Low	Medium
Bundled Payment	Med-High	Medium	Med-High
Global Payment	Med-High	Med-High	High

Evaluation of Models

1. Fee for Service, in which providers are paid a pre-determined amount for each discrete service they provide is the most common payment form in Colorado, both in commercial insurance, Medicare, and Medicaid. Even while it is the most common, Fee for Service creates financial incentives to provide more care than might be medically necessary, and contributes to health care inflation.[47] Fee for Service can even be seen to indirectly reward providers for the poor health of their patients by linking payment to the volume of services provided to treat illnesses rather than to improved health outcomes.[48]

2. Pay for Performance rewards providers for meeting/exceeding pre-established benchmarks for care processes and health outcomes. Pay for Performance is an umbrella term for initiatives aimed at improving the quality, efficiency, and overall value of health care. These arrangements provide financial incentives to hospitals, physicians and other health care providers to carry out such improvements and achieve optimal outcomes for patients. A typical Pay for Performance program provides a bonus to health care providers if they meet or exceed agreed-upon quality or performance measures. Financial penalties can also be imposed on providers who fail to achieve specific goals.[49] States are using both financial and non-financial incentives to improve quality and accessibility of routine and preventive care. *Section 6 of this report provides a more in-depth analysis and evidence for Pay for Performance.* Three-quarters of states have at least some experience with implementing Pay for Performance, viewing this model as a payment approach that can help improve primary care and chronic care, encourage collaboration with community-based providers, reward practices with higher payments based on practice performance, and provide support for care coordination.[50]

3. Care Coordination Payments: Health care providers receive monthly payments (in addition to standard FFS reimbursements) to pay for the infrastructure needed to enable care coordination-- costs that are not reimbursable under the Fee for Service model. Care coordination payments are most often found in the context of medical homes.[51] Colorado is home to multiple medical home programs, including Colorado Children's Health Access Program[52], Safety Net Medical Home Initiative[53], and Comprehensive Primary Care Initiative[54]. The Per Member Per Month compensation structure implemented by the ACC to RCCOs is another example of care coordination payments.

- Evidence: Studies suggest that care coordination payments in the context of medical home models, when designed for and targeted to appropriate populations, can lower health care costs. Colorado's medical home efforts are yielding small but positive results. According to a 2010 study by The Commonwealth Fund, children in practices that participated in Colorado Children's Health Access Program (CCHAP) had lower median Medicaid costs and fewer emergency department visits than those not in CCHAP.[55]

4. Gain-Sharing and Shared Savings: Providers are offered incentives to reduce health care spending for a defined population by offering providers a percentage of any net savings realized as a result of their efforts.[56] In Colorado both commercial payers and some within Medicaid (Denver Health and Rocky Mountain Health Plans) are incorporating shared savings. Colorado's Accountable Care Collaborative does not utilize this model.[57] The majority of provider and payer participants interviewed for The Commonwealth Fund's 2011 brief view Shared Savings payment methodologies as transitional, but with an undefined timeframe.[58]

- Evidence: Shared Savings in Medicaid is complex and potentially places implementing states and CMS at risk if the calculations and trends are inaccurate or if the calculations are not routinely rebased to reflect changes in Medicaid programs and the efficiencies that have been gained through better coordination and improved quality.[59] Since many Shared Savings models are implemented as experiments in order to facilitate learning, it is unclear how effective the model is in the long term. Typically, organizations also operate a variety of models and performance measures. Providers can find it difficult to respond to disparate incentives.[60] The Center for Healthcare Quality and Payment Reform also argues that Shared Savings is less desirable than other payment reform models because it is another form of Pay for Performance, rather than a separate payment reform model. Key primary care services that aren't paid for, like nurse care managers for chronic disease patients, phone and email consultations with physicians, etc., still would not be paid for. While creating an incentive for providers to control total spending is beneficial, it only creates significant change when coupled with additional underlying payment systems.[61]

5. Bundled Payment: Provides a single payment to a provider, or group of providers, for all health care services associated with a defined episode of care. The episode could be a specific condition (diabetes), event (heart attack), or medical procedure (hip replacement). Payment bundles can be adjusted to reflect the risk or severity of patients' conditions. Savings are shared with providers when the total expenditures are less than they would have been under FFS. In Colorado, two trials are underway to test bundled payments, one in Medicaid and another in hospitals.[62]

- Evidence: A 2009 study by RAND Corp found that bundled payments showed the greatest promise for reducing health care expenditures (global payments were not analyzed in this study).[63] Researchers with Health Affairs argue that Bundled Payments are generally touted as a promising example of payment innovation. However, the true benefit comes from re-engineering care delivery, not from combining separately paid line items. Bundled Payment

provides the impetus, but success is only realized when unnecessary care and readmissions are reduced and low risk and complication rates exist for patients.[64]

6. Global Payment: Providers are prospectively compensated for all or most of the care that their patients may require over a contract period, such as a month or year. Like bundles, global payments are adjusted to reflect the health status. Pilots are underway in Colorado through private insurance and a pilot serving Medicare. Global payments are usually paid monthly per patient over a year, unlike Fee for Service, which pays separately for each service.

- Evidence: Researchers with The Commonwealth Fund found that cost reductions of 20 to 30 percent are achievable under well-constructed Global Payment models, while also improving quality of care. However, they recognized that not all primary care providers will respond effectively to Global Payments. Further, successful payment reform may generate a surplus of hospitals and specialists that will need to be redeployed.[65] A 2004 report prepared by The Lewin Group reviewed fourteen studies of savings achieved from Medicaid managed care programs using capitated payments. The researchers found clear evidence of cost savings, mainly from less use of inpatient services. Savings ranged from 2 to 19 percent compared to Fee for Service.[66] However, the types of care covered by Global Payment must be clearly defined and applied within a stable population group. Without this stable relationship, organizations find it difficult to effectively manage and hold down the cost of care.[67]

According to research by the Center for Improving Value in Health Care (CIVHC) and the Colorado Health Institute, payment reforms that continue to operate within the Fee for Service framework are unlikely to achieve significant results.[68]

Colorado's Accountable Care Collaborative Structure

In the latter part of the 2000's, around 85% of Colorado's Medicaid beneficiaries received their care in what the state characterized as an unmanaged fee-for-service system. [69] [70] Against this backdrop, Colorado developed the Accountable Care Collaborative (ACC) Program.[71] Under the ACC, Colorado contracts with a Regional Care Collaborative Organization (RCCO) in seven regions to create a network of Primary Care Medical Providers (PCMPs). Colorado's ACC is a hybrid model, including elements of Accountable Care Organizations and Primary Care Case Management. The RCCOs are modeled after Community Care of North Carolina (CCNC). CCNC divides North Carolina into 14 non-profit networks. Each enrollee in the network is assigned to a medical home. As of 2009, 67% of the North Carolina Medicaid population was enrolled in CCNC.[72]

Colorado Medicaid pays a per member per month (PMPM) rate for each Medicaid recipient enrolled in a RCCO. In practice this comes to approximately $10 to $11 PMPM paid to the RCCO, $3 to the PCMP, and additional amounts are withheld to serve as incentives if Key Performance Indicators (KPIs) are met. Payments are also made to the Statewide Data and Analytics Contractor (SDAC) for data-related services.[73],[74]

As of preliminary data from March 2015, over 1,200,000 Coloradans were enrolled in Medicaid or CHP+. That is a net increase of 57% when compared to average enrollment in July through September of 2013.[75] Today, the majority of Medicaid enrollees are assigned to a RCCO based on where they live. While each RCCO works with the Statewide Data and Analytics Contractor (SDAC) so performance data can be uniformly analyzed across the state, each RCCO functions independently.

The Department of Health Care Policy and Financing uses a hybrid of payment strategies to reimburse RCCOs and PCMPs. The strategies include fee-for-service payments as a base and additional payment strategies to reward providers for meeting KPIs and performing effective care coordination.

ACC Pay for Performance Structure

RCCOs and PCMPs receive payments for reaching Key Performance Indicator (KPI) targets. There are also efforts to look at ways to tie payments to targets that are not KPIs but are important to the ACC's success, such as getting the right care for members after they leave the hospital and screening for physical and behavioral health and wellness in adolescents.[76]

The ACC Program Improvement Advisory Committee discussed during their January 21, 2015 meeting that KPIs have been difficult to move because the dollar value tied to them is too low. It will also be important for the state to track and report on more measures than what is directly tied to payment.[77] The list of these non-KPI targets have yet to be identified.

Initial KPIs included (1) Hospital All-Cause Thirty Day Readmissions; (2) Emergency Room Visits; and (3) High Cost Imaging Services. Each KPI calculation was based on service utilization by the population enrolled in the RCCO. Exclusions were also applied to the observed value and budget value. Observed value is simply the reported value, which may be the number of visits or cases. The budget value represents the expected utilization of a population, and is risk-adjusted based on gender, age, and disability status. These adjustments are made so each regional population group can be compared to a common standard, no matter the differences in population.[78] Both the Thirty Day Readmissions and High Cost Imaging Services KPIs were subsequently dropped.

As of July 1, 2014, new performance indicators were added to the incentive methodology for RCCO and PCMPs to boost well-child visits among children ages 3 to 9 and improve the quality of care provided by PCMPs. As an example of how well-child KPI compensation works, RCCO 7's baseline for well-child visits is 48.8%, based on claims data from 2012. This means half of all RCCO children and adolescents did not have one well-child visit in 2012. In order to receive the first tier KPI incentive payment for well child-visits, RCCO 7 needs to achieve a benchmark of 60% of qualifying children and adolescents receiving one well-child exam. To receive second tier incentive payment, the RCCO needs to reach the 80% benchmark.[79]

The original base PMPM rate paid to the RCCO was $13. By November 2012, however, that rate was reduced to a little above or below $9.00 PMPM, depending on the RCCO. Part of that reduction was a

negotiated amount and reflected a lower rate payable since the initial rate included start-up costs. Another part of the reduction was due to the $1 PMPM withheld for incentive payments and placed in a quarterly incentive payment pool. RCCOs and PCMPs each "lost" $1 from their PMPM payment but can earn it back if they meet their KPIs.[80] PCMPs can also earn an additional $0.50 PMPM if they meet the Enhanced Primary Care Medical Provider standards outlined below.

PCMPs that meet five of the nine high standards listed below for a patient-centered medical home receive this incentive in addition to their $3 PMPM payment. The nine standards[81] include:

1. **Extended Hours**. At least once a month has regularly scheduled appointments on a weekend or beyond regular business hours.
2. **Timely Clinical Advice.** Provides timely clinical advice both by phone or secure electronic messaging both during and after office hours.
3. **Data Use and Population Health.** Uses available data to identify populations that may require special services or support due to medical or social reasons.
4. **Behavioral Health Integration.** Provides on-site access to behavioral health care providers.
5. **Behavioral Health Screening.** Collects and regularly updates a behavioral health screening (including substance abuse) and/or developmental screening tool for children under five using a Medicaid approved tool.
6. **Patient Registry.** Generates a list of patients actively receiving care coordination**.**
7. **Specialty Care Follow-Up.** Tracks the status of referrals to specialty care providers and provides the clinical reason for the referral along with pertinent clinical information.
8. **Consistent Medicaid Provider.** Accepts new Medicaid clients for the majority of the year.
9. **Patient-Centered Care Plans.** Collaborates with the patient, family or caregiver to develop and update an individual care plan.[82]

In 2015, RCCOs will receive a full per-member-per-month payment only for members who are attributed to a medical home within six months of enrolling in the ACC.

Bringing Consistency to Colorado's Health Programs

Colorado's Accountable Care Collaborative Program and its results-based incentive structures for health providers now co-exist with programs such as Healthy Communities that have been in place for some time. The Healthy Communities structure currently follows a traditional contract model whereby HCPF hires teams around the state to offer a scope of services via yearly contracts for a fixed amount.

The fact that these two models coexist within the complex landscape of healthcare reform poses a number of challenges:

1. RCCOs are reimbursed using a capitated Per Member Per Month model that enables them to cover the incremental costs associated with serving more clients. This model is ideal as it

accommodates the growth in enrollment that is expected to continue, and allows RCCOs the flexibility to adjust to consumer demand as needed.

2. By contrast, Healthy Communities has a fixed budget that has not been adjusted to enable the program to serve the large volume of newly enrolled children on Medicaid. Many of the RCCOs count on Healthy Communities to provide orientation to newly enrolled families, offer referrals, and help RCCOs identify appropriate contact information for key clients. Without sufficient funding, Healthy Communities cannot adequately play this supporting role.

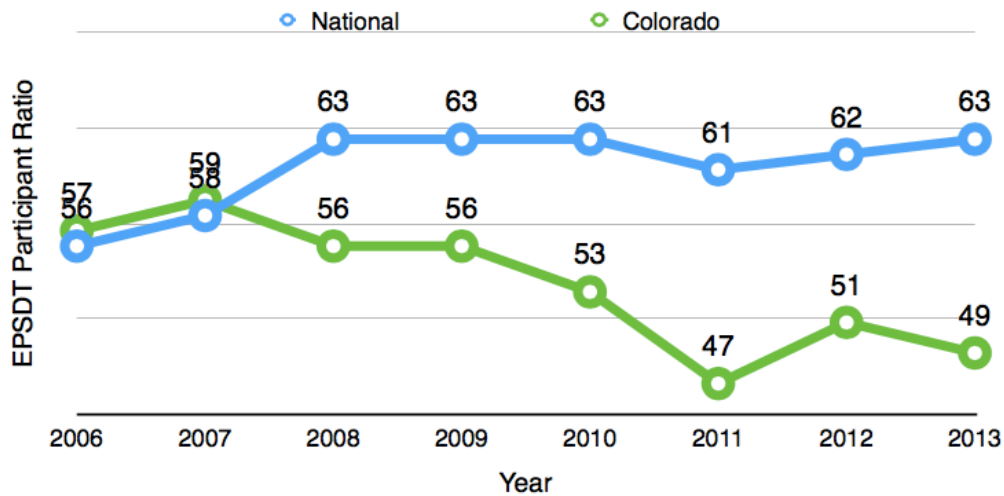
3. Both RCCOs and Healthy Communities are responsible for boosting well-child visits. RCCOs and PCMPs can receive an incentive payment based on the percentage of well-child visits among children ages 3-9. Healthy Communities teams are also charged with increasing the number of well-child visits among children ages 3-9, in addition to other children on Medicaid under the age of 21, but currently do not receive incentives for results. Healthy Communities teams may have more impact on EPSDT outcomes due to the direct outreach and reminders from the program, however incentivizing RCCOs without incentivizing Healthy Communities can have an unintended adverse effect of DIS-incentivizing Healthy Communities teams who realize that the harder they work, the more the RCCOs are rewarded.

To diffuse the tension that inevitably exists between two programs working toward the same goal yet operating under very different reimbursement structures, it would be wise to also move the Healthy Communities program to a Per Member Per Month compensation structure. Similar to the RCCO incentive for well-child visits, adding incentives for Healthy Communities would provide an additional layer of accountability. We recommend that a similar structure be applied to all relevant programs funded by HCPF to reduce tensions and ensure consistency across the health delivery system.

Section 4. Other State Medicaid Programs

Each of the 50 states must submit an annual report to the Centers for Medicare and Medicaid Services (CMS) with EPSDT data. Based on this report (CMS-416), CMS calculates a national average for EPSDT participation rates. EPSDT outcomes can be viewed via the screening ratio (total number of well-child visits over expected visits) or participant ratio (number of children having received the expected well-child visits).

The chart below illustrates Colorado's EPSDT participant ratio in comparison to the national average. There has been a notable decrease from the national average since 2008.



Please note that this graph reflects the **Participant Ratio as opposed to the **Screening Ratio**, which was 86% at a national level but only 64% in Colorado in the same year.*

To better understand those factors that may positively affect EPSDT outcomes and can help boost Colorado's EPSDT outcomes, we turned to the National Academy for State Health Policy and explored case studies from six different states.

Strategies to Increase EPSDT Rates

The National Academy for State Health Policy identified eight strategies that states use to effectively meet EPSDT improvement goals:

1. **Partnering with others**
2. **Integrating EPSDT into other initiatives**
3. **Helping primary care providers implement EPSDT**
4. **Helping families secure EPSDT screening services and other preventive care**

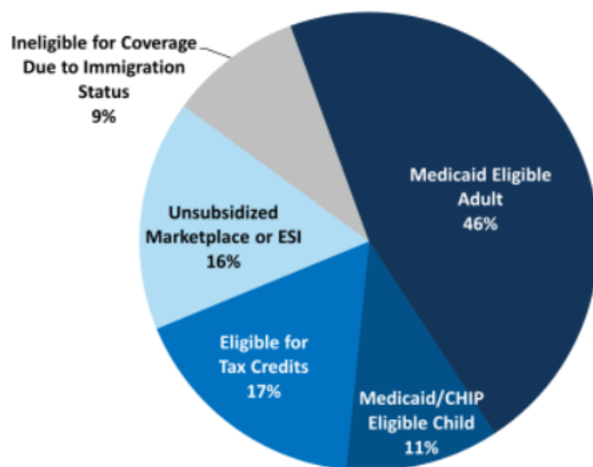
5. **Supporting care coordination**
6. **Managing access to services not otherwise covered by the state Medicaid program**
7. **Aligning EPSDT policies with professional standards**
8. **Using data to make the case for change and reward improvement[83]**

Some states use Title V funds to help meet statutory obligations to provide outreach and information, as well as assistance with scheduling or transportation. Some states reimburse local health departments for time spent assisting families in the appropriate use of children's health services under the EPSDT benefit. Similar to the Healthy Communities program in Colorado, some activities include communications targeted at ensuring that clients do not miss appointments or recommended screenings.[84]

Many of the states with higher EPSDT rates than Colorado have the majority of their Medicaid children enrolled in managed care organizations, and the responsibility for EPSDT participation falls to those managed care organizations. For example Illinois, Indiana, Massachusetts, Missouri, New York, and Wisconsin all have screening ratios of 100% (or nearly 100%) and participant ratios in the 70% range (per the 2013 CMS-416 report) and all have managed care models. Many of Colorado's children on Medicaid are not enrolled in a managed care model so some lessons from those states may not be applicable. We have chosen to examine six state programs with interesting lessons that could be applied in Colorado.

1. HAWAII: Sports Physical Aligned with Well-Child Visits

Hawaii's health insurance exchange has been characterized as the worst performing in the country—only about 3,500 people enrolled in 2014—and the state's Medicaid enrollment soared by more than 50,000 people under the Affordable Care Act.



85

The state has budgeted about $5.5 million to fund the extension of higher Medicaid reimbursements through June 2015, but after that it will be up to the state legislature to determine in the current legislative session whether it can and will pay the $11 million annual cost.[86]

Even with these struggles, Hawaii maintains a high rate of EPSDT participation with a screening ratio of 100% and a participant ratio of 78% in 2013. **They achieved this in large part by broadening the sports physical to include well-care services.**

Hawaii CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	1	1	1	.87	.96	.82	.88	.30
Participant Ratio	.78	.98	.86	.74	.86	.72	.79	.28

AlohaCare, a Medicaid health care plan, recommended that physicians expand school and sports physicals to meet the criteria of a well-care screening.[87] This has become an effective way of engaging youth since annual sports physical exams, or pre-participation physical exams, are required by the state of Hawaii for kids who play in after-school sports.[88]

Iowa schools have enacted similar requirements - adolescents must receive a well-care screening in order to join school-sponsored sports teams – and the Iowa participant ratio is at 81% while screening ratio is at 100%. The **Tennessee** Department of Health also advises providers to incorporate well-care screenings into sports physicals and had a participant rate of 59% in 2013 - a full 10 percentage points above Colorado.[89]

2. TENNESSEE: Sports Physical, Expanded Access and Teen Outreach

Along with Hawaii, Tennessee is another example of the impact partnerships between health care organizations and school health programs can have on EPSDT services. TennCare, Tennessee's Medicaid managed care program operates TENNderCare, the state's EPSDT Program.

Medical checkups including EPSDT services are available at the clinic of a child's primary care provider, at local health departments, and through mobile clinics and school-based clinics.[90]

Tennessee CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	.81	.79	1	1	.67	.71	.61	.48
Participant Ratio	.59	.95	.83	.73	.50	.52	.42	.30

TENNderCare conducts outreach through a variety of venues:

- Home visits to TennCare eligible children
- Health fairs in the community, schools and churches
- Trainings for parents/guardians and community partners
- Health information packets distributed at Kindergarten Round-Up

In contrast to many states, Tennessee's EPSDT rates among older children ages 10 – 20 are high and the state has prioritized outreach to this group. In Knox County for example, TENNderCare specifically targets teens and adolescents during Child Health Week and at a teen health conference, called Talkin' Bout Health100.[91] TBH100 is a conference for teens that promotes healthy lifestyle decisions.[92]

3. WASHINGTON DC: Better Coding and Financial Incentives

The Department of Health Care Finance is responsible for implementing and administering Washington DC's Medicaid and Children's Health Insurance Programs (CHIP). Currently only 3% of DC children lack health care coverage. Approximately 90% of Medicaid children are served in a managed care delivery system.[93]

As of 2013, 94,445 individuals (aged 0 – 20) were eligible for HealthCheck, the District's EPSDT Medicaid benefit for children and adolescents. According to CMS data from 2013, HealthCheck achieved a screening ratio of 95% (95% of screenings anticipated based on enrollment numbers were met) and a participant ratio of 63% (63% of all children enrolled met the recommended screening requirements).[94]

District of Columbia CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	.95	.87	1	1	.90	.86	.71	.41
Participant Ratio	.63	.90	.84	.73	.64	.61	.50	.28

Washington DC is a good example of embracing data and rewarding improvement. The DC leadership team is very focused on boosting the participant ratio for EPSDT and ensuring that children in the district are as healthy as possible. In 2014, DC announced a change to HealthCheck designed to clean up coding and provide financial incentives to providers if they reach certain screening targets and code well-child visits correctly.

Having only an aggregate picture of what was happening at the state level was insufficient, and decision-makers insisted on getting more and better data. While physicians will not be penalized for non-participation, they will receive a financial incentive for meeting screening recommendations and proper coding. Coding was modified to provide EPSDT benefit managers an accurate picture of the type of well-child checks performed, as well as the need and utilization of follow-up care. This represents a permanent change in the program, holding the providers and MCOs more accountable.[95]

4. CONNECTICUT: Data-Driven Partnerships, Outreach & Infoline

While financial incentives can work for improving EPSDT outcomes in some cases, cultural shifts and agency partnerships can often have a longer duration and impact.[96] Connecticut is an example of the impact cultural changes and collaboration between public and private entities can have on health care delivery and outcomes.

Lessons learned during a unique partnership agreement between the Connecticut Department of Social Services and the Hartford Foundation for Public Giving were applied at the state level to improve Connecticut's EPSDT program. The Hartford Foundation subsequently launched a ten-year, $10 million initiative to improve school readiness for low-income children. Hartford HealthTrack, as the project was known, was implemented in 1993 in partnership with the state's Medicaid agency to improve EPSDT screenings in children.

HealthTrack had three components:

1. Automated tracking system using Medicaid eligibility and claims data to determine which children needed EPSDT screening examinations
2. Partnerships with community-based organizations that conducted outreach to ensure that even the most difficult-to-reach children received timely well-child exams and follow-up
3. A plan for provider recruitment, education, and support, intended to expand the network of Medicaid providers and facilitate compliance with EPSDT screening recommendations.

After foundation funding ended for the initiative, Connecticut's State Department of Social Services approved funding to continue the work. The Hartford HealthTrack became the **Connecticut Children's Health Project.** The Project implemented a variety of strategies to continue EPSDT utilization:

- **Tracking and Performance Monitoring.** Medicaid managed care enrollment and encounter data was used to identify children due or overdue for screens, based on the EPSDT periodicity schedule. The project then notified the child's health plan provider to follow up.
- **Education and Training.** Efforts were focused on sharing information with community-based service providers who assist families in obtaining Medicaid managed care coverage. To promote collaborative outreach efforts, the project convened representatives of health plans and community-based service organizations to discuss effective strategies for reaching the hardest-to-reach families.
- **Information and Care Coordination.** The project also operated a Children's Health Infoline. Information, referrals, and care coordination services were available toll-free by telephone in several languages. Family members would call and a care coordinator would access the child's case files electronically and check on EPSDT screening status. In three years, the Infoline received more than 18,000 calls and placed more than 30,000 calls.

- **Enrollment Outreach.** The project launched a school-based statewide effort to enroll eligible but not enrolled (EBNE) children into Medicaid. Interested parents called the Infoline for assistance with obtaining coverage.
- **Policy Development.** Quantitative and qualitative data gathered through performance monitoring, care coordination activities, enrollment outreach, and interactions with community-based providers was continually examined by council staff for evidence of problems at both the program and health plan levels, requiring policy solutions.

Overall, children's access and utilization of EPSDT services nearly doubled over fee-for-service levels, to 60 percent in 1998. The Hartford Foundation was an effective and essential partner and political advocate in the success of the initiative.[97]

Connecticut CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	.78	1	1	.87	.60	.63	.57	.34
Participant Ratio	.65	.97	.90	.81	.59	.61	.53	.30

5. MAINE: Physician Profiles and Incentives

Since 1998, Maine has used physician profiling as one part of its incentives for physicians in the primary care case management (PCCM) program. The state links the results of the physician profiles to monetary rewards. On a quarterly basis, pediatricians, family practices/group practices, internists, and OB/GYNs receive scores for measures related to targeted goals, including:

- Average number of EPSDT encounters (per patient per year)
- Number of EPSDT/Bright Futures forms required/number of EPSDT visits billed
- Children ages 0 to 20 with 1 or more ESPDT visits in the last year
- Well-child visits in first 15 months of life
- Well-child visits in 3rd, 4th, 5th, and 6th years of life
- Adolescent well-care visits: ages 12-21 years
- Cervical cancer screening
- Breast cancer screening
- Prenatal care in the first trimester
- Diabetes-retinal exams
- Diabetes- HbA1c tests
- Diabetes- Lipid tests
- Lead screening rates: 1st year
- Lead screening rates: 2nd year

The Main legislature provided $3 million for bonus payments to the MaineCare managed care primary care physicians who showed the best performance. Main Medicaid staff reported satisfaction with this incentive. Physicians also appreciated obtaining the profile reports. Analysis has not made clear what has been the primary motivator for physicians: the desire to improve ranking on a publicly shared profile report or the potential for a bonus payment.[98]

Maine CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	.95	1	1	.96	.70	.68	.54	.28
Participant Ratio	.54	.95	.85	.97	.50	.49	.39	.21

Additionally in Maine, when an EPSDT well-child screen visit results in a referral, a public health nurse receives a copy. This provides an opportunity for follow-up to ensure that the family has support to complete the referral and that the health care provider gets information. This has transitioned from a phone call to face-to-face support.[99]

6. OKLAHOMA: Supporting Care Coordination through Electronic Data Transmittal System

Oklahoma has successfully built care coordination into their electronic data transmittal system. The University of Oklahoma Health Sciences Center built the Preventive Services Reminder System in 2002 with funding from the Agency for Healthcare Research and Quality and Oklahoma's Medicaid program.

The open source academic system has helped providers improve preventive and longitudinal care by:

- Providing reminders to ask patients about preventive services and current risk factors
- Offering an immunization registry, as well as visit and patient-specific recommendations
- Incorporating a web-based referral and tracking system to facilitate communication between primary care and early intervention providers.

Since the web portal is able to track the rate at which a referral is completed, Oklahoma has shown a significant reduction in the time to close a feedback loop, dropping from an average of 85 days to 51 days. The state has also increased the percentage of the time that the feedback loop is completed from 43% of the time in 0 days or less to 73%, and from 9% of the time in 160 days or less to 98%.[100]

Oklahoma CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	.75	.89	1	.58	.63	.56	.47	.17
Participant Ratio	.56	.89	.66	.50	.58	.51	.42	.16

GUNNISON COUNTY: Culture of Collaboration and Care

In addition to reviewing lessons and best practices from other states, we also looked to Gunnison County - the county with the highest Screening Ratio and Participant Ratio in the state – to see what might account for the higher rates of well-child visits.

Gunnison County has the highest EPSDT screening ratio in the state of Colorado and one of the highest participant ratios. To better understand the factors that may be contributing to Gunnison County's success, Upleaf interviewed the program's Family Health Coordinator and Healthy Communities Supervisor from Mesa County who manages Gunnison County, as well as the RCCO Manager for Rocky Mountain Health Plans who covers Gunnison County.[101]

Gunnison County CMS-416 2013 Data

	Total	<1	1-2	3-5	6-9	10-14	15-18	19-20
Screening Ratio	.77	.95	1	.84	.39	.55	.48	.69
Participant Ratio	.50	.86	.77	.55	.31	.41	.33	.44

The factors that seem to make Gunnison County more supportive of EPSDT include:

- **Strong Partnerships.** Gunnison County has a broad healthcare commission that meets quarterly, and everyone seems to be at the table including law enforcement and schools. Such a strong level of commitment across all sectors creates a supportive culture in which everyone is prioritizing health.
- **Continuity of Care.** Most of the primary care practices in Gunnison have been around for a long time. They know the families well, and many people continue to see the same family doctor their child has seen since birth.
- **Well-Child Reminders from Providers.** According to the Healthy Communities team, it is common practice for providers in the region to send out annual reminders to families that it's time for a well-child visit.
- **Time Availability.** Doctors may also have more time to do annual exams as there aren't as many constraints on the amount of time a physician can spend with a patient as there is in other regions with high demand for services.
- **Training.** Gunnison Valley Family Physicians was one of 51 practices on the western slope with a Quality Improvement Advisor (QIA) assigned by the Colorado Beacon Consortium (funded by the National Coordinator for Health Information Technology). The QIA offered support to participating practices for improving EMR use, meaningful use standards, and quality improvement in general. A specialized coach went out to the family practices and talk to them about meeting preventive health and screening schedules. Gunnison may have made more of that opportunity than some of the other sites, because they had more time available to implement changes and less turnover in staff.
- **Friendly Community.** Healthy Communities team calls families on Medicaid in Gunnison County to educate them about their benefits and follow up regarding well-child visits – the same as they

do for the other counties they support. They report however that their ability to reach every enrolled family in Gunnison is much higher, and that families are very receptive to their phone calls and embracing of the Healthy Communities team.

Lessons for Colorado

This review of what has worked in other states offers useful ideas for Colorado. The Healthy Communities program could adopt some of the ideas, while the state or RCCOs can implement others.

HCPF

- Align sports physicals with requirements for well-child exams across the state (Hawaii, Tennessee, Iowa)
- Implement a children's health information line to provide education and referrals (Connecticut)
- Bring agencies and programs together to build partnerships that collaborate to increase EPSDT (recommendation from National Academy for State Health Policy specific to Colorado)

Healthy Communities

- More outreach to families, particularly those with teenagers (Tenessee)
- Routinely use Medicaid claims data to determine which children still need EPSDT screening examinations and follow up with them (Connecticut)
- Outreach to ensure that even the most difficult-to-reach children receive timely well-child exams and follow-up (Connecticut)
- Prioritize outreach to adolescents to boost rates among ages 10-20 (Tennessee)

RCCOs

- More training in quality improvement and coaching for providers regarding well-child exams (Gunnison County)
- Broad community-based coalitions to address health issues (Gunnison County)
- Implement electronic data transmittal systems to help improve care coordination (Oklahoma)
- Score physicians based on achievement of a number of goals, make scores available publicly, and incentivize physicians monetarily based on performance (Maine)
- Notify providers of children overdue for a well-child exam to follow up with the family (Connecticut)
- Make EPSDT services available through mobile clinics and school-based clinics in communities with less access to care (Tennessee)
- Incentivize physicians for coding well-child visits appropriately (Washington DC)

Section 5: Behavioral Influencers

Factors that Influence Preventive Health Behavior

There are a number of factors that influence any health-related behavior. Well-known behavior change theories such as the Health Belief Model[102] and the Theory of Reasoned Action[103] have been studied exhaustively and applied to a wide range of health behaviors. Both of these theories do not sufficiently take into account the role of access issues however, so we turned to another more comprehensive framework.

We find Population Services International's Opportunity, Ability and Motivation framework[104] to be particularly useful for examining any type of health-seeking behavior, as it draws on both the Healthy Belief Model and the Theory of Reasoned Action but also introduces the importance of access issues.

The framework groups the factors that tend to influence behavior into three areas. Examples of the factors within each of these three areas that may impact well-child visits for children on Medicaid are included below:

1. **Opportunity**
    a. Transportation
    b. Affordable cost of services
    c. Availability of providers who accept Medicaid patients
    d. Appointments can be made relatively quickly
    e. Accessible hours
    f. Childcare available for other children
    g. Provider speaks same language
2. **Ability**
    a. Knows well-child visits are important to keeping a child healthy
    b. Does not believe you only take your child to the doctor when they're sick
    c. Knows well-child visits are free and part of the Medicaid benefits
    d. Can find a provider who accepts Medicaid and make appointment
3. **Motivation**
    a. Wants to keep children healthy
    b. Wants to be a good parent/guardian
    c. Believes well-child visits are an important part of being a good parent (social norms)
    d. Has strong social support (i.e. been told by providers and friends/family to take children in for well-child visits)

To help further identify which factors most strongly influence well-child visits, Upleaf has conducted a Client Survey with the collaboration of the Healthy Communities teams. The results of this study are forthcoming.

Barriers to Well-Child Visits Among Medicaid Recipients

Kay Johnson, MPH, who has been a leader in Medicaid, EPSDT, and health policy at the federal and state levels since 1984, argues that the utilization of preventive health care services "is not about families." Families recognize and understand the importance of well-child visits and other preventive services.[105] Steve Federico, MD with Denver Health agrees, pinning preventive care utilization disparities on a lack of understanding of families in poverty by health care professionals. "How do we share a value of prevention when so many families we deal with are just in survival mode?"[106]

Some of the factors that Johnson[107] and Federico[108] identified that influence well-child visits among Medicaid beneficiaries include:

- **Availability of Medicaid Specialists.** Many Medicaid recipients report that it is difficult to find a dentist who accepts Medicaid. Similarly, they report frustration with long wait times when dental providers are identified.
- **Transportation.** Transportation is a significant limiting factor to accessing health care and healthy activities
- **Cost.** Medicaid recipients also note the high cost of wellness and sports related programs.[109]

Enrollment as a Barrier to Care

"Colorado's Maze to Enrollment in Medicaid and CHP+" published in June 2012 identified enrollment as an additional barrier that many families face in connecting their child to important preventive services. The report explains that the most frequently mentioned barriers families mention relates to the length of time it takes to determine eligibility for a program, especially if one child is on Medicaid and another is on CHP+. While the subsequent introduction of the online application process through PEAK may have reduced the length of time to determine eligibility, many enrollment challenges remain.

Once a family is determined eligible for Medicaid or CHP+, they receive a significant amount of communication from different sources. If a child is determined eligible for Medicaid, they could receive by mail[110]:

- Medicaid eligibility determination
- Denial for CHP+
- Request to select a primary care provider
- Information about enrollment to the Accountable Care Collaborative
- Medicaid ID cards
- Income verification
- Renewal letters

They are also likely to receive a phone call from a Healthy Communities Family Health Coordinator welcoming them to the program and providing orientation about their Medicaid benefits – which may help the family make sense of all of the communications they have received. Streamlining the amount of

information received about coverage and benefits would help families better understand how to use their Medicaid or CHP+ benefits. Comprehensive enrollment assistance informs families about the program, facilitates successful enrollment, and promotes retention in the program.[111]

Renewed Focus on Behavior Change

According to the Institute of Medicine Committee on Health and Behavior, health care and behavior change programs can succeed when human decision-making is understood to be affected by systematic cognitive biases, habits, and social norms.[112] While this takes the focus away from the relationship between the clinician and the patient and puts weight on the need to create a supportive ecosystem that engages the patient with those closest to her, it may offer a useful complementary approach. This person-focused paradigm for behavior change, outlined by Sundiatu Dixon-Fyle, Shonu Gandhi, Thomas Pellathy, and Angela Spatharou with McKinsey's Healthcare Systems and Services Practice, [113] includes five components:

1. Engaging individuals more effectively by taking advantage of new insights from behavioral psychology and behavioral economics
2. Integrating behavioral change as a core component of new care delivery models
3. Using the power of influencers and networks to support behavior change
4. Utilizing self-care oriented technologies to support and empower individuals, and connect them to clinicians and other influencers
5. Adopting a multi-stakeholder approach, which includes public-private partnerships, to support high-impact societal and primordial prevention interventions.[114]

Changing individual behavioral is increasingly at the heart of health care.[115] Based on a McKinsey Retail Healthcare Consumer Survey, 76 percent of participants with high-risk clinical conditions described themselves as being in excellent, very good, or good health.[116] This demonstrates the gap that individuals experience between their actual health status and the way they perceive their health on a day-to-day basis. To be successful, programs and case management must be designed recognizing this cognitive dissonance.

McKinsey Retail Healthcare Consumer Survey researchers estimate that "programs designed under the new paradigm could deliver a 10 percent to 15 percent reduction in costs in target populations, in addition to productivity gains, better outcomes, and better quality of life."

Financial Incentives for Behavior Change

Financial incentive interventions are one method of promoting healthy behavior change. Emma Giles and researchers writing for PLoS One conducted a systematic review of the effectiveness of financial incentive interventions for encouraging healthy behavior change. The researchers conducted a meta-analysis of seventeen papers that reported on 16 studies. They found that the average effect of incentive

interventions was greater than the control for the short term. There were also no differences in effects between the different groups of behavior, such as smoking cessation compared to physical activity. Their meta-regression did find limited evidence to suggest that the size of the effect decreased as the post-intervention and follow-up period and incentive value increased. Their analysis suggests that financial incentive interventions are more effective than usual care or no intervention regarding healthy behavior change.[117]

Financial incentives have been shown to be most effective in smoking cessation, weight management, exercise programs, and others that have clear and accessible goals.[118] Studies have also found that it is easy to engage participants in simple behavioral changes that involve office visits because it requires direct action, such as vaccinations, screenings, and wellness programs, etc.[119] Similarly, parents can be engaged in positive behaviors when the behaviors benefit their children.[120]

There are studies however that assess the longevity of behavioral changes when initially motivated by incentives. Two studies related to tobacco cessation found that when incentives continue over a relatively long time frame (10 months) they are still effective in motivating the desired outcome.[121,122] After incentives have stopped however, some studies suggest that the program effects disappears within one year.[123, 124, 125]

Financial Incentive Recommendations. In analyzing the use of patient incentives to promote personal responsibility and health in Medicaid populations, the Institute of Medicine recommends that critical determinants of health including **age, gender, race, ethnicity and socioeconomic status** be carefully considered in designing, implementing and interpreting results of social and behavioral interventions.

In addition, incentive programs must not include penalties and should be designed to:

- Allocate benefits equitably
- Support the patient-physician relationship
- Support the physician's ethical and professional obligations to care for patients
- Not discriminate against a class or category of people
- Facilitate patient-centered care
- Respect patient autonomy
- Follow evidence-based models

Potential unintended consequences such as the promotion of negative behaviors in order to qualify for incentives or the shifting of resources from more effective interventions should be carefully evaluated.[126]

Motivational Interviewing

While the research abounds on the importance of motivational interviewing - along with other evidence-based practices, such as shared-decision making, self-management support, and peer-to-peer support - such practices are not effectively integrated into most care settings.[127]

Frank J. Domino, MD, professor in the Dept. of Family Medicine and Community Health at the University of Massachusetts Medical School in Worcester argues that "Typically, when doctors approach patients about habits that are unhealthy, they do it in a parental-type way. My first goal in using motivational interviewing is for you, the patient, to identify what you want to do. This takes that paternalism away." This approach reduces patients' resistance to change by allowing them to voice their ambivalence about it. Physicians who empathize with patients' hesitation then can establish themselves as allies in searching for achievable steps.

Kim L. Lavoie, PhD and co-director of the Montreal Behavioural Medicine Centre in Canada says "We're all dying because of chronic disease because of bad behavior. It's not enough to go and see the doctor once a year and have him tell you what to do. It's not that people don't know what do to, it's that they don't do what they know."[128] Motivational interviewing involves physicians:

- Asking open-ended questions
- Listening to patients' answers
- Avoiding doing all the talking in the exam room
- Summarizing what patients are saying about the challenges they face

Motivational interviewing engages individuals to explore their change readiness and engages them in selecting behaviors they will adopt or eliminate to address their health goals. Motivational Interviewing is evidence-based, relatively brief, specifiable, applicable across a wide variety of problem areas, complementary to other active treatment methods, and learnable by a broad range of professionals.[129]

Media Richness Theory

The effectiveness of communication channels varies significantly when it comes to behavior change.

Not only is the message important (as it must address the relevant factors related to Opportunity, Ability and Motivation and speak to caregivers or adolescents with the right tone/choice of words) but also the medium is critical.

Media Richness Theory outlines the behavior change impact that can be expected from different channels.[130]

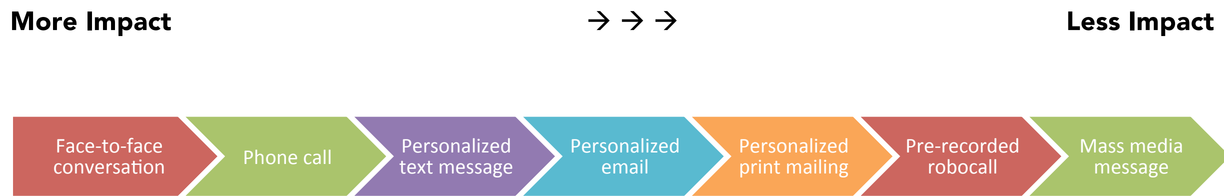
The most effective channel (face-to-face) is usually the most expensive while the least effective channels (bulk mailings, posters, etc) are among the least expensive. There is a very significant tradeoff in terms of the impact that can be expected when employing the least expensive channels.

The communication channels selected by the Healthy Communities program will also follow this continuum. The 32.4% of Family Health Coordinators who said that their face-to-face interactions when providing orientation to newly enrolled families[131] were the single most important thing the Healthy Communities program could do to increase EPSDT outcomes, intuitively knew Media Richness Theory to be true.

The other communication channels used by the Healthy Communities teams (letters, emails) should be personalized as much as possible to increase their impact. Written communication related to upcoming or missed well-child visits should include the name of the child needing the visit along with what is to be expected from that particular visit (4yr, 8yr, 14yr well-child visit) and how it will benefit the child. We recommend closely examining the efficacy of pre-recorded robocalls to determine whether the impact is worth the cost investment.

Applying Media Richness Theory to the Healthy Communities program, we can reasonably assume that the following channels will have more or less impact as evidenced in the graphic below:

More Impact → → → **Less Impact**



We therefore recommend that Healthy Communities continue to prioritize face-to-face conversations and phone calls, for newly enrolled orientation and follow up with families whose children are overdue for a well-child visit. Personalized automated messaging via text message, email, or snail mail can be used to remind families of the need for an upcoming well-child visit, depending on their stated communication preference. We also recommend considering training teams in motivational interviewing.

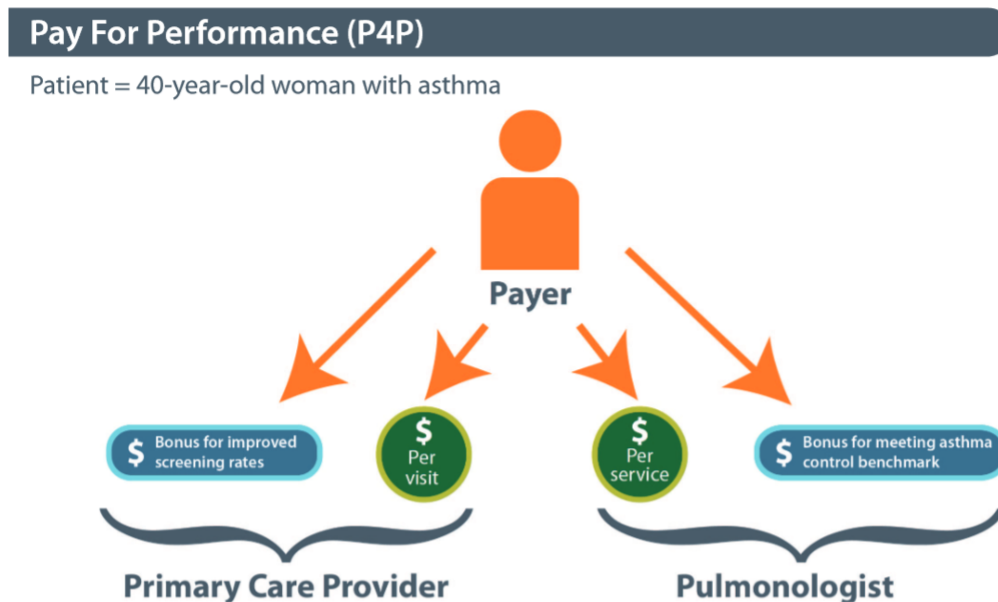
Closely exploring the motivators and barriers cited by clients in the forthcoming Client Survey conducted by Upleaf and HCPF's Healthy Communities teams, can help inform the messages and talking points that the Family Health Coordinators follow when speaking with clients.

Section 6. Pay for Performance

For more than a century, there have been bipartisan efforts to increase accessibility and quality in health care.[132] Since the implementation of the Affordable Care Act, states and organizations across the country have been transitioning from the predominant fee-for-service payment system to value-based reimbursement system. The idea is simple: rather than pay providers based on volume of care or number of patients, tie their payment to measures of performance.[133]

In practice however, this transition is rather complicated. Provider practice revenues, whether through Medicaid or Medicare reimbursements, private insurance, or private pay, are the driving force behind all health care services provided in the United States.

In this section we will evaluate the evidence for Pay for Performance models in relation to promoting preventive care in Medicaid populations.



134

Pay for Performance History

The predominant fee-for-service system under which most providers in Colorado are paid leads to increased costs by rewarding providers for the volume and complexity of services they provide. This higher intensity of care does not necessarily result in higher-quality care, and can even be harmful.

During the 1990s payers focused on managed care arrangements to reduce excessive or unnecessary care. However, concerns about potentially compromised quality and constraints on patients having access to providers of their choice led to a backlash from both providers and consumers. By the early 2000s, serious deficiencies in the quality of U.S. health care had been highlighted. From this, pay-for-performance emerged as a way for payers to focus on quality, with the expectation that doing so will also reduce costs.

How Pay for Performance Works

Pay for Performance is an umbrella term for initiatives aimed at improving the quality, efficiency, and overall value of health care. [135] States use both financial and non-financial incentives to improve quality and accessibility of routine and preventive care. Non-financial incentives can motivate providers by impacting both the public and peer image of physicians: Concern for protecting reputation tends to motivate quality improvement among physicians.[136]

There are various types of bonus payments as well as additional financial incentives used in Pay for Performance Systems.

- **Bonus or Withhold**: Reward payments can be made through a bonus pool, disbursed at the end of the measurement period. Some payers use withholds and might withhold 5% or 10% of physicians' fees. Employers might withhold a small percentage of premiums paid to health plans.
- **Penalties**: Payers may reduce payments to provider organizations and physicians who do not achieve an acceptable level or improvement of performance.
- **Fee Schedule Adjustment**: Payers may adjust fee schedule payments up or down, depending on performance, by adjusting the conversion factor that translates fee schedule relative value unites (RVUs) per service into dollar payments.
- **Per-Member Payment**: In capitated environments, or plans in which patients are enrolled with primary care providers, a health plan might pay providers an additional or incremental per member per month or per member per year payment that is contingent on measured performance.
- **Differential Payment Update**: Payers can reward provider organizations and physicians that perform well with an update factor to their payments that is higher than those given to provider organizations and physicians that perform poorly.
- **Payment for Provision of a Service**: A payer can establish payment, or enhanced payment, for services that further the goals of the Pay for Performance program.
- **Payment for Participating/Reporting**: Programs might pay provider organizations and physicians to engage in performance-enhancing activities, such as developing quality improvement action plans or attending continuing education programs.
- **Lack of Payment for Poor Performance**: Payers can deny payment for services that appear to be ineffective, harmful, or inefficient.
- **Shared Savings**: Payers can give providers incentives to improve efficiency and generate savings by allowing them to share in the realized savings.
- **Quality Grants or Loans**: A provider could apply to a payer for a grant to implement quality-enhancing infrastructure changes, such as an EMR or patient registry.[137]

A typical Pay for Performance program provides a bonus to health care providers if they meet or exceed agreed-upon quality or performance measures. Pay for Performance may also reward improvements in performance over time, such as year-to-year decreases in the rate of avoidable hospital readmissions.

Pay for Performance can also impose financial penalties on providers that fail to achieve specific goals or cost savings.

Most early Pay for Performance experiments narrowly focused on quality with very little, if any, consideration of cost. Quality measures used in Pay for Performance generally fall into 4 categories:

1. **Process.** Measures the performance of activities that have been demonstrated to contribute to positive health outcomes for patients. *Example: smoking cessation support offered*
2. **Outcome.** Measures the effects care had on patients. *Example: if a patient's diabetes is under control from analysis of lab results. Outcome measures are particularly controversial in Pay for Performance because outcomes are often affected by social and clinical factors unrelated to the treatment provided and beyond the provider's control.*
3. **Patient Experience**. Measures patients' perception of the quality of care they have received and their satisfaction with the care experience.
4. **Structure.** Measures facilities, personnel, and equipment used in treatment. *Example: Pay for Performance can offer incentives to providers to adopt health information technology.*

Results from Pay for Performance

There are mixed results on whether Pay for Performance actually improves quality and reduces costs. In some studies, improvements shown were consistent with national improvements during the same time period. Or, these improvements did not hold out over multiple years of analysis, when compared to other non-Pay for Performance participating health care organizations.

For example, Suzanne Felt-Lisk of Mathematica Policy Research did a study of seven Medicaid-focused health plans in California from 2002 to 2005. She found that paying financial bonuses to physicians for improving well-child care did not produce significant effects in the majority of participating health plans. The lack of success was attributed to particular characteristics of the Medicaid program, such as enrollees' lack of transportation and limited staff capacity to do outreach.

A study published in Health Affairs in April 2011 on the effect of Pay for Performance in Hospitals examined the effects of a government partnership with Premier Inc., a national hospital system, and found that while the improvements seen in 260 hospitals in a Pay for Performance project outpaced those of 780 not in the project, five years later all of those differences were gone.[138]

Some providers are also concerned about the cost of adopting the health information technology needed for data collection and reporting. The American Academy of Family Physicians has stated that Pay for Performance incentives must be large enough to allow physicians to recoup their additional administrative costs as well as provide significant incentives for quality improvement.[139]

Meredith Rosenthal and Adams Dudley, with the American Medical Association, argue that there are important tensions between holding individual physicians accountable for their direct impact on patient care and the notion that quality deficiencies often reflect system problems and therefore can be best addressed by the group collectively. In practice, groups will pool the risk associated with Pay for

Performance contracts and enforce desired behavior through the management system. They conclude that for behaviors under the individual physician's control, such as counseling about smoking cessation, incentives may be most effective when targeted towards individual physicians rather than a contracting organization.[140]

The American Medical Association has developed principles for Pay for Performance, including:

- Making provider participation voluntary
- Physicians should be allowed to review, comment, and appeal performance data
- Programs should use new funding for positive incentives to physicians for their participation

There is also concern that Pay for Performance may exacerbate racial and ethnic disparities in health if providers avoid patients that are likely to lower their performance scores. Alyna Chien at Weill Cornell Medical College affirmed this sentiment in her study showing that medical groups caring for patients in lower-income areas of California received lower Pay for Performance scores than others. The reasons were attributed to serving patients who have both language barriers as well as limited access to transportation, child care, or other resources. For some of these institutions, given the populations they serve, if they were to lose even 1% of reimbursement, the impact would be severe, and care for the populations the institutions serve could be jeopardized.[141]

Two new studies by *Robert Wood Johnson Foundation* (RWJF) *Investigator Award in Health Policy Research* recipient R. Adams Dudley, MD, MBA, and colleagues suggest that **for incentives to be effective, they must be carefully targeted and designed.** Dudley's study focused on treatment of hypertension in twelve hospital-based clinics in VA health networks. Clinics were assigned randomly to one of four study groups. Group 1 featured incentives for individual physicians; Group 2 offered incentives to the practice which then distributed money equally among all of its participating providers including non-physicians; Group 3 provided incentives to both the physician and the practice; and Group 4 provided no incentives at all. The study ran for 20 months, and researchers gathered data for 16 months afterward to see if improvements outlived the incentives. **The results suggested that incentives are most effective when they go directly to clinicians.[142]**

Oklahoma has found success providing physicians financial incentives for meeting EPSDT requirements. SoonerCare Choice, Oklahoma's Primary Care Case Management Program, provides health care for low-income Mediciad-eligible pregnant women, children, and the SSI-eligible population. Each year the state sets aside $1 million for bonus payments for physicians who complete EPSDT requirements. Since the program began in 1997, EPSDT rates have improved by more than 20%. The average EPSDT bonus payout per physician was $2,800 in 2006.

Oklahoma tried a similar incentive for physicians for administering the fourth dose of DPT/DTaP. However, this was less successful because it was based on physicians self-reports. Since then, Oklahoma has changed the process to base the incentive on an internal review of encounter data.[143] **This result suggests that successful programs also have strong roots in data collection and analysis.**

Monetary incentives at the hospital level have been reported to improve quality indicators.[144, 145] Of seven randomized control trials conducted on the effectiveness of Pay for Performance, results were negative in three studies, positive in three studies, and mixed in one study.

Ref.	Disease/ Measure	Setting/ Sample	Incentive	Results	Comments
Grady[146]	Referral for mammography	61 primary care practices (23 education only, 18 education plus reminder cues, 20 education plus reminder cues pluse feedback & incentives	$50 bonus/provider for 50% referral rate	Negative: Both cue groups demonstrated increased referral rate compared to education only, but cue and reward group was not significantly greater than cue group without reward	Very small monetary incentive; small sample size
Kouides[147]	Influenza immunization rate	54 solo or group practices (27 incentive group, 27 control group)	Bonus: 10% above standard fee ($8.00 for more >70% rate; 20% above standard fee for rate >85%; mean bonus $162/group	Positive: Median improvement in incentive group significantly greater than that in control group; marginal cost-effectiveness reported to be $3.02 per extra immunization	Selection bias a potential problem- participants had to have volunteered to participate in previous Medicare demonstration project
Hillman[148]	Cancer screening in women >age 50	52 primary care provider groups (26 incentive group, 26 control group)	Full & partial bonuses (20%, 10% of capitation); $570-$1260/site	Negative: No significant difference between groups in mean increase in compliance scores (pap test, colorectal screening, mammography, breast exam)	Possibly not enough time to develop effective intervention and too small a bonus; Medicaid managed care
Hillman[149]	Pediatric prevention care guidelines	49 primary care provider groups (19 feedback plus incentive; 15 feedback only; 15 control group)	Full & partial bonuses (20%, 10% on sites total 6 month capitation for members <age 7); $772-$4682/site	Negative: no significant differences between groups in the increase in total compliance scores (reflecting immunizations and other indicators)	Possibly not enough time to develop effective intervention and too small a bonus; small sample size; Medicaid managed care
Fairbrother[150]	Pediatric immunizations	60 physicians (15 bonus, 15 enhanced fee, 15 feedback, 15	Bonus: $1000- 20% improved; $2500- 40% improved;	Positive: Bonus group improved significantly in documented up-to-date immunization	Small sample size; much of the increase was the result of better

		control groups)	$5,000- 80% up-to-date; enhanced fee: $5/vaccine given when due; $15/visit at which >1 due and all given	status; no significant changes occurred in the other groups	documentation
Fairbrother [151]	Pediatric immunizations	57 physicians (24 bonus, 12 enhanced fee, 21 control group)	Bonus: $1000- 30% improved; $2500- 45% improved; $5000- 80% up-to-date; $7500- 90% up-to-date; enhanced fee: as in study above	Positive: Both bonus and enhanced fee group improved significantly in up-to-date immunization status versus controls Bonus group, but no other groups had significant decrease in missed opportunities to immunize (MOI) during sick visits; no significant change in any group for MOI during well visits	Good incentive; feedback given to both intervention groups increases primarily due to better documentation
Roski[152]	Smoking	37 primary care provider groups (13 incentive group, 9 incentive group plus registry, 15 control group)	Bonus for hitting targets: $5000 for sites with 1-7 providers; $10000 for sites with at least 8 providers	Mixed: Change in tobacco use status identification; incentive group significantly greater than other groups; no significant differences between groups in providing advice to quit or in the documented quitting rate	Small sample sizes; easier task affected more than harder tasks; why was incentive group more effective than incentive group plus registry?

Two of the negative studies were in Medicaid populations, in which reimbursement is typically low, practices are more constrained, and patients are harder to reach and enlist in quality improvement programs.[153]

Fifteen studies using nonrandomized designs have also been analyzed[154], including seven uncontrolled before-after studies, six studies using a controlled before-after design, and two studies using cross-sectional survey methodology. These studies evaluated the effect of Pay for Performance programs on a wider spectrum of diseases and measures than the random controlled trials. All but one of the studies showed positive or mixed results.

Factors associated with success in these studies include:

- **Large enough incentives**
- **Measures that are more amenable to change**
- **Responsive populations**
- **Combination with other strategies such as information system enhancements, guidelines, feedback, and public reporting.[155]**

The 1999 study by Hillman, Ripley, Goldfarb, Weiner, Nuamah, and Lusk provides insight into the impact use of physician financial incentives and feedback have on improving pediatric preventive care for children on Medicaid. The objective of the study was to examine whether a system of semiannual assessment and feedback, coupled with financial incentives, could improve pediatric preventive care in a Medicaid health maintenance organization (HMO).

The researchers randomly assigned primary care sites serving children to one of three groups:

1. A feedback group where physicians received written feedback and compliance scores
2. A feedback and incentive group where physicians received feedback and a financial bonus when compliance criteria were met
3. A control group.

Compliance with pediatric preventive care guidelines were evaluated through semiannual chart audits during 1993 to 1995.

Compliance with pediatric preventive care improved dramatically over the study period across all three study groups, from 56% to 73%. Immunizations scores also increased from 62% to 79% and other preventive care from 54% to 71%. However, there were no significant differences between the intervention groups and control groups. Possible explanations include the context and timing of the intervention, the magnitude of the financial incentives, and lack of physician awareness of the intervention.[156]

Other Factors to Consider with Pay for Performance

There are several important factors that are not often explored in Pay for Performance studies:

- **Financial Factors.** Factors such as incentive as a proportion of total income, cost of complying, payment structure to minimize disruption of care should also be explored. The Medicare Payment Advisory Commission has recommended that large-scale Pay for Performance incentives should initially only involve a small portion of total reimbursement. Over time, as better performance measures are developed to calibrate financial rewards and help providers build the infrastructure they need to understand and meet performance standards, more aggressive Pay for Performance incentives could be used.[157]

- **Environmental Factors**. Factors such as number of other incentives in place, community-level professional initiatives in place to improve quality, and other factors affecting the environment providers operate within should be reviewed.
- **Provider Factors**. Issues such as workload, proportion of patients for whom incentive is relevant should also be taken into consideration in evaluating Pay for Performance.
- **Organizational Capabilities**. Information systems, use of guidelines, leadership, and culture[158] and also critical.

The success of Pay for Performance hinges on additional measures. Many Pay for Performance systems use quality measures that focus on appropriate testing or treatment for specific conditions. Because these services are sometimes underused, improving the quality of care may entail greater use of these services, which can offset other cost savings or even raise costs. [159] An additional area of uncertainty lies in the bonus payment itself. In many cases it is unknown whether the potential bonuses will be sufficient to compensate for the collection of data or to motivate change in the way providers care for patients.[160]

Incentive programs are based on data reporting, requiring computer hardware and software as well as systems for data reporting, auditing, and data security. Providers with heavy caseloads for vulnerable patients, or those in solo or small practices, may be unable to collect and report necessary data accurately, efficiently, and reliably.[161]

More and better-designed studies are needed to determine the actual effectiveness of incentives themselves isolated from other factors, circumstances that promote effectiveness, effectiveness relative to other strategies, and cost-effectiveness.[162]

Section 7. Healthy Communities Compensation

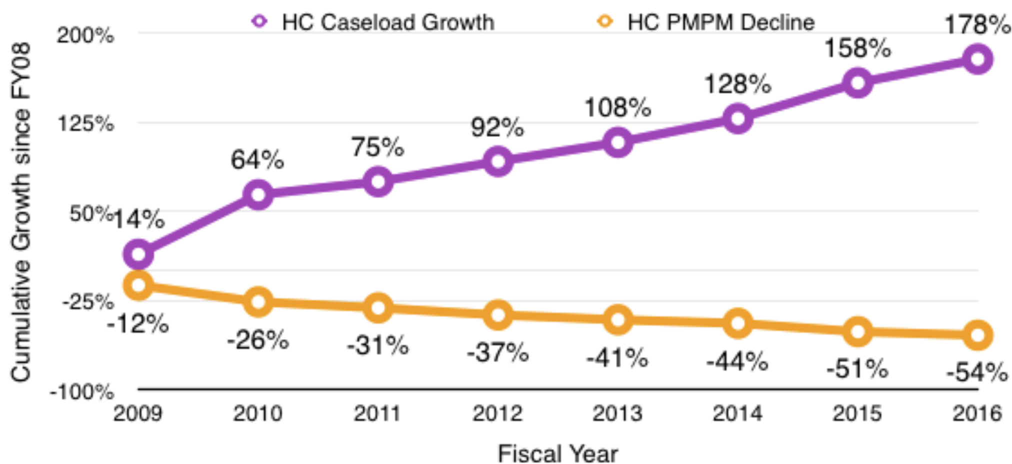
As evidenced in Section 2 of this report, investing in the Healthy Communities program to increase the volume of well-child visits is a wise investment for Colorado for both financial and health reasons. In this section we will explore how much should be invested in the program and what an incentive structure for the program could look like.

Total Healthy Communities Program Budget

While total Medicaid spending in Colorado is growing at a rate proportionate to enrollment, the Healthy Communities program has seen its budget increase only slightly and not proportionate to the increase in caseload. In FY2007 the Healthy Communities budget was $2.47 million with a caseload of 227,300. **By FY2015 the Healthy Communities budget had risen to $3.12 million (26% increase over FY2007) with a caseload of nearly 588,000 (159% increase over FY2007).** If the program had been compensated on a Per Member Per Month basis, the budget would have more than doubled from 2007.

As the effective PMPM rate dropped, so did EPSDT participant ratios and screening ratios (see chart on page 23).

Healthy Communities Caseload Growth by Effective PMPM Rate



Healthy Communities serves more than 50% of Medicaid enrollees and is *the* program that traditionally offers in-person or telephone orientation to newly enrolled families with children regarding their Medicaid benefits, EPSDT benefits in particular, and connects them to a primary care provider or medical home. This is a high value service, widely recognized as essential by the RCCOs[163] and other providers.

The total Healthy Communities budget in FY2015 accounted for only .047% of total Medicaid spending in Colorado.

Crippling this program with an insufficient budget may adversely affect Colorado's overall Medicaid expenditures by increasing emergency room and other high cost services due to lack of understanding of benefits, preventive care and its importance, and lack of a medical home among Medicaid recipients.

We recommend that the total budget for Healthy Communities be increased to cover the recent increase in caseload. We also recommend that the program implement significant changes to focus efforts on activities that are most likely to bring about the anticipated changes in EPSDT participation.

If the Healthy Communities budget were to increase proportionately from FY2007 levels (when EPSDT participation was much higher) it would stand today at $6.4 million (more than double next year's budget for the program). This is around 0.1% of the current Medicaid budget.

We recommend that the program be funded at the $6.4 million level and that HCPF take a portion of this amount and place it in an incentive fund to reward Healthy Communities teams who meet their EPSDT targets.

Healthy Communities Program Changes

As presented throughout this report, many case studies and experts on state Medicaid programs that have increased EPSDT concur that financial incentives alone do not lead to changes. Programs that successfully increase well-child visits rely heavily on data, incorporate feedback on performance, build strong partnerships, and clearly identify who needs to be screened.[164] They also invest in appropriate messaging and educational materials to reach both Medicaid families and providers.[165]

A number of recommendations for the program will be spelled out in the final report. A brief summary of the recommendations is included here for context:

- Focus on 12 priority counties that have 85% of children on Medicaid in Colorado
- More outreach and education for children ages 6 and over
- Standardize activities across Healthy Communities contractors based on best practices
- Import claims data regularly and configure HC Salesforce system to flag children overdue for their well-child visits
- Automate email or text or print reminders about upcoming well-child visits through HC Salesforce system, based on the families' stated communication preferences
- Make online information much more accessible and search engine optimized
- Provide more educational tools and training for Healthy Communities teams
- Play a strong supporting/collaborative role for the RCCOs

By implementing these changes and providing Healthy Communities teams with the human resources and support they need to effectively implement their activities, we believe that meeting the new EPSDT targets outlined below becomes feasible.

Healthy Communities Incentive Structures

Because most Healthy Communities contractors are already short-staffed and have severely limited budgets, withholding a portion of existing funding is wholly unrealistic and could so demotivate the teams that it would be difficult for them to even maintain current EPSDT participation rates.

Additional funds must be made available to enable teams to hire sufficient staff to do their jobs. Nearly half of the Healthy Communities teams surveyed in May of 2015 (45.95%) stated that they would prefer that any new funding go to hiring new staff rather than to an incentive structure that would bolster their own salaries.[166]

Once teams have expanded however, HCPF can put an additional amount into an incentive fund. Other Healthy Communities teams (37.84%) felt that this would help boost well-child visits and would be welcomed by their team.[167]

Studies cited previously throughout this document found that to be effective, financial incentives must be significant.

With an appropriate budget increase, we anticipate that the number of Family Health Coordinators would grow from 65 to around 175. There are also 22 Healthy Communities Team Supervisors.

Of the $6.4 million total recommended budget, we recommend allocating between $500,000 (7.8%) and $750,000 (12%) for incentives. Allocating any more toward an incentive fund would take away from the funds Healthy Communities teams need to be able to hire staff which in turn would decrease their capacity to meet the desired objectives. It would also limit the budget available for HCPF to provide necessary training, state-level support and coordination, and educational materials.

All incentives would be distributed at the end of the year based on county EPSDT reports from the claims database, in addition to Salesforce Healthy Communities CRM reports regarding the number of high-value interactions (face-to-face and telephone conversations) both per Family Healthy Coordinator (FHC) and per Healthy Communities team. This rewards both individual efforts by the FHCs who interact directly with clients, as well as team performance to incentivize program supervisors.

We recommend incentivizing increases in EPSDT participant ratios (proportion of children who received a well-child visit) because this is the best measure of overall preventive health in a population. We also recommend incentivizing increases in EPSDT screening ratios (actual screens in a population over expected screens) as this is what the federal government prioritizes and expects to reach an 80% ratio. Boosting the participant ratio should in turn increase the screening ratio, though for various reasons this increase is not always consistent or directly proportionate. The participant ratio is consistently lower across all states and counties.

Incentives Option A - $500,000 Incentive Fund

Family Healthy Coordinator Incentives

- 5 percentage point increase in EPSDT participant ratio for county = $1500 individual bonus
- 10 percentage point increase in EPSDT screening ratio for county = $2500 individual bonus
- Meets 3 intermediary goals as reported in Salesforce = $500 individual bonus

Note: If all goals are met, FHC receives $3000 maximum individual bonus.

To receive ANY bonus, FHCs must also have also met the following intermediary goals as reported in Salesforce:

- Reached **X# priority children** by phone or via an in-person visit. "Priority children" are the number of children without a well-child visit in the last 24 months. Targets will be set each year, at the beginning of the fiscal year, as a percentage of priority children in the county based on claims data imported into HC Salesforce system.
- Reached **X# newly enrolled** by phone or via an in-person visit. Targets will be set each year, at the beginning of the fiscal year, based on total number of newly enrolled who have not yet received orientation as reflected in HC Salesforce system.
- Referred **X# newly enrolled to a medical home.** Targets will be set each year, at the beginning of the fiscal year, based on total number of newly enrolled who have not yet received orientation as reflected in HC Salesforce system. All referrals will be documented in HC Salesforce system and reported quarterly to the respective RCCO.

Rationale: *While Family Health Coordinators have the capacity to influence EPSDT outcomes, there are other factors in each county that may affect outcomes, including the availability of primary care providers accepting new Medicaid clients. FHCs should still receive some incentive for meeting their individual targets, even if the EPSDT report does not show the desired change. Conversely it is possible that a huge push by primary care providers and policy changes can positively affect EPSDT, therefore FHCs should not receive incentives if they haven't met their internal goals and done their part to contribute to improved outcomes. Adequately staffing program will make it much more likely that program efforts lead to increases in both screening and participant ratios.*

Healthy Communities Supervisor Incentives

- 5 percentage point increase in EPSDT participant ratio averaged across team counties = $1500 individual bonus
- 10 percentage point increase in EPSDT participant ratio averaged across team counties = $3000

- 10 percentage point increase in EPSDT screening ratio averaged across team counties = $2500 individual bonus
- 20 percentage point increase in EPSDT screening ratio averaged across team counties = $5000 individual bonus
- 90% of Family Health Coordinators in team meet their 3 intermediary goals as reported in Salesforce = $500 individual bonus
- Supervisor provides timely monthly reports regarding # of medical home referrals and the specific practices clients were referred to, and total number of in-person/phone orientation for newly enrolled. Reports are sent to both Healthy Communities Program Manager and RCCO (this can even be automated through Salesforce). Must be submitted by the 15th of each month, for the previous month. = $500 individual bonus

Note: Supervisor can receive a maximum annual bonus of $6000.

Rationale: *Incentivizing the Supervisors will help boost overall team efforts. Tying one objective to reporting to the RCCO helps ensure greater communication and collaboration between Healthy Communities and the respective RCCO Manager. This also reinforces the important role Healthy Communities plays in supporting RCCO goals of identifying medical homes and providing initial orientation for families on Medicaid.*

Option A Budget Analysis

Scenario 1 = $157,100

- 25% of FHCs meet their maximum goals = $131,250
- 25% of Supervisors meet their 10% screening ratio increase + other goals = $19,250
- 5% of Supervisors meet 20% screening ratio increase + other goals = $6,600

Scenario 2 = $314, 200

- 50% of FHCs meet their maximum goals = $262,500
- 50% of Supervisors meet their 10% screening ratio increase + other goals = $38,500
- 10% of Supervisors meet 20% screening ratio increase + other goals = $13,200

Scenario 3 = $464,700

- 75% of FHCs meet their maximum goals = $393,750
- 75% of Supervisors meet their 10% screening ratio increase + other goals = $57,750
- 10% of Supervisors meet 20% screening ratio increase + other goals = $13,200

Incentives Option B - $750,000 Incentive Fund

Family Healthy Coordinator Incentives

- 5 percentage point increase in EPSDT participant ratio for county = $2500 individual bonus
- 10 percentage point increase in EPSDT screening ratio for county = $3500 individual bonus
- Only met 3 intermediary goals as reported in Salesforce = $1000 individual bonus

Note: If all goals are met, FHC receives $4500 maximum individual bonus.

To receive ANY bonus, FHCs must also have also met the following intermediary goals as reported in Salesforce:

- Reached **X# priority children** by phone or via an in-person visit. "Priority children" are the number of children without a well-child visit in the last 24 months. Targets will be set each year, at the beginning of the fiscal year, as a percentage of priority children in the county based on claims data imported into HC Salesforce system.
- Reached **X# newly enrolled** by phone or via an in-person visit. Targets will be set each year, at the beginning of the fiscal year, based on total number of newly enrolled who have not yet received orientation as reflected in HC Salesforce system.
- Referred **X# newly enrolled to a medical home.** Targets will be set each year, at the beginning of the fiscal year, based on total number of newly enrolled who have not yet received orientation as reflected in HC Salesforce system. All referrals will be documented in HC Salesforce system and reported quarterly to the respective RCCO.

Rationale: *While Family Health Coordinators have the capacity to influence EPSDT outcomes, there are other factors in each county that may affect outcomes, including the availability of primary care providers accepting new Medicaid clients. FHCs should still receive some incentive for meeting their individual targets, even if the EPSDT report does not show the desired change. Conversely it is possible that a huge push by primary care providers and policy changes can positively affect EPSDT, therefore FHCs should not receive incentives if they haven't met their internal goals and done their part to contribute to improved outcomes.*

Healthy Communities Supervisor Incentives

- 5 percentage point increase in EPSDT participant ratio averaged across team counties = $2500 individual bonus
- 10 percentage point increase in EPSDT participant ratio averaged across team counties = $3500
- 10 percentage point increase in EPSDT screening ratio averaged across team counties = $4000 individual bonus

- 20 percentage point increase in EPSDT screening ratio averaged across team counties = $6000 individual bonus
- 90% of Family Health Coordinators in team meet their 3 intermediary goals as reported in Salesforce = $1000 individual bonus
- Supervisor provides timely monthly reports regarding # of medical home referrals and the specific practices clients were referred to, and total number of in-person/phone orientation for newly enrolled. Reports are sent to both Healthy Communities Program Manager and RCCO. Must be submitted by the 15th of each month, for the previous month. = $1000 individual bonus

Note: Supervisor can receive a maximum annual bonus of $8000.

Rationale: *Incentivizing the Supervisors will help boost overall team efforts. Tying one objective to reporting to the RCCO helps ensure greater communication and collaboration between Healthy Communities and the respective RCCO Manager. This also reinforces the important role Healthy Communities plays in supporting RCCO goals of identifying medical homes and providing initial orientation for families on Medicaid.*

Option B Budget Analysis

Scenario 1 = $238,675

- 25% of FHCs meet their maximum goals = $196,875
- 25% of Supervisors meet their 10% screening ratio increase + other goals = $33,000
- 5% of Supervisors meet 20% screening ratio increase + other goals = $8,800

Scenario 2 = $314,200

- 50% of FHCs meet their maximum goals = $477,350
- 50% of Supervisors meet their 10% screening ratio increase + other goals = $66,000
- 10% of Supervisors meet 20% screening ratio increase + other goals = $17,600

Scenario 3 = $707,225

- 75% of FHCs meet their maximum goals = $590,625
- 75% of Supervisors meet their 10% screening ratio increase + other goals = $99,000
- 10% of Supervisors meet 20% screening ratio increase + other goals = $17,600

Additional Notes on Incentives

Both of the options presented here are grounded in a solid analysis of what has and has not worked well in other states with regard to financial incentives and EPSDT, and what is needed for the Healthy Communities program to function effectively and support the Medicaid system in Colorado.

The incentive structure MUST be accompanied by (1) an adequate increase in fixed operating budget for the Healthy Communities teams to hire the staff they need to handle the current caseload OR a shift to appropriate PMPM structure; and (2) changes in how the program operates based on final recommendations from this evaluation.

Additionally the financial incentives must be significant enough to motivate the teams, and the proposed targets must be sufficiently within reach. The incentive structure must find a balance between being large enough to constitute a real incentive, but small enough to not withhold so much of the budget that the Healthy Communities teams are inadequately staffed and therefore unable to perform their basic responsibilities and meet their EPSDT targets.

We believe that the two proposed options strike the appropriate balance and include goals that are within reach IF overall funding is increased and the proposed changes are implemented.

Section 8: References

[1] "EPSDT-A Guide for States: Coverage in the Medicaid Benefit for Children and Adolescents." Centers

[2] Rodin, Diana and Sharon Silow-Carroll. "Medicaid Payment and Delivery Reform in Colorado: ACOs at the Regional Level." The Commonwealth Fund. March 2013. P1. http://www.commonwealthfund.org/~/media/Files/Publications/Case%20Study/2013/Mar/1666_Rodin_Medicaid_Colorado_case_study_FINAL_v2.pdf

[3] https://www.colorado.gov/pacific/hcpf/regional-care-collaborative-organizations

[4] "Defining the Medical Home: A patient-centered philosophy that drives primary care excellence." Patient-Centered Primary Care Collaborative. https://www.pcpcc.org/about/medical-home

[5] "Colorado-Medical Homes." National Academy for State Health Policy. April 1, 2014. http://nashp.org/colorado-990/

[6] Daley, John. "10 Things to Know About Medicaid in Colorado." Colorado Public Radio. August 25, 2014. http://www.cpr.org/news/story/10-things-know-about-medicaid-colorado

[7] "Insurance Provisions of the Affordable Care Act: An Implementation Timeline for Colorado." http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251675926663&ssbinary=true

[8] "How will the Uninsured in Colorado Fare Under the Affordable Care Act?" Henry J. Kaiser Family Foundation. Jan 6, 2014. http://kff.org/health-reform/fact-sheet/state-profiles-uninsured-under-aca-colorado/

[9] "How will the Uninsured in Colorado Fare Under the Affordable Care Act?" Henry J. Kaiser Family Foundation. Jan 6, 2014. http://kff.org/health-reform/fact-sheet/state-profiles-uninsured-under-aca-colorado/

[10] Blue Ribbon Commission for Healthcare Reform. http://www.colorado.gov/208commission/

[11] "Colorado Health Care Affordability Act: Annual Report." Colorado Department of Health Care Policy and Financing. January 15, 2014. https://www.colorado.gov/pacific/sites/default/files/2014%20Annual%20Report_1.pdf

[12] Rudowitz, R, L. Snyder, VK Smith, KGifford, and E Ellis. "Implementing the ACA: Medicaid Spending and Enrollment Growth for FY 2014 and FY 2015." Henry J. Kaiser Family Foundation. October 2014. http://kff.org/medicaid/issue-brief/implementing-the-aca-medicaid-spending-enrollment-growth-for-fy-2014-and-fy-2015/

[13] "A Half Million Newly Insured: Is Colorado Ready? An Analysis of Primary Care Workforce Needs After Health Care Reform." Colorado Health Institute. December 2011.

http://www.coloradohealthinstitute.org/key-issues/detail/health-coverage-and-the-uninsured/a-half-million-newly-insured-is-colorado-ready

[14] Overview of Colorado's Medicaid Program. Accessed June 17, 2015: http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-State/colorado.html

[15] Healthy Communities Salesforce CRM System Report, May 2015.

[16] "History of Medicaid shows the program's value in combating poverty and providing access to health." Colorado Center on Law & Policy. Issues Brief Feb. 3, 2012. http://cclponline.org/wp-content/uploads/2014/03/History-of-Medicaid-in-Colorado.pdf

[17] "Average Annual Growth in Medicaid Spending." The Henry J. Kaiser Family Foundation. http://kff.org/medicaid/state-indicator/growth-in-medicaid-spending/

[18] "Medicaid Facts." American Academy of Pediatrics and Children's Hospital Association. March 2015. https://www.aap.org/en-us/Documents/federaladvocacy_medicaidfactsheet_colorado.pdf

[19] "ASPE FMAP 2015 Report." Office of the Assistant Secretary for Planning and Evaluation. February 2014.

[20] "State Health Care Spending on Medicaid: A 50 state study of trends and drivers of cost." The Pew Charitable Trust & MacAurthur Foundation. July 2014. http://www.pewtrusts.org/~/media/Data-Visualizations/Interactives/2014/Medicaid/downloadables/State_Health_Care_Spending_on_Medicaid.pdf

[21] Rudowitz R, Snyder L, Smith VK, Gifford K, and Ellis E. "Implementing the ACA: Medicaid Spending & Enrollment Growth for FY 2014 and FY 2015." Henry J. Kaiser Family Foundation. October 2014. http://kff.org/medicaid/issue-brief/implementing-the-aca-medicaid-spending-enrollment-growth-for-fy-2014-and-fy-2015/

[22] Janssen, Marty. Affordable Care Collaborative, Colorado Department of Health Care Policy and Financing.

[23] Rudowitz R, Snyder L, Smith VK, Gifford K, and Ellis E. "Implementing the ACA: Medicaid Spending & Enrollment Growth for FY 2014 and FY 2015." Henry J. Kaiser Family Foundation. October 2014. http://kff.org/medicaid/issue-brief/implementing-the-aca-medicaid-spending-enrollment-growth-for-fy-2014-and-fy-2015/

[24] Rudowitz R, Snyder L, Smith VK, Gifford K, and Ellis E. "Implementing the ACA: Medicaid Spending & Enrollment Growth for FY 2014 and FY 2015." Henry J. Kaiser Family Foundation. October 2014. http://kff.org/medicaid/issue-brief/implementing-the-aca-medicaid-spending-enrollment-growth-for-fy-2014-and-fy-2015/

[25] "5 Key Questions about Medicaid and its Role in State/Federal Budgets and Health Reform." Henry J. Kaiser Family Foundation. Kaiser Commission on Medicaid and the Uninsured. May 2012. https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8139-02.pdf

[26] "Total Medicaid Spending, FY 2013" Henry J. Kaiser Family Foundation State Health Facts. http://kff.org/medicaid/state-indicator/total-medicaid-spending/

[27] Young K, Rubowitz R, Rouhani S, Garfield R. "Medicaid Per Enrollee Spending: Variation Across States." Henry J. Kaiser Family Foundation. January 28, 2015. http://kff.org/medicaid/issue-brief/medicaid-per-enrollee-spending-variation-across-states/

[28] Charles Brown Consulting, Inc. "Medicaid Expansion: Examining the Impact on Colorado's Economy." The Colorado Health Foundation. https://www.statereforum.org/sites/default/files/medicaid_expansion_examining_the_impact_on_colorado_s_economy_2.11.2013.pdf

[29] "A Half Million Newly Insured: Is Colorado Ready? An Analysis of Primary Care Workforce Needs After Health Care Reform." Colorado Health Institute. December 2011. http://www.coloradohealthinstitute.org/key-issues/detail/health-coverage-and-the-uninsured/a-half-million-newly-insured-is-colorado-ready

[30] "Colorado's Primary Care Workforce: A Study of Regional Disparities." Colorado Health Institute. February 2014. http://www.coloradohealthinstitute.org/uploads/downloads/Com_Cap2_for_web_2_11_14.pdf

[31] "Colorado's Primary Care Workforce: A Study of Regional Disparities." Colorado Health Institute. February 2014. http://www.coloradohealthinstitute.org/uploads/downloads/Com_Cap2_for_web_2_11_14.pdf

[32] "Colorado's Primary Care Workforce: A Study of Regional Disparities." Colorado Health Institute. February 2014. http://www.coloradohealthinstitute.org/uploads/downloads/Com_Cap2_for_web_2_11_14.pdf

[33] "Colorado's Primary Care Workforce: A Study of Regional Disparities." Colorado Health Institute. February 2014. http://www.coloradohealthinstitute.org/uploads/downloads/Com_Cap2_for_web_2_11_14.pdf

[34] Staiger, D, D Auerbach, and P Buerhaus. "Health Care Reform and the Health Care Workforce- the Massachusetts Experiment." New England Journal of Medicine. 365:e24. 2011. http://www.nejm.org/doi/full/10.1056/NEJMp1106616

[35] "A Half Million Newly Insured: Is Colorado Ready? An Analysis of Primary Care Workforce Needs After Health Care Reform." Colorado Health Institute. December 2011. http://www.coloradohealthinstitute.org/key-issues/detail/health-coverage-and-the-uninsured/a-half-million-newly-insured-is-colorado-ready

[36] Charles Brown Consulting, Inc. "Medicaid Expansion: Examining the Impact on Colorado's Economy." The Colorado Health Foundation. https://www.statereforum.org/sites/default/files/medicaid_expansion_examining_the_impact_on_colorado_s_economy_2.11.2013.pdf

[37] Charles Brown Consulting Inc. "Medicaid Expansion: Examining the Impact on Colorado's Economy." The Colorado Health Foundation. https://www.statereforum.org/sites/default/files/medicaid_expansion_examining_the_impact_on_colorado_s_economy_2.11.2013.pdf

[38] Brown, David W., Amanda E. Kowalski, and Ithai Z. Zuir. "Medicaid as an Investment in Children: What is the Long-Term Impact on Tax Receipts." National Bureau of Economic Research. Working Paper No. 20835. January 2015. http://www.nber.org/papers/w20835

[39] Brown, David W., Amanda E. Kowalski, and Ithai Z. Zuir. "Medicaid as an Investment in Children: What is the Long-Term Impact on Tax Receipts." National Bureau of Economic Research. Working Paper No. 20835. January 2015. http://www.nber.org/papers/w20835

[40] Hakim, RB and BV Bye. "Effectiveness of compliance with pediatric preventive care guidelines among Medicaid beneficiaries." Pediatrics. July 2001. 108(1): 90-97. http://www.ncbi.nlm.nih.gov/pubmed/11433059

[41] Johnson, Kay and Jill Rosenthal. "Improving Care Coordination, Case Management, and Linkages to Service for Young Children: Opportunities for States." The Commonwealth Fund and National Academy for State Health Policy. April 2009.

[42] "Physician Payment Reform Introduction." National Business Coalition on Health. 2011. http://www.nbch.org/VBP-Physician-Payment-Reform-Introduction

[43] Mechanic, Rob and Stuart H. Altman. "Payment Reform Options: Episode Payment Is A Good Place to Start." Health Affairs. March/April 2009. Vol. 28. No. 2. http://content.healthaffairs.org/content/28/2/w262.full

[44] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[45] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[46] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[47] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[48] "The Negative Impacts of Fee-For-Service Payment." Payer Fusion. January 29, 2013. https://payerfusion.com/ceos-blog/impacts-fee-for-service-payment/

[49] James J. "Pay for Performance. New payment system reward doctors and hospitals for improving the quality of care, but studies to date show mixed results." Robert Wood Johnson Foundation, Health Affairs Policy Brief. October 11, 2012. http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_78.pdf

[50] "Farewell to Fee for Service? A 'Real World' Strategy for Health Care Payment Reform." UnitedHealth Center for Health Reform & Modernization. Working Paper 8. December 2012. http://www.unitedhealthgroup.com/~/media/UHG/PDF/2012/UNH-Working-Paper-8.ashx

[51] "Payment Reform and Delivery System Redesign Strategies in Colorado." Center for Improving Value in Health Care. April 2014.

[52] Colorado Children's Healthcare Access Program. http://cchap.org/

[53] Safety Net Medical Home Initiative. http://www.safetynetmedicalhome.org/about-initiative

[54] Comprehensive Primary Care Initiative. http://innovation.cms.gov/initiatives/Comprehensive-Primary-Care-Initiative/Colorado.html

[55] Silow-Carroll, S. and J. Bitterman. "Colorado Children's Healthcare Access Program: Helping Pediatric Practices Become Medical Homes for Low-Income Children." The Commonwealth Fund. 2010.

[56] Bailit, Michael and Christine Hughes. "Key Design Elements of Shared-Savings Payment Arrangements." The Commonwealth Fund. August 2011. http://www.commonwealthfund.org/~/media/Files/Publications/Issue%20Brief/2011/Aug/1539_Bailit_key_design_elements_sharedsavings_ib_v2.pdf

[57] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[58] Bailit, Michael and Christine Hughes. "Key Design Elements of Shared-Savings Payment Arrangements." The Commonwealth Fund. August 2011. http://www.commonwealthfund.org/~/media/Files/Publications/Issue%20Brief/2011/Aug/1539_Bailit_key_design_elements_sharedsavings_ib_v2.pdf

[59] "Letter to State Medicaid Directors: Shared Savings Methodologies." SMDL# 13-005. Centers for Medicare & Medicaid Services. August 20, 2013. http://www.medicaid.gov/Federal-Policy-Guidance/Downloads/SMD-13-005.pdf

[60] Bailit, Michael and Christine Hughes. "Key Design Elements of Shared-Savings Payment Arrangements." The Commonwealth Fund. August 2011. http://www.commonwealthfund.org/~/media/Files/Publications/Issue%20Brief/2011/Aug/1539_Bailit_key_design_elements_sharedsavings_ib_v2.pdf

[61] "Is 'Shared Savings' the Way to Reform Payment?" Center for Healthcare Quality & Payment Reform. http://www.chqpr.org/downloads/SharedSavings.pdf

[62] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[63] Elbner, C. "Controlling Health Care Spending in Massachusetts: An Analysis of Options." RAND Health. 2009.

[64] Williams, Tom, and Jill Yegian. "Bundled Payment: Learning From Our Failures." Health Affairs Blog. August 5, 2014. http://healthaffairs.org/blog/2014/08/05/bundled-payment-learning-from-our-failures/

[65] Robinow, Ann. "The Potential of Global Payment: Insights from the Field." The Commonwealth Fund. February 2010. http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2010/Feb/1373_Robinow_potential_global_payment.pdf

[66] The Lewin Group Inc. "Medicaid Managed Care Cost Savings: A Synthesis of Fourteen Studies. July 2004.

[67] "Global Payments to Health Providers." National Conference of State Legislatures: Briefs for State Legislators. No. 2. May 2010. http://www.ncsl.org/portals/1/documents/health/GLOBAL_PAYMENTS-2010.pdf

[68] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in Health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[69] "Understanding the ACC Program: Health Programs Services and Support." Colorado Department of Health Care Policy and Financing.
https://www.colorado.gov/pacific/sites/default/files/Overview%20of%20the%20ACC%20Program.pdf

[70] "Data Analytics in Medicaid: Spotlight on Colorado's Accountable Care Collaborative." The Henry J. Kaiser Family Foundation. October 2013.
https://kaiserfamilyfoundation.files.wordpress.com/2013/10/8484-data-analytics-in-medicaid1.pdf

[71] "Data Analytics in Medicaid: Spotlight on Colorado's Accountable Care Collaborative." The Henry J. Kaiser Family Foundation. October 2013.
https://kaiserfamilyfoundation.files.wordpress.com/2013/10/8484-data-analytics-in-medicaid1.pdf

[72] "The Colorado Medicaid Accountable Care Collaborative Program." Colorado Center on Law and Policy. September 12, 2011.
http://www.healthpolicyproject.org/Publications_files/Medicaid/ColoradoAccountableCarePresentation.pdf

[73] Robin D and Silow-Carroll S, Health Management Associates. "Medicaid Payment and Delivery Reform in Colorado: ACOs at the Regional Level." The Commonwealth Fund. March 2013.
http://www.commonwealthfund.org/~/media/Files/Publications/Case%20Study/2013/Mar/1666_Rodin_Medicaid_Colorado_case_study_FINAL_v2.pdf

[74] Lanphier, Matthew, Accountable Care Collaborative. Colorado Department of Healthcare Policy and Financing.

[75] Overview of Colorado's Medicaid Program. Accessed June 17, 2015:
http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-State/colorado.html

[76] "Creating a Culture of Change: Accountable Care Collaborative 2014 Annual Report." Colorado Department of Health Care Policy and Financing.
https://www.colorado.gov/pacific/sites/default/files/Accountable%20Care%20Collaborative%202014%20Annual%20Report.pdf

[77] Minutes of the Meeting of the ACC Program Improvement Advisory Committee. Colorado Department of Health Care Policy and Financing. January 21, 2015.
https://www.colorado.gov/pacific/sites/default/files/Preliminary%20Findings%20ACC%20RFI%20-PIAC%20Notes%201-21-15.pdf

[78] "Key Performance Indicator Calculations for ACC Incentive Payments." Treo Solutions. June 22, 2012.

[79] Community Care Central Colorado. RCCO Region 7 Provider Update. January 2014.
http://www.mycommunitycare.org/wp-content/uploads/2014/03/JAN_2014-Community-Care-Provider-Newsletter.pdf

[80] Janssen, Marty, Accountable Care Collaborative. Colorado Department of Healthcare Policy and Financing.

[81] "Colorado Medicaid Accountable Care Collaborative." Patient-Centered Primary Care Collaborative. https://www.pcpcc.org/initiative/colorado-medicaid-accountable-care-collaborative-acc

[82] Accountable Care Collaborative Enhanced Primary Care Medical Provider, June 2015. Colorado Department of Health Care Policy and Financing.

[83] Kaye, Neva and Jennifer May. "State Innovations in ESPDT." National Academy for State Health Policy. February 2010.

[84] Johnson, Kay and Jill Rosenthal. "Improving Care Coordination, Case Management, and Linkages to Service for Young Children: Opportunities for States." The Commonwealth Fund and National Academy for State Health Policy. April 2009.

[85] "How Will the Uninsured in Hawaii Fair Under the Affordable Care Act?" The Henry J. Kaiser Family Foundation. January 6, 2014. http://kff.org/health-reform/fact-sheet/state-profiles-uninsured-under-aca-hawaii/

[86] Walden, A. "Hawaii Taxpayers to Fund Medicaid Boost for Six Months." Heartland. January 6, 2015. http://news.heartland.org/newspaper-article/2015/01/06/hawaii-fill-medicaid-fee-shortfall-six-months

[87] "Paving the Road to Good Health: Strategies for Increasing Medicaid Adolescent Well-Care Visits." Center for Medicare and Medicaid Services. P18. February 2014. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Downloads/Paving-the-Road-to-Good-Health.pdf

[88] AlohaCare Summer 2011 Member Magazine. Page 6.

[89] "Paving the Road to Good Health: Strategies for Increasing Medicaid Adolescent Well-Care Visits." Center for Medicare and Medicaid Services. P18. February 2014. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Downloads/Paving-the-Road-to-Good-Health.pdf

[90] TENNderCare. http://www.tn.gov/tenncare/tenndercare/welcome.pdf

[91] TENNderCare programming in Knox County. http://www.knoxcounty.org/health/tenndercare.php

[92] TBH100 Youthfest. http://www.knoxcounty.org/health/tenndercare_info.php

[93] Sonosky, Colleen. "Overview of EPSDT for Children in DC Medicaid: DCPS Professional Development Training" Government of the District of Columbia Department of Health Care Finance. February 13, 2015.

[94] "EPSDT Toolkit, DC- EPSDT." National Academy for State Health Policy. December 5, 2013. http://www.nashp.org/dc-780/

[95] Upleaf (Gena Akers) interview with Colleen Sonosky of the DC Department of Health Care Finance, June 18, 2015.

[96] Kay Johnson, MPH. 2015, June 12. Telephone interview.

[97] Hall, C, MA Lee, J Solomon. "The Children's Health Council: A Community Foundation/State Government Partnership- Increased EPSDT participation in Connecticut is one result of this unique partnership." Health Affairs. P167-171. July/August 1999. http://content.healthaffairs.org/content/18/4/167.full.pdf

[98] "Physician Pay-for-Performance in Medicaid: A Guide for States." Center for Health Care Strategies. 2007. http://www.allhealth.org/briefingmaterials/PhysicianP4PinMedicaid-Aguideforstates-679.pdf

[99] Kaye, Neva and Jennifer May. "State Innovations in ESPDT." National Academy for State Health Policy. February 2010.

[100] "Making Connections: Strengthening Care Coordination in the Medicaid Benefit for Children & Adolescents." Center for Medicare and Medicaid Services. September 2014.

[101] Upleaf (Elizabeth Beachy) interview with Sarah Robinson and Shirley Taylor of the Healthy Communities team from Mesa County. June 17, 2015.

[102] The Health Belief Model. http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/SB721-Models/SB721-Models2.html

[103] Theory of Reasoned Action. http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/SB721-Models/SB721-Models2.html

[104] "PSI Behavior Change Framework 'Bubbles': Proposed Revision." Concept Paper. Population Services International. 2004. http://www.psi.org/wp-content/uploads/drupal/sites/default/files/publication_files/behaviorchange.pdf

[105] Kay Johnson, MPH. National Academy for State Health Policy. 2015, June 12. Telephone interview.

[106] Steve Federico, MD. Denver Health. 2015, June 17. Telephone interview.

[107] Kay Johnson, MPH. National Academy for State Health Policy. 2015, June 12. Telephone interview.

[108] Steve Federico, MD. Denver Health. 2015, June 17. Telephone interview.

[109] Jessica Greene, PhD. "Medicaid Efforts to Incentivize Healthy Behaviors." Center for Health Care Strategies, Inc. 2007. http://www.chcs.org/media/Medicaid_Efforts_to_Incentivize_Healthy_Behaviors.pdf

[110] "Colorado's Maze to Enrollment in Medicaid and CHP+: Progress Made and Opportunities for Improvement." Colorado Covering Kids and Families. June 2012.

[111] "Colorado's Maze to Enrollment in Medicaid and CHP+: Progress Made and Opportunities for Improvement." Colorado Covering Kids and Families. June 2012.

[112] Institute of Medicine (US) Committee on Health and Behavior: Research, Practice, and Policy. Health and Behavior: The Interplay of Biological, Behavioral, and Societal Influences. Washington (DC): National Academies Press (US); 2001. 5, Individuals and families: Models and Interventions. http://www.ncbi.nlm.nih.gov/books/NBK43749/

[113] Sundiatu Dixon-Fyle, PhD, Shonu Gandhi, Angela Spatharou, PhD. *Changing Patient Behavior: The Next Frontier in Healthcare Value.* McKinsey's Healthcare Systems and Services Practice. 2012 http://healthcare.mckinsey.com/sites/default/files/791750_Changing_Patient_Behavior_the_Next_Frontier_in_Healthcare_Value.pdf

[114] Sundiatu Dixon-Fyle, PhD, Shonu Gandhi, Angela Spatharou, PhD. *Changing Patient Behavior: The Next Frontier in Healthcare Value.* McKinsey's Healthcare Systems and Services Practice. 2012 http://healthcare.mckinsey.com/sites/default/files/791750_Changing_Patient_Behavior_the_Next_Frontier_in_Healthcare_Value.pdf

[115] Sundiatu Dixon-Fyle, PhD, Shonu Gandhi, Angela Spatharou, PhD. *Changing Patient Behavior: The Next Frontier in Healthcare Value.* McKinsey's Healthcare Systems and Services Practice. 2012 http://healthcare.mckinsey.com/sites/default/files/791750_Changing_Patient_Behavior_the_Next_Frontier_in_Healthcare_Value.pdf

[116] Sundiatu Dixon-Fyle, PhD, Shonu Gandhi, Angela Spatharou, PhD. *Changing Patient Behavior: The Next Frontier in Healthcare Value.* McKinsey's Healthcare Systems and Services Practice. 2012 http://healthcare.mckinsey.com/sites/default/files/791750_Changing_Patient_Behavior_the_Next_Frontier_in_Healthcare_Value.pdf

[117] Giles EL, S Robalino, E McColl, FF Sniehotta, J Adams. "The Effectiveness of Financial Incentives for Health Behaviour Change: Systematic Review and Meta-Analysis." Ed. Hamid Reza Baradaran. PLoS ONE 9.3 (2014): e90347. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3949711/

[118] Kane, R.L., et. al., "A structured review of the effect of economic incentives on consumers' preventive behavior." American Journal of Preventive Medicine, 27 (2004). Shroeder, S.A. "We can do better-improving the health of the American people," New England Journal of Medicine, 357 No. 12 (2007)

[119] Kane, R.L., et. al., "A structured review of the effect of economic incentives on consumers' preventive behavior." American Journal of Preventive Medicine, 27 (2004). Sutherland, et. al., "impact of targeted financial incentives on personal health behavior: A review of the literature," Medical Care Research and Review, 65 Sup. 6 (2008).

[120] Gurley-Calvez, T., et. al., "Mountain Health Choices Beneficiary Report." West Virginia University, Bureau of Business and Economic Research (2009). Green, J. "Using consumer incentives to increase well-child visits among low-income children," Medical Care Research and Review, 68 No. 5 (2011).

[121] Donatelle R, Hudson D, Dobie S, et al. "Incentives in Smoking Cessation: Status of the Field and Implications for Research and Practice with Pregnant Smokers." Nicotine & Tobacco Research.2004;6 Suppl 2:S163-179.

[122] Donatelle RJ, Prows SL, Champeau D, et al. "Randomised Controlled Trial Using Social Support and Financial Incentives for High Risk Pregnant Smokers: Significant Other Supporter Program." Tobacco Control. 2000;9:iii67-iii69.

[123] Volpp KG, Gurmankin Levy A, Asch DA, et al. "A Randomized Controlled Trial of Financial Incentives for Smoking Cessation." Cancer Epidemiology, Biomarkers & Prevention.2006;15:12-18.

[124] Gilbert DG, Crauthers DM, Mooney DK, et al. "Effects of Monetary Contingencies on Smoking Relapse: Influences of Trait Depression, Personality, and Habitual Nicotine Intake." Experimental and Clinical Psychopharmacology.1999;7:174-181.

[125] Stitzer ML, Bigelow GE. "Contingent Reinforcement for Carbon Monoxide Reduction: Within-Subject Effects of Pay Amount." Journal of Applied Behavior Analysis.1984;17:477-483.

[126] American College of Physicians. Ethical Considerations for the Use of Patient Incentives to Promote Personal Responsibility for Health: West Virginia Medicaid and Beyond. Philadelphia: American College of Physicians; 2010: Position Paper. (Available from American College of Physicians, 190 N. Independence Mall West, Philadelphia, PA 19106.) https://www.acponline.org/running_practice/ethics/issues/policy/personal_incentives.pdf

[127] Minniti MM, Abraham MR and Johnson BH. "Individual and Family Engagement in the Medicaid Population: Emerging Best Practices and Recommendations." Robert Wood Johnson Foundation. November 2014. http://www.ipfcc.org/advance/topics/Individual-Engagement.pdf

[128] O'Reilly, Kevin B. "Motivating Patients to Make Wise Choices." American Medical News. February 18, 2013. http://www.amednews.com/article/20130218/profession/130219951/4/

[129] Miller WR and Rose GS. "Toward a Theory of Motivational Interviewing." *American Psychologist,* 64 (6): 527-537, 2009.

[130] Daft, Richard L. and Robert H. Lengel. "Communications: An Inside Look." http://communicationsinsider.weebly.com/media-richness-theory.html

[131] Beachy, Elizabeth, MHS. "Healthy Communities Team Survey." Upleaf, May 2015.

[132] A Century of Health Care Improvements. http://www.sanluisvalleyhealth.org/patient-center/your-health/health-care-101

[133] Delbanco S. "The Payment Reform Landscape: Pay-for-Performance." Health Affairs. March 4, 2014. http://healthaffairs.org/blog/2014/03/04/the-payment-reform-landscape-pay-for-performance/

[134] "New Approaches to Paying for Health Care: Implications for Quality Improvements and Cost Containment in Colorado." Center for Improving Value in health Care (CIVHC) and Colorado Health Institute. July 2012. http://www.civhc.org/getmedia/2e9d3aa9-15c7-48c2-9ba7-5cb64263db5e/New-Approaches-to-Paying-for-Health-Care_CIVHC_CHI-Issue-Brief_7.12.pdf.aspx/

[135] James J. "Pay-for-Performance. New payment systems reward doctors and hospitals for improving the quality of care, but studies to date show mixed results." Robert Wood Johnson Foundation, Health Affairs Health Policy Brief. October 11, 2012. http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_78.pdf

[136] Hibbard, J.H., J. Stockard, and M. Tusler. "Hospital Perforamnce Reports: Impact on Quality, Market Share and Reputation." Health Affairs, July/August. Pg 1150-1160.

[137] Cromwell J, Trisolini MG, Pope GC. "Pay for Performance in health Care: Methods and Approaches. P50-52. Research Triangle Institute. March 2011.

[138] Werner, Rachel M., Jonathan T. Kolstad, Elizabeth A. Stuart, and Daniel Polsky. "The Effect of Pay for Performance in Hospitals: Lessons for Quality Improvement." Health Affairs. April 2011. http://content.healthaffairs.org/content/30/4/690.abstract

[139] James J. "Pay-for-Performance: New payment systems reward doctors and hospitals for improving the quality of care, but studies to date show mixed results." Robert Wood Johnson Foundation, Health Affairs Health Policy Brief. October 11, 2012. http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_78.pdf

[140] Rosenthal, Meredith B. and R. Adams Dudley. "Pay-for-Performance: Will the Latest Payment Trend Improve Care? JAMA. February 21, 2007. Vol 297. No 7: 740-743. http://www.hci3.org/sites/default/files/files/Rosenthal_P4P.pdf

[141] James J. "Pay-for-Performance. New payment systems reward doctors and hospitals for improving the quality of care, but studies to date show mixed results." Robert Wood Johnson Foundation, Health Affairs Health Policy Brief. October 11, 2012. http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_78.pdf

[142] "New Study Challenges Conventional Wisdom on Pay-for-Performance Incentive Programs." "Robert Wood Johnson Foundation. September 19, 2013. http://www.rwjf.org/en/library/articles-and-news/2013/09/new-study-challenges-conventional-wisdom-on-pay-for-performance-.html

[143] "Physician Pay-for-Performance in Medicaid: A Guide for States." Center for Health Care Strategies. 2007. http://www.allhealth.org/briefingmaterials/PhysicianP4PinMedicaid-Aguideforstates-679.pdf

[144] Grossbart SR. What's the return? Assessing the effect of Pay for Performance initiatives on the quality of care delivery. MCR&R 2006; 63(suppl):29S-48S.

[145] Bratzler DW, Nsa W, Houck PM. Perforance measures for pneumonia: are they valuable, and are process measures adequate? Curr Opin Infect Dis 2007; 20:182-189.

[146] Grady KE, Lemkau JP, Lee NR, Caddell C. Enhanced mammography referral in primary care. Prev Med 1997; 26:791-800.

[147] Kouides RW, Bennett NM, Lewis B, *et al*. Performance-based physician reimbursement and influenza immunization rates in the elderly. Am J Prev Med 1998; 14:89-95.

[148] Hillman AL, Ripley K, Goldfarb N, *et al*. Physician financial incentives and feedback: Failure to increase cancer screening in Medicaid managed care. Am J Pub Health 1998; 88:1699-1701.

[149] Hillman AL, Ripley K, Goldfarb N, *et al*. The use of physician financial incentives and feedback to improve pediatric preventive care in Medicaid managed care. Pediatrics 1999; 104:931-935.

[150] Fairbrother G, Hanson Kl, Friedman S, Butts GC. The impact of physician bonuses, enhanced fees, and feedback on childhood immunization coverage rates. Am J Pub Health 1999; 89:171-175.

[151] Fairbrother G, Siegel MJ, Friedman S, *et al*. Impact of financial incentives on documented immunization rates in the inner city: results of a randomized controlled trial. Ambul Ped 2001; 1:206-212.

[152] Roski J, Jeddeloh R, An L, *et al*. The impact of financial incentives and a patient registry on preventive care quality: increasing provider adherence to evidence-based smoking cessation practice guidelines. Prev Med 2003; 36:291-299.

[153] Rosenthal MB, Frank RG. What is the empirical basis for paying for quality in healthcare? Med Care Res Rev 2006; 63:135-157.

[154] Schatz M. "Does Pay-for-performance Influence the Quality of Care?" Curr Opin Allergy Clin Immunol. 2008; 8(3): 213-221.

[155] Schatz M. "Does Pay-for-performance Influence the Quality of Care?" Curr Opin Allergy Clin Immunol. 2008; 8(3): 213-221.

[156] Hillman AL, Ripley K, Goldfarb N, *et al*. The use of physician financial incentives and feedback to improve pediatric preventive care in Medicaid managed care. Pediatrics 1999; 104:931-935.

[157] "Financial Incentives for Health Care Providers and Consumers." Mathematica Policy Research, Inc. Issue Brief no. 5, May 2010. http://www.mathematica-mpr.com/~/media/publications/PDFs/health/reformhealthcare_IB5.pdf

[158] Frølich A, Talavera JA, Broadhead P, Dudley RA. A behavioral model of clinician responses to incentives to improve quality. Health Policy 2007; 80:179-193.

[159] Rosenthal m., R. Frank, L. Zhonghe, and A. Epstin. "Early Experience with Pay for Performance." JAMA, Vol. 294, no. 14, October 12, 2005, pp. 1895-1902.

[160] Fisher Es. Paying for Performance: Risks and Recommendations. New England Journal of Medicine. 2006; 335(8): 1845-1847.

[161] Rosenthal m., R. Frank, L. Zhonghe, and A. Epstin. "Early Experience with Pay for Performance." JAMA, Vol. 294, no. 14, October 12, 2005, pp. 1895-1902.

[162] Schatz M. "Does Pay-for-performance Influence the Quality of Care?" Curr Opin Allergy Clin Immunol. 2008; 8(3): 213-221.

[163] Beachy, Elizabeth, MHS. Healthy Communities Stakeholder Interview Report. Upleaf. June 2015.

[164] Kaye, Neva and Karen VanLandeghem, MPH. National Academy for State Health Policy. 2015, June 18. Telephone interview.

[165] Johnson, Kay, MPH. National Academy for State Health Policy. 2015, June 12. Telephone interview.

[166] Beachy, Elizabeth, MHS. "Healthy Communities Team Survey." Upleaf, May 2015.

[167] Beachy, Elizabeth, MHS. "Healthy Communities Team Survey." Upleaf, May 2015.