

Appendix F

Introduction to Appendix F

The American Academy of Pediatrics submission to Colorado Blue Ribbon Commission on Health Care Reform (Dr. James Todd, key author) offers an excellent description of how the use of “medical homes” improves quality in health care. Balanced Choice supports their recommendations with only two areas of discrepancy:

1. The American Academy of Pediatrics recommends reimbursing primary care physicians a set fee for every medical home patient in their practice. Balanced Choice believes that medical home services should be reimbursed on the basis of the service provided, not the number of patients in a practice. For example, a young woman may benefit from a medical home that reminds her of yearly pap smears, but it is not clear that a primary care physician should need additional reimbursement for this service. On the other hand, a child with disabilities and special needs may require extensive personal and phone coordination or consultation time that should be adequately reimbursed based on the time needed.
2. Balanced Choice does not believe that the pay-for-performance or pay-for-outcome theories have demonstrated their effectiveness well enough to be instituted in a health care reform proposal. Pay-for-performance and pay-for-outcome have potential for creating a cumbersome bureaucracy, and they have not been demonstrated to be beneficial in practice. There are multiple unsolved problems in the pay-for-performance and pay-for-outcome models, and some of these are listed below:
 - a. It is not clear which provider should benefit from positive outcomes when there are multiple providers.
 - b. The full set of important and useful performance and outcome measures are often difficult to determine.
 - c. It is not clear how to measure performance or outcomes in a manner that does not result in the necessity of learning how to game or stretch the system to maximize performance or outcomes measures
 - d. Pay-for-performance and pay-for-outcome systems require proper and extensive risk adjustment. It is not clear that there is a cost-efficient way to conduct this risk adjustment.
 - e. It is not clear that there is a risk adjustment method that does not result in the necessity of learning how to game or maximize risk adjustment.
 - f. Pay-for-performance and pay-for-outcome systems imply that a centrally controlled bureaucracy can use reimbursements to direct personal health care decisions. This has never been the case before.

We are supportive of the other recommendations and ideas presented in the American Academy of Pediatrics Proposal.

23 March 2007

To: All Blue Ribbon Commission Applicants and Others Interested in Colorado Healthcare

Attached is our concept paper "*Colorado Health Outcomes Measurement & Evaluation Consortium (CO-HOME): A System to Ensure an Effective and Efficient Medical Home for All Coloradans*" along with 10 appendices.

We would like to make this available at this time to all those who have indicated a desire to submit a proposal to the Blue Ribbon Commission. It is our intention to permit any degree of incorporation of the ideas, text, tables and/or figures of our concept paper into any complete proposal as long as the source is footnoted as: "*Colorado Health Outcomes Measurement & Evaluation Consortium (CO-HOME): A System to Ensure an Effective and Efficient Medical Home for All Coloradans. (2007) Colorado Chapter of the American Academy of Pediatrics and The Children's Hospital, Denver, Colorado.*"

James K. Todd, MD

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**Colorado Health Outcomes Measurement & Evaluation Consortium (CO-HOME):
A System to Ensure an Effective and Efficient Medical Home for All Coloradans**

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Colorado Children's Healthcare Access Program (CCHAP) and
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Summary

Providing health insurance coverage for all Coloradans will not necessarily improve their health outcomes unless there is a fundamental change in how healthcare resources are allocated and how health outcomes are measured and improved. The concept of "medical home," first promoted by the American Academy of Pediatrics and now endorsed by all four of the leading national primary

care organizations, establishes standards that have been proven to improve the quality and cost-effectiveness of healthcare for Coloradans – keeping them out of emergency departments and hospitals, and saving money in the process. Even with uniform medical home standards, a system is needed that will permit the stratified, comparative measurement of the IOM’s standards of quality: efficacy, effectiveness, safety, continuity, technical proficiency, and appropriateness of care for all Colorado citizens. It is fair to say that such a system does not currently exist in Colorado. The three reasons for this are: Colorado does not have a comprehensive, data-driven healthcare system, so standards of care and measurement of outcomes differ significantly among health plans, coverages, and providers; current measures are inadequate for the task; and there is no data system available to support the uniform application of even useful measures across populations.

This proposal defines the structure and function of the Colorado Health Outcomes Measurement and Evaluation Consortium (CO-HOME) with the purpose to: define the standards for a “medical home” that should be the basis for the provision of individual healthcare for every Coloradan; establish rigorous, data-driven measurement of clinical outcomes as well as costs in assuring the provision of sustainable, high quality, cost-effective care; and define an inclusive, statewide, comparative data system for process and outcome measurement based on medical home standards for any and all health plans providing future healthcare in Colorado. Without setting higher standards via the medical home concept, without better and more appropriate clinical measures, and without a comparative data system that transparently spans all health plans and populations, it is unreasonable to expect that any effort at comprehensive healthcare reform in Colorado can succeed in improving outcomes and wise use of the healthcare dollar.

Comprehensiveness:

What problem does this proposal address? This concept paper specifically addresses the creation of a statewide public-private consortium -- the Colorado Health Care Outcomes Measurement and Evaluation Consortium (CO-HOME). CO-HOME will provide the necessary expertise and systems to assure the data-driven, quality measurement and improvement based on medical home standards that any comprehensive health plan or system should incorporate to assure financially viable, sustainable, and fair access to high quality, cost-effective, and coordinated care. It is offered to be used entirely or in part by any entity wishing to incorporate it into a complete proposal and for the use of the Blue Ribbon Commission for Healthcare Reform as a quality benchmark for review of complete proposals. It does not specify what types of health plans or systems might participate in

providing care for all Coloradans but establishes the necessary standards and mechanism for measuring and improving their care.

What are the objectives of this proposal?

To define the standards for a “medical home” that should be the basis for the provision of individual healthcare for every Coloradan.

To establish the importance of rigorous, data-driven measurement of clinical outcomes as well as costs in assuring the provision of sustainable, high quality, cost-effective care.

To define the Colorado Health Outcomes Measurement and Evaluation Consortium - an inclusive, statewide, comparative data system for process and outcome measurement based on medical home standards for any and all health plans providing care for Coloradans.

General:

Who will benefit from this proposal? All Coloradans receiving healthcare, and all taxpayers and consumers concerned about the effective and efficient use of the healthcare dollar will benefit.

Who will be negatively affected by this proposal? No one will be negatively affected.

How will your proposal impact distinct populations (e.g. low-income, rural, immigrant, ethnic minority, disabled)? By establishing standards for the provision of a medical home and systems for the measurement and improvement of quality of healthcare, all populations will benefit. Comparative measurement of utilization and outcomes for stratified populations (including those listed above) will permit the recognition of health disparities that can be the focus of improvement initiatives.

Please provide any evidence regarding the success or failure of your approach. Please attach.

Although the following documentation reflects an emphasis on children's healthcare process and outcomes, the principles apply equally to any comprehensive healthcare system. Over the past several years, the State of the Health of Colorado's Children program in the Department of Epidemiology and Community Pediatrics at the Children's Hospital and The Colorado Children's Healthcare Access Program (CCHAP) have conducted a number of studies that demonstrate the deficiencies in assuring access and quality outcomes as well as the associated increased costs that currently exist in Colorado's public insurance programs. Our CCHAP program documents the path

to improving care for these children (and by extrapolation, for all of Colorado's citizens) by providing a "medical home" as defined by the American Academy of Pediatrics and other national provider organizations:

Appendix A demonstrates the movement away from Medicaid managed care programs toward unassigned fee-for-service (UFFS) in the state Medicaid system and the resulting decrease in access to providers and the associated deterioration in HEDIS process measures (primary care visits, vaccination rates).¹

Appendix B demonstrates the importance of measuring actual outcomes for identifying opportunities to improve morbidity and mortality and reduce costs. From 1995 through 2004, Colorado children who had public or no health insurance had significantly worse hospitalization outcomes and significantly increased costs compared to Colorado children with private insurance.² These disparities demonstrate the opportunity to improve health outcomes as well as saving costs if all children in Colorado had access to the same providers and services currently enjoyed by children with private insurance.

Appendix C is our assessment of the use of AHRQ patient safety indicators in Colorado.

Appendix D is a position paper endorsed by the Colorado Chapter of the American Academy of Pediatrics summarizing the current deficiencies in assuring quality outcomes for children in Colorado and identifies the critical steps in providing sustainable, affordable, and accessible quality healthcare for all Colorado's children.

Appendix E is a description of the Colorado Children's Healthcare Access Program (CCHAP) that documents the standards and services for moving children from Unassigned Fee-For-Service to a medical home.³

Appendix F is a CCHAP list of characteristics of the medical home that are amenable to measurement and improvement.

Appendix G is a statement of the concept of a "medical home" of the American Academy of Pediatrics.⁴

¹ Berman, S., C. Armon, et al. (2005). "Impact of a decline in Colorado Medicaid managed care enrollment on access and quality of preventive primary care services." *Pediatrics* **116**(6): 1474-9.

² Todd, J., C. Armon, S. Poole, S. Berman. (2006). "Increased rates of morbidity, mortality, and charges for hospitalized children with public or no health insurance as compared with children with private insurance in Colorado and the United States." *Pediatrics* **118**(2): 577-85.

³ <http://www.cchap.org/>

⁴ <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;110/1/184.pdf>

Appendix H is a recent, joint statement of four prominent national medical provider organizations endorsing the importance of the medical home concept for improving outcomes of all Americans [American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Osteopathic Association (AOA)].

Appendix I is the mission statement and structure of the Public Health Data Standards Consortium presented as a model for the proposed Colorado Health Outcomes Measurement & Evaluation Consortium (CO-HOME).⁵

Appendix J is the mission statement of the Massachusetts Health Data Consortium – another example of a statewide data-driven initiative to be used for measuring and improving health outcomes and reducing costs.⁶

How will the program(s) included in the proposal be governed and administered? Public programs will continue to be governed and administered by the Department of Healthcare Policy and Financing (HCPF), Colorado Division of Insurance, and the Colorado Department of Health and Environment who will actively participate in CO-HOME -- a public/private consortium governed by its established charter. This consortium should be independent and free standing with the capacity to evaluate quality measures across all payer types and provider systems.

To the best of your knowledge, will any federal or state laws or regulations need to be changed to implement this proposal (e.g. federal Medicaid waiver, worker's compensation, auto insurance, ERISA)? If known, what changes will be necessary? State laws and/or policies may need to be altered to empower the application of standards of a medical home to all participating health providers/plans and to require participation of all health providers/plans in the Colorado Health Outcomes Measurement & Evaluation Consortium (CO-HOME).

How will your program be implemented? HCPF and state insurance policies will be altered to require provision of medical home standards for all covered individuals. CO-HOME will be a public/private consortium formed with the assistance of statute if necessary and governed by a charter created and approved by its members.

How will your proposal transition from the current system to the proposal program? Over what time period? CO-HOME will be created as a public/private consortium. It will elect a board of directors from its contributing members and form its five committees (see figure 2). Formation

⁵ <http://www.phdsc.org/>

⁶ <http://www.mahealthdata.org/consortium/mission/index.html>

of the Consortium and initial deliverables of its committees is estimated to take one year if pursued energetically. Because health plans will participate in committee activities, it is likely that standard and measurement development can occur in parallel with many other transition activities.

Access:

Does this proposal expand access? If so, please explain. The establishment of medical home standards in effect does increase access to improved services and outcomes for all covered individuals with a documented savings in cost (see “Does the medical home improve outcomes and save money?”, page 12-13). Current Colorado evidence indicates that expanding eligibility does not necessarily increase enrollment and increasing enrollment does not necessarily assure access to a medical home. It is the goal of the Blue-Ribbon Commission for Health Care Reform to assure access to health care for every Coloradan. Unless that access assures a medical home and unless the outcomes achieved by various health plans and providers can be measured and compared, increased access may not necessarily yield improved outcomes. That is the purpose of this concept paper.

How will the program affect safety net providers? All providers -- including safety net providers -- will be equally affected by implementing medical home standards and requirements for submission of uniform data abstracts to CO-HOME.

Coverage: All of these criteria (coverage, affordability, portability) will be addressed in comprehensive proposals presented to the commission by others. It is intended that this current concept paper will serve as a benchmark by which the success of any such proposal can be judged no matter how it is financed or structured (e.g. public versus private, managed care versus individual provider, for-profit versus not-for-profit, etc.).

Does your proposal “expand healthcare coverage?” (Senate Bill 06-208) How? Not addressed

How will outreach and enrollment be conducted? Not addressed

If applicable, how does your proposal define “resident?” Not addressed

Affordability:

If applicable, what will enrollee and/or employer premium-sharing requirements be? Not addressed

How will co-payments and other cost-sharing be structured? Not addressed

Portability:

Please describe any provisions for assuring that individuals maintain access to coverage even as life circumstances (e.g. employment, public program eligibility) and health status change.

Not addressed

Benefits:

Please describe how and why you believe the benefits under your proposal are adequate, have appropriate limitations, and address distinct populations. The CO-HOME consortium will be charged with creating standards and measures that will be both effective and efficient in improving healthcare and reducing -- or justifying -- cost. It specifically will be charged with stratifying distinct populations to better identify disparities and opportunities for improvement.

Please identify an existing Colorado benefit package that is similar to the one(s) you are proposing (e.g. Small Group Standard Plan, Medicaid, etc) and describe any differences between the existing benefit package and your benefit package. The Colorado Children's Healthcare Access Program (see Appendix E) is the first to provide access to a defined series of benefits and services that comprise the concept of a medical home. There is ample evidence that even for children currently enrolled in Medicaid, many do not have regular access to a primary care provider let alone one that provides a complete medical home (see Appendix A) and that the absence of these benefits increases morbidity, mortality and cost (Appendix B). More importantly, the benefits provided by the Colorado Children's Healthcare Access Program have been shown to improve these outcomes and reduce costs (Appendix E). The Rocky Mountain Health Plans have offered similar medical home services that have been shown to improve outcome and reduce cost. It is asserted that any comprehensive health care system proposal must include similar standards for benefits or it will fall short in the quality and cost of care provided.

Quality:

How will quality be defined, measured, and improved? Quality has been simply defined as "the right thing, improved,"⁷ but in healthcare it remains a difficult task to define what the "right thing" is. As a result, regulatory agencies have often gravitated to readily available measures rather than relevant ones. A recent editorial in the New England Journal concluded:

⁷ Todd, J. K. (2006). On track to quality. Pittsburgh, Pa., Lighthouse Point Press.

*“This study showed a modest improvement in some process measures and no improvement in intermediate or end-stage outcomes — results that are similar to those of most previous large-scale quality-improvement initiatives. As the authors correctly note, improved processes may not be accompanied by discernible improvements in outcomes for several reasons. A particularly important problem is that the majority of Health Plan Employer Data and Information Set–style [HEDIS] performance measures used to guide most large-scale quality-improvement activities represent inefficient and sometimes counterproductive standards for improving clinical outcome.”*⁸

Unfortunately, up to now, these measures have been the mainstay of comparison of healthcare plans. Similarly, the AHRQ patient safety indicators have been shown to be less than accurate measures for improving and especially comparing inpatient quality (Appendix C.).⁹ New approaches for the development of clinical measures will be necessary with more clinical and perhaps less administrative influence if quality is truly to be measured and reliably improved.

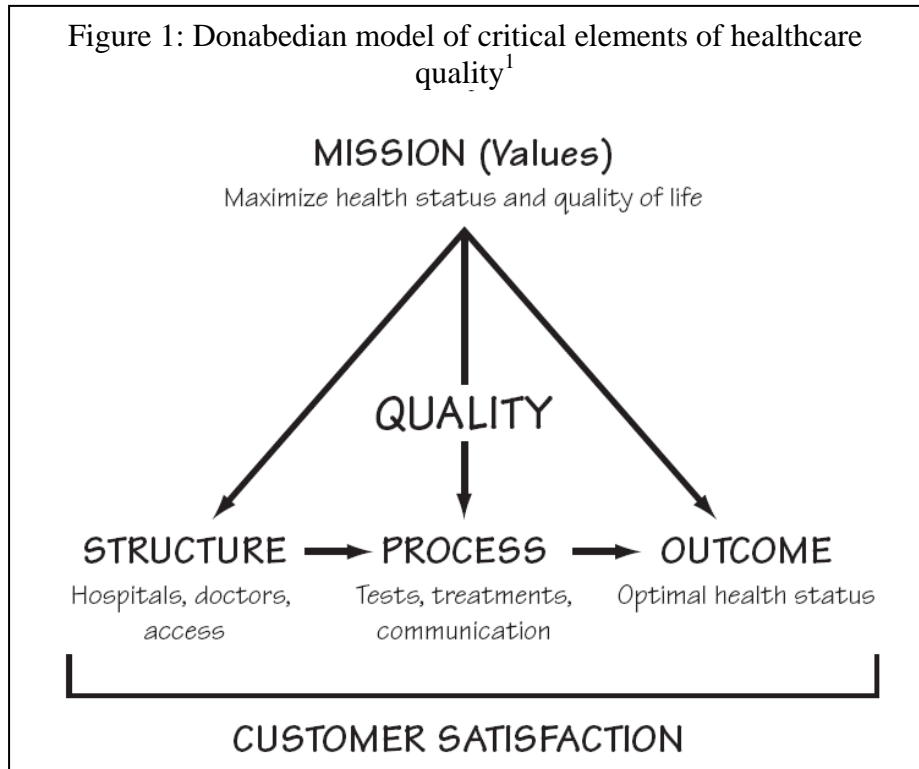
As shown in Figure 1, the modified Donabedian model for healthcare quality improvement requires rigorous measurement of structure, process, and outcome as well as satisfaction in pursuit of a meritorious mission. The mission of the Blue Ribbon Commission for Healthcare Reform is stated to be to: “Protect and improve the health status of all Coloradans.”

As modified by the Institute of Medicine (IOM), measures of the structure, process, and outcome aspects of quality include: **Effectiveness** (achieving increases in survival or improved quality of life); **Efficiency** (maximizing benefits for a given cost); **Access** (the capacity of individuals to obtain the same quality of care); **Safety** (the extent to which potential risks are avoided); **Acceptability** (the degree to which expectations of informed consumers are met); **Continuity** (the extent to which episodes of care are coordinated and integrated into overall care provision); **Technical proficiency** (the extent to which care is consistent with contemporary standards and knowledge); and **Appropriateness** (the extent to which potential benefits of an intervention exceed the risk involved).

⁸ Hayward, R. A. (2007). "Performance measurement in search of a path." *N Engl J Med* **356**(9): 951-3.

⁹ Grobman WA, Feinglass J, Murthy S. Are the Agency for Healthcare Research and Quality obstetric trauma indicators valid measures of hospital safety? *Am J Obstet Gynecol* 2006;195(3):868-74.

There is ample evidence that many of the above measures of healthcare quality are either not being measured well in Colorado, or are being measured sporadically or not at all. The three reasons for this are: Colorado does not have a comprehensive, data-driven healthcare system so standards of care and measurement of outcomes



differ significantly among health plans, coverages, and providers; current measures are inadequate for the task (see above); and there is no data system available to support the uniform application of even useful measures across populations.

The strategic case for the “Medical Home” to establish uniform standards of care for all Coloradans.

The concept of “medical home,” first promoted by the American Academy of Pediatrics and now endorsed by all four of the leading national primary care providing organizations (Appendix H), establishes standards that reflect the quality principles of the IOM as a critical strategic initiative for improving the quality and cost-effectiveness of healthcare for all Coloradans – keeping them out of emergency departments and hospitals. As originally defined, the medical home for infants, children, and adolescents (and adults) ideally should be accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective. Medical care may be provided in various locations, such as a physicians’ office, Federally Qualified Health Center (FQHC) hospital outpatient clinic, school-based and school-linked clinic, community health center, and health department clinic. Regardless of the location, a medical home for infants, children and adolescents should have the following characteristics:

- Provision of primary care, including but not restricted to:
acute and chronic care, preventive services: breastfeeding promotion and management, immunizations, growth and developmental assessments, appropriate screening (vision,

hearing and dental), healthcare supervision, patient and parent counseling about health, nutrition, safety, parenting, and psychosocial issues.

- Assurance that ambulatory and inpatient care for acute illnesses will be continuously available from an informed provider (24 hours a day, 7 days a week, 52 weeks a year).
- Provision of care over an extended period of time to ensure continuity. Transitions, including those to other pediatric providers or into the adult healthcare system, should be planned and organized with the child and family.
- The child's or youth's and family's medical, educational, developmental, psychosocial, and other service needs are identified and addressed.
- Identification of the need for consultation and appropriate referral to mental health specialists, pediatric medical subspecialists, surgical specialists, and dental providers. In cases in which the child enters the healthcare system through these specialists, referral to a primary care provider is needed.
- Primary care providers, medical and surgical subspecialty providers, and mental health providers, oral health providers should collaborate to establish shared management plans in partnership with the child and family and to formulate a clear articulation of each other's role.
- Interaction with early intervention programs, schools, early childhood education and child care programs, and other public and private community agencies to be certain that the special needs of the child and family are addressed.
- Provision of care coordination services in which the family, the physician, and other service providers work to implement a specific care plan as an organized team.
- Maintenance of an accessible, comprehensive, central record that contains all pertinent information about the child, preserving confidentiality.
- Provision of developmentally appropriate and culturally competent health assessments and counseling to ensure successful transition to adult-oriented healthcare, work, and independence in a deliberate, coordinated way.

Provision of a medical home is a measurable concept. Continuity and accessibility for preventive and acute primary healthcare are several of its key ingredients. We can infer that these elements are present when the patient is seen for multiple, serial visits (both preventive and acute primary) at the same clinic or practice over time. Appendix F provides a list of other potential options for quality measures based on characteristics of the medical home. Through the Colorado Health Care

Outcomes Measurement and Improvement Consortium (CO-HOME) state agencies, providers, quality improvement experts, health plan representatives, and other stakeholders will need to decide what standards, and process or outcome measures will be used to establish standards and criteria to evaluate the quality of medical homes for all covered individuals. Thereafter, it will be essential to monitor performance of health plans in meeting those standards and to encourage and reward effective systems for providing quality healthcare.

Does the medical home improve outcomes and save money?

There is ample evidence that existing Colorado programs are not providing appropriate primary care as defined by HEDIS for many Colorado children and are not even attempting to implement the medical home definition. Approximately 14% of Colorado children are uninsured but many of them are eligible for public insurance programs. Of those who are eligible for Medicaid or CHP+, many are not enrolled; of those who are enrolled many are in the unassigned fee-for-service (UFFS) program, meaning that they may not have a primary care physician; and even those with a designated primary care physician may not be provided with the services that comprise the concept of the "medical home". There are measurable consequences of not having a site of consistent primary care. Immunization rates for Medicaid children without a medical home are lower than privately insured children; as a consequence, vaccine preventable diseases in children with public or no health insurance are two times higher than in children with private insurance in Colorado. Fewer than one third of Medicaid children without a PCP had an appropriate number of well child visits in the first 15 months of life. Fewer than one quarter of children had adequate access to a primary care provider in the first 2 years of life.

There are two very relevant examples of programs in Colorado that have shown that private practices can effectively provide a quality, cost-effective medical home: Rocky Mountain Health Plans (RMHP) and the Colorado Children's Healthcare Access Program (CCHAP). A program in North Carolina has shown that enabling private primary care providers to provide a medical home for Medicaid patients can save money for the state and improve health outcomes.

The structure and essential services of CCHAP are described in Appendix E. Quality and cost results for enrolled Medicaid children were obtained from data collected in the 7 CCHAP pilot practices, from the CICC database and from the patient database at Colorado Access, the managed care organization with which CCHAP partnered to do claims processing and to obtain data. The

data analysis was done in collaboration with researchers at the Colorado Health Outcomes program (Table 1 next page). Both quality and cost data were analyzed. In some instances, selected measures measured both quality and cost. In all instances improvement in the quality indicators and cost-saving was demonstrated.

Rocky Mountain Health Plan (RMHP)

RMHP has shown for decades that private practices can serve as quality medical homes for Medicaid and CHP+ children. RMHP Medicaid patients are cared for primarily in private practices. RMHP HEDIS guidelines for Medicaid patients are better than any other Medicaid category (PCPP, FFS, other MCOs). RMHP has served in an ASO-like role for Medicaid children in recent years and shown the ability to return a savings to HCPF.

Community Care of North Carolina (CCNC)¹⁰

CCNC is a program with 7 years experience in encouraging and enabling private primary care providers to provide a quality medical home for Medicaid and CHP+ children in North Carolina. PCPs received 95% of Medicare rates for visits and procedures, plus they received \$2.50 per member per month as a monthly case management fee. Two program evaluations conducted by independent consulting firms documented savings in the range of \$200 million in 2003 and \$250million in 2004. The patients received improved care under this program with HEDIS measures improving. The program saved \$120 per member per year in year two and \$338 per member per year in year three.

¹⁰ www.communitycarenc.com.

Table 1: Preliminary Colorado “medical home” results for children (CCHAP)

Type	Measures	Comparison
Process Measures	Immunization rates (2006):	Commercially insured children in CCHAP practices – 76% Medicaid children in CCHAP private practices -73% All Medicaid children in Colorado – 47%
	Preventive Care Visit Rate	Medicaid children in CCHAP private practices – 80% Medicaid children cared for in all healthcare sites – 60%
	Preventive Care Visit to Acute Care Visit Rate	Medicaid children in CCHAP private practices – 81% Medicaid children cared for in other healthcare sites – 49%
Cost measures		Average cost per child per year is significantly lower for children in CCHAP private practices than for children in healthcare sites and than children without a medical home.
Quality and cost measures	Emergency Room utilizations rate	Children in CCHAP private practices – 366 per 1000 children/yr Children in other healthcare sites – 619 per 1000 children/yr Children without a medical home (estimated from other states)-800
	Hospitalization rates	Children in CCHAP private practices – 18 per thousand per year Children in other healthcare sites – 25 per thousand per year
	Asthmatic visits to emergency department	Implementation of an asthma case management program reduced ED visits by 66% and hospitalizations by 75%
		Estimated savings per child from reduced ED utilization and reduced hospitalization compared to other sites is \$115 per child per year. We do not have the data yet to determine the savings per child compared to Medicaid fee-for-service. Estimates using data from other states is around \$200 per child per year.

The need for a robust, universal measurement system.

Even after uniform medical home standards have been established, a system is needed that will permit the stratified, comparative measurement of efficacy, effectiveness, safety, continuity, technical proficiency, and appropriateness of care rendered by any health plan participating in the care of Colorado's citizens.

The Colorado Hospital Association provides a limited precedent for such a system in its discharge data set consisting of a standardized administrative extract of hospital data; this system permits

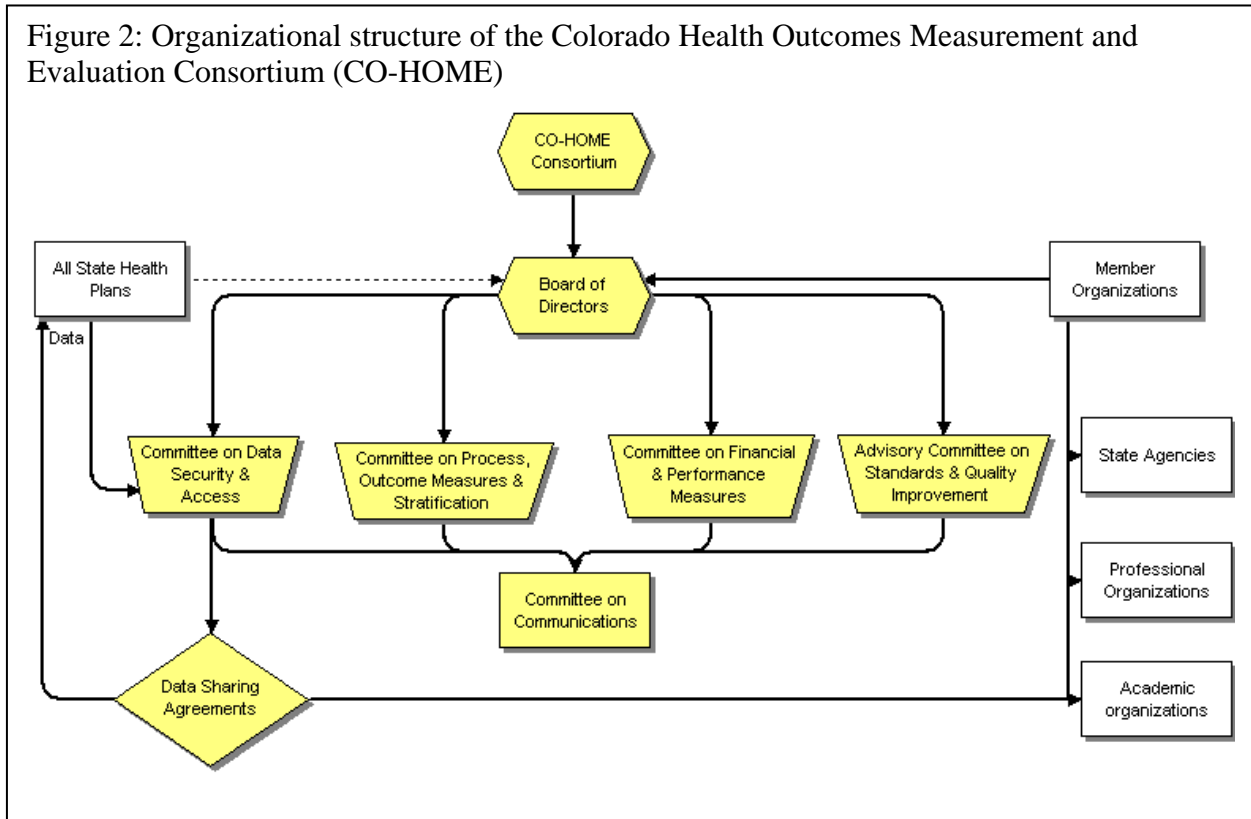
longitudinal internal comparison of measures, and more importantly permits comparison (in a non-competitive way) to other Colorado hospitals. It is limited by three major defects: it only contains hospitalization data; it does not permit continuous patient tracking; and it is not population based. Nonetheless, the CHA database has recently been utilized to measure the hospitalization outcomes of Colorado children with public or no health insurance as compared to those with private insurance (see Appendix B), demonstrating higher morbidity, mortality, and excess annual hospitalization charges (estimated as > \$120 million in 2005) in those with public or no health insurance and providing insight into race/ethnicity, geographic, and demographic factors, which will be increasingly important in the comparative measurement and improvement of health outcomes.¹¹

Relying on hospitalization outcomes and the limited HEDIS measures applied to proprietary health plan databases is insufficient for maximizing outcomes and the use of the healthcare dollar in Colorado.^{11,12} We propose a more robust structure – the Colorado Health Outcomes Measurement and Evaluation Consortium (CO-HOME) (Figure 2). CO-HOME would manage an inclusive database that contains HIPAA-compliant inpatient and outpatient claims data (and the potential for test results and prospective outcome data in the future) on all Colorado-covered individuals. CO-HOME would also be a collaborative process, capitalizing on a wealth of clinical expertise on measurement and outcomes that already exists in Colorado to design practical clinical measures that could be reliably used to improve standards of performance and measure the success of health plans and systems. CO-HOME would be financed by its member organizations.

¹¹ Todd, J., C. Armon, S. Poole, S. Berman. (2006). "Increased rates of morbidity, mortality, and charges for hospitalized children with public or no health insurance as compared with children with private insurance in Colorado and the United States." *Pediatrics* **118**(2): 577-85.

¹² Hayward, R. A. (2007). "Performance measurement in search of a path." *N Engl J Med* **356**(9): 951-3.

Figure 2: Organizational structure of the Colorado Health Outcomes Measurement and Evaluation Consortium (CO-HOME)



The CO-HOME Consortium (Figure 2) would be based on the structure of the Public Health Data Standards Consortium (PHDSC)¹³ -- the public/private organization responsible for the development of national HIPAA standards (Appendix I). Another model is the Massachusetts Health Data Consortium (Appendix J.). Given a similar structure, Colorado has a wealth of expertise (Table 2) that should be encouraged to participate as members and on the committees of CO-HOME to assist in managing its data system, advising appropriate authorities on medical home standards, and developing and evaluating effective measures of efficacy and efficiency of healthcare across all health plans and stratified populations. The importance of such a consortium in the success of any comprehensive healthcare system in Colorado cannot be overestimated. Without setting higher standards via the medical home concept, without better and more appropriate clinical measures, and without a comparative data system that transparently spans all health plans and populations, it is unreasonable to expect that any effort at comprehensive healthcare reform in Colorado can succeed in providing constantly improving outcomes and wise use of the healthcare dollar.

¹³ <http://www.phdsc.org>

CO-HOME committees will be staffed by qualified and interested representatives of its member organizations. The committees include:

Committee on Data Security and Access - creates standards (meeting all state and federal regulations) for data abstracts on all patient encounters to be submitted by all health plans and providers caring for patients in Colorado; manages the central data system; and defines and manages standards for data use by members and other authorized users.

Committee on Process, Outcome Measures, and Stratification - defines and evaluates validated, stratified measures of process and outcome to improve healthcare quality targeted to the needs of Colorado's healthcare system and the populations it serves.

Committee on Financial and Performance Measures - defines and evaluates cost and utilization measures of compliance with standards and efficient use of the healthcare dollar.

Advisory Committee on Standards and Quality Improvement - evaluates measures and advises state agencies on standards of performance and evidence-based mechanisms to improve care and either reduce or justify cost. Supplemented by CO-HOME's other committees, the ability to measure outcomes and utilization on a population basis is a critical tool for any evidence-based approach including clinical care guidelines.

Communications Committee - regularly communicates CO-HOME information and activities publicly via newsletters, annual reports, websites, and conferences.

Table 2: Examples of organizations in Colorado with relevant expertise to the structure and function of CO-HOME (not inclusive)

Category	Organization
State Institution	Department of Public Health and Environment Department of Healthcare Policy and Financing Colorado Division of Insurance
Academic	Colorado School of Public Health

Institutions and Programs	University of Colorado Health Science Center Colorado Health Outcomes Program Division of Healthcare Policy and Research -Dept of Medicine (UC) State of the Health of Colorado's Children Colorado Children's Healthcare Access Program
Foundations	Colorado Health Foundation Rose Foundation Piton Foundation Colorado Foundation for Medical Care Colorado Trust
Not-for-profit organizations	Colorado Children's Campaign Colorado Coalition for the Medically Underserved
Hospitals	Public Private (for profit, not-for-profit)
Health plans	To be determined by the type of system adopted
Professional Organizations	Colorado Medical Society Colorado Chapter of the American Academy of Pediatrics Colorado Chapter of the Academy of Family Physicians Colorado Regional Health Information Organization Colorado Clinical Guidelines Collaborative (CCGC) Colorado Hospital Association Colorado Community Health Network (CCHN) Colorado Health Institute
Private Sector Organizations	Colorado Forum Denver Metropolitan Chamber of Commerce

How, if at all, will quality of care be improved (e.g. using methods such as applying evidence to medicine, using information technology, improving provider training, aligning provider payment with outcomes, and improving cultural competency including ethnicity, sexual orientation, gender identity, education, and rural areas, etc.)? The mission of CO-HOME will be to develop a comprehensive health data system to address the health information needs of the State, for the purpose of improving the efficiency and efficacy of healthcare systems and health outcomes for all Coloradans. Essential to this mission is access to comprehensive, population-based data sufficiently robust to permit the ongoing measurement of clinically relevant process and outcome measures stratified to align provider payments with outcomes and to differentiate the special needs of unique populations including age, gender, race/ethnicity, geography. Currently this is not occurring in Colorado, nor will it unless a structure like CO-HOME is created. Quality will be immediately improved by setting medical home standards for all patients and for the participation of any health plan or system as has already been shown in Colorado by CCHAP and RMHP. Stratified population-based analysis of validated outcome measures will provide essential tools for the

evaluation of health plans and systems as well as efforts to improve outcomes. Given the long list of individuals and organizations in Colorado with interest and expertise in improving health outcomes, the creation of a statewide system to measure outcomes on a population basis will provide the impetus for continuous and ongoing creativity in the improvement of health care.

Efficiency:

Does your proposal decrease or contain healthcare costs? How? There is no doubt that comprehensive healthcare coverage of all Coloradans will increase overall health care expenditures (unless administrative costs and profits can be contained), however the key measure of value will be determined by the outcomes of healthcare divided by that cost - neither of which is being effectively measured at present. Colorado data shows that individual healthcare costs will be reduced on a per patient basis by assuring that every Coloradan has a medical home -- improving outcomes and decreasing cost by reducing emergency-room use and hospitalization (see "Does the medical home improve outcomes and save money?", page 12-13).¹⁴ Optimal allocation of resources will be achieved by evidence-based quality improvement facilitated by objective, comparative, population-based data analysis of clinically relevant process and outcome measures and cost.

To what extent does your proposal use incentives for providers, consumers, plans or others to reward behavior that minimizes costs and maximizes access and quality in the healthcare services? Please explain. One of the assumptions of the successful programs cited previously (CCHAP and RMHP in Colorado, and Community Care of North Carolina), each of which have successfully improved outcomes and decreased costs, is assuring access to a quality medical home by paying incentives that bring providers to break even with their fixed costs. In doing so, each have reduced overall per patient costs by reducing emergency department utilization and hospitalization. Varying somewhat on the healthcare system(s) selected, rigorous comparison of valid process and outcome measures allows the recognition of nonrandom variation that can be the focus of quality improvement and cost containment measures. For capitated contracts, a reduction in costs results in incentive savings. Improved performance results in a competitive advantage for

¹⁴ Todd, J., C. Armon, S. Poole, S. Berman. (2006). "Increased rates of morbidity, mortality, and charges for hospitalized children with public or no health insurance as compared with children with private insurance in Colorado and the United States." *Pediatrics* **118**(2): 577-85.

future contracts. The concept of "pay for performance" incentives can easily be implemented but only if appropriate process and outcome measures are evaluated across providers and populations.

Does this proposal address transparency of costs and quality? If so, please explain. The CO-HOME Consortium brings stratified, population-based, comparative data analysis on a defined claims data set to all Colorado health plans for the first time and makes this data and internal analysis available to a wide range of authorized analysts and organizations. The consortium, with appropriate approval of the insurance commissioner and HCPF, could have access to cost and denominator data that would allow transparency of cost as well. It would be expected to publish summary evaluations of the value achieved with the healthcare dollar expenditure on an annual basis.

How would your proposal impact administrative costs? Administrative costs and/or profit would become transparent if the adjusted direct costs and outcomes of client benefits could be estimated, creating a competitive force to minimize unnecessary expense.

Consumer choice and empowerment:

Does your proposal address consumer choice? If so, how? Consumer choice is impacted in that medical home standards that will be comparatively measured are mandated for all recipients. This ensures a high bar for a minimum set of services making consumer choice easier based only on additional services and costs above and beyond those implied by a medical home.

How, if at all, would your proposal help consumers to be more informed about and better equipped to engage in healthcare decisions? Comparative health process and outcome measures will be published yearly for all healthcare plans and providers, allowing consumers to compare plans.

Wellness and prevention:

How does your proposal address wellness and prevention? Medical home standards are defined to specifically address wellness and prevention, and specific measures will be created that appropriately measure consequent outcomes. For example, the timeliness and completeness of vaccination will be monitored for children to ensure adherence to the recommended vaccination schedule of the Colorado Department of Health and Environment (CDPHE). The frequency of

recommended preventive health visits can be measured and reconciled with outcomes. Effective services can be enhanced while ineffective services and costs can be reduced.

Sustainability:

How is your proposal sustainable over the long-term? The ongoing measurement and evaluation of meaningful process and outcome measures, reconciled with the costs of services provided, provide assurance that healthcare utilization will be continually optimized and the improved. It is expected in the short term that there will be significant per patient cost savings (decrease emergency department utilization and hospitalization), with a decrease in cost shifting attributed to the prevention and early treatment consequences of patients being enrolled in a medical home. This is not to imply that healthcare costs will not increase, but rather that they will be justifiable.

How much do you estimate this proposal will cost? How much do you estimate this proposal will save? Please explain. Data from the Colorado Children's Healthcare Access Program demonstrate that implementation of a medical home resulted in a \$115 per member per year initial savings achieved from significantly decreased emergency department and hospitalization utilization. The State of the Health of Colorado's Children program estimates that potential hospital charge savings for children with public or no health insurance in 2005 (if private insurance levels of morbidity could be achieved) were in the range of \$386 per member per year (appendix D.). The Community Care of North Carolina program for both adults and children saved \$120 per member per year in year two and \$338 per member per year in year three. These studies show, in different ways, that the medical home concept can decrease emergency department and hospitalization costs while improving health outcomes. This is predicated upon setting higher standards for primary and preventive care which will have attendant costs. Nonetheless it would appear that improving care for those already insured by insisting on medical home standards will potentially save money. Expanding coverage to those who are currently uninsured will increase costs depending on the systems of care implemented but with CO-HOME standards there is reasonable confidence that quality will be good and costs justified. With the use of system-wide utilization and outcome comparisons it is very likely that excessive administrative cost and/or profit will be competitively reduced.

Who will pay for any new costs under your proposal? Additional costs will be incurred through the addition of new enrollees (but not for existing ones) enrolled into a medical home (see

preceding question). The costs of CO-HOME, similar to that of the current Colorado Hospital Association database, will be offset by the consortium members.

How will distribution of costs for individuals, employees, employers, government, or others be affected by this proposal? Will each experience increased or decreased costs? Please explain.

Increased costs for supplementary medical home services are offset by in-kind provision of service by existing community resources (see Appendix E). Actual costs of the enrollment will be determined by the type of plan, its administrative costs, and profit (if for-profit).

Are there new mandates that put specific requirements on payers in your proposal? Are any existing mandates on payers eliminated under your proposal? Please explain. All payers will be required to meet medical home standards and submit a defined data abstract to the CO-HOME on a quarterly basis.

How will your proposal impact cost-shifting? Please explain. Cost shifting occurs when providers incur costs that are not reimbursed by the primary payer. This is currently considered one reason for rapidly rising private insurance costs -placing a heavy burden on the private sector as well as the compromised providers. It is assumed that any successful healthcare system that is adopted must reimburse providers at least at a break-even (not-for-loss) level, thus eliminating any justification for cost shifting. The CO-HOME outcomes measurement system additionally will provide ongoing measurement of process and outcome that can be used to compare and justify utilization differences.

Are new public funds required for your proposal? New funding will likely be necessary to assist in the development of CO-HOME. Because it is a public-private consortium, it is expected that much of the funding will come from private sector partners and potentially from foundations interested in helping the new collaborative measurement system get started.