Innovative Prevention Programs
for Improving Children's Healthcare in California

The importance of promoting innovative solutions
Foreword from the National Initiative for Children's Healthcare Quality (NICHQ)

Since 1999, the National Initiative for Children's Healthcare Quality (NICHQ) has worked to improve child health by improving the systems responsible for the delivery of children's health care. What we have learned—repeatedly—over the past decade is that these systems are not now up to the task of addressing the health challenges of our children at the start of the 21st Century. Although incremental improvements in system performance can make a real difference, to truly meet the full spectrum of children's 21st century health needs requires new models and new approaches.

The new approaches that are needed must perform the traditional functions of health care—diagnosis and treatment of acute illness, management of chronic illness and provision of clinical preventive services—far more effectively and efficiently, with grater reliability, than we do now. In addition, they must broaden the purview of health services to encompass and engage with community-wide prevention and health promotion, and address the full frame of health—emotional and developmental as well as physical. This will likely entail fundamental redesign of provider roles and organizational structures; of the relationship between providers, consumers (families), government and communities; of means of communication; and of means of payment.

This project, identifying **Innovative Prevention Programs for Improving Children's Healthcare in California**, represents an important step in this regard. In launching this project—intended to identify innovative programs that could better address these health needs—we found we first needed to define the criteria for a promising innovation, narrow the focus for those areas in which innovation was sought, and then actually find the innovative programs. Each step provided challenges and, in addressing them, provoked new thinking about the nature of innovation in child health and engendered a much deeper understanding of how to promote and sustain promising programs. We know the insights we have gained can inform the field of innovation in health care more broadly.

This project has been undertaken in partnership with, and on behalf of, The California Endowment, which has been an early promoter of the power of prevention in changing health outcomes. The Endowment launched this program to identify exemplars that could inform the activities of the 14 communities in its *Building Healthy Communities* initiative. Through the Building Healthy Communities initiative, the Endowment seeks to support the development of communities where kids and youth are healthy, safe and ready to learn. This goal is fully consistent with NICHQ's vision of a world in which children receive the health care they need.

We are truly grateful to our advisory committee members whose robust dialogue informed and shaped our thinking, and the many stakeholders and innovators who shared their experiences and advice with us. Without the work of these innovators, we would have no stories to share or examples that provide such promise for our future.

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Identifying Innovative Prevention Programs
for Improving Children's Healthcare in California

Project Background

The National Initiative for Children's Healthcare Quality (NICHQ), with support from The California Endowment, undertook a year-long effort to identify innovative programs improving children's healthcare in California. The project focused on programs that address prevention and early intervention, promote clinical practice innovations and roles for health system providers that integrate their services with those of public health and community well being, and directly address disparities among racial, ethnic, and underserved populations.

There have been many facets to this project. We started by addressing the thorny issues surrounding defining "*innovative*" and identifying requisite program characteristics necessary to meet that definition. We then obtained recommendations of California programs that fulfilled some or all of these characteristics and created profiles summarizing their key components and innovative strategies. As we worked, we studied both national program models and these California efforts to develop a greater understanding of the forces necessary to turn innovative ideas into successful, sustainable programs. By assessing common themes across programs, we have identified key levers of change and successful implementation ingredients. We have also gained a much deeper understanding of the barriers to creating and sustaining innovative new programs and insights to support the framing of future strategies for how healthcare organizations, funders, and a range of other stakeholders can work together to promote the creation and spread of promising new interventions.

PROBLEM STATEMENT
The quality of health care provided children has significant, long-term ramifications for their futures. Educational attainment, future income-earning potential, and life expectancy are all inextricably tied to an individual's health status, and as such ensuring the availability of high-quality health care for children is a social imperative.

A recent assessment of children's health care showed dramatic gaps in the quality of care, with the right services carried out less than half the time.[1] The problem is compounded for disadvantaged children, where both national studies[2] and evidence from data specifically for children in California[3] show disparities for asthma, diabetes, behavior problems, and dental care. Children in all five minority groups were significantly less likely than whites to have visited a physician or been given a medical prescription in the past year, with the racial and ethnic disparities shown to be significant, even when access-related factors, such as insurance status and income, are controlled.

MISSION
Experience from decades of efforts to improve health outcomes for children and reduce disparities in those outcomes has consistently demonstrated that truly meeting the full spectrum of children's health needs requires a broader view of health care, with new models and new approaches dramatically different from usual practice. Identifying and breaking down the barriers limiting access to services, engaging the entire family and the

community in finding solutions, improving capacity and more effectively applying health information technology, and fundamental redesigning of provider roles and payment mechanisms that now restrict them must all be employed.

New frameworks and models of care addressing the broader context of community and health system interactions offer great promise.[4,5] The goal of this initiative has been to identify and promote the visibility of those innovative programs in California that incorporate key transformational elements and by doing so strengthen the quality and accessibility of primary and preventive health care for children and families in the state.

APPROACH

To undertake this project, NICHQ combined literature reviews, input from an Advisory Committee and other experts, and stakeholder interviews. Through this process, we first identified the characteristics of innovative programs, and then obtained recommendations of California programs that fulfilled some or all of these characteristics. The programs identified are presented within the context of national activities that are demonstrating success, and are designed as a sampling of promising activities that can be drawn upon by health systems and communities seeking to improve children's health outcomes and reduce disparities.

DEFINING INNOVATIVE

Innovation is generally understood as the successful introduction of a new and useful thing or method:

$$Idea \rightarrow Shared\ Insight \rightarrow Invention \rightarrow \underline{Innovation}$$

Innovation may involve incremental changes thru small steps, dramatic changes creating major improvements, or in the extreme transformational changes. This initiative has considered projects across that spectrum, recognizing that truly *transformational* programs are rare.

The Advisory Committee debated where in the developmental spectrum (concept, pilot testing, proven strategy, maintenance, dissemination…) projects should fall to be considered innovations, focusing on two critical issues: what level of proof constitutes "useful" and what level of persistence constitutes "successful introduction." Although the clear preference of the committee was for inventions to be scientifically proven to be truly considered innovations, we have applied the definition more broadly through this report, identifying *having achieved some positive results* as an important selection criterion, but allowing that highlighting *promising* programs also offers an opportunity to stimulate discussion about creative new strategies for tackling intractable child health issues where persistent disparities exist. We have also highlighted opportunities for learning from innovative programs that have not been sustained by including a few examples of these within our program profiles.

The discussions surrounding the level of evidence required for program inclusion spurred very productive debate on both the limited number of truly innovative model programs incorporating transformational elements and also the tension for funding to support emerging new programs versus sustaining ongoing ones. In response, the Advisory Committee emphasized the importance of innovations in ways to change practice, including promoting organization-wide culture changes, and also innovations in how to maintain and spread successful programs that are already providing solutions as

additional categories of innovation. The importance of considering the issues of sustainability within a broader context of how best to promote innovation itself must become integrated into ongoing funder strategies.

FINAL NOTES
The profiles included in this report are meant to serve as a representative sample of promising programs. While we have included a broad cross-section of programs covering a range of key themes and focus areas, due to time constraints and the already extant availability of information on some domains, important areas and dimensions are under-represented. Most notable in this regard is the exclusion of early childhood development programs, because the accomplishments of such programs have been described elsewhere.[6] In addition, examples of emerging business and service delivery models, including retail clinics and urgent care clinics, among others, are not included as—while innovative—they do not directly address the holistic preventive frame emphasized here

Several cautions are in order when you are reviewing profiles. As noted above, we have not set a requirement relative to their implementation stage, and each program should be reviewed within the context of its identified status, whether as an early pilot, a more advanced project with some positive evaluation results available, a mature project being spread beyond the initial phase, or one of the small set of projects that are no longer being sustained. In addition, these innovative programs are fluid by their very nature. Although these profiles capture their current status, changes in program leadership often occur, and as they continue to evolve, many experience changes in program components and major directions and even the program name they go by.

With these cautions in mind, our hope is that this sampling of promising activities and the reflections on stimulating innovation will be drawn upon by health systems, community groups, and funders seeking to improve children's health outcomes and reduce disparities.

REFERENCES

[1] Mangione-Smith R, DeCristofaro AH, Setodji CM, et. al. The quality of Ambulatory Care Delivered to Children in the United States. *N Engl J Med.* 2007(Oct);357(15):1515-23.

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[3] Holtby S, Zahnd E, Lordi N, et. al. Health of California's Adults, Adolescents, and Children: Findings from CHIS 2003 and CHIS 2001. UCLA Center for Health Policy Research. May, 2006. www.healthpolicy.ucla.edu/pubs/files/Hlth_CAs_RT.062906.pdf.

[4] Halfon N, DuPlessis H, Inkelas M. Transforming the U.S. Child Health Care System. *Health Aff* (Millwood). 2007;26:315-30.

[5] Bergman DA, Plsek P, Saunders M. A High-Performing System for Well-Child Care: A Vision for the Future. New York: Commonwealth Fund #959. www.commonwealthfund.org/publications/ publications_show.htm?doc_id=417069.

[6] See in particular the work on early childhood program effectiveness and evidence-based best practice models from the UCLA Center for Healthier Children, Families, & Communities (www.healthychild.ucla.edu) and The Center on the Developing Child at Harvard University (www.developingchild.harvard.edu).

Profiles of Innovative Prevention Programs for Children in California

Program: **Peninsula Family Advocacy Program: Medical-Legal Partnership**
(East Palo Alto, San Mateo, and other clinic sites)

Lead contacts: *Dana Weintraub, MD, Medical Director (Lucile Packard Children's Hospital)*
Brooke Heymach, JD, MSW, Legal Director (Legal Aid Society of San Mateo County)
Ellen Lawton, JD, Executive Director, National Center for Medical-Legal Partnership

Topic area: Medical-legal partnership

What's innovative:
- Leveraging resources of non-traditional partners. By adding trained lawyers to work as part of the healthcare team, able to address issues linked to the community and home environment.
- Specific strategies to address physician hesitancy to initiate discussions of underlying conditions connected to their patient's poverty especially when they can't do anything to fix the problems. Promotes environmental screening by offering a process for addressing housing conditions and other issues impacting their patients' health outcomes.
- National program support for mentoring physician champions, who are deemed integral to program success. Also, support through sharing of training materials on legal and policy issues, implementation strategies, and evaluation measures.

Program Description: The Peninsula Family Advocacy Program (FAP) provides on-site legal services to support low-income families and pregnant women in addressing unmet legal needs that often present barriers to their children's health outcomes. Pediatricians at Lucile Packard Children's Hospital (LPCH) and Ravenswood Family Health Center (Ravenswood), an East Palo Alto community health center, and healthcare providers at San Mateo Medial Center (SMMC) and its prenatal clinics are provided background understanding of legal issues affecting patients, taught how to screen for family legal needs, and then refer them to the FAP. Law advocates, under the auspices of the Legal Aid Society of San Mateo County, are trained to work as part of the healthcare team. They address civil legal issues including: housing (habitability, landlord disputes), eligibility for public benefits programs (Medicaid/SCHIP, SSI, Food Stamps, TANF), education (special ed/IEP), family law (domestic violence, custody, birth certificates), and immigration (public charge, U-Visa, VAWA). By being available on-site, they are able to immediately start case files, educate families of their legal rights, and often provide redress before the legal issue escalates to a legal emergency.

Cost: FAP runs on an annual budget in the $200K range. This includes a full-time project coordinator, legal director, medical director (0.10 FTE protected time), part of Legal Aid's pro bono coordinator's time, and several part-time legal internships. In-kind support of staff time, office space, and services are also provided by all three of the key project partners.

Funding sources: This initiative is currently funded in part by the National Center for Medical-Legal Partnership, Lucile Packard Children's Hospital, the Philanthropic Ventures Foundation, the Silicon Valley Community Foundation, Palo Alto Community Fund, the Junior League of Palo Alto Mid Peninsula, California Breathing Asthma Program of the Department of Public Health, and the Irene S. Scully Family Foundation. The California Endowment funded FAP from 2004-2007. National Center funders include RWJF, W.K.Kellogg Foundation, Public Welfare Foundation, and The Atlantic Philanthropies, with Atlantic currently funding a 2-year evaluation.

Year started: FAP was initiated in 2004. It follows the Medical-Legal Partnership model pioneered by pediatrician Barry Zuckerman at Boston Medical Center, and leverages support offered by the funded national replication program.

Population served: The program serves low-income families whose children are seen at LPCH and Ravenswood, a federally qualified health center (FQHC), and pregnant women who are seen at SMMC and its clinics. Ravenswood's patient population includes a high proportion of uninsured and new immigrants, from the low-income neighborhoods of East Palo Alto, the Belle Haven community in Menlo Park, and the North Fair Oaks section of Redwood City, with 92% African American, Latino or Pacific Islander.

Evaluation/Effectiveness: Individually and collectively, medical-legal partnerships nationally are determining the best way to measure the impact of preventive legal services on child health. FAP's 30 month pilot study supported by TCE demonstrated increased awareness and use of free legal services, increased access to food and income supports, decreased frequency of hospitalization and improvement in reported child health and well-being. Trends towards improvement were seen for indicators of well child care, immunization status and avoidance of healthcare. The study also demonstrated high patient/client satisfaction with integration of legal services in the clinical setting. Our results also highlighted that most participants had recurring issues; this likely reflects the social, economic and educational challenges faced by the low-income, largely immigrant population served by FAP. Other MLP evaluations have measured changes in acute care and emergency room visits, access to primary and specialty care, and environmental stressors. A pilot study of MLP assistance to improve home environments for children with asthma showed reductions in oral steroid use, a 94% drop in ED visits for asthma, and decreased reported seriousness of lung disease. Another pilot study demonstrated decreased self-report of stress for cancer patients following MLP intervention. A few MLPs have also performed cost-benefit analysis of their MLP, demonstrating that healthcare recovery dollars may cover the cost of the MLP.

References:
Medical-Legal Partnership Annual Site Survey. March 2009. www.medical-legalpartnership.org/sites/default/files/page/2008%20MLP%20Site%20Survey%20Report.pdf
Zuckerman B, Sandel M, Lawton E, Morton S. **Medical-Legal Partnerships: Transforming Health Care.** *The Lancet.* 2008, 372: 1615-1617.
Zuckerman B, Sandel M, Smith L, Lawton E. **Why Pediatricians Need Lawyers to Keep Children Healthy.** *Pediatrics.* 2004;114:224-28.

Discussion: The Medical-Legal Partnership model has now been implemented at over 160 hospitals and health centers across the country, including 10 programs at 20 sites in California. Analysis of these replication efforts has identified the following key success factors:
- *Strong MD leadership*: physician champions train healthcare staff on medical-legal issues affecting health, participate in regular discussions of cases, and provide consistent visibility and support by healthcare staff and leadership.
- *Legal influencers:* A local legal aid society usually leads the MLP. In addition, strong relationships with local law firms and the hospital's legal department often foster increased financial support and collaborative advocacy.
- *Dedicated legal staff:* MLPs combine input from legal-aid agencies, pro-bono lawyers, and law schools. Due to the need to have enough funding to have dedicated lawyers working on the project; programs that run solely with pro-bono lawyers lack continuity and have had less success.
- *Passion is key:* MLPs have followed a range of organizational models and been implemented in different settings, with passion for the mission of addressing the social determinants and working across disciplines the overriding success factor.
- *This is a leveraged service model, in that legal aid is an already-existing entity that is trained to address the social determinants and primed to work with vulnerable populations in the health setting with the right incentives and leadership.*

Program:	**ACCEL: Access El Dorado Care Pathways**

Lead contacts:	*Sandra Dunn, ACCEL Program Director; Kim Dickson, Care Pathways* *John Lehrman, MD, Marshall Center for Primary Care*

Topic areas:	Medical home, care coordination, health information technology

What's innovative:
- Development of standardized work processes, responsibilities and accountabilities across multiple agencies and provider groups
- Enabling technology allowing patient hand-offs to occur in real time to agency representatives with the necessary reference information to perform and document their patient support responsibilities or generate time-triggered follow-up; in few places can health facilities access electronic information from other agencies/organizations across a county
- Infrastructure promoting sharing of best practices among the county's community clinics and health agencies
- A countywide ACCEL Notification of Privacy Practices (NPP)

Program Description: Access El Dorado (ACCEL) Care Pathways is a personalized care management program designed to increase access to primary and specialty care and establish medical "homes" for underinsured and uninsured children. The county-wide collaborative has enabled cross-agency cooperation and communication through the development of web-based **Care Pathway** systems, interagency case management programs that consist of a series of shared, coordinated, and standardized steps that support:

 --enrolling children under 300% of FPL in some form of healthcare **insurance coverage**
 --creating **medical homes** and ensuring that they are being utilized
 --coordinating **pediatric mental health consults**
 --addressing issues for **newborns** (healthcare coverage, establishing a medical home, and
    receiving screenings and preventive healthcare services over the first 8 months)

Community Health Workers advocate for each patient that enters the system, overcoming barriers to their getting care, providing health information, and working with the medical providers to ensure patient visits are completed. Families who would otherwise use the hospital emergency room are assisted in finding a regular source of primary care for their child and mental health assessments are being completed and communicated back to PCPs much more reliably. Forging partnerships with local physicians has led to their taking on more publicly-insured patients.

The underlying HIT systems supporting this work include a **centralized registry** of patient demographic data and pathway status that can be shared among authorized providers, as well as reminder systems for ensuring patient visits are completed.

Cost: Annual budget for the Care Pathways program is approx. $650K. Staffing leverages existing Public Health Department resources (2 health education coordinators and 4 CHWs, with Pathways generally representing half-to-two-thirds time). An independent .5 FTE *Care Pathways Manager* (MPH/RN-level) oversees program activities. Significant contributions without direct salary allocations are also made by **ACCEL Program Director,** 2 *Physician Champions*, a Provider Capacity workgroup, a Steering Committee leadership group that makes critical business decisions and staff users of the Care Pathways technology at the different participating agencies.

Collaborators: This collaborative brings together El Dorado County Health Services Department (Public Health and Mental Health Divisions), two hospitals (Barton Memorial and Marshall

Medical), two rural/tribal clinics, one FQHC, and hospital affiliated medical provider groups.

Funding sources: Tobacco Master Settlement funds, First 5 El Dorado, $1.8 million *HRSA Healthy Communities Access Program* (2003-2006): $1.5 million *AHRQ Health IT Implementation* (2004-2008): Blue Shield of California Foundation, and California HealthCare Foundation, plus significant staff time contributed by all participating organizations.

Year started: Planning initiated in 2002; organization formally established in 2004.

Population served: Uninsured and underinsured children in rural El Dorado County (northeastern CA); a seasonal Hispanic population adds significantly to unmet healthcare needs in the county.

Evaluation/Effectiveness:

Obtaining Medical Home Care Pathway: 273 children (82%) who sought care in the hospital ED for a non-urgent clinical condition, and who did not already have a primary care physician, successfully secured a primary care provider and were seen by that clinician at least one time. Only 37 percent of the children on this pathway who were previously classified as moderate to high utilizers of the ED continued to be heavy users after program enrollment.

Pediatric Mental Health Referrals Pathway: 82 children with challenging mental health needs enrolled; 54% successfully completed pathway, which requires the child to see the specialist and the referring provider to receive and review the child's mental health treatment plan from the psychiatrist. Result is well above national rates for connecting to services.

Newborn Medical Home Pathway: 169 newborns enrolled; so far, 71% have secured a medical home with its associated 8-month preventive care package.

References: See ACCEL program materials at **www.acceledc.org**

Discussion:

- *Leveraging national model:* ACCEL builds on the innovative **Community Health Access Project (CHAP)** Pathways Model developed by Mark and Sarah Redding, MD in Ohio (www.chap-ohio.net). The CHAP model has had great success engaging business funding support for outreach with at-risk populations. The pay-for-performance model components in place that link payment to completion of actual service delivery steps as specified on the detailed care pathways model have resonated with the business community.

- *Replication issues:* Project initiation requires long-term planning – the technology infrastructure enabling multiple agencies to coordinate care requires addressing a wide range of IT system access and data compatibility issues, while getting cross-agency agreements on privacy notification and identifying final authority for each pathway step is complicated. Once initial policies and cross-agency cooperation has been established, adding new Care Pathways takes 6-9 months (multiple Agency input to define and test pathway steps). There is a need to ensure that any problem selected for pathway development happens often enough to warrant the time investment required.

- *Organization/governance issues:* Note benefits that resulted from having neutral contract consultants assume oversight/administrative roles. Leadership on specific program components then allocated to different agencies; each hospital took responsibility for a set of different tasks.

- *Next steps:* ACCEL is now embarking on improved specialty care access programs modeled in part after the mental health consult pathway and adoption of a more fully-functioning countywide clinical health record sharing system for all patients in El Dorado County.

Program: **Sebastopol Community Health Center**
Patient Centered Medical Home (PCMH)

Lead contact: *Jason Cunningham, DO, Clinic Director*

Topic area: Health IT/office practice re-design, medical home

What's innovative:
- Use of information technology throughout the care visit, with design strategies supporting improved communication with the patient about medications and follow-up care required
- Embedded reporting facilitates generating lists of patients due for tests/procedures, creation of patient registries, and population-based QI and utilization analysis
- Remote access of the EHR makes possible leveraging resources from other clinics, allowing nurse case managers from another clinic to oversee patients with complex medical needs

Program Description: Sebastopol Community Health Center was opened in January 2008 as a satellite clinic of West County Health Centers, a Federally Qualified Health Center (FQHC) in Sonoma County. The clinic was created in response to the large number of non-urgent care visits that were occurring at Palm Drive District Hospital in Sebastopol; residents in this rural area had no other local source for care. The hospital made available space for the office and West County decided to use the opportunity to pilot clinical office practices under a patient-centered medical home model.

Adoption of information technology was embedded into the clinic design. West County is part of the Redwood Community Health Coalition; which is embarking on an ambitious electronic health record project using the *eClinicalWorks* application, so the clinic became a pilot implementation site. The eClinicalWorks system is used for patient records, with supports for patient registries, care protocols and tracking system performance (e.g. well-visit rates, immunizations). There is an automated vitals machine, as well as linkages to their lab company, eliminating manual data entry. The care team coordinators use tablet computers available in exam rooms. No paper charts exist. By listening to patient/family input, they have evolved strategies for computer placement in the office and building its use into the clinician-patient dialogue.

The clinic is staffed by a family medicine clinician, an FNP, a Medical Assistant (MA), and a front office staff person, with administrative and billing support provided by West County's other clinics. The care management approach uses a "care teamlet" model, drawing on components from Dr. Tom Bodenheimer's model (UCSF Center for Excellence in Primary Care). The medical assistant serves as care team coordinator, overseeing day-to-day patient flow. Morning "huddles" are used to improve communication and responsiveness to patient needs. A patient summary within the EHR is updated at the point-of-care, with the care coordinator making follow-up appointments, referrals, and lab orders, then printing out an After-Visit Summary that the MA gives to the patient as part of a formal patient education and discharge planning process.

For pediatric populations, the EHR's capabilities include identifying needed well-visits and immunizations, with a disease registry for asthma patients activating ongoing care and population management. Access to the EHR from the local hospital ER is designed to improve safety and efficiency for these patients as well.

Leveraging resources from the other clinics – since Sebastopol does not yet have enough patient volume to support its own nurse case manager, it assigns nurse case managers from another West

County clinic to oversee patients with complex medical needs, which remote access of the EHR makes possible

Cost: The hospital made available a 3,000 square foot office. Start-up costs were limited to modest remodel and medical and electronic system equipment purchases. Currently, the clinic is operating as an intermittent clinic of West County's Russian River Health Center and is open just 20 hours a week while applying to become a fully licensed site.

Collaborators: West County Health Center's Russian River and Occidental Health Centers, Palm Drive District Hospital, and the Redwood Community Health Coalition.

Funding sources: Internal funding from the parent FHCQ and in-kind support from the hospital.

Year started: The clinic was opened in January, 2008.

Population served: Sebastopol is an isolated community in Sonoma County with no real local access to primary care providers prior to the clinic's opening.

Evaluation/Effectiveness:
- Too soon to tell results for patient outcomes, but the rigor provided by the EHR tracking systems is ensuring adherence to care management guidelines as well as easy access to reports on outstanding lab tests and specialist referrals, needed well-visits and immunizations.
- Office efficiencies are constantly under evaluation. Currently, new patient and preventive visits are running 30 minutes, routine office visits 20. The patient panels are just being built up; will be comparing their ability to support more than the 1,200-1,500 patients per FTE clinician at their other clinic sites.

References:
See analysis of the patient-centered medical home components of Bodenheimer's model and the TransforMED pilots:
- Bodenheimer T. **Coordinating Care: A Perilous Journey Through the Health Care System.** *NEJM*. March 6, 2008;358(10):1064-1071.
- Lewis M. **Medical Home Model Improves Efficiency, Docs Say - 32 Practices Tried out the AAFP's TransforMED Model.** *Modern Medicine*. Aug 15, 2008.

Discussion:
- Providing team care coordinators with non-direct-patient care time to co-manage panels seen as key ingredient to success. Efficiencies gained through use of the EHR and keeping overhead low key to allow funding these care coordinators.
- Demonstrating that advanced patient-centered medical home office practices can work within a safety net provider environment. Now spreading EHR to two other clinics (Russian River and Occidental), eventually also to others in the Redwood Community Health Coalition.
- There is a major advantage to implementing this advanced office system model at the start up of a new clinic. As the AAFP TransforMED National Demonstration Project evaluation showed, achieving multiple changes at existing clinics within a two-year period was very difficult. Initial work to create a climate for change within an existing practice took a minimum of 6 months; trying changes without the pre-work, runs the risk of actually doing the practice harm. (Terry McGeeney, President/CEO of TransforMED; in Lewis 2008)
- Another primary care redesign effort that is successfully integrating the Bodenheimer model with elements from the Wagner Chronic Care model is the **Santa Clara Valley Health and Hospital System** pilot at its **Silver Creek Clinic** in South San Jose. Its successes in seeing patients within two days of acute visits, increasing screening rates, and improving diabetic patients' blood sugar and cholesterol levels was recognized with a California Association of Public Hospitals Top Honors award in 2008 in the category of Coordinated Systems of Care.

The mobile nature of many low-income families, from rural migrant farm worker populations to homeless and transient populations in urban centers, makes continuity of care a significant healthcare issue. Although the promise of better outcomes that integrated electronic and personal health records offer may actually threaten to *widen* health disparities, given the lack of access to and limited use of Internet services by low income populations as well as the barriers monthly and/or other usage costs charged by for-profit service providers impose, innovative programs leveraging personal health record (PHR) systems are successfully supporting disadvantaged populations.

A recently-released report offers some important lessons from early safety-net providers' EHR/PHR implementations, highlighting special needs for patient populations such as migrant workers and homeless people and identifying a set of factors that must be addressed for successful implementation.[1]

The **Migrant Clinicians Network (MCN)** has developed a centralized data repository to store prenatal care records of pregnant migrant workers. Outreach to pregnant women through the national MCN Health Network program links them to obstetrical care, assists in setting up their PHR and obtaining their authorization to release their medical records, and supports referrals to services when they move to a different area. The women are given a wallet-sized health network card with a toll-free number that they can call for support and new care providers can also call in to request a transfer of medical records. The program includes health network associates who make follow-up calls to ensure the women access care through a 6-week postpartum visit.   Access to these medical records at the time of delivery offers potentially significant cost savings, avoiding the need for the hospital to take the precaution of treating the birth as a high-risk, or having a potentially complicated birth without documented prenatal care records.[2]

Another personal health record for migrant and seasonal workers was launched in 2003 in Sonoma Valley, California. The *MiVIA™* **Online Personal Health Record System** provides an electronic record and ID system supported by health promotores. The patient manages privacy and security via permissions embedded in the WEB-based system, and the system continues to support families who move across the country, accessing care from different providers and different locations. A growing number of provider sites (clinics, mobile medical units, rural hospitals and practices) are using this simplified, easy-to-use and cost effect electronic medical record system.[3]

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[1] Kanaan SB. **Safety-Net Providers Bring Patients Online: Lessons from Early Adopters.** California HealthCare Foundation. April 2009. (available at www.cfcf.org)

[2] See the Migrant Clinicians Network **Continuous Prenatal Care for Mobile Patients** (www.migrantclinician.org/services/prenatal.html) and the AHRQ Innovations Case Study **Bilingual, Culturally Competent Managers Enhance Access to Prenatal Care for Migrant Women, Leading to Potential for Improved Birth Outcomes** (www.innovations.ahrq.gov/content.aspx?id=1685&tab=1)

[3] The *MiVIA™* Online Personal Health Record System was developed jointly by Vineyard Worker Services, St. Joseph Health System, and Sonoma County Health and Community Development Resource Center (see www.mivia.org).

We have profiled here a program with a specific focus on children -- a pilot PHR system leveraging the *MiVIA/FollowMe.org* platform that is being used to create health records for the homeless and at-risk adolescents at two Sacramento youth centers (**Wind Youth Services** and **Linkage to Education**) as part of an ongoing effort to support increasing access of needed health services and follow-up care referrals. See also the promise offered by innovative systems that link disparate data systems from different agencies to create integrated health records for children in the foster care system, with the Trilogy Network of Care and Case Coordination System "**No Wrong Door**" WEB portal profiled below, as well as the **ACCEL El Dorado** profile.

Program: **Healthshack: A Personal Health Record Project for Homeless,**
Marginalized Youth (Sacramento)

Lead contacts: *Elizabeth Miller, MD, PhD, Pediatrics, UC Davis School of Medicine*
Cynthia Solomon, Follow Me Inc; Ellyne Bell, WIND Youth Services
Diane Littlefield, Sierra Health Foundation

Topic areas: Personal health record, adolescent health

What's innovative:
- Pilot personal health record (PHR) program for homeless and marginalized youth, leveraging platform designed for migrant health workers (*MiVIA.org / FollowMe, Inc.*)
- Youth engaged in designing the program, helping develop functionality to best meet their needs, identifying privacy considerations, and enhancing the interface
- Integrated with ongoing health promotion and care coordination services, supporting identification of outstanding healthcare needs to be addressed, such as missed immunizations, and training in how to navigate the health system
- Combines both health service and social service agency information

Program Description: This personal health record (PHR) pilot is in an early stage, evolving based on early implementation experiences. Using the safe haven created by **Wind Youth Services**, which operates an emergency shelter, day center, and on-site charter school in the North Sacramento area. There, public health nurses have been working to develop baseline health records for youth receiving services. As a personal health record using an existing web-based platform for migrant workers (*MiVIA.org / FollowMe, Inc.)*, the information will be accessible wherever the youth go. Youth health ambassadors are involved in designing the platform to be user friendly and relevant to marginalized youth, creating a marketing video, checking out local resources to add to the site (first ensuring they are youth-friendly), and encouraging other youth to get registered on the site. The youth have named the program "**Healthshack**."

Collecting the necessary medical records has proved challenging, but by securing basic documents—a copy of a birth certificate, legal identification, and a Social Security card—they have created a composite set of information that will be useful to youth on an ongoing basis; especially as they 'age out' of the system. Healthshack is intended to support not only future health system interactions, but also other needs such as employment, education, and housing applications. In the process of documenting the medical care each youth has received, the public health nurse identifies gaps in preventive care, and sets up appointments with appropriate care givers to complete necessary immunizations, for example.

Following the summer 2008 pilot, a second site was added to this project. **Linkage to Education**, a nonprofit supporting foster youth and juvenile offenders as they transition to adulthood, recognizes the benefit of this personal health information system in helping youth they are mentoring to have a secure location to keep important records.

Cost/staffing: Start-up costs were significantly reduced by leveraging the existing PHR platform, with initial catalyst funding from Sierra Health Foundation. This funding supports the software developer costs required to customize the system to their needs, to support local program coordination and to provide stipends for youths who have been integrally engaged in system design. The program is overseen by the adolescent physician and public health nurse already engaged in working with the agency's youth, with additional resources required for project management and research assistant time. Costs have been significantly reduced by using public

health nurse volunteers to work on-site with the youth to create their initial records and initiate referrals for missing services as needed. However, the project would grow more quickly with more consistent public health nursing time.

Collaborators/funding sources: The project is a collaboration of Wind Youth Services, Linkage to Education, UC Davis Adolescent Medicine, California State University Sacramento Public Health Nursing, and Sierra Health Foundation, which also provided initial catalyst funding.

Year started: 2008

Population served: Disadvantaged adolescents receiving services at Wind Youth Services and Linkage to Education (homeless/marginalized youth). PHRs are being created for youth aged 16-24, focusing on ensuring that records are initiated for all those at the younger end of this spectrum, but also explicitly covering older ages to help address the discontinuities experienced by emancipated foster youth.

Evaluation/Effectiveness:
Feedback from youth has been very positive. Several had had ongoing care needs (for example, following an automobile accident), and were never able to provide adequate records of past care when seeking additional treatment. With the few clients input thus far, in qualitative analyses, youth are enthusiastic about the health record and appear to be adhering to following up with a clinician. Visits completed, updated immunization records, and gaps in preventive services are all being tracked as this project unfolds.

Youth engaged in the project have suggested future enhancements including:
--simplified password-protection systems, addressing their inability to keep track of user codes
--addition of resource links to the website so they can immediately identify service providers
     when accessing their PHR (along with youth reviews of these local resources)
--expansion of the data collected to move the record beyond health-only data to encompass other
     details from a broader spectrum of social service agency needs

References:
Gluckman S, Shaw T. ***Improving Health Outcomes for Children in Foster Care: The Role of Electronic Record Systems***. The Children's Partnership. Fall 2008.www.childrenspartnership.org

Botts N, Horan TA. ***Bridging Care Communication and Health Management within Diverse and Underserved Populations***: ***Role for personal health information systems***. Americas Conference on Information Systems. August, 2008.

Discussion:
- *Addressing disparities:* Many have argued that personal health record (PHR) systems have the potential to actually widen health disparities, given low-income populations' lack of access to and limited use of Internet services on the one hand combined with barriers posed by monthly service fees or other access costs. Projects that combine access at service points where at-risk populations feel comfortable, along with transportability features that can enable users to access them even when they move to new locations, may open some of the continuity of care benefits to disadvantaged populations.
- *Replication:* As noted above, after just the summer 2008 Wind Youth pilot, a second site has joined in the development and implementation of this platform, as this PHR may be particularly helpful for youth in foster care and probation.
- *Privacy considerations:* A process for educating the students about privacy issues and then giving them control over what is entered into their PHR and authorizing release of various components is being developed. The public health nurses creating the initial record for each student teach them what information is appropriate to include and why, how to access their record, and when and how to authorize others to access it.

Program: **Trilogy Network of Care and Case Coordination System**

Lead contacts: *Bruce Bronzan, Founder and President, Trilogy*

Topic areas: WEB-based information/care coordination systems

What's innovative:
- WEB portal to promote coordination among health and human service programs; integrated system facilitates referrals by providers and agencies serving kids, linking those referrals into a personal health record maintained for the child.
- Low-cost strategy for maintaining up-to-date community resource lists and a library of pertinent articles and educational materials.
- Patient/family empowerment provided through education, information, access, and involvement.
- Content and system designed to meet low-literacy, low computer skill needs, is ADA-compliant and available in multiple languages.

Program Description: Trilogy Integrated Resources has developed WEB-based information solutions to support county public health and social service departments. Their Network of Care system is designed to integrate a broad range of information that individuals, families, providers, and agencies can access through a user-friendly, "one-stop" WEB portal. Their tailored portals for Kids (0-5) and Children and Family Services (0-18) provide a platform that offers all of the following:
- Service directory -- detailed listings of program resources and easy-to-use search features
- ***"My Folder"* personal health record** space that can include records of provider visits, lab reports, care plans, and other materials
- Ability to communicate directly with a case manager or other provider
- Information on insurance products in the county
- Library of health education materials and recent articles, sorted by category, with the ability to link those of interest into your "folder"
- Repository for support networks, who can post newsletters and announcements and host chat groups to connect their members
- A "legislate" section for tracking bills both at the state and federal level, as well as background information on how to advocate on policy initiatives
- Links to local, state, and national resources

Users are saved the cost of developing and maintaining a high-functioning Web site as well as provided the ongoing content of reference and library materials. Counties are able to replace existing community resources directories they had been maintaining. Mariposa and Merced Counties have integrated a suite of Trilogy Network of Care portals, with Marin, Placer, Contra Costa and Fresno Counties also utilizing the framework.

References: More information is available at: www.networkofcare.org/home.cfm

Discussion:
Computer access and training still may be a barrier to use, although some collaboration with libraries and using provider waiting rooms is supporting wider use. Evaluations to date have centered on tracking usage. The longer-term goal will be to evaluate how families, providers, and agencies working with children use the system to promote better, earlier accessing of services.

There is great excitement surrounding the potential for leveraging teens' and pre-teens' commonly-used information and communications technologies to support health promotion activities – using text messages, social networking and music download interface structures, and video games to engage kids in ways they are more likely to respond. A new, interactive teen E-health site from the **Chinese Community Health Resource Center** offers one example. Developed in conjunction with a group of teen advisors, it offers specifically-tailored messages and a Q&A forum allowing teens to get advice without having to be in face-to-face contact with a provider.

A second profile features the **"Asthma Assistant" self-monitoring pilot** implemented by **San Mateo Medical Center.** During our scan for innovative programs in California, it was referenced often for its creative integration of cell phone text messaging and real-time provider feedback to support participants in improving management of their condition on an ongoing basis. Although this pilot has not been sustained, it is included in our innovative program list as a promising strategy with some important lessons learned about implementing and sustaining new innovations.

Another example that merits mentioning is the **Living Profiles** prototype being developed in a partnership between Stanford School of Medicine, Children's Hospital in Orange County (CHOC), and Art Center College of Design (Pasadena). A set of multimedia personal health record (PHR) tools to help adolescents with chronic illness communicate with their providers and others about their health is under development. By tapping into teen behavior, such as texting and sharing music, the applications help teens track their progress, stay on top of their treatment, and network with their peers. The prototype tools are being built based on input from kids with chronic health conditions (hemophilia, juvenile arthritis), but the goal is to develop a PHR system to inspire teens with and without chronic health conditions. The prototype development was funded by an 18-month RWJF Project Health Design grant.

In the public health domain, **SexInfo** is a sex information and advice service for youth in San Francisco offered by the San Francisco Department of Public Health and Internet Sexuality Information Services (ISIS). Using text messaging, users can request information on everything from what to do if the condom broke, get help deciding if they're ready to have sex, and STD/HIV/AIDS prevention/information (www.sexinfosf.org). The city health department paid ISIS $40,000 to develop SexInfo and spent $20,000 to market it and about $2,500 a month to maintain it. A companion online service to facilitate access to free STD testing at 7 labs in SF has also just been released.

Innovative adaptation of electronic platforms like the increasing exergaming options (Nintendo's **Wii Sports** and **Wii Fit**, Konami's **Dance Dance Revolution**) to promote physical activity, the **GlucoBoy** glucose meter that can be inserted into a GameBoy to encourage compliance with medical regimens, as well as games designed to provide education and self-management skills (***Bronkie the Bronchiosaurus*** for asthma management, ***Escape from Diab*** for diabetes control, ***GetUpandMove*** comic book series for exercise and nutrition) are gaining in popularity. Real thought needs to be given to how healthcare providers can best link patients to these services to support improved patient outcomes; especially for disadvantaged patient populations with more difficult access to products that have been created by for-profit entities.

Program:	**Chinese Community Health Plan and Health Resources Center eHealth WEB Site**

Lead contacts:	*Ed Chow, MD, Medical Director and Dexter Louie, MD, MPA, JD, Associate Medical Director (CCHP); Angela Sun, MPH, Executive Director (CCHRC)*

Topic areas:	WEB-based information systems, reducing disparities

What's Innovative:
- Offer WEB-based health information resource center with culturally and linguistically appropriate health education materials. Materials are developed specifically for Asian populations, not merely direct translations of English materials.
- A separate interactive teen E-health site offers specifically-tailored messages and a Q&A forum allowing teens to get advice without having to be in face-to-face contact with a provider.
- Undertake provider education to promote prevention strategies that directly address the contributions of underlying cultural beliefs to patient behaviors, supporting development of alternative action plans.

Program Description: The Chinese Community Health Plan (CCHP) has been cited for its institution-wide commitment to developing innovative new strategies that integrate health system and community approaches. To support its outreach efforts, CCHP collaborated with community partners in the co-development of the Chinese Community Health Resource Center (CCHRC). The Resource Center offers multiple services, including a *patient navigation program* to assist area residents in taking full advantage of the healthcare system and social services available to them and a comprehensive *bilingual health information Web site* free to health plan members and the general public. Important features include health education materials developed specifically for Chinese families and cross-language references so a provider can undertake a search in English but print out materials in Chinese.

CCHP and the CCHRC have developed culturally and linguistically competent preventive health programs for pediatric and adolescent populations (as well as renowned work with adults, including model diabetes self-management and cancer awareness programs). Areas where they have been working to bring culturally-based education and outreach include teenage smoking, especially among Vietnamese, Korean, and Chinese sub-populations; obesity prevention that reflects on cultural perceptions and diet; addressing barriers to seeking mental health treatment rooted in the social stigma associated with depression; and changing adolescent views on family violence in the wake of cultural legitimacy of certain behaviors.

CCHRC hosts a separate, interactive bilingual WEB site, *Teens in Charge,* which provides reference materials on health topics as well as a Q&A zone that provides a confidential forum for addressing specific concerns. WEB content and responses to teens' questions are developed by their health educators and supporting RN staff, with professional expertise available from affiliated agencies members including licensed Marriage and Family Therapy providers with long experience working with the Chinese immigrant children and youth.

Together with several key partners (see collaboration list below), they are also leveraging innovative outreach strategies to bring educational messages on difficult topics to their target audience, including:
- A **Teen Dating Violence Prevention** Public Service Announcement (PSA), featuring

Asian teens and their parents discussing concerns and highlighting important underlying cultural issues, has been developed and made available for wide release, with distribution on *YouTube*.

- A children's story book, "*Brave Little Panda*", addresses **domestic violence,** featuring age-appropriate content (pictures and English side-by-side with Chinese) that helps show what abuse is and how to find an adult to tell. It is used as a teaching tool by day care providers and in parenting groups, opening a door to conversation on a difficult topic.
- A PSA addressing **emotional abuse** to help alert adults to the harm that can be caused by verbal abuse has also been created and made available on *YouTube*. The importance of this issue was reflected in a CCHRC survey of the perceptions of family violence in the Chinese community indicating that over 82% of respondents did not consider emotionally-based acts as a form of violence.

These community education efforts are bolstered by the Health Plan's provider training and community outreach activities. They stress the importance of student-based, student-driven models for tackling adolescent healthcare issues, training high school students to advocate for better policies, supporting school-based clinics, and providing physician expertise to promote change at the community level. Dr. Dexter Louie, the assistant medical director, offers physician training and tools to promote cultural proficiency, especially around obesity prevention, offering strategies for addressing cultural biases, such as family perceptions that rounded bodies are a sign of prosperity and good fortune, are discussed.

Cost/staffing: CCHRC operates with a fully bilingual staff, led by a full-time director and supported by a patient educator (masters' level) and patient navigator, with part-time RN and dietician support. Start-up grants funded the WEB site development, and shared resources help stretch program capabilities.

Collaboration/funding sources: The Health Resources Center was co-developed by the Chinese Community Health Plan, the Chinese Community Health Care Association (a physicians' independent practice association), and Chinese Hospital, with supplemental support also provided from the Asian American Network for Cancer Awareness, Research and Training (AANCART) at UC Davis Cancer Center.

The **Alliance Against Asian Domestic Violence (AAADV)**, a multi-disciplinary collaboration representing 18 community-based organizations, is a key partner with CCHRC in developing many outreach projects. **Verizon Wireless** grants funded development of the *Teens in Charge* site, and Verizon also joined with **New American Media's YO! TV** in supporting production of the Teen Dating Violence PSA. A current project engaging Asian teens around health issues is being co-sponsored by CCHRC with the SF Youth Commission's Health & Wellness Committee and the American Red Cross Bay Area's Youth for Chinese Elderly (YCE) program.

Evaluation/Impact: CCHRC's core bilingual health website provides access to over 100 bilingual articles on various health topics and records over 1 million visits per year. The *Teens in Charge* site is too new to have access statistics, but the Resource Center's effectiveness in engaging teens in their community is reflected in results such as the 200 teens who participated as leaders and facilitators at CCHRC's annual health fair, which attracted 1,600 people.

References:
- *CCHRC WEB site*: www.cchrchealth.org   *Teens in Charge site*: www.teensincharge.org
- National Committee of Quality Assurance (NCQA). Chinese Community Health Plan and Health Resource Center WEB Site. *Innovative Practices in Multicultural Health Care*. 2006. p. 10-11. www.ncqa.org/Portals/0/HEDISQM/CLAS/CLAS_InnovativePrac06.pdf

Program:	**San Mateo Medical Center *"Asthma Assistant"* Self-Monitoring Pilot**

Lead contacts:	*Neel D. Patel, MD, Medical Director, Fair Oaks Children's Clinic*
	Sylvia Espinoza, MD, Sequoia Teen Wellness Center

Topic areas:	Communication technologies, asthma care

What's innovative:
- Providing free cell phones to patients to improve self-management of their asthma
- Development of tailored screen instructions, information, and graphics in both English and Spanish that aligned with the teen users' vocabulary and reference frames
- Quick intervention when high-risk conditions exist, facilitated through generation of exception reports alerting both patient and provider and mobilizing necessary services
- Development of automated systems to link the cell phone input to the clinic's patient registries and patient records

LEARNING OPPORTUNITY: This project has not been sustained. Technology costs were much higher than anticipated, although this may change as cell phone pricing models improve and more people develop technical expertise in addressing interoperability among different data systems. Ways to translate the model's potential for saving expensive ED visits into new reimbursement strategies and validate the impact of improved workflow in generating office efficiencies are needed to support sustainable technology-based case management services.

Program Description: San Mateo Medical Center (SMMC) distributed mobile phones with customized software to children and teens with severe or persistent asthma, allowing them to communicate with and receive real-time feedback from providers on at least a daily basis. The telephone interface was linked to an asthma registry, action plan development, patient education, and collaboration between schools and medical providers, with the goal of improving management of their condition and reducing exacerbations that lead to costly acute episodes.

A set of 20 questions framed as cell phone text messages with soft key response options was developed (in English and Spanish). Youths entered information about their asthma symptoms daily (e.g. peak air flow, symptoms, inhaler use, missed school days). Tailored menus and entry responses minimizing keystrokes limited time to respond to about 30 seconds. Immediate feedback indicated whether the patient was in a red, yellow, or green zone and recommended next steps. The data was also automatically sent to an asthma case manager at the Medical Center who would call patients needing urgent attention. The information patients entered into their cell phones was also up-loaded into a patient registry, allowing Medical Center staff to see changes over time to help make adjustments in medications or frequency of clinic visits.

The project also included development of asthma action plans for each child and patient education at group visits (generally two 1-hour visits, facilitated by a case manager or community health worker). Case management follow-up was generally via telephone or by in-person visits at the clinic, although a few home visits were done primarily to assess environmental conditions.

Cost: A full-time asthma case manager/educator was hired to oversee the project and a half-time RN supported development of asthma plans and group visits. A low-priced agreement covering the cell phones and monthly service was originally negotiated, but various changes resulted in a much higher-cost agreement (and lower-quality phones). Implementation costs for the various software development components and time for training two clinic teams of primary care

physicians, nurses, and case managers were also incurred.

Collaborators: San Mateo Medical Center worked with BeWell Mobile Technology to develop the software systems and interfaces between the cell phones and SMMC's WEB portal and into their existing systems.

Funding sources: California Healthcare Foundation provided a 2-year grant of $200,000. Kaiser Permanente, Blue Shield of CA, and Qualcomm also provided grant support.

Year started: 2006

Population served: Participants in the cell phone pilot were aged 5-18, with severe or persistent asthma. This was primarily a bi-lingual, low income Latino population, with most covered by public health insurance.

Evaluation/Effectiveness: During the 6-month pilot, 30 children used the free cell phones to record data. Adherence to the ongoing self-management reporting by the participating asthmatic patients was high. Compliance with prescribed drug regimens doubled, from about 40 percent to about 80 percent. None of the participants came to the emergency room or were hospitalized during the trial, in contrast to their being frequent ED visitors (generally in the 3-5 visit/year range) prior to the pilot. Patient school days and parent work days missed due to asthma-related complications were also essentially eliminated.

References:
Bodenheimer T. *Motivating Change: Innovative Approaches to Patient Self-Management*. California Healthcare Foundation. Nov 2007: 8-9.
      www.chcf.org/topics/chronicdisease/index.cfm?itemID=133518

AHRQ Innovations Exchange. *Daily Patient-Provider Communication and Data Transfer Using Mobile Phones Improves Outcomes and Reduces Costs for Teens with Chronic Asthma*.
      www.innovations.ahrq.gov/content.aspx?id=1690

Discussion/learning opportunities:

- *IT implementation challenges:* Significant issues related to technology selection and compatibility and interoperability among various systems surfaced. Interfacing the BeWell system with the Cingular/AT&T platform, SMMC's Web portal, and its asthma patient registry (DocSite) was quite complicated. Mobile phones must have data compatible service; text messaging capability and URL access required. Lack of cell towers in the clinic's low-income community also hindered communication consistency.

- *Innovation potential:* Although evidence is just from a small pilot, results were quite positive. Feedback from participating teens also emphasized the potential from the cell-phone link to their care management team. The teens responded enthusiastically to the interface, finding it much more convenient and fun to use than keeping a paper diary. And given teens' general reluctance to go to a health clinic combined with the special barriers facing these low-income kids of getting there, using the mobile phone connection offers great promise.

- *Improved clinic processes:* Although most of the discussion of this initiative has centered on the cell phone texting component, its development also involved provider/clinician agreement on common protocols, implementing group visits, creating action plans for every asthma patient, and care management systems that meshed with clinic workflow. Therefore, although the provision of free cell phones to patients has not been sustained, the underlying processes developed to support asthma patients in managing their care have evolved into a "standard of practice", enhancing the clinics' asthma patient outcomes.

Innovative strategies to support delivering care to children in underserved, rural areas have been emerging. Telecommunications technologies are facilitating connecting children to experts at regional medical centers, building the expertise of rural providers, and allowing for interactions of cross-disciplinary teams of experts who cannot easily be in the same physical location. Several pilots have been able to demonstrate real improvements in children's outcomes as well as cost efficiencies and sustainable business models. Some of the key issues that these programs must address include the need for funding strategies to cover **upfront implementation costs** (including access to technical expertise); difficulties **engaging rural providers** whose time availability is stretched quite thin; and **third-party payment reimbursements** that address ancillary telecommunications costs and providers present at all locations (hub and spoke) as well as administration costs.

National models: An innovative program developed by ***Envision New Mexico*** has leveraged the nationally-recognized work of the ***Project ECHO*** telemedicine program (Sanjeev Arora, MD, Dept. of Medicine, Univ of New Mexico) to enhance the capabilities of practitioners in rural settings in addressing childhood obesity issues. Bi-monthly case presentations bring multi-disciplinary experts from the UNM Medical School together with practitioners in outlying areas. The goal of the program has been to build the capabilities of the rural providers. At the same time, the experts (cardiology/endochrinology/school psychologists/motivational interviewing expert) have been very excited about the cross-pollination of ideas that has occurred during the case presentations. Even for those specialists working at the same institution, the interactions are breaking down the silos between disciplines that had existed before. Note that the ECHO programs also include a learning loop system for collecting data and monitoring outcomes centrally, helping assess costs and effectiveness.

Kansas' successful TeleKidcare® program established centers in school nurse's offices with telecommunications equipment and digital otoscopes and electronic stethoscopes After almost 10 years in operation, the program has become a national model, demonstrating cost-efficient care as the number of consults has risen, spreading fixed costs across more patients to get cost-competitive with traditional office-based consults. Cases focus especially on consults for mental and behavioral health issues (57% of all consults, including assessing, treating, and managing ADHD and assessing and providing treatment/therapy for depression) and diagnosing and treating acute health care concerns (38% of consults for ear, nose, and throat concerns using); and consultation and education regarding management of chronic health care conditions.

Not all the telemedicine implementations are focusing on rural populations. **Rochester NY's Health-e-Access program** (Kenneth McConnochie, MD, Pediatrics, Univ. of Rochester's Golisano Children's Hospital) is using video conferencing to connect inner city schools to a primary care telemedicine clinician to support diagnosis and treatment of routine childhood symptoms. The program has been successful in reducing parents' need to take time off for work, with the school nurse empowered to support treatment needs, eliminating many primary care or ED visits.

California models: California has become known as a Telemedicine and eHealth leader, with early implementation of programs and advocacy work that resulted in its being one

of the first states to allow Medicaid reimbursement for Telemedicine and eHealth services. Some of the most innovative programs receiving national recognition include a program connecting adult diabetes patients especially in the Central Valley region to retinal screenings and other specialist consults, leverage EyePACS technology and resources at the University of California Berkeley School of Optometry. UC Davis' Center for Health and Technology (CHT) has been a national leader in developing telemedicine programs serving a range of medical needs. Jim Marcin, MD, MPH runs UC Davis' pediatric critical care telemedicine program, which has connected 8 rural sites in California's Central Valley with pediatric critical care physicians at the UC Davis Children's Hospital and conducted evaluations showing improved outcomes from providing live interactive consultations of specialists at UC Davis' pediatric ICU to critically ill pediatric patients in a rural adult ICU setting.

Programs spotlighted in this report, which have focused on pediatric health promotion issues, include the following:
- **Networked Community Health Academic Partnership (NET-CHAP)** (school-based telehealth project; local capacity building, behavior management interventions)
- **Kern Regional Center Telepsychiatry Project** (children with developmental disabilities)
- **N. Sierra Regional Health Network** (epilepsy outreach)
- **Tulare County Pediatric Dentistry** (see oral health programs)

References:
The innovative programs presented here were referred by The Children's Partnership. See Kattlove J, Shaw T. *Meeting the Health Care Needs of California's Children: The role of Telemedicine*. The Children's Partnership. March 2008.

Program:	**Networked Community Health Academic Partnership (NET-CHAP) School-Based Telehealth Project in Rural Plumas County**

Lead contacts:	*Jonathan Kusel, PhD, Executive Director, Sierra Institute*
	Elizabeth Miller, MD, PhD, Pediatrics, UC Davis School of Medicine

Topic areas:	Mental health, school health, telemedicine

What's innovative:
- Telehealth project designed to improve student learning and increase access to the local health system. Emphasizes building capacity in local community to support children and youth with disruptive behaviors and other health issues that impact their school success, encouraging the transfer of knowledge from subspecialists to the community.
- Embedded prevention strategies that recognize a broad range of improved outcomes that can emerge from conducting health assessments of students struggling in school -- uncovering behavioral health issues, but also identifying undiagnosed health conditions (like sleep apnea), vision and hearing problems, lack of health insurance, and impacts on performance from hunger and other home stressors such as family violence.

Program Description: This pilot project is exploring strategies to enhance the delivery of health services in rural schools through the use of telehealth technology. The goal of **Networked Community Health Academic Partnership** (NET-CHAP) is to develop the capacity of local health care providers and schools in Plumas County, a rural community in Northern California by building a community-based network of schools, parents, primary care providers (PCPs), public health, social services, county mental health, and specialists to support children and youth with disruptive behaviors and other health issues that impact their school success.

This collaborative project builds on the expertise of UC Davis's Center for Health and Technology (CHT) which has worked out the implementation steps for delivering telemedicine through primary care and specialty clinic sites, and the work of the Sierra Institute Sierra Institute for Community and Environment, which for the last five years has worked in Plumas County to improve understanding of the healthcare needs of the underserved and bring partners together to improve healthcare access and service delivery. In the county, the schools are small and geographically dispersed, preventing any one school from supporting a full school health center.

This pilot focuses on using telecommunication networks already in place in the schools to connect PCPs, community agencies, and parents to the schools. The program offers:

- *Distance learning opportunities to understand the etiologies of disruptive behaviors and the use of evidence-based tools for assessment:* Uses the telemedicine connection to link behavioral health experts to teachers, school nurses, parents, and primary care providers. Training includes how to do an assessment using a validated tool and how to make appropriate referrals (teacher to nurse to PCP, parent to nurse to PCP, when to draw on behavioral health specialists). Based on focus group input, the project also addresses a wider range of social supports, including insurance enrollment, accessing food stamps and other social services, using interpreters, as well as classroom and home behavioral intervention strategies (e.g., what should teachers do with a child who is disruptive, and sorting out differences between mental health and other issues like hunger, hearing or vision problems).

- *Referrals to subspecialists as needed*: As the goal of the pilot project is to identify community assets, more effectively integrate service provision, and increase the capacity

within communities to address children's health and learning problems, the focus is on knowledge transfer and exchange with rural communities; additional consultations for PCPs, teachers, school nurses, student study teams, and families will be arranged via telemedicine connections to a multidisciplinary group of experts in child psychiatry and psychology, developmental disabilities, special education, communication sciences, medical ethics, as well as the telecommunication/telemedicine experts.

- *Building a community of practice:* A critical component of NET-CHAP is building a stronger network of support for children and youth that advances access to health services and establishes systems of communication between schools, parents, PCPs, and community resources with the expectation that a more integrated and dense network will amplify transfer of knowledge, increase the confidence of key stakeholders in addressing challenging behaviors that are affecting school performance, and allow for closer monitoring of response to interventions. The school nurse is a key locus for activity and care coordination.

Collaborators: The lead partner in this Plumas pilot is the Sierra Institute, who is working with a consortium of local and statewide stakeholders. The Plumas County Unified School District, Plumas Department of Public Health, Plumas County Mental Health, and the local healthcare districts are critical collaborators. Stakeholders outside the community include the Center for Excellence in Developmental Disabilities at the MIND Institute and the Center for Health and Technology (CHT), both at UC Davis; California State University Sacramento School Nurse Program; The Children's Partnership; California School Health Centers Association; Northern Sierra Rural Health Network; and California School Nurses Organization.

Funding sources: Funders include UC Davis' Clinical Translational Science Center and Children's Miracle Network programs (for the behavioral health services pilot), the Health Resources and Services Administration (HRSA), and The California Endowment.

Evaluation: This program is in the pilot stage. In the future, in addition to the behavioral health assessments, referrals and treatment, the project will include interpreter services, ensuring uninsured children enroll in available health coverage programs, and the development of a business plan to ensure sustainability. For the evaluation plan, contact Dr. Liz Miller (elizabeth.miller@ucdmc.ucdavis.edu).

Broader context: The Plumas project emerged out of a feasibility study and community engagement process in which UC Davis partnered with The Children's Partnership and the Sierra Institute to conduct a series of expert interviews and focus groups with school administrators, parents, teachers, community leaders, health care providers, and others to determine community assets, needs, and appropriate service delivery models.

The pilot is part of a broader study, led by Dr. Miller (UC Davis Pediatrics), California School Health Centers Association, and The Children's Partnership, to identify the conditions necessary to implement school-based telehealth in rural counties. In particular, this study is assessing the differences in feasibility between schools where no school-based health centers exist, as in Plumas County, with Fresno County, where school-based health centers exist. A feasibility assessment in Fresno County is continuing, and will result in the design of a program for implementing a telehealth network in schools there.

Discussion:
- Building local capacity given high priority in project design based on community input
- Developing strategies for establishing an ongoing feedback loop between schools, parents, and PCPs to track each child's response to interventions key
- Need full support of school nurses, school administrators, parents, local healthcare districts and providers, and the county's public health and mental health departments

Program:	**Kern Regional Center CSHCN Telepsychiatry Project**

Lead contacts:	*Bonny Hulsy, RN, Kern Regional Center Telemedicine Liaison*

Topic areas:	Telemedicine, CYSHCN

What's innovative:
- Clearly identified roles for "hub" consultants relative to primary care physicians and other care team members; well-developed clinic protocols and use of structured rating instruments and checklists to enhance record-keeping and evaluation
- Expansive treatment network, with connections to medical centers across the state providing access to experts (child psychiatrists, neurologists, autism specialists, etc.) that can support medical, pharmacological, and behavioral treatment and school and development interventions
- Significantly more accessible, family-centered care provided, with extended families and a range of support service providers joining on tele-visits, supporting attainment of coordinated care and a medical home for CSHCN in a rural setting with limited access to child psychiatrists and other specialists
- Sustained volume of 1,500 telemedicine consults a year very high result, helping create cost efficiencies

Program Description:
Kern Regional Center serves about 6,300 people with developmental disabilities in Kern, Inyo and Mono Counties. The Center has developed a telemedicine program that connects children with developmental disabilities in these remote counties to pediatric psychiatrists, neurologists, and other subspecialists at major medical centers throughout the state. Prior to the program's establishment, these children had to travel significant distances to get care, missing school and requiring their parents to take time off work. Care coordination was also a significant issue.

The Center now utilizes videoconferencing capabilities at its sites in the three rural counties, conducting over 1,500 telemedicine consults a year. Services provided by the available subspecialist consult team include initial diagnostic assessments, dynamic and supportive psychotherapy, pharmacological treatment strategies, and patient and parent training. Often, many members of the extended family accompany the child for the visit, along with the members of a child's care management team, such as the pediatrician, teachers, and the regional center staff. Improved communication and collaboration in development of the action plan have resulted. The telepsychiatrists act as consultants, and do not provide direct care. Local primary care providers implement any treatment recommendations for medications and medical and lab tests, while telepsychiatrist actively monitors progress in follow-up consultive visits.

Cost: Capital costs have been spread over multiple years due to the phased implementation of telemedicine capabilities at their developmental centers at 5+ different sites; are currently using grants to upgrade their technology to IP/high-definition transmission lines. Run the program with just two part-time RNs, both experienced developmental disabilities nurses.

Collaborations: Kern Regional Center is working with pediatric psychiatrists, and neurologists from Cedars-Sinai Medical Center (Roxy Szeftel, MD, Telepsychiatry Developmental Disabilities Services), UC Irvine Health System (Ira T. Lott, MD, Chief of Pediatric Neurology Division), UC-San Francisco (Bryna Siegel, PhD, Autism Clinic), Loma Linda University Health Care (Behavioral Medicine Center, Center for Child and Adolescent Assessment), and a network

of individual providers. A collaboration to bring telepsychiatry support services to Native Americans at the Toiyabe Indian Health Project site on the Bishop Paiute Reservation was initiated, although progress was limited given concerns especially around confidentiality and long-standing cultural reticence to share information.

Year started: 1996

Population served: CYSHCN in Kern County (just north of Los Angeles County) and the rural, mountainous Inyo and Mono Counties to the east (on the Nevada border). Inyo County in particular has a substantial Native American population, and Mono has a significant Spanish-speaking population.

Evaluation/Effectiveness:

Success in care coordination evaluated by monitoring development of a care plan, completion of follow-up care recommended by the specialists, and progress as recorded on behavioral charting forms developed in coordination with Dr. Szeftel at Cedars-Sinai. Have tracked reduced absences from school and parents' lost work time, although these telemedicine consults still require a visit to the Center's local office. Family feedback on the program is very positive, with significant support provided toward their goal of keeping these children in their homes rather than residential facilities.

Chart review at Cedars-Sinai showed that more than half the new patients seen under their telepsychiatry program had incorrect diagnoses and medications but that the conditions of the patients improved after their tele-visit, and high treatment compliance rates and low no-show rates were recorded (see Hakak/Szeftel, p. 295).

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- Marcin JP, Ellis J, et. al. *Using Telemedicine to Provide Pediatric Subspecialty Care to Children with Special Health Care Needs in an Underserved Rural Community.* Pediatrics. Jan 2004;113(1):1-6. [Reports on UC Davis program in Oroville, CA; not this Kern program, but provides family and physician survey results on benefits/concerns about telemed visits]

Discussion:

- Identified keys to success include use of well-developed clinic protocols, clearly identified roles of "hub" consultants and other care team members, teleclinic coordinator with both administrative and clinical roles, and structured clinic hours in long enough blocks to allow treatment of these complex cases.
- Several other California programs using videoconference technology to benefit children with autism, bipolar disorders, and other psychiatric conditions, as well as less severe behavioral health issues, are underway. See for example UC Davis Health System's Center for Health and Technology projects such as the MIND Institute autism efforts, and the school-based mental health telemed consult pilots in Fresno and Plumas Counties.

Program:	**Project Access and Telehealth Program:** **Improving Care for Children with Epilepsy in Rural N. California**
Lead contacts:	*Cary Kreutzer, MPH, RD, USC Center for Excellence in Developmental Disabilities; Neva Hirschkorn, No. CA Epilepsy Foundation; Susan Ferrier, BSN, Director of Telehealth, NSRHN*
Topic areas:	Telemedicine, CSHCN

What's Innovative:
- Developing strong family and provider education components represent a promising extension of telemedicine facilities' capabilities
- Access to a Spanish-speaking epileptologist and time to network with other parents offered important improvements in families' ability to support their children's care management

Program Description:
A set of interconnected activities are driving improved care for children and youth with epilepsy in rural Northern California communities. Work underway through **Project Access**, a partnership among Epilepsy Foundation affiliates in multiple states coordinated by the University of Southern California (USC) University Center for Excellence in Developmental Disabilities (UCEDD) at Childrens Hospital Los Angeles (CHLA), combined with **telehealth programs** offered through the Northern Sierra Rural Health Network (NSRHN), is improving access to healthcare services and family supports.

Project Access, a three-year (2007-2010) project led by UCEDD, is designed to assure access to an integrated system of care for children with epilepsy and their families residing in rural communities. It is a multi-state effort, reaching families in rural Alaska, Nevada, and Wyoming as well as California, and builds on work accomplished during a previous three-year California effort. Priorities for action include developing and improving community-based models of care that leverage existing multi-agency Medical Home Coalitions; conducting distance education training targeting primary care providers and parents; and improving community awareness and understanding of epilepsy to eliminate the stigma surrounding it.

Project Access work in rural Northern California communities has been undertaken in collaboration with the Epilepsy Foundation of Northern California. An Epilepsy Parent Resource manual (developed with a parent advisory committee), information on legal rights, seizure observation forms, expertise on developing seizure action plans, and many other resources and tools are made available to local families. Enhanced strategies for coordinated care, including development of epilepsy-specific inserts for their medical home notebooks, have been developed with Rowell Family Empowerment of Northern California, which serves as the Medical Home Coalition in the area.

The effort has included an innovative program aimed at improving family-pediatrician communication and care management for epileptic children within the area, and helping address the lack of access to pediatric neurologists there. Activities leverage the telehealth capabilities of the Northern Sierra Rural Health Network (NSRHN). NSRHN links providers in nine of California's rural northeastern counties with specialists in urban areas and with each other. They have created a network of over 40 sites with two-way video conferencing capabilities that has been providing clinical consultations since 1999. Their system goals include increasing access to care for rural patients, decreasing provider isolation, and continuing education for rural providers.

UCEDD already had an established relationship with NSRHN, having developed a series of 1½ hour continuing medical education (CME) training seminars on pediatric topics for primary care providers serving children with special healthcare needs (CSHCN) and providing technical assistance where needed on using the equipment. Building on those activities, they brought together key partners to develop telehealth programs to meet the needs of both local providers and parents. For providers, CME programs designed to address their stated priorities – addressing early detection, understanding new medications and new treatments, supporting evidence-based best-practice treatment, and identifying referral options and resources – were developed. For parents, the emphasis was on programs that allowed discussions with pediatric sub-specialists with special emphasis on meeting the needs of the local Spanish-speaking community.

In all, four video teleconference trainings focusing on epilepsy have been held, including a special session in Spanish. NSRHN's video-conferencing capabilities at 15 rural, community-based sites were used to link over 100 Spanish-speaking families of children with epilepsy. Information to improve their understanding of current medications, treatments, and accessing of services was provided, led by a Spanish-speaking pediatric epileptologist. Opportunities for asking questions by those in attendance at each site were offered, with provider input bolstered by the parental support, interaction, and feedback from other families. These networking opportunities were a significant component of program success. Families unable to attend the live videoconferences could also listen at other dates, and a library of education materials in English and Spanish was created.

UCEDD is exploring a number of strategies for making programming on issues addressing CSHCNs more widely available. Bandwidth required for video transmission and archiving is not insignificant, so a number of their videoconferences have been captured in digital format and uploaded to the NSRHN WEB page, but are also being offered on CD/DVD. Access to other programming, such as pediatric grand rounds at CHLA, or new mental health programming developed under another NSRHN initiative, is also under consideration. Improving screening for mental health issues and access to mental health services is an important consideration, given the prevalence of co-morbidities of autism, ADHD, depression, and learning disabilities in children with epilepsy. Programs to support primary care physicians in using a mental health screening tool for all children as part of standard practice have been offered, and NSRHN staff also connects area residents with developmental disabilities to specially trained psychiatrists at Cedars Sinai Medical Center in Los Angeles.

Funders/Collaborators: The USC UCEDD-led Project Access work has been funded primarily through grants from the federal Maternal and Child Health Bureau (HRSA/DHHS). The Spanish teleconference was developed collaboratively with the Epilepsy Foundation of Northern California recruiting the epileptologist to speak, NSRHN providing the telecommunications bridge, the Rowell Family Empowerment of Northern California supporting outreach, all hosted under the Project Access grant. A broad range of stakeholders support ongoing activities, including California Children's Services (CCS), Family Resource Centers Network of CA (FRCNCA), CA Children's Regional Integrated Services System (CRISS), families, and a range of pediatrician, neurologist, and other engaged providers.

References: Information on **Project Access** and links to tools for parents including the Webcasts and *Parents Guide* in both English and Spanish are available on the Epilepsy Foundation of Northern California and UCEED WEB sites: www.epilepsynorcal.org; child.uscucedd.org

Adolescent health promotion offers a special set of challenges. Teens face many health risks, and a number of significant barriers interfere with their accessing needed health services. But successful outreach and prevention strategies can make a significant difference in teens' health outcomes.

The early establishment of the **California Adolescent Health Collaborative (CAHC)**, a statewide coalition formed in 1996, has strengthened the effectiveness of adolescent-focused health services available across the state. Using insights from their network of over 800 public and private agency representatives, they have been supporting multidisciplinary approaches integrating clinical care, policy development, research, public health, youth development, advocacy, legal aid, schools and youth services. The statewide Collaborative serves as a resource supporting front-line caregivers and program developers through a number of activities including:

- **Strategic planning:** The statewide Collaborative spearheaded the development of a statewide strategic plan[1] to set a direction for efforts to improve the health and well-being of adolescents. This document created a framework for *making youth a policy priority* and *setting priorities for improving adolescent health services and service systems*.
- **Resources:** Through its WEB site and publications, The statewide Collaborative continually supplements the strategic planning framework by adding detailed information about individual topics. They offer detailed resources for 11 outcome areas such as mental health and suicide, alcohol/tobacco/drugs, foster care and 8 themes (access to care, service coordination, youth engagement, public support, etc.), including an overview of the issue, data, examples of current efforts, a list of implementable strategies, and a reference list.
- **Data**: The statewide Collaborative promotes utilization of standardized measures for tracking adolescent health outcomes and prepares report cards and data guides to improve access to data on adolescent health.[2] The strategic plan identified 27 primary indicators for use in assessing the impact of program and policy changes in California. Reports such as *The Health Status of California's Latino Youth* put data into broader context, and efforts such as its California Adolescent Sexual Health Work Group (ASHWG) Data Tables and Charts for Adolescent Births, AIDS and STDs have improved comparability and expanded access to data that can be used to improve program planning, implementation and evaluation by programs serving at-risk adolescents.
- **Training/Networking:** The statewide Collaborative sponsors regional trainings, including a recent series on minor consent and confidentiality conducted in partnership with the Bay Area Adolescent Health Working Group and a training manual covering core competencies for providers of adolescent sexual and reproductive health programs/services. The statewide Collaborative hosts a biennial conference covering the full range of adolescent health issues and also brings together groups to share information around identified topics of interest.

[1] Clayton SL, Brindis CD, et al. *Investing in Adolescent Health: A Social Imperative for California's Future*. National Adolescent Health Information Center, UCSF. 2000. (www.californiateenhealth.org/download/sp.pdf).

[2] Important partners in CAHC's data development projects include the National Adolescent Health Information Center (NAHIC) at UCSF and the Public Health Institute.

Two programs addressing adolescent health issues are provided below. The Bay Area **Adolescent Health Working Group (AHWG)** has been a leader in developing programs supporting adolescent health, especially in addressing underlying legal issues around minor consent and confidentiality and training providers to maximize prevention results achieved at every adolescent care visit. **Youth UpRising** has successfully integrated adolescent preventive care with a broad set of initiatives addressing violence prevention, education, and job readiness, and ensures that a strong youth voice is engaged in designing all service offerings.

Several programs profiled in other sections also address adolescent issues. These include the Personal Health Record pilot being implemented at the **Wind Youth Services** and **Linkage to Education** sites in the Sacramento area; the **Chinese Community Health Resource Center**'s teen-oriented WEB site and its collaborative work with the **Alliance Against Asian Domestic Violence (AAADV)** and **New American Media's YO! TV** to create teen-driven multimedia education materials available on *YouTube*; and **San Mateo Medical Center**'s effort to improve teenagers' asthma self-monitoring using cell-phone based systems.

Program: **Adolescent Health Working Group** (San Francisco)

Lead contacts: *Alicia Rodgers, MPH, Coordinator*

Topic areas: Adolescent preventive care

What's innovative:
- Innovative strategy of shared funding and shared resources between a county public health department and the children/youth/families social services department
- Early innovator in policy and advocacy work, providing community-centered leadership in bringing the health issues of adolescents to the attention of health policy decision-makers at both the local and state levels
- Leveraging partnerships, working with the San Francisco Health Plan to promote teen-friendly preventive care service offerings within their provider network, and collaborating with the National Center for Youth Law and the CA Adolescent Health Collaborative to develop minor consent and confidentiality policies and co-training sessions reaching statewide audiences

Program description:
The Bay Area's Adolescent Health Working Group (AHWG) is a coalition of youth, adults, and representatives of public and private agencies working to advance the health and well being of San Francisco's youth. Its core functions include: 1) development of tools and trainings that increase safety net providers' capacity to effectively serve youth; 2) advocacy for policies that increase access to health insurance and comprehensive care; and 3) convening of stakeholders and coordinating linkages across systems, including improving referrals.

Tools and Training: A major piece of the Bay Area Working Group's work has focused on the development of the popular *Adolescent Provider Toolkit Series*. AHWG staff, Steering Committee, and network members have worked over the past several years to develop the five modules of the Toolkit - Confidentiality and Minor Consent, Adolescent Health Care 101, Sexual Health, Body Basics, and Behavioral Health. The modules contain screening tools, brief office interventions and counseling guidelines, diagnosis and treatment algorithms, community resources and referrals, health education materials for youth and their parents/adult caregivers, and references.

Additional tools designed to directly increase youth's access to services and improve providers' ability to make appropriate referrals include the *SF Youth Health Services and Referrals pocket card*, updated annually and distributed to over 15,000 youth every year; the *CA Minor Consent Laws pocket card*, for youth and their providers; the *2008 SF Transitional Aged Youth Guide,* for providers serving transitional age youth ages 18-24, resulting from partnership between AHWG, and the TAY SF Initiative at the S.F. Dept of Children, Youth, and Their Families; and the recently released *2008 SF Youth Health and Wellness Snapshot* with data to support understanding and advocating on behalf of adolescent health issues and disparities.

Earlier AHWG initiatives included the development of the *H.E.A.L.T.H. Curriculum*, which provides lesson plans for conducting workshops to promote youth's awareness of key health concepts, including prevention tips, insurance enrollment information, and training materials on how to obtain services in the San Francisco health delivery system with examples of how to ask questions to a health care provider. Alternative formats suitable for middle school, high school, and college-aged youth have been developed, with age-specific activities and materials for both classroom and after-school program settings and example evaluation protocols.

Advocacy and policy: Increasing public awareness of youth health risks is a fundamental component of AHWG's mission. It has worked with the community to advocate for changes in the mental health system, address the needs of transitional youth/exiting foster care, and promote school-based care/wellness centers. Results include increased funding streams provided for adolescent health programs, citywide expansions of access to health and mental healthcare, and technical changes in policy documents. Active teen engagement is another AHWG hallmark. They have partnered with youths to conduct surveys of factors underlying poor access of services, including attitudes toward mental health services, with the resulting data helping to identify priority needs and service gaps and supporting their policy work.

Convening and linkages: AHWG coordinates the annual ***Teen/Young Adult Provider Gathering*** of adolescent health providers that brings together an average of 100 providers from across the Bay Area, and brings its adolescent health experts together with community groups on a regular basis, improving information sharing, networking, and referrals for youth services.

AHWG's partnership with the **San Francisco Health Plan** (SFHP) has supported improvements in health care provider's services to adolescents. Youth interns conducted an assessment of SFHP-affiliated programs and agencies providing health care services to adolescents. Through phone calls and clinic observations, they evaluated service offerings, bundling the assessments into a referral list including ratings as a teen-friendly environment for each provider group and agency. Insights also supported SFHP's *Well-Adolescent Provider Outreach Incentive Program*, a QIP to improve their Medi-Cal well-adolescent visit rate.

Cost/staffing: AHWG has been operating with just one full-time and two part-time staff, relying heavily on volunteer support from its 16-member advisory group member organizations to develop content for its provider toolkits and support train-the-trainer education.

Funding/collaborations: AHWG is a fiscally-sponsored project of the Tides Center. It works closely with DPH to drive ongoing advocacy work that has significantly increased the visibility of adolescent health issues, while the organization is also closely linked to DCYF, with its innovative Children's Fund model funding of social service programs, that has promoted integration of health and social service program need assessments and program development.

Ongoing collaboration with the California Adolescent Health Collaborative, which provided funding to update the consent/confidentiality toolkit and partnered with AHWG in conducting provider trainings across the state, San Francisco Health Plan as described above, the California School Health Centers Association, and the National Center for Youth Law all provide leverage in enhancing program reach. Key funders include The California Endowment, the San Francisco Foundation, and the Department of Children, Youth, and Their Families.

References: See the AHWG's WEB for provider toolkits, adolescent health promotion curriculum, and related resources, including some Spanish and Chinese translations (www.ahwg.net).

Future priorities:
The AHWG's main priority areas include 1) minor consent and confidentiality, 2) behavioral health, and 3) SFUSD Wellness Center capacity building. Additional priorities include sexual health and violence-related trauma, and the ensuing disparities associated with these critical adolescent health issues.

Program: **Youth UpRising/Children's Hospital Oakland Teen Health Clinic**

Lead contacts: *Olis Simmons, Executive Director*   *Su Park, PsyD and Barbara Staggers, MD, Children's Hospital Oakland*

Topic areas: Adolescent preventive care, violence prevention

What's innovative: ▪ Integrating adolescent mental health services and preventive care with a broad set of initiatives addressing violence prevention, education, and job readiness; especially strong connections created to the contiguous high school complex ▪ Developed multiple funding streams and identified strategic cost-saving opportunities, working closely with the county, the city, and the school district ▪ Successful strategies to gain teens trust, provide protective space, which has translated into extraordinary clinic visits

Program description: Children's Hospital Oakland's teen health clinic, located contiguous to the Youth UpRising Center in East Oakland and the 4-school Castlemont Community of Small Schools complex, has been cited for its success in integrating its service offerings within the broader context of addressing underlying stressors connected to poverty and living conditions in this high-risk neighborhood. The Center itself was created in response to racial tensions at Castlemont High that erupted into violence. Community youth were engaged in dialogue to identify important neighborhood concerns, and the need for a community site providing service offerings addressing employment, education, health, and social development issues evolved into the Center. Alameda County authorized the conversion of a vacant County property and joined with the City of Oakland, Oakland Unified School District officials, and health providers from Children's Hospital Oakland to address the youth's concerns. The Center's 25,000 square foot facility contains both the health clinic, with a separate entrance, side-by-side with the Youth Center which includes music recording studios, media arts and video editing equipment, dance performance space, a computer lab, physical activity space, a youth-run café, and a career/education center offering multiple classes including on-site GED and Cal-Safe programs. The Center serves about 300 youths per day, with many coming three times each week to participate in programs and activities or just relax and network with other teens. The health clinic is operated and staffed by Children's Hospital & Research Center Oakland. A stable revenue base for the clinic emerged in part by taking advantage of the Early Periodic Screening Detection and Treatment program, and by the satellite clinic's status as a federally qualified health center (FQHC), which allows it to benefit from higher reimbursement rates that help cover a significant portion of the clinic's overhead expenses. Alameda County contributes additional funds from the settlement of tobacco company lawsuits. The clinic's goal is to address the dramatic health disparities seen for teens in East Oakland. Homicide and suicide are the leading cause of death among teens there, with gang violence, teen dating violence, sexual abuse, and high STD and HIV infection rates all impacting the teens' prospects. Teen pregnancy and child abuse have been recorded at three times the rate for the rest of the county. To address these issues, they have created an integrated set of mental health services and violence prevention programming that includes intensive case management, outreach, violence prevention education and recreational opportunities, with outreach focused on

higher-impact youth, including those trending towards chronic truancy, expulsion or suspension from school, and youth on probation and parole. Case managers work with each teen to identify needs including key stressors that may be affecting them, then help coordinate a set of housing, employment, health, and educational services to match their needs.

The clinic's professional staff also plays a vital role in training teachers, offering sessions on topics including mental health screenings and referrals, crisis intervention strategies for in-class de-briefings, and identifying depression and ADHD. With teacher turnover a significant issue in the affiliated schools, they are now working on developing formalized crisis response protocols, recognizing the many different levels of crisis interventions needed and offering a systematic way for accelerated response to shootings, suicides, in-school fights, etc.

Cost/staffing: The health clinic operates with a full-time mental health staff of six professionals affiliated with Children's Hospital Oakland. Licensed clinical psychologists and nursing staff are available everyday, with consulting psychiatrists supporting medication and treatment plans. Medical services, also staffed by Children's Hospital professionals, are provided 2.5 days per week. Youth UpRising's case managers, recreation/coaching staff, nutritionists, and wellness center staff also support improved health outcomes for participating teens.

Collaborators/funding sources: Start-up funding for the entire Center totaled $7 million, provided by Alameda County (which also contributed the property), Children's Hospital Oakland, the City of Oakland, and Oakland Unified School District. As noted above, the health center's ongoing operations are supported by an innovative combination of funding strategies, with the lead role taken by the Children's Hospital Oakland offering the benefits of FQHC status, other collaborative partners continuing to support ongoing operations.

Year started: The Youth UpRising Center opened in May, 2005; the health clinic facility in 2006.

Population served: Primarily serving disadvantaged youth in the East Oakland area, especially those from the bordering Castlemont high school complex, but the clinic treats any youth aged between 12-21 from Alameda County, and many clients come from foster care, juvenile justice system, and group home settings outside the Castlemont schools.

Evaluation/effectiveness:
Data from Alameda County's *Clinical Fusion* database system (supported by the Institute for Health Policy Studies/UCSF) allows comparative tracking of a number of measures across all of the county's school health service providers. The Youth UpRising clinic site has posted consistently high utilization rates, now recording the highest volume of school-connected sites in the county, and surveys of the teens' assessment of the increased access to services show very favorable impacts, with reduced depression and anxiety particularly notable impacts. Alameda County also reports strong evidence from its school-based clinics in terms of increased school attendance rates, improved academic performance, and reduced teen pregnancy rates.

Discussion:
- *Keys to success:* **Building relationships** seen as integral to success. Investing time to establish trust with school partners to promote a culture that integrates mental health prevention strategies across multiple dimensions and encourages referrals is vital. **Hiring people** able to engender trust from the teens and support crisis intervention and teacher training, is also vital. Finally, the clinic must be seen as a **safe, protective space**, where teens are comfortable asking questions and confidentiality is ensured.
- *Special factors:* The availability of a County-owned property beside a school and the County's ongoing commitment of $1 million a year are not generally replicable, but the clinic is a fabulous adolescent access model, delivering "***health care services in disguise***".

Significant efforts to promote increasing utilization of preventive dental care and improve oral health habits among California's low-income, minority populations have been underway for some time now. The importance of making oral health a top prevention priority for children has been underscored by data showing dental decay as the single most common condition for children, the single biggest cause of Child Health and Disability Prevention (CHDP) exams, and a study showing that California's children suffer twice the rate of Early Childhood Caries as elsewhere in the nation, with noticeable disparities evidenced among low-income populations, especially in rural communities and among Latino students.

A wide range of programs addressing oral health disparities for children in California are underway, with major support being provided by a number of groups, including the California Dental Association Foundation (CDA-F), the Dental Health Foundation, the First Five California commissions, The California HealthCare Foundation, as well as The California Endowment. We have chosen to spotlight three representative programs to highlight their innovative components as well as lessons learned, and have also included a list of national program models. For a more in-depth look at the key avenues for addressing oral health disparities center, including removing barriers to access, increasing capacity at community clinics, utilizing mobile vans and school-based dental clinics to bring care to the children, and providing parent and provider education to address specific cultural/educational barriers to adopting good oral health habits, see these references.

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Program: **Project MAYA (San Ysidro Health Center)**

Lead contacts: *Francisco Ramos-Gomez, DDS, MS, MPH, UCLA School of Dentistry/UCSF*
          Center to Address Disparities in Children's Oral Health (CAN DO)
          Rocio Gonzalez Beristain, MS, MPH, Dental Clinic Manager, San Ysidro Health Center

Topic areas: Oral health, Latino populations

What's innovative:
- Multi-faceted outreach program with incentives proved very successful in both recruiting pregnant women and supporting retention for dental visits until the child turned three
- Prescriptive program developed in collaboration with Latina community to educate mothers resulted in demonstrated changes in their oral health behaviors

Program Description: The **Mother and Youth Access Project (Project MAYA)** was a seven year clinical trial funded by the National Institute of Health through UCSF's Center to Address Disparities in Children's Oral Health (the CAN DO Center) and in collaboration with UCLA. It focused on reducing the incidence of early childhood caries in children born to low-income Hispanic women. The program, administered through the San Ysidro Health Center (SYHC), offered culturally-based oral health education, counseling, and discounted dental procedures to pregnant Hispanic women and their newborns in San Ysidro (near San Diego/Mexico border).

Women were recruited into the program during their second trimester of pregnancy, using a combination of outreach strategies at the community health center and through the local WIC office, health fairs, and during medical prenatal orientations. Education, counseling, screening, and referrals were done at dental visits scheduled every six months the baby's first three years.

Project MAYA was built on a prescriptive program for infant oral care developed by researchers at UCSF's CAN DO Center,[1] with an embedded culturally-based educational component to directly address barriers, misperceptions, and traditions that contribute to oral health disparities.[2] The program included:
- Dental screenings and education for expectant mothers beginning in the second trimester
- New mothers received chlorhexidine mouth rinse to prevent transmission of cariogenic bacteria from mother to child
- Risk assessments for infant at regularly scheduled dental visits (twice a year)
- Preventive fluoride varnishes for infants in the intervention group once their teeth erupted to prevent dental caries as well as to infants in the control group who developed precavitated lesions
- Parental education on a range of oral health behaviors, including the correct way to clean the baby's mouth, feeding and healthy eating guidelines, and the importance of regular dental visits and the establishment of a dental home for infants and toddlers
- Achievement charts used as a motivational tool for parents
- Incentives to encourage participation in an ongoing educational program that included oral health products such as toothpaste, toothbrushes, age-appropriate toys
- Discounted rates up to 75% offered for dental services
- Relationship building through "promotoras", who held social functions such as baby showers and acknowledged birthdays and other key milestones
- Continuous communication via newsletters, telephone follow-up calls, and cards

Funding sources: National Institute of Health/National Institute of Dental and Craniofacial

Research grant supported the 7-year clinical trial; new NIH support now funding additional trials.

Year started: Project recruitment began in April, 2003.

Population served: Second trimester pregnant mothers (excluding high-risk pregnancies) and their newborns through age 3. Border community with highly transitory Hispanic population with a high risk for caries due to factors such as socio-economic status, education, and disparity in access to oral health care.

Evaluation/Effectiveness:
Randomized clinical trial funded by NIH; 361 women in the post-randomization sample. Results:
- 90% retention rate post-randomization at the baby's four-month post-partum visit
- Significant increase in the mother's oral health knowledge score from baseline to the 36-month recall visit
- Improved self-reported oral health behaviors
- Significant increase in the number of dental visits and procedures, although prior access to professional cleaning services was a confounder making it difficult to attribute the increased use solely to the discounted pricing
- Impact of these efforts in preventing severe dental caries in the young children was minimal, reflecting the difficulty of maintaining a true control group (preventive fluoride varnishes were given to infants in the control group who developed precavitated lesions), but also indicating a need for more aggressive intervention and increased frequency of dental visits for populations at highest risk for early childhood caries
- Unanticipated benefit was the impact of project leaders' as role models for these women; several have gone on to school and become dental assistants

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Discussion:
- *Retention/recruitment strategies:* Program identified key strategies for recruitment and retention combining successful partnering with local agencies already interacting with the target population, culturally-aware coordinators (promotoras) willing to support needs beyond a narrow oral health focus, an incentive package and discounted services.[3]

- *Impact of early prevention interventions:* Program reaps long-term benefits of starting prevention early through pro-active counseling that changes oral health knowledge of mothers during pregnancy, addresses misconceptions about very young children's dental care needs, emphasizes the need for establishing a "dental home", and provides early dental treatment that can mitigate the risk for caries in this particularly at-risk population.[4] Key lessons learned that are being translated into a follow-on clinical trial included the need for increased frequency of dental visits (three times a year) and even more aggressive intervention for these populations at highest risk for early childhood caries.

[1] Ramos-Gomez FJ. **Clinical Considerations for an Infant Oral Health Care Program**. Oral Health for Children, Suppl to Compendium of Continuing Education in Dentistry. May 2005;26(5)Supp 1: 17-23.
[2] Ramos-Gomez FJ. **Oral Health Disparities among Latinos in California:** Implications for a Binational Agenda. CA Program on Access to Care. June 2008.
[3] Ramos-Gomez FJ, et. al. **Recruiting and retaining pregnant women from a community health center at the U.S.-Mexico border for the Mothers and Youth Access (MAYA) clinical trial**. *Clinical Trials* 2008(5): 336–346.
[4] Lee JY, Bouwens TJ, et. al. **Examining the cost-effectiveness of early dental visits**. *Pediatric Dent* 2006 Mar-Apr;28(2):102-5; discussion 192-8.

Program:	**"Share the Care" Dental Health Initiative of San Diego**

Lead contacts: *Peggy Yamagata, RDH, Program Manager, County of San Diego HHS*

Topic areas: Oral health promotion, provider detailing strategies

What's innovative:
- Integration of outreach promoting oral health messaging into other programs (obesity prevention, injury prevention, immunizations, child protective services), leveraging resources of nutritionist and health educators across multiple domains
- Testing strategies for most efficient ways to take messages to primary care physicians
- Technology-based system for coordinating and tracking referrals

Program Description: The "*Share the Care*" dental health initiative is a public-private partnership between the County of San Diego Health and Human Services Agency, the San Diego County Dental Society, and the San Diego County Dental Health Coalition. Program has multiple components:
- **Providing emergency dental care** to children without insurance or access to providers. Broad outreach to develop network of 250 dental professionals volunteering to provide pro bono services. An automated system has been created to coordinate and track referrals, and supports for families to get dental insurance coverage and a dental home also provided.
- **Community-based dental clinics**, offering free screenings, dental sealants, and fluoride varnish to children aged 1-18, reaching 200-300 children at each clinic, leveraging the services of their network of 390 volunteer dental professionals. Emphasize Saturday clinics at community sites to catch children missed by school-based dental screenings and sealant programs and to promote parent engagement in improving oral health behaviors.
- **Medical provider trainings** led by one of Share the Care's licensed dental professionals, reaching San Diego's pediatric residency programs and medical offices serving high number of Medi-Cal/Healthy Family patients. Provide specific guidance on doing dental assessments during children's office visits, how to help families establish a dental home for their child, educational materials on healthy oral health behaviors, and how to apply fluoride varnish and bill for those services. Investigating benefit from having each training followed by a second visit during clinical practice.
- **Broad-based education and outreach programs**, promoting improved oral health behaviors to parents and children, as well as trainings offered to Head Start and day care providers, librarians, public health nurses, in addition to their work with dentists and primary care physicians. Ensure appropriate and consistent messages are delivered community-wide.

Share the Care has expanded its reach significantly by co-developing health education messages with a number of partners. This has included working with the San Diego Regional 5-a-Day program linking nutritional and oral health messages around soda and other beverage consumption, adding the need for a first dental check-up at age one to educational flyers with childhood immunization schedules, and creating coloring books and activity guides covering a range of healthy behaviors. They are also working with public health nurses to engage them in providing oral health information during home visits or when working with foster care families, and providing special trainings with **child protective services** on the need to take oral neglect more seriously.

An innovative outreach effort currently being tested involves combining their oral health promotion work with obesity prevention activities. Strategy involves focusing intensive outreach in a narrowly-defined, high-need geographic area (San Marcos, Chula Vista, Escondido selected

as pilot sites). Their dieticians go to local family restaurants and fast food outlets, review ingredients and on-site cooking techniques, and identify healthy menu options at each location. They also coordinate development of inventories of local recreation programs, with very specific information on hours and fees and a pilot grant program allowing kids to apply for small grants to cover fees and equipment. They are then going to medical and dental providers in the area, doing trainings and providing educational materials with these lists of healthy eating and healthy exercise opportunities in the community. Broad outreach in these neighborhoods as well, talk to everyone, get the message about smaller portions and what is healthy out there, leveraging the staff of health educators and nutritionists at Share the Care to reach children in the community.

Cost/Funding sources: Share the Care's dental programs run on an annual budget of about $450,000 with a 2.5 FTE staff. The majority of the funding comes from the county, state and federal   CHDP and MCH resources with Medicaid/EPSDT match. A grant from San Diego's Council of Community Clinics Oral Health Initiative from First 5 funds also supports current activities, and the volunteer dentists and in-kind contributions from local universities and the dental coalition sustain activities.

Year started: The "Share the Care" program was initiated in 1994. New program components have been added over time, with the focused outreach activities into pediatrician offices in targeted communities added two years ago.

Population served: Children in San Diego County below 200% of the federal poverty line.

Evaluation/Effectiveness:
Program monitors value of emergency services provided and number of children who receive screenings and sealant/fluoride treatments at their community-based sealant clinics. They also track completion of follow-up care visits. Supporting review of public school oral health assessment reports to identify pockets of need (issues of access to dental providers, untreated decay documented in the assessment). Pre-and post-test surveys test whether learned knowledge is implemented. To date, 3,666 children have been provided emergency care and 5,978 have been seen at the community-based dental clinics, with the combined value of the pro bono services totaling $1.3 million.

References: www.sharethecaredental.org

Discussion:
- Many leveragable program materials, including a multimedia campaign, back-to-school and classroom activity guide, a train-the-trainer ambassador program taught through community college adult education courses, and agendas from periodic county-wide forums bringing community organizations/agencies and medical/dental professionals together, stimulating dialogue and strategic planning.
- Demonstrated success in partnering with other organizations in both small and large collaborations that have greatly increased its program reach. Also, important lessons from ongoing success in generating sustainable funding streams for its own efforts and these broader collaborative efforts.

Program:	**Tulare County School-Aged Children Teledentistry Program**

Lead contacts:	*Daniel R. Plotkin, eHealth Program Administrator, Childrens Hospital LA*
	José C. Polido, DDS, Chief, Division of Dentistry and Orthodontics, Childrens Hospital Los Angeles, and professor, USC School of Dentistry

Topic areas:	Teledentistry, rural populations

What's innovative:
- Leveraging the existing videoconference links already in place at the schools to shorten implementation time and allow for cost-sharing of the telecommunications infrastructure
- Utilization of teaching hospital's patient registration system and Dentrix condition-charting software, enhancing patient tracking and allowing real-time clinician interaction
- Program coordination by a trained eHealth registered dental hygienist and placement of care coordinators with expertise in insurance enrollment as well as case management at each school to ensure needed follow-up care is completed

LEARNING OPPORTUNITY: This project has not been sustained. While offering some innovative strategies to support dental care in rural communities, it never attained sufficient patient volumes and local dental providers never fully engaged. Results highlight the importance of careful pre-assessment analysis and dedicating time to identify and support local champions, as well as offering important insight on time frames for implementing new technology solutions.

Program Description: Children's Hospital Los Angeles (CHLA) created a school-based teledentistry network to address access to oral health care in rural Tulare County. Dental clinics were set up in three school districts, which were connected to CHLA's Division of Dentistry through a high-speed broadband computer network allowing video conferencing, real time remote input, and access to the hospital's dental systems. The eHealth program leveraged the existing educational telecommunications network at the schools, which had already been developed under the California Research and Education Networks K-12 High Speed Network program.

The program offered students dental exams, x-rays, cleanings, preventive treatments (fluoride), and oral health instruction, with referrals made to local dentists for restorative care as warranted. Key components included:
- A **registered dental hygienist** hired by CHLA and trained in using teledentistry techniques, circulated among the three sites, under the remote supervision of CHLA faculty pediatric dentists.
- On-site **Certified Application Assistants (CAAs)/care managers** worked closely with the families to provide education about ongoing oral health care, coordinate restorative care needs with local dental providers, identify barriers to accessing needed follow-up dental care, and facilitate insurance coverage where applicable. The school nurse and the schools' Migrant Education Program staff also supported the effort.
- **Electronic dental records** were created for each child, integrated into CHLA's patient management system, and this record and accompanying digital intra-oral photographs and radiographs could be shared by practitioners over the eHealth network.
- The tele-network was also used to have the Spanish-speaking CHLA pediatric dentist provide **education to parent groups** and also for **provider trainings** with CE credits.

Funding sources: Start-up funding came from a $335,000 grant from the CA Telemedicine & eHealth Center (CTEC); grants totaling $134,000 from the U.S. Department of Agriculture –

Rural Development to the three school districts; and clinic design and equipment from CHLA and Henry Schein Dental. A three-year U.S. Health Resources and Services Administration (HRSA) grant of $206,973 was obtained to support the hiring of onsite CAA coordinators at two schools.

Year started: May 2005.

Population served: School-aged children in rural Tulare County; many children of migrant agriculture workers, many undocumented.

Evaluation/Effectiveness:
This program was closed down in November, 2008 when funding ran out. An evaluation report is currently being prepared. Preliminary data indicate the service filled an important need, with the teledental visit very often the child's first dental visit and referrals made for important follow-up care that in many cases would likely have gone untreated.

However, patient volumes never achieved program goals. Under 20% of the students in the 3 districts completed initial questionnaires assessing oral health status and providing consent for screenings. And, although the CAAs were very effective in getting many students enrolled in Denti-Cal, the non-billable services including the cost to coordinate individual screenings and follow-up care proved unsupportable.

References:
CHLA's eHealth Program: Teledentistry (Tulare Project)
www.childrenshospitalla.org/site/c.ipINKTOAJsG/b.3838323/k.9CD1/Teledentistry.htm

Discussion/Learning Opportunities:
- *Implementation challenges:* Took a lot longer than anticipated to set everything up (educating everyone about teledentistry, developing IT interfaces, creating consent request documents, developing contracts with each of the schools, working out school space considerations, clarifying job descriptions). Getting buy-in from parents, school administrators and teachers, and local dentists is vital; concerns that this was a program driven by outsiders was seen as one barrier to achieving sufficient patient volumes.

- *Alternative strategies:* Now investigating other business models that may provide better cost structures, such as having an FQHC operate the school site, then contract with CHLA for the tele-dentistry consults as needed would allow reimbursements under FQHC-funding paradigms; this is now being investigated as an option at one of the sites; making better use of existing resources (school nurse, migrant education staff) to put more of the coordinating tasks on lower-cost resources than the dental hygienist; assessing whether use of CHLA's practice management system was efficient, or whether patient registration using a local system would require less staff time; and risk stratification to focus services on students without access to dental homes.

  Teledentistry programs focusing on children younger than the school-aged population of this project are also emerging, such as a Rochester, NY program working out of urban day care centers. (See Kopycka-Kedzierawski DT, Billings RJ. "Teledentistry in inner-city child-care centres," Journal of Telemedicine and Telecare, Vol. 12, No. 4 (2006): 176-81.)

<u>**Innovative National Models – Oral Health Care Prevention**</u>

Our informant interviewees pointed to components of several model programs with potential leverage for improving children's oral health by promoting prevention at very early ages. At the same time, they expressed caution relative to provider capacity and continuity of care issues that need to be considered carefully to ensure program success. Developing networks of dental providers willing to complete follow-up visits and ensuring that school-based and mobile-van services address establishing dental homes and are not just providing episodic care were important considerations. Important gaps identified related to business models/profitability and CQI capabilities at safety net providers, cost recovery strategies to sustain programs initiated with embedded free care components, identifying motivational interviewing strategies that really can achieve behavior modification in high risk patients and families, and broadening the range of caregivers who can translate those messages and support preventive oral health care practices.

The following program components from national models were highlighted:

- The **DentaQuest Institute** in Massachusetts (formerly the **Catalyst Institute**) has developed a collaborative model to increase the efficiency and effectiveness of oral health programs at community health centers. The **Safety Net Solutions** program combines trainings, collaborative learning opportunities, and technical assistance to support computerizing patient records, billing practices, and practice management systems. Volunteer dentists are trained to mentor community health centers' dental practice staff, and new packages promoting increased participation of private dentists in treating Medicaid patients are getting some good results.

  The Safety Net Solutions Improvement Model's emphasis on improving operating efficiency has proven especially helpful for oral health programs in environments with low levels of public reimbursement, supporting community dental practices in becoming financially sustainable through their own operations. Safety Net Solutions is currently advising 30 community health centers in the Northeast and is also a technical advisor on the California HealthCare Foundation's *Strengthening Community Dental Practices in California* pilot program. That program is now linked to the *California Dental Pipeline Program*. In addition to core components on increasing underrepresented minorities in dental schools and integrating cultural competence throughout the dental school curriculum, the Pipeline Program as added strategies for expanding community-based training opportunities and coincidentally improving the practice management systems at the community-based sites so the dental students. An innovative incentive fund has been created to support financial partnerships between California's dental schools and FQHCs that will explore strategies for mutually beneficial revenue-sharing models reflecting both the revenue generated by student-provided care and the staff-provided training costs.
  References: www.dentaquestinstitute.org/safetynetsolutions/
  Scott MK, Bingham D, Doherty M. **The Good Practice: Treating Underserved Dental Patients While Staying Afloat.** CA HealthCare Foundation and The Catalyst Institute/Safety Net Solutions. August 2008. www.chcf.org/documents/policy/TheGoodPractice.pdf

Zamora G, Bau I. Afterword to the Evaluation the Dental Pipeline Program Report: The California Dental Pipeline Program, Phase II. Journal of Dental Education. Feb 2009;73(2 Suppl):S340-343.

- The **Alaska Native Tribal Health Consortium**'s program invested in developing a network of trained **pediatric dental health therapists** who have been integrated into their existing Community Health Aide Program. Modeled after programs in New Zealand and Canada, these new professionals provide cost-effective preventive and restorative care for school-aged children living in remote areas, with efficiencies allowing recovery of upfront training costs within several years. The development of new types of midlevel professionals such as dental therapists offers great promise for addressing both workforce shortages and cost constraints; a recent report by the National Academy for State Health Policy highlights the importance of expanding dental therapist licensing and training programs, along with a number of other proposals under development for new types of dental professionals who could add significantly to the workforce able to care for young children.

    References: Nash DA, Nagel RJ. Confronting Oral Health Disparities Among American Indian/Alaska native Children: The Pediatric Oral Health Therapist. Am Jnrl Public Health. Aug 2005;95(8):1325-1329. Gehshan S, Wyatt M. Improving Oral Health Care for Young Children. National Academy for State Health Policy. April 2007. p. 11-15. www.nashp.org/Files/Improving_Oral_Health.pdf

- The **Eastman Dental Center** (Rochester, NY) **teledentistry program** is linking six inner city day care centers to pediatric dentists at the Eastman site. Intraoral cameras and office space had to be created at each site, but the program was able to leverage Health-e-Access telemedicine infrastructure already in place at the day care centers. Program success in reaching the pre-school age population and creating funding to sustain the ongoing costs of telehealth assistants have been highlighted.

    References: Kopycka-Kedzierawski DT, Billings RJ. Teledentistry in inner-city child-care centres. Journal of Telemedicine and Telecare. 2006; 12(4): 176-81.

- The **Access to Baby & Child Dentistry (ABCD)** program in Washington State has focused on increasing access to dental services for low-income children under six. Innovative program includes enhanced payments for an array of preventive dental services to Medicaid enrollees aged 0-5, successful outreach efforts to recruit and train more dentists serving this population, and outreach services provided by the health department. It includes an innovative strategy addressing broken appointments/no-shows to help improve community health center dental clinic profitability by educating parents on how to schedule appointments and the importance of attending scheduled appointments through low-literacy educational pamphlets on dental office "*Dos and Don'ts*".

    References: www.abcd-dental.org. See also: Kobayashi M, Chi D, Coldwell SE, Domoto P, Milgrom P. The effectiveness and estimated costs of the Access to Baby and Child Dentistry program in Washington state; Journal of American Dental Association, Sept 2005; 136(9):1257-63.

- The **Boston University/Chelsea Schools Partnership**, a university-community collaboration brings dental services to school-aged children in a low-income neighborhood where one-third of students were found to have untreated tooth

decay at baseline. Education, screenings, and referrals by a dentist-hygienist team in 173 classrooms take place every year, with referrals made to the school clinic or a community dental office; dental sealants are provided twice a year to first and second graders, and fluoride varnishes are starting to be offered for the K/1 ages. A dental clinic was opened in 2003 at the middle school, staffed by 4 bilingual dentists, greatly improving follow-up treatment rates.

> *References:*dentalschool.bu.edu/community/chp-oral-health-promotion.htm; see also: AHRQ Innovations Exchange. Comprehensive School-Based Program Enhances Access to Oral Health Education, Prevention, and Treatment Services For Low-Income Children. www.innovations.ahrq.gov/content.aspx?id=1844

- Nevada's **Community Coalition for Oral Health** effectively engaged the Hotel Employees and Restaurant Employees International Union Welfare Fund to address access issues. Almost no dentists were accepting the union's dental plan, and the fact that many of the employees were seasonal workers impacted their families getting regular dental preventive screenings/dental visits (engaging non-traditional partners, addressing access for seasonal workers).

  > *References:* www.nvoralhealth.org/CCOH/CCOH%20home.htm; see also: Oral Health America. A for Effort: Making the Grade. February 2005. p. 13 www.oralhealthamerica.org/pdf/A%20for%20Effort%20Report%20final%20 web.pdf

One of the goals for this project established by the Advisory Committee was to look for ways organizations were fostering innovation. How can you create a climate where innovation can flourish? How has organizational leadership set the tone for allowing the risk-taking necessary when tackling new initiatives? How do you break down institutional silos to promote collaboration, resource sharing, and the breakthroughs that come from the cross-pollination of ideas?

We have selected two California organizations to spotlight in this regard:
- **Kaiser Permanente** has created an organization-wide culture that promotes developing new strategies for care delivery and innovative prevention models, and has been pro-active in disseminating successful models through widespread outreach activities and resources for safety net providers and community groups through its Northern and Southern California Region networks.
- **Contra Costa Health Services** has demonstrated leadership commitment to promoting health equity, developing organizational infrastructure to support QI initiatives, establishing a strategic plan that recognizes the long-term commitment necessary to change community environments, and creating leveragable models for collaborating with communities to promote resident leadership development, economic stability, and environmental justice issues. It is now disseminating its models through trainings and peer exchanges of best practices to help others plan public health programs that effectively engage communities.

While special characteristics of these two organizations – Kaiser Permanente's substantial financial resources and national reach, and Contra Costa's integration of a regional medical center and satellite health centers with a county-sponsored health plan and the county's public health division all under one umbrella – will make it difficult for others to achieve the same level of impact, their strategies for promoting prevention and health equity goals highlight the importance of organizational infrastructure support and connections with community systems.

References:

For a framework for assessing organizational culture toward innovation, see some of the new survey instruments that have been designed to analyze the connections between patient safety and quality improvement and organizational culture.

> Agency for Healthcare Research and Quality (AHRQ). *Patient Safety Culture Surveys*. January 2009. www.ahrq.gov/qual/hospculture/

For national examples of organizational strategies for promoting equity in health outcomes, see:

> National Initiative for Children's Healthcare Quality (NICHQ). *Improving Cultural Competency in Children's Health Care: Expanding Perspectives Beyond the Clinical Environment.* July 2005.
> www.nichq.org/pdf/NICHQ_CulturalCompetencyFINAL.pdf

| *Program:* | **Kaiser Permanente Prevention and Community Health Initiatives** |

| *Lead contacts:* | *Scott Gee, MD, Pediatrician and Medical Director, Prevention & Health Information (KP Northern CA)* |

| *Topic areas:* | Organizational culture (innovation, prevention), obesity prevention |

What's Innovative:
Organizational culture focused on stimulating innovation; wide-ranging strategies including payment systems that reward keeping patients healthy, a special facility for testing new technologies and promoting collaborative problem solving, and sponsorship of a full complement of effective pediatrician detailing and outreach strategies to address childhood obesity, parent smoking, developmental screening, injury prevention, and other topics.

Program Description:
Kaiser Permanente is a leading integrated health plan garnering national recognition for innovations in addressing health promotion and prevention strategies. This work crosses many dimensions, backed by leadership commitment and allocation of significant corporate resources. Highlights of some key dimensions include:

- **Fixed-fee payment model:** Compared with traditional fee-for-service plans, Kaiser's fixed-fee payment model embeds financial incentives that support prevention and keep patients healthy. Coupled with strategies that match the level of service provided to the complexity of individual cases, it is also reflected in 22% greater cost efficiency than competing systems.[1]

- **Sidney R. Garfield Health Care Innovation Center** (San Leandro, CA): opened in 2006, the center is promoting experimentation with new technologies such as in-home videoconferencing systems linking health care professionals to patients, laser-projected keyboards that can prevent the spread of germs via computer equipment, and refined medication administration systems. The space is also used to bring interdisciplinary teams together to collaboratively address complex problems, brainstorming alternative care delivery and business models.

- **National Linguistic & Cultural Programs (NLCP)**, a centralized resource to provide guidance, leadership, and exert consultation on issues related to linguistically and culturally appropriate care. Partnered with City College of SF to build qualified health care interpreter capacity in the community and also developed assessment tools to test/evaluate provider language and cultural competency.[2]

- **Financial and technical support for innovative people** to test new ideas and then disseminate lessons learned within the provider community. Early innovator in developing multi-pronged programs to address exposure to second-hand smoke and childhood obesity prevention. The tools and communication strategies have been adapted especially for Native American and Latino families and for children of different ages.

- **Community health outreach:** Leverage prevention messaging to the community-at-large through ongoing media campaigns, support advocacy efforts aimed at achieving better health outcomes for children, and maintain a community benefits program offering grants to community programs.[3] Participation by its physicians like Scott Gee, MD in trainings on prevention topics including motivational interviewing techniques and electronic medical record implementations has been widely heralded.

- **Childhood obesity prevention interventions:** Kaiser Permanente has been an early innovator in developing multi-pronged programs for childhood obesity prevention.[4] Their *medical office visit interventions* use office systems redesign and information technology (MD web pages, electronic medical record, registry data) to drive improvement. The tools

and communication strategies have been adapted especially for Native American and Latino families. KPNC's *weight management interventions* use BMI data to risk-stratify membership to match weight interventions to fit population needs. They have a broad portfolio of weight interventions for children of different ages (e.g. **KP Kids**; **Kids in Dynamic Shape, Teen Choices and Challenges**). Program components include incentives for participants such as "Kaiser Bucks" for toys. The **KPNC Community Health Initiative** has developed program components to support *environmental changes*, including systematic training of health professionals to provide leadership and advocacy for community initiatives, media campaigns and education materials designed for children and families, and financial support to develop community programs such as their **Educational Theater** and **Farmers' Market** models which have been disseminated to other KP regions. They target activities to communities with a high prevalence of obesity & racial/ethnic disparities.

Evaluation/Effectiveness/References
The references below provide more information on Kaiser Permanente's prevention initiatives and evaluation frameworks:

[1]Rae-Dupree, Janet. *Disruptive Innovation, Applied to Health Care*. New York Times. January 31, 2009 (citing data from a 2007 Hewitt Associates study).

[2]Tang G. *Defining Race, Ethnicity and Language Populations*. Presentation to the IOM Committee on Standardized Collection of Race/Ethnicity Data for Healthcare Quality Improvement. March 11, 2009. Newport Beach, CA.
Tang G. *Making the Business Case for Culturally and Linguistically Appropriate Services in Health Care*. Alliance of Community Health Plans (ACHP) www.achp.org/library/download.asp?id=7042.
Chong N. A Model for the Nation's Health Care Industry: Kaiser Permanente's Institute for Culturally Competent Care. The Permanente Journal. Summer 2002;6(3): p. 47-50 (xnet.kp.org/permanentejournal/sum02/model.pdf).

[3]Kaiser Permanente CHI Cross-Site Evaluation Strategy. November 28, 2005. xnet.kp.org/communitybenefit/chi/evaluation/docs/CHINationalEvaluation.doc

[4]Gee S. Kaiser Permanente's Approach to Overweight Children; A Ten Year Strategy to Change the Trajectory of the Epidemic. CA Childhood Obesity Conference Proceedings. January 24, 2007: 7-26.
nature.berkeley.edu/cwh/PDFs/CCOC_07_PDFs/CCOC_07_Jan24_Scott_Gee.pdf

Program:	**Contra Costa Health Services Reducing Health Disparities Initiatives**

Lead contacts:	*Wendel Brunner, MD, Director of Public Health*
	Concepcion Trevino James, Health Equity Manager

Topic areas:	Reducing disparities, integrating public health components, QIP

What's Innovative:
- System-wide commitment to reducing disparities, funding leadership positions dedicated to coordinating efforts to address disparities across their organizational divisions, language access, and IT systems and staff to support data collection and evaluation
- Developed systems for promoting collaborations within the community that directly address the links between poverty and health outcomes

Program Description:
Contra Costa Health Services (CCHS) has been an innovator in developing system-wide strategies aimed at reducing health disparities. At the core of their successful work has been a leadership commitment to addressing issues of health equity, recognizing the need to look beyond a narrow health system focus to connect with broader community-based solutions. Leadership has consistently been willing to take a long view, initiating strategic planning sessions with multiple stakeholders identifying barriers, assessing priorities, and establishing programs with ten- and fifteen-year time horizons when needed.

Strategic plan: CCHS coalesced its many ongoing activities addressing disparities reduction around a comprehensive strategic planning process, soliciting input from stakeholders, convening staff and advisory councils, and then formally adopting a five-year plan[1] that establishes goals and implementation plans for coordinated action across its many departments. Ensuring linguistic access, community engagement, and staff education, training and diversity are identified cornerstones to achieving their plan.

Organizational support: CCHS created management-level responsibility for overseeing health equities goals, and integrates status reporting into regular management meetings. In addition, internal infrastructure system redesign, including development of systems supporting QI programs and data collection, has been coordinated through the Community Health Assessment, Planning, and Evaluation Group, which provides expertise on program design, assesses capacity to collect and report data by race and ethnicity, develops baseline data, and conducts ongoing evaluations.

Community engagement framework: CCHS has translated its long history of developing strategies for engaging communities in promoting the public's health, dating back more than 20 years, into a framework for developing community partnerships. Built on lessons learned from their Healthy Neighborhoods Project and other outreach and prevention programs, their *Ladder of Community Participation*[2] describes a continuum of approaches across seven tiers designed to promote more balanced power sharing and joint decision making in setting priorities, identifying interventions, and determining how resources are allocated.

CCHS's **Life Course Initiative**, launched in 2005 by the public health division, is one example of an innovative program integrating health services, public health, and community activities. The program established a 12-point plan to close the black-white gap in birth outcomes, with a 15-year time horizon in recognition of the complex issues it is addressing. Utilizing a framework[3]

developed by Drs. Michael Lu and Neal Halfon at UCLA, it goes beyond traditional medical models for prenatal care, addressing family structures, community systems, and social and economic inequities. It includes strategies for **enhancing service coordination and systems integration** such as streamlining paperwork for registering for various services and tackles systemic disparities in economic and educational attainment through cooperative efforts addressing local and supports for working parents. The **Building Economic Security Today (BEST) program**, for example, is an innovative pilot examining ways to support disadvantaged families in improving their financial security but integrating financial education classes into existing home visiting programs (black infant health and medically-vulnerable infant programs), offering classes for WIC clients, and having staff available to assist clients in addressing broader financial concerns at the same time they are supporting insurance enrollment and access to the health care system.

Discussion: Note *CCHS's unique structure.* CCHS integrates four health provider components under one umbrella, encompassing Contra Costa Regional Medical Center (the flagship hospital in Martinez); ten CCHS health centers (five of which have specialized pediatric clinics); Contra Costa Health Plan (a county-sponsored health plan covering over 65,000 people); and Contra Costa Public Health (the county's public health division). The ability of others to integrate health system and public health goals to promote prevention will require their establishing similar connections outside a formal organizational structure.

References:
[1]Contra Costa Health Services. *Five-Year Plan for Reducing Health and Health Care Disparities: 2007-2012.* 2007. www.cchealth.org/groups/rhdi/pdf/5_year_plan_2007.pdf

[2]Morgan MA, Lifshay J. *Community Engagement in Public Health: Ladder of Community Participation.* 2006. www.cchealth.org/groups/phoec/pdf/community_engagement_in_ph.pdf

[3]Lu MC, Kotelchuck M, Hogan V, Jones L, Jones CP, Halfon N. *Closing the Black-White Gap in Birth Outcomes: A Life-Course Approach.* Ethnicity and Disease. 2009. See also CCHS Life Course Initiative: www.cchealth.org/groups/fmch/pdf/life_course_fact_sheet.pdf

Innovations in Ways to Change Practice (collaborative learning, innovation networks)

The project Advisory Committee identified the importance of looking for collaborative learning networks and similar initiatives offering **innovations in ways to change practice**, in addition to the primary goal of identifying innovations in models of care. Profiles of several regional networks focusing on children's prevention topics and on more global health care delivery issues which offer some important, leveragable examples of best practice sharing, technical assistance supports, leadership development and mentoring, and funder collaboration are provided on the following pages.

Program:	**Statewide Pediatrician Resident Training Network: Community Pediatrics and Legislative Advocacy**

Lead contacts:	*Lisa Chamberlain, MD, MPH, Stanford School of Medicine/Lucile Packard Children's Hospital*

Topic area:	Collaborative learning networks

What's innovative:
- Enhanced training for pediatricians that directly addresses the vital intersections between the health system, public health, and community organizations
- Efficiencies provided by leveraging curriculum development across the participating medical schools
- The opportunity for training programs to share ideas on successful community-based activities as well as lessons learned is setting the stage for more rapid implementation of effective programs and long-term benefits from the enhanced pediatrician capabilities in addressing population-based community needs

Program Description:
A network supporting collaborative curriculum development and networking across 13 pediatric training programs in CA was initiated in early 2007. An educational and training model focused on developing culturally-competent pediatrician-advocates has been developed, including a Child Advocacy Curriculum featuring standardized workshops and a plan for pediatric residents to engage in advocacy work and individual community projects. The programs are all developing linkages with local health departments, school districts, community clinics, and other community organizations. Residents then support those organization's needs. Examples of resident activities include writing wellness policies for a school system, teaching classes on obesity prevention, supporting the development of medical homes for incarcerated youth, connecting asthma collaborative activities to community clinic supports, addressing teen pregnancy prevention issues in specific populations, and helping coordinate advocacy for S-CHIP funding.

Resourcing: One or two people at each of the 13 programs are contributing to the curriculum development, with 3 people in leadership roles and one part-time program coordinator.

Funding: Grants totally approximately $1.5 million are funding this program, led by grants from The California Endowment.

Collaborators: Stanford University School of Medicine serves as the collaborative's lead institute, supported by the University of California-San Francisco and the Children's Hospital and Research Center-Oakland, joined by ten additional pediatric residency programs across the state.

Evaluation/Effectiveness:
An assessment of an early version of the Child Advocacy Training curriculum model developed by the pediatric departments at Stanford School of Medicine, UCSF, and the University of Miami, FL was undertaken in 2005. An evaluation plan is in place for current activities of the 13-site network and each site has received IRB approval. The evaluation will center on changes in attitudes, knowledge, and skills of the residents and interviews of the faculty on how the collaborative made an impact on their program.

References:
Chamberlain LJ, et al. Integrating Collaborative Population Health Projects into a Medical Student Curriculum at Stanford. *Academic Medicine*. April 2008; 83(4):338-344.
Chamberlain LJ, et al. Child Advocacy Training: Curriculum Outcomes and Resident Satisfaction. *Arch Pediatr Adolesc Med*. Sep 2005;159:842-847.

Discussion:
This network provides an innovative example of the potential for impacting child health outcomes through advocacy work. Their coordinated advocacy for S-CHIP, bringing the weight of medical school-based expertise statewide behind the importance of this issue for children's health outcomes has been an important development in enhanced capacity for promoting improved child health outcomes.

Program: **Bay Area Regional Health Inequities Initiative (BARHII)**

Lead contacts: *Bob Prentice, Ph.D., Director*
                    (through the Public Health Institute, Oakland)

Topic area: Public health, collaborative learning

What's innovative:
- Collaboration among multiple public health departments with very clear focus on integrating the upstream social and environmental determinants of health (poverty, racism, neighborhood conditions) into public health departments' consciousness
- Leverage from pooling of resources, collective technical assistance, best practice sharing
- Important emphasis on changing the culture
- Development of a consistent set of data, promoting data-driven priority setting and supporting advocacy work

Program description: The **Bay Area Regional Health Inequities Initiative (BARHII)**, a collaborative effort among 9 member county/city health departments in the Bay Area, is presented here as a model for promoting leadership and cultural change at the organizational level. While not focused specifically on pediatric issues, the initiative's standardized regional approach, coupled with community advocacy efforts, has added impetus to reorient public health practice and promote new programs addressing health inequities with county leadership.

BARHII's activities include:
- **Partnership building:** BARHII is bringing public health directors together with local government planning directors and community groups to promote collaborative approaches to reducing health inequities. By coordinating with the Bay Area Planning Directors' Association (BAPDA), they have increased local governments' capacity to incorporate of health considerations into land use and transportation decisions. They also support member health departments in forging other new community and school partnerships.
- **Data development:** The initiative has been developing standardized matrices of indicators that link socio-economic and neighborhood environmental conditions to measures on the medical causes of death, diseases, and risk behaviors, mapped into the Healthy People 2010 framework (see references below).
- **Advocacy efforts:** A legislative outreach and media advocacy component is infused into all of BARHII's activities. They have developed position statements on legislative issues on topics including the state's public health infrastructure, immigration policies, and data collection specifications. They develop Health Impact Assessments for use in the planning process and provide testimony and expert consultation to key regulatory and planning bodies that influence community environments. BARHII has increased the visibility of important positions by combining their data and health experts with consistent communication messages across multiple geographic domains, generating news stories and impacting decisions.
- **Trainings/networking opportunities:** They offer trainings and peer consultations on identified best practices around the intersection of health and social justice issues, such as Doak Bloss's Advancing Social Justice Through Dialogue (Ingham County MI DPH), supporting systematic examination of the influence that race, class and gender have on population health, and a Public Health and Land Use 101 seminar on influencing land use and planning decisions.

- **Assessing public health competencies for eliminating health inequities:** A matrix of 9 Workforce Competencies and 9 Organizational Standards and Policies has been developed and translated into a set of **Self-Assessment Tools** which are being piloted. Results will enable public health departments to prioritize actions to take to make work on health inequities central to their missions.

Cost/staffing/funding sources: The collaborative is largely operated using donated time from the individual health departments' participating staff members, with the operating budget limited to a part-time director, a policy associate, and the cost of regional forums and training events.

The California Endowment has been a major sponsor, along with the San Francisco Foundation, Peninsula Community Foundation, and the East Bay Community Foundation. A grant from the Robert Wood Johnson Foundation has been expanding the work on land use to encompass transportation, economic development, and redevelopment, and the National Association of County and City Health Officials (NACCHO) provided a contract for BARHII to collaborate Los Angeles and Shasta counties on strategies for addressing social determinants of health.

Collaborators: This regional collaboration includes public health directors, health officers, senior managers and staff from Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Solano and Sonoma counties, and the City of Berkeley.

Year started: 2002

Evaluation/effectiveness:
BARHII is working to promote use of standard measures that integrate public health indicators with measures that capture neighborhood social and environmental characteristics. Presentations of these indicators are available in the following reports:
- BARHII. **Health Inequities in the Bay Area.** BARHII/Public Policy Institute. 2008. www.barhii.org/press/download/barhii_report08.pdf
- Iton A, Witt S, et. al.. **Measuring Health Inequities: Understanding Health in Context**. May, 2007. www.barhii.org/programs/download/framework-in-action.pdf

Other References:
- Cabuslay E, Clayton K. **Assessing Local Health Department Capacity to Address Health Inequities.** BARHII. October 28, 2008. www.barhii.org/programs/download/barhii_selfassessment_toolkit_apha.pdf
- Stoto MA. **Regionalism in Local Public Health Systems.** California Health Policy Forum/*Center for Health Improvement*. Sept 2007. www.cahpf.org/GoDocUserFiles/412.RegionalizationIssueBriefFinal.pdf

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Discussion:
- *Changing culture:* Vehicle for overcoming institutional policies and categorical funding that have worked to limit the range of practice. Can serve as a model for bringing pediatricians and other health care provider constituencies into the conversation in a way that recognizes the need to re-examine traditional limitations of practice scope to address health inequities. Too early to tell whether the advocacy work and increased capacity in local health departments will translate into better outcomes for kids.

Program:	**The ACTION Program/LEADing Organizational Change**

Lead contacts:	*Sunita Mutha, MD, Program Director*
	Center for the Health Professions, UCSF

Topic area:	Collaborative learning

What's innovative:
- Framing cultural competency as a quality-of-care issue, embedding quality improvement (QI) principals into the development of interventions that promote patient/family-centered, culturally responsive care and eliminate gaps in the quality of care for diverse populations
- Specifically addressing need to enhance organizational capacity at safety net providers through trainings, practical tools, and technical assistance covering quality improvement strategies and evidence-based culturally responsive care delivery
- Learning network accelerates dissemination of lessons learned

Program description:
The Network for Multicultural Health, run under the auspices of the UCSF Center for the Health Professions, has developed a series of initiatives promoting reductions in health care disparities by increasing organizational capacity at safety net providers and others providing direct patient services to diverse patient populations. Although these initiatives do not focus on children's preventive health care services per se, they were recommended for inclusion in these profiles as an innovative strategy that leverages expert technical assistance using statewide networks of providers.

LEADing Organizational Change: Advancing Quality through Culturally Responsive Care (LEAD) was a three-year initiative designed to enhance the cultural competency and quality of care at California's public hospitals. Professionals from eight public hospitals were engaged in developing programs to improve their organization's QI capacity to measure disparities in care and then improve that care. It leveraged provider trainings, technical assistance, and one-year grants with networking to support cross-pollination of ideas to accelerate new program adoption. Projects participants have taken on a range of strategies, and there have been many lessons learned in the process, notably the importance of carefully managing the size of changes being implemented and developing strategies to measure the effect of those changes. Ongoing benefits have resulted as the LEAD participants continue to network and curriculum materials have been bundled into a nationally-recognized training toolbox.

The ACTION Project: ACT using Information, Opportunities, and Networks: The LEAD program has been followed by the creation of ACTION, a statewide resource to bring the lessons of the LEAD program to a wider group of organizations involved in providing direct patient services such as front-line of providers (e.g., community clinics, medical groups) or those that coordinate the work of direct service providers, like an IPA. In early 2009, ACTION undertook a stakeholder survey to help prioritize organizations' needs to promote their improving the equity of care for all patients. The findings will help support their development of resources for practical ways to improve health equity via two main tracks:
- **Technical assistance program:** supporting taking practical steps to improve the delivery of equitable care. Includes training in quality improvement methods, patient-provider communications, disease management, survey instruments, and quality dashboards by national experts. Also will provide support for dissemination activities to take information on approaches, tools, results, and lessons learned to a wider audience.

- **Seed funding:** Providing start-up grants of $10-$35K to catalyze an organization's ability to initiate change, supporting staff time and data collection system development. Applications are being accepted through the end of 2010.

Cost/staffing: ACTION will provide $500,000 in funding for QI efforts to improve equity care.

Collaborators/funders: The Center for the Health Professions at UCSF has partnered with the California Association of Physician Groups (CAPG) and the California Health Care Safety Net Institute (SNI), the education and research affiliate of the California Association of Public Hospitals and Health Systems (CAPH), in implementing these initiatives. The California Endowment is funding the ACTION program and its three-year precursor LEAD program; the California HealthCare Foundation funding of the Network for Multicultural Health has been integral in providing the underlying curriculum and strategies that guide these initiatives.

Year started: ACTION began in 2008; LEAD was a three-year program initiated in 2004. Both of these grew out of ongoing work through the Network for Multicultural Health, which was initiated in 1998.

Evaluation/effectiveness:
LEAD evaluation strategy included the following: 1) interviews with participants as well as organizational leaders and staff affected by changes that were implemented, 2) pre and post organizational assessments, evaluation of educational process, and project outcomes. ACTION evaluation will include patient outcomes and process measures.

References:
- Background information on both the **ACTION Program** and **LEADing Organizational Change** can be found on the UCSF Center for Health Professions WEB site at: futurehealth.ucsf.edu/TheNetwork/Default.aspx?tabid=110.
- UCSF Center for the Health Professions. **What do Organizations Need to Improve Health Equity? Results of an Online Survey.** February 2009.
- Mutha S, Allen C, Welch M. **Toward Culturally Competent Care: A Toolbox for Teaching Communication Strategies.** San Francisco, CA: Center for the Health Professions, University of California, San Francisco, 2002.
- Wu E, Martinez M. **Taking Cultural Competency from Theory to Action.** The Commonwealth Fund. October 2006.

Discussion:
- These efforts directly address the lack of robust QI expertise at many safety net providers. By building capacity to consistently integrate QI strategies into initiatives to improve delivery of culturally-competent care, the ACTION and LEAD initiatives ensure that outcome measures are embedded in their activities, which in turn allows for exploration of the business case for implementing cultural competency initiatives that improve the quality of care for diverse populations.

Program: **California Medical Association Training/Mentoring Programs**

Lead contacts: *Elissa K. Maas, MPH, Vice President of Programs*
Dexter Louie, MD, CMA Foundation Board Chair

Topic area: Collaborative learning

What's innovative:
- Successful strategy promoting improved quality of preventive care especially in small pediatrician practices, using physician champions as peer educators backed by provider toolkits and resources developed through statewide collaboration
- Building capacity for physician engagement in advocacy efforts, conducting trainings and promoting a grassroots approach linking volunteer physicians with communities and schools to promote healthy behaviors and policy change
- Recognize the importance of building capacity of ethnic physicians, who provide a disproportionate share of care to at-risk youth

Program description: The California Medical Association Foundation (CMA-F) has developed several innovative programs that are building the competence of the state's physicians in addressing a range of pediatric prevention issues. These include:

- **Obesity Prevention Toolkits, Mentors, and Community Advocates:** CMA-F, has developed a training curriculum with accompanying provider toolkits and has created physician champions to conduct the trainings, using a train-the-trainer model. Key components of the CMA-F's Obesity Prevention Project include:

  o **Child & Adolescent Obesity Provider Toolkit**, developed in partnership with the California Association of Health Plans, covers what clinicians should consider in the prevention, assessment, and treatment of pediatric overweight patients, including detailed information on clinical guidelines, supporting office systems, billing and CHDP coding, and strategies to improve patient-provider communication.

  o **Physicians for Healthy Communities Initiative,** provides training for *Physician Champions* on community collaboration, nutrition messages, and advocacy techniques to promote healthy eating and active living throughout California. The Initiative promotes policy and environmental changes in schools and neighborhoods. To date, over 500 physicians have been trained, an active *Speakers' Bureau* database is maintained, and many links to school boards, county councils, and other community organizations are accelerating the adoption of obesity prevention programs at the community level. This community advocacy training program has been recognized by the Institute of Medicine (IOM) as a *Best Practice* in its 2007 report on progress in preventing childhood obesity.

  o **Supporting resources:** CMA-F has developed a comprehensive set of resources to support the childhood obesity prevention efforts of California's physicians. These include a **media and advocacy training** toolkit covering how to effectively communicate health issues to local officials and techniques for delivering effective testimony at local and state government hearings, a **cultural competency** training package, an **obesity policy clearing house**, **speakers' bureau kit, a guide for working wiith physicians,** and a county-specific **community resource directory**.

- **Network of Ethnic Physicians Organizations (NEPO) Capacity Building:** CMA-F serves as the central convener of a network of the 42 EPOs in California. It has been providing grants to individual EPOs to support capacity building among their provider members. Recognizing the importance of these small, private practice physicians as safety-net providers, CMA-F and NEPO, with support from The California Endowment, initiated the QISS Project – the Quality Improvement in Solo/Small Group Practice Project. QISS's goal is to ensure access to care for safety-net communities through the formulation and implementation of strategies to support the sustainability of primary care ethnic physician solo and small group practices.

- **Adolescent Health Collaborative:** CMA-F sits on the Steering Committee of this statewide effort, working on vital issues of teen health promotion (profiled on p. 32).

Cost/staffing: CMA-F staffing does not neatly divide between pediatric-focused initiatives and its broader work supporting all physicians in the state, but approximately six staff are committed to support the initiatives described above.

Collaborators/funding sources: The CMA Foundation has developed an array of diverse partnerships with businesses, government, health plans, community organizations and others that has provided great leverage in its work. The funder lists for each initiative are available on its WEB site (see reference below).

Year started: The CMA Foundation's Obesity Prevention Project was initiated in 2004. NEPO was first convened in June, 2002, with the QISS survey project started in 2006.

Evaluation/effectiveness:
CMA-F conducts internal evaluations of its physician capacity-building projects, assessing effectiveness and change in knowledge after each training session and engaging in ongoing dialogue with the Physician Champions to help assess their level of community involvement and usage of tools and resources provided.

References:
- CMA-F's program resources, including its provider toolkits, educational materials, and community resource lists are available on its WEB site: www.calmedfoundation.org/projects
- Mass E, Blash L, Lee C. *Quality Improvement in Solo and Small Group Practice. Strengthening the Private Practice Safety-Net.* CMA Foundation. Dec. 2008. www.ethnicphysicians.org/projects/QISS%20Final%20Report%20020209.pdf
- Committee on Progress in Preventing Childhood Obesity. *Progress in Preventing Childhood Obesity: How Do We Measure Up? Institute of Medicine (IOM).* 2007: (see best practice profile p. 249-250).

Discussion:
- The importance of finding ways to support the sustainability of small solo and small group practices that serve the safety net cannot be understated. Ethnic physicians are providing a disproportionate share of care to Medi-Cal and underserved youth, and enhancing their capabilities offers important potential to address issues of community health disparities and workforce diversity.
- CMA-F has demonstrated an ability serve as both a *facilitator*, developing partnerships and funding streams, and a *convener*, bringing together a broad range of stakeholders to develop the information they need, maximizing physicians' impact on the obesity prevention front.

Program: **Building Clinical Capacity for Quality (BCCQ)**

Lead contacts: *Bridget Hogan Cole, MPH, Program Director (BCCQ)*

Topic area: Collaborative learning (QI skills, HIT implementation)

What's innovative:
- Funder collaboration and grantee capacity building around both quality improvement (QI) project planning and the complex decisions associated with HIT platform selection and implementation readiness
- Strategies that focus on first developing well-defined, strategic QI projects, then embedding HIT implementation into those plans
- Phased approach recognizing that most safety net providers are not prepared for full electronic health record adoption, but that they can implement less complex health information technologies to achieve QI goals

Program description: **Building Clinical Capacity for Quality (BCCQ)** is a Southern California initiative designed to enhance the capacity of community clinics to implement quality improvement strategies that are supported by health information technologies. BCCQ started by conducting an assessment of 51 safety net organizations' readiness for technology-enabled quality improvement across five major dimensions: vision and leadership; quality improvement; people, processes, and finance; technology capacity; and market environment. The results were dramatic: 57% were not prepared, 41% were moderately prepared, and only 2% were highly prepared. They found that safety net provider leadership was engaged, but technology-supported QI was not being incorporated into strategic plans, and they lacked the funding, trained people, and infrastructure to move forward.

Based on these results, the BCCQ sponsors crafted the Technology-Enabled Quality Improvement (TEQI) program to support cohorts of clinics in adopting a narrowly-focused project of their choosing (one project, one population, one technology), developing the skills necessary for QI implementation coincident with the development of supporting technology infrastructure, including addressing core process flows, looking for ways to improve them rather than just automating the existing processes. Program supports include participation in a QI learning collaborative, up to 140 hours of paid on-site consulting from HIT experts, stipends for software purchase, and wide-ranging technical assistance from the program office addressing both QI and IT implementation needs, including selecting consultants, writing contracts, and addressing staff software training.

A first round of grants has been made to 14 clinics. Most of the early projects center on creating disease registries to support adult chronic care disease management activities, especially for diabetes. However, several pediatric initiatives are in the planning stages. **Community Action Partnership of Kern's Family Health Center** is working on process flow assessment and redesign, care management, panel management, and organizational QI related to pediatric immunizations. Their pre-work to first address optimizing workflows before scoping IT system functionality requirements illustrates the effectiveness of strategically staged implementation. Similarly, early planning at the **Westside Family Health Center** and **Community Health Alliance of Pasadena** has centered on how information from new internal HIT implementations supporting immunization and well-visit tracking (i2iTracks and EPIC respectively) will cross-communicate with the Los Angeles-Orange Immunization Network (LINK) immunization registry and, longer-term, support tracking follow-up with cross-agency interactions such as early childhood development referrals and home visiting programs for newborns.

Cost/staffing: BCCQ's operating budget is about $2.8 million, covering program office staff, supporting resources for the learning collaboratives (extranet, sponsored consultants, training curriculum materials), on-site consultants and the HIT purchase stipends.

Collaborators/funding: BCCQ operates under the Community Partners (Los Angeles) umbrella. Funding is provided by four sponsors – Blue Shield of California Foundation (BSCF), Kaiser Permanente, LA Care Health Plan, and UniHealth Foundation – whose willingness to combine forces behind a commonly-defined mission has greatly expanded program reach.

The BCCQ initiative has enhanced its efforts by integrating with other key HIT activities underway across the region and the state. Eight clinics are involved in both BCCQ and the **Tools for Quality** program, a statewide collaboration under the Community Clinics Initiative, which has focused on implementation of disease registries at safety net clinics, including implementations of *i2iTracks*, a proprietary population health management software system. The **LA Care Health Plan HIT Initiative**, using incentives to improve performance in Medicaid Managed Care by rewarding utilization of four types of HIT including the county immunization registry, and **Health-e-LA**, dedicated to developing an infrastructure for multi-organizational electronic exchange of clinical healthcare information, also support enhanced clinic HIT capacity. Important leverage has come from cooperative development of training sessions, curriculum materials, and project resources such as budget templates and measure specification.

Year started: BCCQ's work conducting the assessment of clinic readiness was initiated in 2006; its first wave of project implementation, funding 14 clinic projects, began in September, 2008.

Evaluation/effectiveness:
The BCCQ Program's knowledge-building and technical support components are being assessed using participant surveys. The 14 clinic projects funded under the TEQI grants will be evaluated first on their successful progression with their QI plan's improvement cycles from the testing phase through implementation and wider spread. The extent of their achieving the project's QI outcome goals will also be measured. Each clinic is selecting their own measures, drawing on a library of validated measures provided in a Recommended Measures List.

References:
- Object Health. **Building Clinic Capacity for Quality in Southern California: Readiness Assessment Program Final Report**. 2007. www.unihealthfoundation.org/pdfs/uhf_bccqreport1.pdf

Discussion:
- *Addressing capacity building needs:* The learning communities and technical support BCCQ is providing directly address an important gap community clinics face. Their practice management systems are generally antiquated, offering limited reporting capabilities. Structuring improvement programs that force addressing process redesign within the context of population-based panel management marks an important step toward more robust chronic disease management system implementation. Development of data exchange capabilities will especially benefit *cross-agency communications* allowing connecting to data via a WEB portal, linking to immunization registries, etc.
- *Funder collaboration:* Important governance models underlie this project's structure, with the program office created as a neutral entity with separate functions from the sponsor group's advisory functions.

Exciting initiatives addressing the prevention of childhood obesity are taking place all over California. These projects have a wide range in scope, from narrowly focused initiatives addressing just one healthcare provider group or one small target population (like Latina tweens), to wide-ranging regional collaboratives working with hundreds of stakeholders across multiple domains.

We have selected a small set of childhood obesity prevention initiatives to profile here, each emphasizing a different focus area:
- **CHANGE** (Central Valley/San Bernardino): leveraging the evidence-based *Shape Up Somerville* national model modified to address the different needs of rural communities
- **Pediatric Healthy Lifestyle Center**: Risk stratification and referral strategy emphasizing adoption of healthy lifestyle habits using an incremental behavioral change approach; promoting positive eating practices and increased physical activity including partnership with the YMCA
- **Recreation R/X:** Innovative partnerships with both public and for-profit recreation program providers to break down the barriers, especially financial barriers, to exercise; statewide replication enabled through WEB-based training materials and resources
- **San Diego County Obesity Initiative:** Broad-based regional collaborative with particularly successful strategies for outreach to non-traditional partners, models for leveraging work being done in narrowly focused projects, early engagement of county elected officials, and an innovative pilot with San Diego Regional Immunization Registry to add BMI surveillance for children beginning at birth
- **Santa Clara Family Health Plan Adolescent Obesity Prevention:** Medi-Cal QIP program implementation including testing of incentive options for both patients and providers

Three programs profiled elsewhere in this report also address obesity prevention:
- **Kaiser Permanente** (No. CA, So. CA): *medical office visit interventions* to supporting health system improvement, coupled with a broad portfolio of weight interventions for children of different ages and targeted activities in high-prevalence communities (p. 47)
- **CMA Foundation Obesity Prevention Project**: promoting improved quality of preventive care especially in small pediatrician practices, using physician champions as peer educators backed by provider toolkits and resources developed through statewide collaboration; also building capacity for physician engagement in advocacy efforts (p. 57)
- **Share the Care** (San Diego): integrating outreach strategies promoting oral health with obesity prevention, leveraging resources of nutritionist and health educators and development of more efficient ways to take messages to primary care physicians (p. 39)

For a more in-depth look at childhood obesity prevention activities, we encourage tracking the following key resources:
- **NICHQ's Childhood Obesity Action Network (COAN)** offers a forum for healthcare professionals to share experiences across a broad spectrum of activities and efforts to improve clinical care and local environments. Experts across the country contribute best practices, tools, and resources addressing medical office visit interventions, reimbursement strategies for childhood obesity services, and advocacy efforts the health care sector can take to promote policy change. COAN's *Implementation Guide* offers strategies for putting the June 2007 AMA/HRSA/CDC Expert Committee Recommendations on the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity into practice.
      Reference: www.nichq.org/childhood_obesity/index.html

- **California Convergence Partnership:** Seven leading health foundations and public health agencies have developed a platform to share results from their programs in California communities addressing comprehensive improvements in food and physical activity environments. The California Convergence provides opportunities for local leaders to learn from each other and to work collectively as policy advocates addressing land use and transportation planning, retail food environments, public safety measures, and improving nutrition standards for children. The following major programs are included under the Convergence umbrella:
    1. **Healthy Eating, Active Communities (HEAC):** The California Endowment
    2. **Healthy Eating, Active Living (HEAL):** Kaiser Permanente
    3. **Active Living by Design:** Robert Wood Johnson Foundation
    4. **Central California Regional Obesity Prevention Project (CCROPP):** The California Endowment
    5. **Communities of Excellence in Nutrition, Physical Activity, and Obesity Prevention:** California Department of Public Health
    6. **Steps to a Healthier U.S.:** U.S. HHS/Centers for Disease Control and Prevention
    7. **The Food and Fitness Initiative:** W.K. Kellogg Foundation

    Reference: www.californiaconvergence.org/index.php

- The **State of California** coordinates an array of childhood obesity prevention activities, guided by a strategic plan developed in 2005. Efforts span numerous state departments, with the Department of Public Health's **Coordinating Office for Obesity Prevention (CO-OP)** and the Department of Health Care Services' **Office of Clinical Preventive Medicine (OCPM)** playing lead roles in connecting health system-focused efforts to state programs extending broadly through education, agriculture, recreation, and land use planning departments. The state-sponsored **Network for a Healthy California** has leveraged particular expertise in developing social marketing campaigns, including *5 a Day – Power Play!*, an early nutrition education and mass media campaign, and its current *Champions for Change* program emphasizing stakeholder empowerment and promoting spotlighted local community champions. Especially noteworthy are the range of strategies adopted to reach low-income families such as Food Stamp and WIC families, promoting healthier purchasing and cooking of foods. Related state efforts include **Project Lean** (Leaders Encouraging Activity and Nutrition), emphasizing youth empowerment, policy and environmental change strategies, and community-based solutions, the **CA Healthy Kids Resource Center**, a searchable database of evidence-based best practices, and the **Communities of Excellence in Nutrition, Physical Activity, and Obesity Prevention** Convergence partner referenced above.

    References: The **Network for a Healthy California** WEB site offers one key entry point into the state's many initiatives (www.networkforahealthycalifornia.net). See also the Department of Public Health's **Coordinating Office for Obesity Prevention (CO-OP)** site. For media outreach campaigns, including design and evaluation strategies, see: Community-Based Social Marketing: The California Project LEAN Experience. January 2004. www.phi.org/pdf-library/ProjectLEANExperience.pdf

- **Research centers:** Important efforts to grow the evidence-base behind obesity prevention interventions are underway at a number of research centers across the state including the **Stanford Prevention Research Center** and the **Lucile Packard Children's Hospital Center for Healthy Weight**, **UC Berkeley's Center for Weight and Health**, **The Center for Advanced Studies in Nutrition and Social Marketing at U.C. Davis**, and the **Public Health Institute**, among others.

Program:	CHANGE (Creating Healthy, Active, and Nurturing Growing-up Environments) Central/San Bernardino Valley

Lead contacts:	*Vivica Kraak, MS, RD, CHANGE Program Director, Save the Children* *Christina Economos, PhD and Julia Bloom, MPH* *School of Nutrition Science and Policy, Tufts University*

Topic area:	Childhood obesity prevention, rural populations

What's innovative:
- Linking home, school, and community interventions
- Undertaking 18 month planning effort to support identification of strategies for adapting an evidence-based program from an urban setting to meet the needs of rural environments
- Leveraging successful work on how to spark social change – how to nurture community advocates, use government strategically, employ mass communication, and support development of environmental and policy changes; community capacity-building focusing on how to change the system
- Program implementation has been designed with future replication at other rural sites in mind. Extensive evaluation components will build a sound scientific base; analysis of individual program components is designed to contribute to the development of a package of interventions that can reduce the risk of obesity for ethnically and racially diverse low-income children living in rural regions

Program Description:
Save the Children is partnering with Tufts University's Friedman School of Nutrition Science and Policy faculty to design, implement, and evaluate a large-scale childhood obesity prevention intervention in rural America. The intervention is exploring how to create supportive environments to encourage low-income rural children to increase their daily physical activity levels, reduce leisure-screen time, and develop healthy eating habits. The program, named CHANGE (Creating Healthy, Active, and Nurturing Growing-up Environments), is being implemented in the Central and San Bernardino Valleys in California as well as in rural areas of the Mississippi River Delta, Appalachia, and South Carolina.

Each of the four program communities will develop a series of interventions including:
- A range of home, school, before/after-school, and community-based programs
- Training in package of replicable obesity prevention initiatives, including curriculum models promoting healthy snacks and eating habits, physical activity modules, and screen time reductions (eg HEAT Club nutrition curriculum, CATCH during recess, etc)
- Professional staff development includes wellness focus for teachers, food service staff, and nurses
- Parent newsletters, tip sheets, and community resource guides in multiple languages
- Strategies for engaging civic leaders, community organizations, school board and PTO, parents
- Technical assistance from Tufts Univ. program staff

Business model: Program includes a paid regional coordinator, extensive hands-on training, equipment, and technical assistance.

Funding sources: *Save the Children* is providing funding for three years, including a 6 month planning period and site coordinator position. The $1 million grant covers 4 intervention sites

and 4 control sites in rural areas of Kentucky, Mississippi, South Carolina, and California as well as smaller-scale CHANGE program activity implementation at 22 elementary schools.

Year started: Intervention began with 2007-2008 school year, but builds on program work initiated in 2002.

Population served: Focuses on elementary school aged children in rural areas. CA program includes activities in the Central Valley/San Bernardino area.

Evaluation/Effectiveness:
- Undertaking a randomized control trial evaluation framework, with data being collected for both intervention schools/community and a similar set of control schools/community. Measures of children's diet and snacking habits, overall physical activity level, daily leisure screen time, and BMI z-scores will be captured 4 times during the two school years, with rural sites in KY, MS, and SC as well as CA.
- Program is in pilot stages, with baseline data being collected.

References:
- Economos CD, et. al. **A Community Intervention Reduces BMI z-score in Children: Shape Up Somerville First Year Results**. *Obesity*. May 2007;15(5):1325-1336.
- Economos CD, et. al. **What Lessons Have Been Learned From Other Attempts to Guide Social Change?** *Nutrition Reviews.* 2001;59(3):40-56.

Discussion:
- This program is testing and adapting key elements of Tufts University's *Shape Up Somerville* intervention that has effectively reduced urban elementary school-aged children's obesity risk. Expense of that program, at $1.5 million from CDC, has been cited as a concern relative to replication potential. Note, though, that the evaluation component added approx 1/3 to the cost. Long-term sustainability has been achieved through high-level buy-in by civic leaders combined with ongoing community-led program components. A funded program coordinator has been key to enabling development of ongoing funding sources.

Program: **Pediatric Healthy Lifestyle Center (PHLC)**

Lead contacts: *Dan Delgado, MD, Santa Clara Valley Medical Center*

Topic area: Childhood obesity prevention

What's innovative:
- Emphasize adoption of healthy lifestyle habits using an incremental behavioral change approach. Identify at-risk children at an early age and intervene with parents, promoting positive eating practices and increased physical activity within a culturally-based structure.
- Partnership with the YMCA in a sustained program of appropriate physical activity coupled with a commitment to making better food choices. Through other partnerships, some participants are given bicycles and helmets and others are underwritten to join Parks and Recreation programs.

Program description: The Pediatric Healthy Lifestyle Center (PHLC) at Santa Clara Valley Medical Center (VMC) is designed to address the growing epidemic of pediatric obesity and pre-diabetes in children by assisting patients in acquiring healthy habits at a young age. PHLC was opened in response to evidence showing that, of the 34,000 paneled pediatric patients at VMC, approximately 30% were overweight, including 15% categorized as obese.

The Center helps obese children manage and treat their conditions, while also providing early intervention strategies for at-risk children and their parents, with the emphasis in both populations on adopting healthy lifestyle habits, not on weight loss. Services provided include comprehensive evaluation, dietary plans, activity plans, medication management, family counseling, and individual behavioral counseling. The Center uses different strategies and tools depending on the child's age, developmental needs, and degree of parental participation, including two distinct programs facilitated for children in different age groups:
- **Salud Para Juventud**, or Health for Youth, is an intervention program for pre-kindergarten children and their families. Instead of waiting for children to develop the co-morbidities associated with overweight and obesity, Salud Para Juventud identifies at-risk children at an early age and intervenes with a focused prevention effort that educates parents about positive eating practices.
- **Cambie Su Vida**, or Change Your Life, in partnership with the YMCA, helps children 11 years and older engage in a sustained program of appropriate physical activity coupled with a commitment to making better food choices.

Collaborations: PHLC's collaborative program with the **Santa Clara Valley YMCA** has increased its patients' access to low-cost exercise options. And, working with **Turning Wheels For Kids**, it has been able to give bicycles to some patients, an exciting opportunity to help encourage a fun and healthy lifelong habit.

More broadly, Dr. Delgado, PHLC's clinical leader, has played a major role in promoting greater awareness of obesity issues in the community through his leadership role in the **Early Childhood Obesity Prevention Collaborative** (coordinated through **First 5 Santa Clara County**). An obesity prevention marketing campaign to educate parents and a policy group working with local officials has been created. In addition, a series of initiatives to improve care in clinical settings has resulted in trainings for healthcare providers on childhood obesity prevention messages, best practices, and awareness of low-cost nutrition and physical program resources, all promoting a changed culture of care especially within the local public healthcare system. PHLC also coordinates with Santa Clara County activities under the CDC-funded **Steps to a Healthier US**.

Cost/staffing:
The PHLC operates 40 hours a week with a staff of 1.5 MDs and 2 RDs providing direct patient care, supported by 2 full-time medical assistants. The clinical dieticians function as Health Liaisons performing nutrition assessments, feeding dynamics evaluations and creating individualized nutrition plans based on Medical Nutrition Therapy (MNT) current knowledge. There are plans to add a licensed clinical social worker to the team to provide counseling support to families though clinic space is a continual issue. A Senior Human Resources Representative acts a clinic coordinator and verifies insurance authorizations and acts as registration clerk.

Funding sources: The PHLC is housed at FQHC sites within the County system and currently rotates through 3 County sites and will be expanding services to a total of 5 sites. Reimbursements cover a portion of the program's budget. Youth gym memberships and other employee wellness programs have been funded by a private family foundation for a 3 year period. The Health Trust and First 5 Santa Clara County helped fund the Raising a Healthy Eater classes for parents with kids under 6 years old. Kaiser Community Benefits and Kaiser Regional have helped fund ancillary programs and infrastructural support.

Year started: The PHLC clinic was established in 2003 as a small pilot program with just one pediatrician. Service expansion has been gradual with current staffing levels in place since 2008.

Population served: Staff sees patients between the ages of six months and 19 and accepts referrals from both County and community providers. PHLC specifically targets children in low-income families; as such, most are Medi-Cal, Healthy Families (SCHIP) or Healthy Kids (private Santa Clara County insurance program). Over 70% of the children seen are Latino, and all the clinical staff are bi-lingual and bi-cultural. Educational materials are provided in both English and Spanish with some also in Vietnamese.

Evaluation/effectiveness:
- PHLC staff has reported not only weight loss but also improved physical fitness, healthier eating, improved self-esteem, lowered blood pressure, and improvement in blood sugar and cholesterol levels. Evaluation data for the period between August 2005 and May 2007, when 665 patients visited the clinic, showed that, for those who had severe enough obesity to require monitoring of glucose and lipid values, 61% improved their glucose levels, 63% lowered their cholesterol, and 65% lowered their triglycerides (though this data was not analyzed for statistical significance).

References:
- National Association of Public Hospitals. The 2008 Safety Net Awards (Reducing Health Care Disparities Category). 2008; p. 23. www.naph.org/naph/sna/sna08.pdf
- National Public Health and Hospital Institute. Obesity Treatment Programs in Public Hospitals and Health Systems. April 2008; p. 31-35. www.magnetmail.net/images/clients/NAPH/attach/ObesityMonograph.pdf

Discussion:
- The initial philosophy was to create a Level 2 intervention targeting those patients most likely to succeed. This "low hanging fruit" approach is good as a public health measure but does not address the needs of the individual patients that are becoming more and more complicated. PHLC is now looking at creating separate treatment arms for the more challenging patients, but identifying sustainable funding streams is an issue.
- Results for the intervention for kids under 5 are particularly promising, and the hope is to replicate this in a private health setting in the near future.
- Data collection and analysis to evaluate clinical outcomes pose an ogoing challenge; PHLC is working to enhance SCV's electronic patient registry and an ambulatory electronic medical record in process to provide data to support improved follow-up and outcome measurement.

| Program: | **Recreation RX** (Chula Vista/San Diego/Tulare) |

| *Lead contacts:* | R. Christopher Searles, MD, UCSD Family Medicine/Psychiatry |

| *Topic area:* | Childhood obesity prevention |

What's innovative:
- Innovative partnerships with both public and for-profit recreation program providers to break down the barriers – primarily financial – to exercise, including translating excess capacity at underutilized park and recreation programs into free program offerings
- Low cost implementation with limited program infrastructure costs
- Statewide replication enabled through WEB-based training materials and resources

Program description: Recreation RX promotes improved child health outcomes by facilitating partnerships between healthcare and recreation providers in underserved communities to increase access to safe and structured activity. The program was initiated in the low-income, predominantly Latino community of West Chula Vista (San Diego) by Dr. Searle, a local provider, to address his concerns over the limited exercise his pediatric patients were getting. The children were facing reduced PE time in school, were often locked out of school playgrounds after school, their neighborhoods were not walkable, and they were not utilizing existing recreation and programmed open space because of a combination of factors including cost, distance, timing, and awareness.

In response, Dr. Searle developed relationships with the City of Chula Vista Parks and Recreation Dept. to allow free access to programs. They identified specific city programs that were underutilized and agreed to open them up for free to local children. Over time, outreach has resulted in an expanded set of offerings available, including programs at the local pool, structured after-school programs offering guided physical exercise, walking clubs, and yoga. Culturally-specific programming such as *Family Salsa*, outdoor excursions to address lack of exposure to nature, and social activities like chess have been added.

Detailing was provided to pediatricians and family medicine providers in the community to make them aware of these program offerings. Class listings, prescription pads, posters for waiting and exam rooms advertising the availability of recreation prescriptions, and ideas on strategies to get kids to actually attend, such as by engaging entire extended families including grandparents were provided. These sessions were structured as in-the-hall discussions with minimal time commitments, and are followed up to ensure prescriptions for exercise are being written for overweight and sedentary children.

Efforts underway to replicate Recreation RX in other settings offer important insights into the benefits of leveraging the underlying model while also recognizing the need for community-specific variations. In Tulare County, the County Health and Human Services Agency (HHSA) took a lead role in the effort. Developing access to Park Service sites proved politically challenging, so they have emphasized relationships with local organizations and businesses (Y, Boys & Girls Clubs, yoga studios) who were lobbied to open up one-hour slots each week for free access. By coordinating across these programs, they have been able to make at least some free exercise activities available every day of the week.

Another Recreation RX pilot program is underway in Spring Valley (eastern San Diego County) through collaboration between the County of San Diego Department of Parks and Recreation, the

Network for a Healthy California, Grossmont Spring Valley Family Health Center, and the San Diego County Commission on Children Youth and Families. Family Health Center clinic patients aged 5 -17 who are identified for obesity risk primarily through elevated BMI levels receive prescriptions for specially designated programs. Individuals either pay a $5 co-pay or participate in one of the community or rec centers' free daily activities. Program evaluation will include a cross-comparison of the small co-pay relative to free access on attendance rates.

Collaborators: As noted above, it is the collaborations between healthcare providers and public and for-profit recreation providers that form the heart of the Recreation RX program. Building on its first key partnership between a single family medicine provider and the City of Chula Vista Park & Recreation Department, an array of creative partnerships are now furthering the availability of exercise programs and local providers' awareness of those programs.

Cost/staffing: This program is run with a minimal operating budget, limited primarily to printing costs for prescription pads, office signage, and maintenance of the WEB-based resources. The program leader's time for outreach has primarily been provided pro-bono. An additional physician champion and a WEB resource developer support program activities on a part-time basis.

Funding sources: CMA Foundation grants have supported program development.

Year started: 2006

Evaluation/effectiveness:
- Program evaluation to date has included follow-up surveys of pediatricians to reassess knowledge and attitudes and monitoring of both prescriptions written and program utilization.
- The Spring Valley pilot will allow an evaluation of free versus cost-based exercise programs, with questions such as whether the cost barrier decreases the total number of participants or if paying a little increases adherence being studied. Plans for a tracking system that will also track BMI for the children who stay within the system are also being considered.

References:
- Background materials available at the Recreation RX WEB site: www.recreationrx.org

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Discussion:
- *Forcing rethinking of traditional roles:* The Recreation RX framework promotes an expanding role for health care professionals in building infrastructure needed to improve community health; similarly, city/county recreation departments are re-working program offerings with the health needs of at-risk populations in mind.
- *Replication notes:* Model is being made available through support for regional program champions and a WEB site offering training materials, prescription pad templates, office posters, and discussion boards. Knowledge of the local neighborhood is key. The physician champion's close neighborhood connections – he grew up there, taught in the recreation program as a teen, and was on the board for the County of San Diego Parks and Recreation there – greatly facilitated his ability to make connections. Absent that connection, he challenges providers to follow a patient through various recreation options (can they really get to the Y pool? are the walking paths safe?) to develop the right recreation prescription.

Program:	**San Diego County Childhood Obesity Initiative (COI)**

Lead contacts:	*Cheryl Moder, Director*

Topic area:	Childhood obesity prevention, collaborative models

What's innovative:
- Particularly successful strategies for outreach to non-traditional partners on special projects, providing connections and promoting advocacy work
- Model for leveraging work being done in narrowly focused projects, taking lessons learned to a county-wide audience
- Early engagement of county elected officials
- Innovative pilot with San Diego Regional Immunization Registry (SDIR) to implement a health screening module with height and weight/BMI tracking; creates a resource for BMI surveillance among children beginning at birth, and has potential for practice enhancement by including prompts and resources for children at identified BMI trigger levels.

Program description: The **San Diego County Childhood Obesity Initiative** (COI/Initiative) is an innovative county-wide collaborative that has mobilized partnerships to implement childhood obesity prevention, with particularly successful strategies for outreach to non-traditional partners who are actively engaged in special projects and offer connections and clout to help promote advocacy work as well as providing funding. The public/private partnership represents more than 100 stakeholder organizations working through 7 active workgroup domains to support obesity prevention through advocacy, education, policy development, and environmental change.

The Initiative oversees implementation of the **San Diego County Childhood Obesity Action Plan**,[1] a 2006 roadmap for childhood obesity prevention and reduction in San Diego County. Highlights of some of COI's major accomplishments include:

- **Built environment:** Led by County of San Diego's Health & Human Services Agency (HHSA), government domain representatives have conducted groundbreaking work to improve the built environment. Relationships have been established with regional transportation and municipal planning departments, as well as with designers, developers and architects. A workshop convened leaders from healthcare, real estate development, climate change and elected officials to explore solutions to support healthy, sustainable development. A follow-up workshop brought together city planners and health professionals to learn models for incorporating health into community design and planning regulations. COI convened County Dept. of Planning and Land Use (DPLU) with partners from all domains to learn about the general plan update process and review the plan draft; subsequently, COI provided health language in a formal public comment letter for inclusion into the County of San Diego's General Plan. In addition, public health language was included in the City of San Diego's general plan and the DPLU has begun routing their planning documents through Public Health for review.
- **Policy development:** Countywide policies adopted since the inception of COI include: the County of San Diego Dept. of Parks & Recreation (DPR) and the County Board of Supervisors (BOS) have adopted policies assuring that foods and beverages offered in vending machines at county facilities comply with nutritional guidelines; DPR has adopted a policy assuring that foods sold at concession stands at all facilities comply with nutritional guidelines; BOS voted to increase Park Land Dedication Ordinance Funds, which had not

been adjusted since 1986; a policy assuring accessible and comfortable lactation accommodations at the workplace was adopted by the HHSA and will serve as a model for other businesses.

- **Community resources:** A grant from the Vitamin Cases Consumer Settlement Fund has allowed development of a free centralized resource/referral network together with 2-1-1, Rady Children's Hospital, SD Nutrition Network and SD Diabetes Coalition to link pediatricians and community residents to local resources. This project resulted from a survey of pediatricians, who indicated that the lack of awareness about local resources is a major barrier in their ability to make appropriate referrals. Partners developed and maintain a free searchable resource listing of nutrition, physical activity, healthy weight, and diabetes services using the San Diego's 211 Web and telephonic platforms.[2] Outreach and awareness activities are focused on pediatricians, endocrinologists, public health nurses and school nurses to encourage referrals.

- **Healthy food access:** Through a collaborative effort with multiple partners, the first farmers' market in the county to regularly accept EBT cards was established in the underserved neighborhood of City Heights. This market provided the first outlet for residents to utilize WIC farmers' market nutrition program vouchers and has implemented the "Fresh Fund," an incentive program for SSI, WIC and SNAP recipients to build clients' habits to access healthy foods. In addition, workers are on hand at the market to answer questions and conduct pre-screening for food stamp eligibility, thereby making food assistance more accessible to families. The San Diego Farm Bureau, which serves as market manager, has agreed to accept EBT cards at new farmers' markets throughout San Diego County.

- **School wellness policies:** COI has enhanced implementation of school and childcare center wellness policies by offering trainings and technical assistance and creating a forum for sharing promising practices and lessons learned. With COI support, partners have conducted parent trainings to enlist their cooperation and advocacy. Capacity building support has included cultivation of mini-grant and recognition programs to reward schools and districts for outstanding achievement in policy implementation.

- **Youth engagement:** COI and partners are engaging and training local youth leaders to conduct neighborhood assessments to determine areas for improvement in food and physical activity environments and to advocate with local decision-makers for identified changes. Pilot projects have been implemented successfully in the cities of Chula Vista and La Mesa. Both projects have led to noteworthy environmental change including refurbishment of a local park (Chula Vista) and a safe routes to school grant (La Mesa). Currently, COI is overseeing development of a training manual to assist community partners in expanding this model countywide.

- **Creative business partnerships:** COI has partnered with the San Diego Padres on the Friar Fit initiative, focused on improvements in food/activity environments in the ballpark, schools and the community. Efforts include healthier food options, "instant recess" breaks and in-park messaging at the ballpark, training and resources for schools, and support for community health/fitness events.

Collaborators/governance: COI is a broad-based collaborative, with many participating partners spanning medical, education, government, business, and community groups. The County has played a major role in supporting the Initiative, with both funding and in-kind staff support.

The Initiative is directed by a Leadership Council, which is comprised of many stakeholders and led by co-chairs from both the public and private sectors, and is facilitated by Community Health Improvement Partners (CHIP), a collaboration linking the broad spectrum of San Diego's healthcare stakeholders to community and government groups. CHIP also houses the San Diego Diabetes Coalition, which had resulted in an important cross-pollination of efforts, and the Chula Vista Healthy Eating, Active Communities (HEAC) program.

The Initiative's leadership offers the following insights on fundamental components of their collaborative that have contributed to its sustained progress:

- **Understanding value of making good connections**: COI leadership has devoted significant energy to making high-level connections. The early **engagement of county elected officials** was especially important; roles of business partners and a media/PR firm have also been key. Work is now underway to enhance community engagement at the grassroots level.
- **Having neutral hosting arrangement:** Having COI housed within CHIP, an independent agency, was key, especially with the early funding primarily coming from the public side.
- **Dedicated, FTE collaborative leader:** COI's excellent organizational work stands out; connections to diverse communities enabled comprehensive approaches working with multiple sectors and supported the success in obtaining multiple funding sources.
- **Leveraging work by others:** COI has been very successful accelerating adoption of best practices developed elsewhere (**Chula Vista's HEAC** program, integrating expertise from people working on **CA Project LEAN**, building on the collaborative funding model of San Diego's successful prevention program for teen/youth smoking).
- **Workgroup governance:** COI promotes the independence of its seven workgroups, establishing solid leadership and workplans for each, driven by monthly agendas, but also ensuring the domain leaders all convene regularly to identify collaborative opportunities.

Costs/funding sources: The Initiative's many partnering organizations make COI happen, donating staff time and resources. COI now operates with a full-time Director, Coordinator, and Administrative Assistant, with an annual core operating budget of approximately $400,000. COI has received core funding from the **County of San Diego Health & Human Services Agency**, the **First 5 Commission of San Diego County** supporting their efforts with children 0-5, and **The California Endowment** to allow the Initiative to expand its involvement with businesses, local governments, media and faith-based communities. Other grants have included one from the Vitamin Cases Consumer Settlement Fund that supported creation of the 211 resource network.

Evaluation/effectiveness: COI's evaluation committee, comprised of stakeholders and researchers from local academic institutions, is in the process of developing a comprehensive evaluation plan to track health indicators in local communities and measure improvements in the determinants of health over time. Evaluation consultants also track COI domain work group activities and accomplishments. In partnership with COI, **San Diego Regional Immunization Registry (SDIR)** has implemented a health screening module that contains height and weight/BMI tracking within the registry. This model has received national recognition, as it provides a much-needed resource for BMI surveillance among children beginning at birth, and also has potential for practice enhancement by including prompts and resources for children who are identified at certain BMI levels.

References:

[1] *Call to Action: San Diego County Childhood Obesity Action Plan*. January 2006/revised September 2007. www.ourcommunityyourkids.org/documents/obesity_action_plan.pdf

[2] *Prescription for Obesity: County-Wide Database of Diabetes and Obesity Prevention Programs Released.* Center for Healthier Communities/Rady Children's Hospital San Diego. February 2009. files.e2ma.net/28469/assets/docs/pdfonline.pdf

Program: **Santa Clara Family Health Plan: Adolescent Obesity Prevention (Medi-Cal QIP)**

Lead contacts: *Lily H. Boris, MD, Medical Director*

Topic area: Childhood obesity prevention, QI implementation

What's innovative:
- Testing incentive options for both patients and providers and coupling that with increased availability of wellness and fitness classes.

Program description: Santa Clara Family Health Plan (SCFHP) has initiated an Adolescent Obesity Management/Weight Control quality improvement program (QIP) aimed at addressing extremely high obesity rates for their adolescent members. They have developed a multi-pronged campaign to deal with the issues unique to overweight and obese teenagers.

An important program component has been the expansion of health education classes and activities offered. All classes are provided free to SCFHP members, and include opportunities to learn healthy eating habits as well as a range of fitness activities for adolescents (exercise/aerobics/salsa/martial arts/boxing/open gym). Providers are encouraged to refer their patients, and members can also register directly. Other strategies focused on member outreach include:
- Direct and newsletter communication with adolescent members and their parents
- Continued development of wellness and fitness classes and educational materials on healthy lifestyles and weight management.
- Birthday care incentives for members linked to completed well visits that include BMI calculation and counseling (small denomination movie or music cards)

Strategies aimed at providers include:
- Developing and distributing Body Mass Index (BMI) Provider Tool Kits and conducting outreach to improve physician calculation and reporting of BMI for ALL adolescent plan members
- Improving assessments and referral strategies to identify appropriate members to participate in the high-risk obesity program under their collaboration with the Lucile Packard Children's Hospital and Clinics' Weight Control Program
- Broad dissemination of a resource guide of SCFHP and community programs such as nutrition classes and weight management and fitness programs
- Identifying adolescent provider champions for outreach and training, and developing additional information and resources for providers
- Activities linked to ongoing efforts to improve adolescent well-visit rates, including provider notification of patient well-visit reminders sent
- Investigating possible incentives for providers for program participation and reaching goals under their Reward Best Practices program or via increased adolescent well-visit payment rates and/or BMI calculation reimbursements

Funding sources: The Lucile Packard Foundation for Children's Health has been supporting SCFHP's Healthcare for Teens program, underwriting focus group interviews with adolescent plan members in multiple languages and supporting recruitment for a teen advisory committee, with insights from these efforts used to improve teens' use of health services.

Year started: QIP implemented in 2008, with baseline measurement data from 2007.

Population served: This effort is focused on SCFHP's adolescent members (12-18 years old). Baseline data from 2007 showed that more than 30% of SCFHP's adolescent members were over the 95th percentile in BMI. [1]

Evaluation/effectiveness:
Progress is being tracked using several measures including the HEDIS Adolescent Well Care Visit rate, weight management referrals, and review of provider data and medical records to assess BMI documentation and counseling and/or referral rates.

Discussion:
- In spite of the visibility being placed just on documenting BMI and counseling rates, few Medicaid managed care plans have made much progress on this front. NCQA's field test of its new HEDIS measure showed only 0.8% of the child/adolescents in the Medicaid sample with an outpatient visit had medical record documentation of BMI percentile (0-2.7% range across all plan types). [2] At least documentation of nutrition counseling (69.6%) and physical activity counseling (42%) was much higher.

References:
[1]Well-Visits – Basis for a Healthy Start. *Just the Facts*: Santa Clara Family Health Plan Newsletter. March 2008.

[2]Sarah Sampsel/NCQA. Opportunities to Improve Obesity Assessment and Treatment Through Measurement and Accountability. DMAA Obesity Management Symposium, Sept. 2008. www.dmaa.org/theforum08/presentations/Sampsel.pdf

Given the fact that improving the quality of asthma care is generally categorized under chronic disease management frameworks rather than the early prevention focus of this project, as well as the rich evidence from the wide range of asthma initiatives spanning the last two decades being made available elsewhere, a comprehensive review of innovative pediatric asthma programs was not undertaken as part of this innovative program search. Just two programs, one with a strong prevention focus working upstream to address environmental triggers in the community, in schools, and in homes, and one with innovative components designed specifically to study business model and return-on-investment measures, are profiled. For those with further interest in this arena, a summary of additional resources is provided below.

The **National Initiative for Children's Healthcare Quality (NICHQ)** has a long history bringing quality improvement tools together with chronic care model concepts to promote improved systems for the delivery of asthma care to low income children. Early experiences engaging primary care practices in Boston and Detroit in adopting quality improvement interventions[1] have been translated into a number of collaborative efforts including the New York State Asthma Outcomes Learning Network (Jump-Start training), The California Healthcare Foundation's Plan/Practice Improvement Project (PPIP) supporting Medi-Cal plans, and the Children's Health Improvement Collaborative Asthma Teams in Washington State. These initiatives strengthen the capacity of asthma partner organizations to improve asthma care processes and outcomes for children in a variety of settings such as schools, school based health centers, primary care, hospitals and emergency departments, county health departments, day-care centers. Improvements in symptom free days; inhaled corticosteroid use among persistent asthmatics, use of asthma self management plans, identification and remediation of environmental triggers and reductions in asthma urgent visits and emergency department visits have been achieved.

Key sources of information on national programs and evidence-based reviews of asthma interventions include:

- The **Centers for Disease Control and Prevention's (CDC)** asthma pages provide information on the many interventions sponsored under their *National Asthma Control Program*, annual winners of their annual *National Environmental Leadership Award in Asthma Management*, and comprehensive links to other resources including the **National Heart, Lung, and Blood Institute**'s clinical guideline, other interventions including the *National Cooperative Inner-City Asthma Study (NCICAS)*, and legislative and policy issues[2]
- A comprehensive review of asthma programs with an environmental component developed as part of the EPA-funded **Asthma Health Outcomes Project**[3]
- A study by the **Center for Managing Chronic Disease** at the University of Michigan on the effectiveness of educational and behavioral asthma interventions[4]
- Program successes, tools, and lessons learned from the seven community-based coalitions supported by the **Robert Wood Johnson Foundation** *Allies Against Asthma*[5]

In California, a wealth of resources on interventions and program strategies is being made available through the *Community Action to Fight Asthma Initiative (CAFA)*, [6] a statewide network of asthma coalitions funded by **The California Endowment** and coordinated by the *Regional Asthma Management and Prevention (RAMP) Initiative*, a project of the **Public Health Institute**. The **Children's Asthma Management Program (AMP)** is developing a reimbursement mechanism to disseminate improved children's care management throughout the and the **California Asthma Public Health Initiative (CAPHI)**/California Department of Health Services have also supported numerous initiatives.

Asthma Intervention Reference List

[1]Homer CJ, Forbes P, et. al. Impact of a Quality Improvement Program on Care and Outcomes for Children with Asthma. *Arch Pediatr Adolesc Med*. 2005;159:464-469.

[2]Centers for Disease Control and Prevention Asthma Pages, National Asthma Control Program, Intervention Links: www.cdc.gov/asthma/default.htm

[3]Asthma Health Outcomes Project. Asthma Programs with an Environmental Component: A Review of the Field and Lessons for Success. *The University of Michigan Center for Managing Chronic Disease*. Dec 2007. www.asthma.umich.edu/media/ahop_autogen/AHOP_2-21-08.pdf See also EPA initiatives www.epa.gov/asthma/index.html)

[4]Clark NM, Mitchell HE, Rand CS. Effectiveness of Educational and Behavioral Asthma Interventions. Pediatrics. March 2009;123(Supp 3):S185-S192.

[5]Robert Wood Johnson Foundation. Allies Against Asthma: Five Themes; Grantee Profiles. October 6, 2008. www.rwjf.org/pr/product.jsp?id=34868; see also descriptions of key activities and downloadable tools from each of the seven Allies are available at www.asthma.umich.edu/Allies_coalitions/coalitions.html

[6]Kreger M, Brindis C, Lee PR. **CAFA's Framework for Systems Change: Working Toward Sustainability.** The California Endowment. January 2008. See references at www.calendow.org/Collection_Publications.aspx?coll_id=18&ItemID=306# and www.calasthma.org

Program: **Long Beach Alliance for Children with Asthma (LBACA)**

Lead contacts: *Elisa Nicholas, MD, Director/Founder; Elina Green, MPH, Project Mgr*   *Miller Children's Hospital and The Children's Clinic (Long Beach)*

Topic area: Asthma

What's innovative: ▪ *Educating, mobilizing community volunteers*: LBACA has been very effective in mobilizing volunteers to promote policy changes that are improving local environmental conditions. They use community members to identify and track outdoor air pollution hot spots, monitor traffic patterns, and provide underlying data to support legislative petitions; these volunteers have gained the attention of lawmakers. ▪ *Provider training:* LBACA's evidence-based provider education programs reach all provider levels, with the comprehensive health, environmental assessment, and neighborhood leadership training provided their community health workers especially enhancing the success of their home visiting and outreach programs. ▪ *Innovative school outreach:*   LBACA's orange flag program is just one example strategy for providing consistent, highly-visible messages; when these are flying, everyone knows that students' physical activities have to be adjusted. ▪ *Centralized information resource center:* Free resources made available at a community-based site.

Program description: The Long Beach Alliance for Children with Asthma (LBACA) works to improve health outcomes for low-income children in the Long Beach area by promoting better asthma management and reduced exposures to adverse environmental factors. Program components include: ▪ Community health worker (CHW) home visiting program ▪ Asthma resource center ▪ Physician Asthma Care Education (PACE), an evidence-based provider asthma care education program developed by LBACA, with ongoing trainings conducted by three expert physicians ▪ Training for Medical Assistants and office staff to enable them to provide asthma education to patients and families at provider sites; trainings conducted by nurse practitioners with extensive asthma-care expertise ▪ Advocacy efforts driven by community mobilization to address indoor and outdoor air quality and other environmental issues; working with schools, after-school programs, day care providers, and parks and recreational centers. Training goes beyond asthma care management, including an understanding of air pollution science, *Toxic Tours* of their neighborhood, and legislative tours. Their *LBACA Moms* have become a powerful voice for their children's health, and volunteer *A-Teams* have been very effective in identifying and sustained testing of outdoor air pollution hot spots, monitoring traffic patterns, and providing underlying data to support legislative petitions. *Cost/staffing:* LBACA has two full-time project management staff, five Community Health Workers, an Asthma Outreach and Education Coordinator, and a part-time office manager, all under the direction of Project Director Elisa Nicholas, MD. New funding has also enabled the hiring of two former volunteers as Community Outreach Liaisons to coordinate its Neighborhood Assessment teams (*A-Team*) of community volunteers in addressing housing and outdoor air pollution issues. Two additional physician leaders and two nurse practitioners from Miller

Children's support provider training.

Collaborators/governance: LBACA operates under the institutional umbrella of Miller Children's Hospital, Long Beach. Key partners include the Long Beach DHHS, the Children's Clinic, Long Beach Unified School District, the American Lung Association, legal aid, managed care organizations, numerous community/school/recreation groups, and academic partners (Cal State Univ. Long Beach, USC Keck School of Medicine and Children's Environmental Health Center).

Funding sources: Robert Wood Johnson Foundation's *Allies Against Asthma* provided initial funding. Current funders include The California Endowment *Community Action to Fight Asthma*, EPA, the South Coast Air Quality Management District funding under the British Petroleum Settlement, The National Institute for Environmental Health, and several local foundations.

Year started: 1999, with the CHW intervention added in 2004.

Population served: Reaches children under 18 living in highly-industrialized, low-income communities in Long Beach, Wilmington, Carson, and San Pedro. The communities' location near the Long Beach/Los Angeles ports, with diesel pollution from the ports' trains, ships, cargo conveyors and trucks, results in their facing some of the highest levels of air pollution in the state.

Evaluation/effectiveness:
Program reach since 2004:
- CHW intervention of 2,575 home visits to 725 families of children with severe asthma;
- PACE provider training of 375 providers;
- Nurse practitioners have trained over 145 provider's medical assistants and their staff; and
- Education of over 1,000 parents and children and 100 trainings for 5,000 teachers, after-school program staff, school nurses and others has been completed

Health outcome results being monitored:
- Reducing hospitalizations from baseline of 879 hospital days and 1,254 ER visits due to asthma for children under 18 (2000)
- Reducing school absenteeism due to asthma

Policy competencies:
- Community surveys on knowledge of relevant City of Long Beach building codes and process for reporting code violations, and tenant rights
- Adoption of local policy solutions increasing the availability of affordable housing for low-income tenants

References:
- LBACA 2008-2010 Strategic Plan (2008): www.lbaca.org/pages/strategicplan.htm
- Nicholas EA, et al. Coalition-Based Approaches for Addressing Environmental Issues in Childhood Asthma. *Health Promotion Practice*, 2006 Apr;7(2 Suppl): 108S-116S.

Discussion:
LBACA has successfully expanded its program from the city of Long Beach into several additional areas, and its success in educating and mobilizing community volunteers, including empowering them to drive policy change, has received national recognition. Dr. Nicholas has cited ***promoting coordination and partnerships among coalition members, implementation of consistent messages,*** and ***building a broad and unified voice for policy change*** as keys to success (see Nicholas et al, op. cit.)

Program:	**Asthma Tools and Training Advancing Community Knowledge (ATTACK)**

Lead contacts:	*Dayna Long, MD & Mindy Benson, MSN, NO, Children's Hospital & Research Center Oakland*
	Elizabeth Edwards, MA, MPH, Alameda Alliance for Health

Topic areas:	Asthma, ROI/business case

What's innovative:
- Explicitly testing business case for a QI effort with a 3-year timeframe, using a "treatment" group and a "control" group to evaluate both the intervention's impact on outcomes and whether it can generate financial savings in excess of program costs
- Tracking system to assist providers in identifying and following up on patients is being combined with a local Medicaid managed care plan's datasets to analyze utilization and intervention success

Program description:
The Children's Hospital & Research Center – Oakland is partnering with the Alameda Alliance for Health, a Medicaid managed care plan serving Alameda County, the Alameda County Health Department, the American Lung Association of California, and local provider groups to implement an intervention known as **Asthma Tools and Training Advancing Community Knowledge (ATTACK)**. ATTACK is designed to promote improved patient self-management and reduce repeat ED visits through a multi-pronged approach:

- **ATTACK asthma clinic:** Following an emergency department visit for asthma at Children's Hospital Oakland, children are referred to an adjacent ATTACK clinic for follow-up. The clinic is operating one evening a week, with goal for children and their families to attend the next session (i.e. within 7 days of their ED visit). A physician, nurse practitioner, and asthma educator are available at each clinic session. They conduct an asthma assessment, provide treatment, and then offer intensive one-on-one education. They promote improved self management by developing the asthma action plan at the session and stress recognizing early symptoms to avoid repeat ED visits.

- **Care coordination:** The ATTACK clinic supports follow-up care by linking families to community resources including Alameda County Public Health Department's *Asthma Start* home-based case management program, providing information to the child's school and identifying school-based self-management education when available, and communicating with the PCP. Assistance in getting insurance and establishing a medical home when needed is provided through referral to Oakland Children's CHDP GATEWAY program.

- **Provider training:** Important work to address the quality of asthma management provided within the primary care setting pre-dated initiation of the ATTACK clinic. Children's Hospital Oakland's nurse practitioner conducted trainings of both clinicians and non-clinicians, reaching out to pediatricians in the Alameda Alliance's provider practices and to community clinics through the Community Health Network. Training covered evidence-based practice guidelines, developing asthma care plans, and promoting self-management.

- **Data development:** Ongoing work through the Alameda County *Asthma Start* program, the Alameda Alliance for Health, and Asthma Coalition of Alameda County (ACAC) partners is

supporting data development, combining multiple sources to support analysis of healthcare utilization, provider behavior, medication use, enhanced patient registries, and links with CHDP and other county services. A system allowing for tracking completion of follow-up care for children discharged from the ATTACK clinic will be integrated into program evaluation.

Cost/staffing: The weekly ATTACK clinic is staffed by a physician, a nurse practitioner, and an asthma educator. Additional costs are incurred for care coordination case managers, research coordination, and the evaluation effort.

Funding: Each participating partner contributes resources to this project, led by MD and NP leadership from Children's Hospital & Research Center – Oakland, with Alameda Alliance for Health, the Alameda County Health Department, and the American Lung Association of California contributing resources from health educators, case managers, and data support staff. Outside funding for ATTACK primarily comes from a 3-year $150K annual grant from the Center for Health Care Strategies (CHCS) "*Business Case for Quality*" program, which was made possible through funding provided by the California HealthCare Foundation, the Robert Wood Johnson Foundation and The Commonwealth Fund.

Year started: ATTACK was initiated in April, 2008; it builds on a series of pediatric asthma activities that have been taking place in Oakland, including work through the CDC-funded Controlling Asthma in American Cities Project (CAACP) and CalAsthma RAMP activities.

Population served: Intervention for children aged 1-17 who visit Children's Hospital Oakland's emergency room with an asthma diagnosis or history of wheezing.   Approximately 5,000 children are coming through the Children's Hospital Oakland's ER with asthma problems every year; 25% of them are repeat visitors and 40% need to be hospitalized.

Evaluation/effectiveness:
Success of the ATTACK clinic will be evaluated by using data from the *Asthma Start* tracking system as well as data from Alameda Alliance, which can be used to track repeat ED visits, completion of PCP follow-up visits, medication use based on pharmacy claims. Complete data analysis will be limited to those children covered under Alameda Alliance's Medi-Cal managed care plan. Technical assistance is being provided through the Center for Health Care Strategies grant to translate the clinical outcomes and utilization and cost data into an analysis of return on investment (ROI).

References:
- Center for Health Care Strategies. Business Case for Quality: Phase II. April 20008. www.chcs.org/info-url_nocat3961/info-url_nocat_show.htm?doc_id=520535

Discussion:
Improving referral visit completion rates: One constraining factor on the success of programs like ATTACK remains the difficulty in achieving high follow-up visit rates with the at-risk population targeted. The ATTACK clinic's results are in the 30-40% range. The experience of the **Pediatric Asthma Clinic** at **San Francisco General Hospital**, and the related *Yes We Can Urban Asthma Partnership,* in addressing identified barriers to accessing care offers some important insights on strategies for using risk stratification to offer home visits from community health workers (CHW) for just a limited set of families, but increasing use of extensive phone support by the CHWs as a follow-up strategy.
> Thyne SM, Marmor AK, Madden N, Herrick G. **Comprehensive asthma management for underserved children.** *Paediatric and Perinatal Epidemiology.* November 2007;21 (suppl. 3):29-34.

Acknowledgements

About the National Initiative for Children's Healthcare Quality (NICHQ)

Founded in 1999, the National Initiative for Children's Healthcare Quality (NICHQ) is an action-oriented organization dedicated to achieving its vision — a world in which all children receive the healthcare they need.

Led by experienced pediatric healthcare professionals, NICHQ's mission is to improve children's healthcare by improving the systems responsible for the delivery of children's healthcare. Specifically, NICHQ:

- builds sustainable system improvement capabilities;
- accelerates local and widespread adoption of best practices; and
- advocates for high quality children's healthcare.

Advisory Committee
Identifying Innovative Prevention Programs
for Improving Children's Healthcare in California

NICHQ gratefully acknowledges the contributions of our Advisory Committee members, who gave generously of their time, knowledge, and expertise in guiding our research effort.

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