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Examining Chronic Care in California's Safety Net

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Prepared for
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by
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About the Foundation

The **California HealthCare Foundation,** based in Oakland, is an independent philanthropy committed to improving California's health care delivery and financing systems. Formed in 1996, our goal is to ensure that all Californians have access to affordable, quality health care. CHCF's work focuses on informing health policy decisions, advancing efficient business practices, improving the quality and efficiency of care delivery, and promoting informed health care and coverage decisions. CHCF commissions research and analysis, publishes and disseminates information, convenes stakeholders, and funds development of programs and models aimed at improving the health care delivery and financing systems.

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Executive Summary

One hundred million people in the United States have at least one chronic condition. Chronic illness accounts for three-quarters of total national health care expenditures. Yet care for chronic conditions is seriously inadequate. On average, 72 percent of persistent asthmatics cared for in California physician groups do not use steroid inhalers, which is the indicated medication. Other chronic illnesses are similarly poorly controlled. Many chronic conditions have an increased prevalence among the populations who use the nation's health care safety net, and yet these people have the most difficulty accessing health care.

This report examines the delivery of chronic care in California's health care safety net, focusing on county health systems and community clinics. The research sought out programs targeting asthma in children, congestive heart failure (CHF), diabetes, and hypertension; few programs were found for CHF and hypertension.

The report attempts to answer several questions:

- To what extent do safety net institutions offer state-of-the-art chronic care programs reaching large numbers of low-income Californians?
- What are some examples of excellent chronic care programs in the safety net?
- To the degree that safety net institutions fail to provide state-of-the-art chronic care to large numbers of people, what barriers impede the attainment of this goal?
- What policy changes could remove these barriers and facilitate the spread of excellent programs to all patients with chronic disease in California's safety net?

Data gathering was achieved by conducting 77 interviews including 13 site visits between July 2002 and March 2003 in five urban California counties and the rural Central Valley.

The Fiscal Crisis of California's Safety Net

In 2003, a looming fiscal crisis imperils the financial viability of the safety net. County health systems are experiencing reductions in federal and state funding through Medicaid, which is the largest revenue source for the safety net. Virtually every California county faces budget deficits that have already caused some counties to close primary care clinics; larger deficits are foreseen in the future. Community health centers — community clinics that fulfill federal requirements to receive augmented fees from Medicaid (Medi-Cal in California) — are beginning to experience fiscal pressure because of a recent change in the Medicaid payment formula. In addition, if numbers of Medi-Cal recipients become ineligible for Medi-Cal because of state cutbacks, community clinics will be caring for more uninsured people, thereby reducing clinic revenues.

Improving Care and Reducing Costs of Chronic Conditions

The Chronic Care Model, developed by Edward Wagner, M.D., of the MacColl Institute for Healthcare Innovation in Seattle, is a guide to improving chronic care. The Chronic Care Model can be deconstructed into a number of components:

- Links with community resources
- Health care organization
  - Leadership
  - Financing
- Self-management support
  - Traditional patient education
  - Training in goal setting and problem solving
- Decision support
  - Clinical practice guidelines
  - Clinician education
- Delivery system redesign
  - Planned visits
  - Case management
  - Primary care teams
- Clinical information systems
  - Registries
  - Clinician feedback
  - Reminders

Research studies have attempted to ascertain which Chronic Care Model components are most effective in improving the care and reducing the cost of chronic illness. This body of research suggests the following simplified guide to chronic care management:

- Registries are needed to identify the population with a particular chronic condition.
- Registries can be sorted to stratify people into low-, medium-, and high-risk for developing complications and requiring inpatient or emergency care.
- Everyone with a chronic condition requires disease-specific patient education plus training in goal-setting and problem-solving skills.
- People at low risk can be managed by primary care teams using reminder prompts and finding ways to relieve busy physicians from performing routine chronic care management tasks.
- People at medium risk should have access to planned chronic care clinics that can provide intensive education and management for at least several months.
- People at high risk, who often have multiple chronic conditions, should be provided with permanent intensive case management.

This paradigm is likely to improve quality of life for people with chronic conditions and reduce health care costs by preventing expensive emergency department visits and hospitalizations.

This research explored how the elements of the Chronic Care Model are being used in innovative ways in parts of California's safety net. Here are synopses of the findings for each of five urban counties and the rural Central Valley.

Alameda County

The great majority of patients using the county health system are not provided with organized chronic care management. However, two clinics offering planned chronic care at the county's Highland Hospital — one for diabetes, another for asthma — demonstrate that some physicians have been successful in initiating chronic care programs in the county system. The county's community clinics are organized through the Community Health Center Network, which coordinates chronic care management through a registry and performance feedback to individual clinics. The local initiative Medi-Cal managed care plan, the Alameda Alliance for Health, has begun to establish programs to assist providers in chronic care improvement. La Clinica de la Raza has a long history of improving chronic care particularly for diabetes; the clinic concentrates on patient education and self-management training and the use of reminder prompts and performance feedback in primary care. La Clinica's successes are attributable to the leadership of several committed individuals, a culture emphasizing quality and service, and progress toward the goal of permanently institutionalizing several Chronic Care Model components. A problem faced by community clinics including La Clinica de la Raza is that substantial personnel time is needed to input data into chronic disease registries since most data do not flow electronically into the registry. Another barrier voiced by people in both the county and community clinic sectors is that health plans seldom pay for chronic care improvement programs.

Los Angeles County

Los Angeles, with 2.8 million uninsured people, is facing a serious fiscal crisis as federal Medicaid dollars, including "bailout" funds, are declining. The county has closed 16 primary care clinics and may close two hospitals. The Los Angeles Department of Health Services is attempting to restructure its services to reduce costs by emphasizing primary care and chronic care management while reducing hospital use, but the financial incentives created by fee-for-service, per diem, and other Medi-Cal reimbursements favor inpatient over primary care. The worst-case scenario has been postponed by a November 2002 voter initiative and an infusion of funds from the federal and state governments, but the financial future of the county system is clouded.

While most people in the Los Angeles safety net do not have access to optimal chronic care management, several innovative and excellent programs exist both in the county health system and in the extensive network of community clinics. This report includes just a few of many innovations, such as pediatric asthma treatment at The Children's Clinic in Long Beach, the county health system's breathmobile program for children with asthma, the Edward R. Roybal Comprehensive Health Center diabetes clinic in the county health system, and the diabetes program of the Venice Family Clinic. While the Roybal diabetes clinic and the breathmobile program feature planned visits, the programs of the Venice Family Clinic and The Children's Clinic rely on innovations in primary care without separate chronic care clinics. The Roybal experience offers an important lesson: Patients receiving optimal care in the diabetes clinic may lose ground when they return to traditional primary care, demonstrating that both planned visit clinics and primary care redesign are needed to reach a large proportion of people with chronic illness and to sustain the gains in their management on a permanent basis.

San Diego County

San Diego has a well-developed network of community clinics with relatively few county health facilities. Like Alameda County, the community clinics are organized into a Community Clinic Network with a strong component of chronic care management through clinic chart audits and performance feedback. A highlight of chronic care innovation in San Diego's safety net is the diabetes program of Project Dulce, which trains teams of nurses, medical assistants, and *promotoras* to travel to different community clinics, offering high-quality patient education and self-management classes in addition to planned visits.

As in other counties, a concern among chronic care improvement champions is the lack of reimbursement by most Medi-Cal managed care plans and other payers for non-physician chronic care services; without such reimbursement, existing programs such as those of Project Dulce may be difficult to expand and sustain.

Santa Clara County

The county health system and community clinic sectors of the safety net have a history of working together through the Community Health Partnership of Santa Clara County. The county's Valley Health and Hospitals System is beginning to develop one of the most comprehensive diabetes care programs of any county system in California, including a diabetes registry with reminder prompts for patients and clinicians in addition to an extensive program of diabetes education.

San Francisco City and County

San Francisco's county health system and community clinic network are beginning to collaborate through a partial electronic medical record, a diabetes registry, and an emerging chronic care coalition. In contrast with most diabetes registries that require manual inputting of data, San Francisco's registry has less clinical data but all the data flow electronically into the registry without the need for personnel to perform inputting. San Francisco's safety net has a number of programs for children with asthma, including the training of community health workers by Yes We Can, a planned-visit pediatric asthma clinic at San Francisco General Hospital, and efforts by the local-initiative Medi-Cal managed care plan to assist providers in the care of its enrollees with asthma.

Central Valley

Many community clinics and some county health systems struggle to provide care for a large dispersed population of low-income Latino and Asian people, many of whom are uninsured. Two community clinics endeavoring to create chronic disease registries abandoned their attempts due to the amount of effort required to maintain the registries. Chronic care champions at San Joaquin General Hospital and Sequoia Health Center in Fresno have created diabetes clinics, but as in other regions of California, chronic care innovations are the exception rather than the rule.

Chronic Care Improvement: Facilitators and Barriers

A number of serious barriers exist to the spread and sustainability of innovative programs based on Chronic Care Model components. Provider organizations are generally not paid for non-physician caregivers to provide chronic care, and primary care physicians are too busy to perform all chronic care functions themselves. Many routine chronic care functions could be accomplished by visits to caregivers who are not clinicians, such as medical assistants (clinicians are physicians, nurse practitioners, or physician assistants). Lack of reimbursement for these non-clinician caregivers is perhaps the most serious barrier to spreading innovative chronic care programs. For example, nurse-run planned-visit clinics for diabetes may be the most effective innovation to improve diabetes care, but health plans may not pay for these planned visits.

Inadequate clinical information systems are another major barrier to improving chronic care. Chronic disease registries, which have been created by a number of community clinics and county health system planned-visit clinics, take a great deal of time to populate since data must be entered keystroke by keystroke. Vastly better information systems, including registries that can be electronically populated from clinical, laboratory, and pharmacy data, are needed.

Most chronic care improvement has come about through the dedication of individual champions rather than through a redesign of primary care practices that delegate routine chronic care functions to non-professional staff. The sustainability of innovations is in doubt without such redesign, and the practice of delegating routine functions to non-professionals is dependent on payers reimbursing their work.

By far the most important facilitator of chronic care improvement has been the dedication of innovative champions. Training many more clinical leaders to become chronic care champions could help spread innovation throughout the safety net. The leadership training process should include the training of more peer leaders and peer educators through community health worker and *promotora* programs.

Medi-Cal managed care plans can be important facilitators or major barriers to chronic care improvement. To become facilitators, these plans can help pay for chronic care improvement and provide a number of support functions to health care providers.

Finally, the collaborative process has been successfully utilized for some community clinics and is expanding in scope. Collaboratives are extremely helpful in training leaders and stimulating the cross-fertilization of ideas. Thus far, county health systems have rarely been included in the collaborative process.

Policy Recommendations

Payers of Health Care in the Safety Net

(Medi-Cal, Medi-Cal managed care plans, Medicare, and county indigent care programs)

"Pay for program." Payers should pay for components of the Chronic Care Model that have been shown by the research literature to be effective. Examples are nurse-run clinics offering planned chronic care visits, peer-led or health educator-led patient education and self-management training, and staff time spent inputting data into registries and using the registries for population-based chronic care management.

"Pay for program" does not mean that payers should create new fee-for-service billing codes for services performed by non-physicians. Alternative modes of payment might avoid the need to certify new categories of caregivers and should reduce the temptation of providers to overutilize services in order to make money. What are some alternative ways to pay for program?

- ***Annual bonus.*** For community clinics, health plans might pay a $30,000 annual bonus to clinics that develop and utilize a chronic disease registry. The bonus amount might depend on the number of patients entered into the registry. The federal Bureau of Primary Health Care has begun to grant clinics with registries funds to hire personnel for registry duties.
- ***Monthly global fee.*** For community clinics, health plans might pay a monthly global fee for care of each person with diabetes, with the fee adequate to pay for chronic care programs; in addition, clinics might receive a bonus if their patients are kept out of the hospital and the emergency department.
- ***Global budget.*** For county health systems, health plans might pay a yearly global budget for inpatient services while reimbursing primary care with augmented fee-for-service or capitation payments plus bonuses that "pay for program." This blended payment mode would create incentives to improve chronic care at the primary care level in order to reduce hospital admissions that — with a global budget — become an expense rather than a revenue producer.

Assist safety net providers. In addition to paying for program, payers should assist safety net providers with development and implementation of such chronic care tasks as creation and use of registries and reminder systems, physician education, and tools for clinicians such as guideline-embedded progress notes and asthma action plan forms.

Safety Net Providers

(county health systems and community clinics)

Collaboration. Planning for chronic care improvement in each county/region should involve collaboration between county health systems and community clinics, which often share the same patients. This includes planning clinical information systems/registries. Medi-Cal health plans and relevant community organizations should be involved in planning efforts.

Identify potential leaders. Safety net providers should identify people within their institutions who are concerned with improving chronic care, as a step toward training these potential leaders.

Institutionalize innovations. Safety net providers should begin to institutionalize simple chronic care innovations (see below). Implementing these innovations would be far more likely if payers paid for the innovations. However, even in the absence of payment, the innovations are not expensive to initiate and sustain.

- ***Simple reminder systems.*** Safety net provider organizations should create simple reminder systems that prompt caregivers to perform routine functions indicated for the management of chronic conditions. Research has shown that reminder systems improve chronic care; the systems are easy to institute even without computerized information systems. Examples are flow sheets for patients with diabetes or tickler files reminding clinic staff to call patients who have missed appointments or lab tests.
- ***Train non-professional staff.*** Safety net provider organizations should train non-professional staff (in particular medical assistants) to perform chronic care management tasks that are routine and do not require medical or nursing degrees. In diabetes, for example, four concrete tasks can be delegated to medical assistants: (1) preparing a reminder prompt for each visit of a patient with diabetes by looking through the medical chart or directly from a registry; this prompt would indicate which tests are overdue; (2) ordering the tests that are overdue so that the physician does not need to spend time on that routine task; (3) if there is a registry, inputting data daily from patients seen that day into the registry; and (4) on a monthly basis using the registry to identify and make appointments for patients who (a) are overdue for diabetic tests, (b) have elevated HbA1c, lipids, or blood pressure, and (c) have not had a recent visit. These tasks would be in the medical assistant job description.

Two other innovations are more difficult but could be considered:

- ***Initiating RN-run clinics.*** Safety net providers should consider initiating RN-run clinics for common chronic conditions; for example, a diabetes/coronary heart disease risk factor reduction clinic for patients newly diagnosed with, and in poor control of, these conditions. RNs can be provided with physician-created protocols enabling them to perform patient education and management with physician supervision as needed. A number of experts who have initiated such clinics could be asked to assist in planning and training.
- ***Managing patient population.*** Safety net providers should consider how to manage their entire population of patients with common chronic conditions. This entails creating a registry including all patients with common chronic conditions. Because registries are difficult to create on clinical information systems that do not easily interface with one another, proto-registries can be used that are better than no registry at all. A proto-registry is a simple list generated from claims data ICD-9 codes. In order to make such lists useful in population management, non-professional clinic staff would periodically — perhaps every six months — go through the list to determine whether each patient has had an appointment and has completed routine tests. Proto-registries can

be sorted by disease severity if clinicians utilize the proper ICD-9 codes on encounter forms.

The California Association of Public Hospitals and Health Systems, the California Primary Care Association, and local/regional community clinic consortia are key catalysts, assisting provider organizations to improve chronic care.

Federal, State, and Local Governments

Assist safety net providers. All three levels of government should assist safety net providers in implementing the recommendations listed above. An urgent governmental responsibility is to make a substantial investment in electronic clinical information systems for the safety net.

Facilitate the conversion. Federal and state governments should facilitate the conversion of all county health system primary care sites into Federally Qualified Health Centers, allowing these sites to receive adequate Medi-Cal reimbursement that can cross-subsidize the care of the uninsured. This one change could be instrumental in creating the conditions for improved chronic care.

The principal barrier to the development of chronic care improvement in the safety net is the failure of government to legislate universal health insurance.

Health Professional Schools

Teach students. Schools of medicine, nursing, pharmacy, health education, and medical assistant training should teach their students the Chronic Care Model, including self-management training of patients and a team approach to care, such that newly graduated caregivers will have learned some basic concepts that many existing caregivers do not know. In addition, health professional schools should work with community organizations to assist in the training of *promotoras,* lay educators and community health workers.

Health Care Foundations

California is blessed with several foundations working in the health care field, including the California HealthCare Foundation (which sponsored this report), the California Endowment, California Wellness Foundation, Tides Foundations, and local foundations such as Santa Clara County's Health Trust. In two arenas, these foundations could make a major contribution to chronic care improvement in California's safety net: clinical information systems and strategic decision making.

Clinical information systems. Information technology constitutes both a facilitator and a barrier to improved chronic care. The essence of the barrier is two-fold. First, for institutions with chronic illness registries, lab, pharmacy, and encounter data rarely flow electronically to populate the registries, thereby requiring time-consuming work to input data manually. Second, most safety net institutions do not have chronic disease registries at all, and where registries exist they are seldom connected with larger computerized data systems.

California's health care foundations could help upgrade clinical information systems by:

- Bringing together expertise to plan the best strategy for creating regional clinical information systems that are electronically populated. It is likely that such systems would be centered in a data warehouse that receives data electronically from laboratories, pharmacies, and clinical encounters, and is able to produce registries and clinical performance reports for participating institutions. Ideally, county health systems and community clinic consortia would develop registries jointly.

- Assisting in the necessary process of standardizing the transmission of data among providers, laboratories, pharmacies, data warehouses, and registries with unique patient identifiers.
- Utilizing their funding expertise and contacts to raise money for clinical information systems for the safety net. It may be possible for foundations to convene corporate, health plan, government, and philanthropic organizations to establish a fund for a safety net information infrastructure.

Strategic decisions. California's health care foundations could make a contribution by funding some carefully planned meetings of chronic care champions working in California's safety net and in Medi-Cal managed care plans. The meetings could result in the creation of a California Chronic Care Coalition, which could discuss some of the following issues:

- Is "pay for program" a good idea? If so, how might Medi-Cal health plans and other payers implement it using modes of reimbursement that provide incentives for chronic care improvement? The Rewarding Results initiative of the Robert Wood Johnson Foundation and California HealthCare Foundation would provide insight.
- In the above recommendations to provider organizations, four proposed innovations are listed. More detailed discussion of these innovations would be fruitful. Are these the most important innovations? Are some more important or feasible than others? How can they be widely implemented in a thoughtful and efficient fashion?
- Can all institutions providing chronic care services agree to disseminate unified simple messages to the general public regarding self-management of a few highly prevalent conditions? How can the media be utilized for such dissemination?
- Are electronic medical records (EMR) systems developed enough for safety net institutions to invest in them, or is the timing too early? Which systems best integrate chronic disease registries with other EMR functions?

Are existing collaboratives adequate to educate and inspire chronic care innovators in California's safety net? In addition to the Bureau of Primary Health Care and California Primary Care Association collaboratives, is there a need for local collaboratives? How can county health systems become deeply involved in the collaborative process?

- How can a far larger crop of chronic care champions be identified and trained?
- Are non-fee-for-service modes of paying community clinics and county health systems — for example global budgets or other forms of bundled payment — desirable to create positive financial incentives for chronic care programs? Should health plan, provider, and government representatives be convened to discuss this issue?

Conclusion

An impressive group of individuals throughout California have made major strides — though limited in the proportion of the safety net population reached — in improving chronic care. These individuals are the founders of a larger movement for chronic care improvement in California's safety net. The first step in catalyzing better chronic care should be to draw on the knowledge and experience of active chronic care champions to begin the process of spreading their efforts to many more safety net institutions and those they serve.

I. Introduction

One hundred million people in the United States have at least one chronic condition. Chronic illness accounts for three-quarters of total national health care expenditures.[1,2] Yet the health care system has failed to implement effective ways to manage chronic conditions on a widespread basis. Many chronic conditions have an increased prevalence among low-income and minority populations who use the nation's health care safety net. Yet it is precisely these populations who face the most difficulty accessing health care. People in the greatest need of good chronic care have the most difficult time receiving it.

Care for Chronic Conditions Is Seriously Inadequate

- On average, 72 percent of asthmatics cared for in California physician groups do not use steroid inhalers, which is the indicated medication.[3]
- Nationally, half of patients hospitalized with congestive heart failure are readmitted within 90 days, indicating a major failure in the transition from inpatient to outpatient care.[4]
- Seventy-four percent of people with diabetes in the United States have uncontrolled blood pressure, 71 percent have elevated lipids, and 54 percent have hemoglobin a1c levels above 7.0, indicating poor control of blood sugar.[5]
- Seventy-three percent of people with high blood pressure are inadequately treated.[6]

This report examines the delivery of chronic care in California's health care safety net — institutions that deliver a significant amount of health care to uninsured, Medicaid, and other vulnerable patients.[7] The safety net provides care within three inter-related but separate sectors: county health systems, community clinics, and private physician practices. In this report, we focus on only the first two sectors, county health systems and community clinics/health centers. While the private physician sector cares for a large number of low-income people, there was not sufficient time to study this sector. We limited our exploration to four common chronic conditions: asthma in children, congestive heart failure, diabetes, and hypertension. Because few programs for congestive heart failure and hypertension were identified, the report concentrates on asthma and diabetes.

The report attempts to answer several questions:

- To what extent do safety net institutions offer state-of-the-art chronic care programs reaching large numbers of low-income Californians?
- What are some examples of excellent chronic care programs in the safety net?
- To the degree that safety net institutions fail to provide state-of-the-art chronic care to large numbers of people, which barriers impede the attainment of this goal?
- What policy changes could remove these barriers and facilitate the spread of excellent programs to all patients with chronic disease in California's safety net?

Research was performed through interviews and site visits in five urban counties and the rural Central Valley. The areas were picked based on two criteria: They were relatively large counties and they were geographically diverse, located in Northern, Central, and Southern California. No attempt was made to select the site visits randomly; each was chosen by virtue of having an innovative chronic care management program.

A total of 77 interviews were conducted between July 2002 and March 2003, 50 in person and 27 by telephone. A number of the in-person interviews took place at 13 site visits. The list of interviewees was based on suggestions from experts knowledgeable about California's safety net. The California Primary Care Association, which represents the state's community clinics, regional community clinic consortia, and the California Association of Public Hospitals and Health Systems were most helpful in proposing individuals to interview. All interviews were typed into a database and carefully reviewed when preparing this report.

Chapter II briefly describes California's safety net and the fiscal condition of county health systems and community clinics. Chapter III reviews a widely accepted model for the management of chronic illness, the Chronic Care Model, and summarizes the medical literature indicating which Chronic Care Model components improve care and reduce costs. The report then moves to a description of chronic care programs in a few California counties, offering case studies of high-performing chronic care programs. The report concludes with overall lessons gleaned from the interviews and case studies, and with policy recommendations on improving chronic care in California's safety net.

II. The Fiscal Crisis of California's Safety Net

CALIFORNIA'S SAFETY NET POPULATION INCLUDES 6.8 million Californians with no health insurance[8] plus more than 6 million with Medi-Cal,[9] together making up about one-third of California's population. The uninsured and Medicaid populations are closely linked because many people move in and out of Medicaid eligibility. Much of this population receives health care in county health systems and community clinics.

Community Clinics

In this report, the generic term "community clinic" stands for independent, generally nonprofit, primary care safety net providers. There are several categories of community clinics. Under Section 330 of the Public Health Service Act, community clinics that meet a series of requirements can become Federally Qualified Health Centers (FQHCs) that receive federal grants. Community clinics meeting federal requirements without receiving grants are FQHC look-alikes. Both FQHCs and look-alikes are eligible for augmented reimbursement rates from Medicaid. Community clinics that are not FQHCs and look-alikes are not eligible for augmented Medicaid reimbursement.

In 1998, about 700 California community clinics served 2.6 million patients, half of whom were Latino. Sixty-one percent had incomes below the Federal Poverty Level. About 44 percent of clinic patients claimed English as their second language. Nationwide, 40 percent of community clinic patients are uninsured and an additional 30 percent to 40 percent have Medicaid.[10]

Medicaid is the financial underpinning of the safety net through such programs as disproportionate share hospital (DSH) payments and cost-based reimbursement for community clinics that are Federally Qualified Health Centers or look-alikes (see box on community clinics). Through these additional Medicaid payments, safety net institutions have been partially subsidized to care for the uninsured. State and local governments have also provided important revenues for safety net providers. In 2003, however, a looming fiscal crisis imperils the financial viability of the safety net.

At the very time that more people are losing their insurance, Medicaid financing of the safety net is shrinking. Federal subsidies to the safety net are declining, while state and local government budgets are steeped in red ink, heralding major cutbacks in funding for the care of low-income Californians. The fiscal problems are most severe for county health systems,[11,12] but affect community clinics.

California's County Health Systems

California counties have three varieties of safety net arrangements: county-owned; University of California hospitals in three counties with no county hospitals (Sacramento, Orange, and San Diego); and a nonprofit community hospital in Fresno County. These 26 hospitals and associated ambulatory facilities shoulder the county responsibility under Section 17000 of the California Welfare and Institutions Code to care for "medically indigent" patients. The specific definition of "medically indigent" or "county indigent" varies from county to county.

While making up only seven percent of California's hospitals, the 26 hospitals provide 87 percent of all care delivered to county indigent outpatients, 74 percent of all care to county indigent inpatients, 35 percent of all care delivered to Medi-Cal outpatients, and 26 percent of all care to Medi-Cal inpatients. County health systems deliver 11 million ambulatory care visits per year. More than three-quarters of patients served by public hospitals and health systems are members of racial and ethnic minorities.[13] In California, uninsured people account for 42 percent of county health system outpatient visits.[14] County health systems are highly dependent upon Medi-Cal revenues. Whereas all California hospitals received 35 percent of their revenues from the higher-paying Medicare program and only 20 percent from Medicaid, county hospitals receive just eight percent of their revenues from Medicare and 77 percent from Medicaid.[13]

County Health Systems

Federal funds. For years, hospitals caring for a large proportion of Medicaid patients have received additional funding through the disproportionate share hospital (DSH) program. Over the past few years, Medicaid DSH funds to California have been cut by $264 million; further reductions in 2003 approach $200 million.[15] Adding to the blow of reduced DSH funding, federal Medicaid is planning to eliminate extra reimbursement (the "Upper Payment Limit") for services provided by Medicaid-heavy hospitals, causing California public hospitals to lose hundreds of millions of dollars over the next decade.[16] Moreover, the federal administration hopes to shift more responsibility for Medicaid to the states, which could result in California's Medi-Cal program losing one billion in federal dollars each year.

> *"The health care safety net is unraveling fast precisely when more families are falling into it."*
>
> *San Francisco Chronicle,* December 29, 2002

State funds. In 2003, the State of California faces the greatest budget deficit in its history, in the range of $35 billion. In January 2003, Governor Gray Davis proposed major Medi-Cal cutbacks that are currently under debate in the Legislature. At worst, 500,000 Californians would lose Medi-Cal benefits and become uninsured, placing increased pressure on safety net institutions.[17,18]

> *"More families without care, longer lines in emergency rooms, more hospitals and public clinics bleeding red ink, more kids sick at school: That's what is looming if Washington continues to close its ears to the health care alarm ringing now in California."*
>
> *Los Angeles Times,* December 30, 2002

County funds. County governments in California are legally responsible to provide health services for those without insurance or financial means. Some counties maintain a public system of health facilities, while others back away from direct provision of health services and reimburse non-county facilities to care for only the lowest income uninsured people. With upcoming cuts in transfer payments from the state to the counties, plus a reduction in local tax revenues, counties have fewer funds for health care, impacting both county health facilities and community clinics, which often receive county funds for the care of medically indigent people. In early 2003, virtually every California county has reported major budget deficits and some have already closed primary care clinics. To make matters far worse, these deficits do not take into account the coming impact of the multi-billion dollar state budget reductions that will squeeze county finances for years to come.

Community Clinics

Community health centers receive 29 percent of their funds from Medicaid.[10] FQHCs and look-alikes (but not other community clinics) have received augmented payments under the Medicaid program, based on the actual cost per visit — the health center's total expenditures divided by the total number of patient visits to professional caregivers. While Medi-Cal might pay a private physician $25 for a visit, a community health center might receive $90 per visit. The concept is fair because while private physicians rarely see uninsured patients unable to pay, 43 percent of California community health center patients are uninsured. Augmented Medi-Cal payment allows health centers to remain financially viable while caring for many uninsured people. A few county health systems have achieved FQHC status and are receiving augmented Medi-Cal rates.

In 2000, a federal law repealed cost-based reimbursement and substituted the Medicaid prospective payment system (PPS) method of funding FQHCs and look-alikes. PPS allows these clinics to receive Medicaid reimbursement pegged to the base year of 1999–2000 or 2000, with per-visit payments increasing at 2 percent to 3 percent each year. Community clinic expenses — particularly for prescription drugs that three-quarters of health centers supply to uninsured patients[10] — are growing at 10 percent to 15 percent each year. Thus reimbursement will become less adequate as each year passes. In one example, a California FQHC receiving $89 per visit has average costs of $107 per visit; costs are growing far faster than reimbursement.

The PPS system creates inequities among health centers, punishing more efficient clinics. Clinics with greater productivity (more visits per clinician) in the 1999–2000 base years had a lower cost per visit and thus received lower reimbursement than clinics with fewer visits per clinician. Clinics have varied greatly in their cost-based reimbursement, ranging from $80 to $180 per visit. Since PPS payment is tied to the base year payment, more efficient clinics are forever locked into lower PPS payments.

The Impact on Chronic Care Improvement

Chronic care programs for congestive heart failure (CHF) and asthma can reduce hospital and emergency department costs (see Chapter III). Can county health systems and community clinics save money by instituting CHF and asthma improvement programs?

County Health Systems

In order to explore this important question, it is helpful first to examine the fiscal dynamics of private hospitals and then to understand how public hospitals differ.

Take the case of a private hospital paid fee-for-service or per diem by Medi-Cal or by Medicare's diagnosis-related group (DRG). These reimbursement mechanisms not only fail to create savings from chronic care programs; they actually cause such programs to lose money for the hospital. The hospital invests funds for nurse case managers to improve the care of patients with CHF and asthma, thereby reducing emergency department (ED) visits and hospital admissions. As a result, the hospital loses revenues on the reduced ED visits and hospital admissions. The financial incentive is to stop the programs. In the words of one California physician, "The sad truth is that hospitals make more money cutting off a diabetic foot than providing good diabetes management."

The fiscal incentives for county health systems are different. First, many patients have no insurance, causing a public hospital to lose money on each admission since the admission is not reimbursed. Second, most public hospital beds are filled most of the time, with patients often waiting in EDs for a bed to open up; therefore many Medi-Cal or Medicare admissions do not increase hospital revenues unless an insured patient replaces one who is uninsured. Public hospital EDs are so busy that county health systems desire to reduce their workload; moreover some ED visits for Medi-Cal patients receive fewer reimbursement dollars than their per-visit expenses. Thus county health systems, by and large, do not face negative fiscal pressures for improving chronic care.

Nor, however, do county health systems enjoy *positive* fiscal incentives to improve chronic care at the primary care level. Primary care reimbursement rates in most county systems are low, usually less than the cost of a visit. In contrast, hospital days and surgical procedures tend to be money-makers rather than money-losers. Therefore, it makes more financial sense to invest in hospital and surgical programs than in primary care, chronic care programs. The undervaluation of primary care and chronic care services creates a major barrier to chronic care improvement in county health systems.

Community Clinics

Community clinics are not generally at risk for hospital or ED expenditures and do not benefit financially from chronic care programs that reduce hospital or ED use. The main fiscal impact of chronic disease improvement is increased personnel and program costs. Given that few chronic care programs are reimbursed by Medi-Cal, community clinics have no positive financial incentive to initiate chronic care improvement.

The triple whammy of federal, state, and county deficits — severe for county health systems and threatening for community clinics — complicates the potential for chronic care improvement. Most county health systems are cutting programs rather than adding new ones. For community clinics, the new PPS formula may cause personnel and program cutbacks, endangering gains made in the care of chronic illness. Reductions in Medi-Cal reimbursement created by the state budget crisis means fewer Medi-Cal dollars and more uninsured people. In summary, the fiscal crisis of safety net providers makes chronic care improvement an extraordinarily challenging endeavor.

III. Improving Care and Reducing Costs of Chronic Conditions

Overview of Four Chronic Conditions

Based on national estimates, about 12 million Californians live with at least one chronic illness. About four million Californians have been diagnosed with asthma,[19] half a million have congestive heart failure,[20] two million have been diagnosed with diabetes,[21] and more than five million have hypertension. An unknown number of people with these diagnoses have more than one condition. These four chronic conditions account for most of the 12 million Californians with chronic illness.

The population of Californians who disproportionately receive care from safety net providers are the six million receiving Medi-Cal and the six million uninsured — about one-third of California's population. If this safety net population had the same prevalence of chronic illness as the general population, we could estimate that four million safety net Californians (one-third of 12 million) have at least one chronic condition. Since lower-income people suffer higher rates of chronic illness than those with higher incomes, it is likely that the number of safety net Californians with chronic illness exceeds four million.

Asthma

Three million Californians experience asthma symptoms, including about 500,000 children.[22,23] From 1980 to 1994, national asthma prevalence among children in the zero to five age group increased by 160 percent. African American children, often treated by the safety net, have a higher rate of asthma prevalence than white children and are four times more likely to die of asthma.[23] A quarter of California asthmatic adolescents and 19 percent of adults with asthma report not receiving information from their health providers on asthma prevention or treatment; just over half of children ages five to 17 take asthma medications appropriately.[23] This failure to control the disease results in unnecessary costs to the system. Just over 11 percent of California children with asthma visited an ED in the past year for treatment of asthma. Medi-Cal pays for 46 percent of pediatric asthma hospital stays. The average cost of an asthma hospitalization in California was $13,000 in 2000.[22] More than half the cost of asthma treatment is the result of preventable exacerbations.[23]

Congestive Heart Failure (CHF)

Most patients with congestive heart failure are elderly and covered by Medicare. One-tenth of the elderly — about 400,000 Californians — suffer from CHF. CHF is the leading hospital diagnosis for people 65 years and older in California. Nationally, half of patients hospitalized with CHF are readmitted within 90 days, indicating a major failure in the transition from inpatient to outpatient care.[4]

Diabetes

One and a half million Californians (8.4 percent of the population) are diagnosed with diabetes; if we assume that one-third of diabetes goes undiagnosed, the actual number is two million. This number may double by the year 2020.[21] Native Americans, African Americans, and Latinos have a far higher prevalence of diabetes than whites.[24] Nationally, 74 percent of people with diabetes have uncontrolled blood pressure, 71 percent have elevated lipids, and 54 percent have hemoglobin a1c levels above 7.0, indicating poor control of blood sugar.[5] The 300,000 diabetes-related hospitalizations each year in California cost more than $3 billion.[21]

Hypertension

An estimated 5.2 million people in California are hypertensive.[25] Nationally, only 27 percent of people with high blood pressure are adequately treated.[6] Low-income people, in particular Mexican American men, have the worst rates of blood pressure control.[26] Both medication and life-style modification (weight loss, low-sodium diet, exercise, less alcohol, and smoking cessation) can improve blood pressure control,[25] and chronic care programs can facilitate those changes.

Why Is Chronic Care Inadequately Managed?

Chapter I listed evidence demonstrating that the U.S. health care system is seriously inadequate in the management of common chronic illnesses. What is behind these deficiencies in chronic disease care?

A common belief holds that patients with chronic illness fail to follow medical advice and are thus responsible for their inadequate care. However, evidence suggests that health systems, not patients, are largely responsible for the deficiencies. In a recent survey, 77 percent of patients with asthma were not provided with a written treatment plan, even though such plans have been shown to improve asthma outcomes.[27,28] In a study of patient-physician communication for people with depression, only 34 percent of patients with depression were told how to use their medications.[29] A 2001 national survey of more than 1,000 physician organizations found that the average physician group uses only 32 percent of clinical practices recommended for optimal care of chronic illness.[30]

Most clinicians know how to care for chronic conditions, but acute patient symptoms and concerns crowd out the less urgent need to bring chronic illness under optimal management. Clinicians routinely experience this “tyranny of the urgent.”[31] In both public and private institutions, physicians are rushing from one patient to another like hamsters on a treadmill, a predicament described as “hamster health care.”[32]

In institutions designed for acute rather than chronic care, patients are not taught to care for their own illnesses. Visits are brief and little planning takes place to ensure that both acute and chronic needs are addressed. Lacking is a division of labor that would allow non-physician personnel to take greater responsibility in chronic care management. Too often, caring for chronic illness features an uninformed passive patient interacting with an unprepared practice team, resulting in frustrating, inadequate encounters.[31]

The Chronic Care Model

Edward Wagner, M.D., of the MacColl Institute for Healthcare Innovation has developed a model for the care of patients with chronic illness. The Chronic Care Model identifies six essential elements needed to improve chronic care: two elements external to the provider organization — community resources and health care organization — and four internal elements — self-management support, delivery system redesign, decision support, and clinical information systems.[33,34]

Community resources. Provider organizations need linkages with community-based resources, e.g., exercise programs, senior centers, and self-help groups.

Health care organization. If an organization's goals and leaders do not view chronic care as a priority, innovation will not take place. If purchasers and insurers fail to reward chronic care quality, improvements are difficult to sustain.

Self-management support. For chronic conditions, substantial segments of management — diet, exercise, self-measurement (e.g., using glucometers), and medication use — are under the direct control of the patient.[35,36] Self-management support involves helping patients and their families acquire the skills, confidence, and problem-solving techniques to manage their chronic illness. Kate Lorig, Dr.P.H., at Stanford University has developed chronic disease self-management classes to train patients in goal setting and problem solving; controlled trials show that the classes improve patient functioning.[37,38]

Delivery system redesign. The structure of medical practice must be altered, creating practice teams with a clear division of labor, separating acute care from the planned management of chronic conditions. Non-physician personnel need to be trained to support patient self-management, arrange for routine periodic tasks (e.g., diabetic laboratory tests, eye exams, and foot exams), and assure appropriate follow-up. Planned visits are an important feature of practice redesign. For those patients whose illness is difficult to manage, intensive case management is indicated.

Decision support. Evidence-based clinical practice guidelines provide standards for optimal chronic care and should be integrated into daily practice through reminders.

Clinical information systems. Computerized information offers three important tools: (1) registries for planning individual patient care and conducting population-based care; (2) reminder systems that help primary care teams comply with practice guidelines; and (3) feedback to physicians, showing how each is performing on such chronic illness measures such as hemoglobin a1c and lipid levels.

Registries — a central feature of the Chronic Care Model — are lists of all patients with a particular chronic condition on an organization's or physician's panel. Take the example of diabetes. In the ideal case, patients with a diabetes-related ICD-9 code, diabetic prescription, or laboratory result indicating diabetes are entered electronically into the diabetic registry. Laboratory values — HbA1c, LDL-cholesterol, and urine microalbumin — automatically flow to the registry. Ideally, eye and foot exams and blood pressure are also entered. The registry may feed into a reminder "pop-up" on the electronic medical record, which flags lab work or exams not performed according to schedule. With paper charts, reminder sheets can be printed for each diabetic visit. As a population tool, registry data can be electronically sorted to identify and contact patients with elevated HbA1c levels or those lacking up-to-date eye exams.

A number of organizations have attempted to introduce components of the Chronic Care Model. Some have enjoyed success. Others succeeded but were unable to sustain the improvements.[39,40,41] The Health Disparities Collaboratives of the federal Bureau of Primary Health Care (BPHC) train and activate teams within community health centers (FQHCs) to initiate programs based on the Chronic Care Model. Several hundred health centers have participated in collaboratives targeting diabetes, cardiovascular disease, asthma, and depression.[40] In this report, these efforts will be referred to as BPHC collaboratives. In California, the BPHC has contracted with the California Primary Care Association to carry out the collaborative process[42] and the California Primary Care Association has also organized a statewide collaborative for non-FQHC community clinics.

Components of the Chronic Care Model

- Links with Community Resources
- Health Care Organization
  - Leadership
  - Financing
- Self-management Support
  - Traditional patient education
  - Training in goal setting and problem solving
- Decision Support
  - Clinical practice guidelines
  - Clinician education
- Delivery System Redesign
  - Planned visits
  - Case management
  - Primary care teams
- Clinical Information Systems
  - Registries
  - Clinician feedback
  - Reminders

Do Chronic Care Model Components Improve Care and Reduce Costs?

Research studies have attempted to ascertain which Chronic Care Model components internal to the provider organization are most effective in improving the care of chronic illness.[43] These studies are summarized briefly; a full discussion is available in reference 43.

Self-management support. Traditional patient education improves patients' knowledge in patients with asthma and diabetes but does not improve outcomes.[44] Combining traditional education with training in goal-setting and problem-solving can improve glucose control in people with diabetes[45] and can reduce symptoms in people with asthma.[46] Several studies show that patient education can reduce hospital and ED use in patients with asthma.[47-53] Patients actively engaged in their own care had better blood pressure control than those who had not been activated.[54]

Decision support. Clinical practice guidelines by themselves do not improve physician performance in managing chronic illness but guidelines reinforced by interactive physician education may improve performance.[55–59]

Delivery system redesign. Planned visits—individual or in groups, often led by nurses—for patients with diabetes can improve control of glucose and blood pressure in randomized controlled trials.[60–63] Planned visits can also reduce hospitalization rates and total health care costs for patients with diabetes.[60,64] Patients with diabetes who achieve improved glycemic control have reduced health care costs within one year compared with those in poor control.[65] Nurse case management using telephonic and home visit follow-up of congestive heart failure patients is associated with a 56 percent reduction in heart failure hospital readmissions and improvement in quality of life scores compared with controls.[66]

Clinical information systems. Two studies have shown that registries, in combination with reminders, planned visits, and self-management training, improve clinical outcomes in diabetes compared with controls;[67,68] registries with reminders also improve outcomes in diabetes and hypertension.[62,69] Feedback of clinical performance data to physicians can improve practice, but the effect is small.[70,71] Twenty-two of 26 studies on physician reminders for a variety of chronic conditions found improvement in physician performance.[57] However, in one study, 63 percent of physicians ignored the reminders or forgot to respond to them.[72] Reminders are most helpful when combined with delivery system redesign, with a non-physician member of the clinical team responsible for acting on reminder prompts.

Summary of Effective Chronic Care Model Interventions

Research suggests that people with chronic conditions can be risk-stratified, with Chronic Care Model interventions tailored to the risk level of individual patients and populations. Everyone with a chronic condition should receive self-management support including disease-specific information and skills plus training in problem solving and goal setting. Registries are needed to define the population with a chronic condition and provide information for risk stratification. People in reasonable control of their condition can be managed with reminder systems, delegating responsibility to non-physician personnel such as medical assistants to perform the tasks prompted by the reminders. Patients newly diagnosed with a chronic condition or in poor control are best referred to a nurse-run, planned chronic care clinic. High-risk patients with multiple diagnoses and frequent use of in-hospital and emergency services should be offered intensive nurse case management. Optimal management of patients at higher risk can lower health care costs by cutting hospital and emergency department use.

IV. Alameda County

TWELVE PERCENT OF ALAMEDA COUNTY'S 1.5 million people are Medi-Cal recipients, with about half in a Medi-Cal managed care plan. Of the county's population below age 65, 17 percent are uninsured.[8,9] Alameda County's two safety net sectors — the county health system and the community clinics — are quite separate from one another, although linkages are beginning to develop. Of the two sectors, the community clinics have had more experience in implementing components of the Chronic Care Model. Of all the community clinic consortia in California, Alameda County's clinics are the most closely integrated, through the Community Health Center Network.

General Description of Chronic Care Management

County Health System

The Alameda County Medical Center is a nonprofit public hospital authority created several years ago to separate county health services from direct management by the county government. The system is paid fee-for-service (Medicare and Medi-Cal), global budget (yearly payment from the county for uninsured patients), and capitation (from Medi-Cal managed care plans). With the budget from the county, the system has an incentive to save money by substituting primary care services for hospital admissions, but the fee-for-service reimbursement, which rewards hospitalization, dilutes that incentive. After a few years of financial stability, the system went over budget in 2001–2002 and faces a big deficit in 2002–2003. In early 2003, several primary care clinics were closed.

With respect to financial incentives for chronic care programs, the county reimbursement environment is distinct from that of many private hospitals. An example clarifies the difference. Nurse case management of congestive heart failure (CHF) patients can reduce CHF hospitalization by about 50 percent, substantially reducing health care costs (see Chapter III). A private hospital paid fee-for-service or per diem would lose money on such a program because the hospital would have fewer admissions and thus less revenue. In the Alameda County Medical Center system, no such negative incentive is at work, for two reasons. First, many patients are uninsured and the health system would receive no reimbursement for a hospital admission. Second, even for patients with Medicare and/or Medi-Cal coverage, the hospital does not benefit from more hospital admissions because the hospital is always full and lacks the capacity to handle more admissions. In fact, the emergency department is often clogged with patients waiting for a hospital bed. Thus, whether for uninsured or insured patients, the public hospital system prefers to keep people out of the hospital. Effective chronic care programs that reduce hospital use are welcomed by county health systems.

The principal financial barrier to improved chronic care, then, is not a perverse incentive, but rather the scarcity of funds and the reality that chronic care programs are by and large not reimbursed. In one positive development, some Alameda County clinics will be receiving FQHC status with the associated increases in payment per visit.

The county paid the Alameda County Medical Center $29 million for an upgraded clinical information system, launched in 2002. The system is designed to solve such basic problems as making laboratory, x-ray, and patient encounter data available to physicians anywhere in the system, and has the potential to link to a chronic disease registry.

The system's main primary care site is the Highland internal medicine clinic, a busy facility staffed by well-trained, committed physicians who — with few rewards — care for society's most complex patients. The clinic has been unable to institute reminder prompts, performance feedback, or team care. Overly stressed physicians do virtually everything themselves: acute, chronic, and preventive care. Physician champions at Highland Hospital have started small programs for asthma and diabetes (see below).

Community Health Center Network

Alameda County's community clinics are the best organized of any in California, aligned under the auspices of the Alameda Health Consortium, an association of ten health centers that provide 400,000 annual patient visits at 30 sites. Many clinic patients also receive services at the Alameda County Medical Center.

Seven of the consortium clinics, operating 22 sites, are linked by the Community Health Center Network of the East Bay (CHCN), created as a way for clinics to participate in Medi-Cal managed care. CHCN receives capitation funds from the two managed Medi-Cal plans (Alameda Alliance for Health and Blue Cross) and subcapitates the seven clinics in the network. The executive officers of the clinics sit on CHCN's board.

One of California's leading champions of chronic care, Khati Hendry, M.D., is medical director of CHCN. Dr. Hendry, who also works as a primary care physician at La Clinica de la Raza, has created a chronic care quality improvement program for the seven clinics in the network. The clinic medical directors meet as a quality improvement committee. CHCN has instituted a pay-for-performance system by which risk share payments to the clinics depend in part on meeting quality performance goals. The network collects performance data from the seven clinics using disease registries and chart review, and feeds the data back to clinic medical directors, creating friendly competition among clinics to improve performance. For example, a network diabetes goal is an average HbA1c level below 8. In 2003, three clinics and the network as a whole had reached the goal. Several clinics in CHCN have participated in Bureau of Primary Health Care (BPHC) collaboratives (see Chapter III) and CHCN has received advice from Kaiser-Permanente's northern California region on its chronic care improvement strategy.

CHCN has developed programs in asthma, diabetes, and hypertension in diabetic patients. There is no network-wide congestive heart failure program since few CHF patients — most of whom are elderly and covered by Medicare — are served by most CHCN clinics. There is considerable variation among the seven network clinics regarding chronic care management. La Clinica de la Raza is the most advanced; some clinics have implemented some components of the Chronic Care Model for asthma and diabetes, and others have been unable to get chronic care improvement off the ground.

CHCN has created a data warehouse from encounter information submitted quarterly from all seven clinics, plus lab data from the commercial laboratories and pharmacy data from managed care plans. This makes it possible to identify populations of patients with different diagnoses from the clinics. Even though CHCN is responsible to track only performance data for Medi-Cal managed care patients, it has opted to track data for all patients seen in the clinics. These data are used to develop network-wide audits on such topics as Pap smears, diabetes care, and asthma.

In addition, the seven clinics have their own electronic data systems that track clinical performance and feed the CHCN data warehouse. Some of the clinics use the Cardiovascular Diabetes Electronic Monitoring System (CVDEMS) created by BPHC, while others use a separate system developed by La Clinica de la Raza prior to the BPHC collaborative process. Most CHCN clinics are not sorting these disease registries and calling patients at high risk; the registry reports are used more as performance feedback than to guide individual and population-based chronic care management. Currently, much of the data must be laboriously input into the system (consuming about one hour for every 15 patients entered). The clinic registries are dependent on CHCN personnel who travel to clinics and input the data onto CHCN laptop computers. BPHC has begun to give small grants for hiring personnel to perform registry work.

Medi-Cal Managed Care

The county-affiliated Medi-Cal managed care plan, the Alameda Alliance for Health, is involved in the California Pay for Performance initiative and pays providers (physicians, IPAs, or CHCN) an additional four percent if certain quality benchmarks are met. The Alliance collects patient visit and laboratory data, which can be merged and used to provide feedback sorted by physician, clinic, or patient. This database can be used as a chronic conditions registry. Goals for diabetes include a ten percent increase in the number of HbA1c tests done per patient and a ten percent decrease in the average level of HbA1c. For patients with asthma, the database can feed back the number of emergency department visits and use of steroid inhalers. A limitation from the provider perspective is that the data cover only Alliance enrollees rather than all the provider's patients.

The Alliance pays by capitation and does not make additional fee-for-service payments for such services as patient education or a medical assistant's time working on a registry. The Alliance has hired a health educator and a nutritionist who are available for any patient in the plan. However, few physicians are referring patients to these professionals. The Alliance pays hospitals on a per diem basis, creating a business case for improving chronic care in order to reduce hospital days. Since few Alliance enrollees are elderly, CHF is of minor importance. In contrast, asthma in children is common, and Alliance case managers become involved with children having multiple ED asthma visits.

Half of Alliance enrollees are cared for in capitated, delegated groups, particularly Kaiser, Children's Hospital Medical Group, and CHCN. These groups have an incentive to develop pediatric asthma programs that might save money. There is no organized use of registries, reminder systems, practice guidelines, or patient self-management education in the private physician community caring for Alliance patients.

Two Asthma Programs

An energetic internist at Highland Hospital, Linda Englestad, M.D., has started an adult asthma clinic. Pediatric asthma is not a priority since most low-income children are cared for at the private Children's Hospital or by private physicians. The adult asthma clinic was pieced together with minimal funding. It meets half a day each week and evaluates patients with asthma for triggers, offers education about environmental control and medications, and adjusts medications. Asthma action plans are used. The clinic attempts to enroll patients who have had asthma-related ED visits and hospitalizations. Perhaps 5 percent to 10 percent of patients with asthma at Highland Hospital have attended the clinic. Currently, there are no asthma case managers, no performance feedback to physicians, no reminders, and no asthma registry.

La Clinica de la Raza is offering asthma education classes. In 2002 La Clinica joined a BPHC asthma collaborative; it is using asthma action plans and creating an asthma registry. Goals are to have asthma severity noted on the chart for 90 percent of asthma patients, treatment with steroid inhalers for 95 percent of persistent asthmatics, self management goals for 70 percent, and flu shots for 90 percent. An asthma progress note serves as a reminder system. La Clinica, along with other CHCN clinics, will receive feedback from CHCN's asthma audit, measuring, for example, the percent of persistent asthmatics on steroids. For La Clinica, once these data are in the registry, chart audits may not be needed.

Diabetes Care at La Clinica de la Raza

What began in 1971 as a storefront clinic on Fruitvale Avenue in Oakland, California, has grown into a respected community institution. La Clínica de la Raza has an operating budget of more than $27 million (2002–2003), employs more than 350 people, operates more than ten sites, and provides 120,000 patient visits per year. The organization is governed by an 18-member board of directors composed of consumers and professional members of the community, the majority of whom are elected by the clinic's patients.

La Clinica cares for 15,000 people—86 percent Latino, 87 percent below the Federal Poverty Level. Since 1971, more than 100,000 people have made more than one million visits to La Clinica. Clinicians at La Clinica are very busy, seeing 22 to 25 patients per day. La Clinica would like to institute an electronic medical record, but administrators have delayed this innovation after witnessing the difficulties encountered by other clinics.

Most payments to La Clinica are fee-for-service through the augmented FQHC rate. Due to the new PPS payment mechanism (see Chapter II), La Clinica's financial situation is less secure. The PPS system allows payment increases of just 2 percent to 3 percent per year, while expenses are increasing at twice that amount. PPS does not allow health educators or RN case managers to be reimbursed for visits.

La Clinica began its diabetes program before the BPHC collaboratives started. Two physicians and a certified diabetes educator, Joan Thompson, R.D., initiated the program. In 1999 La Clinica joined the first BPHC diabetes collaborative and customized its practice management software to automatically enter patients with diabetes into a new registry. One of La Clinica's two laboratories provides disks weekly for downloading data into the registry; for the other lab, the data must be entered manually. The registry creates a reminder prompt, and registry data are sent to CHCN to be analyzed for feedback to the clinic. Clinic leaders considered the BPHC collaborative learning sessions, including the Chronic Care Model and the model for rapid institutional change, to be very useful.

The diabetes program is data driven. Graphs are created to track HbA1c, blood pressure, LDL-cholesterol, and other measures over time. La Clinica cares for about 800 patients with diabetes, with an average HbA1c of 8 percent. In contrast with many diabetes programs that are limited in breadth, La Clinica's program reaches most of its patients with diabetes. About 70 percent of patients with diabetes have discussed a self-management plan with a diabetes educator or registered dietician.

Each clinician receives a quarterly report on his/her panel of patients with diabetes, including dates and levels of HbA1c results. Many clinicians do not have time to follow up on these reports; now, medical assistants, health educators, and nutritionists will be performing HbA1c tests without the need for

Continued on the next page.

Improvements in Diabetes Care

Alameda County Medical Center's Highland Hospital has a diabetes clinic one day per week. The clinic was initiated by an energetic medical resident, Phyllis Preciado, M.D., and a faculty physician in internal medicine, Lyn Berry, M.D., with the help of two certified diabetes educators and advice from La Clinica de la Raza. The clinic offers planned diabetes visits for education and care of new diabetes patients and those with poorly controlled disease; it has seen a few hundred patients out of a total of thousands with diabetes in the county system. A volunteer inputs data into the clinic's registry, which is not automatically populated from laboratory results. The diabetes clinic sorts the registry for population management of its patients and has the capability to generate reminders. The diabetes educators are trained in empowerment diabetes teaching and the diabetes clinic staff uses action plans with their patients. Dr. Berry is meeting with the Community Health Center Network to coordinate diabetes care in both sectors of the safety net.

In the community clinic sector, the 2001 CHCN diabetes audit found that 1,500 of the system's 4,000 patients with diabetes have been entered into clinic registries; the remainder of the data must be collected through chart audits. The audit found that 83 percent of CHCN patients had a HbA1c test performed during the year; the mean HbA1c result was 7.8, and 67 percent had levels below 9.0. La Clinica is the network leader in diabetes improvement.

physician involvement. The diabetes collaborative raised clinicians' consciousness about blood pressure control for patients with diabetes. The diabetes registry indicates that 55 percent of diabetics have blood pressure under 130/80, a performance level well above the national average.

La Clinica does not risk-stratify its registry, but clinicians refer high-risk patients to health educators and nutritionists for intensive management. Diabetes group visits have begun, with a portion devoted to education and a portion to management of each patient's condition. Self-management classes based on the model developed by Kate Lorig, Dr. P.H.,(see Chapter II) will be starting soon.

The diabetes collaborative slightly increases work of primary care clinicians. They must verify the currency of diabetes flow sheets and add clinical information such as blood pressure. The flow sheets are used to update the registry and also act as reminder prompts that clinicians must respond to, indicating which tests are overdue. Any change in clinical processes is seen by some clinicians as requiring mental energy that is in short supply during a full clinic schedule.

Which specific improvements have made La Clinica a high-quality provider of diabetes care? Different professionals at La Clinica have different views on this question. For some, reminder systems are important and performance feedback less so. For others, feedback is seen as a motivating factor for improving care. The registry is seen as critical; as medical director John Pescetti, M.D., explains it, "Without a registry you can't even start. You plant your tree with the registry."

Perhaps chronic care improvement at La Clinica is less related to specific processes such as registries, feedback, or reminders, but is the result of a quality culture that has pervaded La Clinica during its 30 years. La Clinica clinicians are committed to serving low-income people, use evidence-based practice, are motivated by goals other than money, and regularly review each others' charts, keeping them accountable to their peers.

Another explanation for La Clinica's performance is the dedication of a small number of individuals with intense motivation to improve care. Like most community clinics, La Clinica's clinicians are extremely busy, confronting the "hamster syndrome" every day (see Chapter III). Redesign of the entire primary care process—routinely delegating simple chronic care management functions to trained non-physician staff—has just begun at La Clinica. It is sobering to speculate whether La Clinica's diabetes program would continue if a few key people left the organization. Institutionalization of improvement has probably taken root, given the use of diabetes progress notes with embedded practice guidelines and the number of years that clinicians have been exposed to chronic care improvement efforts. However, it is necessary to consider the question: Can high-quality chronic care be sustained without the day-to-day dedication of a few champions?

Lessons from Alameda County

- The work of CHCN in uniting seven clinics for the purposes of chronic care improvement and modernizing the data system should serve as a model for all community clinic consortia.
- High-quality planned chronic care visits can be established in county health institutions and community clinics using relatively few new resources.
- High-performing organizations such as La Clinica achieve success through a variety of factors: committed champions; introduction of Chronic Care Model components such as registries, reminder systems, performance feedback, and patient self-management training; a culture that places high value on quality; and attempts to institutionalize improvement such that it cannot be reversed.
- Medi-Cal managed care plans have the potential to assist providers in improving chronic care; the limitation is that most providers have a relatively small percent of their total patients in a Medi-Cal managed care plan.
- Information technology is both a facilitator and barrier to better chronic care. Chronic disease registries exhibit two major problems. First, they are difficult to maintain if manual inputting of data — rather than populating the registry electronically from labs, pharmacies, and clinical encounters — is required. Second, if personnel are not available and trained, the registries may not be utilized to perform their important functions: (a) looking at the entire population of people with a chronic disease and attempting to improve performance of both individuals and the entire population, (b) providing data for risk-stratification to allow referral of patients to chronic care interventions with an intensity appropriate to their risk status, (c) creating reminder prompts for primary care teams, and (d) offering performance feedback to clinicians and clinic sites.
- Few if any positive financial incentives exist that might encourage better chronic care. For example, under fee-for-service payment, physicians are paid, but non-professional caregivers — who could relieve physicians by performing chronic care tasks — are not paid, and chronic care programs such as patient self-management classes are not reimbursed.

V. Los Angeles County

LOS ANGELES COUNTY IS LIKE A LARGE AND diverse country unto itself, with practically the entire membership of the United Nations represented.

Twenty percent of Los Angeles County's ten million people receive Medi-Cal. About half of recipients are in managed care plans, 60 percent of these in the local initiative plan, LA Care Health Plan.[9] With about a third of its under-65 population — 2.8 million people — without health insurance,[8] the challenges to the Los Angeles safety net are almost insurmountable. The safety net encompasses a huge county health system, serving 800,000 patients, a widespread network of community clinics, and many private Medi-Cal providers. The county and community clinic systems are interlinked through the public-private partnership (PPP) program by which the county reimburses community clinics for the care of some uninsured patients.

Threatened Meltdown

As of November 1, 2002, the Los Angeles Department of Health Services (DHS) faced a shortfall of $326 million in 2003–2004, rising to a staggering $682 million in 2005–2006. DHS received multi-million dollar bailouts, channeled as Medicaid waivers, from the federal government in the 1990s. It appeared that in 2005–2006, the bailout money would run out.[73] In response to this crisis, the county closed 16 primary care clinics in 2002.

Planning for best and worst cases, DHS projected three scenarios. Under Scenario 1 (worst case), DHS would maintain three of its hospitals — Los Angeles County/University of Southern California (LAC/USC), King/Drew, and Oliveview — and would close all other DHS health services including Harbor/UCLA hospital and countless ambulatory facilities. PPP reimbursements to community clinics would disappear. Scenario 2 would reduce outpatient services by 50 percent and cut but not eliminate PPP funds. Scenario 3 (best case) would reduce ambulatory care by 16 percent, closing smaller clinics but retaining the six comprehensive health centers.[73] These potential cutbacks take place in a system already stretched to the breaking point. The county's emergency rooms are so overcrowded that they turn away incoming ambulances 40 percent of the time. Waits in the LAC/USC emergency room may be eight or nine hours.[74]

Relieving some pressure, county voters approved a November 2002 referendum to raise property taxes that adds $168 million per year to the DHS budget. In February 2003, the federal and state governments promised an additional $250 million to DHS, a figure far short of the needed $1.4 billion, but very helpful in the short run. With the closing of primary care centers and planned elimination of two of its hospitals, DHS — currently operating at Scenario 3 (best case) — projects solvency through 2005–2006 without further service reductions. However, no long-term solution to the fiscally unstable health system has been implemented, and in the year following 2005–2006, a $265 million deficit is anticipated.[75] In this fiscal environment, DHS is pondering how to improve chronic care. In the county health system, the great majority of patients do not have access to chronic care management programs, but a few excellent programs exist, as described below.

The Community Clinic Association of Los Angeles County is doing important work in overall chronic care improvement through chart

Restructuring the Financing of County Health Systems

The Los Angeles County health system — and systems in other counties — is saddled with a disconnect between its vision of improved chronic care in primary care sites and the reality of how the system is financed. Much of DHS' financing comes from fee-for-service or per diem Medi-Cal payments that reimburse inpatient services at a considerably higher revenue/cost ratio than payment for primary care. Also, Medi-Cal DSH payments (see Chapter II) go up as inpatient days increase, but do not rise as outpatient visits grow. The incentive favors hospital over primary care. Over the past few years DHS has reduced its inpatient census by 29 percent, but because Medi-Cal inpatient admissions translate into revenue, the cost savings produced a revenue reduction. Expanding chronic care services in poorly reimbursed primary care sites creates a net loss.

The 2002 L.A. County Medicaid Demonstration Waiver Modification Proposal states: "The financial incentives for the County to provide hospital-based services are profound. Actions that decrease the use of inpatient care result in significant loss of County revenue…While the Waiver has allowed the County to develop outpatient care, the underlying fiscal incentives that favor inpatient care have not been fundamentally corrected…Medi-Cal funding mechanisms…offer a disincentive to reduce the total cost of serving its patient population by a shift to less expensive outpatient care."[76]

The DHS proposes to convert the county's primary care clinics into FQHCs in order to receive the augmented FQHC Medi-Cal rates. But for large-scale chronic care improvement to be sustainable, there needs to be a more fundamental change in how county health services in Los Angeles and throughout California are reimbursed.

One solution would be for the federal, state, and county governments to come together and provide a single global budget for the county health system. Such a budget would transform hospital and ED care into an expense rather than a revenue. Chronic care programs can reduce hospitalization for conditions such as diabetes, asthma, and heart failure (see Chapter III). Under a global budget, the incentive is to upgrade primary and chronic care in order to reduce hospital admissions and ED visits. An alternative is capitation funding, though it is limited to Medi-Cal recipients and inapplicable to the uninsured who are coming and going in and out of the county. Another financial restructuring combines fixed budgets for inpatient and ED care combined with augmented fee-for-service payments for primary care.

Such changes in financing are so difficult that only one situation might allow their acceptance: the impending collapse of a huge metropolitan area's safety net. Over the next decade, such a collapse is precisely what Los Angeles County faces.

audits and performance feedback. The association has performed audits of diabetes, demonstrating improvement in many clinics, and of asthma, cholesterol, and hypertension. Clinic representatives meet monthly to discuss chronic care initiatives and performance feedback within their clinics. Richard Seidman, M.D., medical director of the high-performance Northeast Valley Health Corporation, and June Levine, R.N., are leaders in the association's chronic care efforts.

Pediatric Asthma

The Children's Clinic Serving Children and Their Families

Long Beach, a city of more than 500,000 with a large population of Latino families, is located in the southern portion of Los Angeles County. Led by its executive director, Elisa Nicholas, M.D., The Children's Clinic in Long Beach has developed an impressive program for children with asthma, focusing on the self-management and decision support components of the Chronic Care Model. Every exam room is outfitted with tools to manage asthma: action plan forms, inhalers, spacers, peak flow meters, and patient education materials, making it easy for physicians to care for children with asthma. Action plan forms are designed simply; copies go to the chart, the family, the school, and after-school programs. Charts of children with asthma are purple — a visual reminder prompt. Asthma visits are recorded on a flow chart embedded with national asthma guidelines and a reminder checklist. These simple innovations help physicians provide optimal asthma care even within the rushed atmosphere of primary care.

The clinic has not created an asthma registry. Given its 4,000 asthma patients, the resources needed to populate and use the registry are not available. Until a registry can be populated electronically, Dr. Nicholas does not feel that its benefits outweigh its costs. The billing system — if physicians enter asthma codes accurately — could be used to sort asthma severity into the mild, moderate, and severe persistent categories, allowing the clinic to identify and provide more intensive management to those children in more severe classifications. While this simple risk stratification system has not yet been tapped, it can be viewed as a "poor person's registry" or "proto-registry." Recent random chart audits of school age children with asthma revealed 90 percent compliance with use of asthma action plans, 100 percent compliance with flu vaccine administration, 100 percent compliance with documentation of asthma severity, and 100 percent compliance with prescription of controller medications to children with persistent asthma.

Dr. Nicholas is not satisfied with perfecting asthma care at The Children's Clinic and is spearheading a campaign to improve asthma care for all children in Long Beach. Through the Long Beach Alliance for Children with Asthma, she plans to train private physicians and their medical assistants in optimal asthma care and to create a group of community health workers to teach asthma self-management in the home. Training will be targeted to primary care physicians who see many Medi-Cal children with asthma.

Dr. Nicholas is also working with numerous groups in Los Angeles on a media campaign with the simple message: "Asthma can be controlled, working together. Kids with asthma can lead normal active lives." Families of children with asthma would be encouraged to ask their physicians: "Should my child be on controller inhalers, and could you provide me with an asthma action plan?" The combination of physician training and activated patients is a powerful impetus to improve asthma care.

The Children's Clinic strategy is quite different from that of other case studies featured in this report. Rather than initiate planned visits and utilize registries, Dr. Nicholas is making the best asthma care an integral part of the primary care process.

The Breathmobile Program

The Los Angeles County DHS has developed an innovative program for children with asthma. Under the stewardship of Dr. Craig Jones, DHS, collaborating with the local chapter of the Asthma and Allergy Foundation of America and the L.A. Unified School District, sends "breathmobile" vans to 95 schools and three DHS comprehensive health care centers. Each breathmobile, which visits the sites at regularly scheduled intervals, has a team made up of an allergist, R.N., respiratory therapist, and patient service worker. Asthma action plans are used, providing two messages: Children with persistent asthma need daily controller medications, and families need to learn what to do if symptoms worsen. On average, patients achieve control of their asthma in three visits. Children are referred by physicians at county health centers, a pediatric asthma nurse at LAC/USC hospital, and school nurses through an intensive school-based outreach system. The program's registry has entered 5,500 children since 1995 but is not part of a county-wide clinical information system (because such a system does not yet exist). The proportion of safety-net children with persistent asthma seen in the breathmobile program is not known.

Diabetes

Los Angeles' safety net population has the opportunity to receive high quality diabetes care due to the ideas and hard work of two nationally prominent diabetologists, Mayer Davidson, M.D., and Anne Peters Harmel, M.D. These physicians have implemented a model based on nurse-run planned diabetes visits. Such clinics exist at two DHS comprehensive health centers and the King/Drew Hospital.

Edward R. Roybal Comprehensive Health Center

This comprehensive DHS-run ambulatory care center is an attractive facility in East Los Angeles, featuring a colorful mural on its front wall and community-based artwork inside. The clinic's highly effective medical director is Gregory (Mike) Roybal, M.D. The Roybal health center, most of whose patients are Latino, is the site of a premier diabetes program that is hoped to be a model for programs at other county facilities.

The Roybal diabetes program, directed by Dr. Peters Harmel, is a delivery system redesign offering planned visits for patients with diabetes. New patients and those in poor glycemic control are cared for by registered nurses working with protocols written by Dr. Peters Harmel, who, with another endocrinologist, supervises the diabetes nurses. After six months of focused diabetes care, the patients revert to their primary care clinicians but return to the diabetes clinic yearly for follow-up. The six-month cut-off is needed because of the clinic's limited number of available trained nurses. In the clinic, nurses pursue the triple goal of glycemic, lipid, and blood pressure control. Each nurse, who does teaching, phone follow-up, and medication management, handles a patient load of 150. For a time, primary care physicians rotated through the clinic to improve their diabetes skills, but the heavy demand for primary care appointments temporarily halted this part of the program.

Most diabetes programs have had difficulty bringing the percent of patients with diabetes receiving annual retinal exams to acceptable standards, because of difficulty accessing timely ophthalmology appointments. The Roybal program has confronted this problem by obtaining a retinal camera. The photographs are read by physicians at Roybal trained to detect retinopathy, and only those patients with positive findings are sent to ophthalmology, greatly reducing the number of people needing specialty referral.

Of Roybal's 3,400 patients with diabetes, about 1,500 have been entered into the clinic's registry. HbA1c levels improve markedly for patients attending the clinic, but tend to rise again after care reverts to the busy primary care clinics. The diabetes registry suffers the same difficulties as registries in other settings. The software stands alone, unavailable to primary care clinicians at Roybal. In the absence of other available staff, Dr. Peters Harmel herself performs data entry.

A barrier to the formation of planned DHS clinics is the reimbursement situation. Nurse-run clinics are poorly reimbursed; yet if they reduce ED or hospital utilization for patients with Medicare or Medi-Cal, DHS loses fee-for-service revenue. If DHS were paid by capitation or by global budget, fiscal incentives would be better aligned.

Venice Family Clinic

This remarkable institution has transformed itself over the past 30 years from a volunteer operation to a FQHC with 19,000 patients and a clinical staff supplemented by 150 volunteer clinicians. The clinic serves a wide variety of patients, including those from underserved minority communities and a substantial cohort of homeless people. A family physician, Jeff East, M.D., supported by the clinic's medical director, Susan Fleischman, M.D., and assisted by a BPHC diabetes collaborative, initiated the diabetes program.

Venice Family Clinic has about 1,500 patients with diabetes. The diabetes registry, a central feature of the improvement effort, produces a diabetes progress note that serves as a provider reminder prompt, facilitates the ordering of laboratory studies, and provides the data for performance feedback. Data entry into the registry creates the usual personnel problems; thus far, 600 patients have been entered into the system. The registry can be sorted to risk-stratify patients in order to target those in poor control for extra attention.

Classes and support groups combine education, discussion and physical exercise — walking or dancing. In addition, some planned diabetes visits are available, conducted by a health educator or pharmacist. Some physicians discuss self-management goals with patients, using a form derived from the BPHC collaborative process. Like the Roybal clinic, Venice Family Clinic has obtained a digital retinal camera to improve rates of retinal screening.

Clinicians receive performance feedback on patients with diabetes, including percent of patients with blood pressure over 135/85, with HbA1c levels above 9.5, and with LDL cholesterol below 100. Run charts indicate how clinicians are performing over time. Diabetic patients' average HbA1c value is 8, 55 percent to 60 percent of people with diabetes have blood pressure below 135/85, and 75 percent have LDL-cholesterol values below 130. A controlled study showed that physicians involved in the diabetes intervention had better performance than a control group in performing foot exams, ordering HbA1c and LDL-cholesterol tests, and discussing self-management goals with patients.

Dr. Fleischman believes that the registry and the performance feedback, plus the education and exercise groups, are the main reasons for the clinic's success in diabetes care. Dr. East emphasizes that the clinic's high quality of diabetes care is principally related to the collaborative process of institutional change, with a committed diabetes team of six people using rapid change methods to bring about innovation.

Lessons from Los Angeles County

In a resource-poor environment, chronic care champions have created excellent models of care in diabetes and asthma. However, only a small proportion of the safety net population with these conditions benefit from these models. In order to sustain and spread these models of care, restructuring of the mode of reimbursement is needed.

Planned chronic care visits, such as those offered at Roybal's diabetes clinic, can improve care, but when patients attending planned visits return to primary care, the gains may reverse. The asthma program at Long Beach demonstrates that — with great effort — care can improve by redesigning primary care rather than creating separate planned-visit clinics. The Los Angeles experience suggests that both chronic care clinics and primary care redesign are needed for optimal chronic care to reach the entire target population.

VI. San Diego County

A TENTH OF SAN DIEGO COUNTY'S THREE million people receive Medi-Cal. About half of the Medi-Cal population is enrolled in the county's seven commercial Medi-Cal managed care plans.[9] San Diego County has a 22 percent rate of uninsured residents under age 65.[8]

Reminiscent of Alameda County, San Diego has a highly developed community clinic network. There is no county hospital — the University of California at San Diego (UCSD) hospital system performs county hospital functions — nor a local-initiative Medi-Cal managed care plan. The county offers a County Medical Services plan for uninsured people with very low incomes, but many uninsured are not eligible. For this report, interviews were not conducted with the County of San Diego nor with UCSD.

General Description of Chronic Care Management: San Diego Council of Community Clinics

The San Diego Council of Community Clinics is an association of 21 clinics operating more than 70 primary care sites in San Diego and neighboring Imperial counties, providing services to 350,000 patients. About 10 percent of clinic funding comes from the County of San Diego; 42 percent comes from Medi-Cal.

Like Alameda County, the Council of Community Clinics has spawned a related organization, the Community Clinic Network, which contracts with Medi-Cal managed care plans for 15 of the county's 20 clinics. Most of the health plans delegate quality improvement functions to the network. As in Alameda County (see Chapter IV), the clinic medical directors insisted that quality improvement be conducted not solely for Medi-Cal managed care patients, but for all clinic patients, many of whom are uninsured.

The network's chronic disease activities involve chart audits of the 15 member clinics; results are discussed in the Network's Physician Council (clinic medical directors who meet monthly). Since clinics are compared with one another on chronic disease measures; medical directors use this performance data to motivate clinic personnel and plan improvement projects. Audit data can be sliced by clinic, clinic site, and physician. Audits are extremely time-consuming and the network quality improvement staff conducting audits is supported by a California Endowment grant, which will soon expire. The sustainability of this chronic care quality effort is in some jeopardy.

The Community Clinic Network performed its first hypertension audit in 2002, and found that most clinics — while exceeding the national average of 27 percent of hypertensive patients under control — had results far short of adequate. For that reason, the clinic medical directors named hypertension as one of the priority audits for 2003.

San Diego's community clinics have pursued chronic care improvement without the direct stimulus of the BPHC collaboratives. In the past, San Diego had only two FQHCs that would have been eligible to participate in these collaboratives. The network has responded by organizing its own collaborative process.

The network has a vision for streamlining the cumbersome chart review audit process by creating chronic disease registries. Currently, several asthma and diabetes registries exist, but these cover a small proportion of safety net patients with these conditions. The network may create disease-specific progress note forms whose data could be scanned into the computer system. A more permanent development is planning for a data warehouse. Data could be electronically entered from laboratories and pharmacy. Blood pressure and other clinical data would be input or entered through electronic medical record projects that a couple of clinics are planning. A difficulty with pharmacy data (crucial for asthma management) is that uninsured patients receive their medications at many different pharmacies, and health plan pharmacy data only cover Medi-Cal managed care patients. These information technology complexities are major barriers to efficient chronic care management. Another barrier is the variety of local, state, and national performance data criteria for different chronic conditions. Measures required by the HEDIS managed care quality program, Medi-Cal, the federal Bureau of Primary Health Care, and the Indian Health Service may differ from one another, as do software packages used by different agencies.

Many Organizations Concerned with Asthma

A number of San Diego organizations are concerned with pediatric asthma, including Children's Hospital, UCSD, State of California Department of Health Services, County of San Diego, the Community Clinic Network, San Diego Allies Against Asthma, and two California Endowment-funded projects: California Asthma Among the School-Aged (CAASA), and Community Action to Fight Asthma (CAFA).

The Community Clinic Network organized a pediatric asthma collaborative locally. In contrast to BPHC collaboratives, clinic teams did not need to travel out of the area, had no national reporting requirements, and could determine how asthma data would be entered and tracked. The collaborative involved two learning sessions on asthma and rapid cycle improvement. Eight to nine clinics are involved in the project and have formed asthma improvement teams that participate in monthly teleconferences to share experiences. Each clinic has asthma guidelines embedded in an asthma progress note form. Clinics decide which other Chronic Care Model components they wish to use to improve asthma care. North County Health Services, a San Diego leader in chronic care improvement, is involved in a BPHC asthma collaborative.

Several asthma registries exist, sponsored by the state of California, by CAASA (involving two clinics), and a new registry effort of the local collaborative. Network-wide asthma data and reporting are missing. The San Diego Childhood Asthma Initiative, a collaborative project of the American Lung Association, Children's Hospital and the Council of Community Clinics, provides clinics with asthma tools including action plan forms, clinical practice guidelines, and asthma-specific progress notes. This project trains community health workers to do asthma education and home environmental screening. Thus far, the Medi-Cal managed care plans do not reimburse for these services.

The network conducted an asthma chart audit in 2002, examining ten measures including documentation of asthma severity, peak flow, triggers, use of action plans, participation in asthma education, and use of controller medications. Clinic performance was fed back to clinic executive directors and medical directors for discussion within their clinics. Network-wide, 68 percent of persistent asthmatics were on controller medications, with performance varying by clinic from 40 percent to 88 percent. Only three percent of patient charts showed documentation of asthma action plans; the network goal is 90 percent. Because of the major effort involved in tracking ten asthma indicators, the medical directors have decided to focus on three: Are patients classified by severity? Are persistent asthmatics on steroids? Are action plans being used? A follow-up audit will examine those measures.

Only a small percent of children with asthma in the safety net are in asthma registries. To sustain the variety of asthma projects, Medi-Cal managed care plans could come together and create a registry for their enrollees, with clinics adding uninsured patients to the same registry. The plans could fund case managers for patients needing intensive management. Because pediatric asthma is a major cost for Medi-Cal managed care plans with their large proportion of pediatric enrollees, and proper asthma care can reduce hospital and emergency department use (see Chapter III), the Medi-Cal plans have a business case for helping community clinics coordinate and spread asthma projects.

Diabetes: Project Dulce

Diabetes is handled differently in San Diego than in other California counties: Much of the diabetes improvement work is performed by the private, nonprofit Project Dulce. The Community Clinic Network relies on Project Dulce to catalyze diabetes improvement. Most of the network clinics work with Project Dulce, the diabetes registry lives at Project Dulce, and the county health department has adopted Project Dulce as its vehicle for management of medically indigent people with diabetes.[77]

In the mid-1990s, the Whittier Institute for Diabetes, part of Scripps Health, initiated Project Dulce, obtaining initial funding in 1997. The program was piloted at two community clinics, North County Health Services and Escondido. Three hundred high-risk patients (HbA1c greater than 10) — Medi-Cal and uninsured — were identified. Project Dulce created an R.N./certified diabetes educator and medical assistant teams, working with community clinic physicians, to intensively care for these patients in planned diabetes visits, using an endocrinologist-created protocol. Clinics provide space for the four Project Dulce teams, which work at different clinics on different days.

A less intensive arm of the project involves patient education classes taught by peer leaders who receive a six-month training program. The peer education model is based on the work of Dr. America Bracho at Latino Health Access (Anaheim, California), which trains *promotoras* to work on issues of health, education, and youth violence.

The Project Dulce *promotoras,* who often have diabetes themselves, are an integral part of the diabetes team, teaching classes and doing community outreach. Project Dulce currently pays seven *promotoras* and is training more. *Promotora* training programs are run by a health educator who brings in a nutritionist, an endocrinologist, and other experts. The project works in the

Latino, Vietnamese, Filipino, and African American communities.

Project Dulce has created a diabetes registry using BPHC software. The registry is sorted to identify patients in poor control, and charts are created for the clinics to show HbA1c levels and other data. Project Dulce has an employee in charge of the registry. Whereas only 28 percent of people with diabetes cared for in San Diego's community clinics had at least two HbA1c tests per year, all of those in Project Dulce received these tests. After attending Project Dulce classes, HbA1c and lipid results improved.

Nearly a quarter-million people in San Diego County have diabetes. If approximately a quarter of diabetics are in the safety net, more than 50,000 people with diabetes are treated in San Diego's safety net. The safety net estimate is probably low considering that Medi-Cal patients have twice the prevalence of diabetes as the general population. Project Dulce has 2,200 patients in its diabetes registry. Clearly, Project Dulce's work needs to be enormously magnified. With funds to care for patients in the county's medically indigent program, Project Dulce is currently expanding from six pilot sites to all the county's community clinics. Moreover, because many people in the safety net receive care from private doctors, Project Dulce's leaders would like to work with private physicians on diabetes care.

Project Dulce's leaders realize that its work has not resulted in primary care redesign in community clinics. Physicians are too busy with acute visits to handle routine chronic care issues; primary care teams with non-physician personnel trained to do routine diabetes care have not been institutionalized. As a result, Project Dulce is concerned about the sustainability of its work. Since it is funded by grants and by a financially shaky county health effort, its leaders realize that without reimbursement of its non-physician care, its efforts are not secure. While some of the Medi-Cal managed care plans in San Diego pay for portions of Project Dulce's work, Medi-Cal overall does not pay for diabetes education, planned nurse visits, or group classes.

Lessons from San Diego County

- Project Dulce's combination of *promotora*-led diabetes education/self-management classes and its planned, nurse-run diabetes mini-clinics appears to be a highly effective program for diabetes care in the safety net.
- The San Diego Council of Community Clinics, like Alameda County's Community Health Center Network, represents a major step forward in promoting chronic care improvement for the clinics' patients. Chronic Care Model components can be more effectively implemented at a broad network level than by isolated clinics.
- Many excellent San Diego organizations have programs for children with asthma, but the absence of one all-inclusive, population-wide registry means that many families and children with asthma in San Diego's safety net do not receive optimal self-management education and clinical care.
- As in other counties, San Diego's safety net has benefited from the efforts of committed leaders in improving chronic care. In the absence of reimbursement from Medi-Cal, Medi-Cal managed care plans, and other payers, these efforts' sustainability over the long term is a haunting question.

VII. Santa Clara County

EIGHT PERCENT OF SANTA CLARA COUNTY'S 1.8 million people are Medi-Cal recipients. Forty-two percent of Medi-Cal recipients are in one of the two Medi-Cal managed care plans, with the local initiative Santa Clara Family Health Plan having more than 60 percent of the Medi-Cal managed care business. Sixteen percent of the county's under-65 population lacks health insurance.[8,9]

Santa Clara County has a tradition of collaboration between the community clinic and the county health system sectors of the safety net. From its beginning, the clinic consortium, Community Health Partnership of Santa Clara County (CHP), has had county health system representation on its board. The use of the term "partnership" expresses the vision that the two sectors of the safety net should be working together.

In some counties, the community clinic and county health system safety net sectors view each other as competitors for public and foundation funds and for Medi-Cal patients who represent reimbursement. CHP has attempted to overcome this natural competitiveness, understanding that the same patients move back and forth between the community clinic and county systems with the county system providing needed specialty back-up for the clinics. In addition, the county funds community clinics in the amount of about $2 million per year for the care of the uninsured.

The discussion of Santa Clara County's chronic care is limited to diabetes.

The Promise of Improved Diabetes Care

The Community Health Partnership of Santa Clara County supports a unified system of diabetes care for patients in both the county and community clinics, but lack of funds has hampered the process. It is hoped that a unified registry would eventually link county and community clinics. Several overlapping initiatives are being developed to address the problem of diabetes. These include:

1. The Diabetes Coalition convened by the non-profit foundation Health Trust. Besides planning diabetes care, the Coalition has a policy agenda to have payers

reimburse diabetes educators and other non-physician diabetes caregivers.

2. Programs of CHP including Lorig-model classes,[36] a diabetes support group — Fiestabetes — and a supply bank of diabetes supplies for uninsured patients.
3. Rudimentary diabetes programs in a few of the community clinics, without the clinic-wide network existing in Alameda and San Diego Counties. The only community clinic diabetes registry is at the Indian Health Center. The federal Indian Health Service has made diabetes management a priority.
4. The county health system diabetes program, one of the most comprehensive county-based diabetes program in California. The county health system, Valley Health and Hospitals System, and its associated Valley Health Plan, has hired a well-trained and energetic nurse coordinator, Norma Rivera, R.N., to champion a comprehensive chronic care management program for diabetes and cardiovascular risk factor reduction. The program is being piloted at two primary care sites with plans to spread to all county-run sites.

Of the 92,000 patients with diabetes in Santa Clara County, 8,000 receive care in the Valley system. More than 1,400 have been entered into a diabetes registry, which is used to generate reminder prompts for patients and providers. Feedback reports to providers are being planned. Laboratory data are entered by keystroke into the registry, but plans for electronic data entry are underway. Besides the registry and reminder systems, the diabetes care system focuses on patient education. The classes feature traditional diabetes education, and will add Lorig-model self-management training.[36] At the pilot sites, physicians may transfer basic diabetes management to diabetes educators and pharmacists, representing a form of planned diabetes care. The care management system utilized by Kaiser Permanente's northern California region[33] is being adapted to the county's needs. Lipid and blood pressure management will be started to complement the diabetes program.

Lessons from Santa Clara County

- Leaders in the county and community clinic sectors agree that serious barriers to success exist. Fundamental is lack of reimbursement for chronic care management functions other than physician visits. Related to the reimbursement problem is lack of resources. County government, thriving during the Silicon Valley boom, faces the same deficits as counties all over California. For fiscal year 2004, the county is requiring that Valley Health and Hospital System reduce its budget by $33 million.
- Leadership is a problem in some of the county's community clinics. As one person described it, the doctors are interested but do not have the time, whereas the administrators have the time but not the interest.

VIII. San Francisco City and County

FOURTEEN PERCENT OF SAN FRANCISCO'S population receives Medi-Cal benefits. Thirty-seven percent of Medi-Cal recipients are in managed care, 60 percent in the local-initiative San Francisco Health Plan. Thirty-four percent of San Francisco's under-65 population is uninsured.[8,9] San Francisco features a wealth of safety net clinics, both in the county health system and as independent community clinics. The two safety net sectors are planning to collaborate to a degree rarely seen in other counties.

Collaboration in the Safety Net

The county system, called the Community Health Network (CHN), includes about a dozen primary care clinics, both at San Francisco General Hospital and scattered among the city's neighborhoods. In addition, nine non-governmental community clinics serve San Francisco's safety net, loosely organized into the San Francisco Community Clinic Consortium. CHN cares for more than 120,000 people, and the consortium clinics an additional 65,000. Two major developments will soon link the two systems: a shared partial electronic clinical record, and an emerging coalition for chronic care.

The Lifetime Clinical Record. For several years, CHN has utilized a partial electronic medical record in its clinical sites. This "Lifetime Clinical Record" (LCR) includes diagnosis and medication lists, laboratory and x-ray results, some specialty consultation reports, and — in two sites — primary care progress notes. Because patients bounce back and forth between the two safety net sectors, CHN and consortium leaders determined to extend the LCR program in 2003 to the community clinics.

Related to, though somewhat separate from, LCR is a CHN diabetes registry. In contrast with most safety net registries, the CHN registry is populated electronically and does not require the laborious inputting that frustrates so many community clinics. Currently, CHN clinics receive twice-yearly reports of their diabetic cohort, tracking indicators of diabetes control obtained from LCRs (e.g., HbA1c, LDL cholesterol, and Pneumovax status). Some sites have developed improvement projects based on the registry, namely risk stratification, patient and provider reminder systems, and performance feedback.

The emerging coalition. In 2002, a major conference—Caring for the Patient with Chronic Illness in the Safety Net—was held for leaders and caregivers in 50 San Francisco community organizations, including CHN and consortium clinics. Kaiser Permanente provided both financial and intellectual support and links were made with Alameda County's Community Health Center Network. Using the Chronic Care Model as an organizing principle, the conference energized many people within San Francisco's safety net to develop chronic care programs. A coalition is developing, one of whose first projects is to make fuller use of the diabetes registry. A mandated quality improvement activity for CHN primary care clinics is adoption of registry-related diabetes care.

Pediatric Asthma

Many initiatives exist in San Francisco to improve the care of children with asthma. This report is limited to a description of three programs.

San Francisco Health Plan

Sixty-five percent of the San Francisco Health Plan's (SFHP) 25,000 enrollees are children. The health plan does not contract with individual physicians, but with physician groups, at financial risk for emergency department (ED) and inpatient care. Delegation of ED and hospital risk to physician groups means that SFHP lacks a strong financial incentive to decrease ED and hospital use through cost-reducing asthma management. In spite of the absence of a financial incentive, SFHP initiated a pediatric asthma program.

SFHP pays for spacers, which the fee-for-service Medi-Cal program does not do. About 2,000 copies of red-yellow-green asthma action plans, available in five languages, have been distributed to health plan physicians. In 1999, five percent of pediatric enrollees with persistent asthma had action plans; a follow-up audit found an increase to 12 percent. In addition, the health plan distributes supplies such as spacers, peak flow meters and mattress covers.

The health plan has created a registry that tracks indicators such as asthma-related hospital and ED utilization and use of inhalers. These measures are employed to risk-stratify patients, and lists of patients designated as red (poor management), yellow (fair), and green (good) are sent to the patients' physicians. Physicians receive feedback on hospital and ED use, and the number of albuterol and controller canisters obtained from a pharmacy over the past year. SFHP is working to improve the accuracy of feedback data.

How Medi-Cal Managed Care Plans Can Help Improve Chronic Care

Health plans are not provider organizations, which is where the "rubber meets the road" for chronic care improvement. Yet health plans can help in the following ways, for example, in improving asthma care:

- using claims and pharmacy data to create an asthma registry and share registry data with each physician;
- informing providers of patients who
  a. frequently use the ED or hospital,
  b. underutilize controller medications, or
  c. overutilize rescue medications;
- offering practice guidelines and educational sessions to physicians;
- providing asthma tools such as action plan forms, asthma progress notes with embedded guidelines and reminder prompts, and patient education materials;
- providing supplies such as spacers and mattress covers for patients with asthma;
- hiring nurses to work as asthma care managers for high-risk patients;
- paying physician groups for planned asthma; visits with nurses, respiratory therapists, or pharmacists; and
- providing feedback to physicians on their performance.

In summary, SFHP has the beginnings of an ambitious pediatric asthma program. However, because most physicians care for relatively few San Francisco Health Plan enrollees, the program touches only a small percentage of most providers' patients.

Yes We Can

Established in 1992, Community Health Works of San Francisco is a center for training, research and development of community health workers and interdisciplinary community health teams. One of its projects is the Yes We Can Urban Asthma Partnership. Yes We Can's philosophy, expressed on its Web site,[78] argues that "There is an abyss between what we know about how to prevent uncontrolled children's asthma, and what really happens in a health system that is oriented to acute care, not chronic care. The gap is particularly wide in stressed community based and public health clinics. To close that gap, Yes We Can set out to demonstrate a team model of prevention-oriented children's asthma care that addresses both the social and the medical challenges of good asthma management. The primary care team is composed of a clinician, a nurse care coordinator and a community health worker from the child's own community. This team approach… provides a clear division of labor so that non-physicians can play a strong role in supporting self-management." Yes We Can trains community health workers, links them with clinical sites, creates protocols and forms for their work, and is developing a toolkit on implementing the team model for chronic disease care.

Pediatric Asthma Clinic

Shannon Thyne, M.D., has started a weekly Pediatric Asthma Clinic at San Francisco General Hospital, staffed by primary care physicians, allergists, a nurse practitioner, a public health nurse, health educators, and community health workers trained by Yes We Can. The clinic provides planned asthma visits combining education, treatment, and self-management asthma action plans. Some patients receive home visits to help families with environmental controls. After six months, patients are referred back to their primary care physicians with recommended annual follow-up.

As with many planned-visit clinics, the Pediatric Asthma Clinic's registry is not integrated into the county's clinical information system, the Lifetime Clinical Record. The registry, which includes only the Asthma Clinic patients rather than all CHN patients with asthma, is not utilized to generate reminder prompts, to risk-stratify patients, nor to provide physician performance feedback. The clinic has seen about 400 children since starting in 1999, a small proportion of the estimated 3,000 children with asthma cared for in CHN. For new patients to obtain a Pediatric Asthma Clinic appointment requires a three-month wait.

Children attending the Asthma Clinic have considerably better control of their condition compared with those not seen in the clinic. To improve the program's reach, Dr. Thyne gives educational talks to physicians in all CHN primary care sites. She feels that many physicians are not familiar with standard asthma guidelines.

Lessons from San Francisco

- County health systems and community clinics can begin to collaborate through shared information systems. Simple registries can be developed in the safety net that do not require manual inputting of data.
- Medi-Cal managed care plans are important allies in chronic care improvement, though their assistance is limited to people who are their enrollees.
- Disease-specific planned-visit clinics are highly successful in improving chronic care, but planned clinics' data systems are generally limited to the clinic patients and not integrated into system-wide registries. The clinics often see a small proportion of the target population.

IX. Central Valley

California's Central Valley includes many counties lying to the north and south of Sacramento. A number of small Central Valley counties have no county hospital and limited county health systems. Three of the larger counties have different models for their safety net hospitals: San Joaquin County maintains its county hospital; Sacramento uses UC Davis Medical Center as its safety net hospital; and Fresno County transferred its hospital to the non-profit, private University Medical Center.

Many community clinics are scattered throughout the Central Valley and are vital elements in the Valley's safety net. A dozen clinic organizations with 80 clinical sites in 17 counties are linked together by the Central Valley Health Network. In 2000, these clinics provided 1.3 million medical visits to 400,000 patients, including more than 100,000 seasonal and migrant farm workers. Sixty-five percent of these mostly Latino agricultural workers are uninsured. The Central Valley is also home to 65,000 Lao, Hmong, and Mien Southeast Asian refugees, bringing an array of cultural and linguistic needs for clinics to address.

Several Central Valley clinics have participated in BPHC collaboratives and in a federal pilot program to introduce electronic medical records into community clinics. The clinics are severely stressed by large numbers of uninsured patients who bring in little or no revenue, forcing the clinics to generate many Medi-Cal visits. Financial pressures and the resultant drive for productivity by clinic physicians are intense in the Central Valley, as in urban clinics, making chronic care improvement an exceptional challenge.

Central Valley Health Network medical directors meet quarterly to discuss such problems as the difficulty clinics face inputting data into BPHC chronic disease registries and the need to upgrade information technology. The network has not reached the stage of coordinating chronic care improvement using the model of Alameda County.

The Experiences of Two Central Valley Clinics

Golden Valley Health Centers

Golden Valley Health Centers, a FQHC centered in Merced with 14 clinical sites, joined a BPHC diabetes collaborative, but due to the need to focus on other priorities, was unable to sustain the collaborative work. Diabetes group visits were initiated, but low attendance caused them to be discontinued. Golden Valley is currently in a BPHC pediatric asthma collaborative and hopes to launch a registry and asthma program soon.

Golden Valley joined the BPHC pilot program to develop an electronic medical record (EMR), but was forced to drop out due to financial difficulties. Medical director David Campa, M.D., feels that the EMR is essential to developing chronic disease registries, in order to avoid the effort of manual data input and the dysfunctionality of stand-alone registries not tied to the clinic's overall data system. Golden Valley was seriously affected by the switch in Medi-Cal payment from cost-based reimbursement to PPS (see Chapter II). According to Dr. Campa, the clinic became very productive shortly before PPS was initiated. Increased productivity translates into more visits per physician per day, which means a lower average cost per visit. Cost-based reimbursement is calculated as cost per visit, and the PPS rate is based on the rate of cost-based reimbursement in the 2000 base year. Since Golden Valley was efficient, leading to low cost-based payment, its PPS rate is also low. It increases only 2 to 3 percent per year, far less than the 10 to 15 percent per year growth in clinic expenses. Less productive clinics with higher costs per visit have higher PPS reimbursement. The PPS rate may vary from less than $90 per visit to more than $175 per visit; Golden Valley's reimbursement rate is $89.99 per visit, the low end of the range. This barrier, low Medi-Cal reimbursement, represents the major challenge to chronic care improvement at Golden Valley.

Family Health Care Network

The Family Health Care Network (FHCN) serves people at eight clinical sites in the southern Central Valley. FHCN has doubled in size over the past three years; its PPS payment is $22 per visit greater than that of Golden Valley.

FHCN joined a BPHC diabetes collaborative in 1999 at one pilot site. The diabetes registry, which covered about 10 percent of people with diabetes served by the clinic, was initiated on a physician's laptop computer and not integrated into the overall practice management system. The health educator worked evenings inputting data. Medical director Barry London, M.D., assessed that the program could not be spread to other sites because of difficulty in maintaining the registry. FHCN entered an asthma collaborative in 2000, experiencing the same difficulties in information technology.

From these experiences, Dr. London decided that an EMR must precede the development of chronic disease registries such that all clinicians and other health care workers — not just a few people backlogged with inputting tasks — would enter clinical data at each patient visit electronically. Pursuing that strategy, FHCN joined the pilot program for EMR development and hopes to be computerized within a year at all eight sites. In the meantime, the chronic disease programs have been put on hold.

Diabetes

San Joaquin General Hospital

San Joaquin General Hospital's primary care clinics are often crowded with waiting patients. Attempting to address the needs of a large population with diabetes, the hospital is dividing patients with diabetes into Level 1 (in reasonable control), Level 2 (requiring temporary care management to improve control), and Level 3 (needing permanent care management). The one diabetes care manager receives referrals from physicians and the emergency department but is able to serve few Level 2 and 3 patients. The level of stress experienced by primary care physicians is intense. To obtain a nutritionist appointment at the hospital may take three months. Diabetes health education is available through a community organization, Su Salud. No diabetic registry exists.

An enthusiastic medical chief resident, Olga Calof, M.D., organized a team including two pharmacists, a nurse practitioner, and a nutritionist to start a clinic offering planned diabetes visits. While primary care appointments clinics have weeks of delay, Dr. Calof attempts to provide prompt access to the weekly clinic, which focuses on new diabetics and those whose disease is difficult to control or have had a recent diabetes-related hospitalization. She created guidelines and led educational sessions for physicians at the hospital. The clinic utilizes pharmacists as key clinical personnel.

Fresno's University Medical Center

A number of years ago, Fresno County's public hospital became University Medical Center (UMC). In 1995-96, UMC was transferred to nonprofit, private Community Medical Centers. UMC is perched on a four-legged stool: Community Medical Centers, UCSF-Fresno residency training program, Fresno County, and the faculty medical group. UMC operates primary care clinics and sends a nurse practitioner-staffed caremobile to rural sites in Fresno County. The county pays Community Medical Centers under $20 million per year to care for the uninsured, an amount the hospital feels is insufficient. A 25 percent reduction in DSH funds is an additional stressor. Because of these budgetary problems, UMC's primary care clinics are in jeopardy because they are poorly reimbursed in comparison with hospital care.

UMC provides more than 100,000 primary care visits per year, of which more than half are Medi-Cal. All hospitals in the area lack the capacity to meet patient demand for primary care, resulting in many patients seeking non-urgent care in hopelessly busy emergency departments. Uninsured patients come from neighboring counties lacking a safety net. In summary, primary care at UMC is in a chronic state of crisis.

Financial Incentives at University Medical Center

A business case exists for improved chronic care at the primary care level. UMC's emergency department (ED) receives less Medi-Cal reimbursement per visit than its cost per visit; thus, programs that keep patients out of the ED benefit the hospital. Chronic care programs that reduce hospitalizations also help UMC. Hospital admissions for the uninsured are uncompensated, and for Medicare and Medi-Cal patients, the hospital is frequently full and unable to handle more admissions. In spite of these incentives for better chronic care, the paltry $28 Medi-Cal payment per primary care visit makes expansion of primary and chronic care virtually impossible. Community Medical Centers, which owns UMC and its primary care sites, hopes to transfer control of primary care to a board with 51 percent consumer membership to convert primary care sites to FQHC status. This would increase reimbursement from $28 to $105 per visit.

In spite of these problems, UMC initiated a diabetes program. In 2001, a planning group convened to standardize diabetes care guidelines. A Diabetes Care Center is staffed by diabetes educators who provide group education. Blue Cross-managed Medi-Cal reimburses the center for its enrollees, but much of the care is uncompensated. Because the Diabetes Care Center manages only a small proportion of people with diabetes in the UMC system, a diabetes clinic was recently established in the internal medicine department. Whether UMC — facing difficult financial troubles — is able to spread its diabetes program to a majority of its patients with diabetes remains to be seen.

Sequoia Health Center

Phyllis Preciado, M.D., who helped initiate the diabetes clinic at Highland Hospital in Alameda County, launched a diabetes clinic at Sequoia Health Center in Fresno. With few resources and almost no funds, Dr. Preciado brought together two health educators, a nutritionist, two Latino premedical students, a medical assistant and a high school student to staff the once-a-week clinic. Pharmacy students will soon join the effort. The students are helping to create a registry on Dr. Preciado's laptop computer. At a weekly case conference, the team discusses the clinic's patients and creates a division of labor to determine how the team members will participate in the care of each patient.

Lessons from the Central Valley

- Institutions and individuals in the Central Valley are attempting to institute some diabetes programs against difficult odds — high rates of uninsured and diabetes prevalence — but these efforts barely scratch the surface of the population's needs.
- Two planned diabetes clinics — at San Joaquin General Hospital and Sequoia Health Center — were started with almost no budget, their champions gathering together personnel and resources in highly inventive manners. These efforts can serve as models for other resource-poor safety net institutions.
- Because of the dispersed population, small institutional efforts are unlikely to address the big picture of diabetes in the Central Valley. An alternative strategy might be a Central Valley-wide diabetes clinical information system linking community clinic sites and county health systems. From a simple regional diabetes registry — less robust than BPHC registries — a regional list could be generated (from clinic and hospital encounter data) of people with diabetes, providing three pieces of information: has the patient had a primary care visit in the past two years, has the patient had a HbA1c test in the past two years, and — if so — what is the HbA1c result? An attempt could be made to contact patients without visits, without HbA1c tests, and with HbA1c levels greater than 10 to come to one of the region's diabetes programs. Where such a registry would reside, how it would be financed, who would maintain it, and how high-risk people would be cared for are all questions needing answers.

X. Chronic Care Improvement: Facilitators and Barriers

WE HAVE PRESENTED CASE STUDIES OF CHRONIC care improvement efforts that bring components of the Chronic Care Model to patients with chronic illness in California's safety net. Two things are striking about these efforts: (1) the chronic care improvements are initiated and maintained by dedicated and talented individuals, and (2) they reach a small proportion of chronically ill people in California's safety net. What might be the facilitators for, and the barriers to, extending these efforts to the entire population that can benefit from the innovations? We list facilitators and barriers together because they are often two sides of the same coin — facilitators when present and barriers when absent.

Paying for Chronic Care Improvement

Stable funding for chronic care programs requires routine reimbursement of these programs by all payers: Medi-Cal, managed Medi-Cal health plans, Medicare, county indigent care programs, and others. In virtually every California county visited, chronic care champions pointed out that payers were reimbursing few or none of their efforts, both in county systems and in community clinics. In fee-for-service systems, physician visits are reimbursed and most non-physician care is not. Medi-Cal managed care plans pay capitation rates that are insufficient to finance chronic care innovation. There are exceptions. Project Dulce in San Diego has persuaded some Medi-Cal managed care plans to reimburse non-physician diabetes visits. Community clinic PPS payment can be generated by some non-physician visits but most reimbursement requires physician time.

A new payment mechanism taking hold in California is "Pay for Performance." Health plans are expected to offer bonuses to physician organizations that improve their performance in clinical quality, patient satisfaction, and information technology. Pay for performance also involves some Medi-Cal managed care plans. The Alameda Alliance already pays providers a bonus if certain quality benchmarks are met (see Chapter IV). Pay for Performance is a potential facilitator of chronic care improvement, but is not well adapted to county health systems, whose patients often have multiple comorbidities including substance abuse, mental illness and homelessness, making it difficult to improve chronic care performance measures. It is unlikely that sufficient dollars will be placed in pay-for-performance pools to make a difference in the underfunded safety net.

A number of chronic care champions feel that community clinics and county health systems should be paid for the chronic care service they offer. In addition to "pay for performance," payers should "pay for program." Visits to caregivers who are not physicians should be reimbursed if these visits are components of a chronic disease program. According to this view, health plans and other payers should provide funds for chronic disease registries; for medical assistants to make use of the registries; for patient self-management education done by nurses, health educators, or *promotoras;* and for nurse-run chronic care clinics. The failure of health plans and other payers to reimburse Chronic Care Model components represents a fundamental barrier.

If payers "pay for program," from where do the additional funds come? A business case for payers can be made — for asthma, congestive heart failure, and possibly diabetes — that chronic care programs reduce expensive hospital and emergency department use. "Pay for program" could save money for health plans and other payers.

Information Systems That Work

A chorus of complaints come from community clinics regarding chronic disease performance reporting. Clinics are required by various payers, regulatory bodies, and — for BPHC collaboratives — the federal government to report clinical performance data. Such reporting has become a hassle with a registry and a hassle without a registry. Without a registry, clinics must do time-consuming chart audits to track performance data. In almost all cases, registries must be input keystroke by keystroke, utilizing scarce personnel resources. While registries are essential for individual and population chronic disease management, difficulties in populating and maintaining registries have made some clinic leaders feel that they are not worth the effort — for example, Family Health Care Network, Golden Valley Health Centers, and The Children's Clinic. In other cases — Clinica de la Raza and Roybal Comprehensive Health Center — registries are maintained only through the dedication of professionals who utilize their valuable time to input data.

It is difficult to improve the health of a population without knowing who in the population has a chronic condition; registries provide such data. It is also difficult without registries to guarantee that every person with a chronic condition is receiving proper management for that condition. But registries are currently a mixed facilitator/barrier to chronic care improvement. Removing the barrier requires that registries be electronically populated from laboratories, pharmacies, and encounter data. In addition, the registries should become a part of organization-wide or region-wide clinical information systems rather than perched on a physician's laptop computer.

One temporary solution to the registry problem might be to rely on claims data as a simple way to risk-stratify patients. The Children's Clinic can potentially utilize its billing system to sort children with asthma into severity categories. Diabetes codes could similarly be separated into those for well-controlled and poorly controlled patients. In this way, practice management software could become a simple "proto-registry." Another idea, coming from the San Diego Community Clinic Network, is to electronically scan chronic disease-specific progress notes into computer systems, thereby avoiding the drudgery of inputting the data.

Overcoming the information system barrier requires a well-thought-out plan and funds to invest in information systems. These two items are discussed in the final chapter.

The Hamster Syndrome

In Chapter III it was noted that primary care physicians — not only in the safety net but everywhere — often feel like hamsters on a treadmill, running faster and getting nowhere.

Most primary care clinicians are capable of managing chronic care. Why, then, do national data show that chronic care is inadequate (see Chapter I)? One explanation is that primary care is delivered by hamsters. Smart and dedicated hamsters, but hamsters nonetheless. The hamster syndrome — clinicians being so rushed by the myriad of patients' acute problems that they cannot handle the less pressing management of chronic conditions — pervades safety net clinics and is a major barrier to improved chronic care.

Planned visits can overcome the hamster syndrome, as demonstrated by the Roybal Comprehensive Health Center diabetes clinic, diabetes and asthma clinics at Alameda County's Highland Hospital, the incipient diabetes clinics at San Joaquin General Hospital and Sequoia Health Center, the nurse-led diabetes teams of Project Dulce, and the Pediatric Asthma Clinic at San Francisco General Hospital. The Roybal experience, however, must be carefully considered: HbA1c levels of patients sent back to primary care often rise when planned visits no longer take place.

There are far too many people with chronic conditions in California's safety net for planned chronic care clinics to handle. If gains made by patients in planned-visit clinics are to be sustained, and if all Californians with chronic conditions in the safety net are to receive optimal management, redesign of primary care will be needed, with non-physician personnel given time and training to offload physicians from routine chronic care tasks. Redesign will not take place until health plans pay for non-physician visits.

Finding and Training More Chronic Care Champions

The chronic care programs featured in this report came about because committed individuals decided to "do the right thing." These champions are the primary facilitators of chronic care improvement. Yet they also represent potential barriers. As long as dedicated leaders impel organizational improvement by sheer will, the organization becomes dependent on those individuals and may fail to institutionalize changes made.

The lack of trained leaders with dedicated time constitutes a barrier to chronic care improvement. An army of trained chronic care improvement champions could become a powerful facilitator, moving the safety net in the direction of a chronic care tipping point. In addition, the institutionalization process needs to take place such that an improvement becomes a permanent way of doing business rather than a temporal blip on the radar screen. Again, the need for health plans to "pay for program" and thereby catalyze primary care redesign is evident.

Creating Simple Messages for Patients and Caregivers

A strength but also a limitation of the Chronic Care Model is its complexity, which informs but sometimes paralyzes people wishing to make change. A few clear messages, distilled from the Chronic Care Model, might help institutions and their leaders get started. What these messages are requires discussion and debate. Some messages emanating from this report are: the importance of planned chronic care visits, electronically populated registries, use of medical assistants and reminder systems to improve chronic care in primary care sites, and the central role of health plans in catalyzing chronic care programs. Are these the right messages? If so, are they right for all chronic conditions and all safety net institutions?

A relatively simple chronic care improvement strategy for the safety net might be a facilitator for change; what the strategy should be requires chronic care champions to come together for discussion.

Parallel to the need for simple messages to institutions and their leaders is the importance of simple messages for patients. Elisa Nicholas, M.D., of The Children's Clinic has formulated simple messages on pediatric asthma (see Chapter V). Could similar simple messages be developed for diabetes, hypertension and congestive heart failure? Simple messages — repeatedly proclaimed by the media, schools, and caregivers in safety net institutions — might help inform and activate patients.

Training Patients to Be Self-management Experts

Several California counties are sites of *promotora* programs developed by Latino community organizations, including Project Dulce in San Diego, the Community Health Partnership in Santa Clara County, and San Francisco's Yes We Can community health worker program for asthma. These programs train lay people to become peer educators of patients with chronic conditions. *Promotoras* can be important facilitators of patient self-management training. Health plan reimbursement for the work of *promotoras* could encourage a major increase in their numbers.

Collaboration among Individuals and Organizations

BPHC collaboratives for improving chronic care have been important facilitators of change in a number of community clinics. The California Primary Care Association is initiating California collaboratives built on the BPHC model. Collaboratives have three purposes: (1) formal education about both the Chronic Care Model and an institutional change model, (2) informal education, allowing different institutions to learn from each others' experience, and (3) inspiration — creating a culture of improvement.

The lack of collaboratives has been a barrier for county health systems. Some informal collaboration is taking place between community clinics and county facilities, but more formal collaboratives involving county health systems and community clinics could be an important facilitator in improving chronic care and in locating a new group of leaders.

Involving Medi-Cal Managed Care Plans

The local-initiative Medi-Cal managed care plans are often led by individuals who partake of the safety net culture of quality and service. Involving leaders from managed care plans in the collaborative process could be an important step. Besides the "pay for program" concept described above, there are many ways in which Medi-Cal health plans can help providers to improve chronic care.

Medi-Cal health plans could (1) use claims and pharmacy data systems to create registries and share the registry data with each physician and provider institution; (2) inform providers of their patients who are frequent ED or hospital users; (3) offer practice guidelines and educational sessions to physicians; (4) provide tools such as action plan forms, progress notes with embedded guidelines and reminder prompts, and patient education materials; and (5) provide performance feedback.

Hampering the efficacy of Medi-Cal health plans is the reality that many safety net patients do not receive Medi-Cal and that, for many providers, only a small number of patients are enrolled in these plans. Coordination would be needed between health plans and providers such that the health plans perform these functions for their enrollees while the providers do the same for the uninsured. The health plans could assist in making funds available for safety net providers to develop adequate clinical information systems through which health plan and provider data could be merged.

Conclusion

A number of barriers seriously impede the institutionalization of Chronic Care Model components into California's safety net. These include:

- Failure of health plans to pay for chronic care programs
- Inadequate clinical information systems
- The hamster syndrome impacting primary care clinicians
- An insufficient number of trained improvement leaders
- Overly complex chronic care improvement messages for providers and patients
- Insufficient collaboration between county health systems and community clinics
- Failure of Medi-Cal managed care plans to provide more assistance to providers

The final chapter, proposing recommendations, is based on the need to convert these barriers into facilitators.

XII. Policy Recommendations

THIS CONCLUDING CHAPTER OFFERS recommendations directed to the institutions involved in financing and delivering chronic care in California's safety net. The final section addresses California's health care foundations, suggesting some first steps.

Payers of Health Care in the Safety Net
(Medi-Cal, Medi-Cal managed care plans, Medicare, and county indigent care programs)

"Pay for Program"

Payers should "pay for program," that is, pay for components of the Chronic Care Model that have been shown by the research literature to be effective. Examples are nurse-run clinics offering planned chronic care visits, peer-led or health educator-led patient education and self-management training, and staff time spent inputting data into registries and using the registries for population-based chronic care management.

"Pay for program" does not mean that payers should create new fee-for-service billing codes for services performed by non-physicians. Alternative modes of payment might avoid the need to certify new categories of caregivers and should reduce the temptation of providers to overutilize services in order to make money. What are some alternative ways to pay for program?

Annual bonus. For community clinics, health plans might pay a $30,000 annual bonus to clinics that develop and utilize a chronic disease registry. The bonus amount might depend on the number of patients entered into the registry. The federal Bureau of Primary Health Care has begun to grant clinics with registries funds to hire personnel for registry duties.

Monthly global fee. For community clinics, health plans might pay a monthly global fee for care of each person with diabetes, with the fee adequate to pay for chronic care programs; in addition, clinics might receive a bonus if their patients are kept out of the hospital and the emergency department.

Global budget. For county health systems, health plans might pay a yearly global budget for inpatient services while reimbursing primary care with augmented fee-for-service or capitation payments plus bonuses that "pay for program." This blended payment mode would create incentives to improve chronic care at the primary care level in order to reduce hospital admissions which — with a global budget — become an expense rather than a revenue producer.

In addition to paying for program, payers should assist safety net providers with development and implementation of such chronic care tasks as creation and use of registries and reminder systems, physician education, and tools for clinicians such as guideline-embedded progress notes and asthma action plan forms.

Safety Net Providers

(county health systems and community clinics)

Collaboration. Planning for chronic care improvement in each county/region should involve collaboration between county health systems and community clinics, which often share the same patients. This includes planning clinical information systems/registries. Medi-Cal health plans and relevant community organizations should be involved in planning efforts.

Identify people. Safety net providers should identify people within their institutions who are concerned with improving chronic care, as a step toward training these potential leaders.

Institutionalize. Safety net providers should begin to institutionalize simple chronic care innovations. This process is outlined in the next two paragraphs. Implementing these innovations would be far more likely if payers paid for the innovations. However, even in the absence of payment, the innovations are not expensive to initiate and sustain.

Simple reminder systems. Safety net provider organizations should create simple reminder systems that prompt caregivers to perform routine functions indicated for the management of chronic conditions. Research has shown that reminder systems improve chronic care; the systems are easy to institute even without computerized information systems. Examples are flow sheets for patients with diabetes or tickler files reminding clinic staff to call patients who have missed appointments or lab tests.

Train non-professional staff. Safety net provider organizations should train non-professional staff (in particular medical assistants) to perform chronic care management tasks that are routine and do not require medical or nursing degrees. In diabetes, for example, four concrete tasks can be delegated to medical assistants: (1) preparing a reminder prompt for each visit of a patient with diabetes by looking through the medical chart or directly from a registry; this prompt would indicate which tests are overdue; (2) ordering the tests that are overdue so that the physician does not need to spend time on that routine task; (3) if there is a registry, inputting data daily from patients seen that day into the registry; and (4) on a monthly basis using the registry to identify and make appointments for patients who (a) are overdue for diabetic tests, (b) have elevated HbA1c, lipids, or blood pressure, and (c) have not had a recent visit. These tasks would be in the medical assistant job description.

Two other innovations are more difficult but could be considered:

Initiating RN-run clinics. Safety net providers should consider initiating RN-run clinics for common chronic conditions; for example, a diabetes/coronary heart disease risk factor reduction clinic for patients newly diagnosed with, and in poor control of, these conditions. RNs can be provided with physician-created protocols enabling them to perform patient education and management with physician supervision as needed. A number of experts — some featured in previous chapters of this report — who have initiated such clinics could be asked to assist in planning and training.

Managing patient population. Safety net providers should consider how to manage their entire population of patients with common chronic conditions. This entails creating a registry including all patients with common chronic conditions. Because registries are difficult to create on clinical information systems that do not easily interface with one another, proto-registries can be used that are better than no registry at all. A proto-registry is a simple list generated from claims data ICD-9 codes. In order to make such lists useful in population management, non-professional clinic staff would periodically — perhaps every six months — go through the list to determine whether each patient has had an appointment and has completed routine tests. Proto-registries can be sorted by disease severity if clinicians utilize the proper ICD-9 codes on encounter forms.

The California Association of Public Hospitals and Health Systems, the California Primary Care Association, and local/regional community clinic consortia are key catalysts, assisting provider organizations to improve chronic care.

Federal, State, and Local Governments

Assist safety net providers. All three levels of government should assist safety net providers in implementing the recommendations listed above. An urgent governmental responsibility is to make a substantial investment in electronic clinical information systems for the safety net.

Facilitate the conversion. Federal and state governments should facilitate the conversion of all county health system primary care sites into FQHCs, allowing these sites to receive adequate Medi-Cal reimbursement that can cross-subsidize the care of the uninsured. This one change could be instrumental in creating the conditions for improved chronic care.

The principal barrier to the development of chronic care improvement in the safety net is the failure of government to legislate universal health insurance.

Health Professional Schools

Teach their students. Schools of medicine, nursing, pharmacy, health education, and medical assistant training should teach their students the Chronic Care Model, including self-management training of patients and a team approach to care, such that newly graduated caregivers will have learned some basic concepts that many existing caregivers do not know. In addition, health professional schools should work with community organizations to assist in the training of *promotoras,* lay educators, and community health workers.

Health Care Foundations

California is blessed with a several foundations working in the health care field, including the California HealthCare Foundation (which sponsored this report), The California Endowment, California Wellness Foundation, Tides Foundations, and local foundations such as Santa Clara County's Health Trust. In two arenas, these foundations could make a major contribution to chronic care improvement in California's safety net: clinical information systems and strategic decision making

Clinical information systems. Information technology is both a facilitator and a barrier to improved chronic care. The essence of the barrier is two-fold. First, for institutions with chronic illness registries, lab, pharmacy, encounter data rarely flow electronically to populate the registries, thereby requiring time consuming work to input data manually. Second, most safety net institutions do not have chronic disease registries at all, and where registries exist they are seldom connected with larger computerized data systems.

California's health care foundations could help upgrade clinical information systems by:

- Bringing together expertise to plan the best strategy for creating regional clinical information systems that are electronically populated. It is likely that such systems would be centered in a data warehouse that receives data electronically from laboratories, pharmacies, and clinical encounters, and is able to produce registries and clinical performance reports for participating institutions. Ideally, county health systems and community clinic consortia would develop registries jointly.

- Assisting in the necessary process of standardizing the transmission of data among providers, laboratories, pharmacies, data warehouses, and registries with unique patient identifiers.
- Utilizing their funding expertise to raise money for clinical information systems. It may be possible for foundations to convene corporate, health plan, government and philanthropic organizations to establish a fund for a safety net information infrastructure.

Strategic Decisions

California Chronic Care Coalition. California's health care foundations could contribute by funding carefully planned meetings of chronic care champions of California's safety net and Medi-Cal managed care plans. A chronic care coalition could discuss some of the following issues:

- Is "pay for program" a good idea? If so, how might Medi-Cal health plans and other payers implement it using modes of reimbursement that provide incentives for chronic care improvement? The Rewarding Results initiative of the Robert Wood Johnson Foundation and California HealthCare Foundation would provide insight.
- In the above recommendations to provider organizations, four proposed innovations are listed. More detailed discussion of these innovations would be fruitful. Are these the most important innovations? Are some more important or feasible than others?
- Can all institutions providing chronic care services agree to disseminate unified simple messages to the general public regarding self-management of a few highly prevalent conditions? How can the media be utilized for such dissemination?
- Are electronic medical records (EMR) systems developed enough for safety net institutions to invest in them, or is the timing too early? Which systems best integrate chronic disease registries with other EMR functions?
- Are existing collaboratives adequate to educate and inspire chronic care innovators in California's safety net? In addition to BPHC and California Primary Care Association collaboratives, is there a need for local collaboratives? How can county health systems become deeply involved in the collaborative process?
- How can a far larger crop of chronic care champions be identified and trained?
- Are non-fee-for-service modes of paying community clinics and county health systems — for example global budgets or other forms of bundled payment — desirable to create positive financial incentives for chronic care programs. Should health plan, provider, and government representatives be convened to discuss this issue?

Conclusion

An impressive group of individuals throughout California have made major strides — though limited in the proportion of the safety net population reached — in improving chronic care. These individuals are the founders of a larger movement for chronic care improvement in California's safety net. The first step in catalyzing better chronic care should be to draw on the knowledge and experience of active chronic care champions to begin the process of spreading their efforts to many more safety net institutions and to many more people with chronic illness in California's safety net.

Endnotes

1. Hoffman, C., D. Rice, H.Y. Sung. "Persons with chronic conditions: Their prevalence and costs." *JAMA,* 1996.
2. Wagner, E.H. "Meeting the needs of chronically ill people." *BMJ,* 2001.
3. Legorreta, A.P., X. Liu, C.A. Zaher, et al. "Variation in managing asthma: experience at the medical group level in California." *Am J Man Care,* 2000.
4. Ni, H., D.J. Nauman, R.E. Hershberger. "Managed care and outcomes of hospitalization among elderly patients with congestive heart failure." *Arch Int Med,* 1998.
5. Clark, C.M., J.E. Fradkin, R.G. Hiss, et al. "Promoting early diagnosis and treatment of Type 2 diabetes." *JAMA,* 2000.
6. Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, 6th Report. *Arch Int Med,* 1997.
7. Institute of Medicine. *America's Health Care Safety Net: Intact but Endangered.* Washington, D.C.: National Academies Press, 2000.
8. Brown, E.R., N. Ponce, T. Rice. *The State of Health Insurance in California.* Los Angeles: UCLA Center for Health Policy Research, March 2001.
9. Medi-Cal Policy Institute. *Medi-Cal County Data Book.* Oakland: California HealthCare Foundation, 2002.
10. Gusmano, M.K., F. Fairbrother, H. Park. "Exploring the limits of the safety net: community health centers and care for the uninsured." *Health Affairs,* 2002.
11. National Association of Public Hospitals and Health Systems. *America's Safety Net Hospitals and Health Systems, 2000: Results of the 2000 Annual NAPH Member Survey.* 2002.
12. California Association of Public Hospitals and Health Systems. *On the Brink: How the Crisis in California's Public Hospitals Threatens Access to Care for Millions.* 2003 (**www.caph.org**).
13. Dower, C., T. McRee, B. Briggance, J. Vance, E.H. O'Neil. *California's Open Door Providers.* San Francisco: UCSF Center for the Health Professions, 2002.
14. California Association of Public Hospitals and Health Systems. *California's Public Hospitals and Health Systems: An Inside Look at Outpatient Services.* 2001.
15. California Association of Public Hospitals and Health Systems. *Prevent the Medicaid DSH Cliff.* 2002.
16. California Association of Public Hospitals and Health Systems. *Restore the 150% Upper Payment Limit.* 2002.
17. *Los Angeles Times,* January 11, 2003.
18. *California Healthline,* January 25, 2003.
19. UCLA Center for Health Policy Research. *Asthma in California in 2001. California Health Interview Survey Policy Brief* (**www.chis.ucla.edu**).
20. Linder, Alice P. *Improving Quality of Care for Californians with Heart Failure.* Oakland: California HealthCare Foundation, July 2002.
21. California Diabetes Control Program, California Department of Health Services. *Fast Facts on Diabetes.* June 2002 (**www.caldiabetes.org**).
22. California Department of Health Services. *California Asthma Public Health Initiative Fact Sheet.*
23. Runde, Denise M. *Improving Quality of Care for Californians with Pediatric Asthma.* Oakland: California HealthCare Foundation, July 2002.
24. Oswald, Nancy. *Improving Quality of Care for Californians with Diabetes.* Oakland: California HealthCare Foundation, July 2002.
25. Whelton, P.K., J. He, L.J. Appel, et al. "Primary prevention of hypertension." *JAMA,* 2002.
26. He, J., P. Muntner, J. Chen, et al. "Factors associated with hypertension control in the general population of the United States." *Arch Intern Med,* 2002.
27. Markson, L.E., W.M. Vollmer, L. Fitterman, et al. "Insight into patient dissatisfaction with asthma treatment." *Arch Intern Med,* 2001.
28. Gibson, P.G., J. Coughlan, A.J. Wilson, et al. "Self-management education and regular practitioner review for adults with asthma." *The Cochrane Library,* Issue 4, 2001.

29. Bull, S.A., X.H. Hu, E.M. Hunkeler, et al. "Discontinuation of use and switching of antidepressants. Influence of patient-physician communication." *JAMA,* 2002.

30. Casalino, L., R.R. Gillies, S.M. Shortell, et al. "External incentives, information technology, and organized processes to improve health care quality for patients with chronic diseases." *JAMA,* 2003.

31. Wagner, E.H., B.T. Austin, M. Von Korff. "Organizing care for patients with chronic illness." *Milbank Quarterly,* 1996.

32. Morrison, I., R. Smith. "Hamster health care. Time to stop running faster and redesign health care." *BMJ,* 2000.

33. Bodenheimer, T., E.H. Wagner, K. Grumbach. "Improving primary care for patients with chronic illness." *JAMA,* 2002.

34. Bodenheimer, T., E.H. Wagner, K. Grumbach. "Improving primary care for patients with chronic illness: the Chronic Care Model. Part 2." *JAMA,* 2002.

35. Lorig, K. "Self-management of chronic illness. A model for the future." *Generations,* 1993.

36. Bodenheimer, T., K. Lorig, H. Holman, K. Grumbach. "Patient self-management of chronic disease in primary care." *JAMA,* 2002.

37. Lorig, K., H. Holman, D. Sobel, et al. *Living a Healthy Life with Chronic Conditions.* Palo Alto: Bull Publishing Company, 1994.

38. Lorig, K.R., P. Ritter, A.L. Stewart, D.S. Sobel, B.W. Brown Jr,, A. Bandura, V.M. Gonzalez, D.D. Laurent, H.R. Holman. "Chronic disease self-management program: 2-year health status and health care utilization outcomes." *Medical Care,* 2001.

39. **www.improvingchroniccare.org**

40. **www.healthdisparities.net**

41. **www.IHI.org**

42. **www.cpca.org**

43. Bodenheimer, T. "Interventions to improve chronic illness care: evaluating their effectiveness." *Disease Management,* 2003. (Available from Dr. Bodenheimer)

44. Norris, S.L., M.M. Engelgau, K.M.V. Narayan. "Effectiveness of self-management training in type 2 diabetes." *Diabetes Care,* 2001.

45. Anderson, R.M., M.M. Funnell, P.M. Butler, et al. "Patient empowerment. Results of a randomized controlled trial." *Diabetes Care,* 1995.

46. Gibson, P.G., J. Coughlan, A.J. Wilson, et al. "Self-management education and regular practitioner review for adults with asthma." *The Cochrane Library,* Issue 4, 2001.

47. Mayo, P.H., J. Richman, H.W. Harris.. "Results of a program to reduce admissions for adult asthma." *Ann Int Med,* 1990.

48. Kelso, T.M., T.H. Self, M.J. Rumbak, M.A. Stephens, W. Garrett, K.L. Arheart. "Educational and long-term therapeutic intervention in the ED." *Am J Emerg Med,* 1995.

49. Greineder, D.K., K.C. Loane, P. Parks. "Randomized controlled trial of a pediatric asthma program." *J Allergy Clin Immunol,* 1999.

50. Ghosh, C.S., P. Ravindran, M. Joshi. "Reductions in hospital use from self management training for asthmatics." *Soc Sci Med,* 1998.

51. Gallefoss, F., P.S. Bakke. "Cost-effectiveness of self-management in asthmatics." *Eur Respir J,* 2001.

52. Kelly, C.S., A.L. Morrow, J. Shults, N. Nakas, G.L. Strope, R.D. Adelman. "Outcomes evaluation of a comprehensive intervention program for asthmatic children enrolled in Medicaid." *Pediatrics,* 2000.

53. Clark, N.M., C.H. Feldman, D. Evans, et al. "The impact of health education on frequency and cost of health care use by low income children with asthma." *J Allergy Clin Immunol,* 1986.

54. Billault, B., P. Degoulet, C. Devries, et al. "Use of a standardized personal medical record by patients with hypertension." *MD Computing,* 1995.

55. Cabana, M.D., C.S. Rand,, N.R. Powe, et al. "Why don't physicians follow clinical practice guidelines?" *JAMA,* 1999.

56. Weingarten, S.R., J.M. Henning, E. Badamgarav, et al. "Interventions used in disease management programmes for patients with chronic illness - which ones work?" *BMJ,* 2002.

57. Davis, D.A., M.A. Thomson, A.D. Oxman, et al. "Changing physician performance." *JAMA,* 1995.

58. Thomson O'Brien, M.A., A.D. Oxman, D.A. Davis, et al. "Educational outreach visits: effects on professional practice and health care outcomes." *Cochrane Review,* 1997.

59. Thomson O'Brien, M.A., A.D. Oxman, R.B. Haynes, et al. "Local opinion leaders: effects on professional practice and health care outcomes." *Cochrane Review,* 1998.

60. Sadur, C.N., N. Moline, M. Costa, et al. "Diabetes management in a health maintenance organization. Efficacy of care management using cluster visits." *Diabetes Care,* 1999.

61. Wagner, E.H., L.C. Grothaus, N. Sandhu, et al. "Chronic care clinics for diabetes in primary care." *Diabetes Care,* 2001.

62. Griffin, S., A.L. Kinmouth. "Systems for routine surveillance for people with diabetes mellitus." *Cochrane Review; In: The Cochrane Library,* Issue 3, 2001.

63. Stroebel, R.J., J.K. Broers, S.K. Houle, et al. "Improving hypertension control: a team approach in a primary care setting." *Jt Comm J Qual Improv,* 2000.

64. Domurat, E.S. "Diabetes managed care and clinical outcomes." *Am J Managed Care,* 1999.

65. Wagner, E.H., N. Sandhu, K.M. Newton, D.K. McCulloch, S.D. Ramsey, L.C. Grothaus. "Effect of improved glycemic control on health care costs and utilization." *JAMA,* 2001.

66. Rich, M.W., V. Beckham, C. Wittenberg, et al. "A multidisciplinary intervention to prevent readmission of elderly patients with congestive heart failure." *N Engl J Med,* 1995.

67. Olivarius, N.F., H. Beck-Nielsen, A.H. Andreasen, et al. "Randomised controlled trial of structured personal care of type 2 diabetes mellitus." *BMJ,* 2001.

68. Sperl-Hillen, J., P.J. O'Connor, R.R. Carlson, et al. "Improving diabetes care in a large health care system." *Jt Comm J Qual Improv,* 2000.

69. Kinn, J.W., J.C. Marek, M.F. O'Toole, et al. "Effectiveness of the electronic medical record in improving the management of hypertension." *J Clin Hypertens,* 2002.

70. Thomson O'Brien, M.A., A.D. Oxman, D.A. Davis, et al. "Audit and feedback: effects on professional practice and health care outcomes." *Cochrane Review,* 1997.

71. Weingarten, S.R., C.S. Kim, E.G. Stone, et al. "Can peer-comparison feedback improve patient functional status?" *Am J Man Care,* 2000.

72. Lawson, K. "Electronic reminders can get lost in info overload." *Internal Medicine News,* August 1, 2000.

73. **www.dhs.co.la.ca.us/planning/**

74. Cohn, J. "The White House abandons LA." *New Republic,* November 20, 2002.

75. "County Avoids Health-Care Debacle? For Now." *Los Angeles Times,* April 2, 2003.

76. County of Los Angeles. *Los Angeles County Medicaid Demonstration Project 1115 Waiver Modification Proposal.* July 2002 (**www.dhs.co.la.ca.us/planning**).

77. Philis-Tsimikas, A., C. Walker. "Improved care for diabetes in underserved populations." *J Ambulatory Care Management,* 2001.

78. **www.communityhealthworks.org**