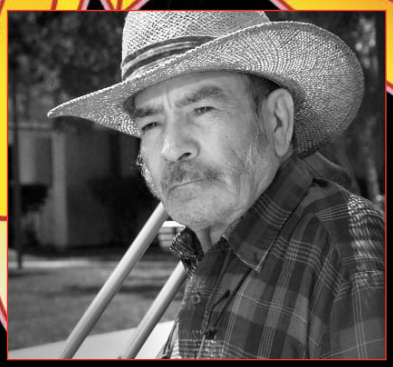
Celebrating **Technology Advances** in **California's Community Clinics** and **Health Centers**

Community Clinics Initiative
A joint project of Tides and
The California Endowment
1999–2006



Community Clinics Initiative

Strong Clinics, Healthy Communities

TIDES

The California Endowment

Sunburst artwork – Ricardo Richey
Graphic Design – JPD Communications, LLC

A message from Ellen Friedman

Truly effective foundation initiatives result from achieving the right balance between the art and the science of grantmaking. The Community Clinics Initiative has found that balance and the results have been profound for the three million uninsured and underinsured people in California who are seen in community clinics and health centers. During the last six years, CCI has made $41 million in grants to 82 percent of the nearly 200 nonprofit clinics and their associations in California. The initial focus of CCI's work, improving the information technology capacity of community health centers in California, has not only resulted in a sea change in the use of technology in clinics, it has opened up horizons for clinics to think about expanded services, increased opportunities for improving public health and prevention, and introduced new partners and resources to the poor and disadvantaged communities that community clinics and health centers are part of and serve.

"While CCI's work has been about building new and expanded capacity in community clinics and health centers, at its deepest level it has been about reaching for the "sun" and building strong and healthy communities."

While CCI's work has been about building new and expanded capacity in community clinics and health centers, at its deepest level it has been about reaching for the "sun" and building strong and healthy communities.

> *"During the last six years, CCI has made $41 million in grants to 82 percent of the nearly 200 nonprofit clinics and their associations in California."*

When the first phone call came from Marion Standish at The California Endowment to Tides in 1999 about a potential partnership with them, we had little history with community clinics but a rich history of developing creative and responsive grantmaking programs. As the partnership evolved, and the relationships developed, the synergies between Tides and The California Endowment became clear. While each of us brought unique capabilities and perspectives to the partnership, we share a deep commitment to healthy communities, access, economic opportunity, diversity, and social justice and human rights. The vision of health care that is revealed on a daily basis by community clinics and health centers is one of equity and justice—it is fundamental to a progressive vision of the world ensuring that all people have opportunity, access, and security. CCI has helped to deepen and enrich the work of both TCE and Tides to enable a society that advances the common good for all people.

An important aspect of CCI has been its commitment to learning, reflection, and transparency. In that spirit, this document contains three important pieces. The first is a reflections piece by Kendall Guthrie and her colleagues, our evaluation team from Blueprint Research and Design, synthesizing the rich data Blueprint has collected over these past six years and articulating the concrete changes that have resulted in clinics from CCI investments. We are grateful to Kendall and her team for their thoughtful and important participation in shaping and documenting this initiative so that clinics and others can learn as we expand our use of technology in health care.

We also asked our colleague Tom David to draft the enclosed "Lessons from CCI's IT Grantmaking" in order to help others learn from our experience. We see this piece as a continuing contribution to the thinking

about health-related grantmaking, and a contribution to the larger philanthropic community that continues to question and evolve an approach to the craft of grantmaking that is relevant, responsive, and uses always-limited resources in ways that make a difference in the lives of people and in communities. We are appreciative of Tom's thoughtful contribution and the honesty of the document.

> *"The vision of health care that is revealed on a daily basis by community clinics and health centers is a vision of equity and justice—it is fundamental to a progressive vision of the world that ensures that all people have opportunity, access, and security."*

Third, the voices of clinics themselves are found in the middle of this book, sharing the stories of their experiences and some of the challenges they have faced as a result of this program. Clinics have taken real financial and organizational risks in order to implement technology projects in their organizations. For most of them, they took very seriously a statement that CCI made very early on: don't automate inefficiencies. This simple statement resulted in complex organizational changes in clinics. Reading their stories, I think the conclusion is that it was worth it for the results they have achieved.

A key element of the "art" component to a successful program is the strong network of people who make the effort happen and CCI has benefited from an abundance of them. To our colleagues at The California Endowment, specifically, Mario Gutierrez, Laura Hogan, Lew Reid, Bob Ross, and Marion Standish, all of whom took a gamble on this program, supported it, and were true partners along the way, thank you. We had an amazing CCI Steering Committee who hung in there and worked hard to think long term and with vision. This group of visionaries and activists enabled the program to push beyond the boundaries that many were comfortable with and stimulated thinking and action that will have a lasting impact. Finally, the group that found the balance between art and science on a daily basis, the CCI staff, Kathy Lim Ko, Jane Stafford, Sarah Frankfurth, Olivia Nava, Mike Anguera, Tina Howard, and most recently, Tom David, have breathed life and love into this effort—working with a degree of collegiality, creativity, and commitment to excellence that is desired by all, but not always experienced.

At the end of the day, the CCI IT program will be judged by its ability to affect long term and sustainable change in the lives of people. The value of the program will be seen in the answer to the question, has CCI helped community health centers and clinics move closer to the vision of healthy and just communities? The data in this report gives us some hope that we are farther along that path than when we started in 1999, but it also shows us that our work is not done. We will all continue to do the hard work to get us to the sun, and due to this program, we have a few more tools to help us along the way.

Ellen Friedman
Vice President, Tides Foundation and Tides Center
Managing Director, CCI
August 2006

Feb-99

Funding from TCE for Y2K programming

Jul-99

Meeting with regional consortia for input on Y2K funding guidelines

Jul-99

Steering Committee formed

Aug-99

Y2K grants disbursed

Sep-99

Steering Committee visioning meeting for IT program after Y2K grant

Jan-00

Funding from TCE for Technology program

Feb-00

Assessing the Capacity of Community Clinics to Track and Use Health Status Data (Blueprint report)

Clinics' Progress Along the Path to the Sun:

Reflections from the Six-Year Evaluation of CCI's Technology Program

By Kendall Guthrie, Amy Luckey, and Justin Louie, Blueprint Research and Design, Inc.
With assistance from Bobbie Wunsch, Pacific Health Consulting & Julie Murchinson, Object Health
August 2006

In 1999, the Community Clinics Initiative (CCI) issued a challenge to California's community clinics and health centers: explore how information technology can enhance business operations and health care delivery. Make building a modern information technology infrastructure a priority. During the last six years, CCI, a partnership between Tides and The California Endowment, has backed that challenge with $41 million in grants to 82 percent of the nearly 200 nonprofit clinics and their 15 consortia in California.[1]

Like so many nonprofits, clinics are apt to focus on programs and under-invest in their organizational infrastructure. In the early 2000s, the Internet boom and rising health care costs were already drawing clinics into improving their information technology (IT). CCI's timely financial resources helped clinics ride this technology wave. CCI accelerated clinic development by rallying clinic leaders to focus on using IT to improve operations and by funding clinics to upgrade more rapidly. CCI's dedicated technology funding gave clinics the incentive and freedom to plan for and invest in their technology without having to choose between funding computers and funding direct patient care.

[1] CCI provided funding to state licensed nonprofit clinic corporations that provide comprehensive primary care services, are community-based and owned, and provide care regardless of ability to pay. American Indian Health Centers are also eligible for CCI funds. Throughout the paper we use "community clinic" and "clinic" to refer to all organizations meeting these criteria.

[2] In March 2005, Blueprint sent the last round of its Information Management (IM) Assessment Survey to the 190 clinics that have ever applied for a grant from CCI. The survey had a high response rate: 76 percent of executive directors and 78 percent of medical directors responded. The IM Assessment Survey has been conducted four times over the course of the IT program-in 2000, 2001, 2002 and 2005. Overall, 74 clinics have completed the last two surveys, 54 have completed the last three, and 40 have completed all four surveys.

Blueprint has supplemented the data gathered in the four IM surveys with data from six case studies of California community clinics. These six clinics were chosen to represent clinics at differing levels of capacity around information technology and management, along with differing levels of medical director involvement in the clinic's IT process, and the roles and skills of IT staff before receiving a CCI grant. Clinics also ranged in their geography, patient load, number of sites, and participation in their regional consortium. Case study clinics were visited by the Blueprint research team in 2000, 2001 and 2004. The case studies have provided the evaluation a more in depth look at the change process in community clinics, including the challenges they faced and the internal and external factors that facilitated progress.

Additionally, Blueprint has gathered supplemental data from observation at all meetings of CCI's Steering Committee - made up of representative clinic and consortia leaders as well as issue experts. Also, our findings have been informed by a series of interviews we conducted in 2003 with Steering Committee members, medical directors, and other stakeholders.

Detailed reports of the CCI evaluation research findings are available at www.communityclinics.org.

Now, most clinics have built a solid technology infrastructure and automated core business functions. More importantly, their attitude toward IT and data has been transformed. They view IT as a core competency that supports all aspects of clinic operations and data as a strategic resource to inform both business and clinical decision making. The next step along the pathway to healthier communities involves applying expanded information management capacity to directly affect patient care - through systems that support clinics making decisions around individual patient care and using data to better understand patterns in the health practices and status of their entire patient population.

This paper reflects on how the California community clinic field's information management capacity evolved over the six years of CCI. As clinics prepare for the next challenge of applying IT more directly to improving clinical quality, this paper will help CCI participants - grantees and funders - look back on the accomplishments and wisdom gained along the way. As the program evaluators over the last six years, Blueprint Research and Design documented both how clinic technology capacity grew and analyzed factors that influenced the evolution.[2] After discussing CCI's theory about how IT would improve health care, we provide a portrait of the activities clinics and consortia pursued to strengthen their IT infrastructure, and describe how IT capacity in the field has evolved and influenced clinic operations. Key aspects of information management capacity that have grown are:

- IT vision and planning skills
- Medical provider involvement in IT planning
- Physical infrastructure
- Overall staff knowledge and comfort with information technology
- Access to more and higher quality data

This increased capacity has helped clinics by significantly improving internal and external communications, enhancing cost and revenue management, improving overall efficiency (through automating patient scheduling), and increasing the practice of data-informed decision making especially around operational issues.

We close the paper by identifying five areas that have challenged clinics during CCI and which will continue to shape clinics' ability to move into the next stage of applying their IT capacity to improving clinical quality. Looking ahead, clinics will need to improve their capacities to:

- Conduct data analysis and data-informed decision making, especially regarding clinical issues
- Collaborate among clinics and with other partners, especially finding new ways to collaborate around jointly operating complex and expensive clinical IT
- Increase electronic linkages with other health care organizations
- Navigate and influence the volatile health care technology market
- Identify funding sources for IT innovation

Apr-00

RFP2 grants disbursed

Jun-00

Grantee Conference

Oct-00

CareScience Technology Forum: Redondo Beach, California

Mar-01

RFP3 grants disbursed

May-01

Moving from Data Collection to Health Promotion: Lessons on the information management capacity of California's community clinics and health centers drawn from the first year of the Community Clinics Initiative (Blueprint report)

Jun-01

Community Clinic Voice launched

Dec-01

RFP4 grants disbursed

CCI's Goals and Theory about How IT Contributes to Improved Community Health

Initially, CCI sought to strengthen California's health care safety net by helping as many clinics as possible develop basic IT infrastructures – the hardware, software, connectivity as well as the "humanware" to manage their IT systems. Over time, the vision of the CCI staff and Steering Committee evolved to include an understanding of how improved IT infrastructure would contribute to improving health outcomes for patients and move clinics toward "the sun" of healthier communities. In its simplest form, they envisioned a chain reaction as follows:

Improved IT Infrastructure
contributes to
Better Data and Communications
contributes to
More Data-Driven Business and Clinical Decisions
contributes to
More Efficient Clinics and Higher Quality Care
contributes to
Stronger, Healthier Communities ("the Sun")

In essence, the initiative evolved from a focus on information technology to information management - where the technology infrastructure is a necessary but not sufficient component. All stakeholders agreed that moving all the way along this path to "the sun" of healthier communities would take many years (and require more than IT improvements). Therefore, improving clinics' capacity to use their data to inform business and clinical decisions became a key interim outcome to mark progress in "getting to the sun".

As shown in Figure 1 the building blocks for information management are data collection, data analysis, and data-informed decision making. CCI anticipated that clinics would hone their data skills first to inform their business operations, since this data was the most easily accessible. They would then progress up the path to the sun via clinical operations, individual patient care, and population health. Essentially, The California Endowment expected to see evidence at the end of CCI that clinics had increased their capacity to use data and technology to improve clinic efficiency and track health outcomes. They expected that this capacity, combined with improved clinical practices, would lead to improved community health in the years to come.

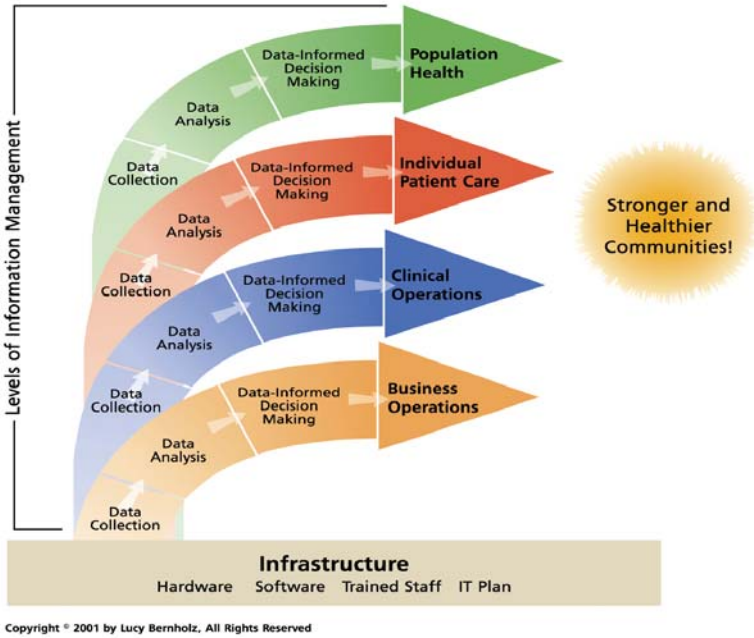


Figure 1: Levels of Information Management at Community Health Centers

How Clinic IT Capacity has Changed and Improved Clinic Performance

Beginning in 1999, CCI invested $41 million over eight grant cycles towards improving information management at 163 clinics and 15 regional consortia of clinics. CCI distributed more than half of the grant money in the first two years. Over the course of the initiative, the average clinic received a total of $176,612 and the average consortia received $725,992 (much of it spent to provide support to member clinics).

	Clinics	Consortia
Personnel	23%	43%
Consultants	17%	28%
Training	4%	4%
Hardware	22%	4%
Software	19%	8%
Other	14%	12%

Table 1: How Clinics and Consortia Spent CCI Funding

Table 1 details how grant dollars were spent by clinics and consortia. Figure 2 (see next page) shows the types of activities clinics pursued. Across all six years, grant activities focused on purchasing hardware, hiring IT staff, and IT training. IT planning took place to a greater degree in the early years. More recently, an increasing number of clinics focused on improving their data use and working with consortia.

IT expenses now take up about 5 percent of a clinic's overall budget. It is difficult to determine how much this proportion has increased since 2000 because when CCI began, most clinics could not even provide a dollar amount for how much they spent on IT. IT was not tracked as a separate cost center: costs were buried in other budget categories. Today, 70 percent of clinics either track IT as a separate cost center or can easily determine their entire IT costs, even if items are distributed in other budget categories.

Jun-02

RFP5 grants disbursed

Jan-03

Funding from TCE for Building Capacities program

Feb-03

Community Clinic Voice Member's Meeting

Jun-03

Report to the Field: Getting Beyond Information Technology Basics: An Update on the Evolving Information Management Capacity of California Community Clinics (Blueprint report)

Jun-03

RFP6 grants disbursed

Jun-03

Strategic Investments grantee program commences

Aug-03

Community Clinic Information Technology Fact Book (Blueprint report)

For their part, consortia assisted clinics in their IT development mainly by providing a range of member services. Over three-fourths of consortia assisted members with fundraising for IT projects, helped assess members' IT needs and identified problems, provided leverage/liaison assistance with IT vendors, and provided consulting advice to help clinics acquire the right hardware and software. Consortia also hosted consortia-wide collaborative projects and assisted clinics in standardizing and pooling data, but those activities were less common. Because the focus of consortia was so much on member support, the grant dollars that they received from CCI went primarily to staff and consultants (71%).

The sidebar describes clinic leaders' perceptions of how IT improvements enhanced their organization over the last five years. Five aspects of improved infrastructure are particularly noteworthy:

- Vision and planning
- Medical director involvement
- Physical infrastructure
- Staff knowledge about IT
- Quality and accessibility of data

Clearer Vision and Improved Planning

Clinics now have a much more comprehensive vision of how IT can support their work. When CCI began, most clinic leaders viewed IT primarily as a tool to get the bills out. Moreover, it was a festering operational challenge that they didn't know much about and were not eager to tackle. Today, IT is viewed as a core

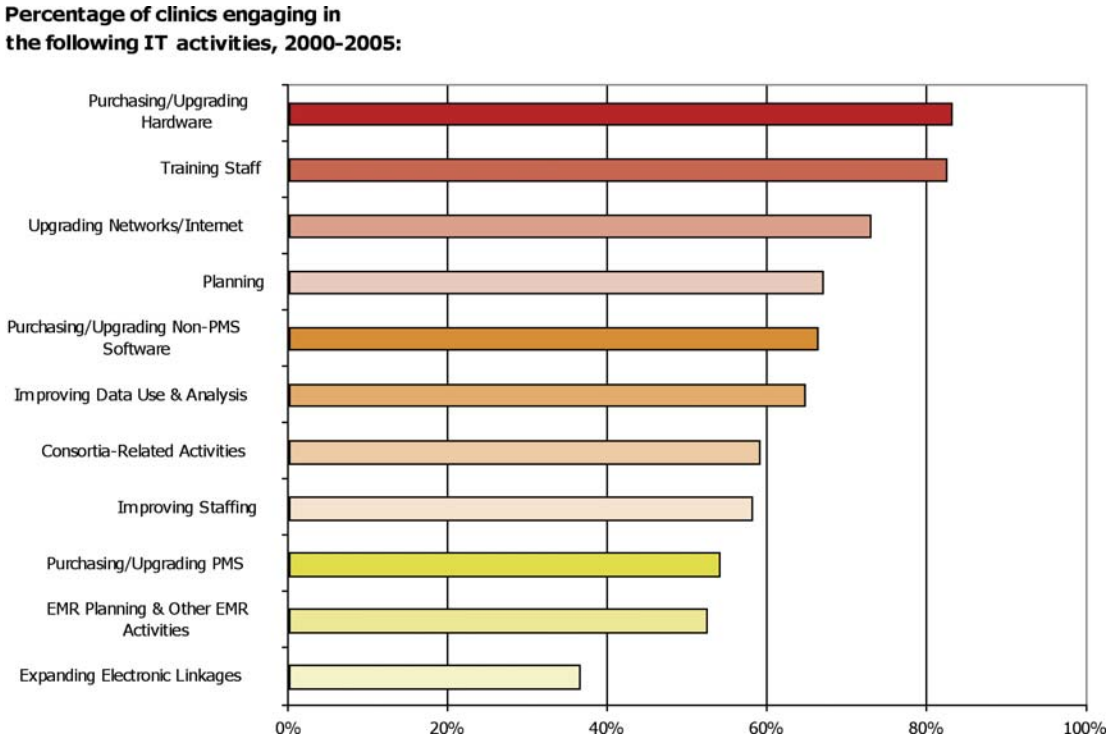


Figure 2. Activities Clinics Pursued to Strenghen Information Management Capacity

competency that supports all aspects of clinic operations. They now see data as a resource that informs decisions and guide planning. Clinics understand that all management team members need to have a vision for how IT supports clinic operations – from billing and scheduling to business planning and chronic disease management. This change in attitude and resulting structured planning processes will long outlast the actual technology bought with CCI funds.

Clinics have instituted more pro-active IT planning processes. When CCI began, few clinics had an IT plan or IT goals in their business plan. After two years of CCI, 85 percent of clinics had IT goals in their business plan. Half the clinics now have a formal interdepartmental planning team to oversee or guide information management issues. Such teams help a clinic identify how IT can support all aspects of a clinic, not just finance.

Increased Medical Director Involvement in IT Issues

Medical director involvement in IT planning increased significantly. In 2000, only 34 percent of clinic executive directors said their medical director was involved in software decisions, despite that practice management systems and other software could enhance clinical management, facilitate patient tracking, and provide data relevant to understanding patient population health. By 2005, 88 percent of clinics said their medical director was involved in IT planning of which software planning is a componet.*

Several factors fueled this change. First, medical directors have been increasing their leadership in

*It should be noted that the survey question in 2000 asked about medical director involvement in software planning while the question in 2001, 2002 and 2005 used the term IT planning. However, we have used the 2000 data because it provides the earliest data on medical director involvement.

Operational Changes Resulting from IT Improvements Most Valued by Executive Directors and Medical Directors

In order to get some sense of the impact of clinics' expanded information management capacity, our final Information Management Assessment survey asked clinic executive directors and medical directors to note areas where their clinics have made operational improvements due to information technology improvements. Additionally, the survey asked what improvements were the most valuable to the clinic. The following are the operational changes resulting from IT Improvements most valued by executive directors and medical directors.

Executive Directors

1. **Improved and increased internal communications**
2. **Increased organizational productivity**
3. **Improved data access and availability**
4. **Improved revenue and cost management**
5. **Improved and increased external communications**

Medical Directors

1. **Improved and increased internal communications**
2. **Improved data access and availability**
3. **Improved focus on clinical quality improvement**
4. **Improved use of current medical literature for individual patient care**
5. **Improved management of clinic workflow**

While both executive directors and medical directors valued improved internal communications and data access and availability, leaders also valued those improvements most related to their responsibilities. Executive directors valued business-related improvements, such as organization productivity and revenue management. Medical directors value how IT improved an increased focus on medical quality and gave them better access to medical literature. It is also interesting to note that medical directors were less likely to see IT as influencing operation improvements across the board than were executive directors.

Jan-04

Report to the Field: Getting Beyond Information Technology Basics: Technology Management to Build Capacity and Create Sustainability (by Tom Dawson and SA Kushinka)

Mar-04

Community Clinic Voice Member's Meeting

May-04

RFP7 grants disbursed

Jul-04

CCI Technology Salon: Santa Monica, California

Oct-04

Partnership with Dr. Robert Miller (UCSF) for Electronic Health Records and New Practice Management Systems in Community Health Centers: Assessing the Potential Business Case

all aspects of clinic operations. CCI's program to support medical directors through a weeklong training on clinical leadership issues led by faculty of the Harvard School of Public Health played a key role. Second, CCI's RFPs and knowledge sharing convenings in the early years highlighted and promoted medical director involvement. Third, the Bureau of Primary Health Care's disease collaboratives provided many medical directors a taste for how data could help them improve care - and created a demand for more. This program provided clinicians for the first time with access to continually updated data registries on key health indicators for patients with specific chronic diseases.[3] These disease registries serve as tools to collect, analyze, and share data to monitor and manage the quality of service across clinics' patient populations.[4] While the registry technology is clumsy and does not integrate with clinics' practice management systems, the registries have provided medical directors that "light bulb" moment about the value of data to improve health care and the need for computer systems to collect and manage it.

More Robust Physical Infrastructure

The most observable improvement at clinics since 2000 is the advancement of their IT infrastructure. Over half the clinics reported significant improvements in computer hardware, connectivity, software, and humanware (staffing and technical support). Below we identify some key indicators of that growth from our annual surveys and discuss how the improvements have helped clinics.

1. Practice Management Systems (PMS):
Practice management systems currently provide the core of an information infrastructure for clinics. At the start of this project, most clinics were vastly underutilizing the power of this complex software.

Since 1999, over 80 percent of clinics have made changes to their practice management systems: over half have purchased new systems or upgraded existing systems, and nearly sixty percent have added new modules. Of clinics that made a change in their PMS, 56% say that they have experienced a significant improvement in the system. Overall, 92% say they have made at least some improvement.

[3]This program has been supported by the Health Resources and Services Administration's Bureau of Primary Health Care (HRSA/BPHC), a part of the U.S. Department of Health and Human Services and administered in California by CPCA. Since the program was limited to FQHC clinics and a few enrolling clinics, about 1/3 of CCI grantees did not have the opportunity to participate.

[4]Data includes both the proportion of patients receiving key preventative health services - such as foot checks for diabetes patients, as well as indicators of health status - such as glucose levels.

2. Connectivity/Networking:
Improved communications was the most widely experienced and highly valued improvement related to IT among clinic executive directors and medical directors. Clinics have moved from no organization-wide Internet connections at the beginning of the initiative to near universal Internet access today. Local and wide area networks have seen tremendous increases. For example, by 2005, only seven percent of multi-site clinics had remote sites that could not access their PMS. Electronic mail has been especially helpful to medical directors, who often felt isolated from their providers at remote sites and from other medical directors around the state. As medical directors' leadership roles have increased within and outside of their clinics, electronic mail has been a key support tool.

3. Automating Basic Business Function:
The initial CCI needs assessment in 2000 identified that about 1/3 of clinics had not automated even a core set of basic business functions: appointment scheduling, patient registration, payroll, and accounts payable. By 2002, 90 percent of clinics had automated these core functions. Two of the most important impacts of this automation are: 1) better cost and revenue management and 2) general productivity improvements. 88 percent of executive directors noted that IT contributed to an improvement in the quality of accounting & billing, and 70 percent reported improvements in revenue and cost management. IT facilitated revenue management by helping clinics get bills out faster, so payments came in quicker. It also allowed for better tracking of provider productivity rates. Second, nearly 3/4 of executive directors highly valued how IT led to overall improvement in productivity. Increased productivity grew out of projects in the first few years such as automating patient registration and scheduling, provider scheduling, as well as financial software such as accounting and payroll.

4. Clinical Uses for Information Technology:
At the start of the initiative, clinic leaders viewed information technology primarily as serving the business and administrative needs of clinics. However, as medical directors have become increasingly involved in IT planning, clinics are identifying more ways that IT can also directly support providers in serving patients. For instance, the Internet has opened up new resources for medical providers. By 2002, half of all medical directors said they consulted the Internet daily for medical literature.

Other clinical uses of technology are also spreading. The increase in disease registries has significantly enhanced clinic capabilities in chronic disease management. Today, 87 percent of clinics have at least one disease registry. Almost 3/4 of clinics have a diabetes registry (55 percent in 2002) and nearly 2/3 have an immunization registry (55 percent in 2002). Medical providers are increasingly using personal digital assistants (PDAs) to support their work. Today, the majority of clinics say the majority of their providers used PDAs. Medical directors find that PDAs are most useful for checking drug prescription, drug interaction, or drug formulary information. The number of clinics sending automated wellness reminders to patients has doubled over the last three years (from 14 to 29 percent). However, many more clinics would benefit from implementing this technology. This increase appears primarily to stem from people implementing the capability already built into their systems. The most frequent types of reminders sent are for gynecological exams and immunizations.

Dec-04

Report From
the Field & DVD:
Insights by Community
Clinics on Information
Technology Adoption
(by Nanette Falkenberg)

Jan-05

RFP8 Regional
Workshops:
five grantee workshops
around the state

Feb-05

White Paper:
A National HIT System:
An Opportunity to
Improve Health Care in
All Communities
(by Nanette Falkenberg)

May-05

EHR Forum: Pathway to
Healthier Communities

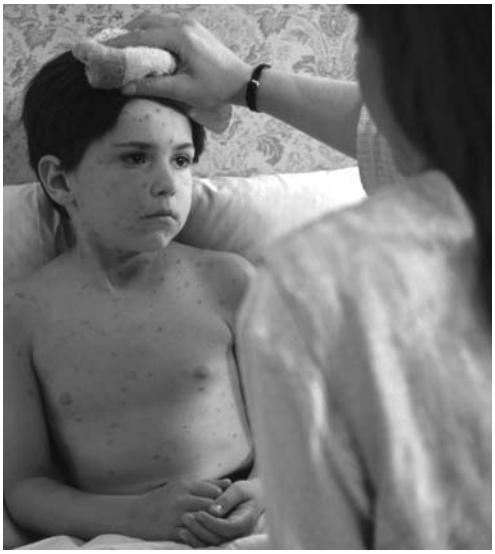
Jun-05

Funding partnership with
Blue Shield of California
Foundation for RFP 8

Jul-05

RFP8 grants disbursed
(last round)

There are a few aspects of clinical technology that have not made as much progress. Mid-way through CCI, medical directors surveyed said that using technology to improve patient tracking, recalls and referrals was on of their top priorities. Today, about thirty percent of clinics have an electronic system to track referrals to specialists, only an eight percent growth over 2002.



Increased Staff Knowledge of IT

Effective use of information technology requires trained staff that can manage and maintain the systems. At the start of the initiative, most clinics had limited technology expertise on staff. Much of the effort over the last five years has focused on improving this staff capacity. Over 97 percent of clinics now report having a staffing solution to provide core IT functions - technician services, application support, and systems administration. Clinics are using multiple strategies to provide IT support services to staff. Each clinic staffs these needs through a unique combination of internal IT staff and off-site consultants. Over the years, no single formula for the balance between staff and consultants has emerged. It appears that each clinic has developed a custom solution, based on the availability of staff and consultancy expertise in its region.

Finding affordable technology management expertise has been especially challenging for the small- and medium-sized clinics, for which hiring a traditional Chief Information Officer (CIO) is cost-prohibitive. Although not every clinic can or should hire a CIO, even the smallest clinic has technology leadership needs. Clinics that do not have their own CIOs are drawing on three alternative staffing strategies: 1) outsourcing technical support and system management to local consulting firms, 2) relying on the expertise of their regional clinic consortium, or 3) cultivating the CIO-type skills of existing technology staff members. This level of technology expertise will become more important for clinics that move into electronic health records (EHR) and other complex clinical technologies.

IT training for all staff also has been significantly enhanced. Rather than seeing IT training as an ad hoc activity, clinics now recognize the need to plan for training, both for orienting new staff members and providing ongoing training. Almost 50 percent of clinics have included money in their budgets for ongoing training and employ staff people with IT training as part of their formal job descriptions. Documentation of IT systems has improved as well. However, less than 20 percent have any regular schedule for training.

Increased Quality and Breadth of Data Available to Support Decision Making

Most medical directors and executive directors report that their IT improvements have significantly enhanced their access to quality data. When CCI started, most clinics had greater difficulty accesing even fairly basic data about patient demographics, let alone information about services utilization or patient health status. Clinic directors viewed reports primarily as a means of complying with regulations and reporting requirements from their funding sources.[5] They did not see data as a resource to help in planning clinic operations or improving the quality of care.

The significant increase in the production and readership of management reports demonstrates clinics' increased access to, and use of, data. Today, clinics are regularly producing a wider range of management reports than they were four years ago, providing senior managers regular information about business and clinical administration issues.

More importantly, leaders are receiving information more relevant to their jobs. Early evaluation results found that that key management reports were often generated but not disseminating to the people who needed them. For example, less than half of medical directors were reviewing patient demographic information, even though the clinics regularly produced reports on this item. Over the course of CCI, readership of some reports has increased dramatically, especially among medical directors. Table 2 shows changes in the reports most frequently read by different members of management teams over a five-year period. Increased report production and dissemination is likely due to several factors: greater appetite for data, improvements in practice management systems and reporting modules that make it easier to extract data, and the availability of email to distribute reports.

Executive Directors			
2005		2001	
Budget Variance	96%	Budget Variance	71%
Administrative Costs/Overhead	91%	Patient Demographics	69%
Patients by Demographics	90%	OSHPD*	65%
Provider Productivity	89%	Overhead	59%
Personnel Tracking	88%	Provider Productivity	59%
		Accounts Receivable	58%
Medical Directors			
2005		2001	
Quality Assurance	91%	Provider Productivity	49%
Provider Productivity	88%	Patients by Demographics	43%
Patient Flow Efficiency	82%	Immunizations	38%
Utilization Reports	73%	Utilization Reports	37%
Patients by Demographics	59%	Budget Variance	33%
Budget Variance	59%		
Boards of Directors			
2005		2001	
Budget Variance	86%	Budget Variance	63%
Administrative Costs/Overhead	68%	Overhead	47%
Quality Assurance	58%	Patient Demographics	45%
Aged Accounts Receivable	48%	Accounts Receivable	31%
Provider Productivity	46%	Cost Reporting	31%

Table 2
Management Reorts Most Frequently Reviewed by Senior Managers
(percentage indicates proportion of clinics whose leader regularly reads this report)

[5] "Moving from Data Collection to Health Promotion." Blueprint Research & Design, 2001. P. 10.

* Office of Statewide Health Planning & Development

Sep-05

Report to the Field: Meeting the Challenge to Modernize: Insights from Case Studies on the Evolution of Information Technology Capacity at Community Clinics (Blueprint report)

Oct-05

HIT: Federal Policy Landscape

Nov-05

Harvard Symposium: Promises and Challenges of HIT in Community Health Centers

Jan-06

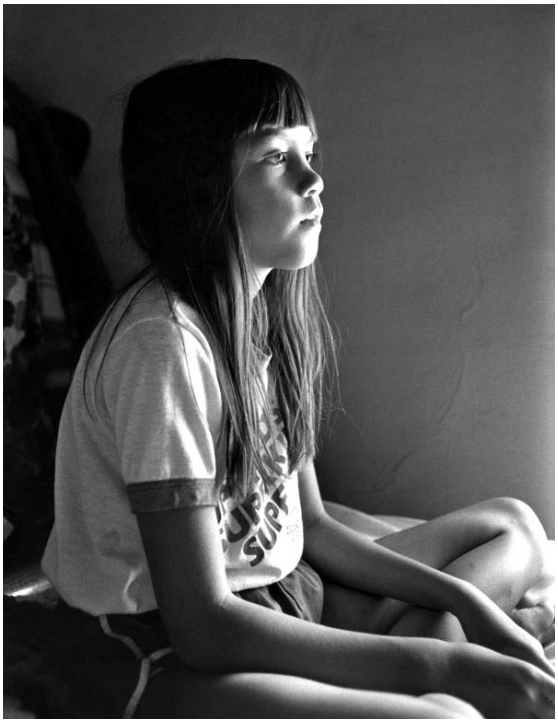
Community Clinic Voice Member's Meeting

Feb-06

CCI partners with BlueShield of California Foundation and California HealthCare Foundation to form the Innovations Incubator project

The types of information regularly reviewed by medical directors have changed most dramatically. Medical director review of utilization reports leaped from 37 percent to 73 percent. Medical director review of provider productivity reports went from 49 percent to 88 percent. It is especially notable that most medical directors now read utilization, provider productivity, and patient reports. There also has been a big increase in their readership of demographics reports. The types of reports they are regularly reading is now much more pertinent to their work than the administrative reports they read in 2001 were. This is probably because they could only get administrative reports in the past. Boards of directors are mostly reading financial reports, although high readership of quality assurance reports is an encouraging sign.

Increased use of comparative data is another indicator of better data quality. Clinics have significantly increased their access to two types of comparative data: 1) trend data that compares their current performance to previous time periods and 2) data that compares their performance to state or national standards. The majority of clinics now regularly include trend data in their management reports that compare current statistics to previous time periods. Increases in proportion of the 13 key management reports with this data ranged from 17 percent to 47 percent. Reports containing data over time should be more useful for clinic decision makers, and will allow managers to put current data in context and, in some cases, track clinics' progress toward set benchmarks. Between 2002 and 2005, the proportion of clinics that reported they regularly compared their data to regional and national standards doubled. Today, almost half of the community clinics we surveyed said that they compare their data in services utilization, financial information, patient demographics and patient health status.



Overall, clinics now have many more tools in place to regularly practice data-informed decision making. The majority of clinics' management reports now include trend data. More clinics are using data to compare their performance to national standards. Reports are read in greater numbers by members of the management team. However, this picture needs two caveats. First, quantity does not always equal quality. Our survey data cannot assess the quality of various management reports. In our case study research, we saw that the quality of reports tended to vary widely across clinics. More importantly, survey data cannot determine whether increased access and analysis of data is leading to better decisions.

Continuing Challenges for Clinics

Clinics are now on the cusp of a new IT revolution. During CCI, the focus was primarily on the infrastructure - automating business systems to improve operational efficiency and using data to inform business operations. Moving forward, the goal is using IT to collect data to improve the quality of health care. The next step along the path to the sun involves applying information technology more directly to improving clinical care and using data to understand and manage the health issues and outcomes of their entire patient population. National leaders are envisioning an interoperable health care technology infrastructure with electronic health records that can reduce medical errors, make it easier for multiple providers to coordinate care and for public health officials to pro-actively manage public health problems.[6] This goal involves bringing the power of IT to every provider - from the doctors down to the medical assistants.

To ride the next technology wave in health care, clinics will need to build their capacities in five areas that have proven challenging during CCI:

- Data analysis and data-informed decision making
- Collaboration
- External linkages with other health care organizations
- Navigating the complex and transitioning software market
- Funding for technology innovation

These five issues are by no means the only challenges to harnessing the power of health IT. But they are areas where clinics can learn from their past experiences. In this next section, we review some of the barriers to clinics making progress on these issues during CCI and provide a few thoughts about moving forward.

Analyzing and Using Data to Inform Decision-Making

During the six years of CCI, clinics have improved their ability to collect and analyze their data, primarily related to business and operational issues. Today, when managers have a key business decision to make, be it about opening a new site, changing hours of operation or adding new provider staff, they more frequently consider how any data they may have might inform this decision. The next challenge is to make data informed decision-making standard practice for everyone at the clinic - and to apply it to improving patient care. Our case study research found that most clinics are using data in an ad hoc way; for example, creating reports to answer specific questions as they emerge. And, in the clinical setting, medical directors and providers are beginning to use their newly

[6] See the National Coordinator for Health Care Information Technology's statement on the benefits of HIT. http://www.hhs.gov/healthit/valueHIT.html

Principles to Guide IT Development in Clinics

Over the course of six years, CCI participants - the staff, evaluators, and staffs at all the clinics - learned through trial and error key principles to guide the development of clinics' IT infrastructures Our wisdom can be distilled in six lessons.[7]

1. A clinic's information needs should drive its health IT decisions. From the outset, CCI recognized that information technology is merely a tool to support clinics' efforts to realize their missions to provide health care regardless of ability to pay. Therefore, information technology plans should start and build on a clinic's information and communication priorities. Get very clear on these needs before making decisions on hardware and software. Ambitious technology projects also require strong organizations-not simply grand visions for using technology. Critical to the successful implementation of new tools are a well-functioning management team, visible buy-in and support of the executive leadership, a commitment to the clinic's mission permeated throughout the organization, and staff members' confidence in the clinic's management.

available data for supporting individual patient care, especially using disease registries for chronic disease management. Almost none are using their data systematically to inform population health management.

As clinics continue to build their data analysis and data-informed decision capacity, they will need to focus on four challenges:

- Increasing analysis skills. The quality of management reports varies dramatically. Few clinics have staff with the business analysis skills to design a comprehensive set of user-friendly management reports, let alone more complex analysis on special issues. Most executive and medical directors lack the public health training or the time to conduct population health analysis with any regularity or sophistication. Few clinics can afford their own epidemiologist. Most don't even have skilled data analysts.

- Improving the quality of encounter data. About 1/3 of medical directors still have concerns about the quality of their clinics' encounter data for population health analysis. This stems both from unreliability of practice management systems and from challenges in staff members consistently correctly coding the data for health status as well as billing information.

- Improving data access and integration of distinct data sources. Because practice management systems were built primarily for billing, the process of getting data from them is laborious, requiring export into another program and often merging data from several different sources. While 3/4^{ths} of clinics say their PMS can identify patients by chronic conditions, only about half can identify those in need of key preventative services and only a third can identify patients by medications dispensed. In 2005, only 15 percent of clinics had their disease registry data electronically interfacing with their PMS system.

- Incorporating systematic quality improvement processes. Using IT will not, by itself, improve clinical quality. Quality improvement is a process of goal-setting, data collection and measurement, process change, and continual data monitoring. Clinics have some experience in process improvement with PMS implementation, but quality improvement requires clinical and data sophistication that is new to clinics and difficult to afford.

Factors in Successful Collaboration

Based on the clinics that succeeded in collaborative IT projects, a few success factors emerged:

- **Universal buy-in on the collaborative business imperative**
- **Identifying shared financial risks as well as the shared benefits**
- **High level of trust among collaboration partners, usually developed through pre-existing business relationships**
- **A clear decision-making structure**
- **Significant time investment of clinic leaders**
- **Adequate outside expertise in technology and negotiating legal and business relations**
- **Careful attention to the relationship requirement for collaboration**

Looking ahead, housing sophisticated data analysis and quality improvement capacity in collaborative locations such as consortia may be a good solution for many clinics. This strategy has been successful in Alameda, where CHCN – funded in part by CCI – centralized data analysis capacity for its members and in San Diego where the Consortia facilitates member-wide disease collaboratives. CCI also funded Planned Parenthood Federation of America to provide centralized data management and analysis for a set of affiliates in California.

A new generation of reporting tools that interface with practice management systems also holds promise to fill in the space between PMS and EHR (which is too costly and complex for most clinics to tackle right now). The Redwood Community Health Coalition is leading 20 clinics in learning to tailor the reporting tool MediTracks into a more sophisticated chronic disease management tool. CCI funding of the group was contingent on standardizing a set of measures across each chronic disease. The group ultimately developed a number of clinic-specific report templates that will be available in the next release of the MediTracks software. While these organizations now face the challenge of building a quality improvement process to appropriately leverage MediTracks data and reports, their experience may serve as a model that can be replicable in other settings. Already, a number of other consortia have increased their prioritization of data issues. Most now report that standardized and higher quality data sets as a key goal for their collaborative IT projects.

B. Collaboration

Early on, CCI encouraged clinics to join forces with other clinics as a way to share the costs of large scale technology innovation. Field leaders looked to regional consortia as the logical choice to nurture joint technology projects and shared services among their members. However, collaboration on technology issues has proved far more complex and difficult than anyone anticipated. Despite early visions at the CCI Steering Committee, no statewide technology solution or technical service provider emerged, in part because there was no organization with the skills, capacity, and mission to take on this work. Moreover, clinics have learned the hard way that their neighboring clinics may not be the best partners for some types of technology projects. Technology collaborations need to be based on shared business imperatives. Faraway clinics with similar technology sophistication

2. Involve medical care providers in IT planning. Effectively applying IT to improve clinical quality requires significant involvement from a clinic's medical providers. Increased medical leadership in IT planning over the past six years has been a key factor in identifying ways that IT can support improvements in clinical quality. Medical staff from the medical director to the nurses and medical assistants need to learn more about ways that technology can support clinical work so that they can help shape the developing vision for their clinics. Formal interdepartmental planning teams are effective tools for insuring that all key departments can voice their needs and concerns.

3. Take time for a comprehensive planning process. Plans need to include a timeline and change management strategies. IT projects are organizational change projects in disguise; new information technology tools require clinic staffs to work differently. Implementation of new technologies not only automates existing administration and clinical systems, they change them in intended and sometimes unexpected ways. Change management plans for before, during, and after implementation are needed to successfully guide staff through this transition. Ongoing communication about the project's purpose, process, and progress is especially important. The planning process also helps a clinic assess its tolerance for the risk of new technology and to chart a course consistent with the clinic's culture.

or neighboring hospitals that treat a clinic's patients may make better partners for some of these projects than members in their own consortia.

During CCI, clinics have been most likely to collaborate with other clinics. Collaboration with other health care partners such as hospitals has seen minimal growth. Clinics explored at least three types of IT-related collaboration with other clinics:

- sharing IT staff or support services,
- operating shared software (either PMS or EHR), and
- sharing and comparing both patient and administrative data.

The field has witnessed the biggest growth in sharing of data. For example, the proportion of clinics coordinating with other clinics around analysis of patient health data grew from about 1/3 in 2002 to about 50 percent by 2005. The learning community around using MediTracks for chronic disease management is an excellent example. Another 25 percent say that they have plans to share data with other clinics in the next year. About half of all clinics report coordinating with other clinics in some way around operating IT systems - mostly through knowledge exchange such as IT user groups and sharing support staff and planning strategies.

Beyond a few notable exceptions, clinics are not yet engaging in significant joint IT undertakings - such as shared PMS or EHR. Many of the efforts to jointly operate software or develop formal shared service programs ran into significant obstacles - and a number failed - mostly due to the non-technical issues. Limited growth in collaboration can be attributed to at least four factors:

- Clinic culture of independence. Although clinics have become multi-million dollar, sophisticated organizations, their mission and boards are still strongly shaped by the 1970s community organizing movements that helped start them. Their strong sense of independence and self-sufficiency has helped them thrive. However it also means they tend to focus on their uniqueness and less inclined to look for partners to solve problems.

- Difficulty identifying shared business imperatives among participants. Clinics' experiences during CCI have demonstrated that IT requires new types of collaboration based on business imperatives rather than geographic proximity. Unlike their previous experience in collaborating around advocacy and fundraising, technology collaborations involve a high level of planning, formal arrangements, and shared risk (in terms of cost

and work disruption). They therefore require a high level of trust among partners and a strong common business motivation to help people push through the challenges. Moreover, collaboration around IT requires a significant focus on the cost and benefits of IT for each partner, the collaborative group, and the financial relationship with any vendor involved. Given the nascent nature of IT adoption among clinics, most financial planning was limited to clinic-specific cost-benefit or collaborative-wide benefits, but did not comprehensively address the shared risk of financial loss related to sub-optimal results. Most clinics haven't invested in the level of business planning to adequately conceptualize and analyze the needed business imperatives for collaborative IT projects.

- Many consortia were not well-suited to collaborative IT projects. At first, regional consortia seemed like the logical locus for collaborative IT projects. However, many consortia's original structure, mission, and skill set were not well-suited for significant IT undertakings. Consortia are membership organizations; many were initially formed to advocate for increased funding for clinics. Few had the capacities needed to shepherd clinics through complex collaborative IT projects. Given consortia's membership structures, where in most cases, each member clinic carries equal weigh on the board, it may be unrealistic for consortia with very diverse memberships to identify a joint IT solution that adequately meets all members' needs. However, many consortia are actively pursuing other roles they can play to support their members' uses of IT, including but not limited to IT planning, assistance with software selection and vendor negations, and running user groups. And, having learned from their experiences over the past six years, some are continuing to increase their IT capacities to support collaborative projects.

- Inadequate IT infrastructures within clinics. Many clinics spent CCI funds focusing on strengthening their basic internal systems such as LANs, WANs, servers, and email. It's not wise to take on an ambitious project until basic house operations are in order. Moreover, many clinics were still focusing on finding IT managers who could simply provide basic user support. They did not have a CIO-level person on staff or at their consortia that could imagine and coordinate a complex project.

Moving forward, clinics can look to build on their existing efforts to collaborate with consortia members around analysis of patient data. They also will want to use what they've learned about the key factors in technology collaboration to identify new partners. Building communities of care that focus on quality improvement may involve collaboration with hospital and private practice specialists in their region. When looking for people to share the cost of an expensive new electronic health records software, they should look for clinics or other partners in a similar state of organizational readiness and technology sophistication - that may be located in another part of the state.

4. Initial and ongoing training for all staff levels is fundamental for the successful use of new technologies. Although most clinics provided training shortly before or after implementing new technology systems, those that were most successful also formally integrated orientation, refresher, and advanced technology training into their human resources processes and provided users with written instructions. Continuous training systems are especially important for those staff positions responsible for data entry and which experience high turn-over rates. Also, ongoing training can provide clinicians and others who may not be inclined to use new technologies the chance to "warm up" to their clinics' new systems.

5. Complex IT projects (such as EHR) require sophisticated business and technology skills that most clinics don't have. Implementing sophisticated IT requires specialize skills to make an informed selection, negotiate a contract, and carry off implementation. Clinics need access to sophisticated technology skills to accurately assess vendor promises. They need business and legal skills to negotiate the complex purchasing contracts, especially if they involve multiple clinics. Without access to these skills, clinics should not start significant technology projects. And, as of 2005, only one-forth of California clinics had a chief information officer (CIO) on staff. Over the course of the initiative, too often grantees relied on the knowledge and guidance of technology

C. Electronic Linkages with Other Health Care Organizations

CCI also had high expectations initially around creating electronic linkages between clinics and their health care partners. Electronic data exchange with labs, pharmacies, and hospitals can contribute to the continuity and quality of patient care by providing patients and providers timely access to needed information. Data on patterns of patients' hospital stays and prescription patterns could inform clinic business planning. However, over the course of CCI, little progress has been made in creating the electronic links. Barriers included technology complexity, challenges in collaboration, and concerns over compliance with new Health Insurance Portability and Accountability Act (HIPAA).

One notable exception is the significant increase in clinics receiving electronic lab results. It has grown from just under half to 2/3 of clinics since 2002. The number of lab linkages would be much lower if not for the work of the lab company, Quest Diagnostics, to create a widespread solution to make its data accessible to clinics and other medical providers. Links for hospital discharge summaries or radiology are very rare. Just as throughout the rest of the health care industry, a world where all IT systems communicate is not yet a reality for clinics.

In addition to the collaboration challenges, connecting to a different agency's data system is technologically complex. Specifically, neither clinics' nor their partners' information systems have been designed to communicate with outside systems; connecting them can be an expensive, and sometimes impossible, undertaking. Even when data can be exchanged electronically, only rarely have clinics been able to integrate the additional information into their data management systems. Consequently, clinics simply print patients' lab results, for example, and add them to their charts. Although these clinics gain access to the information more quickly than they would otherwise, they do not gain the other benefits that the electronic formats could provide.

Also, concerns about HIPAA rules have created some fear around exchange of patient data - especially among hospitals. While these concerns can be addressed, they created one more disincentive to tackle this issue.

Although most clinics do not currently prioritize establishing electronic connections with their community health partners, such connections are needed for meeting the national policy goal of improving the availability of a longitudinal patient record for all patients. Many hospitals and medical groups are beginning to make their information technology applications available to clinics, demonstrating a move toward greater collaborative

opportunity within the broader health care industry. Now that clinics have developed more stable and powerful IT systems, have become savvier about the non-technical challenges of IT collaborations, and have greater technology know-how, they are better positioned to work with their health partners to share patient information electronically. Building these electronic connections will involve strengthening institutional relationships as well as physical data links. However, given the technological hurdles involved in many cases, the challenge may be too great for individual clinics and their partners to surmount. Organizations throughout the health care industry are facing similar challenges in their efforts to exchange health information. Fundamental changes in the data systems available, such as PMS and EHR software, will be required. Since its inception in 2004, the Office of the National Coordinator for Health Information Technology (ONC), part of the US Department of Health and Human Services, has worked to inspire public-private partnerships in the field to make linkages possible.

D. Influencing the Software Market

Clinics' potential to effectively apply IT to clinical care will be circumscribed by the capabilities of the technologies available. Throughout CCI, clinics have been frustrated by unresponsive vendors and a volatile market that was hard to navigate. While many clinics report improvements in their practice management systems, they are still less than satisfied with the product and vendor choices available to them. CCI was unable to identify an effective strategy to influence the software market, despite much research into potential leverage points during the first few years of the initiative. Clinics have been unable to get existing PMS vendors to develop products more tailored to their needs. As a result of the increasing focus on clinic IT systems, no new PMS products have emerged but are instead becoming components of more advanced EHRs and other clinic IT offerings.

CCI experimented with several approaches to influence the software market on behalf of clinics,but found no way to make significant impact. In 2001, a consultant-led software certification process defined a minimum set of functionality requirements necessary for new practice management systems purchased by clinics with CCI funds. These requirements included basic functionality and technology standards, product reliability, and interoperability with other systems. As the vendor market experienced significant change and clinics made their PMS purchases, the certification process was discontinued. Plans to follow up the certification process with large-scale group purchasing for better bargaining power never came to fruition. In 2002 CCI partnered with the California HealthCare Foundation to explore the possibilities for other strategies to "move the market" toward producing tools more relevant to clinics' needs. Despite much research, no good leverage point was has yet been identified.

One small-scale success has been collaboration described above among 20 clinics using MediTracks, a tool that extracts data from PMS to generate standard reports. These clinics invited the vendor to join them in learning how to use the software and developing new reporting templates. The vendor has decided to include the report templates the group developed in its next release of the software.

vendors, who had a financial stake in the clinics' choices. To help them down the path to EHR, clinics need access to CIO-type capacities (perhaps through their consortia) as well as skilled intermediaries to guide them through selection, contract negotiation, and implementation.

6. Complex IT project require clinics to collaborate based on shared business imperatives rather than geographic proximity. The significant financial costs and complexity of EHR will require most clinics to find ways to coordinate with other health care providers. The CCI experience suggest that traditional partnerships with neighboring clinics may not always be the best strategy. Because these arrangements are often complicated, entail a unique set of business relationships and shared financial risk, they require a different level of involvement than other types of collaboration. Clinics need to assess collaboration opportunities thoroughly before entering into them. Clinics will want to explore alliances with hospitals, counties, for-profit providers, as well as other nonprofit community health centers with similar levels of technology sophistication and business needs.

[7] This section is drawn largely from Kendall Guthrie's presentation a a symposium in Washington D.C. on "Realizing the Benefits of Health IT for Community Health Centers: What is Needed and How Does it Get Done" on November 8, 2005 and "Report form the field: Insights by Community Clinics on Information Technology Adoption" prepared by Nannette Faulkenberg, December 2004.

The reasons behind the problems encountered by clinics will continue as they look to buy new technologies to meet their clinical needs. First, software vendors who primarily served private physician practices do not see clinics as an attractive market. Clinics have more complex information needs due to multiple payer sources, high patient turnover, and greater interest in aggregate patient data to track trends in their patient population. Moreover, they demand a high level of customization and training but have relatively low purchasing power and often weak IT infrastructure and support staff to maintain their system.

Second, the market was, and continues to be, volatile. Over the years, many vendors have closed shop or merged, leaving some clinics in the lurch with unsupported software, which can no longer be upgraded. Consolidation in the vendor market continues and the trend toward developing software that combines administrative and clinic functionality in suite-based systems is changing the landscape of vendor choices for clinics. While the health care technology is unlikely to be as unstable as it was during the technology boom and bust, the market will continue to be in flux. In such a market, clinics need to investigate new vendors and products with care. Fortunately, their experience over the last few years will make them more savvy consumers and less swayed by vendors who talk big but can't deliver.

Looking ahead, clinics will need to pay attention to the national policies and industry activities that may influence the evolution of health care IT, and to find ways to influence them. In the last two years, CCI has succeeded in getting more clinics to recognize the importance of national policies on the evolution of health care IT, as well as in drawing the attention of national policymakers at the ONC to the health IT needs of community clinics. Moreover all consortia now say they are participating in state and federal policymaking around health care IT, due in part to CCI's efforts to raise the importance of this work. In addition to relevant government policymaking, national industry efforts to standardize health IT tools and to develop certification criteria and inspection processes for electronic health records (EHRs) are already underway, in large part prompted and funded by the ONC. Clinics will need to find ways to stay informed as these activities unfold and to participate in them wherever possible. Renewed attention to group purchasing may also help clinics gain greater leverage with software companies.

E. Funding to Support Continued Innovation

While clinics are likely to be able to maintain their existing IT infrastructures, they are unlikely to make significant innovation leaps without substantial external funds. The experiences of California clinics and of other clinics across the country that have made major technology leaps suggest that significant outside funding is needed to give clinics the space and confidence for technology innovation.

Finding these funds will be a challenge. Clinics may never again have the major infusion of funds for technology innovation that they had in the last six years. CCI has increased health funders' awareness of the opportunities in the area of community clinics' technology, which has brought several new players to the table, notably the BlueShield of California Foundation. However, without the high levels of financial support provided by CCI, clinics may be left to pay for clinical IT out of their ongoing operations budgets or by piecing together grants from several smaller funders.

Since technology has proven to be valuable primarily for improving quality rather than saving money, the prospect of clinics justifying investments in their IT to prospective funders based on the potential for significant cost savings is unlikely. Yet, many will be able to make their case by demonstrating the organizational and clinical benefits they are already experiencing due to their improved IT systems and uses of data. Meanwhile, national policy researchers are exploring ways to propose reimbursement changes to provide both incentives and revenue sources for undertaking technology innovations that could make a significant difference in care quality.

Conclusion

Clinics spent the first few years of the 21st century building their basic IT infrastructures and learning how to use these new tools. They installed new hardware, connected computers via LANS and WANs, hired new IT support staff, and increased IT training througout their organizations. Most importantly, they expanded their vision for how information technology can help them advance their mission to provide high quality health care regardless of their patients' financial resources. They now view IT as a core competency that supports all aspects of clinic operations. They view their data as key strategic resources for improving both business operations and improving the quality of the services they deliver.

This new appetite for data can fuel clinics to continue their journey toward "the sun" of healthier communities. Now that clinics view data as a strategic resource to improve care, they want more and better data. That often means more robust IT systems to help collect and maintain the data. This virtuous cycle (as depicted in Figure 3) will be central to sustaining improvements in IT infrastructure funded through CCI. Clinic staff who care about the data will now have a built-in incentive to sustain and improve their IT infrastructures.

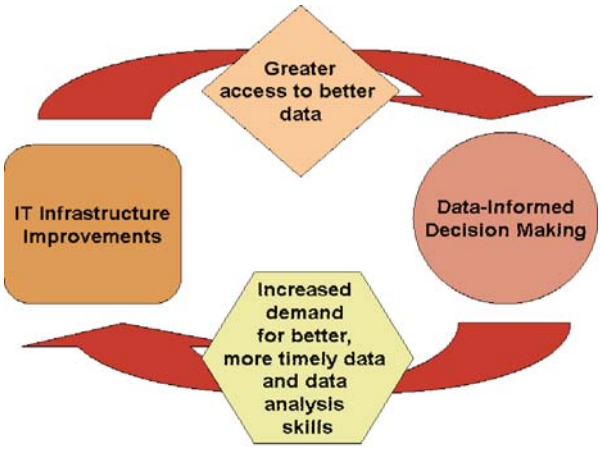


Figure 3. Virtuous Cycle Model

Community clinics and the health care industry as a whole have only began to realize the benefits of applying information technology to medical care. The first stage - building the physical infrastructure and using data to inform business practices - was in some ways the easy part. There were models from many other industries that had automated their business functions before health care had. The next stage of using IT and collecting data to improve the quality of health care will require more in terms of changing mindsets than changing physical infrastructures. And, it will take changing practices of everyone in the clinic to achieve. Yet, in many ways, it's the stage that mission driven clinics - with their passion for patient care - are best suited to tackle.

For further information about this research, contact Amy Luckey at amy@blueprintrd.com or 415-677-9700

Grantee Stories from CCI's IT Program

Excerpts from CCI's Final Grant Reports

What having a working IT system has done for the health center and our patients is remarkable. We have been able to join a diabetes collaborative, allowing us to give our diabetic patients state-of-the-art care based on a practice model that works. Staff members have access to on-line resources including current publications on clinical and diagnostic issues. Medi-Cal and other program eligibility are checked on line at the time of a visit, making our billing information up to date at the time of service. Our bookkeeper works on payables and financial reports remotely from home. Staff members go on line to access patient education materials and some referrals are made by e-mail. On a broader level, our clients see the health center as current and offering state-of-the-art care to them and their families.

– Anderson Valley Health Center, Boonville

In 2001 we received CCI funding to strengthen our internal systems through the purchase of six MegaWest modules. It has, however, been a long and arduous journey to get this far. For small community clinics, even the most minimal staff turnover has a significant impact on operations, particularly when there is a need for ongoing staff training and support. It has only been since we joined CCALAC's Los Angeles County MegaWest Users Group in 2004 that we have been able to effectively utilize three of the six modules originally installed. Joining the Group has been a gift, and the recent strides made in the utilization of existing systems can be attributed to the support and assistance from its members.

– Korean Health, Education, Information and Research Center, Los Angeles

Our information technology has grown dramatically over the last five years. Its impact is seen in nearly every aspect of clinic management. Efficient appointment systems enable us to see more patients in less time. The chart tracking system has made lost medical records a thing of the past. Referral tracking has meant referrals are no longer misplaced and/or forgotten. Internet connectivity has improved our ability to verify the insurance coverage for our patients, increasing collections. And our stand-alone diabetes registry has shown our providers how their interventions are truly improving the health of our diabetic patients.

– Imperial Beach Health Center, Imperial Beach

The quality of clinical decision making has improved with the increase in provider use of Personal Digital Assistant (PDA) devices during patient visits, and clinical treatment protocols have been enhanced as a result of computer assisted clinical data analysis, Internet communication, and the joint development of clinical protocols through the Redwood Community Health Coalition collaborative. Five years ago no providers used PDAs and few used the Internet; today all providers use both extensively.

– Petaluma Health Center, Petaluma

Many of the basic and labor-intensive tasks that our administrative and clinical staff used to do are now done electronically and are accomplished on-site at each clinic, rather than being undertaken in an overly burdensome centralized system. These enhancements have empowered PPLA to better allocate our staff resources in favor of patient care and away from tedious paperwork as well as provide consistent billing and, hence, a reliable cash flow of reimbursement income. One critical outcome of these technological enhancements is that we have increased the number of patients we serve annually from nearly 45,000 to over 61,000 representing an increase of nearly 36%.

– Planned Parenthood Los Angeles, Los Angeles

Having access to the data on a timely basis, without the need to open all of our thousands of charts, has meant that we can respond to challenges - we can target flu vaccine just to those at risk, we can change our asthma protocols when it appears we are not getting a reduction in acuity in a group of patients, we can verify our procedures and follow-up for anemia patients. We have undergone a huge conversion in how our practice operates, as one young staff person said "looking at this flat screen computer I feel like I have gone from the Stone Age to the Space Age."

– Roseland Children's Health Center, Santa Rosa

The projects we have undertaken, in large part in partnership with CCI, have resulted in greater adaptability and innovation and have bolstered our organizational commitment to our vision and mission. The emerging strengths that bode well for the future of FHCN are an increased use of data to drive management decisions and a culture of learning and training for all staff.

– Family HealthCare Network, Visalia

Last year we reorganized our diabetes case management system. At the time, we were utilizing a computer-based practice management system to track the healthcare of our diabetic patients. The problem was, its use was sporadic, and the data entered into the system were not always complete. We devised a method to 1) assure that all relevant diabetes information was entered into our patient management system; 2) information from the patient's glucometer was downloaded and analyzed on the physician's computer; 3) a health summary report was generated for each patient prior to their visit to highlight labs or referrals the patient is lacking and needs to be addressed at the visit; 4)monthly case management reports summarizing our overall status for diabetics were printed and reviewed by the diabetes case management teams, at which point we could address any deficiencies. After less than four months, the results of this intervention were staggering. The percent of diabetics receiving their required blood tests increased from 51% to 97%. Perhaps the most important improvement was the patients' control of their blood sugar level, since this is the ultimate goal of diabetes care. Prior to the intervention, only 38% of patients were in the ideal or good categories (indicating adequate control of their diabetes). Following the intervention, 71% were in the ideal or good categories.

– San Diego American Indian Health Center, San Diego

The Misys-Users group funded by CCI enabled us to create a statewide network of community clinics that have similar IT needs, concerns, questions and issues. The collaborative work also exposed some Misys software problems, which have since been corrected. Together we have been able to leverage our collective power in dealing with the vendor. Lessons learned by one have become lessons learned by all.

– St. John's Well Child & Family Center, Los Angeles

A strong IT framework provides us the ability to track and measure data on an individual and aggregate level in order to assess and compare the impact of our services on patient health outcomes. We are now able to compare the quality of care we provide to national standards/recommendations identifying where quality improvement is needed. Our efforts have become streamlined and well-organized, allowing us to enhance the health and lives of the communities and individuals we serve.

– East Valley Community Health Center, West Covina

We have reengineered the patient experience, resulting in higher levels of patient and provider satisfaction and quality of care, as well as improved billing procedures that have maximized patient revenue. Patient waiting time has decreased from an average of 57 to 28 minutes. Clinical quality improvement is evidenced by clinical audits that have steadily achieved 100% compliance with clinical standards.

– Community Health Clinic Ole, Napa

Lessons from CCI's IT Grantmaking

Tom David, July 2006

The Community Clinics Initiative (CCI) is a unique collaboration between Tides and The California Endowment. It began in 1999 as a one-time-only grants program to help clinics prepare for information systems difficulties that were anticipated with the advent of Y2K.

CCI has since evolved into a multi-million dollar, multi-faceted grantmaking effort that has reached the vast majority of California's community health centers and clinics.

The preceding piece by Kendall Guthrie and her colleagues at Blueprint Research & Design gives a good summary of what those grantees have accomplished over the past six years.

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Contrary to the current conventional wisdom, there was no detailed theory of change to guide the way. Indeed, the goals of the Initiative changed over time, from its initial short-term purpose to a focus on improved business practices and efficiencies to its current emphasis on health outcomes and community health. But there was a deep commitment to learning on the part of The California Endowment (TCE) and those at Tides who were chosen to run the program office. That spirit infused all of the activities of the Initiative, from the operations of the Steering Committee to the design and implementation of the RFPs to the ways in which assessment and data sharing were integral to each phase of CCI's development.

Despite its somewhat unconventional origins and structure, CCI has managed to do something that few foundation-initiated programs have been able to do, and that is to move a field. In the words of two of the grantees, it has "raised the bar for the field" and "moved the industry." As another grantee observed, "perhaps the biggest impact of CCI has been a cultural shift within clinic organizations that now see IT as integral to their operations."

How did that happen? Timing was certainly a factor. CCI was virtually alone in providing funding for IT projects and infrastructure during a time when becoming more IT-savvy and efficient was essential to the growth and continued competitiveness of community health centers in the broader health care marketplace. The magnitude of the funding made available by The California Endowment and its flexible, multi-year commitment to the Initiative were also critical. As a result, CCI was able to reach the vast majority of California clinics rather than just a select few.

The quality of CCI's staff has also played an important role. They possess a unique combination of grantmaking skills and in-depth knowledge of clinic operations and have been able to achieve a unique rapport with the clinic community. But just as important as all these factors was the way in which CCI has done its business, including its commitment to good process and to learning and reflection.

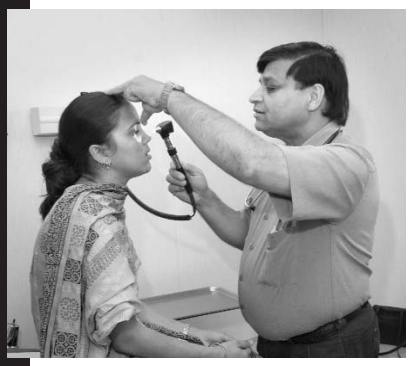
There are many valuable lessons to be learned from the past six years of CCI's Information Technology (IT) grantmaking. Over the past year, I have talked with a number of grantees and key consultants as well as the staff and funders of CCI to see what they've learned from this experience. There are many ways to organize those insights. I've done my best to do them justice, but any errors of interpretation or omission are all mine. The intent is not so much to provide the definitive story of CCI's IT grantmaking, but to synthesize some key lessons that might inform future philanthropic ventures, whether focused on IT or not.

I've identified eight themes that emerged from my conversations. They are listed below, accompanied by observations drawn from CCI's IT funding experience.

1 Allow sufficient funding and flexibility to permit both timely and appropriate action.

CCI enjoyed a rare combination of significant funding coupled with maximum flexibility. Typically, only small foundation grants come with few strings attached. Large grants tend to be highly structured and programmed down to the last detail. But, rather than being constrained by a predetermined "game plan," CCI staff were able to adjust their strategy with each successive RFP in response to the changing context and the lessons they were learning along the way. Having significant dollars available also permitted them to think big and to operate at a scale that was more likely to ensure field-wide impact.

In the words of several participants, CCI has been "organic" in its development. It has been able to chart a dynamic, non-linear course that allowed for genuine creativity. CCI is also opportunistic and entrepreneurial in the best sense of the word. As an example, it was able to commission key pieces of research by Prof. Robert Miller of UCSF that not only informed CCI's strategy but also helped advance the field at large. When Dr. David Brailer moved from California to Washington D.C. to become the National Coordinator for Health Information Technology, CCI was able to build on that relationship and participate in high level policy discussions that were simply not envisioned at the onset of the Initiative. CCI had the flexibility to contract with Nanette Falkenberg and Bass & Howes to maintain a presence for the Initiative in the capital and to extend the influence of the Initiative far beyond California. To appropriate a term from the field of organizational learning, CCI exemplifies an "emergent" enterprise.



It incorporates regular rounds of feedback from its Steering Committee, expert advisors and grantees to craft a continuously evolving program that builds on success.

There were also associated challenges. The California Endowment approved its funding for CCI in phases, and the staff had to respond quickly to the changing signals from the foundation at the same time it was trying to manage the expectations of its grantees.

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Necessity was the mother of invention in some instances. If the CCI staff had known from the beginning of the Initiative how much funding would ultimately be available to them, they would have been able to design an approach to grantmaking that might ultimately have proven to be more strategic. As it was, they were unable to make multi-year commitments in their first several rounds of grants, which put real limits on their conversations with potential grantees.

Consequently, CCI staff sometimes may have felt too much pressure to move fast. After demonstrating their ability to quickly and efficiently implement the initial Y2K funding program, a level of expectation was established (both internally and externally) to "keep up the pace." Also, since the next rounds of funding from The Endowment were not predictable, there was an implied incentive to distribute the dollars available with minimal delay. The Endowment encouraged CCI to spend the money and the field expected it as well.

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There were some immediate and obvious benefits for clinics, which had too frequently witnessed just the opposite behavior from foundations. But there may have been cases where the pace of the funding exceeded the time required for grantee organizations to effectively manage the human complications that inevitably accompany rapid change. While there is a lot to be said for a highly responsive, timely grantmaking process, proper pacing is also essential, particularly when the funding is supporting complicated processes of organizational change. It's important to not provide too much funding too fast, even for the best of motives.

2. Invest in a program office skilled in both grantmaking and relationships.

The Endowment's choice of Tides as the program office for CCI was controversial. Tides had minimal experience with clinics or with health care. As an "outsider" in a tightly connected field, its motives were suspect in some quarters. But it brought substantial strengths, including significant experience with grantmaking in a donor-advised environment and an approach that emphasized capacity building of grantee organizations. But above and beyond their technical skills, the Tides principals had a deep understanding of the importance of relationships in philanthropic transactions.

The Tides staff immediately embraced the challenge of building trust and establishing credibility with the clinic community. It hired consultants and staff with longstanding clinic backgrounds and established a Steering Committee composed of a respected group of clinic and community representatives from throughout the state. From the beginning, it also set out to establish realistic expectations with grantees, encouraging their honest feedback in order to build a reality-based grantmaking program. The Tides staff also demonstrated their willingness to be objective, to take risks and to trust grantees. Their commitment to authenticity and transparency earned them respect from many of those who had initially questioned their selection.

In their mid-initiative stakeholder assessment, Blueprint R&D observed that most felt Tides had brought a fresh perspective to the field as well as grantmaking experience that no one else had. As one CCI staffer observed, "Since Tides didn't have deep knowledge of clinics, we were able to ask 'naïve' questions and encourage clinics to think about different approaches." They promoted a long-term

view that was different from clinics' usual preoccupation with immediate needs. Because they were new to the clinic world, they were also less susceptible to political pressure in their funding decisions, and all clinics started with CCI with a "clean slate."

Because of Tides' history as a grantmaker and the Tides Center's role as an incubator of new projects, CCI staff could approach The California Endowment as peers. That encouraged conversations that were unusually candid and, from the viewpoint of both parties, the relationship was characterized by real transparency. TCE felt this was the "cornerstone of the Initiative's success." CCI staff also felt they were real partners with The Endowment, helping them to accomplish their goals versus acting like a typical "interested party" grantee. It probably helps that Tides doesn't raise money for its own ongoing operations.

From the viewpoint of The California Endowment, there are several advantages to a program office. First, it allows relationships to be sorted out in a way that minimizes the negatives of differential power and the typical anxieties that pervade grantor-grantee communications. Second, it permits much more candid and transparent communications with both CCI staff and the Steering Committee, since those conversations are not taking place in the context of a funding decision. Finally, the program office can operate more nimbly than the foundation. It can design each RFP to respond directly to the community needs. It also has an advantage both in bringing on outside consultants as needed and in being able to explore alternative pathways to see which lead to the desired results.

3. Engage a cross-section of the field in meaningful governance roles and support their learning and leadership.

One of the unique aspects of CCI was the role played by its Steering Committee. It's not unusual for foundation-sponsored initiatives to have advisory groups, but it is quite rare for such a body to significantly influence strategy. The choice of "Steering Committee" as the name of the group rather than something blander spoke volumes. It is also quite out of the ordinary to devote significant time and resources to support the work of such a group. But in the words of one participant, the way the Steering Committee functioned "personified in many ways what CCI was all about." It was a venue where data was examined and strategic options were debated with the assistance of a variety of outside experts. It was an intense and stimulating learning environment for all involved.

The California Endowment has traditionally placed a high priority on community representation. The Steering Committee was conceived of as a vehicle to keep the Initiative "grounded," and also as a "check" given Tides' relative lack of experience in the clinic world. The composition of the group was jointly determined by The Endowment and advisors to Tides. It comprised a true cross-section of the field plus experts from outside the clinic world. According to

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one participant, "the variety of world views around the table set the tone for how CCI evolved. They were big thinkers." From the beginning, the Committee grasped the opportunity before them as greater than just a one-time $10 million grants program. Even if that was to be the limit of TCE's funding they argued for spending the money in a way that would "lay the groundwork for a path to healthier communities rather than just a one-off, formulaic, quickie distribution of funds." They saw the work of CCI as "providing the down payment for a larger change process."

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The Steering Committee proved to be a highly effective mechanism to bring the CCI staff up to speed on clinic issues. It also gave the Initiative a high level of credibility in the field while ensuring that the IT program met the needs of a broad range of clinics. The Committee was actively involved in reviewing and commenting on RFPs and in advising the staff on funding strategy (e.g. "slates" of potential grantees). There were also very robust discussions after each funding round about lessons learned that directly shaped the frame for the ensuing RFP.

Despite the potential for conflicts of interest, Steering Committee members were able to leave their institutional interests at the door and think about the field at large. For example, after RFP3, the Steering Committee was instrumental in arguing to "raise the bar" for subsequent funding rounds and to focus on collaborative efforts rather than continuing to fund on a "clinic by clinic basis." That led to substantial funding being allocated for a limited number of Strategic Investment grants while the overall decline rate increased as the Initiative moved away from a "raise all boats" approach.

CCI invested significantly in the learning of the Steering Committee, seeing them as "ambassadors" for the Initiative to the field at large. Meetings were typically structured to provide one day for business and a second day for learning. Specific talking points were created for Steering Committee members at the conclusion of each meeting to assist them in sharing what they had learned with their colleagues.

In its midpoint assessment of CCI, Blueprint R&D observed that the Steering Committee had created a new venue for a group of leaders, many of whom had few connections elsewhere, to think bigger and to have more visionary conversations. On a personal level, all enjoyed the opportunity to step out of their daily routines, to be more reflective, to be treated well

and to connect with colleagues. By virtue of what they were learning at the meetings and accomplishing within their organizations, a number of them began to be recognized as national leaders on the topic of IT in community health centers.

Were there challenges? One participant observed a "healthy tension" between CCI staff and the Steering Committee, which is appropriate. Despite the fact that much of the work was staff-driven and the final decision authority on grants rested with the Tides board, the Committee was an engaged partner in the enterprise, not a passive sounding board. Given the pace of their work, there was also a natural tendency for the staff to "get out ahead" of the Steering Committee, and they had to be mindful about touching base and keeping the group dynamics positive and aligned.

There also came to be some grumblings in the field about the perceived privileged status of the Steering Committee, based more on observations of their access to information and experts rather than any inside track for funding. There was no mechanism for terms for Committee members, so as the work of CCI broadened to capital grants, some of the original group who had focused intently on IT became less engaged. As the IT work of CCI wound down, the Steering Committee was disbanded. Whether that decision was made too quickly is subject to debate, but most had agreed that there was less of a meaningful role for them to play, particularly compared to the early years of the Initiative.

4. Provide sufficient funding to engage outside experts to inform the work of the staff and grantees.

One of the first things in a project proposal that is likely to evoke a skeptical reaction from a potential funder is a substantial line item for consultants. Not only are such expenditures often viewed as an expensive frill, but they are also questioned because it is assumed that consultants typically leave little behind in terms of improved organizational capacity at the community level. From the viewpoint of many community-based organizations, most consultants are simply too expensive for the benefit they provide. If asked, they'd typically recommend that those dollars be given directly to the agencies themselves.

CCI spent a considerable sum for expert consultation on information technology, but it was money well spent. Early in the life of the Initiative, CCI staff spent a lot of time identifying consulting resources that were relevant to community clinics from the universe of IT experts. Consultants were carefully screened and typically tested on small projects before they were used for larger assignments.

What consultants brought to the Initiative was not only technical expertise but also connections to

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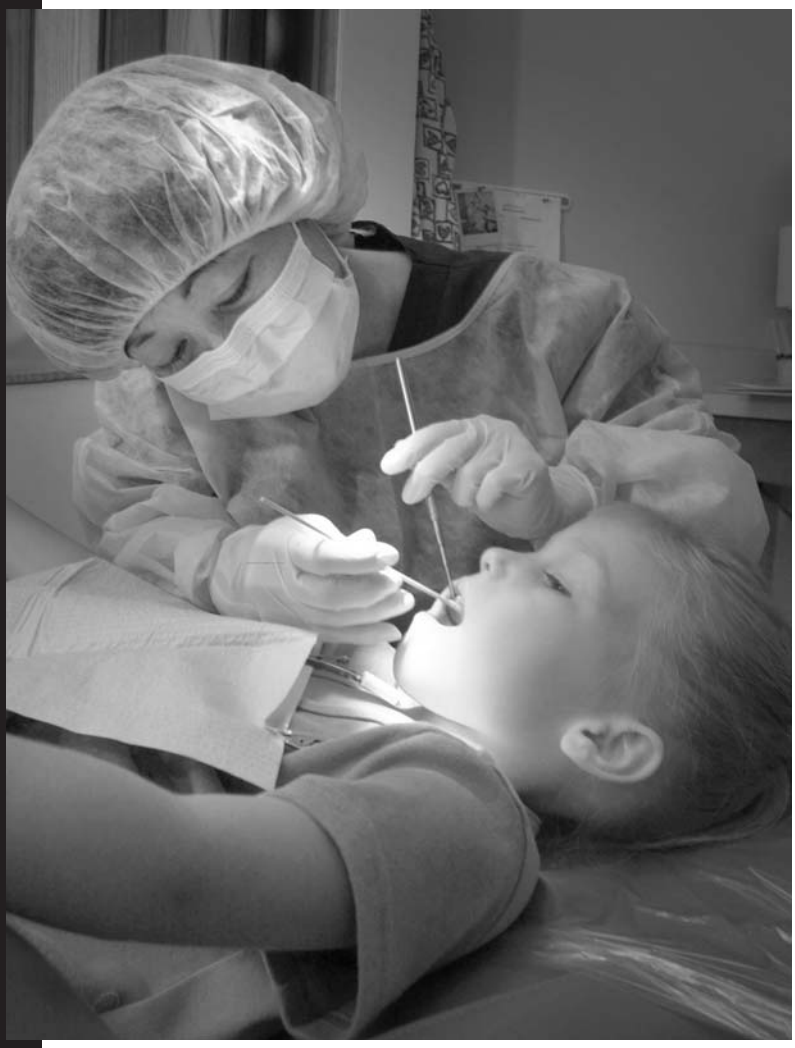
broader national networks. According to one grantee, "CCI helped bring in people from outside the clinic world with different kinds of skills who helped us look at problems in new ways." They also helped connect CCI grantees to the experience of others around the country, substantially shortening the collective learning curve, with resulting "leaps in sophistication." In the process, many of the consultants were also converted into advocates for the particular needs of safety net providers.

One of CCI's most controversial early decisions was to engage in a consulting arrangement with Care Science. The Steering Committee was not consulted in advance, and clinic folks were dismayed at seeing $1 million go to a private firm with no past experience working with community health centers. Yet, that investment not only paid off in terms of better grant-making decisions, but it also provided the field with an objective set of standards for assessing Practice Management software packages. In a marketplace where clinics with limited funds and technical expertise were being barraged with conflicting claims from vendors, the Care Science process of certifying products according to a common set of standards helped to bring greater rationality to everyone's decision making. As a result, untold dollars were saved that might have been wasted on inappropriate products. Not everyone was happy with the process, to say the least, but it was another example of a way in which CCI helped to move the field.

Similarly, other long-time CCI consultants such as Nanette Falkenberg, Jeremy Nobel, Bob Miller, Full Circle and Object Health helped provide the "intellectual foundation for the work." CCI was able to maintain a relatively lean central staff, while engaging the services of national-level experts who would not have been available for full-time staff assignments. Those experts, in turn, built connections for CCI with endeavors like the Harvard Interfaculty Symposium, which helped bring the work of the Initiative and its grantees to a national policy audience.

5. Incorporate evaluation as a strategic partner.

Unlike most other initiatives of The California Endowment, CCI was given the opportunity to select its own evaluator. Blueprint Research & Design was an unconventional choice, since its expertise was philanthropic strategy rather than evaluation per se; but its approach fit well with the CCI staff's aspirations to integrate assessment and learning into every aspect of the Initiative. Kendall Guthrie and her colleagues from Blueprint were seen from the beginning not as external evaluators but as important



members of the CCI team. Their strategic advice was valued as much as their measurement expertise and independent judgment.

Blueprint joined the Initiative after the first round of IT grants had been made. It quickly put together the first needs assessment, and sharing the results with the Steering Committee provided a revelation. It was perhaps the first time data on organizational capacity had been collected across the entire clinic field, and it provided a "rude awakening" about how much of the field had very limited capacity. It also confirmed the value of data for informing decision making throughout CCI. Subsequent rounds of data collection (e.g. Management Assessment Survey) have provided valuable benchmarking for the field.

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CCI staff credit their ability to move quickly and nimbly in part to Blueprint's skill in collecting and sharing data in "real time." From the viewpoint of CCI staff, this was exactly what they wanted from evaluation. It modeled for the field (which did not have much experience in research and documentation) how to use data to shape a program. It also provided the Steering Committee and the field with data no one had ever seen.

This approach also fit with The California Endowment's emphasis on evaluation as "a learning tool rather than an accountability tool." It also allowed a more transparent relationship between the Initiative and The Endowment, so that the funder could engage in mutual learning with CCI staff and grantees rather than merely "watching and counting."

However, The Endowment's goals for the Initiative did change with successive rounds of funding. From the first grant round's emphasis on Y2K, subsequent rounds focused on business practices and efficiencies, and then on health outcomes. That presented particular challenges for the evaluators, who were put in the position of pushing the CCI staff and Steering Committee toward a more outcomes-driven model of change. It was a hard shift for all involved since it was at odds with the responsive approach that had characterized much of the development of CCI. Although grantees were asked to begin to track specific health outcomes, in reality the focus of the Initiative continued to be on more realistic, capacity-oriented goals.

With the changing goals and the maturation of the Initiative, Blueprint's combination of insider and outsider roles became more challenging. Data was no longer needed to inform strategy so much as to begin to track outcomes. But there was an underlying tension about which outcomes were most realistic and meaningful, even though all parties agreed that the ultimate aim of the Initiative was to help clinics move toward the "sun" of healthier communities.

6. Pay careful attention to process.

While putting a priority on good process is sometimes dismissed as wheel spinning that precludes decisive action, CCI's ongoing, consistent investment in thoughtful process has yielded multiple benefits. The staff was particularly adept at knowing when it was important "to go slow in order to go fast later on." It also placed a high value on transparency. A good deal of care and attention went into designing meetings of the Steering Committee, convenings, RFPs and other communications with grantees in order to achieve specific results. Planning was integral to every aspect of CCI, just as it sought to model the benefits of effective planning for its grantees before making IT purchases.

CCI is credited by grantees with having "one of the better foundation processes" when it comes to accessibility, openness, transparency and providing "more than enough help" to applicants. It is seen as "good on timelines and keeping applicants informed on where they are in the process." CCI's staff is also perceived as being a "well-functioning team." They are viewed as "very good at thinking together, planning and implementing." The staff is also given high marks for "the thoroughness it brings to everything it does," as well as a consistent level of attentiveness to the needs of grantees, which more than one described as "wonderful."

While getting the details right is an important accomplishment in and of itself, a number of grantees also noted that "this is not just a typical grantmaking program." Each RFP has built on lessons learned in the previous grant cycles, and the application process incorporates assessments and asks questions that cause clinics to think hard about how their proposed work will help them to achieve the ten characteristics of strong clinics. In the words of one grantee, "CCI models a process that uses grantmaking in order to help clinics learn and grow."

The detailed preparation for Steering Committee meetings is a particularly good example of CCI's attention to process. Following each meeting there was a thorough debriefing by staff and facilitators. The agenda for the next gathering then typically went through several drafts well in advance of the meeting date to maximize the efficient use of the time and to be sure to build in opportunities for formal and informal interaction. A variety of techniques were used to stimulate creative thinking. Skilled facilitation was also an important ingredient.

CCI employed Tomi Nagai-Rothe and Steve Christiano from The Grove International to help plan, facilitate and graphically document the discussions at Steering Committee meetings and grantee convenings. That extra investment in visually depicting group process helped the participants to see their ideas, remember what they had talked about, and connect with one another as quickly as possible. It also helped them to "cycle" ideas faster and to work together as efficiently as

possible. A side benefit was the creation of a rich visual record of CCI thinking and strategy as it evolved over the years.

By expending extra effort and resources on process design, CCI helped to ensure that precious meeting time was utilized for maximum engagement of the participants. Environments were created that truly connected people to one another. Good food was also an important part of any CCI meeting. Positive initial experiences built expectations that were reinforced by subsequent meetings. The quality of CCI gatherings was a significant factor in encouraging the commitment of participants and motivating them to contribute their best thinking.

7. Keep the focus on building the field.

Field building is a common aspiration among foundation programs, but how best should you go about it? Should you spread resources widely across a broad spectrum of organizations to see what germinates or invest only in the innovators and then share their results with others? Should you respond to the self-identified needs of individual clinics or impose a degree of standardization on grant requests, in the name of efficiency and effectiveness? Should a priority be placed on collaborative efforts? What resources need to be provided in addition to grant dollars? What's the most strategic approach if field building is the ultimate goal? CCI has grappled with all of these questions and its strategies have evolved over time…and continue to evolve.

CCI's relationship with its grantees has been characterized by a creative tension that has "helped clinics stretch beyond themselves" in the words of one grantee. The Initiative challenged clinics to step out of their comfort zone and that nudge was resented at times. Yet, looking back on the experience of the past few years, grantees readily admit that CCI pushed them in ways that were ultimately in their long-range self interest. As one put it, "CCI pushed clinics to do things they hadn't done before. Initially there was resistance, but five years later it's clear that CCI has really advanced the field. All the participants in the Initiative were allowed to make mistakes and learn from them."

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As another grantee noted, CCI also "pushed clinics to take themselves more seriously as an industry." CCI is credited as having "laid the groundwork for the creative marriage of IT, leadership and the reengineering of practice." By encouraging and funding multi-institutional collaborations such as the Strategic Investments, it also helped to "break down silos" and "support the kind of coalition building that is critical to the future of the safety net." In the words of yet another grantee, CCI "helped build appreciation for collective experience. Many clinics are still too small to have their own IT Director. Now we realize the importance of supporting someone at the network level to work with all of us."

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CCI's initial rounds of funding personified a "lift all boats" approach to field building. More than 90% of eligible clinics received funding, and undoubtedly some of those grants were less than optimally strategic. However, this initial strategy provided a platform on which to build relationships across the field. It also yielded insights on the wide range of organizational capacity which the Initiative would need to address. Subsequently, the Steering Committee recommended "raising the bar" on who would be funded and pushed a collaborative approach as the best way of advancing the field as a whole. In the words of one participant, it was a "both/and" approach. Individual clinics were helped to achieve a threshold of IT capacity; then it was reasonable to expect them to build external linkages and collaborative infrastructure that would ultimately benefit the local health care system.

CCI pushed the field in a number of ways. One way was to engage Care Science to provide certification for Practice Management software packages and to decline grant requests for products not on the list. Another was to promote a list of ten characteristics of strong clinics, gleaned from CCI data and from national best practices, and to require self assessments of CCI applicants to measure themselves against those qualities. It then incentivized integrated solutions by dedicating substantial funding for the Strategic Investment projects. Those later RFPs made it clear that the potential power of IT was not just within the clinic but in how it was used to build relationships by sharing data with other institutions. In so doing, CCI also "called the question" of sustainability long before the IT funding was due to sunset.

To help the Steering Committee and themselves to think in terms of the entire field, CCI staff repeatedly referred to the "bell curve" of IT capacity among clinics and assessed potential funding strategies by their ability to move the entire curve over time or to change its shape, i.e. in the direction of disproportionately higher capacity. From its earliest brainstorming, the staff also identified four "legacy" themes that were visually prominent in CCI's materials throughout the life of the IT program. In retrospect, they also provided a road map for field building:

- Don't automate inefficiencies
- Data for decision making
- It's not the machines, it's the relationships
- Information for change

Perhaps the biggest challenge to this approach was the fierce individualism of clinics. Self reliance has served them well in weathering past difficulties and they tend to only think of themselves as a field when it comes to advocacy for government funding. Even though a significant number of regional clinic consortia have developed over the past ten years, they are highly variable in the degree to which they actually share resources, let alone function as integrated networks. Any attempt to encourage more collective approaches to capacity building must contend with this longstanding culture, which is quite resistant to change. CCI has managed to use IT as the vehicle to encourage more integration of effort, in direct alignment with the long-range self interest of clinics. While it has enjoyed some significant successes, much work remains to be done on this front.

8. Put learning and reflection at the center of the enterprise.

"CCI used a funding initiative to build a learning community," observed one grantee. CCI has developed a culture that places a high value on relationships, openness, risk-taking and exploration, yet it has also set high standards for rigor, analysis and quality. That is a rare combination indeed. By "walking the talk" of continuous learning and knowledge sharing, CCI has embodied an emergent approach to program development that is both organic and intensely practical.

The kind of innovation CCI has promoted and underwritten does not lend itself to rapid mastery. As Tom Dawson and S. A. Kushinka of Full Circle noted in their January 2004 Report to the Field, "'go live' is not the end of a linear process; it is the beginning of the next cycle of implementation and innovation." IT systems are dynamic and must be constantly aligned with changing conditions. As another CCI participant put it, "IT projects are organizational change efforts in disguise" that require a commitment to continuous organization-wide training and learning. It's appropriate that those values have been at the center of the CCI enterprise from the beginning.

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A number of grantees complimented CCI for its agility and flexibility and its willingness to take risks… as well as its honesty about publicly sharing lessons learned when things haven't turned out as expected. It is seen as engaging in a "genuine learning process with clinics." Unlike some other foundation-driven initiatives, CCI is perceived to be different in that it has espoused no single model or "one-size-fits-all approach" and instead has been willing to "meet clinics where they are."

CCI's grantmaking practice has also kept it grounded in the reality of low-income communities via regular cycles of feedback and dialogue with front-line service providers. CCI has engaged clinic and community leaders on its Steering Committee and listened carefully to their advice at each stage of the program's evolution. As one interviewee noted, "CCI 'gets it' when it comes to involving the field in planning and decision making."

While "value added" has become something of a philanthropic cliché, CCI grantees were not only positive

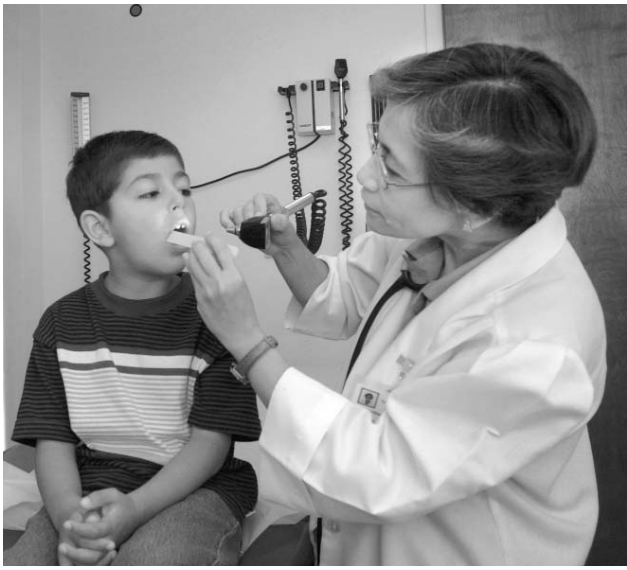
but enthusiastic about the "non-cash" benefits their organizations had received from their participation in the Initiative. CCI is seen as an "interactive resource" that has "educated the field about what is possible" by its convenings, Reports to the Field, website, and special programs such as the Harvard School of Public Health clinician workshops. There is genuine gratitude among grantees for exposure to the talented consultants that CCI has brought in from outside the field. They have also benefited significantly from the various assessment tools which CCI has introduced. The Community Clinic Voice extranet is also seen as a unique resource to "encourage clinics to learn from each other."

CCI has not only modeled an effective learning process, but it has also become a place where important conversations about the future of the field are taking place. One grantee observed, CCI is a "venue for discussion of substantive content about managing a mature movement of organizations that we're unable to find elsewhere." In the words of another participant, "CCI gatherings are a place where you are encouraged to be curious and to stretch your thinking … to ask 'what if?' and 'what else is possible?'" It is not always a comfortable process, but participants are challenged to engage their intellects, always with a common goal in mind.

What's been a challenge? Certainly it would have been ideal if the quality of learning environment enjoyed by the Steering Committee could have been experienced by even more participants. CCI has done more than most initiatives to share the knowledge gained across the field, but it's never quite the same as face-to-face interaction. The opportunity for learning and reflection was also not embraced uniformly across the universe of CCI participants. Many clinics still tend to view time for reflection as an unaffordable luxury. Yet those who have been most engaged in the CCI learning community have found it to be an excellent investment of their time.

IT as a portal

CCI has had a clear focus on information technology and capacity building. But the foundation on which all its work rests is a commitment to underserved populations and to social justice that is shared with the community health centers that it supports. Throughout the life of the Initiative, it has oriented all of its efforts toward the "sun" of improved health outcomes and healthier communities. That perspective has helped clinics to integrate seemingly disconnected clinical and business practices with their larger sense of mission.



Particularly striking is the way in which CCI's focus on information technology has served as a portal for deeper and more meaningful explorations of institutional capacity among community health centers. It's no secret that most non-profit clinics historically have not had the capital to underwrite the kinds of infrastructure that would be considered essential in a for-profit corporation. As a consequence,

> *"CCI has not only modeled an effective learning process, but it has also become a place where important conversations about the future of the field are taking place."*

conversations about institutional capacity with funders tend to be awkward at best. What incentive is there for a grantseeking organization to reveal its "family business" to an outsider?

But by honing in on IT (where it was generally understood that most clinics were at a low level of development), CCI helped to legitimize more open and honest conversations about larger capacity issues in ways that would have been hard to anticipate at the outset of the Initiative. As one grantee observed, "CCI has brought clinics to a whole other level of capacity. Having IT in place has enhanced the credibility of community health centers. It was a big help with 330 applications. Having funding for capital helped as well. By combining it with IT, it helped us think about our other technology needs."

A catalyst for innovation

In sum, CCI has managed to carve out a unique niche in the clinic world. It is not only a funder but also a trusted resource and sounding board for new ideas. It has also become a forum for substantive dialogue among the leaders of the field. Yet, in the words of one grantee, CCI also "struck a balance of being 'of' clinics yet separate, and it has walked that line well. It has some accountability to the field, but it is able to speak with an independent voice." Another grantee provided a slight variation on this theme: "CCI is a player that is separate from clinics in that it's willing to push the field where appropriate, but it's definitely viewed as an asset."

> *"To the vast majority of its participants, CCI has been much more than just a grants program. It has fulfilled its promise as a catalyst for innovation."*

Time and again in the course of my interviews, clinic leaders mused on the progress that has been made in the past six years. When CCI began, most clinics did not see IT as a priority, and many resisted a conversation on the topic. It's not an exaggeration to say that the majority now see it as essential to their operations. An Executive Director of a regional consortium recounted with amazement, "the self assessment got people talking and thinking about IT. The Docs got hooked in via the PDAs. They now say they don't know how they practiced before them. Medical Directors now want to come to IT meetings!" To the vast majority of its participants, CCI has been much more than just a grants program. It has fulfilled its promise as a catalyst for innovation.

While much has been accomplished, we have no illusions about how much work remains to be done to enable community health centers to survive and thrive in a rapidly changing health care environment. As one of our interviewees remarked, "the next phase of this work is vitally important, and made more difficult because it will require deeper involvement and the stakes (and expectations) are higher." But whether or not there is a CCI 2.0, community health centers throughout California are thinking about the future and working together in new ways that they simply couldn't have envisioned six years ago.

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