California HealthCare Foundation

Health Information Technology: Are Long Term Care Providers Ready?

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Prepared for:

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About the Foundation

The **California HealthCare Foundation**, based in Oakland, California, is an independent philanthropy committed to improving California's health care delivery and financing systems. Formed in 1996, our goal is to ensure that all Californians have access to affordable, quality health care. For more information, visit us online at **www.chcf.org**.

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Executive Summary

HEALTH INFORMATION TECHNOLOGY (HIT) CAN be very valuable to long term care providers if the realities of their environment are taken into account during the planning process. To better understand HIT readiness in the state's nursing homes, residential care facilities, and community-based service providers, the California HealthCare Foundation (CHCF) supported research, focus groups, and a survey of long term care providers to explore three questions.

1. What is the current state of HIT planning and adoption in long term care?
2. How ready are providers to invest in HIT and manage its implementation? What are the perceived benefits and barriers?
3. What should providers, policymakers, and community stakeholders know and do to support HIT adoption and successful use in long term care?

Findings on the Current State of HIT in Long Term Care

The findings suggest that HIT implementation has been more a reaction to crisis than a voluntary investment based on an overall strategy. The main drivers of provider HIT decisions have been state and federal payment and certification requirements; long term care leaders tend look to government for direction on HIT adoption. A typical comment: "If an HIT application is a requirement to conduct business, then we'll make the move."

Other findings about the current state of HIT in long term care facilities:

- HIT is used primarily for state or federal payment and certification requirements.
- There is minimal use of clinical HIT applications.
- HIT systems are not integrated.
- HIT systems are underused.

The two main drivers of adoption are: (1) progressive leadership that understands HIT and "thinks out of the box"; or (2) affiliation with a hospital system that is making the investment in HIT. Without such impetus, focus group participants

believed the state or federal government would remain the ultimate driver of HIT adoption. Long term care providers identified several reasons they are not further along in adopting HIT: lack of capital resources; difficulty in finding HIT products that meet their need (a simple, user-friendly, comprehensive clinical system that interfaces with existing systems); lack of evidence that HIT will have a positive impact on quality of care and operational efficiencies; risk of new state or federal requirements; and lack of hardware and technical support staff.

Readiness findings. Overall, long term care provider readiness for HIT is low. The research identified the following causes:

- ***Lack of strategic planning.*** Long term care providers have conducted little or no strategic planning related to HIT.
- ***Undervaluation of HIT benefits in improving quality.*** Providers tended to view technology as automated charting and the elimination of the paper clutter, rather than a tool to summarize and track trends in clinical information to improve provider decision-making.
- ***Lack of time and HIT knowledge.*** System selection and implementation planning is difficult to impossible for administrators and clinical leaders who are focused on day-to-day operations and crises at their facilities.
- ***Underestimation of change management needs.*** Providers viewed change management needs and challenges in the short term. They tended to focus on: basic computer training of staff at all levels; the need to make HIT relevant to the staff to gain acceptance; and the transition from paper to electronic.
- ***Fear of technology.*** Many providers cited outright fear of computers as a hindrance to moving forward. One said: "The problem is that within our industry we have a lot of nurses who have been there a long time, and they're scared to death of anything electronic, pushing any kind of a button and doing something wrong."

Suggested next steps for providers, policymakers, and community stakeholders. Thought leaders suggest three next steps: (1) elevate HIT in long term care on the state's priority list; (2) begin thinking about information on a larger scale; and (3) support forums to share learning across providers.

Providers identified three areas that would be most helpful: (1) establish a California state agenda for HIT in long term care; (2) create avenues for HIT system integration; and (3) reduce barriers by providing grant dollars to cover pilot initiatives, demonstrating the HIT business case, supporting vendor selection and the HIT planning process with tools and education, and promoting collaborative provider efforts to implement HIT.

I. Introduction

Three years ago, President Bush issued an executive order establishing the position of National Health Information Technology Coordinator in the U.S. Department of Health and Human Services.[1] The charge was to lead a "nationwide implementation of an interoperable health information technology infrastructure [including adoption of electronic health record systems] to improve the quality and efficiency of health care" by 2014.[2]

What have we learned since 2004? First, provider experiences shed light on the gap between the promise of health information technology (HIT) to improve health care and the realities of execution. For example, HIT adoption by hospitals and physician practices has been slower than expected. Approximately 24 percent of physicians are using electronic health records (EHRs) and 5 percent of hospitals are using computerized physician order entry (CPOE).[3] Second, strong evidence showing the impact of HIT on quality and costs is limited.[4] Third, while experts agree that HIT is critical to transforming the health care delivery system, there is growing recognition that HIT is only one component of an improvement strategy. HIT provides the information capacity and tools to accomplish a variety of strategies (such as improving clinical decision-making, implementing a community-based chronic care model, conducting effective multidisciplinary team meetings, and enhancing process and outcome management).[5, 6] But more than information capacity and tools are needed to make these strategies a success.

A variety of individuals and organizations are attempting to further the cause of effective nationwide HIT implementation, including provider trade associations, health care researchers, consortiums of IT vendors, quality improvement organizations (QIOs), and providers. They are building on the HIT business case, looking into barriers and challenges from the provider perspective, and developing practical tools to support effective implementation.[7, 8]

HIT and Long Term Care in California

Where does long term care fit in terms of HIT adoption and use? It is an important question because long term care providers care for the fastest-growing segment of the population and account for a high proportion of the health care dollars spent. The Congressional Budget Office reports that long term health care costs will reach $207 billion a year by 2020, and $346 billion a year by 2040. But providers of long term care have lagged behind physicians and hospitals in adoption of HIT. A recent U.S. Department of Health and Human Services Assistant Secretary for Planning and Evaluation (ASPE) report identified the "lack of robust evidence on HIT costs and benefits is especially conspicuous in the post acute care and long term care environments."[9] The Agency for Healthcare Research and Quality has funded several grants related to HIT adoption and impact on quality and safety in long term care.[10] Bills were introduced in the U.S. House and Senate in July 2006 to establish a national consortium to study the impact of technology on the health care of an aging population. Recently, Intel began its first clinical trial of a system to track the progression of Parkinson's disease and also received a grant from NIH for a trial to monitor the disease.

Amid this national activity, California is poised to become a leader in HIT. The governor announced an executive order to convene an eHealth Action Forum to gather input and develop a comprehensive state policy agenda for health IT by mid-2007. The state has the potential to lead in long term care HIT as well. California has more LTC providers than any other state: some 1,200 nursing homes, 14,000 residential care settings with varying levels of care, and a vast array of community-based services. The state's total long term care spending was close to $14 billion in FY 2005-06, representing an annual growth of 7.5 percent from FY 2001-02.[11]

Pressures on California's long term care providers are increasing. There are concerns over quality of care, care coordination between settings, and a market transition toward home- and community-based providers and away from nursing homes. There is potential for HIT to be of great value to long term care providers if the realities of their environment are taken into account in planning for successful adoption and use.[11, 12, 13, 14, 15, 16, 17]

To better understand HIT readiness in the state's nursing homes, residential care facilities, and community-based service providers, the California HealthCare Foundation (CHCF) supported research to explore the following questions:

1. What is the current state of HIT planning and adoption in long term care provider settings?
2. How ready are providers to invest and manage the implementation of HIT? What are the perceived benefits and barriers?
3. What should providers, policymakers, and community stakeholders know and do to support HIT adoption and successful use in long term care?

Table 1: Overview of Research Questions and Sources

Question	Source
1. What is the current state of HIT planning and adoption in long term care?	• Literature review • Survey of long term care providers • Focus groups of providers • Interviews with CA long term care and HIT thought leaders
2. How ready are providers to invest and manage the implementation of HIT? What are the perceived benefits and barriers?	• Survey of long term care providers • Focus groups of providers • Interviews with CA early adopters
3. What should providers, policymakers, and community stakeholders know and do to support HIT adoption and successful use in long term care?	• Focus groups of providers • Interviews with CA long term care and HIT thought leaders

Methods

A number of methods and sources were used to gather comprehensive information, as summarized in Table 1.

Literature review. The purpose of the literature review was to identify HIT trends, drivers, and barriers in long term care settings, both nationally and in California. The review focused on literature published from 2004 to the present. Key search parameters included health information technology and long term care providers (nursing homes, RCFEs, community providers), electronic health records (EHRs) and long term care, and health information exchange and long term care providers.

Survey of long term care providers. In collaboration with the California Association of Health Facilities (CAHF) and Aging Services of California, an electronic survey was distributed to selected members in October and November 2006. Selection criteria included the following:

- Recipient is with a skilled nursing facility or assisted-living facility;
- Recipient is with a facility considering HIT purchase or gathering information; and
- Recipient is a decisionmaker for HIT, including administrators, clinical leaders, and IT personnel.

A total of 200 surveys were distributed—150 to skilled nursing facilities (SNFs) and 50 to assisted-living facilities with more than 75 beds. The response rate was 47 percent from SNFs and 24 percent from assisted-living facilities. A total of 103 surveys were returned (82 were done electronically and 21 were completed at the end of focus group sessions). Of the 80 SNFs that responded, 39 were part of a multi-facility organization; 34 were free-standing; and seven were affiliated with a hospital or system. In terms of financial arrangements, 71 percent of responding SNFs were for-profit; 25 percent were nonprofit; and 4 percent were government sponsored.

Of the 18 responding assisted-living facilities or residential care facilities for the elderly (RCFEs), all were nonprofit. Also responding were five continuing care retirement communities (CCRCs).

Focus groups of providers. In order to deepen understanding of the survey and literature findings, qualitative information was gathered through five focus groups convened in October 2006 in Los Angeles, Sacramento, and Fremont. All invitees were from facilities with an interest in HIT but that had not implemented a full EHR to date; the invited individuals were involved in HIT decisions.

Three focus groups for SNFs included 18 administrators or nursing directors. The average SNF size was 100 beds.[18] A focus group for RCFEs with more than 75 beds was made up of six administrators or nursing directors. Thirty participants, including directors and care managers, attended a focus group for Multipurpose Senior Services Programs (MSSPs).

Interviews with early adopters. To incorporate insights into readiness from early adopters—California long term care providers who have implemented technology beyond state and federal requirements—three interviews were conducted. They included one multi-facility/multi-level nonprofit organization; one for-profit multi-facility nursing home organization; and one MSSP.

Interviews with California's long term care and HIT thought leaders. To incorporate perceived drivers and challenges to widespread HIT use by long term care providers, nine interviews were conducted with stakeholders and HIT experts in California. These experts provided insights on successful HIT implementation. Interviewees from the following organizations were represented: California Department on Aging; California Department of Health Services, Licensure and Certification; CalRHIO; Council on Aging—Silicon Valley; and the California Alzheimer's Association. Also, interviewees included physician and long term care HIT representatives.

II. What Is the Current State of HIT in Long Term Care?

HIT IMPLEMENTATION IN LONG TERM CARE HAS been more a reaction to crisis than a voluntary investment based on an overall strategy. The main drivers of provider HIT decisions have been state and federal payment and certification requirements. Long term care leaders tend to look to state or federal government for direction on HIT adoption. A typical comment: "If an HIT application is a requirement to conduct business, then we'll make the move." A number of overall findings suggest the current state of HIT in long term care facilities.

- ***HIT is used primarily for state or federal payment and certification requirements.*** The large majority of California long term care providers (97 percent of nursing homes and 83 percent of RCFEs surveyed) use HIT for business or administrative functions to support federal or state payment and certification requirements. For example, all nursing home providers use electronic systems for MDS (minimum data set) reporting. Similarly for community-based providers, Area Agencies on Aging require standard electronic client information for most of the programs funded by the state (such as Linkages, senior nutrition services, and adult day care resources).
- ***There is minimal use of clinical HIT applications.*** Only about 20 percent of long term care providers use clinical HIT applications such as assessments and progress note documentation; medication and treatment administration; care planning; electronic prescribing; and decision-support tools. Some 21 percent of nursing homes and 17 percent of RCFE survey responders use clinical charting applications. Medication administration applications are used by 18 percent of nursing homes and 22 percent of RCFE responders.
- ***HIT systems are not integrated.*** Most providers have multiple systems for administrative and financial functions, but the programs are not integrated and often require more staff time to get the work done than with paper-based processes. Said one nursing home provider: "We have to go in and out of systems and have multiple log ons. We still enter information more than once."

- ***HIT systems are underused.*** A typical provider comment is that current HIT systems are underused because they are too complex for the staff or are not flexible enough to meet a provider's unique needs. User interfaces frequently are not user-friendly, intuitive, or easy to learn. System modifications that are routinely needed to support staff use are often too difficult or expensive to program, forcing facilities to use the product "out of the box." One provider commented: "When we want to add a custom data element, it's impossible, so it's just left out." Another said: "Once applications are implemented they are often neglected."

Table 2 offers a snapshot view of where SNFs and RCFEs are in terms of HIT implementation beyond federal and state requirements. Multi-facility organizations and providers with hospital affiliation are further along in the HIT implementation progress. Apparently, organization size increases the economies of scale, and hospital affiliation equates to access to HIT systems and resources. At the other end of the spectrum, 50 percent of free-standing nursing facilities and 50 percent of RCFEs with more than 75 beds are at the initial stage of gathering information or have not started.

It is important to note that within the next year HIT is not a high priority for most providers, as Table 3 illustrates.

Table 2: HIT Implementation Progress

	SNF (hosp affiliated)	SNF (multi-facility)	SNF (free-standing)	RCFE (>75 beds)
Implementation (including fully or partially implemented or in progress)	72%	46%	25%	44%
System being developed	14%	0%	11%	0%
System selection stage	0%	5%	7%	6%
Planning stage (timeline established)	14%	14%	7%	0%
Gathering information (no timeline established)	0%	35%	32%	39%
Have not started	0%	0%	18%	11%
N=	7	39	34	18

Table 3: How Important Is HIT in Achieving Organizational Priorities?

Percent Responding – Very Important	SNF (hosp affiliated)	SNF (multi-facility)	SNF (free-standing)	RCFE (>75 beds)
Next year	100%	55%	40%	31%
Next 1-3 years	100%	61%	50%	47%
Next 3 – 5 years	100%	76%	58%	55%
N=	7	39	34	18

Provider Perceptions about HIT Value

Although providers have made limited headway in moving HIT beyond federal and state requirements, they nevertheless perceive that it has great potential in the long term care environment. They believe HIT can have an impact on both quality of care delivery and daily operations, but the expectations of reducing operational inefficiencies are much more specific. In terms of quality improvement, providers perceive that HIT has the potential to:

- ***Promote standardized documentation.*** All long term provider groups see HIT as valuable for establishing a core set of uniform data elements and a standardized format for documentation. They perceive that standardization eliminates redundancies in charting, increases documentation consistency, improves communications across disciplines, and supports monitoring of clinical protocols.
- ***Decrease errors.*** Providers believe HIT is invaluable for reducing problems related to illegible handwriting, including high transcription costs and medication errors. It enables system checks to automatically monitor for incomplete or inconsistent documentation, thus eliminating documentation errors due to charting omissions. One provider said: "Sometimes we are reviewing chart documentation by someone who no longer works here and we have to guess at the interpretation."
- ***Provide timely monitors for standards of care.*** Providers believe HIT allows easy and more frequent monitoring of compliance with clinical guidelines and can eliminate quarterly manual review of charts. HIT can flag a potential change in a resident's condition, enabling a timely response. One provider stated: "I would be able to review what actually occurred on each shift, see trends, and know where to focus my efforts to change practice patterns."

Providers cited specific opportunities for HIT to reduce operational inefficiencies and increase staff satisfaction in these ways:

- ***Improve regulatory compliance.*** Providers cited technology as a means to improve and streamline regulatory compliance for required documentation and mandatory reporting through automated prompts and reminders.
- ***Reduce paperwork and eliminate redundancies.*** Assessments, medication administration, and required reporting can be done quickly so that clinical staff can spend more time caring for individuals. Said one RCFE provider: "HIT can eliminate the need to re-document or re-enter resident information, resulting in increased staff satisfaction."
- ***Improves charge capture for billing.*** All providers cited technology as a means to reduce time spent pulling together clinical and financial information for billing. Said one RCFE provider: "This compilation is very, very time consuming." Costs would also be reduced. Said a nursing home provider: "Having the system provide a final report and tell me discrepancies instead of paying staff to review charts would save me thousands of dollars each month on triple checks."
- ***Reduce time spent on chart audits.*** Monitoring compliance of nursing and CNA charting in nursing homes requires extensive manual review of multiple log books and disparate forms. One nursing home provider said: "You could keep track of the incomplete notes and charting. You could print reports of what's incomplete instead of having to do a medical records audit."
- ***Streamline communication among providers.*** Providers believe HIT can support timely and easy access to clinical information, such as clinical history, medication use, and test results for new admissions. They see great value in being able to access and share the same information, especially between remote providers. One participant noted that:

"Electronic communication of orders from physicians to nursing home staff would save countless staff hours."

Drivers and Barriers to Adoption

The two main drivers of adoption are: (1) progressive leadership that understands HIT and "thinks out of the box," or (2) affiliation with a hospital system that is making the investment in HIT. Without such impetus, participants believed the state or federal government would remain the ultimate driver of HIT adoption. One nursing home provider summarized a sentiment shared by several participants: "Unless somebody comes in and says this is what you need to do, it's not going to happen."

A secondary driver of HIT adoption is participation in grant-funded pilot projects. Interviews with early adopters suggested that grant money to subsidize HIT and project management support was often the impetus for progress.

The top barriers to HIT adoption, according to survey respondents, are shown in Table 4. To learn more about barriers, researchers asked the focus group participants this question: "What are the main reasons you are not further along in adopting HIT?" Their responses include:

- ***Lack of capital resources.*** A typical comment: "We don't have the funding from the government. We don't have the ability to put in these [systems] that I would love to put in. They don't pay us enough to take care of the patient properly as it is."
- ***Difficulty in finding HIT products that meet needs.*** Providers want a simple, user-friendly, comprehensive clinical system that interfaces with existing administrative and financial systems. However, participants cited frustrations with HIT products they were unable to use "out of the box."
- ***Lack of proven benefit.*** Despite understanding the promise of HIT, providers do not see concrete evidence that it will have a positive impact on quality of care and operational efficiencies in the long term care environment. Several providers expressed reluctance to spend time and invest dollars in HIT. A typical comment: "The money is not there, especially if we are not guaranteed the product is going to work."
- ***Risk of new state or federal requirements.*** Because state and federal regulations can change without warning, providers worry that systems purchased now might not integrate with government mandated products or requirements later on. One participant said: "The risk is that the state says 'we don't want you using that system because it doesn't talk to us correctly.' It's a big risk for us."
- ***Lack of hardware and technical support staff.*** Infrastructure is often inadequate to support HIT. Said one nursing home provider: "Some of our buildings are over 40 years old and we just got email." Facilities without dedicated IT staff often use employees without computer experience to fill in that role. Most facilities are unsure of staffing needs to implement HIT but doubt that enough staff is available to support a project.

Table 4. Barriers to HIT Adoption

Top 2 responses for each group listed (Percent responding 'significant barrier')	SNF Hosp (n=5)	SNF Multi (n=32)	SNF Free-standing (n=27)	RCFE (n=13)
Lack of capital resources	80%	44%	78%	54%
Lack of professional IT staff	60%	31%	44%	62%
IT product not integrated with other systems	40%	56%	44%	85%
Staff lack computer skills	40%	53%	48%	85%
Lack of reimbursement for using IT	20%	17%	60%	29%

III. Are Providers Ready to Adopt HIT?

The focus group participants were asked, "Beyond administrative and financial applications, what are the top three priorities for HIT implementation?" Clinical documentation and clinical data exchange were the top priorities, as Table 5 shows.

Table 5. Top Priorities for HIT Implementation (Beyond Administrative and Financial)

Priority clinical applications	SNF	RCFE
Clinical documentation (ADLs, daily notes, physician orders, results)	93%	66%
Clinical data exchange (electronic communications of resident information with physicians, hospitals, providers in community and insurance eligibility information available on one system for Medicare, Medi Cal, HMOs)	60%	50%
Medication administration	60%	33%
Care planning	40%	33%
Monitoring and messaging systems (BP, blood glucose, weight scales, and electronic thermometers)	27%	33%
Electronic prescribing	27%	33%

Clinical applications that received less than a 20 percent response are not shown in Table 5. Those that did not make the list include: telehealth/telemedicine; clinical decision support; caregiver or resident access to health record; sensor-based monitoring (device for monitoring falls); online health education and wellness; online referrals or assessments to providers; and universal electronic medical records that would follow patients from setting to setting.

Readiness Findings

The research findings on provider readiness to implement HIT are a synthesis of survey responses, focus group input, and early adopter interviews. For this research, provider readiness—the level of preparedness of leadership and the organization as a whole to implement HIT—excludes financial and product-related barriers. Overall, long term care provider readiness for HIT is low and is marked by the following:

- ***Lack of strategic planning.*** Long term care providers have conducted little or no strategic planning related to HIT. Plans that do exist typically have been authored by an IT person versus jointly by clinical, administrative, financial,

and IT leadership. Said one RCFE clinical leader: "We are upgrading systems, but I think we're going to be very disappointed in the outcome, because it doesn't connect to the places it needs to connect. We did not think through the next HIT investment from all perspectives—clinical, administrative, and financial."

- ***Undervaluation of HIT benefits in improving quality.*** Long term care providers tended to view technology as automated charting and the elimination of the paper clutter, rather than a tool to summarize and track trends in clinical information. Leaders with a strong background in quality improvement better understood the value of HIT to support clinical analysis and decision-making.
- ***Lack of time and HIT knowledge.*** System selection and implementation planning is difficult or impossible for administrators and clinical leaders who are focused on day-to-day operations and crises at their facilities. Learning about the details of systems does not usually have a high priority among long term care leaders. No participants were familiar with a systematic, objective vendor-selection process. One said: "I would just call around and ask colleagues to show me what they've got. What are the pros and cons of your system?" Also, all participants expressed concern over their lack of knowledge about managing the HIT implementation process.
- ***Underestimation of change management needs.*** Participants viewed change management needs and challenges in the short term. They tended to focus on: basic computer training of staff at all levels; the need to make HIT relevant to the staff to gain acceptance; and the transition from paper to electronic records. The multi-lingual environment was also cited as posing challenges among staff; the added dimension of interfacing with computer screens with required data entry fields is especially difficult when many read English as a second language. Some longer-term change management needs were not mentioned (i.e., strategies to address the impact of technology on day-to-day clinical activities; routine processes associated with care delivery; and communication among disciplines).
- ***Fear of technology.*** Many providers cited outright fear of computers as a hindrance to moving forward. One said: "The problem is that within our industry we have a lot of nurses who have been there a long time, and they're scared to death of anything electronic, pushing any kind of a button and doing something wrong."

IV. Nuts and Bolts Insights from Those Who Know

THOUGHT LEADERS AND EARLY ADOPTERS offered insights for providers engaged in or about to start HIT implementation.

- ***Technology is not about efficiency, at least not initially.*** The value of HIT is access to information that is not otherwise accessible or takes an inordinate amount of time to assemble.
- ***Plan for sufficient resources.*** Successful implementation requires dedicated project hours for training and ongoing support. It is important to plan realistically for resources to support staff during the initial phases of the project, since training needs often go well beyond what is provided by the vendor. A large component is teaching staff to use the technology to do daily work; this responsibility typically falls on the facility. Said an early adopter, "There is not enough time and not enough manpower to do everything that needs to be done. It is difficult to anticipate all needs without having prior experience with system implementation, and there are few experienced peers (at other facilities) to support your effort."
- ***Engage in shared learning.*** Be a part of a forum, a virtual or real group, for shared learning. Participate in standardizing data elements across multiple providers. Get in the practice of group decision-making. "Most likely the models for best practice will emerge from multi-facility organizations or virtual groups working together to understand how HIT can be used to have an impact on quality and safety."
- ***Don't wait for a full EHR.*** Focus initial HIT implementation on a minimum set of clinical data elements, such as problem lists, orders, CNA documentation, discharge summaries, and medication lists. Focus on how HIT can improve the transitions of elderly persons between settings and communications among all caregivers.
- ***Focus on process improvement versus technology.*** Early adopters emphasize the need to think beyond the challenges of technology installation and stay focused on breakthroughs in daily processes of providing care, such as person-centered care, evidence-based practices, and new models in managing chronic disease.

- ***Redesign workflow prior to implementing HIT.*** Often implementation timelines do not build in adequate time to consider workflow redesign implications prior to system rollout. Said one MSSP respondent: "We took our paper system and went to computer. Looking back, this was absurd. We should have cut down on assessments and paperwork prior to going to computer. This was a fundamental flaw in our process."
- ***Recognize limits to capacity for change among leadership and staff.*** A nursing home early adopter emphasized: "To ensure success you need to have consistency in leadership and focus throughout the entire project. You need leadership's buy-in, complete understanding of the project, and continued support. You can't let up. It's too fragile at first." Also, "We expected staff to transition from a paper to electronic system too quickly. Implementation needed to be a more gradual process." Prepare and plan for leadership turnover; this includes anyone holding a position that is unique to the project.

Toward an EHR - CNA Documentation at Country Villa Health Services

Country Villa Health Services, a multi-center organization offering complex medical care, rehabilitation, sub-acute, skilled nursing, Alzheimer's, long term skilled nursing care, and assisted living services, is taking steps toward an EHR. One step is automating CNA (clinical nurse assistant) daily documentation and using the information to support clinical decision-making of front-line care givers.

Rationale. If the CNAs spend the most time with residents and are documenting key observations every shift, doesn't it make sense to provide easy access to this information by the entire care team?

Steps taken. Three facilities implemented digital pen technology for CNA documentation as part of an AHRQ/CHCF/Lumetra collaborative project to standardize documentation; develop reports based on the documentation; and integrate clinical report use into multidisciplinary team meetings for resident care planning. The project was implemented facility-wide in May 2006. All CNAs use digital pens for daily documentation. Several steps were taken to support the start-up and ongoing effort:

- Identified project leads and champions to integrate report use into weekly care planning decisions.
- Weekly review of clinical reports with front line staff.
- Implemented 5-minute CNA stand-up meetings with dietary staff to review nutritional information.
- Implemented standardized CNA change-of-shift format to promote RN and CNA team communication.

Biggest challenge. "After overcoming minor hardware and training issues early in the project, the greatest challenge by far has been the integration of the clinical reports into daily work."

Lessons learned.

- Daily process changes are immense and should be given the most consideration before HIT implementation.
- To use technology effectively requires a total shift in the way work is performed.
- Workflow changes are a huge challenge and require continual support by leadership.
- Don't underestimate the amount of ongoing CNA training needs.
- Be consistent in leadership to support the project and maintain focus on objectives.

What's next? Country Villa is developing a strategic plan for an EHR across all facilities. "We are early in the process, still trying to determine the best approach for moving forward with all of the systems that we currently have" The organization has started the vendor research process and is conducting needs assessments and preparing an RFP.

Electronic Health Records (EHR) Implementation at Eskaton

Eskaton, northern California provider of health, housing, and social services for seniors, is committed to being a leader in the service area. Their objectives include: providing more bedside care, focusing on clinical effectiveness, decreasing staff turnover by improving working conditions, and decreasing inefficiencies in documentation and paperwork. Leadership decided that HIT was important to achieve each objective. "We moved forward with the decision to purchase and implement health information technology based on a combination of both internal culture and external pressures."

Steps taken. Eskaton selected an EHR system in approximately six months. The process was supported by an internal team of 14 people including leadership, HIT, RN, dietician, and clinical consultants. The team took several steps:

- Established a list of top vendors and products that met their needs, and conducted eight site visits.
- Planned implementation in three phases over 18 months. The first phase included MDS and care plans. The second phase addressed nursing assessments at bedside and certified nurse assistant (CNA) documentation. The third phase covered medication administration.
- Hired a full time trainer during the first phase.
- Assessed and upgraded hardware.
- Prepared direct care givers by frequent communication about plans and what to expect.
- Identified champions on each unit.

Biggest challenge. The technical infrastructure was the biggest challenge: "We needed to retrofit hardware in the older buildings."

Lessons learned.

- Involve a variety of stakeholders during the selection process. "If a systematic selection process is bypassed, you risk system(s) being selected for one purpose that will not meet the future needs of the entire group. Keep in mind that paying for add-on, menu-based items can increase your costs over the long term. We found that package pricing was better for us."
- Systematically implement each stage. "Remember that staff can only handle so much change at once. Each stage should be done well and accepted or you will not sustain compliance and momentum."

What's next? Eskaton is wiring all new retirement living campuses for HIT. "We are focusing on developing plans for future HIT investment and use." Two areas include:

- How to use HIT to support people's independence in their own homes, yet connected to their friends and family support networks; and
- How HIT supports interaction of providers and residents as they move to different levels of care, focusing on continuity.

V. Recommendations for Policymakers and Decisionmakers

One purpose of this research is to start a dialogue by identifying important factors for providers, policymakers, and community leaders to consider in promoting HIT adoption and use. Several next steps were put forth by providers and thought leaders to help support progress.

- ***Establish a California agenda for HIT in long term care.*** Providers and thought leaders said it is crucial to elevate this function on the state's priority list to promote visibility and provide the kind of strong state leadership that has been lacking. Many providers cite a fragmented approach to HIT adoption, a lack of common standards, and continued barriers to sharing information. One respondent commented: "Without executive level sponsorship, data silos across providers will continue and become an excuse not to do anything." Another provider said: "Long term care populations are vulnerable and high risk and therefore need to be part of the state plan."
- ***Think about information on a large scale.*** Create avenues for HIT system integration across facilities, organizations, counties, and states. Encourage a cooperative effort of all long term care trade associations to discuss minimum requirements for sharing information across settings. One respondent envisioned that national-level movers and shakers coming together would increase visibility and influence the buy-in of legislators. Respondents want to avoid problems that hospitals encountered in adopting IT, when many facilities believed they were unique, and therefore selected different systems. As one respondent put it: "We cannot make this mistake in long term care."
- ***Promote collaboration and shared learning.*** All participants agreed it is important to work together. Two avenues are collaborative networks that support implementation and forums to share best HIT practices across providers. Said one respondent: "Providers need to know about peers who have demonstrated success, established a business case, and met their objectives."
- ***Provide grant dollars to cover pilot initiatives.*** Subsidized HIT pilot efforts are an effective way to promote implementation in long term care. Providers wanted opportunities to pilot a product before making a final decision. They agreed that such learning helps other organizations as

well. Said one provider: "If you had somebody willing to be the pilot for a project, the rest of us would be watching that very closely."

- ***Demonstrate the HIT business case.*** Support evaluation of HIT applications in long term care and the development of concrete evidence of the impact on quality and efficiency. Make the information available in ways that can be presented to decisionmakers and owners. One respondent said: "In order to demonstrate the cost-effectiveness of HIT, you really have to find an overpowering way of either making or saving money."
- ***Support the vendor selection and planning process.*** All participants agreed that it would be valuable to know about experiences and "lessons learned" from early adopters and to have access to a list of accredited or evaluated vendors. Most thought it would be useful to learn first-hand about others' successful experiences: what products were evaluated and why; what was eventually selected and why; the pros and cons; and the financial and clinical impact.

VI. Appendix: List of Expert Interviews

Thought-Leaders in California: Long Term Care & HIT

Manuel Altamirano, *Director*
CareAccess

Kathleen J. Billingsley, R.N., *Deputy Director*
California Department of Health Services, Licensing and Certification

Lora Connolly, *Acting Director*
California Department of Aging

Ann Donovan, *Director of Projects*
CalRHIO

William H. Fisher, *Chief Executive Officer*
California Alzheimer's Association

James Mittelberger M.D., M.P.H., C.M.D., F.A.C.P., *Chief*, Division of Geriatrics
President, OakCare Medical Group
Alameda County Medical Center

Monique Parrish, Dr.P.H., M.P.H., L.C.S.W.
LifeCourse Strategies

Joseph Rodrigues
State Long Term Care Ombudsman
California Department of Aging

Stephen M. Schmoll, *Executive Director*
Council On Aging, Silicon Valley

Early Adopters of HIT

Alan Gibson, *Director,* CQI and Customer Service, Country Villa Health Services

Janet Heath, M.A., *Director*
University of California, Davis
Care Management MSSP/Linkages/Caregiver Support Program

Arlene Phalen Hostetter, M.S.W., *Director*
Multipurpose Senior Services Programs (MSSP)

Sheri Peifer, *Vice President, Research and Strategic Planning*
Eskaton Senior Residences and Services

Teri Tift, *Director of Clinical Support and Training*
Eskaton Senior Residences and Services

Charles Garcia, *V.P., Information Services*
Eskaton Senior Residences and Services

Ed Walsh, M.S.W., *Manager Coordinated Care Programs*
Riverside County Office On Aging

Endnotes

1. White House, "Executive Order: Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator," April 27, 2004. (www.whitehouse.gov/news/releases/ 2004/04/20040427-4.html)
2. Office of National Coordinator for Health Information Technology, "President's Vision for Health IT," April 2004 (www.hhs.gov/healthit/presvision.html)
3. Jha, Ashish K., et al. October 11, 2006. "How common are electronic records in the United States? A summary of the evidence." *Health Affairs*—Web Exclusive; w496-w507.
4. Chaudhry, Basit, et al., May 2006. "Systematic review: Impact of health information technology on quality, efficiency, and costs of medical care." *Annals of Internal Medicine* 144 (10); 742-752.
5. Sidorov, Jaan. 2006. "It ain't necessarily so: The electronic health record and the unlikely prospect of reducing health care costs." *Health Affairs* 25 (4); 1079-1085.
6. Miller, R., and C West. 2007. "The value of electronic health records in community health centers: Policy implications." *Health Affairs* 26 (1); 206-214.
7. AHIMA: *A Road Map for Health IT in Long Term Care,* December 2005. Available at: www.ahima.org/infocenter/whitepapers/ltc.asp
8. Horn, S., et al. Home IT: *Lessons Learned.* Available at: http://healthit.ahrq.gov/portal/server.pt/gateway/PTARGS_0_1248_132351_0_0_18/Horn percent205-III.ppt
9. Booz Allen Hamilton. *Evaluation Design of the Business Case of Health Information Technology in Long term Care: Final Report.* Washington, D.C.: U.S. Department of Health and Human Services, ASPE Office of Disability, Aging and Long Term Care Policy. July 2006. Available at: http://aspe.hhs.gov/daltcp/reports/2006/BCfinales.htm
10. Teigland, C., et al. Agency for Healthcare Research and Quality. Advances in Patient Safety: Vol 3. *Clinical Informatics and Its Usefulness for Assessing Risk and Preventing Falls and Pressure Ulcers in Nursing Home Environments.*
11. IAO Analysis of the 2006-2007 Budget Bill, February 2006.
12. Wunderlich, G., and P. Kohler. *Building Organizational Capacity, Improving the Quality of Long Term Care. Committee on Improving Quality in Long Term Care.* IOM.
13. Freedman, V., Calkins, M., et al. *Barriers to Implementing Technology in Residential Long term Care Settings.* Washington, DC: U.S. Department of Health and Human Services, ASPE Office of Disability, Aging and Long Term Care Policy. December 2005.
14. Miller, E.A., and V. Mor. *Out of the Shadows: Envisioning a Brighter Future for Long Term Care in America.* Report for the National Commission for Quality Long Term Care. 2006.
15. Thakkar, M., Davis, D. "Risks, barriers, and nenefits of EHR systems: A comparative study based on size of hospital." *Perspectives in Health Information Management* 3:5, Summer 2006. 1-19.
16. Gaylin, D., Goldman, S., et al. *Community Health Center Information Systems Assessment: Issues and Opportunities.* Final Report: NORC at the University of Chicago. October 2005.
17. Parrish, M. *Aging and Long Term Care Integrated Information Systems: A Summary Report for California.* July 2005.
18. All of the participants were from for-profit organizations. The researchers were unable to recruit a mix of participants from nonprofit and for-profit facilities, but believe, based on survey results and early adopter input, that organization size is a more significant factor than profit status.