

# A Road Map for Health IT in Long Term Care

2008–2010



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# A Road Map for Health IT in Long Term Care 2008–2010

At the time President Bush issued his April 27, 2004 Executive Order on health IT, the national health IT agenda appeared to be almost exclusively focused on acute and ambulatory care. In response to this gap, a group of LTC health IT stakeholders mobilized in 2005 to host a summit and develop a road map that recognized the common interests and vision of the LTC industry. U.S. Health and Human Services Secretary Michael Leavitt affirmed the effort, recognizing that interoperable health information technology held considerable promise in facilitating the coordination of care, improving quality and enhancing efficiency in post-acute and long term care.

The 2008–2010 LTC HIT Road Map is an update of the road map created in 2005, and is intended to provide guidance to provider organizations, legislators, regulators, vendors, payors, and other stakeholders. This road map identifies the progress made in the past two years on key action items and formalizes a plan for the next 24 months. The ultimate goal of the road map is to promote the adoption of interoperable health IT in long term care in order to transform our healthcare delivery system

**The LTC HIT Road Map and past Summit materials are available at:**  
[www.ahima.org/meetings/ltc/LTCSummit.asp](http://www.ahima.org/meetings/ltc/LTCSummit.asp)

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## Executive Summary

In 2005, a collaboration of long term care and aging services stakeholders founded the Long Term Care (LTC) Health Information Technology (HIT) summit and published an initial road map for the advancement of health IT in long term care. This document represents an update to the road map, reporting progress, identifying and refining priorities and calling for even more proactive initiative by stakeholders to address the health IT needs of seniors and the organizations who serve them.

The challenges and opportunities for promoting the use of health IT across the aging services spectrum are greater than ever. Formal LTC settings, such as nursing facilities and home health agencies, make up about 10 percent of national health spending. Aging services providers participate in a high percentage of the shared care and transitions of care events are priority areas for health IT interoperability. Even more importantly, seniors consume substantially more than 50 percent of healthcare services and dollars in this country. And, of course, with the first baby boomers formally accessing social security retirement benefits this year, the demographic trends and the increased consumerism associated with them will only intensify these proportions. The convergence of consumerist, demographic, quality and financial challenges demands a broad scale re-invention of how we serve the health and quality of life needs of the aging population.

Since the initial LTC HIT summit, hundreds of thought leaders and stakeholders have built and advanced key action items focused on private and public sector efforts to promote and implement electronic health records (EHRs) and health IT in long term care settings. Participant stakeholders have grown each year to include representatives from federal and state government agencies, IT developers, LTC providers, quality improvement organizations (QIOs), consumer organizations, research groups, and more.

The LTC HIT summits have carried consistent themes from year to year: certification, standards, quality and research. As expected, these themes remain at the top of the national health IT agenda and have advanced considerably. For example, the Certification Commission for Healthcare Information Technology (CCHIT) has implemented certification programs for ambulatory and inpatient EHR systems. This reduces the uncertainty associated with IT investment and puts the impetus on providers to adopt credible, standardized, and interoperable IT systems. In 2007, long term care was added to CCHIT's road map for expanding certification activities. To prepare to work with CCHIT on LTC EHR product certification, industry stakeholders began development of a LTC-Nursing Home EHR System Functional Profile, based on the Health Level 7 (HL7) EHR-S Functional Model. The profile, reflecting industry consensus requirements for an LTC nursing home EHR system, will be made available to CCHIT in second quarter 2008 for their use in development of a LTC EHR product certification process.

Also noteworthy is the creation of the Continuity of Care Document (CCD) standard by HL7 and its endorsement by the Healthcare Information Technology Standards Panel (HITSP). The CCD provides the foundation for standardized transfer/referral, discharge documents, and assessment instruments, all of which are critical in the long term care environment. Consolidated Health Informatics (CHI) content and messaging standards are incorporated into the CCD. Efforts are also underway to apply these standards to other patient assessment instruments such as the Minimum Data Set (MDS), Outcome and Assessment Information Set (OASIS), and the Continuity Assessment Record and Evaluation (CARE) tool.

Since 2005 there has been an increased investment in research focused on HIT adoption and effective use in post acute and LTC settings. The LTC HIT summits are a forum for disseminating the learning and setting the priorities for future study.

The LTC and aging services communities have taken the first steps to transforming our healthcare delivery system and continue to advocate for our place at the national health IT table. While advancements such as

increased health IT adoption rates in SNFs and LTC representation on national workgroups have been achieved, our efforts have just begun.

Our collaboration has demonstrated the timeliness of long term care's insertion into the national health IT agenda and the readiness of LTC providers and consumers to participate in an interoperable healthcare system. LTC brings a unique perspective to the HIT landscape. LTC settings are often intensely interdisciplinary and holistic in their approach to their patients and residents. Hospitality, health, and wellness needs are integrated into service continuums that seek to promote independence and quality of life for their customers. These goals are often pursued in collaboration with a whole spectrum of care, housing and services organizations, and professionals that can unfortunately be, at times, more fragmented than coordinated. Out of these realities, LTC stakeholders must bring particular emphases on consumer centered health and wellness assessment, care and service coordination, and multi-party health information sharing and exchange to the health IT agenda.

The updated road map challenges the aging services spectrum to take ownership of its own future in partnership with its customers. While we continue to seek governmental actions and policies that can accelerate the adoption of health IT, we recognize that we cannot passively wait for regulatory and reimbursement initiatives. Our organizations must proactively develop consumer-centered strategies and products that leverage health IT to serve the emerging needs that seniors and their families are articulating today. This orientation towards action invites partnership and constructive collaboration with government, consumer, and other parts of the healthcare spectrum. The fundamental optimism of this road map is that the building blocks of our agenda are already being put into place, and we now have the opportunity to begin making a real difference for seniors. As you read this road map, we encourage you to identify areas where you and your organization can collaborate and contribute.

### **Recommendations for Action Items and Priorities 2008–2010**

The 2008-2010 LTC HIT Road Map builds on progress made since 2005 and sharpens the focus on promoting health IT implementation, demonstration, and adoption. The road map also challenges the aging services spectrum to engage in a consumer-centric approach to using technology that enables innovation while recognizing the need to simultaneously address critical adoption barriers. No single action item takes precedence over another. Instead, the following action items reflect an interwoven approach to reaching the goal of an interoperable healthcare system that includes stakeholders from long term and post-acute care:

- Strengthen the cross-organizational collaborative of long term care stakeholders to form a strong voice for long term care representation in health information technology advances
- Increase the consumer-focused approach to quality initiatives and health IT, EHR, and e-prescribing
- Advocate and identify tools to support providers in the adoption and implementation of an electronic health record
- Prioritize e-prescribing and medication management initiatives as immediate opportunities to improve patient safety and collaborate with other healthcare sectors
- Certify EHR and e-prescribing solutions to enhance safe medication prescription and administration
- Demonstrate interoperability of health IT products through emerging standards
- Encourage further research investigating relationships between health IT, quality, and outcomes across the full spectrum of aging services and care

## **Immediate Next Steps**

The LTC HIT summits are critical in bringing the LTC community together to develop a consensus and strategy for promoting health information technology and the EHR. It is essential for the community and its constituents to continue these efforts in a broad array of activities. Four immediate steps must be taken to mobilize the LTC community and to continue the momentum generated from the LTC HIT summits. These activities are critical and must be accomplished within a six to twelve month window to maintain the momentum.

- Move to the next step of creating a sustainable LTC HIT collaborative of stakeholder organizations
- Widely disseminate the 2008–2010 LTC HIT Road Map and LTC HIT Summit white papers, case studies, and presentations
- Initiate plans for the next LTC HIT Summit
- Engage consumers and consumer organizations in the process of adopting health IT and EHRs in aging services



# A Road Map for Health IT in Long Term Care

## Introduction and Background

What a difference two years can make. In the 2005 Road Map the Long Term Care Health IT Summit collaborative focused on awareness, mobilization, engagement, identification of needs and calls for standards. Now, in 2008, recognizing significant progress, we sharpen our focus to promote implementation, demonstration, and adoption.

The challenges and opportunities for promoting the use of health IT across the aging services spectrum are greater than ever. Formal LTC settings make up about 10 percent of national health spending. Aging services providers participate in a high percentage of the shared care and transitions of care events that are meant to be supported by health IT interoperability. Even more importantly, seniors themselves consume over 50 percent of total healthcare services and dollars in this country. And, of course, with the first baby boomer formally accessing social security retirement benefits this year, the demographic trends and the increased consumerism associated with them will only intensify these proportions. The convergence of consumerist, demographic, quality and financial challenges demands a broad scale re-invention of how we serve seniors health and quality of life needs. Health IT represents a key enabler of the care and service innovation that will be required.

LTC brings a unique perspective to the health IT landscape. Hospitality, health, and wellness needs are integrated into service continuums that seek to promote independence and quality of life for their customers. These goals are often pursued in collaboration with a whole spectrum of healthcare and aging services organizations that unfortunately can be more fragmented than coordinated. Out of these realities, LTC stakeholders must bring particular emphases on consumer-centered health and wellness assessment, care and service coordination, and multi-party health information sharing and exchange to the health IT agenda.

This road map challenges aging services organizations to take ownership of their future in partnership with its customers. While we continue to seek governmental actions and policies that can accelerate the adoption of health IT, we recognize that we cannot passively await regulatory and reimbursement initiatives. Our organizations must proactively develop consumer-centered strategies and products that leverage health IT to serve the emerging needs that seniors and their families are articulating today. This orientation towards action invites partnership with governmental, consumer, and other parts of the healthcare spectrum. It also commits to constructive collaboration in these partnerships. But, ultimately, it is our industry's initiative that will ensure implementation, demonstration, and adoption progress.

Of course, the 2008 through 2010 road map continues many common themes from the 2005 road map: standards, certification, quality, and research. Yet, in each case, the movement is from wish list to action plan. The fundamental optimism of this road map is that the building blocks of our agenda are already being put into place, and we now have the opportunity to begin making a real difference for seniors. As you read this road map, we encourage you to identify areas that where you and your organization can collaborate and contribute. We look forward to seeing you at our next LTC HIT Summit where we will continue to celebrate progress made and call each other to achieve next steps.

## Progress on 2005 Priorities and Recommendations for Action

In 2005, a group of thought leaders came together for the first LTC HIT Summit and established the first road map which focused on awareness, mobilization, engagement, identification of needs and calls for standards. In the past two years, the LTC industry as a whole has made significant progress in these areas. This progress has helped shape the new 2008 through 2010 road map.

### Action Item: Formalize a cross-organizational collaborative to mobilize the LTC community on health IT and EHR issues.

- Developing a collaborative of LTC stakeholder organizations was essential to mobilize the LTC community, enhance cross-organizational communication, and provide a strong voice for advancing LTC health IT interests where appropriate and possible. The initial goals of the collaborating organizations were:
  - To convene assemblies of stakeholders, particularly thought leaders, to articulate a consensus vision, agenda, and road map for a person-centric EHR; and
  - To develop ways to encourage policy and standards advocacy, monitor relevant activities, and undertake collaborative actions in the interest of the LTC community.
- Initial goals of this LTC stakeholder collaborative were accomplished as evidenced by the following:
  - The collaborative held three summits resulting in an increased cohesion of cooperative industry efforts. These efforts began with the creation and evolution of a LTC road map and progressed to achieving measurable successes in bringing LTC to national discussions where health IT decisions are being shaped and implemented.
  - The initial road map, reflecting a beginning vision of a broad group of stakeholders, was widely circulated throughout the public and private sector.
  - The LTC HIT Summit organizers have been recognized as the leading collaborative of LTC stakeholders in wider discussions, such as in the *Report on the Future of IT in LTC*, prepared for the National Commission for Quality Long Term Care.
  - The Center for Aging Services Technologies (CAST), American Association of Homes and Services for the Aging (AAHSA), American Health Care Association/National Center for Assisted Living (AHCA/NCAL), and other LTC associations joined together to work on the development of the 2005 White House Conference on Aging. This effort brought to the forefront available technologies and programs that, if funding were made available, could be implemented.
  - Summit conveners developed a sustained collaborative that increasingly moved from reactive to proactive, as demonstrated by the following joint activities:
    - Submitted comments on health IT issues and initiatives to the Office of the National Coordinator of Health Information Technology (ONC) and Centers for Medicare and Medicaid Services (CMS)
    - Submitted an environmental scan to CCHIT and succeeded in getting LTC recognized on their expansion road map for EHR product certification
    - Petitioned for and achieved having LTC representation on the American Health Information Community (AHIC) Chronic Care workgroup
    - Met with Dr. Robert Kolodner, National Coordinator for Health Information Technology, to advocate further inclusion of LTC in the future work of the AHIC, ONC, and HITSP
    - Held meetings with Department of Health & Human Services Office of the Assistant Secretary for Planning & Evaluation (ASPE), CMS, legislative committees, and other federal and state regulatory and policy making organizations to further the understanding and health IT requirements of LTC



## Progress on 2005 Priorities and Recommendations for Action

### Action Item: Advocate for and identify funding mechanisms/incentives, including IT use in pay for performance programs.

- Since 2005, more than 40 comprehensive and interactive education sessions have been offered at the LTC HIT summits on key action items such as funding, standards, e-prescribing, quality, chronic care, safety, research, certification, and other emerging issues. Summit attendees include industry stakeholders, providers, staff from national and state organizations, corporate office staff focused on EHR (CIO, IT, HIM, nursing informaticist), state and federal government, post-acute and LTC/senior services technology vendors, physicians, consultants, QIOs, researchers, and payors.
- The CMS Nursing Home Value Based Purchasing Pilot (NHVBP) is scheduled to begin spring 2008 in five to six states and will evaluate 50 facilities over a three-year period. The purpose is to demonstrate increased quality of patient care for Medicare beneficiaries when payment is linked to the quality of care provided instead of the volume of services provided.
- The Medicare Home Health Pay for Performance Demonstration project will begin operation in seven states effective January 1, 2008. This two-year project will provide incentive payments to home health agencies showing quality improvement efforts that result in the highest performance levels or significant improvement in patient outcomes.
- Home health agency payments are tied to reporting quality indicators. Agencies that fail to electronically report 12 home health quality measures will receive a reduced market basket update each year.
- AHRQ issued grants to pilot electronic prescribing software and research the effect of point of care documentation on quality of life and LTC safety.
- Increasingly, providers have begun to recognize the need to rely upon their own funding of health IT investments rather than waiting for compensation from a third party.

### Action Item: Seek opportunities to participate in the efforts of health IT standards organizations.

- Since 2005, LTC stakeholders have increased involvement in all key standards settings. This involvement is supported by a growing contingent of LTC vendors, providers, government, and professional representatives.
- A LTC agenda is advocated at HL7's EHR Technical Committee, Patient Care Technical Committee, Structured Documents Technical Committee and Community Based Collaborative Care Special Interest Group.
- A Long Term Care Work Group has been established at the National Council for Prescription Drug Programs (NCPDP).
- A joint HL7/NCPDP long term care workgroup shared objectives across standards bodies.
- Long term care stakeholders have been participating in Integrating the Healthcare Enterprise (IHE) profile development and in Health Information and Management Systems Society (HIMSS) Interoperability Showcase leadership.
- A long term care stakeholder was appointed to the AHIC Chronic Care work group.

### Action Item: Advocate for and adopt data content and messaging standards that support a unified language and promote interoperability across care settings.

- ASPE sponsored initiatives leading to approval by the Secretary of HHS of the patient assessment standards endorsed through the Consolidated Health Informatics (CHI) Initiative. These standards were generically incorporated in CCD and IHE patient care specifications.
- The CCD was formally balloted and adopted as an HL7 standard, and received HITSP endorsement.

## Progress on 2005 Priorities and Recommendations for Action

- CMS has included CHI Standards in the scope of work for the CMS transitions assessment, CARE Tool.
- LTC-specific needs for e-Prescribing were addressed in NCPDP SCRIPT standard, versions 10.0, 10.1 and 10.2.
- The CAST initiative has prioritized additional assessments for encoding into CCD and patient assessment standards.

### Action Item: Adopt a standardized patient transfer/summary of care document as a step to coordinate care across settings and reduce risk to the patient.

- The CMS CARE Tool and Demonstration have been developing and testing a standardized transfer instrument.
- CCD and patient assessment standards have been providing a foundation for a standardized transfer form.

### Action Item: Develop implementation guidelines for existing standards.

- A series of project initiatives sponsored variously by CAST, the American Health Information Management Association (AHIMA), and ASPE have advanced the use cases, requirements, prerequisites, and approaches that will allow pursuit of formal implementation guidelines for interoperability standards.

### Action Item: Prioritize e-prescribing and medication safety initiatives.

- In 2006, one of five CMS/AHRQ grants was awarded to a consortium of long term care stakeholders to create an e-prescribing pilot project to implement and test current NCPDP SCRIPT standards in a LTC setting. The CMS report to Congress on the results of this pilot found that "...e-prescribing can be supported, with some technical accommodations to the standards, in long term care facilities for Part D implementation."
- NCPDP created a work group specific to long term care (Work Group 14) to focus on e-prescribing requirements. Several LTC-specific data element request forms (DERFs) were passed and added to the NCPDP SCRIPT standard in versions 10.0, 10.1, and 10.2.
- NCPDP Work Group 14 created a consultant pharmacist task group to provide a forum to develop standards specific to electronic transmission of Consultant Pharmacist Drug Regimen Reviews (DRRs) to the consultant pharmacist, nursing facility, provider pharmacy, Medical Director, and the physician.
- Encouraged recognition of the need for e-prescribing implementation in LTC:
  - Met with CMS staff in July 2007 to discuss CMS/AHRQ e-prescribing pilot project successes and next steps
  - Implementation of Medicare Part D heightened industry awareness of the need for e-prescribing in LTC

### Action Item: Research and benchmark EHR and e-prescribing initiatives.

*The research, surveys and reports listed below have a relationship to health information technology in post-acute and long term care. See Appendix C for further information on research initiatives related to LTC health IT.*

#### **Adoption:**

- Information Technology in Long Term Care – State of the Industry. American Health Care Association
- Nursing Home Health Information Technology Demonstration Project. New York State

## Progress on 2005 Priorities and Recommendations for Action

- Use of Computerized Medical Records in Home Health and Hospice Agencies: United States, 2000. National Center for Health Statistics
- Study on Health Information Technology in Long Term Care. California Health Care Foundation
- Survey on Use or Intended Use of Electronic Health Records for Nursing Home Providers. StratusHealth (Minnesota QIO)

### *Business Case*

- Costs and Benefits of Health Information Technology. HHS, AHRQ, ASPE, RAND Corporation.
- Evaluation Design of the Business Case of Health Information Technology in Long Term Care: Final Report. ASPE and Booz Allen Hamilton.

### *Health Information Exchange*

- State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange Report. Office of the Inspector General
- Report on Health Information Exchange in Post-Acute and Long Term Care. ASPE and the University of Colorado
- Standardizing Assessments and Supporting Health Information Exchange. ASPE and AHIMA
- Health Information Exchange in Post-Acute and Long Term Care: Case Study Findings—Final Report. ASPE and the University of Colorado

### *Quality*

- On-Time Prevention of Pressure Ulcers. AHRQ, ICOR/HIMS, QIOs (CA, AZ, NC, ID).
- Staff Time and Resource Verification Evaluation (STRIVE). CMS and the Iowa Foundation for Medical Care
- Essential but not Sufficient: Information Technology as an Enabler of Consumer Independence and Quality Improvement. Bearing Point, Inc. for National Commission for Quality Long Term Care
- Transforming Quality Improvement through Information Technology Nursing Home IT. AHRQ, Institute of Clinical Outcomes Research, Health Management Strategies (ICOR/HMS)

### *Standardization:*

- Standardizing the MDS with LOINC and Vocabulary Matches. ASPE and Apeion
- Long Term Care Electronic Prescribing Standards Pilot Project. AHRQ
- Making the “Minimum Data Set” Compliant with Health Information Technology Standards. ASPE and Apeion
- Standardizing Assessments and Supporting Health Information Exchange. ASPE and AHIMA

### *Taxonomy*

- Taxonomy of Health Information Technology Functions in Nursing Homes and Home Health Agencies—Report A: Review by Representatives from Standards Development Organizations. ASPE and the University of Colorado
- Taxonomy of Health Information Technology Functions in Nursing Homes and Home Health Agencies—Report B: Review by Representatives from Nursing Homes and Vendors. ASPE and the University of Colorado
- Taxonomy of Health Information Technology Functions in Nursing Homes and Home Health Agencies—Report C: Review by Representatives from Home Health Agencies and Vendors. ASPE and the University of Colorado

### *Workforce*

- Technology Informatics Guiding Education Reform (TIGER) Summit.

## Progress on 2005 Priorities and Recommendations for Action

- Technology's Role in Addressing Maryland's Nursing Shortage: Innovations and Survey Findings. Maryland Statewide Commission on the Crisis in Nursing and Maryland Nursing Technology Workforce Subcommittee

### Action Item: Certify EHR and e-prescribing solutions.

- LTC stakeholder associations submitted an environmental scan to CCHIT petitioning inclusion of nursing homes on CCHIT's road map for expanding EHR product certification—the petition was successful and work on nursing home product certification is slated to commence in 2008.
- The long term care industry is represented on the CCHIT Foundation Workgroup, the organization's volunteer workgroup that identifies and vets certification criteria and test scripts that apply to EHR products across care settings.
- A LTC Minimum Function Set (predecessor to LTC-Nursing Home EHR-System Functional Profile) based on the HL7 EHR-S Functional Model Draft Standard for Trial Use (DSTU) was successfully balloted at HL7.
- A joint workgroup from NCPDP and HL7 initiated work on a LTC EHR-S Functional Profile based on the HL7 EHR-S Functional Model DSTU.
- The LTC Functional Profile Workgroup, composed of a wide array of industry stakeholders and created with major support from ASPE, took over the work initiated by the NCPDP/HL7 LTC workgroup and launched a Web-based, consensus process for the development of the LTC-NH EHR-S Functional Profile based on the American National Standards Institute (ANSI) approved HL7 EHR-S Functional Model normative standard.

### Action Item: Link quality initiatives and health IT, the EHR, and e-prescribing.

- The AHRQ funded On-Time Pressure Ulcer Prevention study uses health IT to integrate clinical guidelines and clinical information into nursing home providers' daily care. Early findings indicate a link between IT and quality, including a 33 percent decrease in the high-risk pressure ulcer quality measure. The 2005 through 2007 study was expanded and extended through 2010 and warrants continued monitoring by stakeholders.<sup>1</sup>
- In February 2007, the not-for-profit entity, eHealthConnecticut, received a \$5 million dollar federal Medicaid Transformation grant to implement HIE and e-prescribing within a subset of their aged, blind, and disabled non-dual-eligible population.<sup>2</sup>
- The private sector, including the Center for Aging Services Technology (CAST) and Continua, has made progress in chronic care and co-morbidity initiatives.
  - Industry leaders established the Continua Health Alliance for the purpose of providing interoperable devices and services to address health and wellness, chronic disease management, and aging independently.
  - Continua established, and is promoting, Healthcare Unbound, support for remote monitoring and aging-in-place.
  - CAST acts as a partnership facilitator and a clearinghouse for multiple grant and research opportunities in the areas of chronic care, disease management, medication management, and other long term care health IT areas.
- There are many research studies by universities and the Veterans Administration (VA) on the value of longitudinal care across the full spectrum of elderly care settings. These studies help provide the basis for the value of a person-centric electronic health record used to track the dynamics of elderly care and preventative medicine.

<sup>1</sup> S. Sharkey PowerPoint: <http://www.ahqa.org/pub/uploads/12>

<sup>2</sup> eHealthConnecticut HIE and e-Prescribing Medicaid project: [http://www.volunteer-ehhealth.org/frisse/docs/Medicaid/CT\\_1.pdf](http://www.volunteer-ehhealth.org/frisse/docs/Medicaid/CT_1.pdf)

## **Progress on 2005 Priorities and Recommendations for Action**

- The long term care industry is represented on the American Health Information Community's Chronic Care workgroup.

### **Action Item: Advocate for special projects through the Quality Improvement Organizations (QIOs) to support health IT adoption and effective implementation.**

- The Texas QIO (TMF Health Quality Institute) and the American Health Quality Association (AHQA) have presented education sessions and poster presentations at LTC HIT Summit on the link between health IT and quality and research activities conducted to push health IT adoption forward. The research activities included the importance of the nursing assistant and the use of technology.
- The Long Term Care-Nursing Home EHR-System Functional Profile Workgroup includes participation from health information standards development organizations, industry professionals, and QIOs.
- The Quality Partners of Rhode Island contracted with CMS and AHRQ to evaluate the impact of an electronic Resident Assessment Protocol (e-RAP) on depression care processes and outcomes in up to 30 participating nursing homes. Quality Partners will also assist CMS with determining whether or not to use a similar decision support model for additional Resident Assessment Protocol (RAP) clinical topics.
- The Minnesota Medicare QIO, StratusHealth, conducted a comprehensive survey illustrating the increased level of EHR adoption and implementation in Minnesota's adult primary care clinics citing lack of capital resources, data input, and loss of productivity as top barriers to implementation. A survey of nursing home EHR adoption and implementation in Minnesota was conducted in November 2007.

## 2008–2010 Priorities and Recommendations for Action

The 2008 through 2010 LTC HIT Road Map builds on progress made since 2005 and sharpens the focus on promoting health IT implementation, demonstration, and adoption. The road map also challenges the aging services spectrum to engage in a consumer-centric approach to using technology that enables innovation while recognizing the need to simultaneously address critical adoption barriers. No single action item takes precedence over another. Instead, the following action items reflect an interwoven approach to reaching the goal of an interoperable healthcare system that includes long term and post-acute care.

### Action item: Strengthen cross-organizational collaborative

*Summit participants in 2005 recognized that a collaborative of LTC stakeholder organizations was essential to mobilize the LTC community, enhance cross-organizational communication, and provide a strong voice for advancing LTC health IT interest. The initial goals of the informal collaborative have been met, yet it is recognized that more progress is needed. Strategies include:*

- Continue to hold the LTC HIT Summit to move the process forward
- Revise the nature of the “collaborative” to develop and implement a sustainable model, maintaining the summit as the focal point, but exploring additional options for enhanced collaboration including advocacy with government agencies
- Develop a sustainable collaborative model that maintains the advantages of the current collaboration (including the ability to come together on issues of mutual interest, without the need for participating organizations to be in complete agreement on all issues). Specific actions include:
  - Create a plan for developing this “sustainable collaborative model”
  - Develop a process and timeline for adopting or moving towards a possible new model
  - Consider issues such as governance, potential professional staffing and budget
  - Consider whether the collaborative should develop more formalized methods to address issues such as adoption of health IT
  - Consider how the collaborative (new model or current) should advance collective interests by meeting with appropriate federal government officials, such as agency executives and congressional staff, regarding health IT needs in LTC
- Plan the evolution of the stakeholder collaborative, at least for the Summit, and potentially for the newly-formed organizational structure discussed above and:
  - Recruit consumer representation
  - Re-assess other aspects of group participation, such as potential enhanced collaboration with entities such as acute care, the Long Term Care Consortium’s newly-formed CIO group, etc.
  - Increase engagement with state agencies (Medicaid, Survey, Aging, Governors, Board of Pharmacy)

### Action Item: Increase the consumer-focused approach to quality initiatives and health IT, EHR, and e-prescribing

*The Summit has a history of encouraging a consumer-centric perspective on the long term care industry’s relationship with health IT. This consumer-centric focus directs the Summit stakeholders to encourage further research into links between quality and resident outcomes, and IT usage across the full spectrum of aging care settings. The concepts of quality and resident outcomes permeate a broad range of health IT initiatives, including: management of chronic diseases and co-morbidities, development of personal health records, seamless transitions between care settings, and medication management and e-prescribing. Consumers are central stakeholder, therefore, the industry should:*

- Educate consumers on the value of health IT, EHRs, and personal health records (PHRs)
  - Empower consumers to take responsibility for their wellness – assisted by PHRs
- Engage consumers at the national, state, and local level in health IT development and adoption efforts



## 2008–2010 Priorities and Recommendations for Action

- Regarding future LTC HIT summits,
  - Involve consumer groups in planning and executing the summit
  - Involve family and friend caregivers in planning and executing the summit. According to the National Family Care Givers Association, 50 million people provide care for a chronically ill, disabled, or aged family member or friend during any given year. Since aging care is longitudinal over many care settings, there are times when a family or loved one provides the care.
  - Increase consumer attendance and participation at the summit

### **Action Item: Advocate for and identify tools to support provider’s adoption and implementation of electronic health records.**

*Fully adopting health IT solutions to improve quality of care requires a significant commitment from providers to invest money, time and human resources. Emphasis must be placed on preparing providers to implement EHRs and participate in a health information exchange. Strategies include:*

- Survey LTC providers on adoption rates annually
- Promote acquisition and use of certified EHR products
- Promote and support QIO work on EHR adoption in LTC
- Present providers with educational resources at the LTC HIT Summit and at other LTC events addressing issues such as:
  - Work flow redesign
  - Barriers to adoption including infrastructure, training, and financial limitations
  - Benefits of EHR product certification
  - Early adopters success and failure stories
  - Business Case
- Advocate for additional funding and offer incentives (fiscal and non-monetary) for health IT adoption
- Establish business case and disseminate best practices for obtaining return on investment
- Identify and promote collaborative health IT pilot projects across the spectrum of care
- Identify tools that have been used effectively to support adoption and implantation.

### **Action Item: Prioritize e-prescribing and medication management initiatives.**

*Significant improvements in patient safety can be realized by focusing efforts on e-prescribing applications as a priority stepping stone to a fully functioning EHR. Experts predict that a shift to e-prescribing by the US healthcare system could avoid more than 2 million adverse drug events annually, of which 130,000 are life-threatening.<sup>1</sup> E-prescribing also has enormous potential to create savings in healthcare costs, through reduction of adverse drug events and in improved workflows. Governmental policies and technical standards affecting implementation of e-prescribing are a priority for the LTC community. Strategies to address e-prescribing include:*

- Advocate adoption of the ANSI approved NCPDP SCRIPT 10.2 (or higher) standard. SCRIPT versions 10.0 and 10.1 contain provisions identified by NCPDP Workgroup 14 as essential to the adoption of e-prescribing in long term care
- Advocate action on recommendations identified during the January 2008 NCVHS hearing by the Subcommittee on Standards & Security regarding standards needed for implementation of e-prescribing in nursing homes

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<sup>1</sup> S. Sharkey PowerPoint: <http://www.ahqa.org/pub/uploads/12>

<sup>1</sup> eHealthConnecticut HIE and e-Prescribing Medicaid project: [http://www.volunteer-health.org/frisse/docs/Medicaid/CT\\_1.pdf](http://www.volunteer-health.org/frisse/docs/Medicaid/CT_1.pdf)

## 2008–2010 Priorities and Recommendations for Action

- Support initiatives to advocate with CMS, the Drug Enforcement Agency (DEA) and state agencies to remove barriers to adoption of e-prescribing and medication management. Prime examples of such barriers include the requirement by some states for a handwritten signature on prescriptions, DEA exclusion of controlled medications from e-prescribing, as well as the national debate regarding the need for digital signatures versus electronic signatures
- Expand electronic order initiatives and capabilities to include e-medication management, durable medical equipment (DME) and other order types
- Advocate inclusion of LTC in future CMS e-prescribing rules by incorporating the ANSI-approved NCPDP SCRIPT 10.2 or higher standard and any other needed standards

### Action Item: Certify EHR and e-prescribing solutions to reduce risk.

*Investing in health IT/EHRs is a significant expense and risk for providers in the LTC community. Financially, providers cannot afford to make an expensive mistake when investing in new technology. To reduce the risk to providers, national certification efforts must also include LTC health IT/EHR vendor products. Strategies include:*

- Promote benefits of EHR product certification addressing the value of-
  - Certifying EHR products to vendors and
  - Purchasing certified EHR products to providers
- Complete LTC-NH EHR-S Functional Profile and register profile with HL7
- Ballot LTC-NH EHR-S Functional Profile at HL7 as a normative standard
- Provide LTC-NH EHR-S Functional Profile to CCHIT for use in development of certification criteria for LTC-NH EHR products
- Provide LTC industry subject matter experts to CCHIT workgroups
- Expand LTC industry efforts on EHR product certification to include home health, health and wellness, and the like

### Action Item: Demonstrate interoperability using emerging standards

*It is recognized that with the emergence of interoperability standards, the industry must engage in demonstration and pilot implementation of these standards in order to educate stakeholders on the use of the standards, identify needed refinements, and promote early adoption. Demonstration enhances the credibility of the whole standards development process, provides feedback to enhance the quality of standards and supports the development of implementation best practices. Stakeholder organizations collaborating on the LTC HIT Summit intend to use their own venues and influence to encourage and support interoperability demonstration. A number of activities are necessary to move this commitment forward. Strategies include:*

- Monitor and support ASPE/AHIMA, CAST and other initiatives seeking to promote standards refinement, problem resolution and demonstration preparation
- Recruit and mentor additional LTC professionals involvement in standards activities
- Challenge LTC services provider, vendor and professional organizations to dedicate additional professional resources to standards and demonstration activities
- Support LTC industry participation in future IHE connect-a-thons, particularly supporting implementation of Functional Assessment Profile within health record summaries
- Advocate for HL7 adoption of a refined implementation guide supporting incorporation of functional status and wellness information CCD
- Advocate with AHIC and HITSP for incorporation of LTC interoperability requirements within the Consultation and Transfer of Care Use Case
- Collaborate with CMS to ensure that the emerging CARE instrument supports existing CHI standards and can be readily incorporated into the CCD
- Use the annual LTC HIT Summit as a context to showcase interoperability demonstrations including transfer of care, e-prescribing, interoperability, and communication to the consumer PHR

## 2008–2010 Priorities and Recommendations for Action

- Monitor ONC national health information exchange activities, interpret to LTC stakeholders and advocate for the inclusion of LTC service providers
- Encourage and support an expansion of the NHIN-Connect efforts to include a focus on behalf of seriously wounded veterans for whom health information needs to be exchanged between the VA and a private sector rehabilitation services provider
- Encourage and support participation in local and regional health information exchange initiatives

### Action Item: Encourage further research investigating relationships between health IT, quality, and outcomes across the full spectrum of aging services and care.

*The LTC community benefits from research, publications, and benchmarking to address issues unique to aging services. To spearhead adoption, it is essential to engage in research, documentation, communication, and education on emerging practices and the impact of health IT on quality and outcomes from the perspectives of the consumer, LTC and other providers of services to elderly and disabled persons, and payors. University and organizational research funding to measure the impact of health IT on outcomes from the point of care and encourage health IT implementation should be increased.*

- Encourage a priority research focus that examines, from the perspectives of various stakeholders, the relationships between health IT, quality, and resident and patient outcomes including analyses of:
  - Resident and patient outcomes in long term care settings, including home health and nursing homes. For example:
    - Monitor the 2007 AHRQ-funded project, “Transforming Quality Improvement through Information Technology: Nursing Home IT,” and
    - Monitor the AHRQ-funded, QIO-partnered project, “On-Time Prevention of Pressure Ulcers”
  - The impact of e-prescribing on safe medication administration and adverse drug events
  - The impact of EHR/health IT implementation on quality care, outcomes and safety, including impact analyses using person-centric, longitudinal outcomes of care applied across all care settings that provide services to aging and disabled persons
  - The impact of EHR supported longitudinal care on reducing the visits, and therefore costs, of seniors to the emergency room, whether it be from a care setting or from home
  - The impact of health IT on consumers’ ability to age in place
  - The impact of health IT implementation on the outcomes of preventive services covered by the Medicare Preventive Services program
  - Methods to disseminate and communicate information to encourage and accelerate health IT adoption
- Explore the Personal Health Record (PHR) --
  - Explore the PHR and its relationship to quality outcomes for elderly users
    - Investigate the relationship between the PHR and disease prevention
  - Determine the LTC industry’s appropriate actions in response to learning this relationship
- Encourage the continued development of health IT as it promotes wellness and disease prevention
- Encourage technology dissemination among home care agencies
- Prioritize topics and issues to be addressed in future research investigation

## **Conclusion and Immediate Next Steps**

With the first wave of baby boomers eligible for social security this year, the need to focus on consumerism, quality, and strategic partnerships is more important than ever. The following four steps have been identified as needing immediate attention:

- Advance the creation of a sustainable LTC HIT collaborative of stakeholder organizations
- Widely disseminate the 2008 through 2010 LTC HIT Road Map and the LTC HIT Summit white papers, case studies, and presentations
- Initiate plans for the next LTC HIT Summit
- Engage consumers and consumer organizations in the process of adopting health IT and EHRs in aging services

The continued cooperation of long term care stakeholders will ensure that health IT implementation, demonstration, and adoption progress. This road map offers guidance over the next two years for consumers, providers, legislators, regulators, states, and vendors to collaborate and contribute constructively to an interoperable healthcare system. We have the opportunity to make a real difference for those receiving care in aging services and long term care settings. We encourage you to take advantage of the groundwork presented here and to be a part of the future of long term care health information technology.

## Appendix A: Summit Methodology

### Organizers:

The annual LTC HIT Summit is organized each year by a group of representatives from key industry stakeholder associations that co-sponsor the two-day event. Sponsoring organizations for the 2008 summit included the following:

- American Health Information Management Association (AHIMA)
- American Health Care Association (AHCA) and the National Center for Assisted Living (NCAL)
- American Association for Homes and Services for the Aging (AAHSA) and Center for Aging Services Technologies (CAST)
- American Medical Directors Association (AMDA)
- National Association of Home Care and Hospice (NAHC)
- National Association for the Support of Long Term Care (NASL)

### Summit Format:

The LTC HIT Summit is structured to offer opportunities for industry participants to expand their knowledge on a wide array of health IT topics, network with their peers, and participate in refining the industry's *Road Map for Health IT in Long Term Care*.

Summit venues that support these activities include:

- An “Early Riser” session offering an orientation to the summit proceedings
- General sessions addressing key health IT initiatives and issues.
- A networking reception providing an opportunity for participants and presenters to mingle in an informal and collegial environment
- A product showcase providing participants an opportunity to meet with health IT vendors and view current offerings
- Topic tracks offering several short sessions that explore various aspects of a given issue/initiative
- Board room policy and discussion sessions providing an opportunity for participants to join in topical policy and issue discussions
- A closing reactor panel summarizing key conference take-aways, action items and next steps

### Summit Resources

Information regarding the LTC HIT summits—including session handouts and a document summarizing the 2007 summit programs—can be accessed at [www.ahima.org/meetings/ltc/index.asp](http://www.ahima.org/meetings/ltc/index.asp)

## Appendix B: Health Information Technology Links and Resources

A review of existing glossaries revealed that there is no single glossary resource that provides comprehensive information on health information technology (HIT). Assembled below are Web-based glossary resources that are available to assist with an understanding of health IT terms and issues.

### General Information Glossaries

- Centers for Medicare and Medicaid (CMS) glossary of terms and acronyms. <http://www.cms.hhs.gov/apps/glossary/default.asp?Letter=H&Language=English>
- Department of Health and Human Services (HHS) list of acronyms related to Health Information Technology. <http://www.hhs.gov/healthit/acronyms/>
- Health Information Technology (HIT) terms produced by the LBJ School of Public Affairs at the University of Texas. <http://www.wcit2006.org/Healthcare/glossary.html>
- Georgia State HIT Glossary [http://dch.georgia.gov/vgn/images/portal/cit\\_1210/21/45/69857888DCH\\_HITGlossary.pdf](http://dch.georgia.gov/vgn/images/portal/cit_1210/21/45/69857888DCH_HITGlossary.pdf)

### Computer Technology Glossaries

- Microsoft Product Support Services Glossary defines frequently used computer terms and abbreviations that may appear in articles on their Web site. <http://support.microsoft.com/support/glossary/>
- Computer Technical Glossary. <http://www.intel.com/education/techglossary/index.htm>
- Computer Technical Encyclopedia. <http://www.techweb.com/encyclopedia/>
- Computer and Internet technology definitions. <http://www.webopedia.com/>
- Technology Glossary. <http://www.geek.com/glossary/>

### Medical Terminology Glossaries

- National Library of Medicine. <http://www.nlm.nih.gov/>
- LOINC® (Logical Observations Identifiers, Names, Codes), is a clinical terminology important for laboratory test orders and results, produced by the Regenstrief Institute. [http://www.nlm.nih.gov/research/umls/loinc\\_main.html](http://www.nlm.nih.gov/research/umls/loinc_main.html)
- Systematized Nomenclature of Medical—Clinical Terms (SNOMED CT) is a dynamic, scientifically validated, clinical healthcare terminology and infrastructure that makes healthcare knowledge more usable and accessible. <http://www.snomed.org/snomedct/index.html>

### Federal Health IT Resources

- US Department of Health and Human Services (HHS) oversees national efforts for developing and implementing health information technology strategy. <http://www.hhs.gov/healthit/>
- American Health Information community (AHIC). Chaired by the Secretary of HHS, this federally chartered commission provides guidance on the nation's move toward the adoption of electronic health records. <http://www.hhs.gov/healthit/ahic.html>
- Office of the National Coordinator for Health Information Technology (ONC) within the US Department of Health in Human Services, ONC leads the nation's efforts to carry out the President's Executive Order that all Americans have electronic health records within 10 years. <http://www.hhs.gov/healthit/>
- Agency for Healthcare Research and Quality (AHRQ). Disseminates health IT information on best practices and coordinates many Federal health IT grants. <http://healthit.ahrq.gov/portal/server.pt?open=512&objID=650&PageID=0&parentname=ObjMgr&parentid=106&mode=2&dummy=>
- The US Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation (ASPE) conducts research to support HHS decisions in a variety of issue areas including Health Information Technology for LTC. [http://aspe.hhs.gov/\\_office\\_specific/daltcp.cfm](http://aspe.hhs.gov/_office_specific/daltcp.cfm)



## Appendix B: Health Information Technology Links and Resources

- The National Committee for Vital and Health Statistics (NCVHS) provides advice on ways to shape national information strategy for improving national health. <http://www.ncvhs.hhs.gov/>

### Health IT Standards Resources

- The Health Information Technology Standards Panel (HITSP) is a public/private effort to identify standards to enable and support interoperability between healthcare software. [http://www.ansi.org/standards\\_activities/standards\\_boards\\_panels/hisb/hitsp.aspx?menuid=3](http://www.ansi.org/standards_activities/standards_boards_panels/hisb/hitsp.aspx?menuid=3)
- The Certification Commission for Healthcare Information Technology is a public/private organization that has certification authority for electronic health records and networks. <http://www.cchit.org>
- The Consolidated Health Informatics (CHI) initiative is one of the Office of Management and Budget's (OMB) eGov initiatives. CHI is a collaborative effort to adopt health information interoperability standards, particularly health vocabulary and messaging standards, for implementation in federal government systems. About 20 department/agencies including the Department of Health and Human Services, the Department of Defense and the Department of Veteran's Affairs are active in the CHI governance process. The CHI reports include a report on standards for disability, functioning, and patient assessments. <http://www.hhs.gov/healthit/chi.html>  
The Secretary's response to the CHI recommendations on disability, functioning, and patient assessments are found at: <http://www.ncvhs.hhs.gov/070731lt.pdf>  
The Federal Register Notice informing the public of the adoption of these new CHI standards (as well as standards for Multimedia and Allergy) and announcing that the "Federal government will require all future federal health information acquisitions to based on CHI standards..." is found at: <http://a257.g.akamaitech.net/7/257/2422/01jan20071800/edocket.access.gpo.gov/2007/07-6058.htm>
- Health Level 7 (United States). Develops standards for electronic interchange of clinical, financial, and administrative information among healthcare oriented computer systems. <http://www.hl7.org/>
- NCPDP creates and promotes standards for the transfer of data to and from the pharmacy services sector of the healthcare industry. <http://www.ncpdp.org/>

### Public/Private Health IT Cooperative Resources

- Connecting for Health is a public-private collaborative of more than 100 organizations committed to enabling health professionals and patients to use information technology so that they can achieve the best care possible in emergency and routine situations, as well as in managing chronic illness. <http://www.connectingforhealth.org/>
- The HIT Champions Partnership is public and private initiative to help state lawmakers understand Health Information Technology issues. <http://www.hit champions.org/>

### Health Information Technology Resources

- Healthcare Information and Management Systems society (HIMSS) is a US not-for-profit organization dedicated to promoting a better understanding of healthcare information and management systems. <http://www.himss.org>
- The eHealth Initiative (eHI) and the Foundation for eHealth Initiative are independent, nonprofit affiliated organizations whose missions are the same: to drive improvement in the quality, safety, and efficiency of healthcare through information and information technology. <http://www.ehealthinitiative.org/>
- The American Health Information Management Association (AHIMA) has as its mission to improve healthcare by advancing best practices and standards for health information management and the trusted source for education, research, and professional credentialing. <http://www.ahima.org>
- Integrating the Healthcare Enterprise (IHE) is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE promotes the coordinates use of established standards such as DICOM and HL7 to address specific clinical need in support of optimal patient care. <http://www.ihe.net>
- The HIT Implementation Testing and Support Web site, developed in partnership by CCHIT, HITSP, NIST and ONC, provides health IT implementers with access to the tools and resources needed to support and test their implementation of standards-based health systems. <http://xreg2.nist.gov/hit-testing>

## Appendix B: Health Information Technology Links and Resources

### Long Term Care Health IT Resources

- The American Health Care Association (AHCA) and National Center for Assisted Living (NCAL) represent nearly 11,000 nonprofit and proprietary facilities, including nursing facilities, assisted living residences, subacute centers, and homes for people with developmental disabilities ranging from small, independent-owner facilities to regional, multi-facility chain corporations. AHCA and NCAL are working to advance the acceptance of health IT by our nation's long term care providers and to represent provider health IT interest before Congress, the Administration and a number of public/private standards and certification setting organizations. [www.AHCA.org](http://www.AHCA.org) [www.NCAL.org](http://www.NCAL.org)
- The National Association in Support of LTC represents health IT Software vendors whose products are designed for LTC providers. [www.nasl.org](http://www.nasl.org)
- The American Association of Homes and Services for the Aging is the parent organization for CAST, the Center for Aging Services Technologies. CAST is a leader in the development and deployment of **emerging technologies** that can improve the aging experience in America. <http://www.agingtech.org/index.aspx>
- The LTC HIT Road Maps and past LTC HIT Summit materials are available at: [www.ahima.org/infocenter/whitepapers/ltc.asp](http://www.ahima.org/infocenter/whitepapers/ltc.asp)

## Appendix C: Research Initiatives

Category	Title	Sponsoring Organization	Author(s)	Brief Description	Web Link
<i>Adoption</i>	<b>Information Technology in Long Term Care—State of the Industry</b>	AHCA	Maestro Strategies on behalf of AHCA/NCAL	AHCA published survey results on the use of health IT in nursing homes and assisted living residences. The survey confirms our belief that IT is “mission critical” to an organization’s success. (April 2007)	<a href="http://www.ahca.org/facility_operations/hit/Documents/InformationTechnologyinLongTermCare.pdf">http://www.ahca.org/facility_operations/hit/Documents/InformationTechnologyinLongTermCare.pdf</a>
	<b>Nursing Home Health Information Technology Demonstration Project</b>	New York state		Resulted from a ruling in an interest arbitration award between several groups of for-profit nursing homes in the NY metropolitan region and 1199/SEIU. Funded by the state legislature, approximately \$9 million, to cover 5,000 “beds” or about 20 nursing homes to assess impact of HIT adoption on residents, workers, labor-management relations, culture and costs.	<a href="http://www.cornel_surveyresearch.com/sri/projects/project.cfm?projid=123420">http://www.cornel_surveyresearch.com/sri/projects/project.cfm?projid=123420</a>
	<b>Use of Computerized Medical Records in Home Health and Hospice Agencies: United States, 2000</b>	National Center for Health Statistics	W. Pearson, A. Bercovitz	This report presents the first nationally representative data that examines the extent of CMR use in the home health and hospice care industry. It summarizes the use of CMRs in the home health and hospice industry in 2000 and identifies several agency characteristics that are associated with the use and adoption of information technology in the form of a CMR. (June 2006)	<a href="http://0-www.cdc.gov.mil/sjlibrary.org/nchs/data/series/sr_13/sr13_161.pdf">http://0-www.cdc.gov.mil/sjlibrary.org/nchs/data/series/sr_13/sr13_161.pdf</a>
	<b>National Home and Hospice Care Survey (NHHCS).</b>	NCHS		NCHS fielding the 2007 NHHCS that includes for the first time questions on whether the responding HHA has an EMR (electronic medical record), and if so, whether the HHA uses certain EMR functions or whether these functions are either not used or not available.	
	<b>National Survey of Residential Care Facilities (NSRCF)</b>	NCHS, ASPE		Includes questions on electronic health information systems. Scheduled to be fielded in Jan. 2009.	
	<b>Study on HIT in LTC</b>	California Health Care Foundation		CHCF identified barriers to adoption including lack of capital resources, lack of evidence that technology will improve quality of care, lack of hardware and technical support in facilities, risk of new federal/state requirements, and difficulty in finding products that meet their needs. Also noted in the report is a low readiness level including a lack of strategic planning, undervalue of HIT benefits, lack of time and HIT knowledge, fear of technology and underestimation of change management needs	<a href="http://www.chcf.org/topics/view.cfm?itemID=132819">http://www.chcf.org/topics/view.cfm?itemID=132819</a>

## Appendix C: Research Initiatives

Category	Title	Sponsoring Organization	Author(s)	Brief Description	Web Link
	<b>Survey Question Design for Nursing Home EHR Adoption and use (Fall 2008)</b>	ASPE	University of Colorado	Specification of (i) a narrow and (ii) more comprehensive list of survey questions on nursing home EHR adoption, use and barriers. Questions could be fielded by public and/or private sectors	
	<b>A Snap-Shot of Use of Health Information Technology in Long Term Care</b>	AHCA, NCAL		The survey includes responses to questions regarding use of HIT from both nursing homes and assisted living facilities.	<a href="http://www.ahca.org/facility_operations/hit/Documents/InformationTechnologyinLongTermCare.pdf">http://www.ahca.org/facility_operations/hit/Documents/InformationTechnologyinLongTermCare.pdf</a>
	<b>Functional gaps in attaining a national health information network. The costs of a national health information network</b>		Kaushal, R., Bates, D. W., Poon, E. G., Jha, A. K., Blumenthal, D. & the Harvard Interfaculty Program for Health Systems Improvement NHIN Working Group (2005a).  Kaushal, R., Blumenthal, D., Poon, E. G., Jha, A. K., Franz, C., Middleton, B. et al. (2005b).	Used expert opinion to generate estimates of current and future HIT adoption rates for several healthcare provider types, including skilled nursing facilities (SNFs) and home health agencies (HHAs).	<i>Health Affairs</i> , 24, 1281-1289.  <i>Annals of Internal Medicine</i> , 143, 165-173.
<b>Business Case</b>	<b>Costs and Benefits of Health Information Technology</b>	DHHS, AHRQ, ASPE, RAND Corporation	Paul G. Shekelle, Sally C. Morton and Emmett B. Keeler	This report is a synthesis of studies that have examined the quality impact of health IT as well as the costs and organizational changes needed to implement health IT systems. This report reviews scientific data about the implementation of health IT to date, as documented in studies published through 2003. It does not project future healthcare benefits or savings, in contrast to other reports. (April 2006)	<a href="http://aspe.hhs.gov/daltcp/reports/2006/HITcb.htm">http://aspe.hhs.gov/daltcp/reports/2006/HITcb.htm</a>

## Appendix C: Research Initiatives

Category	Title	Sponsoring Organization	Author(s)	Brief Description	Web Link
	<b>Evaluation Design of the Business Case of Health Information Technology in Long Term Care: Final Report</b>	ASPE	Booz Allen Hamilton	The purpose of this project was to help/ design a study to assess the business case for health information technology in post-acute care (PAC) and long term care (LTC) settings. This effort is to inform providers, payors, policymakers and others on the possible costs and benefits (financial and non-financial) that could be considered in implementing of health information technology in the PAC/LTC environment. (August 2006)	<a href="http://aspe.hhs.gov/daltcp/reports/2006/BCfinal.htm">http://aspe.hhs.gov/daltcp/reports/2006/BCfinal.htm</a>
	<b>Cost and Benefits of Health Information Technology—Follow Up Study</b>	ASPE	Booz Allen Hamilton		
	<b>Cost and Benefits of Health Information Technology in Nursing Homes and Home Health Agencies</b>	ASPE	UCHSC	This study will conduct a qualitative examination of the costs and benefits of health IT in nursing homes and home health agencies. Information will be gathered both off-site and during site visits to selected providers. A final report is scheduled for 2008.	
	<b>State Medicaid Agencies' Initiatives on Health Information Technology and Health Information Exchange</b>	OIG	D. Levinson	Found that State Medicaid agencies are making progress in implementing healthcare information technology and health information exchange initiatives. (August 2007)	<a href="http://www.oig.hhs.gov/oei/reports/oei-02-06-00270.pdf">http://www.oig.hhs.gov/oei/reports/oei-02-06-00270.pdf</a>
<i>Health Information Exchange</i>	<b>Report on Health Information Exchange in Post-Acute and Long Term Care</b>	ASPE	University of Colorado	This report is based on the most recent and current developments related to health information exchange in post-acute care and long term care. It builds upon the previous literature review conducted in the project that examined the status of electronic health records in post-acute and long term care and research on clinical information exchange needs at times of transition across the healthcare settings. Therefore, the literature review for this project was a targeted search and was gathered from multiple and varied sources with the intention of obtaining only the most up-to-date material available. (Feb 2007)	<a href="http://aspe.hhs.gov/daltcp/reports/2007/HIErpt.htm">http://aspe.hhs.gov/daltcp/reports/2007/HIErpt.htm</a>

## Appendix C: Research Initiatives

Category	Title	Sponsoring Organization	Author(s)	Brief Description	Web Link
	<b>Health Information Exchange in Post-Acute and Long Term Care: Case Study Findings—Final Report</b>	ASPE	University of Colorado	Reports on findings and needed next steps for electronic health information exchange (HIE) between post acute or long term care (PAC/LTC) providers, and three health delivery systems (HDS) and one CCRC. The selected HDSs and CCRC were reported to have robust EHRs as did some of the PAC/LR providers. Points of HIE examined included exchange between PAC/LR providers and hospitals (at time of transition), physicians, pharmacies, and labs. Varying methods of HIE were observed (i.e. paper and varying degrees of electronic HIE).	<a href="http://aspe.hhs.gov/daltcp/reports/2007/HIEcase.htm">http://aspe.hhs.gov/daltcp/reports/2007/HIEcase.htm</a>
	<b>Standardizing Assessments and Supporting Health Information Exchange (August 2008)</b>	ASPE	AHIMA	The goals of this study are to validate CHI-endorsed standards on federally required assessment instruments and to develop the infrastructure to support exchange of assessments and patient summaries through the use of a CDA and CCD.	
				AHRQ-funded and partnered with QIOs on project “On-Time Prevention of Pressure Ulcers” to streamline and standardize CNA daily workflow, wound nurse workflow and collect information for clinical decision-making.	<a href="http://ahrq.gov/research/puwebcast.htm">http://ahrq.gov/research/puwebcast.htm</a>
<i>Quality</i>	<b>Staff Time and Resource Verification Evaluation (STRIVE)</b>			<b><u>Staff Time and Resource Verification Evaluation (STRIVE)</u></b> project through CMS and IFMC with goals to enhance efficiency and accuracy of the RUG’s system and design payment to promote quality. The project is in the analysis stage and no final results are available.	
	<b>Essential but not Sufficient: Information Technology as an Enabler of Consumer Independence and Quality Improvement</b>		BearingPoint, Inc.	Bearing Point, Inc. prepared for the National Commission for Quality Long Term Care a report addressing necessary steps for IT adoption and improved quality in LTC.	<a href="http://www.qualitylongtermcarecommission.org/pdf/BearingPoint_Report_for_NCQLTC.pdf">http://www.qualitylongtermcarecommission.org/pdf/BearingPoint_Report_for_NCQLTC.pdf</a>
	<b>Transforming Quality Improvement through Information Technology Nursing Home IT</b>	AHRQ		AHRQ-funded project will evaluate and implement HIT solutions for key components of long term care processes: nutrition management, incontinence care, and medication administration, and evaluate the impact on daily work processes and resident outcomes, including safety and quality of care.	



## Appendix C: Research Initiatives

Category	Title	Sponsoring Organization	Author(s)	Brief Description	Web Link
		Quality Partners of Rhode Island, CMS, AHRQ		Evaluates the impact of the e-RAP (electronic Resident Assessment Protocol) on depression care processes and outcomes in up to 30 participating nursing homes. Quality Partners will also assist CMS with determining whether or not to use a similar decision support model for additional Resident Assessment Protocol (RAP) clinical topics.	<a href="http://www.riqualitypartners.org/cf/modules/objmgr.cfm?Obj=SelectContract&amp;pmid=95&amp;mid=149&amp;cid=364&amp;clear=yes&amp;bc=Select%20Contracts&amp;bcl=3">http://www.riqualitypartners.org/cf/modules/objmgr.cfm?Obj=SelectContract&amp;pmid=95&amp;mid=149&amp;cid=364&amp;clear=yes&amp;bc=Select%20Contracts&amp;bcl=3</a>
		StratusHealth		The Minnesota Medicare QIO, StratusHealth, conducted a comprehensive survey illustrating the increased level of EHR adoption and implementation in Minnesota's adult primary care clinics citing lack of capital resources, data input and loss of productivity as top barriers to implementation.	<a href="http://www.stratushealth.org/index.php?src=news&amp;refno=102&amp;category=Stratis%20Health%20News&amp;PHPSESSID=4773ab435e68f007705038103c2e8f15">http://www.stratushealth.org/index.php?src=news&amp;refno=102&amp;category=Stratis%20Health%20News&amp;PHPSESSID=4773ab435e68f007705038103c2e8f15</a>
		StratusHealth		The Minnesota Medicare QIO, conducted a survey in 2007 on the use or intended use of EHRs by nursing home providers.	
	<b>From Isolation to Integration: Recommendations to Improve Quality in Long Term Care</b>	National Commission for Quality Long Term Care		Report addresses the need for a national discussion about how the United States can create a new and better long term care system that will help older people and people with disabilities remain independent for as long as possible. Includes a discussion of the impact of technology on addressing the burgeoning needs of America's frail and elderly.	<a href="http://www.ncqlt.org/pdf/Final_Report_NCQLTC_20071203.pdf">http://www.ncqlt.org/pdf/Final_Report_NCQLTC_20071203.pdf</a>
<b>Standardization</b>	<b>Standardizing the MDS with LOINC and Vocabulary Matches</b>	ASPE	Mark S. Tuttle, Tony Weida, Thomas White and Jennie Harvell, Apelon, New York State Office of Mental Health, Office of the Assistant Secretary for Planning and Evaluation	This paper describes the Minimum Data Set (MDS) standardization process and identifies the current vocabulary and Logical Observation Identifiers Names and Codes (LOINC) matches that were identified through a recent ASPE contract. (April 2007)	<a href="http://aspe.hhs.gov/daltcp/reports/2007/MDS-LOINC.htm">http://aspe.hhs.gov/daltcp/reports/2007/MDS-LOINC.htm</a>

## Appendix C: Research Initiatives

Category	Title	Sponsoring Organization	Author(s)	Brief Description	Web Link
	<b>Long Term Care Electronic Prescribing Standards Pilot Study</b>	AHRQ		Achieve Healthcare LTC eRx Report	<a href="http://healthit.ahrq.gov/portal/server.pt/gateway/PTARGS_0_1248_227304_0_0_18/Long%20Term%20Care%20e-Prescribing%20Standards%20Pilot%20Study%20-%20Final%20Report.pdf">http://healthit.ahrq.gov/portal/server.pt/gateway/PTARGS_0_1248_227304_0_0_18/Long%20Term%20Care%20e-Prescribing%20Standards%20Pilot%20Study%20-%20Final%20Report.pdf</a>
	<b>Pilot Testing of Initial Electronic Prescribing Standards— Cooperative Agreements Required Under Section 1860D-(4) (e) of the Social Security Act as Amended by the Medicare Prescription Drug, Improvement, and Modernization Action (MMA) of 2003</b>	HHS		HHS Report to Congress on results of testing e-Prescribing standards as required under the Medicare Modernization Act	<a href="http://healthit.ahrq.gov/portal/server.pt/gateway/PTARGS_0_1248_227312_0_0_18/eRxReport_041607.pdf">http://healthit.ahrq.gov/portal/server.pt/gateway/PTARGS_0_1248_227312_0_0_18/eRxReport_041607.pdf</a>
	<b>Making the "Minimum Data Set" Compliant with Health Information Technology Standards</b>	ASPE Apelon		The goals of this study were to make the MDS compliant with CHI-endorsed content and messaging standards, and to produce a policy relevant report that describes the issues with integrating these HIT standards into federally required patient assessment applications.	<a href="http://aspe.hhs.gov/daltcp/reports/2006/MDS-HIT.htm">http://aspe.hhs.gov/daltcp/reports/2006/MDS-HIT.htm</a>
	<b>Standardizing Assessments and Supporting Health Information Exchange (August 2008)</b>	ASPE	AHIMA	The goals of this study are to validate CHI-endorsed standards on federally required assessment instruments and to develop the infrastructure to support exchange through the use of a CDA and CCD.	
	<b>CHI Recommendations Report on Functioning and Disability, including Patient Assessments</b>	CHI Initiative		The Consolidated Health Informatics (CHI) Initiative unanimously endorsed selected content and messaging standards for use with federally-required patient assessments that include functional and disability content. The NCVHS (National Committee for Health and Vital Statistics) recommended that the Secretary of HHS approve and adopt these CHI standards into federal programs.	<a href="http://www.hhs.gov/healthit/chiinitiative.html">http://www.hhs.gov/healthit/chiinitiative.html</a>

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	<b>Secretary of HHS Response to CHI Recommendations Report on Functioning and Disability, including Patient Assessments</b>			The Secretary of HHS accepted these standards, and asked the Office of the National Coordinator to develop a Federal Register Notice indicating that that these standards will be used by all Federal agencies in implementing new, and as feasible, when updating existing health information technology systems.	<a href="http://www.nvhs.hhs.gov/070731lt.pdf">http://www.nvhs.hhs.gov/070731lt.pdf</a>
	<b>HIT Functions Needed in Nursing Homes and Home Health – A Review by Standard Setting Organizations,</b>	ASPE	University of Colorado	This paper reports on findings from a circumscribed literature review and multiple stakeholder discussions pertaining to the use of and need for health information technology applications in nursing homes (NHs) and home health agencies (HHAs). Through these two data collection methods, the authors have attempted to identify and organize the types of HIT applications and functions currently used in NHs and/or HHAs (beyond federally mandated OASIS and MDS reporting and claims submission).	<a href="http://aspe.hhs.gov/daltcp/reports/TaxonomyA.htm">http://aspe.hhs.gov/daltcp/reports/TaxonomyA.htm</a>
<i>Taxonomy</i>	<b>HIT Functions Needed in Nursing Homes</b>	ASPE	University of Colorado	This is the second report in a series that is describing the findings from stakeholders. The background on the taxonomy development is described in more detail in Report A and it is the expectation of the authors that these reports would be read as a set. A select group of nursing home providers and vendors was invited to provide feedback on the draft taxonomy and information on which applications are currently in use (or planned for future implementation) and the extent to which they are used.	<a href="http://aspe.hhs.gov/aspnet2/briefs/2007/daltcp/TaxonomyB.htm">http://aspe.hhs.gov/aspnet2/briefs/2007/daltcp/TaxonomyB.htm</a>
	<b>HIT Functions Needed in Home Health Agencies)</b>	ASPE	University of Colorado	This is the third report in a series describing the findings from stakeholders. The background on the taxonomy development is described in more detail in Report A and it is the expectation of the authors that these reports would be read as a set. A group of home health agency providers and vendors was invited to provide feedback on the draft taxonomy and information on which applications are currently in use (or planned for future implementation) and the extent to which they are used. This report provides a summary of the findings from this review.	<a href="http://aspe.hhs.gov/aspnet2/briefs/2007/daltcp/TaxonomyC.htm">http://aspe.hhs.gov/aspnet2/briefs/2007/daltcp/TaxonomyC.htm</a>

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	<b>Technology Informatics Guiding Education Reform.</b>	<b>TIGER Summit</b>		As the healthcare industry works toward the widespread adoption of EHR, it is thought that nursing must transform itself as a profession to make use of the capabilities information technology will provide. Since nursing makes up the largest component of healthcare we really need to rethink how nurses can be best prepared to work in a world on information technology. TIGER has put together nine committees working together over the next year to pull together ideas to make this happen. Some of the committees are formed to create tools for informatics competencies; leadership, staff development, policy directives, consumer HIT, and interoperability.	<a href="http://www.tigersummit.com">www.tigersummit.com</a>
<i>Workforce</i>	<b>Technology's Role in Addressing Maryland's Nursing Shortage: Innovations and Survey findings.</b>		Maryland Statewide Commission on the Crisis in Nursing – MD Nursing Technology Workforce Subcommittee	The Maryland Nursing Technology Workforce was a subcommittee under the Maryland Statewide Commission on the Crisis in Nursing. The committee decided to conduct a survey in Maryland with the strong belief that there was an uneven distribution of technology throughout the state and to try and find those anecdotal stories regarding the use of technology by nurses in Maryland.	<a href="http://www.mbon.org/commission/nsg_innovation.pdf">www.mbon.org/commission/nsg_innovation.pdf</a>

## Cosponsor and Strategic Partner Organizations



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LTC HIT Road Map and past summit materials are available at:  
[www.ahima.org/meetings/ltc/LTCsummit.asp](http://www.ahima.org/meetings/ltc/LTCsummit.asp)