Introduction and Purpose

While policymakers, industry stakeholders, and beneficiary and consumer groups consider broader reforms for long-term care (LTC) financing, delivery, and quality improvement, it is imperative that they consider how technological innovations offer the opportunity to improve the LTC system over the short term and facilitate broader reform goals. The purpose of this paper is to explore the potential role of health information technology (HIT) in improving the nation’s LTC system and to suggest some possible approaches for policymakers and industry stakeholders to consider.

The Current State of LTC and System Reform

The United States spends more than $200 billion a year on LTC services, including nursing home, home health, and assisted living services.\(^1\) Yet, these outlays are insufficient to meet the growing demands of care. The vast majority of Americans do not purchase LTC insurance, leaving individuals and families responsible for providing and paying out of pocket for the majority of LTC care. Many of those facing catastrophic events or incurable diseases that require intensive long-term care services, such as Alzheimer’s disease, are left to rely on Medicaid-financed care, which offers relatively little choice over the types of services they will receive and where they will receive the care. With the aging of the baby boom generation, Medicaid’s ability to meet the growing demand for LTC is questionable.

For these reasons, a growing number of researchers, providers, states, and consumer advocates have called for national LTC reform, and they have offered several reform models.\(^3,4,5\) A recent bipartisan commission on the future of LTC has called for placing LTC reform squarely on the national agenda.\(^6\) Many of these ideas, such as a new social insurance program or a federal catastrophic benefit, envision a partnership between private and public financing sources that will infuse and significantly restructure the LTC system with new funds. These models also envision promoting the delivery of LTC care at lower-cost home- and community-based settings when most clinically and socially appropriate for the patient.
At the same time that policymakers consider these major policy overhauls to the nation’s LTC system, they can also act on short-term reforms that will promote greater efficiency and improve care. Such reforms include Medicare post-acute care realignment, private insurance industry reforms, and improved consumer education about the importance of planning for future LTC needs. Policymakers also have the option of exploring the potential for HIT to foster independent living and improve quality of care as another short-term solution.

This paper describes the broad range of technological tools that hold promise for improving the LTC system and cites examples where these tools are already in use. In addition, the paper suggests several approaches for policymakers and industry stakeholders to consider to further expand HIT’s role in strengthening the LTC system. Demonstration programs and other experiments to test the viability of HIT to promote improved care and lower overall costs are offered as examples of ways to expand the use of HIT.

**HIT’s Current Role in Strengthening LTC**

HIT includes a broad range of technological tools that hold promise for supporting and improving the delivery of LTC. Specifically, these tools have the potential to improve the management of clinical information and to improve communication with multiple caregivers. These tools also have the ability to support greater independence among users of LTC services. The following are a few examples.

- **Electronic Health Records (EHRs).** EHRs are computerized health records that enable healthcare providers with access to comprehensive patient health information at the point of care.
- **Remote Monitoring Technologies.** Remote monitoring technologies, such as electronic perimeter management and wander management systems, are tools to assist in the care of people with cognitive impairment and facilitate communication between providers and patients while in different locations. They can be installed in individuals’ homes or in LTC facilities.
- **Aging Services Technology (AST).** ASTs are devices designed to assist individuals in performing activities of daily living and maintaining independence. The category includes a wide range of devices including those that remind individuals to eat and take medication, as well as video phones.
- **Personal Health Records (PHRs).** PHRs are consumer-owned tools that help individuals collect, maintain, and share information related to their health status with physicians, caregivers, and family.

While few LTC providers have been able to devote sufficient resources to take full advantage of these tools, some public- and private-sector providers have successfully incorporated the use of HIT into their care programs. Examples of such programs are listed below.

- The Veterans Health Administration Telehealth program uses telehealth technologies, such as interactive video, to coordinate care for congestive heart failure patients while they remain in their homes.7,8
- Several grants under the U.S. Department of Agriculture’s Visiting Nurse Association program utilize digitized clinical records and provide laptops to field clinicians that link clinical and administrative functions.9
• Medicare’s Post-Acute Care Payment Reform Demonstration uses the Continuity Assessment Record and Evaluation (CARE) patient assessment instrument to electronically collect hospital admissions and discharge data from participating providers.\textsuperscript{10}

• Some states and the federal Administration on Aging have developed Alzheimer’s and other disease-specific programs\textsuperscript{11} that offer support to family caregivers (respite, caregiver training, counseling), and provide resources for different home-based technologies, such as electronic perimeter monitoring, personal emergency response, and community-wide wander management systems.

• The medical home, a care delivery model that assigns responsibility to a single provider who then coordinates with others through the use of HIT, will be tested under a Medicare demonstration beginning in fall 2008.\textsuperscript{12} Bridges to Excellence, a nonprofit consortium of large employers, industry, physicians, and researchers dedicated to systematic quality improvement, is also supporting the model through its Medical Home Program that rewards physicians for the demonstrated use of the model to support care delivery.\textsuperscript{13}

• Erikson Retirement Communities provides PHRs to its patients and credits this technology with saving lives by improving communication between physicians and patients.\textsuperscript{14}

**Further Approaches to Expanding HIT into LTC**

While there are promising examples of how HIT can be incorporated into the LTC system — similar to the entire healthcare system — broader adoption and continued use of HIT tools remains limited. Concerns about the privacy and security of electronic personal health information and the limited ability for tools to exchange information have stifled adoption. More significantly, the lack of funding to support HIT investments in the LTC sector has prohibited many providers and facilities from implementing HIT.\textsuperscript{15} Such implementation generally requires a large upfront investment, as well as ongoing human and financial resources to integrate the tools into workflow processes and maintain the technology over time. LTC facilities are already short on resources, limiting their ability to make HIT investment a priority. In addition, incentives need to be provided to individuals and families to seek these tools in the context of their overall LTC planning.

Policymakers and LTC stakeholders seeking to expand the role of HIT to improve the LTC system have several approaches to consider, either individually or collectively, to address these barriers. While these approaches may increase costs in the short run, the expectation is for long-run costs to be reduced through delayed nursing home stays, avoided re-hospitalizations, or decreased staffing needs. For example, technology-enabled facilities have demonstrated higher staff retention rates, and therefore lower costs.\textsuperscript{16}

**Approach One: Provide Incentives for Facility Investment in Technology.** Under this approach, nursing homes and other LTC facilities would be provided incentives to upgrade facilities and use technologies. For example, facilities could invest in EHRs with patient alerts and decision support tools that would make LTC care processes more efficient and more targeted to the individual needs of the resident. Such investments in EHRs could alleviate the strain on nursing home staff since they would automatically prompt residents at certain times and thus decrease the frequency for physically monitoring residents.

Federal or state regulating agencies could provide incentives for these investments by designating facilities as “HIT-enabled.” The designation would send a quality signal to individuals and their families as they select a
LTC facility. HIT-enabled facilities could also have certain regulatory requirements adjusted, such as the frequency of staff visits with patients. Further, federal or state governments could offer facilities tax credits, grants, or other financial incentives to offset the costs of purchasing and installing these technologies.

**Approach Two: Provide Incentives to Individuals to Adapt Their Homes with Prescribed Technologies.** Several states are currently implementing Partnership Programs, whereby middle-income individuals are provided incentives to purchase private LTC insurance coverage. Individuals who purchase a qualifying insurance policy are permitted to receive Medicaid LTC coverage after the benefits of their policy have expired. States and the federal government expect that participating individuals will delay the point at which they “spend-down” their resources to qualify for Medicaid, thereby reducing overall Medicaid costs.

The same approach is available to promote the adoption and use of HIT. Under this approach, individuals would adapt their homes with prescribed technologies, enabling them to receive LTC supports through their home and remain independent for a longer period of time after becoming disabled. Individuals with HIT-certified homes would receive automatic eligibility for Medicaid-financed LTC care after their disability progressed beyond the capabilities of the technological supports in their homes. In effect, this approach could reduce LTC costs by providing incentives to invest in home improvements rather than spending-down their assets to qualify for Medicaid-financed LTC coverage. The point at which they would qualify for Medicaid would be delayed, if not prevented altogether.

**Approach Three: Expand the Role of Adult Care Programs Through Technology.** This approach would expand the role of adult care programs through technology to transform them into centers of care coordination for patients with high need for LTC supports, such as Alzheimer’s patients. Adult care programs offer socialization and treatment in a central location, providing patients with time outside the home and relief for family caregivers. Care centers are usually licensed by the state in which they are located. Centers that offer particular health services may qualify for Medicaid reimbursement.

The role of these care centers to date has been limited. If the centers were given resources to supplement their services with EHRs or PHRs, their role could be expanded. These tools would collect and disseminate data to care teams, enabling higher-need patients to receive care in these less intensive and lower-cost centers.

Policy precedent exists to test expanding the role of adult day care services to reduce overall federal expenditures. The Medicare Medical Adult Day Care Services Demonstration authorized by Section 703 of the Medicare Modernization Act of 2003 is testing the integration of adult day care facilities with home health services under Medicare. This demonstration, which substitutes a portion of home health services with medical adult day care services to Medicare beneficiaries, will offer a testing ground for lessons learned about using Medicare to pay for adult day care services with a healthcare focus.

**Conclusion**

Federal and state policymakers are considering major overhauls to the LTC system. While promising, these overhauls will take many years to fully develop and implement. Complete overhauls will require federal and state governments to develop new financing mechanisms and regulatory oversight structures; the industry
will need to invest in new infrastructure and capacity; and individuals of all generations will need sufficient
time to plan for their future LTC needs under revamped incentives.

As the broader LTC debate unfolds, policymakers have a number of interim steps available for improving the
LTC system over the next several years. Several successful and replicable models, as highlighted above, could
be used to expand the role of HIT as one strategy to strengthen the LTC system in the short term. The Medicare
and Medicaid programs provide broad demonstration authority for the Centers for Medicare & Medicaid
Services and state Medicaid agencies to test new innovations. Grant money can be quickly dispensed to
states, as evidenced by the recent Medicaid Transformation Grants, authorized under the Deficit Reduction
Act of 2005. 17

Such steps are not clear-cut substitutes for broader reforms. Instead, the steps are additive, more immediately
achievable, and lay the foundation to support future reform goals.

Endnotes

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14 Tumlinson, A. 2007.
15 National Commission for Quality Long-Term Care. From Isolation to Integration: Recommendations to Improve Quality in Long-Term
16 Tumlinson, A. 2007.
17 For more information on Medicaid Transformation Grants, go to: http://www.cms.hhs.gov/MedicaidTransGrants/.