State of Aging Services Technology Policy in Ohio

Primary Author:
Scott Peifer,
Center for Aging Services Technologies (CAST)
American Association of Homes and Services for the Aging (AAHSA)

in partnership with
Association of Ohio Philanthropic Homes,
Housing and Services for the Aging (AOPHA)

August 2010
State of Aging Services Technology Policy in Ohio

CAST™
Center for Aging Services Technologies

A program of the American Association of Homes and Services for the Aging (AAHSA)

2519 Connecticut Ave., NW Washington, DC 20008-1520
Phone (202) 508-9416
Fax (202) 220-0032

Web site: www.agingtech.org

© Copyright 2010 AAHSA
# Table of Contents

1. Introduction .................................................................................................................................................. 2  
   1.1 Scope of Paper ......................................................................................................................................... 2  
   1.2 Benefits of Broad Aging Services Technology Adoption ................................................................. 2  
   1.3 Definitions ............................................................................................................................................. 3  

2. Policy Context ............................................................................................................................................... 5  
   2.1 PERS and Medication Dispensing Technology Services for Older Adults ............................................. 5  
   2.2 Examples of Utilization of Reimbursement for PERS and Rx Dispensing ............................................. 7  
   2.3 Proposed Remote Monitoring Technology Services for Disabled Adults, Plans for Aging ............... 7  
   2.4 Health Information Technology Initiatives Relevant to Aging and Long-term Care ...................... 8  

3. Ohio Research and Demonstration Activities Informing Policy Development ......................................... 11  
   3.1 Scripps Gerontology Center at Miami University in Ohio Research of Monitoring Technology in Dementia Care ........................................................................................................... 11  
   3.2 Wright State University Nursing Institute/ Graceworks Bethany Village “Living Laboratory” ..... 12  
   3.3 Council on Aging of Southwestern Ohio “Life Transitions Home” ................................................. 15  
   3.4 Case Western Reserve University Aging Technology Research Initiatives .................................... 17  

4. Provider Utilization of Aging Services Technologies .................................................................................. 19  
   4.1 Technology Adoption Rates by Ohio Skilled Nursing Facilities ......................................................... 19  
   4.2 Examples of Innovation and New Service Models Using Technology ................................................. 23  
      4.2.1 Telehealth in Chronic Disease Management and Health Promotion ........................................ 23  
      4.2.2 Virtual Service Coordinators in Affordable Senior Housing .................................................... 25  
      4.2.3 Safety Net in Assisted Living ...................................................................................................... 26  
      4.2.4 From EHRs to Cognitive Fitness, Broad Focus on Technology Adoption ................................ 28  

5. Policy Recommendations ......................................................................................................................... 29  
   5.1 Expand Breadth of Policies to Support Technology-Enabled Care ............................................... 29  
   5.2 Examples of Supportive State Policies ............................................................................................... 31  
   5.3 Leverage Recently Enacted Federal Policies and Programs .............................................................. 33  

6. Conclusion .................................................................................................................................................. 33
1. INTRODUCTION

1.1 Scope of Paper
The purpose of this paper is to describe the current state of affairs in aging services technology and policy in the State of Ohio, particularly with regard to the advancement of technology-enabled services in long-term care and home settings. This paper seeks to highlight innovative practices of state government, aging services organizations and others to advance the use of aging services technologies in Ohio. It serves as a baseline for further technology development and deployment. This paper is part of a series of papers that focus on individual states’ progress to date and opportunities for advancing the use of aging services technologies. It is also intended that this series will serve as a best-practice and advocacy guide for use in states nationwide.

This paper was completed in partnership with the Association of Ohio Philanthropic Homes, Housing and Services for the Aging (AOPHA) and benefited from the insights and experience of its members and staff.

It also benefited from the assistance of the Ohio Homecare Organization, the Ohio Department of Aging, several Area Agencies on Aging and others. The contributions of CAST members and sponsors and all parties interviewed were invaluable.

1.2 Benefits of Broad Aging Services Technology Adoption
The value of enabling a broad range of technologies to enhance services and care for older adults has been widely discussed. An increasing body of evidence shows that when appropriate technologies are paired with services to meet an individual’s specific support needs, those services are more effective, efficient and reduce overall health care costs. Because a “one-size-fits-all” deployment of technology is neither effective nor sustainable, it is essential that private and public policies and reimbursement programs enable the deployment of a broad range of technologies to successfully enhance services and care for older adults.

Health and wellness technologies commonly referred to as “remote monitoring” and “telehealth” allow caregivers and health care providers to monitor a person’s ability to carry out activities of daily living and facilitate the daily collection of important health information. They help older people take proactive steps to maintain their own health and control their care; give informal caregivers an objective assessment of an older relative’s ability to live independently; help professional caregivers coordinate, dispatch and track the delivery of needed care and services; and allow health care providers to identify early onset of disease, prescribe appropriate interventions and monitor the
efficacy of those interventions.¹ Recent research shows that targeted deployment of health and wellness technologies reduces hospitalizations among older adults living with chronic conditions.

Medication compliance technologies have monitoring, reminding, and dispensing features that can improve compliance, health outcomes and reduce the overall cost of care as well as provide peace of mind to informal caregivers. Safety technologies, such as Personal Emergency Response Systems (PERS) are well documented to enable swift intervention in the event of a fall, thereby reducing adverse effects and saving lives. Newer versions of these technologies employ automatic fall detection and global positioning to enable emergency response without requiring the press of a button. Other new PERS products incorporate tracking of key health vitals to help prevent falls.

Cognitive fitness technologies are proving to maintain and increase mental acuity and promise to slow down or prevent the onset of dementia such as Alzheimer’s disease. Social connectedness technologies are designed to reduce isolation, improve quality of life and improve health for both seniors and caregivers (primarily informal caregivers).

Finally, electronic documentation technologies include electronic health records, point of care/ point of services systems, electronic prescribing, electronic medication administration records, electronic charting and electronic workflow and documentation systems. Some electronic health records offer the individual and/ or an authorized family member with access to health information on a patient portal or a personal health record. These technologies provide more accurate and timely documentation, reduce time spent on manual documentation, reduce errors, and improve efficiencies for providers. When health information is exchanged with other healthcare providers, these systems reduce unnecessary repeated procedures and improve care coordination, and in turn reduce the cost of care to payers and improve the quality of care and health outcomes to seniors. The ability of these systems to exchange information with other systems and providers, particularly acute care providers (like physicians and hospitals), is key to guarantee the completeness of information, the continuity of information and continuity of care for seniors who are known to have multiple chronic conditions and multiple providers, and tend to transition between different care settings.

### 1.3 Definitions

The following are definitions of key terms used in this paper:

*Aging services technologies (ASTs):* Technologies that can be used by older adults, caregivers (both professional and informal), health care providers and aging services providers to improve the quality

---

¹ State of Aging Services Technologies, CAST and AAHSA, March 2008
of care, enhance the caregivers’ experience, efficiencies and cost-effectiveness. These technologies broadly include assistive, telemonitoring, telehealth, telemedicine, information, and communication technologies that intend to improve the aging or care experience. Aging services technologies can be categorized into three broad areas based on the relationship these technologies address between the older adult and his/ her environment (safety), oneself (physical and mental health/ wellbeing), and others (social interaction). For more information on specific types of aging services technologies see www.agingtech.org.

Health information technology (HIT): Hardware and software used to store, retrieve, share and use health information to treat patients effectively.

In addition, the National Alliance for Health Information Technology, which managed a federally funded initiative to seek industry consensus on the use and definitions of specific information technology terms, has published the following definitions which may be referred to in this paper:

**Electronic Medical Record**: An electronic record of health-related information on an individual that can be created, gathered, managed and consulted by authorized clinicians and staff within one health care organization.

**Electronic Health Record**: An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be created, managed and consulted by authorized clinicians and staff across more than one health care organization.

**Personal Health Record**: An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared and controlled by the individual.

**Health Information Exchange**: The electronic movement of health-related information among organizations according to nationally recognized standards.

**Health Information Organization**: An organization that oversees and governs the exchange of health-related information among organizations according to nationally recognized standards.

**Regional Health Information Organization**: A health information organization that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community.
2. POLICY CONTEXT

The State of Ohio, like several other states in recent years, is making concerted effort to balance Medicaid-funded aging services in order to better meet the needs or desires of older Ohioans in a fiscally sustainable manner. Guiding its efforts is a 45-member “Unified Long-Term Care Systems Workgroup” comprised of state staff from all relevant agencies and departments, service providers and affiliated organizations, consumer representatives, legislators, labor, and academic researchers. The workgroup is charged with helping the state provide consumers with the “right services” in the “right settings” at the “right cost,” improve outcomes for seniors and persons with disabilities, and reduce administrative burden and duplication of efforts in state and local agencies, as well as providers.²

In a May 2008 report entitled “Building a Cost-effective, Consumer-friendly Long-term Services and Supports System,” the workgroup recommended expanding some services that were limited at the time. These services included: “Specialty equipment and assistive devices; technology to assist the individual in the home environment; equipment to assist with medication administration; telemedicine; home modifications.”³ The State’s current and planned policies are consistent with this recommendation as discussed below. The workgroup has begun examining the promise of remote monitoring and telemedicine to help meet these goals more closely and is set to release a second set of recommendations by fall 2010.

2.1 PERS and Medication Dispensing Technology Service Reimbursement for Older Adults

The State of Ohio makes extensive use of Personal Emergency Response Systems (PERS) and medication dispensing technologies though it’s main Medicaid waiver “PASSPORT” program and the consumer-directed waiver “Choices” program. PERS and medication dispensing services are also available through the PASSPORT look-alike locally-funded aging services programs in some parts of the state.

At the end of March 2010, 72 percent or 21,064 of PASSPORT clients were receiving “Emergency Response System (ERS)” services, and 61% or 348 Choices consumers had chosen to use ERS services.⁴ Utilization rates for medication dispensing technologies were not available because the technology is categorized together with home medical equipment and supplies.

Ohio’s ERS services are managed through Area Agencies on Aging pursuant to Administrative Code 173-39-02.6. The policy contains several requirements, including:

---

² Ohio Department of Aging, Unified Long-Term Care Workgroup information (http://aging.ohio.gov/information/ultcb/)
⁴ Ohio Department of Aging, July 2010
ERS service must include a method for the consumer to activate an alarm signal to prompt a response. Before initiating ERS service, providers (with oversight by AAA case managers) must attempt to secure the names of at least two “responders” from each consumer (typically informal care givers, augmented by agency staff as needed). Emergency response centers are to have 24/7 capability to respond to emergency signals within 60 seconds by communicating with consumer and notifying responders and/or emergency personnel; Providers must maintain records regarding all service contacts, installation and monthly maintenance of ERS equipment, and bi-annual updates of responder contact information; Providers must furnish consumers with an in-person demonstration of the ERS equipment.

ERS utilization and payment are split into two parts, or “units”: service (rental of 16 days or more per month) and installation costs. In FY 2008, Ohio’s Medicaid PASSPORT expenditures for ERS services totaled $6.5 million. The services were delivered by 69 providers to approximately 29,159 consumers. On average, consumers received ERS service for eight months of the year at a reimbursement rate of $32.26 per month.5

The PASSPORT program reimbursed for 1,515 new installations in FY 2008, with an average reimbursement rate of $31.83, equal to the program cap for reimbursement costs. However, approximately 15 percent of installations had no cost because of the way some providers package service costs to offer free installation.6

Reimbursement for the use of medication dispensers is made under a “home medical equipment” category and is not separately delineated. Ohio Administrative Code 173-39-02.7 broadly defines home medical equipment and supplies as “…items and/or supplies eligible to be purchased, installed and/or rented…that enable the consumer to function with greater independence in the home and help prevent the consumer’s placement in a nursing facility.” Other items occupying this category include walker baskets or trays, room monitors, eating and dressing assistive devices, etc. In FY 2008, 5

Ohio’s Emergency Response Service in PASSPORT Waiver 2008

- $6.5 million statewide
- 29,159 consumers
- 69 providers
- $32/month average

6 Ibid
approximately 77,285 units of home medical equipment were billed for a total of $5.9 million or $76 per unit.

The State of Ohio also has “Medication Reminders & Administration” reimbursement within its Assisted Living Waiver program as part of an all-inclusive “Tier 3” payment rate. Specific reimbursement for medication related services is not delineated, but to some degree can be discerned by noting that the per-day rate for tier 3 is $10 per day higher than for those consumers in tier 2. However, services other than medication reminders and administration also account for some of the rate difference.

### 2.2 Examples of Utilization of Reimbursement for PERS and Rx Dispensing

Given the significant deployment of ERS on the state-level, it is no surprise that a large percentage of local providers’ PASSPORT consumers receive these services. For example, the Area Agency on Aging of Northwestern Ohio (“Area 4”) has 1,433 consumers using ERS, comprising approximately 70 percent of its caseload. Area 4 utilizes a variety of ERS devices, such as Phillips Lifeline ([www.lifelinesys.com](http://www.lifelinesys.com)), the BOB3600 by Critical Signal Technologies ([www.criticalsignaltechnologies.com](http://www.criticalsignaltechnologies.com)), VRI Medical Alert System’s “Help Button” ([www.monitoringcare.com](http://www.monitoringcare.com)), and the PERS technology by Guardian Medical Monitoring ([www.guardianmedicalmonitoring.com](http://www.guardianmedicalmonitoring.com)).

Likewise, approximately 60 percent of consumers served by the Council on Aging of Southwestern Ohio are receiving PERS technology services. Private nonprofit provider Ohio Presbyterian Retirement Services (OPRS) delivers ERS services to approximately 1,086 of its PASSPORT clients across the state.

Far fewer Area 4 consumers are receiving medication dispensing services, approximately 150 consumers or seven percent of its caseload. Area 4 utilizes a variety of medication dispensers including those by Phillips, CST, VRI and Guardian among other vendors to serve its consumers.

### 2.3 Proposed Remote Monitoring Technology Services for Disabled Adults, Plans for Aging

With Ohio’s extensive and positive experience utilizing Personal Emergency Response Systems and medication dispensers in its PASSPORT and other aging service programs, the state is looking to expand its technology reimbursement to remote monitoring technologies. First to proceed is Ohio’s Department of Developmental Disabilities (DODD) who in April 2010 proposed a “Remote Monitoring (RM)” service in its Individual Options (IO) Medicaid waiver program. The proposal is currently under consideration by the Centers for Medicare and Medicaid (CMS) as a Medicaid Waiver amendment, and is expected to be available to Ohio providers in January 2011.
Under the waiver proposal, “remote monitoring” is defined as the monitoring of an individual in his or her residence by staff using one or more of the following systems: live video feed, live audio feed, motion sensing system, radio frequency identification, web-based monitoring system, or other device approved by DODD.” The proposal additionally requires that the remote monitoring service must 1) ensure health and safety; and 2) must be used to reduce or replace the amount of homemaker/personal care (HPC) services an individual receives.

**DODD Proposed Remote Monitoring Reimbursement Rates**:

- **RM Service Rate Model 1** is $6.47 per hour/per site when “natural” (unpaid) backup support is available;
- **RM Service Rate Model 2** is $9.83 per hour/per site when a HPC Provider is providing the backup support (under this model, remote monitoring service would switch to HPC when backup support is contacted)
- **RM Equipment reimbursement** is capped at $10,000 statewide annually; separate from RM service reimbursement.
  - When two or more individuals share Remote Monitoring Equipment at a residence, they are required to lease equipment that is shared.
  - Remote Monitoring Equipment that is for the specific use of a particular individual may be leased or purchased by that individual.

**Plans for Remote Monitoring Service with Older Adults**

The Ohio Department of Aging has plans to add reimbursement for remote monitoring services to its PASSPORT waiver program within the next year. The Department has been actively exploring the technology and believes its application with PASSPORT consumers would improve the quality and reach of services as well as staff efficiency. Several research initiatives underway in Ohio are informing the Department’s plans (see section three below). Furthermore, the Unified Long-Term Care Systems Workgroup is reviewing potential technologies for deployment under the waiver.

**2.4 Health Information Technology Initiatives Relevant to Aging and Long-term Care**

The American Recovery and Reinvestment Act of 2009 (ARRA) contained health information technology provisions (the “HITECH Act”) that aim to create interoperable Electronic Health Records (EHR) by 2014. In the act, long-term and post acute care providers were prominently included in the definition of health care provider:

---

Because long-term and post acute care providers were not included in the HITECH Act’s Medicare and Medicaid EHR “incentive payments,” state Health Information Exchange (HIE) efforts to implement the Act do not typically feature a focus on or inclusion of these care providers. However, the Act does require that health care providers (including long-term care) be consulted in the development of state-level HIE Cooperative Agreement Grants.

More recent federal legislation, the “Patient Protection and Affordable Care Act (PPACA) of 2010” further links long-term care providers to state-level HIE activities. The Act contains a four-year Certified EHR grant program for long-term care facilities beginning in FY 2011. The grants are to be used to offset costs related to purchasing, leasing, developing, and implementing certified EHR technology and may be used for any computer infrastructure including hardware and software, upgrading current systems, and staff training.

Section 2041 of the PPACA requires long-term care facilities that receive grants to participate in state-level health information exchange entities:

“(4) PARTICIPATION IN STATE HEALTH EXCHANGES.—A long-term care facility that receives a grant under this subsection shall, where available, participate in activities conducted by a State or a qualified State-designated entity (as defined in section 3013(f) of the Public Health Service Act) under a grant under section 3013 of the Public Health Service Act to coordinate care and for other purposes determined appropriate by the Secretary.”

Furthermore, applicants are required to demonstrate evidence of consultation with their state regarding HIE coordination:

“To be eligible to receive a grant under this subsection, a long-term care facility shall submit an application to the Secretary at such time, in such manner, and containing such information as the Secretary may require (which may include evidence of consultation with the State in which the long-term care facility is located with respect to carrying out activities funded under the grant).”
The Ohio Health Information Partnership (OHIP) ([www.ohiponline.org](http://www.ohiponline.org)) is the state-designated entity for Ohio’s statewide health information exchange. OHIP was awarded $43 million in funding from the ARRA for the development and implementation of a health information exchange in Ohio. OHIP sees four primary drivers influencing its strategy for statewide HIE adoption: meaningful use, national standards protocol development, revenue sustainability and balancing core services with regional flexibility. OHIP is planning a phased implementation approach focusing on clinical and administrative services most likely to address these primary drivers and progressing towards a full service solution. OHIP recently expanded its board membership to include a more comprehensive group of stakeholder interests, including an AARP representative, to assist in the direction of Ohio’s implementation of health information technology (HIT) initiatives.

In its HIE Project Abstract and Narrative, OHIP acknowledged the key role that long-term care and other providers have in creating meaningful exchange of health information across the continuum of care. It stated that:

> “OHIP recognizes that the statewide HIE’s ability to concretely affect health care quality and related outcomes is dependent upon the ability of all providers to participate in meaningful exchange including safety-net, social service, long-term care and other providers who have historically not been able to exchange data within the continuum of care. OHIP intends to evaluate the service and geographic support HIEs offer, identify gaps and recommend solutions for meeting the HIE priorities identified for Ohio.”

This recognition is further reflected in OHIP’s HIE Technology Development Principles, which serve as a basis for a Request for Proposals (RFP) currently being finalized and is intended to identify a full-service HIE solution that aligns with the below principles and other stated goals, objectives, strategies and vision. The following four principles are especially noteworthy:

- **Peer-to-Peer Connectivity**
  Any entity that meets the criteria established will be able to connect to the statewide HIE. Entities may include providers, community-based HIEs, payers, consumers, pharmacies, state agencies, registries, hospitals, *long-term care facilities*, labs, and other ancillary providers who can serve both as a provider and consumer of services.

- **Enhanced Provider Services**
  The technical solution will offer enhanced service capability to providers as an incentive for HIE participation, especially for those providers who may not have extensive EHR capability.

---

6  OHIP HIE Project Abstract and Narrative, page 8, October 2009.
These services may include e-Prescription, patient messaging, clinical decision support, practice management functionality or other EHR or EHR-lite services.

✧ **Service Oriented Architecture (SOA)**
The model will support a service oriented approach for connecting disparate technology.

✧ **Device Neutral, Single Access Methodology**
To the extent possible, the technology model will support a device-independent, singular approach to access for HIE participants. Examples of this approach include single sign-on integration with existing HIEs, central web portal access, and centralized patient insurance eligibility verification via desktop, laptop, other mobile devices, EHR integration, fax, email messaging, etc.

The Ohio Health Information Partnership is currently finalizing an HIE Request for Proposal (RFP) and on July 26th it formally submitted its Health Information Exchange (HIE) State Plan to the Office of the National Coordinator (ONC) for approval. The plan outlines the strategic and operational direction needed in order to develop a statewide HIE for Ohio. It will publicly release the plan after it receives feedback from ONC when it is closer to approval and the contents of the document are final.

3. **Ohio Research and Demonstration Activities Informing Policy Development**

Recent and newly formed research and demonstration activities in Ohio are an important source of information for policy makers and providers alike regarding the value and effective application of technology in aging services.

3.1 **Scripps Gerontology Center at Miami University in Ohio Research of Monitoring Technology in Dementia Care**

Since early this decade the Scripps Gerontology Center has pursued social research to explore how various monitoring technologies may help family members who care for a relative with dementia or other age-related impairment. The Center also has published survey results regarding the use of technology by Ohio’s nursing homes (see section 4 below). Scripps maintains close connection to state department staff and policy makers by serving on the Unified Long-term Care Systems Workgroup facilitated by the Ohio Department of Aging. The research was funded as part of a grant from the Ohio General Assembly, through the Ohio Board of Regents to the Ohio Long-Term Care Research Project. Additional sources of support were the Area Agency on Aging of Northwest Ohio, Inc. (PSA 4); the Ohio District 5 Area Agency on Aging Inc., (PSA 5).
Scripps in 2001 first engaged 16 caregivers of persons with significant dementia to develop suitable technology interventions and caregiving supports. The Center later installed a monitoring system in 19 homes. Participants were recruited through two area agencies on aging (AAAs) in Ohio and the local Alzheimer’s Association chapter that served the counties in the two AAAs’ catchment areas. Caregivers themselves were 63 years of age on average. Through the course of the research, an internet-based monitoring system was developed to decrease the caregiving burden for participants. While they did not think of themselves as especially technology savvy, caregivers adapted rather well to the use of technology tools packaged by Xanboo (www.xanboo.com) including motion sensors, contact sensors, and sometimes video cameras into the homes of their relative with dementia. Scripps further explored the value of monitoring technology in dementia care using the HealthSense eNeighbor system (www.healthsense.com) over a period of 6 months. Ultimately, the research concluded that while integration challenges related to installation and maintenance exist, these technologies “have the capacity to provide and support an integrated infrastructure for caregiving in the homes of persons with dementia.”

After the formal research came to a close, most participants wished to continue using the technology. Scripps donated the equipment and the participating Area Agencies on Aging and the Alzheimer’s Association are coordinating efforts to cover monthly technology costs and project management. This first-hand experience with the technology has given the agencies involved an important base from which to expand should the state add reimbursement for such monitoring technologies to the PASSPORT Medicaid program.

3.2 Wright State University Nursing Institute/ Graceworks Bethany Village “Living Laboratory”

In late 2009, the Nursing Institute of West Central Ohio at Wright State University and Graceworks Lutheran Services partnered to create a “living laboratory” home at Graceworks’ Bethany Village campus in Centerville, Ohio (http://www.wright.edu/nursinginstitute/our-expertise.html#laboratory). Its purpose is to be a hands-on living laboratory for innovation, education, research and practice in health service to older adults. Graceworks has served older adults and persons with disabilities for 63 years in Ohio, Indiana and Kentucky, with Bethany Village being one of its first locations. Bethany Village is a continuing care retirement community offering villa, cottage and apartment homes, assisted living, memory-supportive care, and skilled nursing care. The living laboratory is located in a replica of a farm house originally occupying the property. Wright State University departments

---

involved in the project include the colleges of technology, engineering, nursing, social work, and the medical school.

The partners see the Ohio State Legislature and Administration policy makers as a key education audience and collaborator. To date they have held a legislative breakfast for legislators and staff and have developed an educational video for the purpose of educating legislators about the available technology and the importance of directing aging and health service dollars to technology-enabled community-based settings of care (http://www.wright.edu/nursinginstitute/our-expertiselabvideo.html).

The living laboratory has received federal and state funding. First, a $94,000 grant from the Health Resources and Services Administration (HRSA) funded the purchase of the lab’s first human patient simulators that now “live” in the home as an electronic intergenerational family. In March of 2010 the State of Ohio gave the living laboratory a $473,000 funding boost from the Higher Education Capital Fund through the state Controlling Board. The funding is to complete the transformation of the traditional farm house on the Bethany Village campus into a high-tech learning center to teach new ways of caring at home to nursing students, social workers and family members. The funding also enables the home to be an incubator for the development and refinement of new technologies.

Specific goals of the Living Laboratory include:

✧ Developing technology to help older Ohioans remain safe and independent as long as possible
✧ Developing technology-enabled practice models around chronic care
✧ Transforming health care from institutional to a self-health management platform
✧ Improving the quality of care and quality of life for older adults and the people who care for them, both paid care staff and family caregivers
✧ Addressing the problems presented by an aging workforce; use telemedicine to extend efficiency, productivity and longevity of care workers
✧ Commercializing new technologies
Using technology to educate high school, college, graduate and medical students in best care techniques

Several technologies are being deployed and tested in the living laboratory including:

- **Telehealth, PERS, Medication Management.** The living lab will demonstrate and train staff in using internet-linked telehealth vital signs monitoring (i.e., blood pressure, weight, glucose, etc), personal emergency response, and medication management systems to enable older adults to reside safely at home using VRI technologies (http://www.monitoringcare.com).

- **Three-Dimensional Wireless Sensor Network.** The living lab is enabling the development of a wireless sensor network comprised of nine ceiling-mounted sensors to detect three-dimensional orientation of residents wearing a monitoring device. The system would provide accurate detection of whether a person is sitting, standing or has fallen without the use of cameras. Students and faculty are working to evolve the technology into a smaller, more user-friendly format for possible commercialization.

- **Human Patient Simulators.** The “Techy Family” comprised of sophisticated human patient simulators – Nat, Andy, Beth, Josie, and Grandpa George Techy are operated by computer to train caregivers. Each of the simulators has a medical history, and each requires a different array of nursing skills. Most have veins and arteries so nursing students can practice basic tasks such as inserting an intravenous line. The controller, an experienced nurse, can elevate a patient’s heart rate, depress his or her breathing or create other symptoms to which the nursing students are to identify and respond. Some of the simulators are able to speak to describe symptoms and answer questions. The mother of the Techy family, Beth, has interchangeable parts designed to familiarize students with the complexities of women’s health examinations. Beth can be fitted with parts that demonstrate both normal and abnormal exam findings. She also has realistic bed sores and skin breakdown on her body to help learners recognize and treat those conditions.

- **Remote Presence Robot.** The Living Laboratory is utilizing the “RP-7” by InTouch Health Technologies in Santa Barbara, California (www.intouchhealth.com) which allows faculty and physicians in remote locations to interact and instruct students in the Living Laboratory or any location. The robot utilizes a flat screen monitor to display an educator or
practitioner’s face and has a sophisticated visualization system to “see” the patient. The RP-7 is the first and only FDA-cleared Remote Presence device which allows direct connection to Class II medical devices including electronic stethoscopes, otoscopes and ultrasound to transmit medical data to the remote physician.

**Telehealth Kiosk Hypertension Study**

Wright State University partnered with CAST and the AAHSA Institute for the Future of Aging Services (IFAS) in a study funded by the Agency for Healthcare Research and Quality (AHRQ) evaluating the feasibility of deploying telehealth kiosks in federally funded Nutrition Centers to manage hypertension. Wright State nurse researchers helped participants understand and manage their condition by training people to take their own blood pressure once a week, and track blood pressure readings through an electronic database via blood pressure monitoring devices. The study evaluated the willingness, compliance and ability of older people and their health professionals to use a telehealth intervention to manage hypertension. CAST led a literature review on the efficacy of using telehealth in the management of hypertension. The research team concluded that telehealth is an efficacious intervention and submitted its final report to AHRQ. A paper on the literature review was recently accepted by the Journal of Telemedicine and E-Health.

**3.3 Council on Aging of Southwestern Ohio “Life Transitions Home”**

The Council on Aging of Southwestern Ohio (PSA 1) has embarked on a project to build demonstration homes that effectively showcase the use of various technologies and design elements that empower individuals to age in place. The Council believes that currently available technologies, when combined with community-based care, can reduce the risk of nursing home placement. The homes will incorporate multiple systems to address health and safety issues common among aging populations. A key goal is to show, both visually and hands-on, that technology-enabled community-based care is a viable alternative for a greater share of the state’s Medicaid funding.

The Council contends that technology enables effective relationships between seniors, caregivers, family members, service providers, and health and care management professionals. In the aging in place setting, they see four types of relationships that technology can aid to enhance quality of life: 1) communication and engagement, 2) home safety and security, 3) health and wellness, and 4) learning and contribution. Furthermore, in order for technology-enabled relationships to work, the technology must be easy-to-use. Service providers and health care staff must be able to integrate the technology into their workflow. And, the technology must be affordable and widely available.
Its first accomplishment in this process was partnering with John Hueber Homes, American Entertainment Systems, and ElderWatch by CyberNet Solutions to create the “Life Transitions Home – Tech Version” at the CitiRAMA home show in Cincinnati in June 2010. The home featured the GrandCare (www.grandcare.com) communication and monitoring system designed to help older adults remain in their own homes and bring peace of mind to caregivers in addition to several universal design features. Various wireless motion and wellness sensors were installed throughout the house to gather and log information important to caregivers including health vitals, medication reminders, a bed/sleep sensor, and safety features at doorways. Caregivers can set up alerts and automated rules that notify them if something is amiss. The GrandCare System also helps older adults, caregivers, and other family and friends stay connected through photos, messages, shared calendars, and notes, voice and visual reminders, emails, Internet-connected cameras, and videos. The entire system operates by touch screen for ease of use.

Council on Aging staff members, board volunteers, and associates were on hand during the 10-day run of the show to provide information about COA services. According to the Homebuilders Association, 5,000 people attended the show. The Council on Aging is continuing collaboration with its CitiRAMA partners on plans for future aging in place demonstration homes. It has begun the initial planning to open one or two model homes in 2011, and is refining financing details and respective roles and responsibilities for partners.

Future demonstration homes will incorporate a wider range of technologies including wellness monitoring, telehealth, cognitive fitness, smart reminders, and smart lighting and appliances. Of importance to policy development, the Council intends to showcase how telehealth can be used by the AAA’s care management staff for more efficient use of resources and real-time interventions. Beyond the demonstration homes, the Council is in the process of building a multi-generational technology plan to explore the use of technology in the delivery of community based services and care management services to older adults. It will be hosting focus groups and key informant interviews over the remainder of the year to form the basis for a comprehensive technology adoption plan.
3.4 Case Western Reserve University Aging Technologies Research Initiatives  
Case Western Reserve University, through its University Center on Aging and Health (UCAH), has focused an interdisciplinary collaboration of researchers and practitioners on several aging services technology research initiatives in its work to advance innovation for the health and well-being of older adults. UCAH’s technology focus is evidenced by the planned content of its next annual aging conference in April 2011. Entitled “Aging 2.0: Technology, Trends + Transitions,” the conference will explore the current and emerging applications of technology which promote the health and independence of older adults.

With policy makers among the invitees, the conference will examine:

1. The landscape of health care technology targeted at older adults living independently
2. The public policy implications and ethical issues relating to this effort
3. The specific emerging and future trends in technology (including products) and its relevance to an aging population

It will seek to describe several current technologies as they apply to different settings of healthcare, and several methods of engaging the older adult and caregiver in advancing and utilizing technology to support independence in older adults.

With support recently received from the McGregor Foundation and the President’s Strategic Initiatives Fund, UCAH made several grants as part of an initiative to inspire new interdisciplinary research on aging. The Center believes the funded research projects have the potential to leverage larger grants following the development of initial findings.

Smart Wheelchair

One of the funded projects has brought together CWRU researchers from the department of electrical engineering and computer science, the Case School of Engineering, and cognitive science in the College of Arts and Sciences to design a new type of interactive wheelchair that moves by voice commands.

According to CWRU, over 200,000 powered wheelchairs are sold in the US annually, with 40% of wheelchair users reporting difficulty with many steering and maneuvering tasks. Some prospective users cannot use a joystick due to neural disorders, cognitive deficits, paralysis, or due to prohibition of powered wheelchairs in retirement communities (due to danger to residents).
Based on technology for autonomous vehicles, the interdisciplinary CWRU faculty are introducing sensors and computer controls that enhance a user’s capabilities. With sensor feedback, a wheelchair can be made to disobey any joystick commands that would result in collisions, thus making powered wheelchairs safe to use in senior living communities. Further, controlling wheelchairs based on natural language commands (such as “go to the dining room”) can provide a user with independent mobility, in spite of various physical or neural deficits. The team is currently demonstrating its work-in-progress smart wheelchair prototype that prevents collisions, as well as a prototype mobile vehicle that navigates to desired locations based on voice commands.

Effectiveness of Telehealth “TeleCare”
The UCAH in April 2010 awarded a one-year pilot grant to researchers from CWRU’s School of Nursing and the School of Medicine and a researcher from Cleveland State University to study the effectiveness of TeleCare in keeping individuals with complex health issues healthy and out of the hospital. In the study, named, “Supporting Self-Management with Telehealth for Patients with Multiple Morbidity,” researchers will work with 40 patients under the care of the Visiting Nurses Association (VNA) of Ohio.

Patients invited to participate in the study have one or more of the following illnesses: heart failure, chronic obstructive pulmonary disease (COPD) and diabetes. In addition, participant profiles will have symptoms of depression, anxiety or difficulties making decisions. Researchers are intentionally seeking participants with both physical and cognitive/mental health symptoms to determine if the technology is effective in helping “the real patient with real issues” manage their illnesses. A stated goal of the research is learning which patients (“use cases”) benefit the most from telehealth monitoring.

Brain Emporium
The Brain Emporium, opened by a Case Western Reserve University psychology professor, was Northeast Ohio’s first computerized brain fitness center. It was envisioned by the professor several years earlier as a place where people can come to engage, and with funding from CWRU opened in the spring of 2009. Located in the Fairhill Partners complex in Cleveland, the facility gives older adults the opportunity to work with cutting-edge, brain-training programs and games at little to no cost.

The Brain Emporium has eight computers outfitted with brain-training software, a Nintendo Wii and 10 Nintendo DS gaming systems. The programs are designed to engage and stimulate different
areas of cognition, including memory, visual-spatial abilities, mental flexibility, processing speed, language and planning.

Open to all older adults, its main users are from three local senior communities, including Judson at University Circle. Judson residents often go to the Brain Emporium twice a week for hour long sessions with brain fitness software. Faculty and graduate student assistants design brain-training regimens tailored to individual’s interests and abilities. The Emporium also encourages older adults to engage in physical “theraputainment” to build coordination and agility while playing virtual sports on a Nintendo Wii. Students from the Intergenerational School at the Fairhill campus can earn privileges to volunteer in the Brain Emporium to instruct the older adults on using the Wii.

CWRU faculty is now conducting research on a group of people using the Brain Emporium programs to determine if 30 or 40 sessions improve any areas of basic cognition. Research also will examine whether the visual- and attention-training aspects of the games affect the driving skills of older adults. Faculty also is creating an undergraduate class that incorporates brain fitness programs and educational information designed to help older adults maintain a healthy brain.

4. Provider Utilization of Aging Services Technologies

Below is a brief account of current utilization of aging services technologies by providers in Ohio to further give context to policy development that supports technology utilization.

4.1 Technology Adoption Rates by Ohio Skilled Nursing Facilities

Available data on aging service provider technology adoption rates in Ohio is limited to skilled nursing facilities, but this data is rather comprehensive and relatively current. In 2008 the Scripps Gerontology Center at Miami University in Ohio conducted its Biennial Survey of Long-Term Care Facilities: Nursing Home Questionnaire. For the first time the survey included a series of questions assessing nursing home information technology use in areas such as medical records, resident
medication schedules, resident care, and use of technologies by residents and staff. The survey had a response rate of 90.4 percent, or 880 Ohio nursing homes. The following information was published by Scripps in a 2009 report entitled, “Technology in Ohio Nursing Homes: A Report on the State of the Art” from its survey data.

**Use of Electronic Health Records (EHR)**

First with regard to the use of EHRs, the survey assessed progress toward full adoption on a scale of 1-7 points. Points were awarded as follows: 3 points if completely computerized; 2 points if a combination of paper and electronic records; 1 point if paper but had a plan in place to convert to electronic. In addition, 2 points were awarded if providers transferred resident records electronically; and 2 points if the MDS was available for staff on the computer. Therefore, if providers were completely computerized, had electronic transfer of records and had electronic MDS for staff they would receive the maximum 7 points.

Findings include:

✧ Ohio nursing facilities ranged from 1-5 on a 7-point scale toward adoption of EHRs.

✧ While 1.4% reported they relied solely on an EHR and five percent 5% transferred resident records electronically, no Ohio facilities achieved all 7 points for progress towards an EHR and approximately two-thirds (65%) still rely on paper-based charting.

✧ However, significant progress is apparent with 80% of facilities in the early to mid transition stages (score of 2-3) of converting to an EHR system and 10% in the late transition or already converted over to EMR (score 4-5). Five percent reported that they transfer resident records electronically.

---

**Ohio Nursing Home Use of Ten Patient Care Technologies**

**General Patient Care Technologies**
- Electronic tracking of personal care (26%)
- Electronic orders for lab tests (23%)
- Electronic orders for prescriptions (10%)
- Electronic doctor’s orders (10%)
- Automated medication administration (7%)
- Barcode medication administration system (5%)
- Electronic vital sign monitoring system (18%)

**Resident risk management**
- Personal Alarms for Fall Prevention (94%)
- Resident Elopement management system (78%)
- Tracking for residents who leave the facility (GPS) (2%)

Source: Scripps Gerontology Center (2008)
When asked what were the most important reasons for using an EHR, 43% cited greater efficiency, 20% said reduced storage, and 8% cited decreased errors.

Technology for Resident Care
Scripps surveyed facilities on their use of technology that seeks to improve quality of resident care through improvements such as accuracy in medical orders and medications, and improved safety of residents. Researchers included in this segment the use of electronic care documentation and electronic orders for lab tests, each being used by 23% of facilities. Approximately 10% of facilities reported using electronic prescription orders and physician orders. Overall, Scripps reports that 40% of facilities made “moderate” or greater use of resident care technology.

Degree of use for resident care technologies was defined as:
0 = no use;
1 - 4 = little use;
5 - 7 = moderate use; and
8 - 10 = extensive use out of the 10 types of technologies

Technology Used By Residents
The survey asked providers about the use of three types of technology used by residents: 1) software and hardware which allow residents and family members to communicate (access to the internet, video conferencing), 2) adaptive hardware or software to overcome resident physical limitations in computer use (trackballs, alternative keyboards), and 3) technology for activity and cognitive stimulation (game consoles, cognitive fitness devices or applications). General resident technology surveyed included the availability of computers and related equipment amenities.

Results showed that among Ohio nursing facilities:

พยายาม For general technologies, approximately half provided access to personal computers (48%), 44% provided internet access, and 32% printers

พยายาม Use of adaptive software averaged approximately 3%, comprised of screen reader software (3%); screen magnification software (7%); sound translation to text (2%); and voice recognition (1%)

พยายาม Use of adaptive hardware averaged five percent 5%, comprised of alternatives to a computer mouse (e.g. large trackball, touch pad, touch screen or joystick (7%); alternative keyboards

10 Scripps Gerontology Center, Miami University, Use of Technology in Ohio Nursing Homes, presentation to Gerontological Society of America Annual Meeting, November 24, 2008.
(e.g. enlarged keys for dexterity) (4%); and other alternative input devices (e.g. microphone, scanner, head-tracking pointer, foot-pedals) (4%)

✧ Use of interactive gaming or cognitive fitness systems was at 31%

✧ Utilization of watches or alarms to prompt cognitively impaired residents about events was approximately 4%

Barriers to adopting technology in long-term care

Finally, Scripps researches asked Ohio nursing home providers what were the top barriers to technology adoption. In brief, providers indicated that the top barriers to technology adoption were: financial reasons (50%); staff obstacles (30%); technology integration issues; and regulatory concerns. Barriers were broken down into several specific issues (see “Top 10” sidebar), which are helpful insights for policy makers, educators and providers to use in crafting solutions.

Overall, while the Scripps survey shows relatively low adoption rates of advanced technologies beyond the universally utilized electronic Minimum Data Set (MDS) submissions, it shows that in 2008, a vast majority of Ohio providers of skilled nursing care were in the process of converting to electronic health records (approximately 90%) and significant numbers were using electronic care documentation systems and electronic lab orders (23%). More than 150 providers were monitoring vital signs electronically (18%) and more than 270 (31%) providers were using gaming or cognitive fitness technologies. These numbers are likely to be higher today given the focus and attention on use of EHRs and other technologies over the past two years.

“Top 10 Barriers to Technology Adoption”

1. Lack of financial resources to purchase technology initially
2. Lack of financial resources for reimbursement for use of technology
3. Lack of financial resources to pay for maintenance and service as needed
4. Lack of integration of the various technologies
5. Lack of information about how to assess cost effectiveness of a technology
6. Staff lack of time to learn new technology
7. Lack of financial resources to pay for liability insurance, to cover the use of new technology compared to hands-on care
8. Staff lack of basic skills to use computers or technology
9. Staff anxiety or fear regarding technology use
10. Regulations that penalize or hamper implementation of technology

Source: Scripps Gerontology Center, Technology in Ohio Nursing Homes (2009)
4.2 Examples of Innovation and New Service Models Using Technology

While technology adoption in aging services is still early in its growth cycle, and reimbursement models remain largely absent, many providers in Ohio are moving ahead to maximize the potential of technology to enhance care for older adults. The following are just a few examples of innovation and service models employing aging services technologies.

4.2.1 Telehealth for Chronic Disease Management and Health Promotion – VNA Ohio

One leader in technology-enhanced care delivery is the Visiting Nurse Association of Ohio (www.vnaohio.org). The VNA serves Cleveland and 23 counties in Northeast and Central Ohio. Consistent with its mission to “provide compassionate, innovative and effective community-based home healthcare that promotes the health, independence and dignity” is its stated and demonstrated commitment to implement “technological innovations to enhance the health care...” they provide to clients.

VNA’s use of technology to enhance home healthcare spans 15 years. The agency first utilized telephone check-in systems that, through a series of automated questions, queried patients regarding their health status and linked to pagers to alert nurses of problems or questions. VNA began telehealth monitoring technology in 2002 with 25 units and today has nearly 400 units in operation at any given time.

Approximately one-third of its patient population uses the “TeleCare” telehealth technology, namely Honeywell’s HomMed (www.hommed.com). Using wired or wireless connections HomMed enables remote monitoring of health vitals heart rates, blood pressures, oxygen saturation, temperature, weight and blood sugar of patients.

Approximately 2500 people a year receive TeleCare services. The agency is also beginning to use video telehealth technologies for wound care in rural areas. Other senior service providers in Ohio, such as Judson Services, partner with the VNA to provide their residents/clients with remote medication management and telehealth services.

VNA’s staffing model for telehealth, referred to as “TeleCare,” has generally been comprised of a clinical manager, approximately a dozen RNs and two LPN field staff, three “central monitoring” nurses, and a quality coordinator. Patient health vitals are sent to VNA’s monitoring nurses who watch for problematic readings and trends as determined by the consumer’s physician. Focused on disease management and following proven evidence-based
practice guidelines, its target population has been those clients with chronic disease such as cardiac conditions, diabetes, and COPD, and for palliative care clients.

VNA has shown that patients with telemonitoring have better health outcomes, including reduction in re-hospitalization for heart failure exacerbation and improved clinical outcomes for self management. Other benefits for consumers have been higher patient satisfaction and improvement in patient perception of health status. The agency has found that generally consumers like the TeleCare monitoring because while distant, it feels like another person is helping to keep tabs on their health conditions. In a research initiative dubbed “Carewatch Ohio,” VNA Ohio used national heart failure standards of practice to compare a normal plan of care vs. a normal plan of care plus telehealth monitoring. VNA found that the addition of telemonitoring reduced emergency visits by nearly 75 percent. VNA estimates that for every 3000 such patients using telemonitoring, $35 million (Medicare dollars) are saved.

While VNA originally projected its use of telehealth would reduce the number of nurse visits it found instead that visits were refocused and made more targeted with intervention when problem vitals and trends became evident. The number of nurse visits was actually slightly higher with the use of telehealth than without, making it challenging to have a sustainable business model based on episodic Medicare reimbursement. However, other return on investment for the agency includes increased referrals, increased care manager case capacity and increased staff satisfaction and retention.

With no separate, dedicated funding source for telecare/telehealth services, VNA emphasizes the need for providers to have fund development efforts with corporations, community organizations, and foundations; and to build telecare services into agencies’ state and federal program budgets to the greatest extent possible and advocate for dedicated reimbursement.

However, the VNA is hopeful for a more financially sustainable business model for telehealth in home healthcare in the near future, now that some parts of health care payment incentives appear to be aligning to support outcomes enabled by telehealth and other technologies. Federal pay-for-performance payment policy changes which involve “process measures,” have made hospitals more financially interested in improving longitudinal patient outcomes, minimizing rehospitalizations, etc. The new measures will first be reported in the fourth quarter of 2010, creating a vested interest for hospitals to support the use of tools such as medication management and telehealth monitoring, especially for patients with chronic conditions.
The VNA is subsequently working to determine the most effective application of technology for specific groups of patients (“use cases”) that will make the greatest measurable improvements in longitudinal health outcomes and reduced healthcare episodes. It has partnered with University Center on Aging & Health at Case Western Reserve University on a research project to examine these questions (see section 3.4 above).

Ultimately, VNA says that the bottom line is the bottom line when it comes to using technology. Sustainable use has much to do with sorting out the economic model and incentives first, then determining how best the technologies can help accomplish those incentives by increasing the quality of care and patient outcomes. The VNA is making TeleCare a routine part of the plan of care for certain patient populations such as those with diabetes, COPD, and CHF as long as patients have adequate infrastructure connectivity in their homes (phone line and/or broadband connection).

4.2.2 Virtual Service Coordinators in Affordable Senior Housing

Affordable senior housing is often one of the last places to find an investment in technology, likely due to funding restrictions and generally a lower level of services in the independent setting. One of the more ubiquitous services in affordable senior housing settings is “service coordinators,” staff often funded by the US Department of Housing and Urban Development (HUD) who connect residents with appropriate community services, organize on-site health screenings, etc. to help maintain safety and independence. Some affordable housing communities, such as those funded by tax credits, do not typically have funding resources for service coordinators.

National Church Residences (www.ncr.org) addressed this shortcoming with technology for three of its tax credit communities. In operation since 1961, NCR has expanded its mission to include the housing needs of low-income and moderate-income seniors, families and adults, the homeless, persons with disabilities, and a host of supportive health care services. Based in Ohio, it has communities throughout the country across the continuum of care. It has adopted system-wide EHRs and point of care technologies among its several technology initiatives.

To extend service coordinators to three of its tax credit communities, NCR utilized advanced video conferencing technology provided by AgeServe (www.ageserve.com). The user-friendly
technology enables a service coordinator based in Columbus to provide services to NCR communities in Columbus, Indiana, and Louisiana.

Residents have direct dial phones that they use in the Visiting Service Center to contact the coordinator. The coordinator then simply ‘dials’ into the video system at the Center to have the virtual face-to-face meeting with a resident on a large screen. According to NCR, the AgeServe technology far exceeds the technical quality of commonly available videoconferencing technology with fast and accurate real-time video and a reliable clear picture on a large screen. Residents simply sit down in front of the console without doing any operation of the device to hold a service coordinator meeting. AgeServe installs a state of the art Visiting Center in a common area of the community with a large screen TV monitor, cameras, echo-canceling microphones, electronics, cabinetry and lighting. AgeServe remotely monitors, maintains, and makes upgrades and replacements as necessary.

The technology also enables service coordinators to network with any service provider that a resident needs to speak with to arrange and receive services via cell phone. NCR reports that residents were a bit timid at first but quickly warm up to the use of the technology to get the advice and connection to services they need. An added benefit for residents is the ability to use the technology to visit with their friends and families at no additional cost. Family members only need a PC with webcam, headset and high-speed internet connection to use the service. They sign up for the free service online and make their own appointments for visits during visiting hours as determined by the community. At the appointed time, the family member logs into the web site to connect and the visit begins automatically for the resident.

NCR is eager to install the equipment in one of its communities in Florida and elsewhere but is seeking funding support. It also is exploring the opportunity to pair the video conferencing technology with physician office visits and telehealth technologies.

4.2.3 Safety Net in Assisted Living

At Bridgeway Pointe (www.bridgewaypointe.org) assisted living is enhanced with an electronic “safety net” Part of the Bridgeway Health system and co-located with a long-term care hospital, this assisted living community pursued technology tools to help keep people safe by having more frequent staff monitoring without impeding personal space and autonomy. In January 2010, Bridgeway Pointe chose to begin by phasing in 18 installations
of the HealthSense eNeighbor (www.healthsense.com) system in the 114 bed assisted living community.

Many of Bridgeway’s residents have some form of dementia or cognitive decline, putting them at greater risk living alone in their own apartment. While the community has a secured area for residents with advanced dementia, leadership felt as though residents may be placed behind closed doors sooner than they needed to be but for safety reasons absent another option. Staff also was seeking a system with connection back to “health impairment” and care plans, not just a stand-alone remote monitoring system. With the eNeighbor system, Bridgeway can identify both behavioral elements and methods to customize the system to provide a safety net (prevention and response), thereby enabling dementia and other residents to remain independent longer. Moreover, staff have found that the system is very helpful in determining whether or not a resident needs to be moved into a more secured environment.

For those residents who have wandering tendencies, the eNeighbor system can interface wearable pendants with door sensors. When such a resident passes through an exterior door, the system notifies staff with a series of phone calls, not an alarm, allowing staff to intervene and gently redirect residents.

Other pendants worn by residents use WiFi to allow families to keep up on their loved one’s daily routine via an on-line interface. For example, families can see how long a resident spent in the dining room, common areas and their own room.

Bridgeway continues to work with HealthSense to customize the system to meet individual residents’ needs. Challenges include striking the ideal balance between how much to rely on the technology versus hands-on care, and adopting a process to most effectively utilize and manage the information.

While still just a vision, Bridgeway hopes to extend this kind of technology-enabled care model into the greater community. Before that can happen, staff believes sufficient support capacity would need to be in place to fully monitor and respond to potential safety risks identified by the technology.
Bridgeway believes this type of technology would be an effective way of enabling the PASSPORT Medicaid Waiver population to stay in their own homes longer. It would also assist state and local care management staff better determine if and when persons would need a higher level of care, then suggest transition to assisted living care under the assisted living waiver program.

4.2.4 From EHRs to Cognitive Fitness, Broad Focus on Technology Adoption

Some providers, such as Ohio Presbyterian Retirement Services (OPRS) (www.oprs.org) are taking an organization-wide approach to technology adoption by seeking to integrate it into all aspects of operations and care for older adults. OPRS, founded in 1922, is Ohio’s largest not-for-profit provider of Continuing Care Retirement Communities (CCRCs), serving more than 5,800 residents on eleven campuses across Ohio and more than 75,000 older adults OPRS through Senior Independence, its home and community-based services division. OPRS’s technology initiatives include:

- **Electronic Health Records (EHRs)** – OPRS recently implemented an EHR system – MDI Achieve’s Matrix system (www.mdiachieve.com), across all of its congregate living settings, and Allscripts (www.allscripts.com) in homecare and hospice. All OPRS’s nurses are using the technology. Physicians, not only medical directors but all primary care physicians and others who care for OPRS residents are able to sign on to EHR system through secured “guest networks” and individual log-in. Limitations of the system are that physicians can view information and enter notes, but cannot upload new data (done by in-house staff), and they can complete physician order entry for medications but must take a manual step of printing and faxing orders to the pharmacy. OPRS is eagerly anticipating system revisions so that Matrix will be fully interoperable with hospitals and physicians. Because OPRS is a statewide provider, it sees great efficiencies in engaging in health information exchange (HIE) at the state level rather than locality by locality and seeks involvement in Ohio’s OHIP.

- **Broadcast Communications System** –OPRS has adopted the TouchTown TV (www.touchtown.us) communications system in its campus living settings to provide current information and a sense of connection to its residents throughout the state. The system delivers community messages to residents through an in-house TV channel such as community announcements, event schedules, dining menus, etc. Other features include audio narration, background music, live video, emergency messages and others.
• Personal Emergency Response Systems (PERS) and Medication Dispensing – Through its Senior Independence homecare services, OPRS has made extensive use of PERS, and to a lesser extent, medication management technologies with PASSPORT clients and others. It delivers PERS services to approximately 1,086 PASSPORT clients across the state.

• Telehealth – OPRS first explored the use of telehealth technologies through a grant from the McGregor Foundation (www.mcgregorfoundation.org). While its pilot was by many accounts a great success (i.e., improved client outcomes), OPRS experienced first hand the lack of alignment in telehealth payment incentives. For the most part, health care savings generated by the use of telehealth were realized in other segments of the health care system, not by OPRS. After grant funding was expended, OPRS was unable to find a sustainable business model. Reimbursement of telehealth services likely would have allowed OPRS to continue to deliver these benefits beyond the grant funding and yield significant savings to payers.

• Smart House Technology Pilot – OPRS is launching a “smart house” technology pilot in the fall of 2010 in a few residential cottages. It will be piloting two systems, HealthSense (www.healthsense.com) and Status Solutions (www.statussolutions.com). OPRS’s objective is to see how the technology can work effectively in a “controlled” environment before rolling it out to people in their own homes in the community. Their goal is to try to support people safely at home.

• Cognitive Fitness/ Engagement – OPRS has been testing two cognitive fitness and engagement systems, Dakim BrainFitness (www.dakim.com) and It’s Never Too Late (IN2L) (www.in2l.com). Taking significantly different approaches, the systems both seek to improve cognition, confidence, and aptitude for learning and provide users with a truly fun experience they look forward to several times a week.

5. Policy Recommendations

The State of Ohio has the opportunity to build on its past successes in technology utilization and its strong aging services network to further tap the capabilities of technologies available today which support the independence and health of older Ohioans.

5.1 Expand Breadth of Policies to Support Technology-Enabled Care

While several providers have experienced challenges with technology adoption, such as integrating new data into existing workflow and process of care, or structuring staff resources and partnerships to effectively respond to a client’s trends or episodes detected by health monitoring technology, they
are ready and waiting for policy change that expands current PASSPORT Medicaid support for PERS and medication management to the use of activity/wellness monitoring and telehealth technologies. The greatest barrier to utilizing these technologies is the lack of allowable reimbursement whether from public or private insurance programs. Implementation has remained relatively small absent such policies.

Much of the challenge in developing a sustainable reimbursement model is the fiscal fragmentation of our health care system. Savings generated from the use of technology in aging services is only minimally realized by the care provider and are most significantly experienced on a macro level in reduced Medicaid and Medicare expenditures due to fewer nursing home admissions and hospitalizations and subsequent rehabilitation costs. As discussed earlier, federal pay for performance payment policy changes for acute health care which involve certain “process measures” do hold promise to better align fiscal incentives and encourage the use of technologies to reduce longitudinal care costs for patients. However, this construct will likely be feasible only with certain “use cases” in post-acute chronic disease management models for telehealth, but not broader applications of monitoring technologies for older adults with less defined disease states or limitations of activities of daily living, etc.

One significant policy change would be requiring private insurance plans offering health insurance in the State of Ohio to provide coverage of certain technologies that support health and reduce billable health interventions. Some insurers nationwide are beginning to cover telehealth technologies as a way to cut costs. At least four major health insurers – Aetna, Humana, UnitedHealth Group and WellPoint’s Anthem Blue Cross in California are conducting trials or have announced plans for programs that allow patients to wirelessly and remotely send data, such as weight, blood pressure and other vital sign readings, to a health care professional for tracking and follow-up purposes.11

The State of Ohio has a solid policy foundation upon which to build broader technology reimbursement policies in public programs. Through its lengthy and sizable support of Personal Emergency Response Systems (PERS) and medication dispensing systems in its PASSPORT Medicaid waiver program, the State Department of Aging is well positioned for an expansion to reimbursement of remote activity/wellness monitoring and telehealth technologies using its network of Area Agencies on Aging, some of which have direct experience in piloting these technologies. The Department of Developmental Disabilities has moved ahead to propose such a mechanism in the

Individual Options (IO) Waiver. CAST applauds the state’s planning and progress toward such a policy and encourages the state to continue moving toward this goal.

These policy changes need not be cost prohibitive. As described briefly below, the most comprehensive Medicaid waiver reimbursement model in the nation has been entered in a cost-neutral basis.

5.2 Examples of Supportive State Policies
Pennsylvania and New York have implemented statewide, Medicaid waiver policies supporting the use of certain aging services technologies. While they differ in scope and structure, both programs are innovative and serve as important examples of how states can incorporate new technology-enabled care modalities into Medicaid and other state programs serving older adults and persons living with chronic conditions. It is worth noting that Pennsylvania has established its program on a budget cost-neutral basis. Below is a brief summary of the programs.

Pennsylvania TeleCare Program
On October 1, 2009, the Pennsylvania Office of Long-term Living released final regulations for the state “TeleCare” program available to residents age 60 or older. The program is the most comprehensive state program in terms of the range of technology-enabled services eligible for reimbursement.

Pennsylvania began its program as a Medicaid-waiver demonstration in September 2007, and then received CMS approval to include it in its waiver program beginning in July 2008. The state made a major policy step in its final TeleCare policy by expanding the program beyond Medicaid-eligible consumers to those in its sliding-scale “Options” program. Options program consumers whose income is below 125% of the Federal Poverty Level Guideline do not pay a cost share. The scale rises to 300% of the Federal Poverty Level Guideline, at which point the consumer would be responsible for 100% of the cost of Options Services including TeleCare.

Services covered under PA’s TeleCare program include health status measuring and monitoring service (telehealth), activity and sensor monitoring/personal emergency response services, and medication dispensing and monitoring service. One registered nurse in-person visit per month is included in the health status measuring and monitoring fees. Eligible providers include Medicare-certified home health agencies, durable medical equipment providers, personal care/homemaker providers, pharmacies and hospitals depending on the technology-enabled service being deployed. The state developed specific eligibility criteria for persons to participate in the program.
Reimbursement is provided for installation and monthly fees and is managed by Area Agencies on Aging:

- Health Status Measuring & Monitoring: $90 installation, $10/day
- Activity & Sensor Monitoring: $200/installation, $80/mo.
- Medication Dispensing & Monitoring: $50/mo.

New York Home Telehealth Program

The New York legislature in 2007 enacted a Medicaid “Home Telehealth” program on an 18-month pilot basis for telehealth and medication management technologies. The program includes monitoring of vital signs, patient education, medication management, equipment maintenance, and review of patient trends and/or changes in patient condition and identification of problematic changes requiring intervention. Eligible providers are home health agencies and long-term home health programs that are community based or affiliated with a nursing home or hospital. The state developed specific patient criteria to determine eligibility for the program.

In February 2008 the NY Department of Health released the pilot program regulations containing three tiers for monthly reimbursement depending on the degree to which technologies were integrated with point of care software and electronic medical records:

- Tier 1: $270/month/patient – FDA approved Class II Device Capable of interoperability with Point of Care (POC) Software
- Tier 2: $310/month/patient - Interconnected with POC software
- Tier 3: (rate to be developed) - Interconnected with EMR and statewide health information network
- Installation Fee: Providers can bill for a “one time” installation fee of $50 for each Telehealth user.

In October, 2009 the NY Department of Health made the Home Telehealth Program a standard part of its state Medicaid program and converted the reimbursement structure to daily rates effective January 1, 2010. Installation continues at $50 per installation with monitoring Tier 1 reimbursed at $8.88 per day and Tier 2 at $10.19 per day. Tier 3 interoperability has not yet been realized statewide; therefore no daily rate has been set.
5.3 Leverage Recently Enacted Federal Policies and Programs

Recently enacted federal policies and programs, including the HITECH Act and programs included in health care reform present opportunities for states to extend technology initiatives to aging services. As discussed above (see section 2.4), federal health information technology policies require the involvement of long-term and post acute care providers. Some states are finding ways to do just that.

For example, the State of Minnesota is beginning with a demonstration project with the state’s Health Information Exchange (HIE) to involve 10 long-term care organizations as HIE pilot sites including nursing facilities, assisted living and homecare. The pilot, now underway, is making key health information available electronically to participating aging service providers. Next year the state HIE will add a new interface for the demonstration utilizing portable devices, enabling more informed and efficient admissions and care decisions.

Passage of the Community Living Assistance Services and Support Act (CLASS Act) in the Patient Protection and Affordable Care Act presents a significant opportunity for the Health and Human Services Administration in partnership with states to develop new service models that utilize technology to deliver care and nursing support for people who need assistance with activities of daily living. CLASS is a voluntary, federally administered, consumer-financed insurance plan. The CLASS plan provides those who participate with cash to help pay for needed assistance, if they become functionally limited, in a place they call home — from independent living to a nursing facility. State TeleCare programs could serve as a model for comprehensive technology-enabled care reimbursement models under CLASS. Because the CLASS Act is not means-tested or age-restricted, its care modalities (i.e., technology-enabled care) have the potential to be utilized by a much larger population than those served by state Medicaid programs.

6. Conclusion

The State of Ohio can be proud of its accomplishments to date in the aging services technology arena. It has built a solid foundation on which to expand the availability of technology solutions in its programs and has a strategic body in place that has the focus and agenda needed to reach these policy goals. Ohio’s robust research organizations will serve the state’s policy development well by evaluating the effectiveness of specific applications of technology tools to meet the needs of older adults, and developing new technologies. The innovative service provider network in Ohio is actively demonstrating how to maximize the value that technology offers for the care and wellness of older Ohioans, and is eager to implement expanded programs and policies.
ABOUT CAST

The Center for Aging Services Technologies (CAST) is leading the charge to expedite the development, evaluation and adoption of emerging technologies that will transform the aging experience.

CAST four focus areas:

1. Driving a global vision of how technologies can improve the quality of life for seniors while reducing health care costs;
2. Accelerating technology research and development through pilot evaluations with seniors;
3. Advocating to remove barriers to the rapid commercialization of proven solutions; and
4. Promoting dialogue about standards to ensure interoperability and widespread access to aging-services technologies.

CAST is now an international coalition of more than 400 technology companies, aging-services organizations, businesses, research universities and government representatives working together under the auspices of the American Association of Homes and Services for the Aging (www.aahsa.org). The members of AAHSA help millions of individuals and their families every day through mission-driven, not-for-profit organizations dedicated to providing the services that people need, when they need them, in the place they call home.

CONTACT CAST

Majd Alwan, Ph.D, Vice President
(202) 508-9463
malwan@agingtech.org

JOIN CAST

Members and Sponsors receive a wide variety of benefits. Please visit our Web site www.agingtech.org/join.aspx for a full listing of benefits and dues structure.