Technology Adoption and Utilization Survey

The nation’s 100 largest not-for-profit senior living—

- Multi-sites
- Government-subsidized housing multi-sites
- Single campuses
Raising the Bar

As not-for-profit aging services providers, LeadingAge members take responsibility for raising the bar in our field. Ours is a public promise to expand the world of possibilities for aging to the best of our ability—and an internal pledge to strive always to fulfill that commitment through innovation and excellence. LeadingAge offers programs and resources, such as this report, that are based on the latest aging services field-related research and knowledge—including valuable tools, information, education and support to help members honor their commitment.

Produced by:

LeadingAge®

The mission of LeadingAge is to expand the world of possibilities for aging. Its members touch 4 million lives every day and include 6,000 not-for-profit organizations representing the entire field of aging services, 39 state partners, hundreds of businesses, consumer groups, foundations and research partners. LeadingAge is also a part of the International Association of Homes and Services for the Ageing that spans thirty countries across the globe. LeadingAge is a 501c3 tax-exempt charitable organization focused on education, advocacy and applied research.

LeadingAge®CAST

The LeadingAge Center for Aging Services Technologies (CAST) is focused on accelerating the development, evaluation and adoption of emerging technologies that will transform the aging experience. CAST is an international coalition of more than 400 technology companies, aging-services organizations, businesses, research universities and government representatives. CAST works under the auspices of LeadingAge.

For more information, please visit LeadingAge.org/CAST

LeadingAge
2519 Connecticut Avenue, NW
Washington, DC 20008-1520
(202) 783-2242
www.LeadingAge.org

LeadingAge Ziegler 100. The nation’s 100 largest not-for-profit multi-site senior living organizations.

ISBN 1-930599-13-7

Appearance of an organization in this publication does not indicate endorsement or support of a particular organization, product or service by LeadingAge. Report Issued September 2013

©2013 LeadingAge. All rights reserved.
©2013 Ziegler, a division of B. C. Ziegler and Company. All rights reserved.
Technology adoption is a hallmark of innovation and an important enabler of future-ready innovative care models. For the first time, this year’s LeadingAge Ziegler 100 includes a technology addendum designed to gauge the adoption and utilization of a broad array of solutions, including: electronic medical/health records (EMRs/EHRs); health information exchange; technologies that monitor the safety, health and wellness of residents/clients; and social connectedness technologies.

LeadingAge, CAST and Ziegler are pleased with the responses we received to the technology adoption and utilization survey. This response rate—94%—provides a good baseline to help with future trend tracking. Because technology plays such an important role in helping members deliver modern quality care and meet consumer expectations, we intend to update this survey regularly to track technology adoption and utilization trends.

The LeadingAge Ziegler 100 Technology Adoption and Utilization Survey is not designed to provide generalizable data on the broader LeadingAge membership. However, it provides important indicators about the aging services sector, in general, and about this group of providers, in particular, that are known to be market leaders and pioneers of technology. This first survey shows that LZ 100 organizations are strongly embracing:

- Social connectedness technologies. Vast majority of these organizations (91.7%) provide residents with access to Internet, community portal and social connectedness sites.
- Safety technologies. Survey results show high adoption rates for wander management technologies (88%) and emergency response systems (82.6%).
- Electronic documentation technologies. The survey shows strong leadership of LZ 100 organizations in adopting and using EMRs/EHRs (75.5%) and point-of-care technologies (83%).

LeadingAge and CAST are grateful to LZ 100 members that completed the technology addendum. We are pleased to partner with our friends at Ziegler to bring you the first LeadingAge Ziegler 100 Technology Adoption and Utilization Report.

William L. Minnix Jr., D.Min.
President and CEO
LeadingAge

Majd Alwan, Ph.D.
Senior VP of Technology, LeadingAge
Executive Director, CAST
For the 10th edition of the LeadingAge Ziegler 100 publication (“LZ 100”), Ziegler wanted to affirm its commitment to staying current with industry trends and innovation. In partnership with the LeadingAge Center for Aging Services Technology (CAST), we made a commitment to expand the 2013 LeadingAge Ziegler 100 to include an enhanced section on technology adoption. We specifically gathered feedback from the LZ 100 organizations about their utilization of technologies that align with:

- Healthcare reform initiatives, such as electronic health records.
- Enhanced quality-of-care technologies such as remote monitoring for safety and wellness.
- Technologies that promote greater coordination of care both internally and externally with outside organizations and care providers.

We are pleased to have contributed to the development of this report and are excited to be sharing the results of the Technology Adoption and Utilization Survey.

Many LZ 100 organizations throughout the country are well on their way with integrating the most effective technologies that exist. A number of these organizations are paving the way as trend-setters in the senior living sector. We were pleased to see that 83% of organizations have implemented some form of point-of-care or point-of-service technology in their communities. Three out of four senior living organizations also have integrated electronic medical/health records into their communities.

We encourage providers, industry experts and trade associations to utilize the results of the Ziegler-CAST LZ 100 Technology Adoption and Utilization Survey to promote an even greater use of technology-enabled solutions in the care of the people they serve.

Daniel J. Hermann
Senior Managing Director, Head of Investment Banking
Ziegler
Table of Contents

Chapter 1
Electronic Documentation Technologies .......................................................... 5

Chapter 2
Electronic Information Exchange .................................................................... 9

Chapter 3
Monitoring Technologies ............................................................................... 13

Chapter 4
Social-Connectedness Technologies ............................................................. 19
The LeadingAge Ziegler 100

Technology Adoption and Utilization Survey

Background
The 2013 LeadingAge Ziegler 100 (LZ 1001) lists the largest not-for-profit systems providing aging services through senior living in the United States. LZ 100 organizations were identified based on their total owned market-rate units, as of Dec. 31, 2012. The Technology Adoption and Utilization Survey was aimed at only those organizations that were ranked among the largest 100 not-for-profit senior living organizations. A total of 94 of the 100 organizations completed the survey.

All potential survey respondents were given a series of definitions describing the technologies included in the survey. These definitions were added to help participants accurately respond to the survey questions. The questions were aimed to gauge the adoption of various technologies at the organization-level, rather than within each individual community or campus.

Please note that the technology adoption rate across various communities within a system can vary dramatically. A few of LZ 100 providers reported adoption or non-adoption rates across each of their communities, others reported adoption only across some of their locations, but most responded at the organization-level.

For purposes of the current analysis, if the organization implemented a particular technology in at least one of its communities, that technology was counted as an adopted technology within that organization. It is important to acknowledge that this approach may produce a higher perceived adoption rate than the actual adoption rate at the community or campus level. Nevertheless, this practice is consistent with approach used in the overall LZ 100 data collection process and analysis framework.

The data included in the analysis were gathered over a period of time between January and July 2013. The initial hard-copy mailing of the Technology Adoption and Utilization Survey were completed by slightly more than half of the desired respondents. A follow-up, online survey link was then sent to non-respondents during the summer of 2013. In total, these two approaches yielded the 94 completed surveys.

While the mixed methodology garnered a high-level of participation, the different data collection methods and the extended timeframe should be taken into consideration when interpreting the survey results. With the ever-changing technology environment, it can be assumed that as each month passes, the likelihood of adoption increases among providers.
Chapter 1

The LeadingAge Ziegler 100

Technology Adoption and Utilization Survey

Electronic Documentation Technologies

Electronic documentation technologies are primarily aimed at health care professionals and professional caregivers and include technologies such as:

- Electronic health records.
- Point-of-care/ point-of-services systems.
- Electronic prescribing.
- Electronic medication administration records.
- Electronic charting.
- Electronic workflow and documentation systems.

Some electronic health records provide the individual and/or an authorized family member with access to health information on a patient portal or a personal health record.
Providers were asked whether they use any of the following electronic documentation technologies across any of their communities, or if none of these technologies were being utilized in their organization:

- Electronic Health Record (EHR)/Electronic Medical Record (EMR) Systems that include: patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, radiology reports and functional assessments that are unique to senior living providers.

- Electronic Point of Care (POC)/Point of Service (POS) Documentation Systems such as kiosks, tablet computers, smart phones, hand-held devices.

The majority of LZ 100 providers (94 respondents) are implementing EHR/EMR technology (75.5%) and POC/POS (83%) technologies in at least one of their communities/operations. Less than 10% responded that there were no EHR/EMR or POC/POS systems in place within any of their communities.
Chapter 1 2013 LeadingAge Ziegler 100

DOES YOUR COMMUNITY USE ANY OF THE FOLLOWING ELECTRONIC DOCUMENTATION TECHNOLOGIES?

- EMR/EHR Systems: 75.5%
- POC/POS Systems: 83.0%
- None: 9.6%

Responses add up to more than 100% as question was “check all that apply”
N=94
Chapter 2

The LeadingAge Ziegler 100

Technology Adoption and Utilization Survey

Electronic Information Exchange
Health information technology (HIT) encompasses a broad array of technologies involved in managing and sharing patient information electronically, rather than through paper records. HIT systems perform information processing using both computer hardware and software for the entry, storage, retrieval, sharing, and use of health care information (Source: Alliance for Health Reform).

The LZ 100 organizations were provided with a list of 14 different HIT functions that are typically used within a senior living community and may entail the exchange of information. The organizations were asked to indicate their highest level of electronic information exchange and integration capabilities. Respondents were instructed not to include information sharing via fax or regular e-mail.
Across the 14 functions, the three levels of information exchange are:

- **Within facility/site/operation electronic information sharing:** Computer software programs within the facility/site/operation allow resident/client information sharing among two or more databases after entering information only once. No electronic information is shared outside the facility/site/operation.

- **Within corporate/affiliated organization electronic information sharing:** Computer software programs within the facility/site/operation allow resident/client information sharing with other organizations in the same network system (e.g., corporate headquarters or other facilities in corporation; hospital in same health delivery system). No electronic information is shared with non-affiliated providers or organizations.

- **Electronic information sharing with non-affiliated organizations:** The facility's/site's/operation's computer system exchanges (sends and/or receives) electronic resident/client information with one or more non-affiliated providers or organizations.

Key findings from this portion of the survey reveal that the greatest levels of electronic information exchange and integration are for:

- Medication orders and e-prescribing (28.6%).
- Laboratory orders and results (25%).
- Diagnostic test orders and results other than radiology and labs (22.2%).

These higher levels of external exchanges were expected since these functions entail working with outside entities like pharmacies, physician offices and clinical labs.

LZ 100 providers are less likely to exchange the following information with non-affiliated entities like hospitals: Care plans (8.6%).

- Non-regulatory assessments (11.4%).
- Clinical notes and observations (14.9%).
- Advance directives (15.2%).
- Lists of problems, allergies, medications (16%).
- Summary reports, including discharge, transfers and consults (16%).

It is worth emphasizing that the exchange of these types of information with other non-affiliated provider organizations is the key to better coordinated quality care and successful partnerships with hospitals, accountable care organizations (ACO), and other partners on health reform initiatives, such as the hospital readmission reduction program (HRRP).

LZ 100 providers are least likely to exchange public health reporting and radiology orders and results information with anyone.
Chapter 2 2013 LeadingAge Ziegler 100

FOR EACH WORK FUNCTION, SELECT THE OPTION THAT REPRESENTS THE HIGHEST LEVEL OF ELECTRONIC INFORMATION EXCHANGE AND INTEGRATION CAPABILITIES USED BY YOUR ORGANIZATION.

- Resident demographics
- Advance directives
- Resident medical history
- Clinical notes and observations
- Lists: problems, allergies, meds
- Regulatory assessments
- Non-regulatory assessments
- Care plans
- Summary reports (discharge, transfer, consults)
- Lab orders and results
- Radiology orders and results
- Diagnostic test orders and results
- Med orders/E-prescribing
- Public health reporting

- Send and/or receive and integrate electronic information sharing w/ non-affiliated provider or organization
- Within corporate/affiliated/organization electronic information sharing
- Within facility/site/operation electronic information sharing
- None
Safety And Health & Wellness Monitoring Technologies

Safety technologies include:

- Emergency call and personal emergency response systems (PERS).
- Fall detection and prevention technologies such as bed and chair alarms.
- Environmental monitoring of temperature, carbon monoxide, flood, smoke and fire alarms.
- Access control and wander management.
- Unattended stove shut-off systems.
Health and wellness technologies include:

- Health promotion technologies.
- Behavioral and health status monitoring systems.
- Telehealth and telemedicine systems.
- Medication management technologies.
- Cognitive assessment technologies, reminders systems and cognitive stimulation technologies, which focus on the mental health and wellness of seniors.
- Physical exercise and rehabilitation technologies.

Telehealth and remote patient monitoring capabilities are defined as the use of electronic communication and information technologies to allow interaction between providers and patients in different locations. Telehealth includes a range of technologies from those that monitor blood pressure to those that allow wound consultation by a physician at an offsite location using audiovisual equipment.

Telecare, telemonitoring and behavioral monitoring technologies include sensors to monitor things like functional abilities, activities of daily living, behaviors and sleep patterns.

LZ 100 organizations were asked whether or not they utilized any such monitoring technologies throughout their communities. Key findings related to safety monitoring from the survey, based on 90 responses, include:

- Almost 9 out of 10 LZ 100 organizations utilize access control or some form of wander management systems for their residents in at least one of their communities.
- Roughly 8 out of 10 organizations have implemented user-activated emergency response systems.
- A little over 4 out of 10 are implementing automatic fall detectors.
Key findings from the survey related to health and wellness monitoring, based on 80 responses, include:

- About 18% of the responding providers utilize telehealth or remote patient monitoring technologies in at least one of their operations. A slightly smaller percentage (15.5%) has telecare/telemonitoring/behavioral monitoring in place.

- About 68% use physical exercise, therapy and rehabilitation technologies other than typical occupational and physical therapy equipment.

- 44% of responding providers are using brain health/cognitive stimulation/cognitive training technologies.

- Only 2% of respondents are not using any of the listed health and wellness technologies in any of their communities.

- Among providers who are utilizing telehealth/remote patient monitoring technologies, only about 10% indicated that they have integrated data from these technologies into other medical records systems or programs—such as an EMR/EHR—within their organization. It is worth noting that only 71 providers answered this question.

CAST believes that telemonitoring technologies—including telehealth, remote patient monitoring, telecare and behavioral monitoring technologies—are key to improving prevention, care management and coordination. The integration of data from these technologies into an organization’s EMR/EHR system, as well as the ability to exchange such information with other providers, is also important to providing the care team with comprehensive information about the health and functional status of the seniors for whom they are providing care.
Chapter 3 2013 LeadingAge Ziegler 100
DOES YOUR ORGANIZATION USE ANY OF THE FOLLOWING SAFETY MONITORING TECHNOLOGIES?

User-activated Emergency Response Systems: 82.6%
Automatic Fall Detectors: 41.3%
Access Control/Wander Management Systems: 88.0%
None: 2.2%

Responses add up to more than 100% as question was “check all that apply”
N=90
Chapter 3 2013 LeadingAge Ziegler 100

DOES YOUR ORGANIZATION USE ANY OF THE FOLLOWING HEALTH AND WELLNESS MONITORING TECHNOLOGIES?

Responses add up to more than 100% as question was “check all that apply”
N=80
IS INFORMATION OBTAINED THROUGH TELEHEALTH/REMOTE PATIENT MONITORING OR TELECARE/TELEMONITORING/BEHAVIORAL MONITORING TECHNOLOGIES ELECTRONICALLY INCORPORATED INTO OTHER MEDICAL RECORD SYSTEMS OR PROGRAMS WITHIN YOUR ORGANIZATION?

Only asked of respondents who use these types of monitoring.
N=71
Chapter 4

The LeadingAge Ziegler 100

Technology Adoption and Utilization Survey

Social Connectedness Technologies
Social connectedness technologies include:

- Special phones, such as amplified, large-button, and memory phones.
- Easy to use cell phones offering basic communication functionality and, in some cases, different communication modalities such as video reminders or multimedia messaging to keep seniors connected with grandchildren.
- Senior-friendly social networking websites.
- Easy-to-use email systems and e-mail-to-paper communications systems.
- Easy-to-use video phones and video conferencing systems.
- Computer-based cognitive and/or physical stimulation technologies that may also provide an opportunity to connect with peers, particularly in congregate living settings.
The survey results reveal that:

- Nearly 92% of responding LZ 100 organizations (85) provide their residents with access to the Internet, community internet portal and senior networking sites.
- A smaller proportion (34.5%) provides residents with simplified e-mail systems.
- Only about 5% of LZ 100 organizations provide residents with video conferencing capabilities.

It is important to note that the organizations were instructed to exclude technologies that residents are responsible for securing on their own.
Chapter 4 2013 LeadingAge Ziegler 100

DOES YOUR ORGANIZATION PROVIDE ANY OF THE FOLLOWING SOCIAL CONNECTEDNESS TECHNOLOGIES AND SERVICES?

Responses add up to more than 100% as question was “check all that apply”
Responses exclude technologies that residents are responsible for securing on their own
N=85