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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. As 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, an association of 6,000 not-for-profit organizations dedicated to expanding the world of possibilities for aging.

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## Increasing Engagement, Satisfaction, Physical Performance and Team Efficiencies through Social Engagement Technology

### *Categories*

- Increased resident engagement and satisfaction with care
- Improving physical performance
- Increased the team efficiencies

### *Organization Name*

Presbyterian SeniorCare Network

### *Organization Type*

Long Term Care, Skilled Nursing Community, Post-Acute Rehabilitation, Intermediate Care Community, CCRC

### *Organization Description*

Presbyterian SeniorCare Network is a faith-based network of living and care options whose mission is to enrich the lives of older adults through person-centered culture. Our commitment to providing the highest quality of care is validated through our CARF-CCAC accreditation. Our mission and values guide us as we pursue excellence through innovation, collaboration and compassion.

### *Project Description*

Recognizing the increased prevalence of cognitive impairment and dementia in persons served, the Presbyterian SeniorCare Network rehabilitation team sought to further understand how they could provide the most efficacious treatments to individuals living with dementia. As part of the exploration, clinicians were asked to identify what they believed to be the primary barrier to effective treatment in individuals living with dementia, and 43% reported it to be limited engagement and communication during treatment sessions.

As we move into a value-based system for healthcare provision, it is imperative that providers refine and enhance their treatment approaches to maximize therapeutic outcomes and improve their efficiency with achieving those outcomes. It is important for clinicians to have access to a robust set of clinical tools so that they may provide efficacious and efficient person-centered care.

The It's Never 2 Late (iN2L) platform is a multifunctional technology system that is designed to improve engagement, regardless of physical or cognitive ability, with programming and content specifically developed for rehabilitation. We believed that providing iN2L systems to our therapy team would greatly expand clinical tools available in their toolbox, and consequently their capacity to impact persons living with dementia. Multiple iN2L systems were already in use by the lifestyle engagement team throughout the Network on memory care neighborhoods. The technology was rolled out to every therapy team within our network with the exception of one community that served as the control group for this Rehabilitation Effectiveness and Efficiency in Dementia (RE<sup>2</sup>D) research project we are reporting on.

### ***Engagement Modality***

The [iN2L system](#) is a professional grade multifunctional computer with built-in touch screen capabilities that allows the user to access over 3000 senior friendly applications and content items using the picture based interface. Content is curated to promote all dimensions of wellness. The rehabilitation module interface includes a clinically intuitive layout, allowing therapist to easily access applicable content aimed at the specific therapy goals for that session.

### ***Describe System Embodiment***

Every rehabilitation department received the Mobile [iN2L FLEX unit](#), which consists of a professional grade computer with built-in touch screen capability, mounted on a motorized height adjustable cart. Screens are attached to an articulating arm, and are able to be adjusted to multiple angles, all the way down to a table top position. All systems are equipped with high fidelity speakers, built-in web cam, music maker, adaptive stylus, magnetic resistance cycle, joystick, traditional phone handset, wireless keyboard and wireless mouse.

One site also acquired an additional large [wall mount 60 inch screen](#) that provides the same programming and

touch screen capability with a larger view, promoting group interaction. The smaller Mobile FLEX systems can be connected to large screen televisions using HDMI cables for large group engagement as well.

### ***Business Model***

Standard of Care

### ***Implementation Approach***

Every clinical team was provided with training with someone from the iN2L rehab team at time of implementation. Training included a general introduction to the clinic with clinicians only, and then extended to practice using the system with residents in the clinic during therapy sessions.

Champions were designated to assist with the implementation process. Champions were expected to serve as an example to the remainder of the clinical team, utilizing the system as much as possible when clinically appropriate, and supporting other team members in their efforts. All team members played active roles during implementation, sharing best practices and system discoveries with one another.

Throughout the implementation, members of the rehabilitation leadership team met frequently to discuss compliance, identify and resolve challenges, and discuss other team feedback. An open line of communication with the iN2L rehab team was maintained to immediately address team questions, concerns and needs.

Due to the initiation of a clinical research project, one team in particular received follow-up trainings in the months after the systems were implemented.

### ***Advantages to the Approach***

Direct training from the iN2L rehab team, therapists who are directly involved in the development of the programming and technology, provided clinicians with the best opportunity to understand how to best utilize the system during treatment sessions. A combination of technical training and practice with clinical application was helpful in bridging the gap between knowledge and practice. The secondary trainings, which occurred months after initial implementation, allowed for a deeper exploration of the system as a solution that can be utilized during therapy sessions.

## **Outcomes**

Implementation of iN2L systems in the rehabilitation department was aimed at maximizing therapist capacities to engage residents in a meaningful way so that they can provide efficacious levels of intervention. As with many new tools, utilization increased with comfort, exposure and practice with the technology. The overall utilization time, diversity and scope of applications being used by the teams increased over the course of the implementation period. Although the primary reason for system adoption was initially directed toward gaps identified in treating individuals living with dementia, therapists found that the technology was also useful for engaging residents living without cognitive impairment as well.

### *Increased resident engagement and satisfaction with care*

It can be challenging at times to elicit active engagement in the therapeutic process, regardless of cognitive status. Residents, for a variety of reasons, can demonstrate a level of disengagement that is counterproductive to progress toward the goals of therapy intervention. Therapist capacity to engage a resident can be limited by the physical inventory of materials available to them. The addition of iN2L systems significantly boosted therapist resources without occupying a lot of space within the clinic.

The systems allow therapists to create a rehabilitation experience that is centered on the resident, who they are as an individual and what is meaningful to them. It brought joy, laughter and lightheartedness into the rehab clinic, a space that is frequently associated with challenge, loss and the hard work of overcoming those very things. Residents look forward to therapy and the opportunity to work with the system.

The system is highly adaptable to treatment, and ways to incorporate the system into treatment are only limited by the level of creativity of the clinician. Therapists have used applications like Google Earth to visually “visit” a childhood vacation spot to spur conversation. A game of decade specific trivia called “What Did it Cost?” can divert the attention of the resident from the fact that they are performing physically challenging tasks such as standing on a compliant surface for a prolonged period of time. In another case, a resident living with dementia who was hard of hearing typically did not communicate

verbally with others, increasing the challenge for the therapist to engage him in activities to the extent that would foster improvement toward his therapy goals. After learning from his wife that he liked to do puzzles, the therapist pulled up puzzle games on the iN2L system. During the iN2L puzzle sessions, he showed signs of active interest, making clicks with his tongue while fully engaged in the game. His verbalization increased with his level of engagement as well: “I am a puzzle person”, “I used to work puzzles”, “I did well with puzzles yesterday”, and “I’ll try one more”. The iN2L system allowed the therapist to provide the resident with choices of which puzzle he would like to complete, and it was noted that he would select puzzles that had some personal meaning or familiarity.

### *Improving physical performance*

Therapists have used the system in several ways to improve physical performance of the residents. Teams will often utilize the system to promote a productive therapeutic atmosphere, playing a certain genre of music that is enjoyed by everyone in the clinic or pulling up a beach scene on a snowy winter day.

When appropriate, therapists also used the system to divert attention from the physical challenge of their therapy activities, using trivia or games. Therapists have observed an increased capacity for performing challenging activities with use of the iN2L system as a diversion, especially with residents who tended to self-limit their therapy activities.

Therapists also utilized the rehab module programming to directly address identified impairments in physical and functional performance. The video camera were used for biofeedback on postural alignment; the movement patterns of visual targets were manipulated to increase visual tracking toward a certain direction in a person demonstrating visual neglect; and videos “walked” a resident through a house with multiple safety hazards to assess their environmental safety awareness.

Presbyterian SeniorCare Network is currently doing a clinical study on the use of iN2L technology within the rehabilitation setting in persons living with dementia. The project entails quantifying the impact of iN2L technology on levels of engagement during therapy sessions and the impact that it may have on functional outcomes.

### *Increased staff efficiencies*

The iN2L system is relatively all-inclusive, allowing our rehab clinics to greatly expand the clinical tools available in their toolboxes at their fingertips. Motorized and adjustable components allow therapists to quickly customize the physical setup of the system to fit the needs of the resident, while the intuitive impairment based menu of option in the rehab module allow quick access to relevant programs to provide targeted intervention. Therapists are now able to provide activities that span a variety of interests without having to physically locate, retrieve and return equipment.

### *Challenges and Pitfalls to Avoid*

One of the greatest benefits of having iN2L is the amount and variety of content that is accessible within the system. This benefit may also be a challenge in training someone to use the system. It is not likely that an individual can learn the entire system and content and use the technology to its full capacity without repeated exposure and hands on time. It takes time to learn about all the applications and programming that are available and the click sequences to access them. For the sake of efficiency, therapists gravitated toward the same programs during treatment sessions. Additional training and time to explore the system improves the overall utilization of the system, and allows the therapy team to maximize the return on investment.

### *Lessons Learned/Advice to Share with Others*

We recommend setting aside adequate time for the initial training and exposure to the system. The more comfortable the team is with exploring the system, the better the return on investment. Utilization data showed that the teams used the systems more each successive month from the date of implementation. It also showed diversification of the programming and applications used as therapists had more time to learn what the system had to offer.

It is also helpful to have time set aside for practical training, with the iN2L training team showing the therapy team how to incorporate the system into actual treatment sessions. This helps to give clinicians a practical understanding of how the iN2L system adds to their clinical toolbox, and start them on the path to use the system more efficiently.

Maintain an open dialog with the team regarding their comfort level with the system and how they can incorporate it into their treatment plans. We found that follow-up training sessions after a prolonged period of time from the start of implementation greatly improved the proficiency with the system, and promoted the use of more of the technology's capabilities. It was a nice way for the team to digest all the information, ease into using the technology and then formulate questions that extended beyond the introductory level.

Champions were role models who served to promote use of the system, diversify application utilization, as well as provide feedback to the leadership team on additional support needed to successfully integrate the system into the clinical setting. Champions were extremely helpful in providing an honest assessment of the implementation process.