

## iN2L's next step:

### Bringing technology enabled personalization into Focus

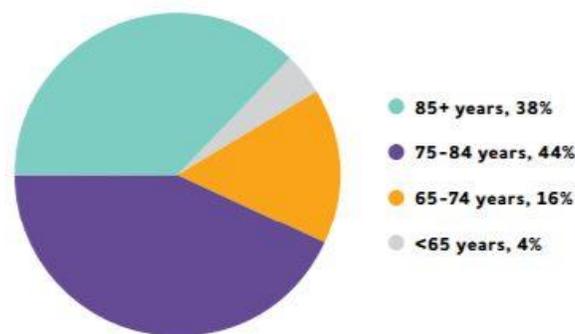
## LONG LIFE, YES – BUT ALSO DEMENTIA -- REQUIRING SUPPORT

Today there are an unprecedented number of older adults living into the years in which frailty and especially dementia present challenges. Today, according to the Society of Actuaries, for those living to age 65, their future life expectancy is also unprecedented:<sup>1</sup>

- At 65, women will live on average to 88.8 (Society of Actuaries), men to 86.6.
- One in four 65-year-olds today will live past 90, and one in ten will live past 95. <sup>2</sup>
- Unanticipated longevity can result in unanticipated needs of the oldest old, including additional services, specialized housing or assistive technologies.

**Numbers rise, even as rate presumably declines.** An estimated 5 million people have some variant of dementia in the US, according to the Alzheimer's Association, and although the percentage or rate appears to be dropping as of 2012, possibly attributed to improvements in education, the actual numbers are not.<sup>3</sup> Of the 85+ population, as many as 30% have some form of cognitive impairment.<sup>4</sup> Further, the total population with some form of cognitive impairment could be as high as 16 million, according to the CDC.<sup>5</sup> (See **Figure 1**).

Ages of People with Alzheimer's Dementia  
in the United States, 2017



Created from data from Hebert et al.<sup>A4,31</sup>  
Percentages do not total 100 because of rounding.

**Figure 1**

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**Coping with cognitive impairment in loved ones – a challenge for families.** Some of the individuals with cognitive impairment attend one of the estimated 5000 adult day centers in the US, where 52% of the participants have some sort of cognitive impairment.<sup>6</sup> Providing services for 150,000 individuals, adult day provides respite for family caregivers, meals, and activities for participants. But compared to the numbers of individuals with cognitive impairment, more than 5 million, adult day programs are able to help only a small percentage.

### **Senior Living Provides Care, but resources are stretched**

Senior living communities can provide services and supported lifestyles for older adults, especially women living alone, couples in large homes, or in isolated areas. Some individuals choose independent living, where the average resident age is 75-84.<sup>7</sup> Others choose assisted living, or reside in skilled nursing facilities (SNFs) to cope with frailties or limitations requiring services not available typically in independent living.

**Demographics of senior living – assisted and beyond.** Whether the home has become too much to manage or an individual's physical and mental changes have presented challenges, senior living communities take over -- variously labeled as assisted living, continuing care retirement communities or CCRCs, or they live in Skilled Nursing Facilities. Today, consider the numbers of individuals served across the Long Term Care Support Services (LTSS) Care Continuum (See **Figure 2**):

- One million live in assisted living communities – usually due to health challenges.<sup>8</sup>
- Potentially 7 out of 10 overall have some form of cognitive impairment.<sup>9</sup>
- Residents are older and perhaps frailer: – typical female aged 87.<sup>10</sup>
- Women outnumber men, 7:1.
- Nationally, 1.4 million older adults live in skilled nursing facilities (SNFs). 52% of that population is aged 85+.

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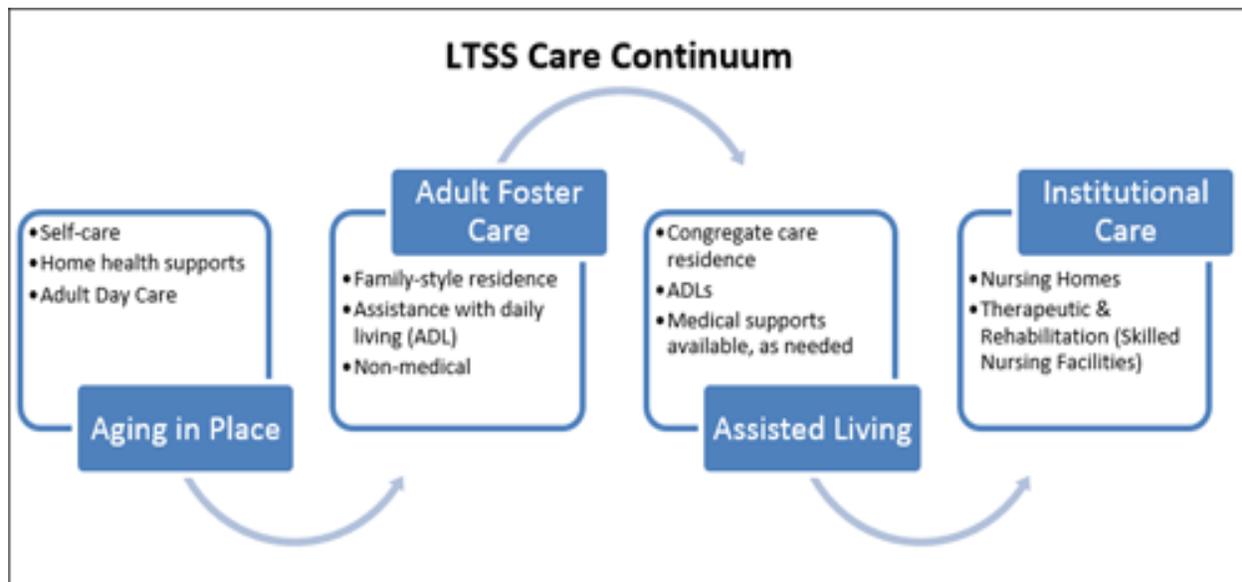


Figure 2 Long Term Care Continuum

## Quality of Life in a Dependent World

While group activities can be compelling and enjoyable, as the iN2L® implementation history in more than 2500 care communities has proven time and again, most group activities have constraints on what staff is able to do in memory care settings. Why?

- **Many residents are wheelchair-bound and need help to get to activities.** In well-run communities, the group activities may be compelling and include music, media and plenty of interaction. Too often this can result in wait times before and after an activity while residents are provided with care and transport to the next location. Individuals with dementia may be particularly prone bewildered during these periods, uncertain of what they are supposed to be doing or where they should go.
- **Schedules are structured around staff tasks and availability.** Staff is stretched thin with tasks in addition to resident activity or interaction. While CNAs and activity staffers would like to spend more quality time with residents, it may not be possible.

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- **Medication is too often an intervention.** Residents of memory care units in particular can become anxious during the so-called sun-downing period of the day. Used for calming residents who may exhibit behavior issues, it can create a catatonic resident who may be unable to move. Instead, various techniques have been suggested to mitigate the effects of sun-downing, including the use of light and music.<sup>11</sup>
- **Some residents won't leave their rooms to participate in group activities.** For these individuals, whether due to physical limitations or illness, remain in their rooms at the time that group activities are conducted.
- **Behavioral issues prevent staff from assisting residents with (ADLs).** As a result, the resident remains in their room and misses activities and the stimulation that could be provided by music, arts and crafts.

### **iN2L HAS CHANGED LIVES FOR RESIDENTS AND STAFF**

Deployed in more than 2500 long-term care communities the iN2L solution has been used in group settings since the company was co-founded by Jack York in 1999. The technology has been deployed enterprise-wide for memory care, and also used in rehabilitation settings, and been a basis of partnership with diverse organizations such as the Eden Alternative, the Pioneer Network, and Leading Age/CAST, and in the 2015 Birdsong Initiative.<sup>12</sup> iN2L has been used to deliver compelling content in a group setting and documented in the Greenhouse Study.<sup>13</sup> In particular, the technology:

- **Has been shown to address the issue of over-medicating.** For example, when a resident who is wandering and cannot find what they may think they have lost and are seeking, particularly during the sun-downing period of the day.<sup>14</sup> The software was used to specifically measure reduction in medication use in a study known as 'The Birdsong Initiative'. It was funded by Westminster-Canterbury Foundation board member and run from June to December 2015. There were 31 residents in Westminster-Canterbury's Hoy Nursing Care Center who were given access to iN2L touchscreen technology as part of their activity plan. At the completion of the study, anti-psychotic drug were reduced among

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40% of those in the intervention group – compared to those that were offered non-computerized recreation.

“Rather than assign staff to customize non-pharmacological engagement and redirection in memory care settings, iN2L offered the ability to pre-program technology to the individual's own interest area.” – Dr. Scott Sautter, Eastern Virginia Medical School

- **Enabling staff in group settings to provide engagement for residents.**

Providing residents with proven solutions can lead to enhanced quality of life, staff efficiencies, and differentiate a community in the market. In April, 2017, iN2L announced that Brookdale Senior Living has exceeded over 5 million hours of usage with their iN2L systems.<sup>15</sup>

“Technology solutions open up the world to our residents, providing opportunities to explore their interests, connect to family and friends, and be challenged with new learning. We could not be happier with iN2L's ability to reach and engage our residents living with dementia in new and innovative ways.” - Juliet Holt Klinger, senior director of Dementia Care and Programs at Brookdale Senior Living

### **iN2L FOCUS: PERSONLIZED CONTENT IN AN INDIVIDUAL SETTING**

Following their success with the group setting use of iN2L, the company has recently launched a tablet-based version with content for personalized use and a user experience specially designed for use in a resident's room, or for use in home settings, or in 1-1 interaction for care providers and individuals – for example, in independent living, home health care or home care.

- **Same level of memory care and senior-oriented content.** As with iN2L's system for group settings, loved ones can send pictures or videos – and staff can make these available through the resident's tablet – visible as new content the next time a person picks the device up. Because a tablet does not require specific scheduling for its use, when family or friends come to visit, they can see what content has been loaded and decide whether to contribute additional material.

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- **Tablet designed for staff enablement of resident's personal use.** Because tablets can be easily customized with an individual's preferences, specific interests can be identified in 'favorites', making it easier to get started again when the tablet is picked up or placed in the resident or user's hands. And with a tablet, it is possible to zoom and change brightness in a way that may be different for individuals with specific vision or cognitive limitations.

"I think the tablet is a great way to connect with residents about their likes and dislikes. The tablet can be helpful in bringing the outliers together with the community." - Victoria Aguila, Sunny View, Front Porch

- **Completely untethered from power, Internet location.** iN2L Focus is lightweight and portable – enabling it to be brought to the resident versus the other way around. With the availability of WiFi Internet access, the device does not need to be plugged into an Internet jack.

"We found that caregivers from any department could pick up iN2L Focus and use it easily to engage a resident one-on-one. It has been a positive relationship building tool." - Cameo Rogers, Life Enrichment Coordinator for Vetter Health Services.

### **Adding clinical integration of data about an individual in a care setting**

Tablets create a unique opportunity to learn about an individual at a greater level of detail – does this material appeal to those with significant dementia, can it be tailored based on personal ability, and is there a correlation with behavior change and therefore possible medication dosages?

- **More data about usage can help refine care plans.** The level of granularity of information creates an opportunity for staff to learn and accommodate personal variations among users and the material. At the same time, this level of personalization may present challenges and require small changes to staff procedures. These can include ensuring that devices are placed near a resident as well as plugged into a charger at day's end.

"Usage analytics allow staff and/or family to see what was used and when. If a measurable can be identified (PRN Anti-psychotic med reduction, standardized test score) the analytics that correlate content use to marked improvement would be very valuable." – Josh Hansen, Manager of Product Innovation, iN2L

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- **How does the iN2L Focus deliver what an iPad cannot provide?** Prospective users have asked – what does iN2L offer in its tablet that an Apple iPad doesn't do? In a word – support. According to the company, iN2L manages the support of the content on a device and sends an updated tablet or manages the update process as needed.

“iN2L Focus has promoted social connectedness, as well as cognitive activity, among all of our residents, enhancing the way we deliver meaningful care,” said Davis Park, director of the Front Porch Center for Innovation and Wellbeing. Per Front Porch, “residents and staff have logged more than 30,000 hours using iN2L Focus at its retirement, adult living and affordable housing communities.”

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#### **WHAT ARE THE POSSIBILITIES FOR USE OF iN2L FOCUS?**

Over time, the Focus tablet can be used in a variety of ways that expand the reach and services caring for individuals with dementia. These individuals could be served by senior living organizations with home care businesses. Or the FOCUS tablet could be provided as part of the toolkit of family or professional care providers to older adults who are home-bound, or those that are visited by other categories of professionals such as home health care providers, companion care businesses. For example, consider:

- **Use of iN2L Focus in Medicaid residential settings.** CMS has provided updates to its Home and Community-based services (HCBS) rule that enables Medicaid reimbursement for person-centered care for people with dementia.<sup>16</sup>
- **Use of iN2L Focus is demonstrated in community settings.** Senior living firms are expanding their service offerings into the communities they serve – including, for example, adult day programs held inside Continuing Care Retirement Communities (CCRCs), or services delivered by senior living firms or other professional groups at senior centers or hospitals.<sup>17</sup>
- **Future of tech-enabled home care and iN2L Focus.** As home and home health care organizations become more efficient, they also will be pressured to provide greater transparency of information about care recipients. And families will expect that technology be part of the service offering, especially that which is personalized for an individual care recipient.<sup>18</sup>

*“The versatility of iN2L allows it to be used one-to-one with caregivers and residents, in small groups or independently by residents,” said iN2L president and co-founder Jack York. In addition, it provides LTC staff opportunities to interact and engage with the people they care for in ways that are unique and personalized.”*

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#### **Footnotes**

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<sup>1</sup> <http://www.prnewswire.com/news-releases/society-of-actuaries-releases-new-mortality-tables-and-an-updated-mortality-improvement-scale-to-improve-accuracy-of-private-pension-plan-estimates-245512447.html>

<sup>2</sup> <http://www.npr.org/sections/thetwo-way/2011/11/17/142457598/90-is-the-new-85-oldest-old-population-is-expanding-rapidly>

<sup>3</sup> <https://www.nytimes.com/2016/11/21/health/dementia-rates-united-states.html?mcubz=0>

<sup>4</sup> <https://www.forbes.com/sites/howardgleckman/2016/11/21/dementia-rates-are-falling-in-the-us/#247ea67f1033>

<sup>5</sup> [https://www.cdc.gov/aging/pdf/cognitive\\_impairment/cogimp\\_poilicy\\_final.pdf](https://www.cdc.gov/aging/pdf/cognitive_impairment/cogimp_poilicy_final.pdf)

<sup>6</sup> <https://www.nadsa.org/consumers/overview-and-facts/>

<sup>7</sup> <https://www.seniorhomes.com/p/retirement-living-communities/>

<sup>8</sup> <https://www.assistedlivingfacilities.org/resources/who-lives-in-assisted-living/>

<sup>9</sup> <https://www.ncbi.nlm.nih.gov/pubmed/24711328>

<sup>10</sup> <http://www.ascseniorcare.com/assisted-living-statistics-a-deeper-dive-into-the-demographics/>

<sup>11</sup> <http://www.dementiatoday.com/alzheimers-and-sundowning/>

<sup>12</sup> <https://www.wcbay.com/birdsong>

<sup>13</sup> [http://in2l.com/wp-content/uploads/2016/04/6.-Green\\_House\\_Evaluation\\_Report.pdf](http://in2l.com/wp-content/uploads/2016/04/6.-Green_House_Evaluation_Report.pdf)

<sup>14</sup> <https://www.ageinplacetech.com/page/in2l-white-paper>

<sup>15</sup> <http://in2l.com/brookdale-senior-living-reaches-engagement-technology-milestone-intouch-by-in2l-reaches-5-million-hours-of-usage/>

<sup>16</sup> Person-centered specifies "Resident choice fosters engagement and improves quality of life." And the updated HCBS ruling clarified specifically that "Assisted Living communities that accept Medicaid having to provide a more homelike, person-centered setting and access to the world at large to their residents living with dementia." <https://www.nhqualitycampaign.org/goalDetail.aspx?g=PCC>.

<sup>17</sup> <https://www.agingcare.com/articles/services-and-care-for-seniors-in-continuing-care-retirement-communities-136756.htm>

<sup>18</sup> <https://www.ageinplacetech.com/page/tech-enabled-home-care-rising-worker-scarcity-family-expectations>