Smart Living Using Technology to Solve the Staffing Crisis and Improve Outcomes

More and more people with disabilities need support with a shrinking workforce

Legend: 2019, 2020, 2021

	2019	2020	2021
Any developmental disability[1]	7.40	8.34	8.56
Intellectual disability	1.70	2.20	1.65
Autism spectrum disorder	2.79	3.49	3.05
Other developmental delay[1]	5.08	5.86	6.06

United States of America - 2020
Population: **331,002,647**

PopulationPyramid.net
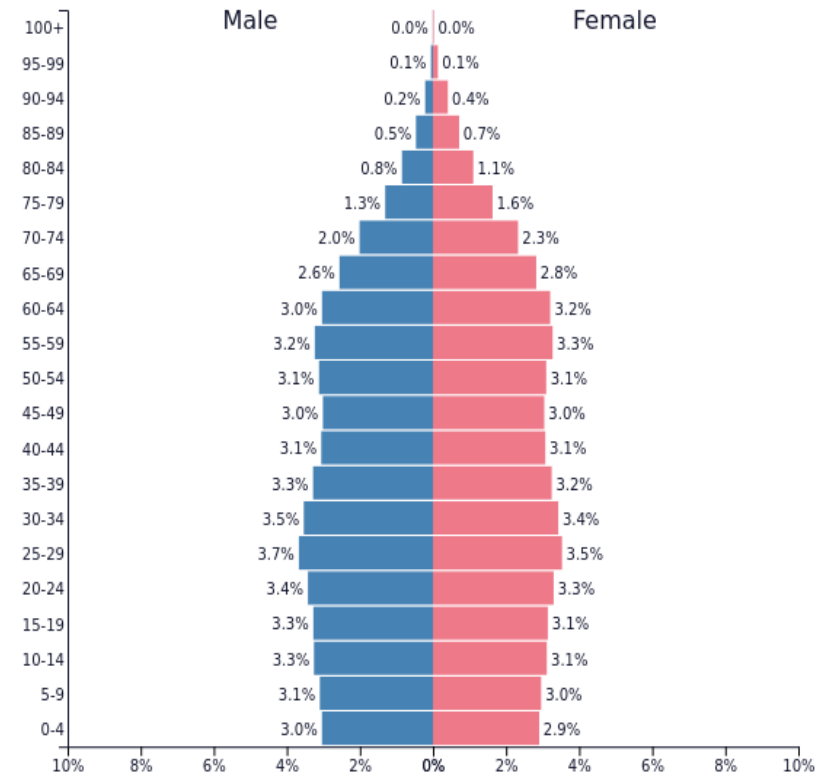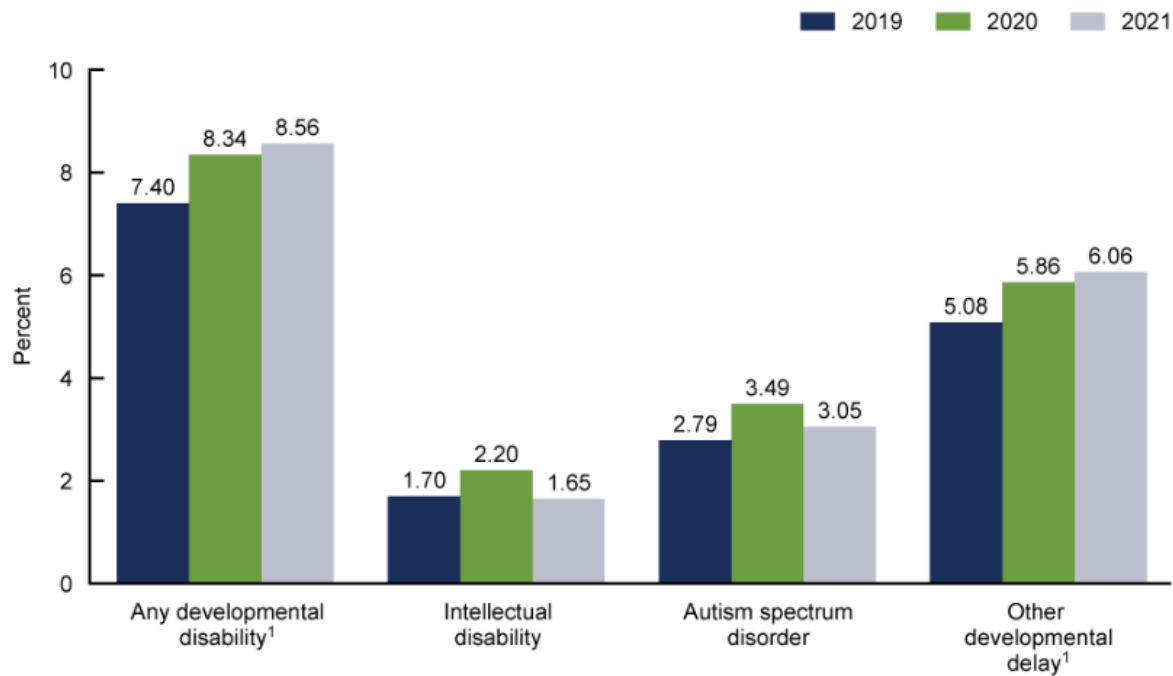
And the problem is only getting worse

‘People will die waiting’: America's system for the disabled is nearing collapse

Providers for intellectually and developmentally disabled struggle to recruit and retain staff amid soaring inflation, pandemic burnout.

DSPs SUPPORT OVER 160,000 IOWANS.

94% of disability service providers have DSP vacancies.

Current DSP turnover has increased by nearly 150% since 2015.

| 2015 | 27% |
| 2021 | 39% |

Statistics are based on the 2021 IACP Wage Survey, where 69% of IACP's provider members submitted responses.
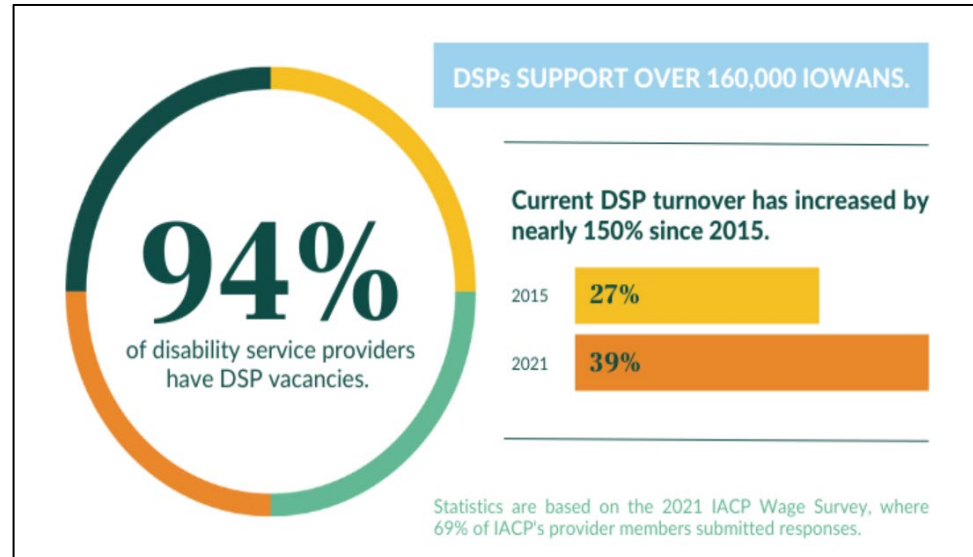
Fears, frustration mount as Minnesota's long-term care staffing crisis deepens

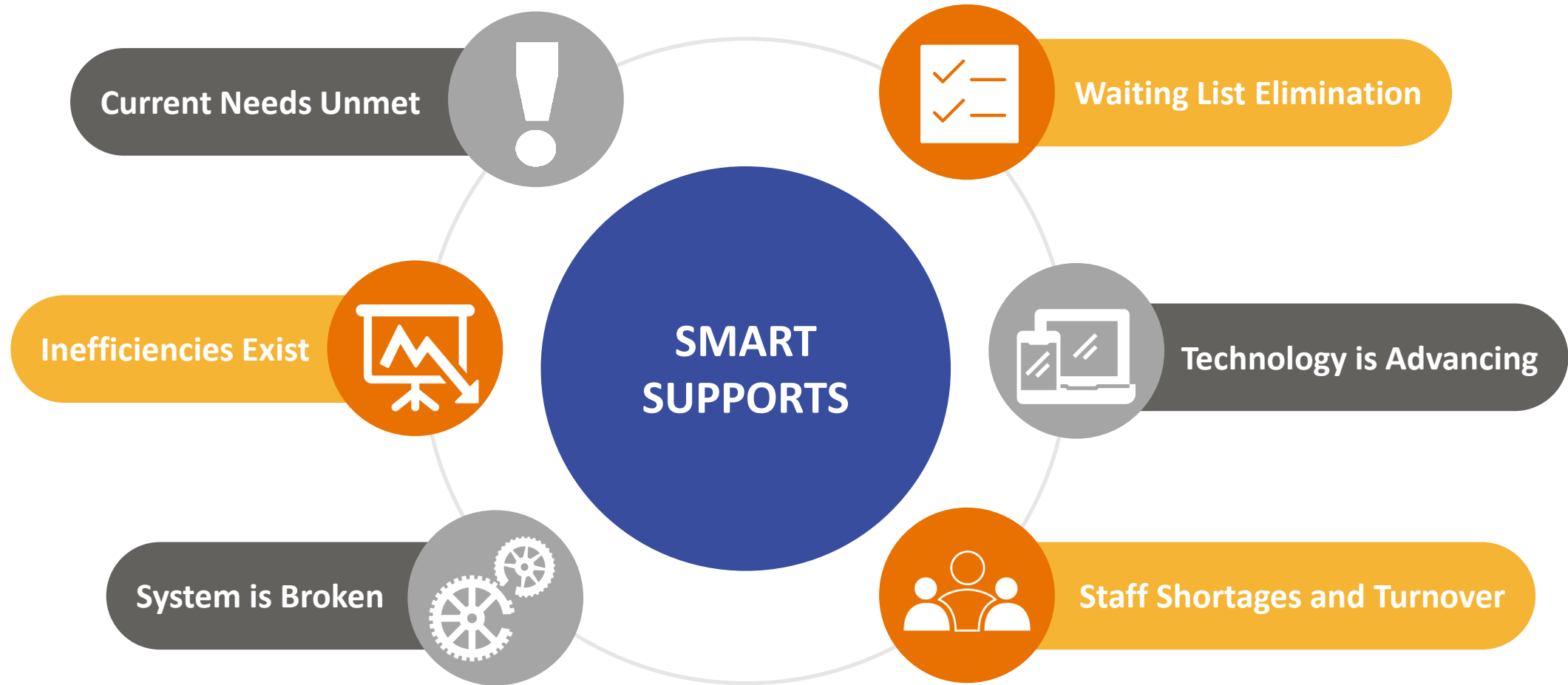Peter Cox   October 5, 2022 4:00 AM

CBS NEWS

U.S.

Nearly 1 in 10 U.S. children have been diagnosed with a developmental disability, CDC reports

BY ALEXANDER TIN
JULY 13, 2023 / 12:01 AM EDT / CBS NEWS

WHY NOW?

Current Needs Unmet

Waiting List Elimination

Inefficiencies Exist

SMART SUPPORTS

Technology is Advancing

System is Broken

Staff Shortages and Turnover

SMART LIVING'S MODEL

Empowering states and providers
with an affordable technology-enabled service model
that furthers community integration, independence and
opportunities for and with people with developmental
disabilities.

INNOVATING A NEW MODEL

INTEGRATION	
TRAINING	
TECHNOLOGY	
LOWER COST OF SERVICES	

Smart Living Pilot:

1. Three years

2. Smart home technology

3. Wearables

4. Staffing efficiencies

Forever, Home geographical zones:

1. Homes in walkable neighborhood

2. Close Proximity to each other

3. Self-Directed Teams

4. Outcome Based Service Delivery

Smart Living Pilot Successes

► Published research on what technology investments have the greatest ROI and/or impact on independence

► A means for remote supports once a person leaves their home developed alongside service specific apps

► An alternative service model for people that have not gotten the waiver and are not likely going to be in an "emergency situation." . . . .
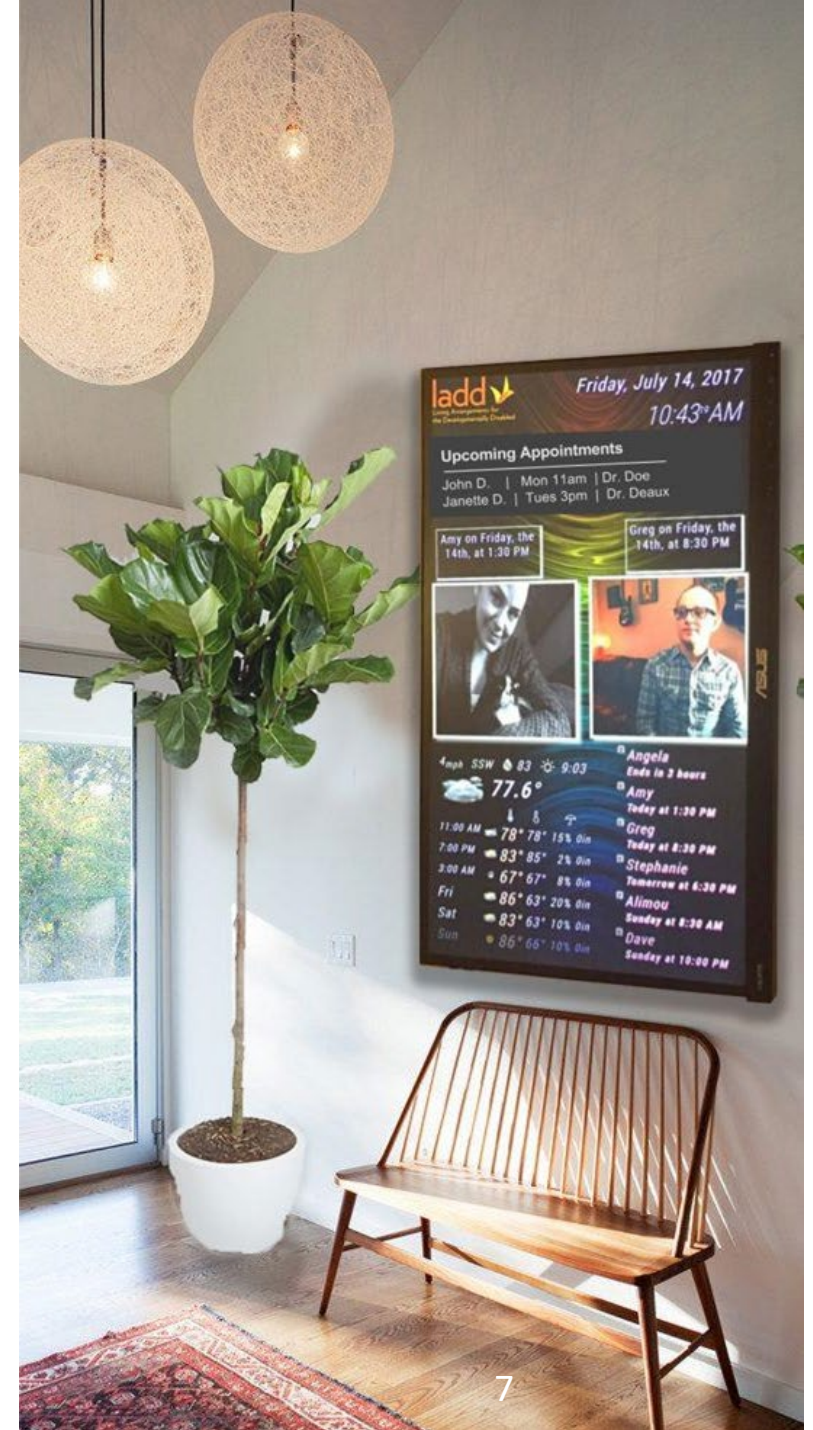
Significant cost savings and increased

Increased self-sufficiency and safety

Decreased reliance on publicly-funded supervision & long-term costs

INNOVATING A NEW MODEL

To address the growing demands and challenges with the current system, LADD proposes a new model without congregate living:

SMART LIVING MODEL

TECHNOLOGY

Leverage technology and training to increase independence

NUMBER OF RESIDENTS

Serve a smaller number of residents per home, and higher number per agency

TRAINING

Provide targeted training and service for each individual, staff member, agency and families

LOCATION (Clusters)

In natural neighborhoods and integrated in the community—putting staff within a five-minute drive

EFFICIENCY OF SERVICES

Develop an affordable service model that reduces Medicaid reliance and increases natural supports

SMART LIVING VS REMOTE SUPPORTS

ITEMS	REMOTE MONITORING	SMART LIVING
Emergency response within 30 minutes	✓	✓
Live person available virtually 24/7 if needed	✓	✓
Use of sensors to trigger intervention	✓	✓
Customized supports for each person	✓	✓
Wearable technology with corresponding app	Sometimes	✓
Easy-to-use dashboard for real-time data	Sometimes	✓
Home automation integrated with the support system	Sometimes	✓
Customized tech suite/menu in excess of 100 devices		✓
Predictive services with daily service adjustments		✓
Significant staff efficiency		✓
Providers control and bills for their own services		✓
Customized health and wellness		✓
Continuing product development		✓
Corresponding staffing model		✓
Outcomes and data-based service model		✓
Supports follow individual into community		✓
Trained employees to provide virtual HCBS services		✓

A PERSON-CENTERED EXPERIENCE

ASSESSMENT
Assessment begins at the highest level and then works down granularly until we know what the persons needs and items that are important to and for them

TECHNOLOGY DETERMINATION
LADD Tech team matches items with available and appropriate technology

IN-PERSON NEEDS DETERMINED
Items not solved with technology delivered through Integrated Targeted Supports

TEAM INTEGRATION, PRE-START TRAINING
Once all determined and authorized, transition and training period begins

SMART HEALTH INTEGRATION
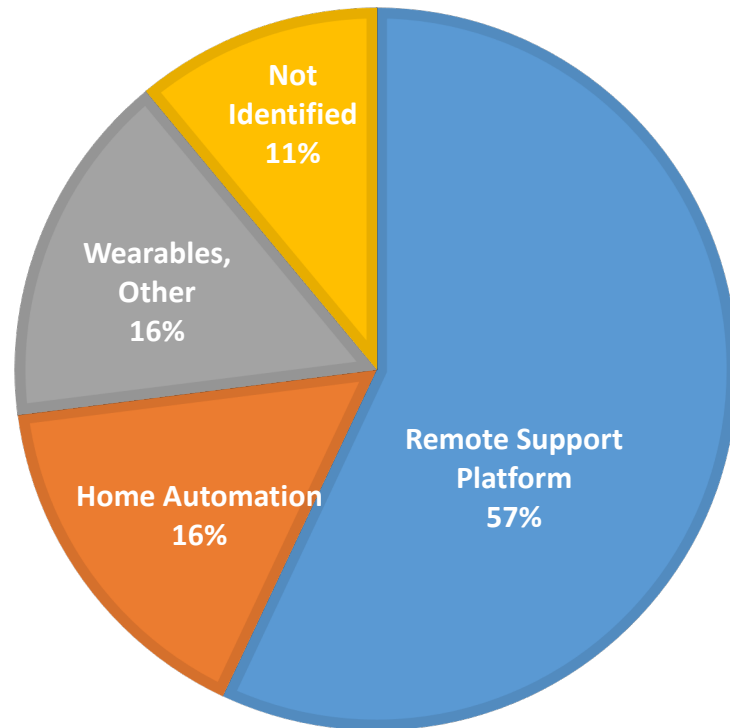A focus on smart health integration is also vital

HOME AUTOMATION
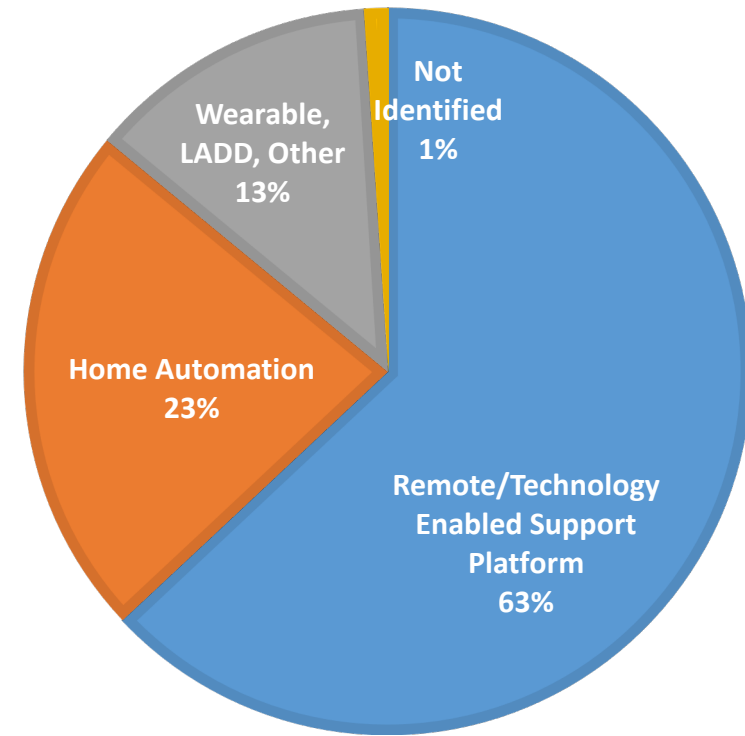Continuous follow up on changing technology and needs, hope is always to use less

TOTAL SOLUTION SUMMARY

We have identified a solution for almost all "must have" requirements
for candidates for Smart Living to live safely

89% of the **TOTAL REQUIREMENTS** have
an Identified Solution

Over **99%** of **HEALTH AND SAFETY**
REQUIREMENT have an Identified Solution

Left pie chart:
- Not Identified 11%
- Wearables, Other 16%
- Home Automation 16%
- Remote Support Platform 57%

Right pie chart:
- Not Identified 1%
- Wearable, LADD, Other 13%
- Home Automation 23%
- Remote/Technology Enabled Support Platform 63%

1 PERSON'S SUPPORT NEEDS

COMMUNICATION
6 must have requirements relating to simple, voice, video & staff assistance

HOME MONITORING
14 must have requirements relating to detecting & monitoring activity within & around the home

SMART HEALTH
3 must have requirements relating to monitoring and measuring health metrics

DAILY ROUTINES
16 must have requirements relating to recurring tasks, calendars, reminders & messages for residents

EXTERNAL MONITORING
2 must have requirements relating to monitoring & assisting activity outside the home

HOME AUTOMATION
15 must have requirements relating to in-home technology assistance & accessibility

A NEW STAFFING MODEL


CURRENT STAFFING MODEL:

- Be there in case something happens

NEW STAFFING MODEL:

- Elimination of block-time caregiving

- Needs not solved by technology use targeted intervention specialists

- Intervention specialists specialize in areas they are passionate about

- Remote Support Staff provide anticipatory supports, monitor for needs and drop in virtually for scheduled supports

- All time spent by staff is value-added

- Model allows for efficiency in staffing. Currently, where we typically utilize 16-18 FTEs, we will be utilizing 5 FTEs, paying them more and then providing tech-enabled supports where the ratios are 1 to 25
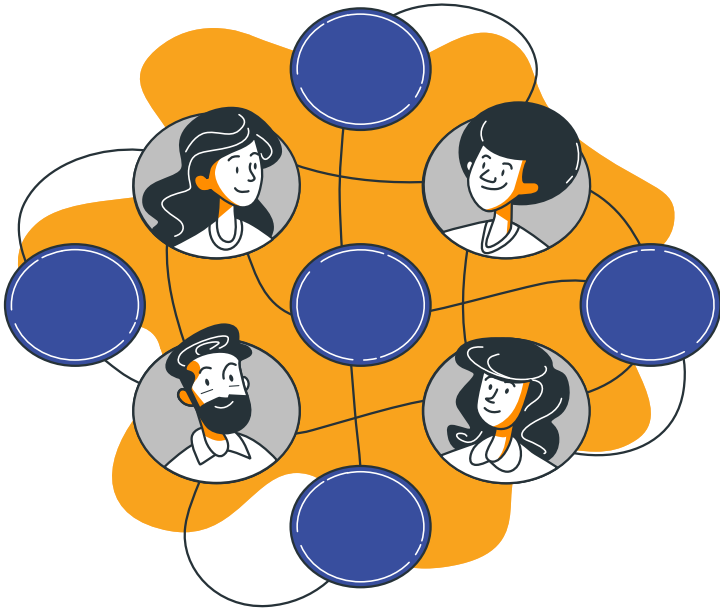
Smart Living Homes
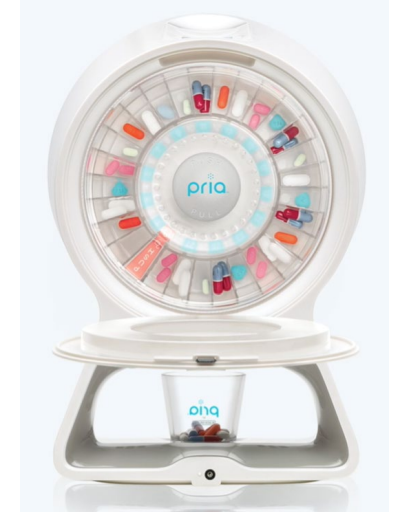
- Over 3 years into the program
- Successfully reduced staff time by over 100 hours per/wk per site on average
- Xavier study on technology and independence showed incredible results
- Partnership with health companies for smart health devices
- Expansion of additional devices at home to further tech testing
- Service model currently being used in over 60 sites, ranging from

14

Smart Living Pilot Successes

- Wearable tech to assist with transportation issues
- Smart refrigerator for meal assistance
- Smart shoe insoles to increase inclusive community independence
- Staff ability to take needed time away and switch back and forth
- New Model significantly reduces staffing needs for new expansion

THE RESULTS

Xavier University Occupational Therapy 3-year Study Results:
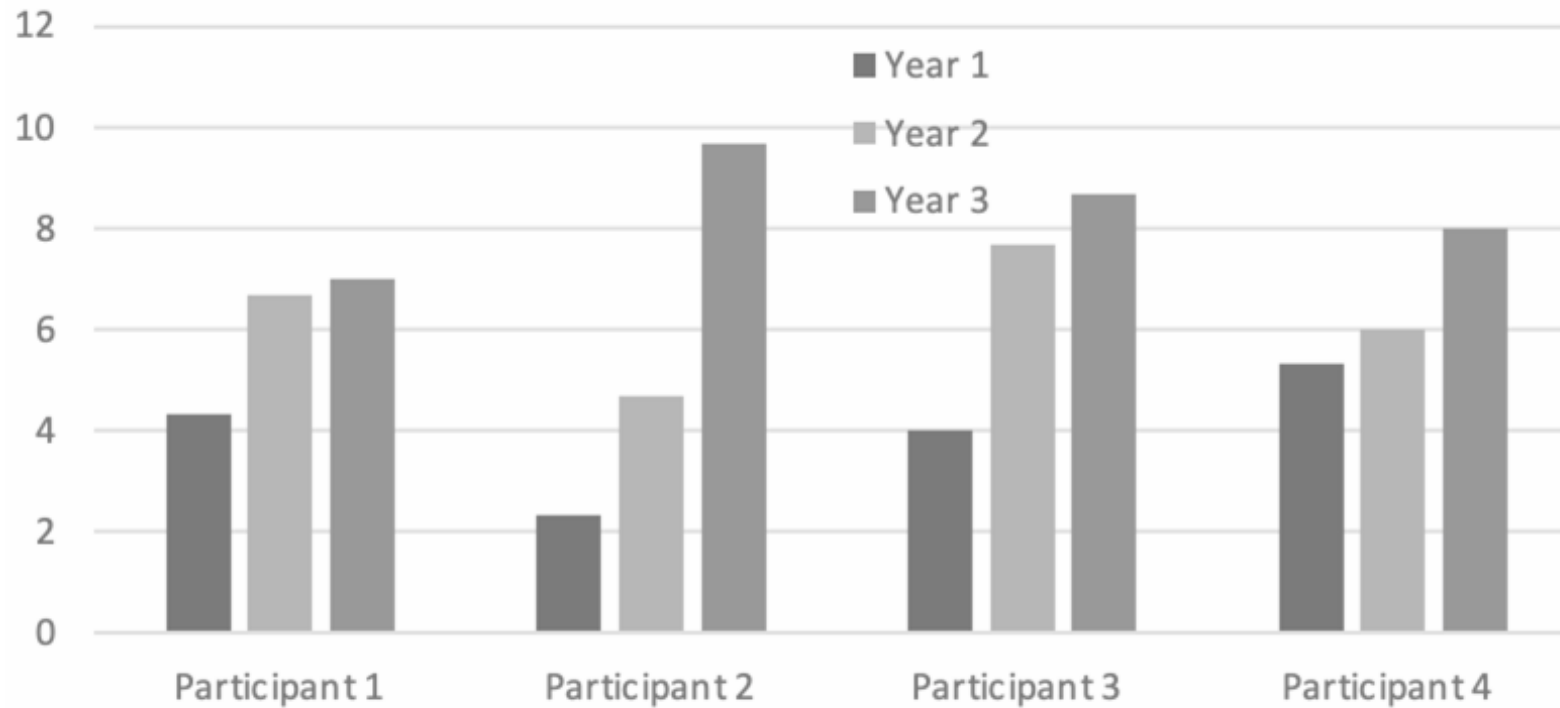
Average independence performance scores of all four residents

"Over three years, the decrease in direct caregiving supplemented by technology in the smart home led to a decrease in overall cost of caregiving. Furthermore, this study found that individuals with DD who moved into a smart home improved their performance of and satisfaction with selected daily tasks over three years."

Where are the Gaps?

Transportation

Potential for intro to autonomous vehicles

Integration

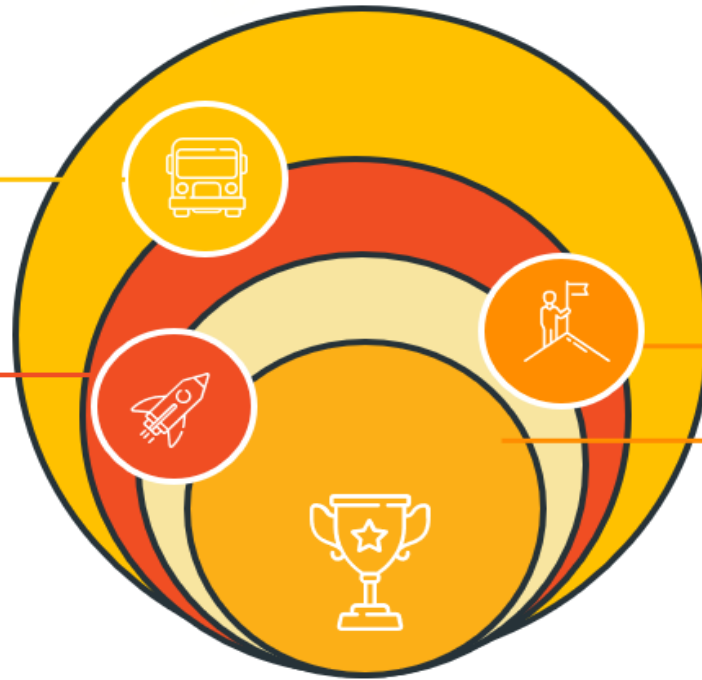Expansion of Platform to Reduce Screens for Staff

Customization of Needs

Menu of Technology Solutions can only go so far

Buy-In

Full buy-in from families, individuals, and funding sources not complete

Smart Living Service Model Toolkit

In Conjunction with Xavier University Department of Occupational Therapy
LADD is developing a toolkit to share with other entities

THANK YOU

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