# THE PERFECT STORM IN SENIOR HOUSING
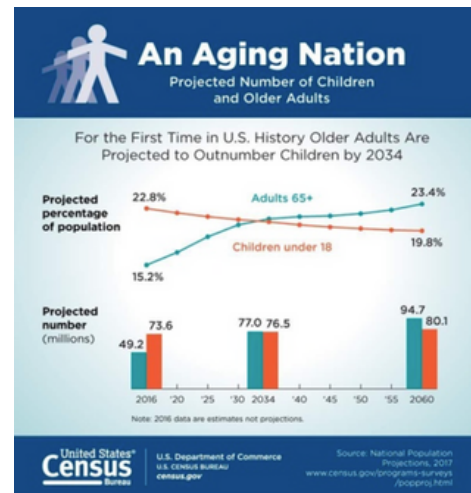
How the Senior Care Industry Can Leverage Technology to Get Back into the Game In a Post-Pandemic World

# THE FUTURE OF SENIOR CARE

As the world deals with the lasting impact of COVID-19, health experts, investors, and caregivers are looking to plan for the future of senior healthcare and housing. According to the 2020 US Census Bureau, over 10,000 people reach the age of 65 per day, and this will increase to nearly 12,000 people per day within the next 10 years. By 2030, 73 million Baby Boomers will be 65 years or older. By 2060 the aging population (65 yrs +) is projected to increase to over 95 million people. This amounts to more than 1 million new seniors every year who will need caregivers and modern, functional senior housing.

The senior housing industry must find new ways to keep up with the demand and the quality of care they provide to their patients. However, declining US birth rates and arbitrary immigration policies have heavily impacted the essential workforce industry, leading to shortages of professional caregivers. Not to mention, the impacts of the COVID-19 pandemic on the senior care industry have been debilitating.



**An Aging Nation**
Projected Number of Children and Older Adults

For the First Time in U.S. History Older Adults Are Projected to Outnumber Children by 2034

Projected percentage of population: 22.8% — Adults 65+ — 23.4%; 15.2% — Children under 18 — 19.8%

Projected number (millions): 2016: 49.2, 73.6; '30 2034: 77.0, 76.5; 2060: 94.7, 80.1

Note: 2016 data are estimates not projections.

United States Census Bureau
U.S. Department of Commerce
U.S. CENSUS BUREAU
census.gov

Source: National Population Projections, 2017
www.census.gov/programs-surveys/popproj.html

Today, senior housing services less than 10% of the aging population, which is just the tip of the iceberg. There is a massive upside on the opportunity of catering to the majority of the senior population. But what worked in the past will not work in the post-pandemic era. Digitization increasingly proves to streamline care management and improve patient care quality, seniors and senior housing must adopt digital technology to contain cost, drive efficiencies and scale care delivery in an economical, efficient, and effective way.

# RISING TRENDS IN THE SENIOR CARE INDUSTRY

Senior care communities provide a safe and secure environment with abundant opportunities for social engagement. Since the early 1990s, many senior housing communities have been built with the promise of high occupancy and profitability, sometimes with operating margins exceeding 40%. The investment community has been dependent on demographical data illustrating the vast increase in the aging population to justify long-term investments in senior housing. The COVID-19 pandemic, however, has heavily derailed the senior housing industry.

## Impact of COVID on Senior Housing Communities

### Occupancy

The recent COVID-19 pandemic contributed to record low occupancies in US senior care communities. According to the 2021 National Investment Center for Seniors Housing & Care (NIC) MAP data, the average Q1 2021 occupancy of Senior Living and

Assisted Living Facilities dropped to 78.8% and 75.5%, respectively. A 100-bed community operating at only 78.8% occupancy amounts to approximately $40,000 per month in lost revenues, which is $480,000 annually.

| Average Occupancy First 3 months (2021) | |
|---|---|
| Nursing Homes | 78.8% |
| Assisted Living | 75.5% |
| Independent Living | 81.8% |

Another rising trend marked by the pandemic: many potential customers and their families are holding back and afraid to move into congregate housing. 39% of US deaths due to COVID-19 were recorded as US nursing home deaths. And the Q1 2021 NIC MAP data shows that Independent Living was the most popular among seniors at 81.8% occupancy, as independent living might lessen the risk of exposure to COVID.

## Industry

Healthcare workers have also been disproportionately affected by the pandemic - lack of adequate personal protective equipment, and ever-changing protocols and CDC guidelines took a massive toll on a strained healthcare system . Many caregivers will experience burn-out during their careers, affecting their health and caregiving burden. Healthcare workers, including caregivers, continue to quit due to burn-out and the COVID-19 pandemic. Caregivers fare worse than non-caregivers in terms of mental health, physical fatigue, increased headaches, body aches, and abdominal discomfort. With lower occupancy rates and higher labor costs, profitability decreased. Many senior care providers were operating in the red during 2020. According to NIC MAP data, this trend will continue for another three years.

American Seniors Housing Association (ASHA) president David Schless continues to urge the government to provide more financial relief to independent living, assisted living, memory care, and continuing care retirement communities. However, this is not sustainable.

Increased competition and price pressures are impacting the margins, and it is unsustainable for the senior care industry to operate business as usual. These conditions have led to higher saturation levels in alternatives to senior care communities like independent living and aging-in-place.

# AGING-IN-PLACE

The truth is, many seniors wish to remain independent until they can no longer care for themselves. <u>The aging-in-place movement has gained significant traction in recent years</u>. However, aging-in-place is <u>not always an option</u> for people as their homes may not be ideal for safety, security, and socialization as they age.

Alternative housing arrangements for this population might be senior care communities, nursing homes, or assisted living facilities.

For us at Zemplee, this posed two questions:

How can seniors improve their own aging-in-place experience and remain at home for as long as possible?

AND

How can caregivers, care facilities, or families ensure that seniors receive the quality care they need, whether intensive intervention or general daily living assistance?

# HOW CAN REMOTE PATIENT MONITORING HELP SENIOR HOUSING

With the rise of 5G technology, the Internet of Things (IoT), Artificial Intelligence (AI), and an increasingly connected world, the technology industry offers a variety of options to address the unique requirements of the aging senior population.

Remote Patient Monitoring (PM) technologies are a viable solution as they lower costs and improve chronically ill patients' quality of life. RPMs passively or actively collect data from patients wherever they are. The world of digital patient monitoring is relatively new, but RPMs have already made significant inroads in it. RPM for COVID-19 post discharge patients was strongly associated with a decreased risk of readmission across five hospitals in New England.

A study via the American Heart Association found that remote monitoring of heart patients resulted in 21% fewer total healthcare visits for heart failure, arrhythmias, or ICD-related events.

Additionally, the United Kingdom's Department of Health reported that the risk of patient mortality was reduced by 45% due to remote patient monitoring systems. RPMs have proven that proactivity on health maintenance and timely intervention can significantly improve clinical and health outcomes. This is especially relevant to the aging population, which suffers from one or more chronic conditions, resulting in hospital readmission.

Monitoring only for chronic conditions and episodic ailments is not enough! It's no secret that one's lifestyle can significantly impact health, especially within the senior population. Risky and indeterminable behaviors such as falls, unaccounted absences or wandering, and irregularities in dining and medication habits are as much of a concern as chronic clinical conditions.

Most often, these are early indicators for an undetected underlying condition and when left untreated they can become acute. Psycho-social and functional domains are also a predictor of adverse outcomes and a determinant of health. Remote patient monitoring and analysis of patient data can detect and track these early indicators!

A pilot RPM run by Recover Healthcare found that their RPM program allowed seniors to enjoy prolonged independence and even helped patients regain independence with respect to medication administration and management. One case in particular, a patient was able to improve their adherence to their daily medication routine from 60% to 95%.

# HOW ZEMPLEE PROVIDES A SOLUTION

Zemplee launched in June 2019. We created our unique application that both:

1. Passively monitors an individual's movement patterns in their homes.
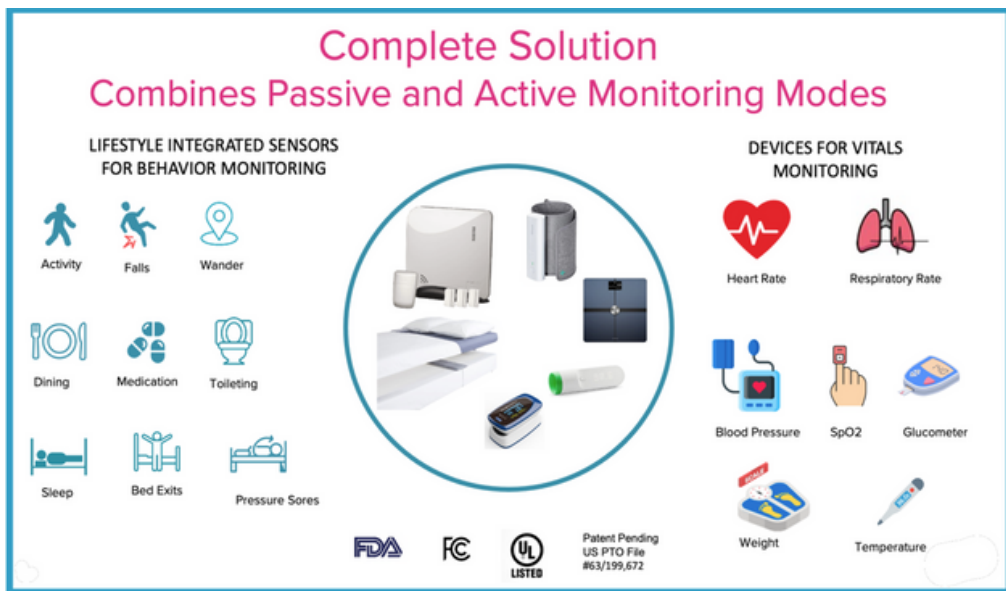2. Utilizes AI to track an individual's Behavior Determinants of Health ®

Zemplee brings the success of remote patient monitoring to senior housing. We operate in care communities, assisted living facilities, and even assist seniors living independently!

Zemplee monitors a patient's deviations in health. Behavioral Determinants of Health  include metrics on daily activity and movement, heart rate, respiratory rate, and medication schedule. A sample deviation in behavior is a period with an unusual lack of movement, indicating unplanned inactivity or a fall. Statistical deviations from the norm in regards to activities, lifestyle habits, movement or vitals are detected. Zemplee issues an automated alert to a patient's appointed contacts, such as a family member, caregiver or physician.

The Zemplee application enhances the aging-in-place experience with non-wearable, quick-to-install sensors that track a patient's infrared movements, heart rate, and respiratory rate throughout the day. When statistical deviations are detected, Zemplee issues an alert providing details on the patient and jumpstarting options for care. By classifying deviations in multiple levels- high, medium, or low- Zemplee ensures more accurate patient care. Remote monitoring allows appointed contacts to access real-time patient data and react accordingly, increasing the appropriateness of hospital/in-office visits.

Tracking changes in a patient's condition also allows them, their caregivers, and physicians to be proactive about their care and manage appropriate interventions. Zemplee's digital monitoring offers an intelligent solution to address the unique care needs of the aging population and their care providers.

## Complete Solution
## Combines Passive and Active Monitoring Modes

**LIFESTYLE INTEGRATED SENSORS FOR BEHAVIOR MONITORING**

- Activity
- Falls
- Wander
- Dining
- Medication
- Toileting
- Sleep
- Bed Exits
- Pressure Sores

**DEVICES FOR VITALS MONITORING**

- Heart Rate
- Respiratory Rate
- Blood Pressure
- SpO2
- Glucometer
- Weight
- Temperature

FDA   FCC   UL LISTED   Patent Pending US PTO File #63/199,672

"

I'm an 87 year-old woman who is living at home alone. At night I have a caregiver as I tend to be unsteady on my feet and am at risk for falls. Zemplee was installed in my home to maintain my independence during the day. One afternoon, my agency was alerted that I had been sitting in my recliner for longer than usual. I was having trouble getting out of the chair and needed help. Soon assistance was sent to help me out of my chair.

- Mrs. K, Roseville, CA

"

## Increase Occupancy

Zemplee digitally transforms facilities using the latest and best technology options to attract and "pacify" families on new and better ways of care delivery. Continuous monitoring with care-at-hand, along with remote connectivity options, are a great way to differentiate and promote senior housing services and increase occupancy rates.

## Increase Average Length of Stay

Multiple studies have shown that implementing an RPM program for post-discharge patients results in reduced hospital or ER readmission. As a passive RPM, Zemplee's sensor system automatically detects and ranks the severity of a patient alert, reducing the need for unnecessary urgent hospital examinations.

## Caregiver Shortage

We are experiencing a national caregiver shortage, with 99% of nursing homes saying they've asked current staff to work overtime or extra shifts in 2021. Digital RPM programs can compensate for the interim gaps in caregiving. Patient monitoring can reduce the follow-up load of caregivers by covering essential functions, like tracking daily stats or generating a patient log.

Senior care, which often involves repetitive and continuous intervention, can easily benefit from technology application. Zemplee's RPM technology can be a complementary companion to the caregiver and increase their capacity to provide higher-value forms of care. Senior housing businesses can vastly improve labor management by leveraging data and analytics.

## Litigation

Remote monitoring technology acts as an additional set of ears and eyes to keep tabs on operations and prevents incidents that can eventually lead to litigation. It can save facilities vast amounts of money in litigation costs and avoid tarnished reputations.

## Improve Family Engagement

In an ever-increasingly connected world, digital family engagement is essential – not only to increase customer satisfaction but also to actively enhance the quality of life and overall quality of care for the elderly. Fostering a better partnership with families by giving them peace of mind knowing that their loved one is in good hands, is needed to thrive in this marketplace.

# READY TO REINVENT THE GAME?

Zemplee is a solution for the issues uncovered in the senior care industry during this unprecedented time- occupancy rates, caregiver burden, and effective patient care. We offer remote patient monitoring powered by an AI solution to improve elder care quality today!

**ZEMPLEE CARES! START THE DIGITAL
TRANSFORMATION OF
YOUR ELDER CARE FACILITY TODAY**

CONTACT US
TO SCHEDULE A DEMO
OR VISIT
WWW.ZEMPLEE.COM

# RESOURCES

https://www.census.gov/library/stories/2019/12/by-2030-all-baby-boomers-will-be-age-65-or-older.html

https://www.mcknightsseniorliving.com/home/news/business-daily-news/operating-margins-other-cash-flow-ratios-fall-to-levels-not-seen-in-a-decade-if-ever-analysis/?mpweb=1326-22343-147514

https://www.nic.org/news-press/u-s-seniors-housing-occupancy-reaches-new-low/

https://news.usc.edu/trojan-family/caregiver-resources-los-angeles-covid-pandemic-aging-family/

https://www.dallasnews.com/business/health-care/2021/09/24/as-covid-rages-more-health-care-workers-are-quitting-and-job-openings-hit-a-new-high/

https://www.hindawi.com/journals/cggr/2016/4723250/

https://leadingage.org/sites/default/files/Case%20Study_Montgomery%20Place_Reducing%20Fall%20Risk1.pdf

https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0040-1721039

https://www.ahajournals.org/doi/full/10.1161/circulationaha.111.088971

https://www.gov.uk/government/publications/whole-system-demonstrator-programme-headline-findings-december-2011

https://leadingage.org/sites/default/files/Recover%20Healthcare.pdf

https://www.mcknights.com/news/just-1-of-nursing-homes-are-fully-staffed/

https://leadingage.org/sites/default/files/Case%20Study_Montgomery%20Place_Reducing%20Fal%20Risk1.pdf

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7454918/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7919204/#bibr9-2333721421999279

https://www.ncbi.nlm.nih.gov/books/NBK51841/