



TECHNOLOGY TO COMBAT **OCCUPANCY CHALLENGES**

Findings From the Research Study - How the Use of AI-Powered Digital Health Platform Increased Occupancy, Health Outcomes and Workforce Productivity in Senior Living Facilities



Introduction

Maintaining occupancy levels in senior care facilities demands both retaining current residents and attracting newer ones. Unprecedented events like the recent pandemic have profoundly impacted the already volatile senior living occupancy rates. According to the National Investment Center (NIC) MAP's senior housing data¹ for the fourth quarter in 2020 (Fig 1), the overall senior housing occupancy fell to 80.7 percent, the lowest level recorded by NIC thus far.

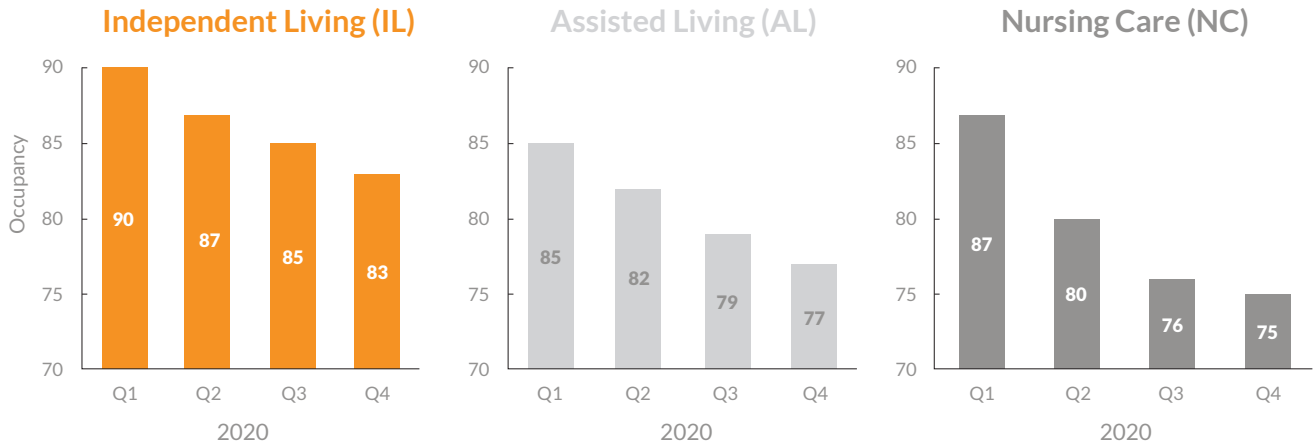


Fig 1: Senior living occupancy rate for IL, AL and NC from Q1 to Q4, 2020. NIC MAP Data.



Technology has come to the forefront as a key differentiator to help senior living facilities penetrate saturated markets and maintain current occupancy. The recently published peer-review study in the **Journal of Medical Internet Research*** details how the use of an AI-powered digital health platform, CarePredict, resulted in improved health outcomes by reducing unplanned hospitalizations and drastically reducing falls in assisted living communities. It also shows how communities that provided their staff with tools for real-time location insights substantially improved response times to alerts and productivity. In this eBook, we will further analyze the direct impact of CarePredict's AI-powered platform on:

- ① Empowering sales and marketing to deliver accelerated occupancy ramp-ups
- ① Increasing final occupancy rates through resident retention and increased length of stay
- ① Increasing staff productivity via sophisticated communication and real-time location system (RTLS) tools

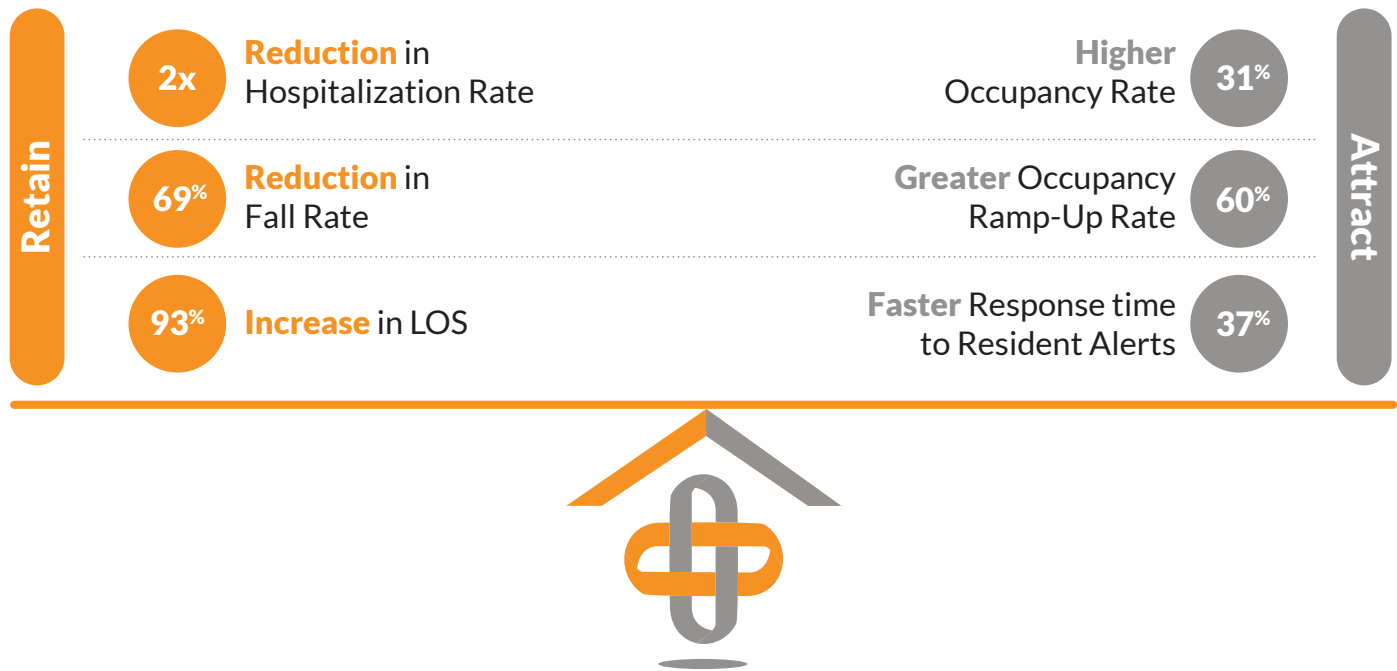


Research Methodology:

For the published study, anonymized data was retrospectively analyzed from 490 residents in six similar assisted living communities managed by the same operator over 24-months. CarePredict was installed and used in three of these communities. Resident health outcomes, occupancy levels and staff productivity from these communities were compared to the remaining three that did not use CarePredict.

Note: This eBook contains exclusive results for final occupancy and occupancy ramp-up not covered in the published study.

GET THE CAREPREDICT ADVANTAGE



Understanding Resident Retention

Resident retention delivers some of the largest returns for senior living operators - directly affecting costs associated with customer acquisition and room vacancy. Conversely, there is a steep price to pay for resident turnover. The National Survey of Residential Care facilities³ states four primary reasons for resident turnover in senior care facilities.



Need for higher levels of care



Unplanned hospitalizations



Falls



Death

Reduced Hospitalization Rate: Unplanned hospitalizations are a strong predictor of future nursing home admissions and are associated with health declines, lower quality of life, and higher health care costs⁴. But how can operators prevent something that is unplanned? The key lies in preventive care. Since health declines in seniors manifest first as changes in daily activity patterns, identifying these signs allows staff to intervene early and protect seniors from conditions that could result in hospitalization if left untreated.

CarePredict's smart wearable, Tempo™, is the world's first wearable designed for seniors that autonomously observes daily activity patterns. It uses advanced kinematics, indoor location insights, and machine learning to capture individual's normal everyday patterns and alerts staff when a resident's patterns are outside of their normal range. For instance, CarePredict's activity-based insights on frequency and duration of bathroom visits are used to identify and flag seniors that show the earliest signs of a urinary tract infection (UTI). The CDC lists new or marked increase in frequency of bathroom visits as one of the criteria to define an UTI event⁵. Seniors who have shown a deviation from their normal

bathroom duration and frequency pattern can be referred to a provider for diagnosis and treatment, thus preventing a visit to the ER, extended hospital stay and possibly sepsis. The study's outcomes point to the effectiveness of preventive care with a **2X reduction in hospitalization rate** in communities using CarePredict.

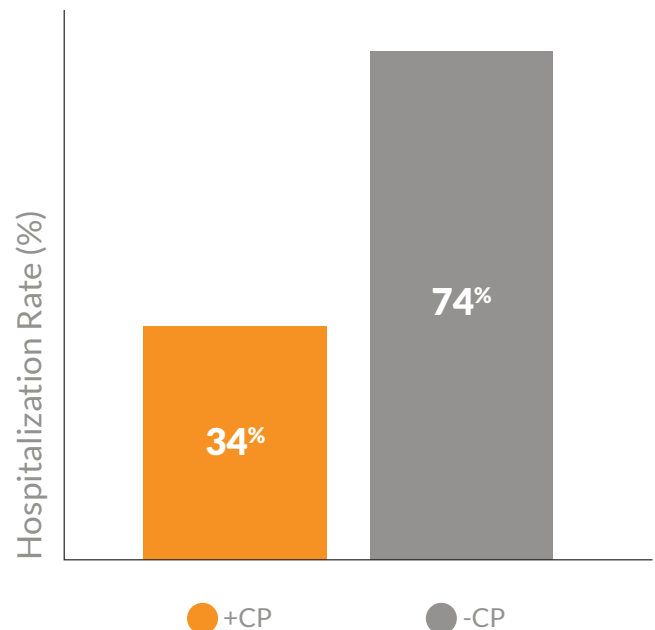


Fig 2: The average hospitalization rate for communities with CarePredict (+CP) was 34 percent, and communities without CarePredict (-CP) was 74 percent indicating that +CP communities had over a 2X reduction in the number of hospitalizations.



Fewer Instances of Falls: Falls are the leading cause of injury and injury-related deaths among adults aged 65 and older. The United States Senate Special Committee on Aging estimates that by 2030 there will be nearly seven deaths every hour, 59,000 deaths annually, due to a fall⁶. Incident fall rates in assisted living communities range between 1.07 and 3.5 falls per person per year⁷. As alarming as these numbers are, they still underrepresent the prevalence as nearly half of the falls go unreported. CarePredict’s smart wearable and AI-powered engine alerts on changes to activity patterns that are precursors to falls, such as sleeping less, frequently getting out of bed at night, skipping meals, and reduced activity levels. The system flags the residents’ out of baseline activities so staff can put forth adequate precautionary measures to prevent falls. In the pilot study, the use of CarePredict’s AI-powered solution in senior living facilities demonstrated **a significant reduction of 69 percent (Fig 3.) in the facility’s annual fall rates.**

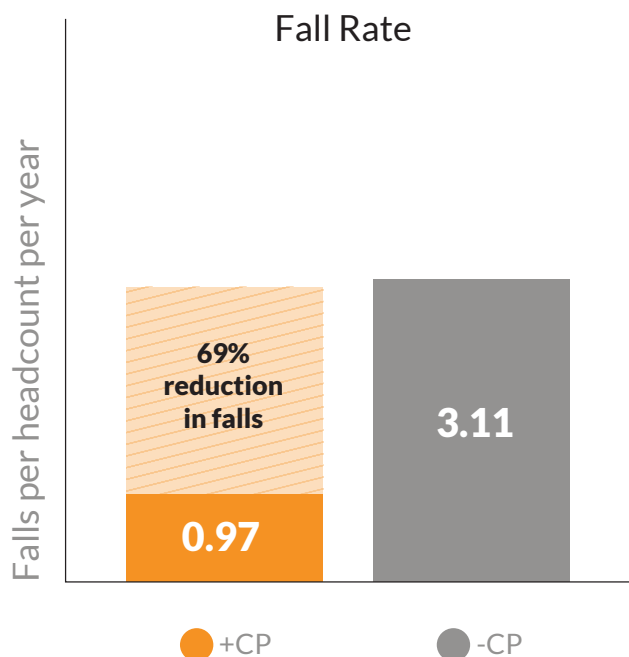


Fig 3: The average fall rate in +CP communities was 0.97, indicating 69 percent fewer falls when compared to -CP communities that had a rate of 3.11 falls per resident per year.

Helping Residents Stay Independent Longer:

According to the National Center for Assisted Living, 59 percent of all assisted living residents will eventually move to a skilled nursing facility. Moving to a higher level of care can be primarily delayed by preventing falls and reducing hospitalizations. They can also have a significant impact on the occupancy levels of a community. In the study, we saw the subsequent effect of reducing falls and hospitalizations on the average Length of Stay (LOS) and higher final occupancy rates.

Length of Stay: The philosophy of care in assisted living is to maximize a resident’s independence, privacy, autonomy, and dignity, and minimize the need for a resident to move when his or her needs change*. Length of Stay (LOS) is the standard measure to assess how long a resident continues to stay with the current level of care in a facility. Since the industry uses varying formulas to gauge LOS, all three computations of the metric – average, geometric mean and median were used to assess the impact of CarePredict in increasing LOS in the pilot study (Fig 4.) The geometric mean is regarded as a precise representation of the metric since it minimizes the impact of outliers. We saw that

CarePredict consistently increased the length of stay in communities and yielded significant results when calculated for the geometric mean (93 percent increase in LOS.)

Final Occupancy Rate: Communities with CarePredict had a **final occupancy rate 31 percent higher than the communities without CarePredict** and 8 percent more than the US’ average occupancy rate at the time of the study⁸. (Fig 5.)

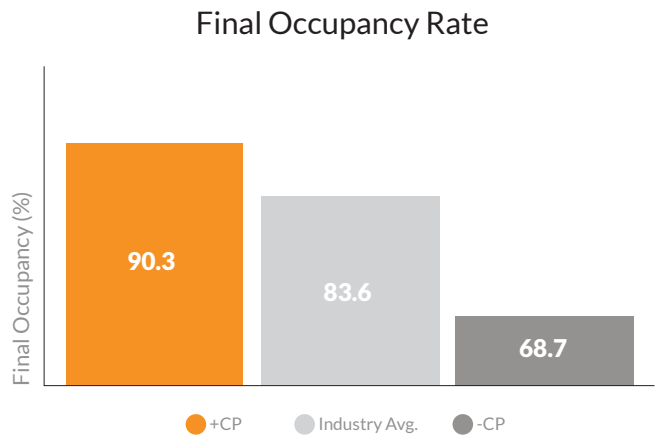


Fig 5: Average Final Occupancy Rates for Communities. The final occupancy rates were computed for all communities at the end of the 24-month study. The average final occupancy rate for +CP was 31 percent higher than -CP communities.

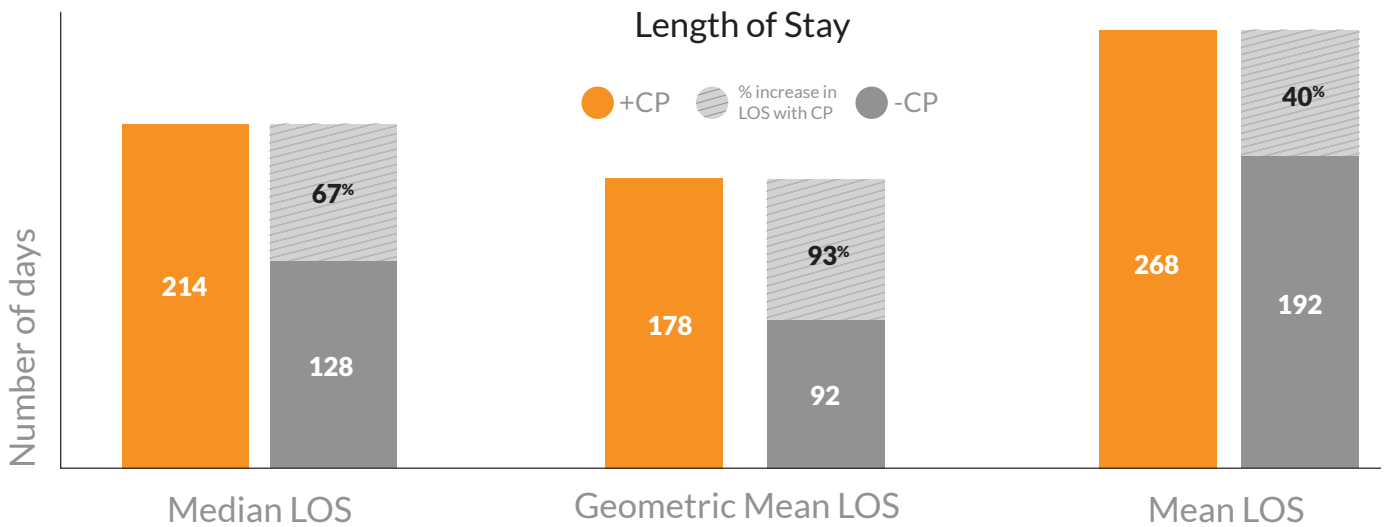


Fig 4: Length of Stay (LOS) for Communities with (+CP) and without (-CP) CarePredict. +CP showed an increase of 67 percent (Median LOS,) 93 percent (Geometric Mean LOS,) and 40 percent (Mean LOS.)

Technology as a Market Differentiator: Despite senior care being the fastest growing market, a new community looking to build occupancy ground up needs to contend with fierce competition, seniors deferring care due to shrinking personal retirement accounts and safety concerns. To command market share, operators must communicate their distinct offerings and convince prospects of their ability to meet the residents’ needs while keeping them safe and healthy. CarePredict was used as a key differentiator in marketing the new senior housing communities in the study. The results (Fig 6) show that brand new communities with CarePredict grew their average occupancy percentage by 12 percent per month, while communities without CarePredict had an occupancy growth of 7.5 percent. Therefore, we can deduce that **the use of CarePredict’s AI-powered solution in the communities’ marketing and sales efforts led to a 60 percent greater occupancy ramp-up rate.**

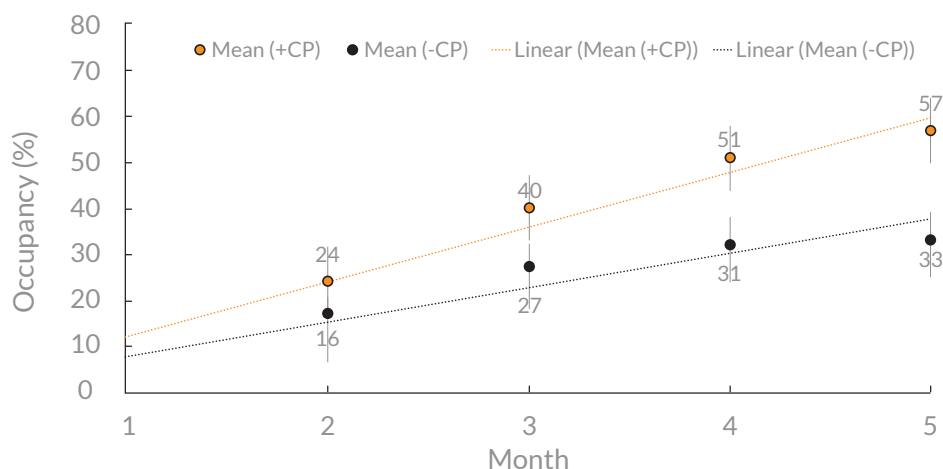
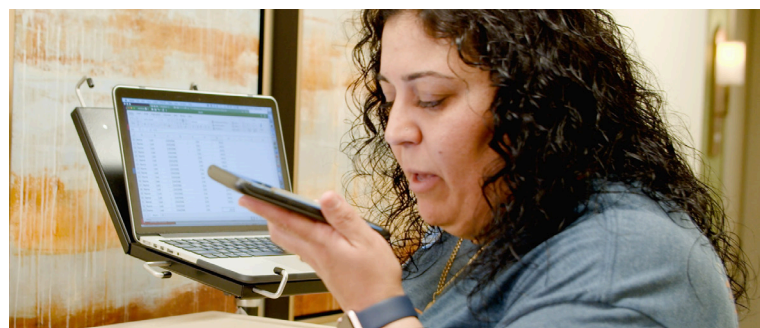


Fig 6: The average occupancy rates within the first five months of opening of +CP and -CP communities are shown.

Driving Staff Engagement: Research on the impact of staffing shortages has shown that employee engagement is tied to a range of benefits, including higher quality of care, employee retention, and occupancy rates¹². Equipping staff with technology-enabled tools can streamline workflow processes, improve staff response times, and enhance collaboration in senior living communities. This is evident in the outcomes study where the use of CarePredict wearable Tempo by care staff resulted in a **37 percent faster response time to resident alerts**. This improvement could be attributed to the Tempo’s ability to provide real-time location tracking and direct communication between staff and residents. Further, the system drives efficiencies by automatically documenting direct care time spent by staff with each resident and providing management with visibility into the quality and quantity of care provided to each resident in their community.



Tempo’s two-way voice communication allows residents to communicate directly with the caregiver through their wrist-worn wearable and receive prompt assistance and reassurance.

The Future of Senior Care: Technology for Sustained Growth

The U.S. is soon poised to join other super-aged countries where the senior population outnumbers children. The 80 plus population is projected to double from 12.9 million in 2019 to 26.5 million in 2030. Likewise, a 100 percent growth rate is expected for the 85 plus population cohort by 2036. On the contrary, the workforce population needed to care for these older adults is estimated to grow by only two percent during the same period¹³. These projections and estimates all point to one fact – we will not only need technology to drive better outcomes for resident retention and health, but we will also need it to augment human caregivers to deliver quality senior care.



Access the complete peer-reviewed research study here - <https://aging.jmir.org/2020/2/e19554>

About CarePredict

CarePredict's mission is to help caregivers of seniors take timely action by detecting precursors to health declines. Based on the science that changes in daily activities and behavior patterns precede health declines, CarePredict's award-winning smart wearable, Tempo™, autonomously understands these patterns and alerts professional and family caregivers on changes that warrant attention.

Medisuivie is the Canadian distributor of CarePredict solutions. Its head office is located in Saint-Ambroise-de-Kildare, Quebec. For more information, you can reach us at institutions@medisuivie.com or call 514 377-7747.



Sources:

1. [Wilmink G, Dupey K, Alkire S, Grote J, Zobel G, Fillit HM, Movva S
Artificial Intelligence–Powered Digital Health Platform and Wearable Devices Improve Outcomes for Older Adults
in Assisted Living Communities: Pilot Intervention Study](#)
2. [National Survey of Residential Care Facilities \(NSRCF\)](#)
3. [Factors associated with length of stay in care homes](#)
4. [Urinary Tract Infection \(UTI\) Event for Long-term Care Facilities](#)
5. [High Service or High Privacy Assisted Living Facilities, Their Residents and Staff: Results from a National Survey](#)
6. [Falls Prevention: National, State, and Local Solutions to Better Support Seniors - Special Committee on Aging
United States Senate](#)
7. [Interventions for preventing falls in older people in care facilities and hospitals](#)
8. [2Q2019 Seniors Housing Actual Rates Report Key Takeaways](#)
9. [Falls in older people: epidemiology, risk factors and strategies for prevention](#)
10. [Falls among assisted living residents : Results from the 2016 National Study of Long-Term Care providers](#)

