

## ***Digitization in Long-Term Care***

*As the world lives longer, is it taking better care of its aging population? Though there have been great strides in adopting technology to help provide more value to patients and care providers across the rest of the healthcare industry, the senior-care industry has lagged behind. Long term care institutions can benefit from digitizing their operations in terms of operational efficiency and resource management while gaining insights about previously hidden trends among their residents.*

The rise of technology over the last century has directly contributed to a decidedly higher quality of care. Leaps made in HealthCare mean a larger portion of the world population is living longer. By 2030, 1 in 6 people in the world will be aged over 60. Between 2015 and 2050, the proportion of the world's population over 60 will nearly double from 12% to 22% (WHO). 1 in 5 Americans will be eligible for retirement by 2030 (Vankar). Can long term care solutions scale up to help providers meet this challenge?

In the United States, while major healthcare providers have made great strides in digitizing most of their processes, senior care facilities are yet to catch up. In this article - we evaluate how digitization can help in senior care.

### *How can digitization help?*

Because residents of nursing homes or long-term care centers stay for years, the number of records stored in these centers will be voluminous. Centers that use paper records will find it very hard to categorize and aggregate all the data in their system - whether it be operational data or patient health data.

Even if data is partially digitized, by way of Excel sheets, server backups, older software solutions - it will be very hard to generate a holistic view of a resident's overall wellness unless the data is processed and stored in a way that is accessible to people in the org quickly and with minimal friction.

There are 3 key care areas where digitization can help - generating insights, resource management and managing emotional health.

### *Generating Insights*

A large amount of data exists for residents that is often held in an unstructured form including paper documents or hand-written notes. This is simply too much data for caretakers or administrators to manually process to generate any kind of meaningful information in a consistent manner.

Data mining involves creating a pipeline that pre-processes, cleans, transforms and categorizes this data into a structured form that makes it easier for computer systems to evaluate and generate insights from. There are a host of supervised and unsupervised data mining techniques that can be used to generate patterns and insights from this data.

These insights can be used to power a clinical decision support system. Insights can be generated to compare symptoms across a population and generate patterns of symptoms and conditions. With the huge number of prescription drugs available in the market, it is critical that insights are generated on prescriptions and reactions.

Data mining can help figure out common groups in the population that can be allergic to or intolerant of specific chemicals generated by combinations of drugs. Further insights can help caretakers figure out precise prescriptions and prevent dangerous combinations of drugs and pre-existing health factors.

### *Resource management*

A US survey on long term care specialists revealed that more than 50% of residents have some sort of chronic disease (PointClickCare). Rising acuity levels mean senior care institutes need to be better prepared in terms of the specialists they have on board.

Managing the complexity that comes with rising acuity will hinge on the ability of administrators to ensure that information on residents is consistent and easily accessible. Chronic conditions like dementia and Alzheimer's require the need of a different set of specialists to take care of the individual's needs. Digitizing the existing health data will mean that administrators are able to figure out the distribution of ailments and consequently the specific set of specialists an institute will require.

### *Managing Emotional Health of residents*

Around 14% of seniors aged 60 and above live with a mental health issue including anxiety and depression (World Health Organization). Social isolation, loneliness and a reduced sense of purpose all contribute to psychological distress.

For long-term care facilities, it is vital that systems are in place to monitor and track the psychological state of its residents as it is very easy to miss.

Wearable devices that can track both physiological and behavioral parameters can help alert caretakers to unusual patterns. Aggregating and analyzing this data could help detect changes in sleep patterns, physical activity levels or heart rate abnormalities that indicate presence of anxiety and stress in residents.

To tackle social isolation, it is vital that residents have access to applications that can help them connect with loved ones. A caretaker could configure an automated system to nudge friends and relatives to occasionally check in on residents via voice or video calling. To foster social engagement and physical activity, applications should help residents plan, organize and engage in community events.

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