Culture Change as a Strategy:
Presbyterian SeniorCare Network's LEAN*f*orward Initiative

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Abstract

The landscape of the healthcare workforce is changing. The elderly population in America is growing. For the first time in U.S. history, adults over the age of 65 will make up 20% of the population by 2030.[1] This has two main effects. First, as the age of the U.S. population continues to rise, the need for long-term care services is expected to increase. Second, a decreased working-age population, is a major contributing factor toward healthcare worker shortages today. Which bears the question – how does the healthcare industry do more with less?

The lean business model adds value to the customer through standardizing, simplifying, and eliminating waste along entire systems. Continuous improvement efforts work to define processes requiring less human effort, space, capital, and time to make products or services at lower costs. Presbyterian SeniorCare Network, a long-term care continuum in Western Pennsylvania, understood this call for change in the long-term care industry. This essay evaluates Presbyterian SeniorCare Network's lean culture change strategy to combat demographic, demand, and workforce challenges.

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Preface

This essay is dedicated to my loving family. Without their continuous support, none of this would have been possible.

1.0 Introduction

Presbyterian SeniorCare Network (PSCN), a long-term care continuum serving more than 6,500 seniors across Western Pennsylvania, is tasked with how to do more with less. The field of long-term care will change dramatically in the coming years. The U.S. population is aging, more than 20% of the population will be over 65 years old by 2030.[1] Increased life expectancy rates for older adults results in an increased demand for long-term care to adequately manage chronic conditions. Simultaneously, the healthcare industry is experiencing a shortage of healthcare personnel.

PSCN is adopting the lean business model a culture of continuous improvement as part of an overall strategic plan to keep providing person-centered care despite industry barriers. Empowering front-line team members to take ownership of their work drives culture change from the inside out. PSCN's tiered huddle system is a method of transportation for this change through daily kaizen, or daily improvement. This paper will analyze an example of PSCN's ability to streamline nursing assistant workflows; to further understand how lean principles help PSCN achieve their person-centered mission. This system has allowed PSCN to reduce resident call bell response times and add greater value to residents.

2.0 Increased Need for Long-term Care Services

An aging population with increased longevity leads to a greater demand for long-term care services. Projections based on the 2010 census determine the U.S. population will shift toward a much older demographic (Figure 1).[1] By 2030, more than 20% of the population is projected to be over 65 years old.[1]

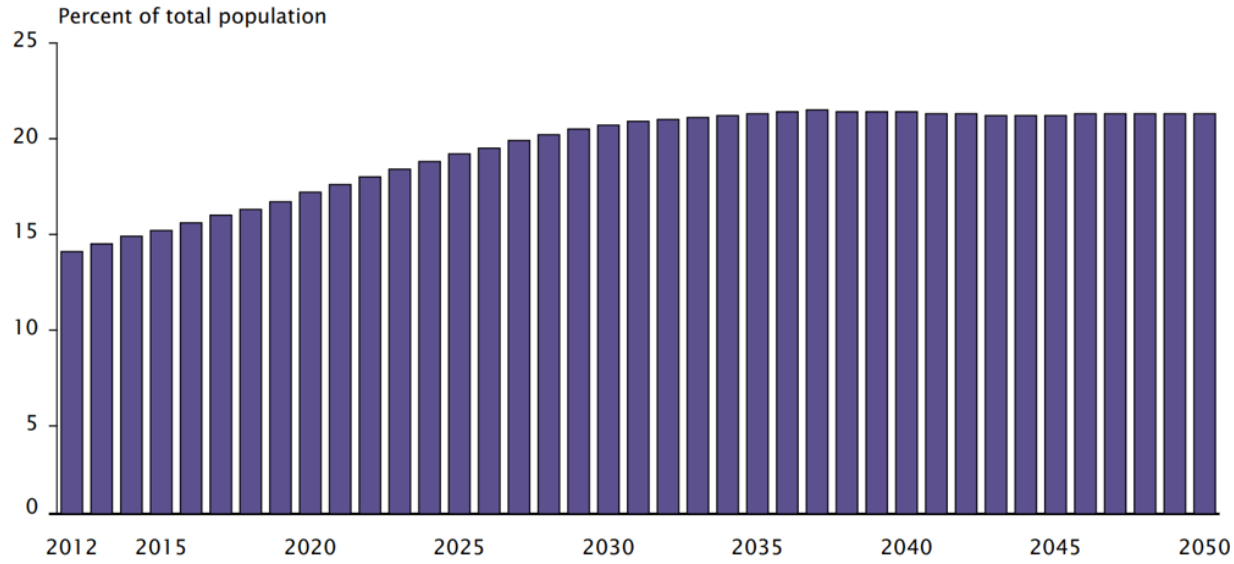

Figure 1. Percent of Total U.S. Population Age 65 and Over, 2012-20501

Advances in public health and medicine have greatly increased life expectancy rates for older adults (Figure 2).[2] As a result, older adults are also managing more chronic conditions (e.g., pulmonary disease and diabetes), age-related disabilities (e.g., loss of hearing, sight and movement), cognitive illnesses (e.g., dementia and Alzheimer's) and injuries (e.g., falls).[3] For instance, the incidence of dementia and Alzheimer's continues to rise as life expectancy increases.

According to the Alzheimer's Association, 6.5 million Americans are living with Alzheimer's dementia.[4] By 2050, Alzheimer's prevalance projections reach 12.7 million.[4]

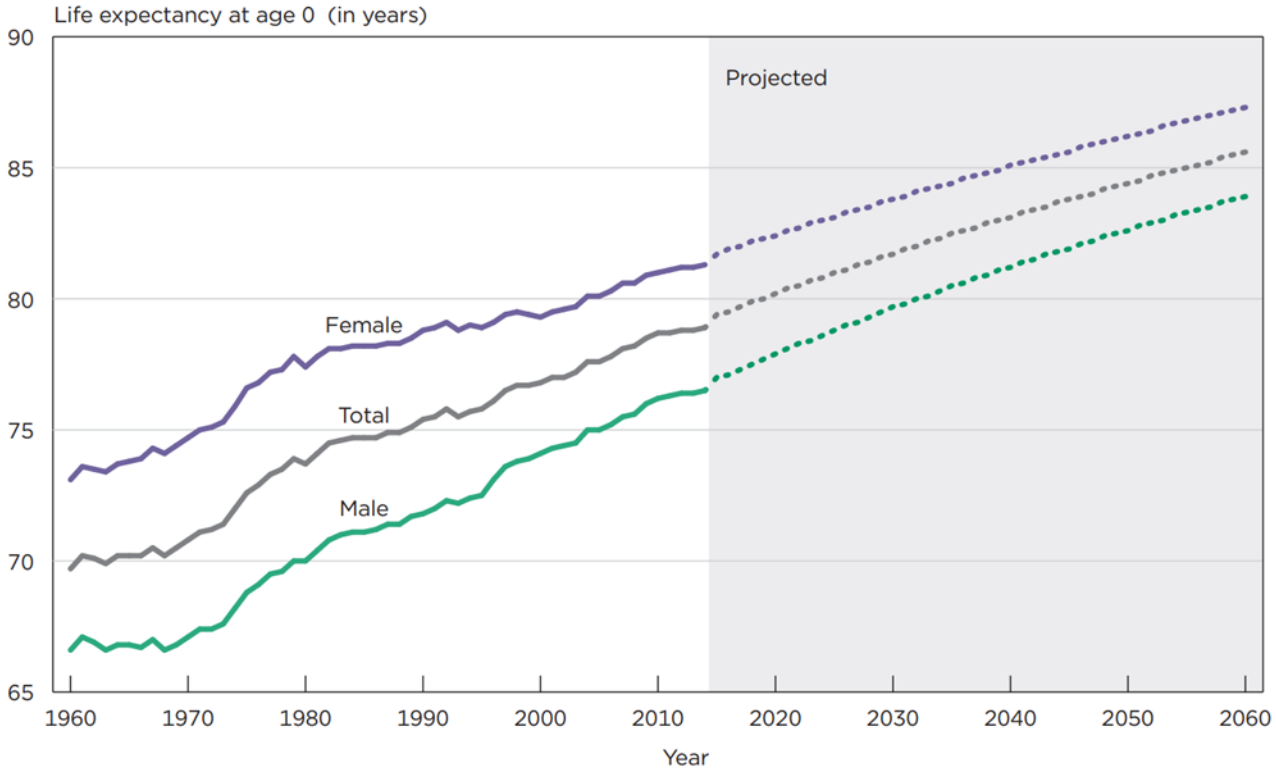

Figure 2 Historical and Projected Life Expectancy for U.S. Population, 1960-2060

Long-term care consists of a variety of services from home healthcare (e.g., assisting with activities of daily living, such as bathing, dressing, meals, toileting, and mobility) to more complex care within an institutional setting (e.g., nursing home care).[3] As the population continues to age and their longevity continues to rise, the need for long-term care services will continue to increase.

3.0 Shortage of Healthcare Workers

As the population ages the percentage of working aged people decreases. In 2012, 62.8% of the U.S. population was aged 18 to 64.[1] By 2030, these proportions are projected to drop to 57.3%.[1] The increased need for long term-care services due to an aging population, along with a decreased workforce, has resulted in a shortage of healthcare workers.

To adequately meet the rising demand of long-term care services in the next coming years, the number of healthcare workers needs to increase dramatically. It is estimated by 2025, there will be a shortage of more than 400,000 home health aides, 120,000 physicians, 95,000 nursing assistants, and 29,000 nurse practitioners.[2] Furthermore, according to the Bureau of Labor Statistics, the demand for nurses is increasing faster than other healthcare professionals. Data suggests "the country will need more than 200,000 nurses each year until 2026 to fill new positions or replace retiring nurses."[2] However, current enrollment in nursing programs is not sufficient to meet demands.[2] These finding are significant because the long-term care continuum is primarily staffed by nurses, nursing assistants, and home-health aides. As the demand for long-term care health professionals increases, the availability of long-term care health professionals decreases.

4.0 Presbyterian SeniorCare Network

Presbyterian SeniorCare Network (PSCN) (Figure 3) is a non-profit, faith-based network of living and care options.[5] PSCN's purpose is Making Aging Easier®.[5] PSCN's mission is to enrich the aging experience through person-centered service and living options.[5] PSCN's values are grounded in Christ-like beliefs of benevolence and love of neighbor, pursuing excellence, innovation, collaboration to ensure individuals live well, and team members have meaningful engaging work.[5]

PSCN is made up of more than 2,100 employees serving the needs of more than 6,500 older adults each year in 10 counties in Western Pennsylvania.[5] PSCN offers a comprehensive continuum of care to meet the needs of older adults, from at-home programs and services to senior living communities.[5] PSCN offers a variety of services, such as: Rehabilitation/Skilled Nursing Care, Personal Care, Affordable Supportive Housing, Continuing Care Retirement Communities, Independent Living, Home and Community-Based Services.[5]

Figure 3. Presbyterian SeniorCare Network Branding

4.1 Presbyterian SeniorCare Network's LEAN*f*orward Team

In 2016, PSCN's executive leadership identified an opportunity to look at quality and improvement differently. PSCN's executive leadership realized the organization needed to scale for the rate of industry change predicted in the coming years. Lisa Malosh, a Quality Improvement specialist, was hired to analyze how PSCN can continue to achieve their person-centered mission, despite the demographic, demand, and workforce barriers faced by the long-term care industry. Traditional management systems function on informal relationships with people, siloed workgroups, and management through top-down one-on-one interactions, often without methodical problem identification, process improvement, follow-up, and team involvement. Therefore, PSCN had opportunity to redefine their everyday learning, team development, and quality management. LEAN*f*orward is part of an overall strategic plan to address these opportunities through the development of a lean organizational model.

The purpose of the LEAN*f*orward team is cultivating a continuous team member-based problem-solving culture to fulfill PSCN's mission as an integrated system. LEAN*f*orward is the support system for this culture change; teaching lean leadership to empower team members to take ownership of their own work and innovate toward perfection. Perfection for PSCN can be defined as achieving their purpose of Making Aging Easier®, through: person-centered care, clinical quality, service quality, resident/customer satisfaction, employee satisfaction, and cost effectiveness.

Figure 4 LEAN*f*orward Branding

4.2 Lean Management – What It Is and What It Is Not

The Toyota Production System (TPS) founded the lean business model, which eliminates resource waste and streamlines inefficient processes. Waste presents itself in various forms, such as: defects, excess processing (e.g., unnecessary steps), overproduction (e.g., duplication), time (e.g., waiting), inventory waste, motion (e.g., excess foot traffic), and unutilized team member talent. The purpose of the lean business model is to add value to the customer. This purpose can only be achieved through an organizational culture of continuous improvement and team member development.[6] A culture of continuous improvement starts with lean leadership commitment to training and empowering all team members within their roles and responsibilities.[6] The leader's role is to put team members in a position to be successful in their work and add customer value.[6] The leader does not add customer value themselves but coaches and supports team members to do so, while keeping them aligned with the organizational mission.[6]

Traditional top-down business models assume leaders are the experts and front-line staff need told what to do, when to do it, and how to do it. Lean goes against the traditional top-down business-model structure as it views team members as the organizations most valuable resource in adding customer value.[6] When a leader is the "driver of change" their actions steal energy from the work being done, because team members closest to the process lose ownership of their work.[6] Team members are not "revitalized by a leader who tells them what to do and how to do it; they are paralyzed".[6] This critical difference is the only way sustained excellence can be achieved because the people doing the value-added work take ownership over its excellence.[6]

Lean's bottom-up approach understands front-line team members are the experts in their role. Lean separates front-line team members from organizational problems, by recognizing issues are a result of poor work design and wasteful processes. By refocusing management effort on

improving process and providing resources, front-line team members are granted autonomy in their work to decide what they need and when they need it. Lean no longer assumes leaders are experts in fixing operational-level process issues. Therefore, leaders do not tell team members how to fix their problems; instead, team members tell their leaders how they want to fix their problems and those leaders are the support system for driving those changes within the scope of the organization.

This allows team members to take ownership of their work and focus their efforts toward optimizing the flow of services horizontally across systems to the customers. Standardizing, simplifying, and eliminating waste throughout entire systems, instead of at isolated points, defines concrete processes needing less human effort, less space, less capital, and less time to make products/services at lower costs, compared with traditional business models.[6]

5.0 Tiered Huddle System – A Method of Transportation for Daily Kaizen

Kaizen is a Japanese word meaning "change better".[6] Daily Kaizen is an integral part of lean leadership and is how an organization operates at the most fundamental level.[6] There are two types of kaizen requiring daily activity: 1) Maintenance Kaizen, and 2) Improvement Kaizen.[6] 1) Maintenance Kaizen is the process of reacting to the inevitable mistakes, breakdowns, changes, or variations occurring in everyday life.[6] Fundamentally, maintenance kaizen up-holds the "status quo" of productivity, quality, and safety standards.[6] 2) Improvement kaizen is not just maintaining standards but raising the bar; thus, creating new standards.[6] Since the goal of lean is working towards perfection, every process can be improved no matter how many previous improvements have been made.[6]

The foundational way daily kaizen is implemented throughout PSCN is their tiered huddle system (Figure 5). The tiered huddle system is where information on maintenance problems or improvement ideas are gathered at the front-line and pushed up through the organization until all needs are met. The Tiered Huddle system allows front-line team members to identify and communicate issues at the beginning and end of every shift. Problems that cannot be solved at their respective level are then escalated to the next level to seek appropriate assistance, support, and resources. This system empowers staff to be in control of their own work, its redesign, and overall communication throughout the organization.

At the start of a shift all front-line team members meet in their respective departments. They identify problems or needs for improvement. If they cannot solve the issue at their level, the manager escalates the issue to the next level. In the same fashion, building administrators meet at 9:00 a.m. to address problems or needs for improvement at the management level, as well as any

issues the front-line staff escalated to them. And if any issue cannot be solved at their level, it is then escalated to community director level. This process is repeated respectively at 10:00 a.m. with the community directors and at 11:00 a.m. with the executive team members. Furthermore, when a solution to a problem is sustained and proves efficiency, it is then shared throughout the organization. This shared learning process identifies best practices, or internal benchmarks, across PSCN. The Tiered Huddle System is significant because it gives power to the front-line staff to take ownership of their work and drive the everyday work of the entire organization.

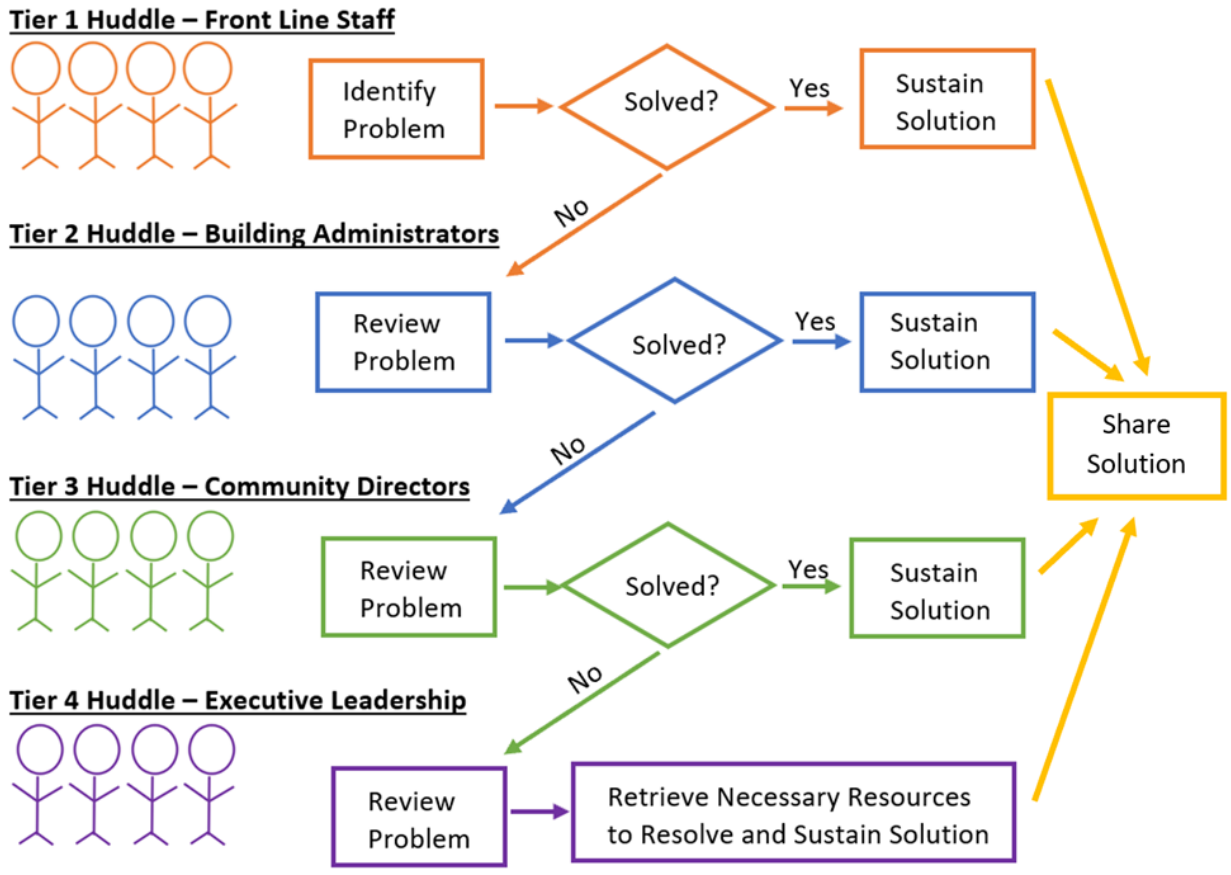

Figure 5. Tiered Huddle System

5.1 Tiered Huddle Agenda

Tier 1 and tier 2 have physical white boards that team members gather around for discussion. While tier 3 and tier 4 have virtual platforms and screen sharing ability to share findings. The average tiered huddle is about 20 minutes. Across the organization all huddles are organized the same: 1) important team member communication specific to each tier, 2) organizational focus areas, and 3) improvement opportunity identification and tracking (e.g., daily kaizen).

Important Team Member Communication Specific to Each Tier. What each tier finds important to share is different from one to the next. For example, tier 1 nursing huddles often share information specific to resident clinical care needs, while tier 2 administrative huddles often share census, admission, discharge, and payor mix information. Once these key topics are defined for each level, they are reviewed daily within those tiers.

Organizational Safety. Organizational safety is reviewed at each level every day. Lean defines safety as a precondition for all work. Safety metrics are reviewed daily to identify, track, and trend safety concerns, allowing for immediate root-cause analysis. For example, PSCN identified 3 focus area topics: 1) resident and employee COVID-19 outbreaks, 2) resident and employee safety concerns, and 3) resident falls. Each safety metric is reviewed and reported on throughout all 4 tiers of the organization.

Improvement Opportunity Identification and Tracking. Improvement opportunity identification and tracking is daily kaizen action. When a tiered huddle identifies an area for improvement, they can either choose to escalate the problem or solve the problem within that level. Problems are escalated when it requires resources outside of the respective tier. Problems solved within the tier itself are then put into 1 of 3 stages: “To Do”, “Doing”, or “Done”. “To Do” means

the problem has been identified but work has not yet begun. “Doing” means the problem has entered the improvement kaizen process using A3 Thinking, LEAN*f*orward’s improvement tool. “Done” means the problem has been solved and must be sustained.

5.2 Improvement Kaizen Process – A3 Thinking

When a kaizen is brought to the appropriate tier, they perform a root-cause analysis through the A3 Thinking Improvement Model. A3 Thinking is a LEAN*f*orward improvement tool to methodically solve identified problems. A3 Thinking can be used for problem solving, decision making, or planning potential solutions for an identified issue. When a problem is identified the following steps must be followed:

1. Background: What is the background someone needs to know to understand the problem (history/context)?
2. Problem/Need Statement: This is specific and states the effect, not the cause or solution.
3. Critical Factors: Identify critical factors contributing to process.
4. Current Condition: How is the work currently being done? (Go and see first-hand where the work is being done)
5. Data and Analysis: What data do we have that measures the problem? What data do we need?
6. Target Condition: This is best setup as the work design that will get us to an expected outcome.
7. Expected Outcome: Using the scientific method to arrive at an explicit hypothesis. Usually stated as: “IF (I do this action), THEN (I will achieve this goal).”
8. Action Items: Be specific. What steps need to happen? By whom and by when?
9. Follow Up and Key Learnings: Using the Plan-Do-Study-Act model analyze results. What have we learned? How do you know if your countermeasure was successful?

6.0 Improvement Kaizen A3 Thinking Example – Resident Call Bell Wait Times

The tiered huddle system has proven effective at identifying improvement opportunities. One example PSCN is focusing their continuous improvement efforts on is the reduction of resident call bell times. This example identified 3 critical factors contributing to the current condition. Below outlines PSCN's resident call bell wait times improvement kaizen process:

Background. Call Bells are used to alert staff when residents have a need. However, current resident wait times can exceed acceptable resident wait times.

Problem/Need Statement. Residents need to have call bells answered quickly to ensure their needs are met appropriately and safely.

Critical Factors. After in-person observations and informal staff surveys, three critical factors were determined as causing long resident wait times: 1) Call Surges, 2) Queuing Issues, and 3) Communication Issues.

Current Condition 1: Call Surges. The current condition for call bell occurrences shows there is a surge of calls following resident wake-up and mealtimes.

Data and Analysis 1: Call Surges. When looking at Figure 6, The yellow line shows the spikes in call bell occurrences, while the green lines show resident mealtimes.

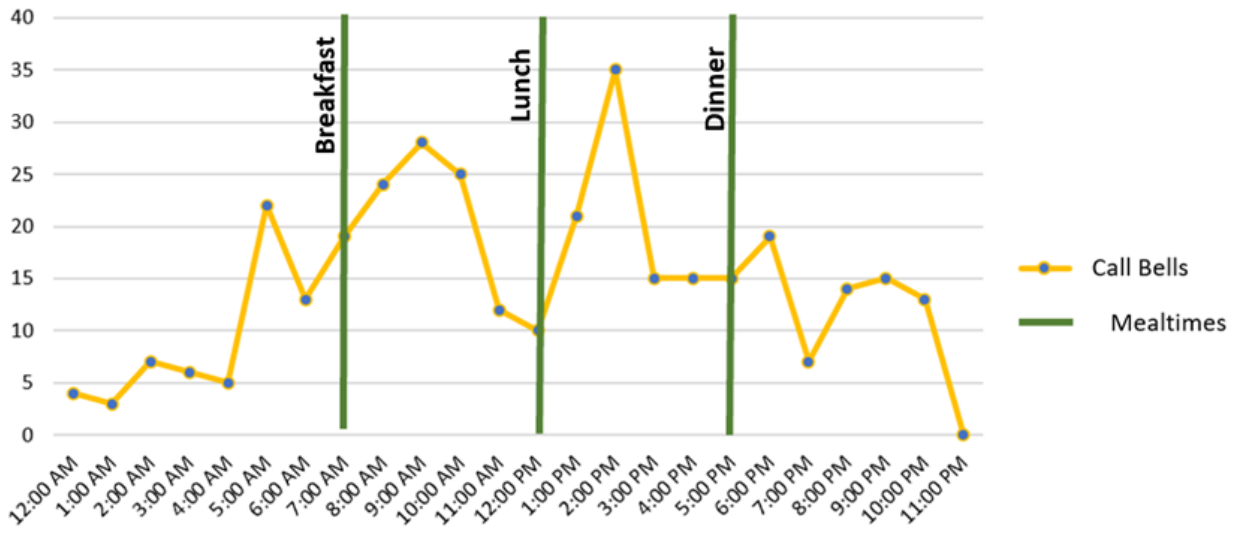

Figure 6. Resident Call Bell Wait Times Following Meals

Target Condition 1: Call Surges. PSCN's target condition is to form a help-chain, or a daily response team, to assist with call bells during peak hours. While the help-chain may not be able to perform nursing assistant level tasks, they can certainly reach the remote and fetch residents a cup of water. The help-chain would help lower the number of "easy" calls, so nursing assistants can focus on the work they are specially trained to do. After observation and informal staff surveys, roughly half of resident call bells are "easy" calls. Meaning, there is the potential to reduce resident call bell wait times by half during peak hours. Some additional benefits of this target condition includes teambuilding, creating an organizational culture of helping one another, and reconnecting all team members with what matters most – residents. Thus, driving PSCN's person-centered mission. This allows front-line team members to take control of their work by using their skill most efficiently in times of increased demand.

Target Condition 1: Call Surges: Limitation. One limitation of this target condition is it does not address the spike in resident call bells following resident wake-up. This issue is not being addressed in the help chain for two reasons. First, when residents first wake up, most of their needs

are beyond the scope of the help-chain (e.g., toileting dressing, and bathing). Meaning, this issue stems from a lack of available healthcare workers staffed during this time. Second, majority of administrator level team members do not arrive at work until 8:00 a.m. Thus, not allowing for help-chain assistance from 4:00 a.m. to 5:00 a.m. The goal of lean is to continuously improve toward perfection. Meaning, once a new process is implemented it is continuously followed-up on and altered as needed. Therefore, PSCN plans to address resident wake-up call bell wait times in the future.

Current Condition 2: Queuing Issues. Figure 7 shows a call bell light signal above the door. Some benefits of this light are it is simple looking, not distracting to visitors, and appear less institutional. Some challenges of this light are it is hard to see at times and there is no way of knowing which call bell light came on first. Meaning, it is difficult to answer lights on a first come first serve basis.

Figure 7 Photo of Call Bell Light

Data and Analysis 2: Queuing Issues. The current condition for call light answering queuing issues looks something like the diagram shown in Figure 8. After observation and informal staff surveys, most nursing assistants answered call bell lights in order of which is closest to them. Even if the last one they answer has been on the longest, because they have no way of knowing which light came on first.

Target Condition 2: Queuing Issues. The target condition is to have colored call bell lights. PSCN is working with their call bell system vendor to upgrade the call lights to change color based on how long they have been on or if the call is an emergent need: red signaling >10 minutes or emergent need, yellow signaling >5 minutes, and green signaling <5 minutes. This helps because the different colored lights tell nursing assistants which lights to answer first (Figure 8). An additional benefit of this target condition is it will signal other team members to help. Much like the help-chain, but less formal. This allows front-line team members to take control of their work by having the information necessary to provide appropriate/safe care.

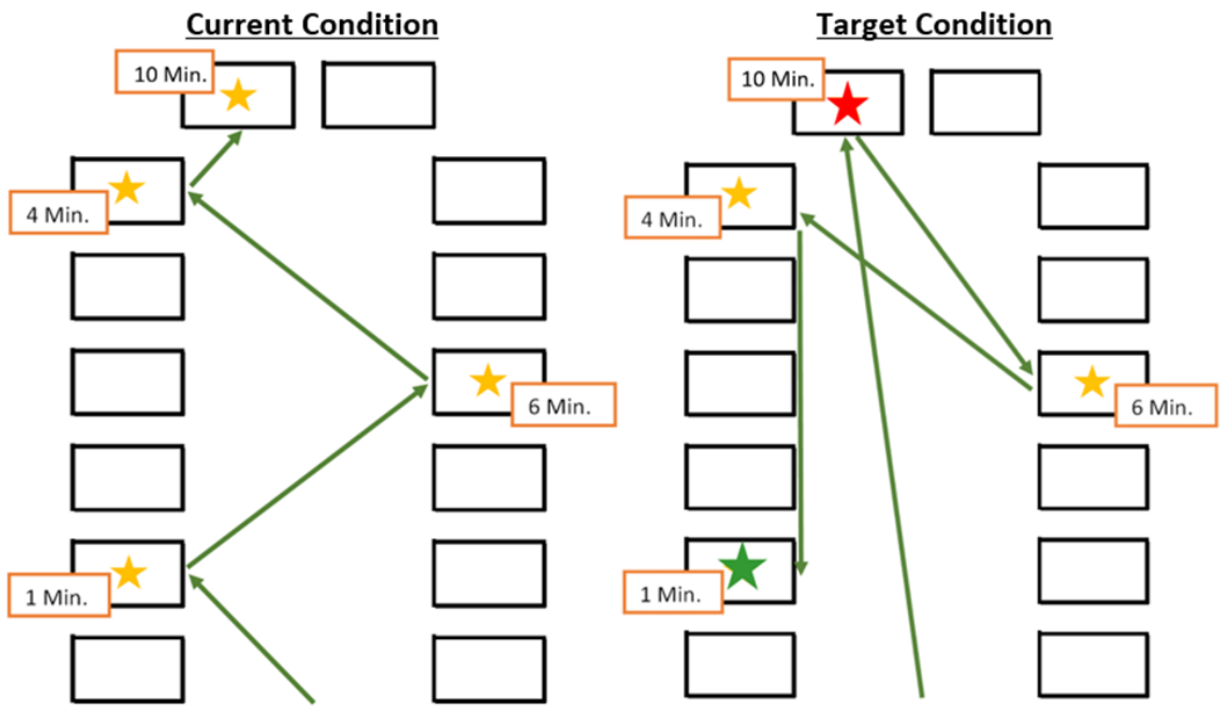

Figure 8. Target vs. Current Condition Queuing Issues

Current Condition 3: Communication Issues. The third critical factor involves communication issues. C.N.A.s often need help with caring for residents. Unfortunately, a lot of time is wasted retrieving personnel and/or supplies to meet resident needs, such as: finding a fellow nursing assistant for a 2-person assist, retrieving out of stock medical supplies, contacting dietary for snacks, calling activities to video call family, etc.

Data and Analysis 3: Communication Issues. The current condition for time wasted due to communication issues looks something like the diagram shown in Figure 9. Through observations using a timer, it took nursing assistants about 2 minutes to identify the resident need. It then took about 7 minutes to retrieve personnel and/or supplies to meet these resident needs. Once retrieved, it took about 2 minutes to meet the resident's needs (excluding bathroom usage

and showers). As a result, the lead time is about 11 minutes, and 64% of that time is spent doing non-value-added work.

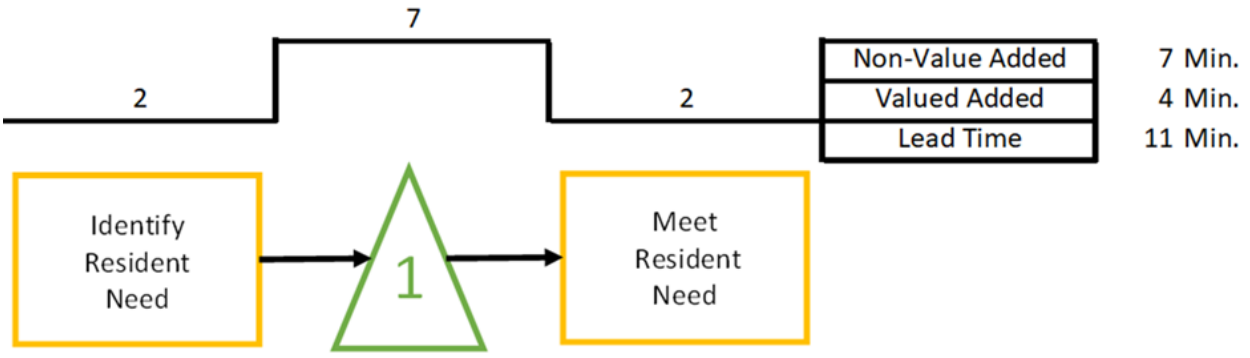

Figure 9. Value Stream Map of Nursing Assistant Workflow

Target Condition 3: Communication Issues. The target condition for communication issues is to implement communication radios, such that team members can seek assistance immediately leave the resident. With the need for speed in mind, PSCN approached solving this problem through investing in communication radios for nursing assistants, nurses, unit managers, and department heads. Furthermore, each department has their own radio channel. Therefore, on a moment's notice, nursing assistants can ask for assistance without having to leave the resident alone to find another nurse to help or request assistance from ancillary departments (e.g., dietary, housekeeping, laundry, maintenance). This allows front-line team members to take control of their work by having the ability to signal for help to provide appropriate/safe care.

Expected Outcome. If PSCN achieves all three target conditions, then resident call bell times will be reduced.

Action Items, Follow Up, and Key Learnings. PSCN is currently in the process of turning these findings into a reality through appropriate planning, completion, and follow-up

necessary to reach target conditions. Since this process is in development, a final report is not currently available.

7.0 LEAN*f*orward Team Member Training

This culture change is leadership driven. The executive, community director, and administrator levels are coached by the LEAN*f*orward team. On a weekly basis the LEAN*f*orward team holds "Steering Meetings" with all department leaders to educate, train, coach, and empower them to steer their individual teams in lean philosophy within the scope of the organizational mission. While majority of the training is leadership driven, LEAN*f*orward does hold workshops to teach lean philosophy and to further educate on how to navigate through new process improvements. For example, once the resident call bell wait time issue was brought to the tiered huddle system, the LEAN*f*orward team is coaching leaders on how to drive the implementation of the target conditions. In other words, the LEAN*f*orward team is teaching leadership how to empower team members to embrace the help chain, value the colored call bell lights, and use the communication radios.

8.0 Conclusion

An aging population with increased longevity leads to a greater demand for long-term care services. However, shortages in health personnel poses challenges for meeting these demands. PSCN is using culture change as a strategy to continue to provide person-centered care despite challenges the future poses. PSCN implemented a tiered huddle system throughout the organization, which empowers front-line team members to take ownership of their work through daily kaizen. The tiered huddle system has proven effective at identifying improvement opportunities. The example improvement kaizen outlines PSCN's ability to streamline processes to add greater value to residents with less resources. Through careful project planning and execution, PSCN identified 3 critical factors responsible for high resident call bell response times: 1) call bell surges, 2) queuing issues, and 3) communication issues. Data collection and analysis of the current condition helped PSCN arrive at their target condition, which will ultimately reduce resident call bell times. This bottom-up lean transformation allows PSCN to remain a quality long-term care provider despite an aging population, increased demand for long-term care services, and staffing shortages – by doing more with less.

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