

# Quarterly Report to Ohio Department of Medicaid and CMS



Project Leaders: Caleb York

Email Address: [caleby@virtusensetech.com](mailto:caleby@virtusensetech.com)

Phone Number: 734-395-1125

CMP Request Number: G-2021-04-0300

CMP Request Number: G-2021-04-0300

# 1. Project Overview/Summary

Program Name:	Reducing Falls with AI; Proactive Approach to Mobility Improvement and Fall Prevention
Project Start Date and End Date:	01/01/20 – 1/01/23
[Contract/Agreement] Number:	G-2021-04-0300
Location of Project:	Ohio
Reporting Period:	07/01/20 – 09/30/20

## 1.1 Project Description/Introduction

We will partner with Long-Term Care (LTC) communities to identify resident risk levels through a series of standardized assessments captured by machine vision infrared sensors and analyzed using artificial intelligence (AI). Research shows deficiencies in balance, gait, and/or function are significant factors that contribute to senior falls; therefore, VSTBalance was developed to specifically address each one. VSTBalance can objectively assess and identify the musculoskeletal and sensory deficiencies—all in less than three minutes. These assessments are holistic and can cover the range of balance, gait, and function. The analysis of these assessments is undergirded with normative data according to age group as defined in peer reviewed studies, National Institute of Health (NIH), academic journals, and CMS research.

Each assessment offers a personalized comparison with normative data and calculates each resident's mobility level (High, Medium, or Low Mobility) according to the normative data for that assessment. Additionally, for residents over the age of 70, the Gait Assessment will calculate not only the mobility level but also the probability for the resident to suffer a fall within the next 12 months. Following identification of mobility level, the AI engine, along with clinician feedback, will create clinical pathways to route residents appropriately. With the information generated from their assessments, the care team will have specific musculoskeletal movement data to form a plan of care appropriate to the resident mobility level (High, Medium, Low) and their identified movement deficiencies. Following the initial clinical pathway, our AI engine will flag residents with minimal progress and provide the clinician actionable data to formulate an alternate plan of care.

Currently, resident risk level and changes in functional status data are not easily communicable between therapy, nursing, and wellness in a LTC community. If the clinicians were equipped with this data in real-time, then they can design contingency protocols such as increased rounding, reduced bed heights, and other protocols to prevent falls. Our HIPAA-compliant cloud dashboard is accessible from any browser-based device such as a smartphone, tablet, or computer to all levels of care providers in LTC.

1. Cedarview Care Center, Lebanon, OH
2. Clovernook Health Care & Rehabilitation Center, Cincinnati, OH
3. Countryside Manor Nursing & Rehabilitation, Fremont, OH
4. The Glen, Cincinnati, OH
5. Harrison Pavilion Care Center, Cincinnati, OH
6. Lincoln Crawford Care Center, Cincinnati, OH
7. Northcrest Rehab & Nursing Center, Napoleon, OH
8. Sunrise Nursing Healthcare, Amelia, OH
9. Traditions at Chillicothe, Chillicothe, OH
10. Westbrook Place Rehabilitation & Nursing Center, Westlake, OH

/

# Ohio CMP Q3 Report

## CCH Facilities

J1800



**Improvement**

J1900 B&C



**Improvement**

\*As reported by Westbrook Place MDS Coordinator, 29 of the 50 falls reported falls were from patients within their dementia unit

---

## The Glen & Traditions

Total Falls



**Improvement**

Total Falls with Major Injury



**Improvement**

These sites informed VirtuSense that they were unable to pull baseline MDS items. Therefore, we are reporting improvements via Total Falls as opposed to MDS specific items\*

\* As reported by The Glen MDS Coordinator, one resident fell a total of 30 times between February & March 2020\*

\*Falls with a minor injury was not able to be pulled, as according to each site\*

CMP Request Number: G-2021-04-0300

CCH Facilities*	Before VST (2019) Yearly Average	Yearly Average Expected (After Implementation)	Performance Achieved (Total Average)	Performance Achieved (Individual Average)	Annual Performance Goal
J1800 (Overall)	65	48	26%	27%	10%
J1900B & C (w/injury)	21	14	33%	43%	10%

**\*NOTE\* A Westbrook MDS Coordinator stated that 29 of 50 Quarterly Falls came from their Dementia Unit**

The Glen & Traditions* & ***	Before Yearly Average (2019)	Yearly Average (After Implementation)	Performance Achieved (Total Average)	Performance Achieved (Individual Average)	Annual Performance Goal
Falls (Overall)**	253	159	37%	36%	10%
Falls (w/ Major Injury)****	16	5	69%	71%	10%

**\*NOTE\* These sites informed VirtuSense that they were unable to pull baseline MDS items. Therefore, we are reporting improvements via Total Falls as opposed to MDS specific items.**

**\*\*NOTE\*\* As reported by The Glen MDS Coordinator, one resident fell a total of 30 times between February & March 2020.**

**\*\*\*NOTE\*\*\* Falls with minor injury were not able to be pulled, as according to each site.**

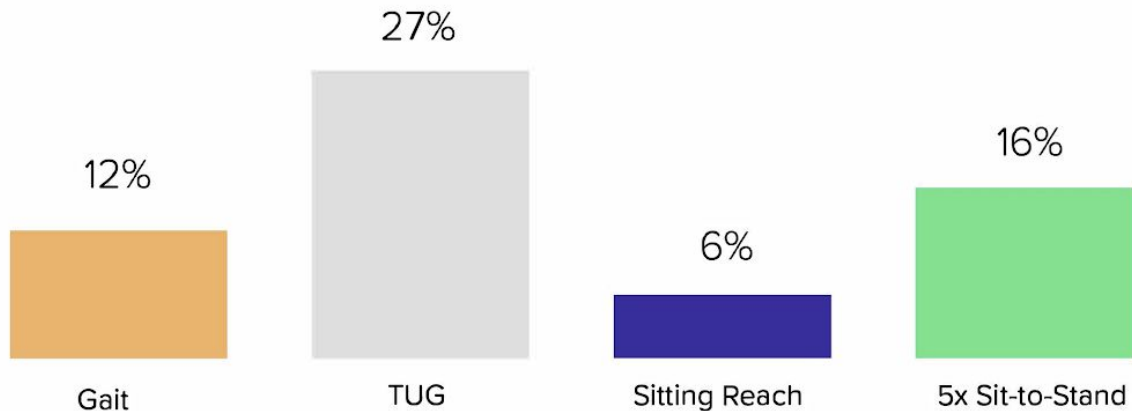
**\*\*\*\*NOTE\*\*\*\* The Glen has been without an Administrator, DON, ADON, and MDS since 9/24 (when VirtuSense was notified)**

All facilities except Traditions	Before VST (2019) Yearly Average	Yearly Average (After Implementation)	Performance Achieved (Total Average)	Performance Achieved in Current Quarter (Individual Average)	Annual Performance Goal
Hip Fractures	10	4	60%	44%	10%

**\*NOTE\* Excludes Traditions as they were unable to pull this data**

Total Ohio Mobility & Satisfaction	Baseline (Sites with Reassessed Residents)	Reassessment (Sites with Reassessed Residents)	Improvement Average (Sites with Reassessed Residents)	Target Average
Gait Speed	0.34 m/s	0.38 m/s	12%	20%
Balance Scores	9.73 in	10.35 in	6%	15%
Functional Scores	32.67 sec.	27.29 sec.	16%	15%
Resident Satisfaction	N/A	93%	93%	75%

## VSTBALANCE IMPROVEMENTS



---

260 RESIDENTS ASSESSED SINCE DEPLOYMENT  
107 REASSESSED RESIDENTS

## TESTIMONIALS

---

“The percentages speak for themselves, this program shows quantitative progress for the administrative/insurance end while brightening resident’s moods and improving overall therapy sessions while out on the floor.”

Sarah Kline, MS, OTR/L

“I have had two patients in the last 15 days that have now scored in the moderate fall risk with both gait and TUG scores. One patient one was a 31% increase with both Gait and TUG and 40% increase in 5x STS. Her fall risk went from 62.58% to a 45.74% fall risk...I have also had a family member that didn't release the severity of their parent's limitations and thought they were much higher level functioning than they were. When I went over the results from the VSTBalance scores and percentage of fall risk, I could tell his whole demeanor changed and he was able to understand more clearly the different areas that were limiting and could be improved upon.”

Randy Rybarczyk, PT, The Glen

Project Outcomes Measures – 10% reduction in the score for MDS item I3900 (Hip Fractures).	Baseline FY 2019	Annual Target	Expected Outcomes Based on Current Results	Q1	Q2	Q3	Annual Performance on track to achieve to the End of Reporting Period (%)	On Target Y/N
Cedarview	4	3	0	0	0	0	100%	Yes
Clovernook	13	12	3	0	1	1	77%	Yes
Countryside Manor	4	3	6	1	2	1	-50%	No
The Glen	22	20	12	2	2	N/A	45%	Yes
Harrison Pavilion	3	2	3	0	1	1	0%	No
Lincoln Crawford	3	2	7	2	2	1	-133%	No
Northcrest	17	16	2	0	1	0	88%	Yes
Sunrise	4	3	0	0	0	0	100%	Yes
Traditions	n/a	n/a	16	10	2	0	N/A	N/A
Westbrook Place	12	11	2	1	0	0	83%	Yes

Project Outcome Measures – 10% reduction in falls and a 10% reduction in falls with injury. This improvement would correlate to a 10% reduction in score for MDS items J1800, J1900 (Any Falls Since Admission/Entry or Reentry or Prior Assessment, whichever is more recent).	Baseline FY 2019	Annual Target	Expected Outcomes Based on Current Results	Q1	Q2	Q3	Annual Performance on track to achieve to the End of Reporting Period (%)	On Target Y/N
Cedarview	J1800: 65 J1900B: 11 J1900C: 2	J1800: 58 J1900B : 10 J1900C : 1	J1800: 28 J1900B: 10 J1900C: 0	J1800: 3 J1900B: 1 J1900C: 0	J1800: 10 J1900B: 3 J1900C: 0	J1800: 8 J1900B: 3 J1900C:0	J1800: 57% J1900B: 9% J1900C: 100%	J1800: Yes J1900B: Yes J1900C: Yes
Clovernook	J1800: 81 J1900B: 14 J1900C: 1	J1800: 73 J1900B : 13 J1900C : 0	J1800: 40 J1900B: 16 J1900C: 0	J1800: 10 J1900B: 5 J1900C: 0	J1800: 8 J1900B: 4 J1900C: 0	J1800: 12 J1900B: 3 J1900C: 0	J1800: 51% J1900B: -14% J1900C: 100%	J1800: Yes J1900B: No J1900C: Yes
Countryside Manor	J1800: 49 J1900B:	J1800: 44	J1800: 44	J1800: 10	J1800: 17	J1800: 6	J1800: 10% J1900B:-25%	J1800: Yes J1900B: No

	12 J1900C: 5	J1900B : 11 J1900C : 4	J1900B: 15 J1900C: 6	J1900B: 5 J1900C: 1	J1900B: 4 J1900C: 2	J1900B: 2 J1900C: 1		J1900C: -20%	J1900C: No
The Glen*: Unable to report specific MDS items for 2019	Total Falls: 218 Minor Injuries: n/a Major Injuries: 10	Total Falls: 196 Minor Injuries: n/a Major Injuries: 9	Total Falls: 168 Minor Falls: 28 Major Injuries: 2	Total Falls: 70 Minor Injuries: 9 Major Injuries: 1	Total Falls: 14 Minor Injuries: 5 Major Injuries: 0	N/A		Total Falls: 23% Minor Falls: n/a Major Falls: 80%	Total Falls: Yes Minor Falls: n/a Major Falls: Yes
Harrison Pavilion	J1800: 64 J1900B: 12 J1900C: 1	J1800: 58 J1900B : 11 J1900C : 0	J1800: 16 J1900B: 2 J1900C: 0	J1800: 5 J1900B: 0 J1900C: 0	J1800: 7 J1900B: 1 J1900C: 0	J1800: 0 J1900B: 0 J1900C: 0		J1800: 75% J1900B: 83% J1900C: 100%	J1800: Yes J1900B: Yes J1900C: Yes
Lincoln Crawford	J1800: 52 J1900B: 11 J1900C: 2	J1800: 47 J1900B : 10 J1900C : 1	J1800: 34 J1900B: 7 J1900C: 0	J1800: 6 J1900B: 1 J1900C: 0	J1800: 11 J1900B: 2 J1900C: 0	J1800: 8 J1900B: 2 J1900C: 0		J1800: 35% J1900B: 36% J1900C: 100%	J1800: Yes J1900B: Yes J1900C: Yes
Northcrest	J1800: 89 J1900B : 52 J1900C: 1	J1800: 81 J1900B : 47 J1900C : 0	J1800: 44 J1900B: 24 J1900C: 2	J1800: 11 J1900B: 10 J1900C: 1	J1800: 13 J1900B: 2 J1900C: 0	J1800: 9 J1900B: 6 J1900C: 0		J1800: 51% J1900B: 54% J1900C: -100%	J1800: Yes J1900B: No J1900C: No
Sunrise	J1800: 37 J1900B: 19 J1900C: 2	J1800: 34 J1900B : 17 J1900C : 1	J1800: 28 J1900B: 14 J1900C: 0	J1800: 5 J1900B: 3 J1900C: 0	J1800: 9 J1900B: 6 J1900C: 0	J1800: 7 J1900B: 1 J1900C: 0		J1800: 24% J1900B: 26% J1900C: 100%	J1800: Yes J1900B: Yes J1900C: Yes
Traditions*: Unable to report specific MDS items for 2019	Total Falls: 288 Minor Injuries: n/a Major Injuries: 21	Total Falls: 260 Minor Injuries: n/a Major Injuries: 19	Total Falls: 150 Minor Injuries: 31 Major Injuries: 8	Total Falls: 34 Minor Injuries: 8 Major Injuries :1	Total Falls: 37 Minor Injuries: 7 Major Injuries: 2	Total Falls: 41 Minor Injuries: 8 Major Injuries: 3		Total Falls: 48% Minor Injuries: n/a Major Injuries: 62%	Total Falls: Yes Minor Injuries: n/a Major Injuries: Yes
Westbrook Place	J1800: 78 J1900B: 18 J1900C: 1	J1800: 71 J1900B : 16 J1900C : 0	J1800: 146 J1900B: 10 J1900C: 0	J1800: 14 J1900B: 2 J1900C: 0	J1800: 45 J1900B: 5 J1900C: 0	J1800: 50 J1900B: 0 J1900C: 0		J1800: -87% J1900B: 44% J1900C: 100%	J1800: No J1900B: Yes J1900C: Yes
Project Outcomes Measures -  Residents that were identified to have balance and function deficiencies and were provided treatment will show on average an improvement of at least 15% in function	Baseline** FY 2020	Annual Target	Q1 FY 20	Q2 FY 20	Q3 FY 20	Q1 Performance (%)	Q2 Performance (%)	Annual Performance Achieved to the End of Reporting Period (%)	Positive Improvement ?



assessment scores.									
Cedarview	24.61 sec	20.92 sec	23.1 sec	23.1 sec.	23.1 sec.	9%	6%	6%	Yes
Clovernook	29 sec	24.65 sec	N/A	N/A	17.76 sec.	N/A	N/A	39%	Yes
Countryside Manor	26.33 sec	22.38 sec	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The Glen	37.46 sec	31.84 sec	23.47 sec	29.6 sec.	34.22 sec.	32%	20%	9%	Yes
Harrison Pavilion	30.12 sec	25.6 sec	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lincoln Crawford	36.38 sec	30.92 sec	25.85 sec	31.84 sec.	31.84 sec.	31%	14%	12%	Yes
Northcrest	40.27 sec	34.23 sec	22.75 sec	31.92 sec.	29.75 sec.	49%	26%	26%	Yes
Sunrise	22.28 sec	18.94 sec	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traditions	33.72 sec	28.66 sec	N/A	25.86 sec	25.86 sec	N/A	23%	23%	N/A
Westbrook Place	27.26 sec	23.25 sec	38.21 sec	32.42 sec	28.51 sec	-15%	-5%	-5%	No
Collective Short Term	33.97 sec	28.87 sec	28.73 sec	29.36 sec	29.57 sec	17%	15%	13%	Yes
Collective Long Term	30.19 sec	25.66 sec	25.98 sec	25.98 sec	24.63 sec	14%	14%	18%	Yes

\*Function is measured in 5x Sit to Stand scores (measured in Seconds) (A lower time is a better score)

\*\*Baselines include both Q1 & Q2 Baselines

Project Outcomes Measures - Residents that were identified to have balance and function deficiencies and were provided treatment will show on average an improvement of at least 15% in balance assessment scores.	Baseline*	Annual Target	Q1 FY 20	Q2 FY 20	Q3 FY 20	Q1 Performance (%)	Annual Performance Achieved to the End of Reporting Period (%)	Annual Performance Achieved to the End of Reporting Period (%)	Positive Improvement
Cedarview	11.97 in.	13.77 in.	12.97 in.	12.97 in.	12.97	4%	8%	8%	Yes
Clovernook	12.73 in.	14.64 in.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Countryside Manor	9.4 in.	10.81 in.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The Glen	6.42 in.	7.38 in.	7.7 in.	7.39 in.	7 in	28%	31%	9%	Yes
Harrison Pavilion	13.82 in.	15.89 in.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lincoln Crawford	11.81 in.	13.58 in.	10.36 in.	10.54 in	10.54 in	-10%	-10%	-11%	No
Northcrest	7.12 in.	8.19 in.	10.77 in.	8.51 in	8.35 in	40%	3%	17%	Yes
Sunrise	12.2 in.	14.03 in.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traditions	10.46 in.	12.03 in.	N/A	11.43 in	11.43 in	N/A	9%	9%	N/A
Westbrook Place	10.58 in.	12.17 in.	14.69 in	12.29 in	11.82 in	14%	1%	12%	Yes
Collective Short-Term	9.4 in	10.81 in	10.92 in	10.15 in	9.26 in	19%	10%	-1%	No

Collective Long-Term	11.31 in	13 in	11.06 in	10.53 in	10.37 in	10%	4%	-8%	No
----------------------	----------	-------	----------	----------	----------	-----	----	-----	----

\*Balance is determined by Sitting Forward Reach scores (measured in Inches)

\*\*Baselines include both Q1 & Q2 Baselines

Project Outcomes Measures - 20% improvement in resident gait speed	Baseline *	Annual Target	End of Q1 FY 20	End of Q2 FY 20	End of Q3 FY 20	Q1 Performance (%)	Q2 Performance (%)	Performance through the end of the reporting period (%)	Positive Improvement
Cedarview	0.51 m/s	0.61 m/s	0.49 m/s	0.49 m/s	0.49 m/s	-4%	-4%	-4%	No
Clovernook	0.37 m/s	0.44 m/s	N/A	N/A	0.37 m/s	N/A	N/A	0%	N/A
Countryside Manor	0.23 m/s	0.34 m/s	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The Glen	0.33 m/s	0.4 m/s	0.38 m/s	0.38 m/s	0.39 m/s	23%	26%	18%	Yes
Harrison Pavilion	0.37 m/s	0.44 m/s	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lincoln Crawford	0.28 m/s	0.34 m/s	0.26 m/s	0.25 m/s	0.25 m/s	0%	-7%	-11%	No
Northcrest	0.28 m/s	0.34 m/s	0.33 m/s	0.27 m/s	0.3 m/s	32%	4%	7%	Yes
Sunrise	0.43 m/s	0.52 m/s	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traditions	0.32 m/s	0.38 m/s	N/A	0.4 m/s	0.41 m/s	N/A	25%	28%	Yes
Westbrook Place	0.3 m/s	0.36 m/s	0.42 m/s	0.4 m/s	0.46 m/s	31%	33%	53%	Yes
Collective Short-Term	0.32 m/s	0.38 m/s	0.43 m/s	0.40 m/s	0.41 m/s	34%	25%	28%	Yes
Collective Long-Term	0.35 m/s	0.42 m/s	0.48 m/s	0.44 m/s	0.38 m/s	14%	5%	9%	Yes

\*Baselines include both Q1 & Q2 Baselines

Project Outcomes Measures - Resident satisfaction of at least 75%	Annual Target	Q1 FY 20	Q2 FY 20	Q3 FY 20	Annual Performance Achieved to the End of Reporting Period (%)	On Target Y/N
Aggregate Data	75%	79%	100%	100%	93%	Yes

## 2. ACTIVITY IMPLEMENTATION PROGRESS

### 2.1 Progress Narrative

In regards to Reducing Falls with AI; Proactive Approach to Mobility Improvement and Fall Prevention, we have been greeted with key achievements! First and foremost comes the demonstrated effort and support from the sites onsite. Almost all sites who were able to implement our technology have expressed a deep admiration and appreciation of our technology. We have been able to have a very regular communication flow and have provided numerous calls offering our utmost support. Overall, these facilities are incredibly grateful throughout our willingness to help them on all fronts. Quarter three brought unexpected challenges for the project as all parties have had to continue to work around COVID-19 and the challenges that it brought. As mentioned in the quarter one report and discussed more fully in the quarter two report, COVID has made it difficult for our partner facilities to get ideal and proper usage of the system resulting in multiple challenges (discussed by each individual facility). We were originally hoping that the sites which did not re-assess any residents in quarter one or two would be able to gather re-assessment data in quarter three. Needless to say, COVID prevented our partner facilities from being able to use the system and therefore were not able to start gathering re-assessment data, still. Though even with the challenges of COVID, we have still been able to provide as much support as we can to the sites and are still on track to hit the majority of our project goals, though we will have to continue to work with the sites who have been unable to gather any re-assessment data to get them started on rescreening residents whenever they and the facility are in a comfortable place to use the system within the parameters of their facility and organizational guidelines and protocols. With that being said, the staff at all facilities have all stated that they are eager to continue using this system more when they have the chance of moving past COVID.

In regards to the reported falls data, overall, our VST System is doing well! Broken down by individual site:

#### 1. Cedarview

For Cedarview, I3900 falls has improved, thus far, 100%. There are no active hip fractures. Overall falls have improved 57%. We are able to support this claim, as twenty-one J1800 items were captured thus far within three quarters. Falls with minor injury have improved 9%. Similarly, we were able to conclude that seven falls with minor injury occurred since our implementation. Finally, J1900C items are on track to improve 100%. We are able to conclude that falls are happening at a substantially lower rate!

In regards to Gait velocity, they have declined at -4%. For Functional ability, Cedarview has improved 6%. For Balance ability, Cedarview has improved 8%. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that while not moving at a faster pace, their functional ability to move has shown significant improvement and their balance while doing so has also improved!

#### 2. Clovernook

For Clovernook, I3900 falls have improved, thus far, 77%. There is one active hip fracture, however this was a fracture that occurred prior to admittance to the facility. Overall falls have improved 51%. We are able to support this claim as thirty J1800 items were captured since our VSTBalance implementation. Falls with minor injury have declined -14%. Twelve falls with minor injury have happened since our implementation. Finally, J1900C items are on track to improve 100%.

In regards to Gait velocity, they have neither improved, nor declined, with an average of 0%. For Functional ability, Clovernook has improved 39%. For Balance ability, Clovernook does not have any retest data. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that while not moving at a faster pace, their functional ability to move has shown significant improvement!

### **3. Countryside Manor**

For Countryside Manor, I3900 falls have declined, thus far, -50%. There is currently one active hip fracture. both occurred prior to admittance. Overall falls have improved 10%. We are able to note this claim as thirty-three J1800 items were since our deployment. Falls with minor injury have declined -25%. Twelve falls with minor injury took place since our implementation. Finally, J1900C items are on track to decline -20% as four falls with major injury have occurred. When considering Countryside Manor and their substantial increase in falls with injury, it is important to note that Countryside Manor has not fully utilized the VSTBalance System. Later in this report, we identify Countryside Manor as not being very willing to use the system. Most staff members have opted to stick with their traditional measures to identify musculoskeletal deficits. We are to believe this increase in falls could have been lessened with the proper usage of the VSTBalance system.

In regards to Gait, Function, and Balance, we are unable to compare increases between Admission and Discharge at this time. Countryside Manor has not had at least two assessments per resident at this time. Therefore we are unable to say their overall improvement or decline.

### **4. The Glen**

For The Glen, I3900 falls has improved, thus far, 45%. There are two active hip fractures, however, both occurred prior to admittance to the facility. Overall falls have improved 23%. We are able to support this claim as a total of 168 falls had occurred since deployment. We are unable to compare falls with minor injury as we were informed by the site MDS Coordinator that there was no way for them to delineate a minor injury with their 2019 coding system. We will only be able to compare this from a quarterly basis. For the quarter, Falls with minor injury has improved 44%. Finally, falls with major injury items are on track to improve 80%. Only one fall with a major injury has occurred since our deployment. We can conclude that major injury falls are improving substantially! We are unable to collect MDS Data from the facility during Q3, as it was reported that the facility current does not have an Administrator, DON, ADON, or MDS Coordinator. Our project lead has repeatedly expressed concern as they do not have enough resources to pull and identify our requested data. So The Glen will does not have any falls numbers to report this quarter, though once they are able to generate the report and we are able to receive them, we will add those numbers to the next quarterly report to reflect their missed reported data.

In regards to Gait velocity, they have improved 18%. For Functional ability, The Glen has improved 9%. For Balance ability, The Glen has also improved 9%. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that residents at The Glen are improving along all levels!

### **5. Harrison Pavilion**

For Harrison Pavilion, I3900 falls has improved, thus far, 0%. There is one active hip fracture that was not caused by a fall within the facility. Overall falls have improved 75%. We are able to support this claim, as twelve J1800 items were captured since our VSTBalance implementation. Falls with minor injury have improved 83%. Similarly, we were able to conclude that one fall with minor injury occurred since our implementation. Finally, J1900C items are on track to improve 100%. We are able to conclude that falls are happening at a substantially lower rate!

In regards to Gait velocity, Function, Balance, Harrison Pavilion has not had at least two reassessments at this time. Therefore we are unable to say their overall improvement or decline.

### **6. Lincoln Crawford**

For Lincoln Crawford, I3900 falls has declined, thus far, -133%, with five having already been coded. Every single hip fracture that has happened up to this point was not caused by a fall within the facility. Overall falls have improved 35%. We are able to support this claim, as twenty-five J1800 items were captured since our VSTBalance implementation. Falls with minor injury have improved 36%. Similarly, we were able to conclude that five falls with minor injury occurred since our implementation. Finally, J1900C items are on track to improve 100%. We are able to conclude that falls are happening at a substantially lower rate!

In regards to Gait velocity, they have declined 11%. For Functional ability, Lincoln Crawford has improved 12%. For Balance ability, Lincoln Crawford has declined 11%. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that while balance and gait velocity have slightly declined, residents at Lincoln Crawford are substantially improving their Functional abilities.

### **7. Northcrest**

For Northcrest, I3900 falls has improved, thus far, 88%. Overall falls have improved 51%. We are able to support this claim, as thirty-three J1800 items were captured since our deployment. Falls with minor injury have improved 54%. Similarly, we were able to conclude that eighteen falls with minor injury occurred since our deployment. Finally, J1900C items are on track to decline -100%.

In regards to Gait velocity, they have improved 7%. For Functional ability, Northcrest has improved 26%. For Balance ability, Northcrest has improved 17%. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that residents at Northcrest are improving at all levels!

### **8. Sunrise Manor**

For Sunrise, I3900 falls has improved, thus far, 100%. There are no active hip fractures that were caused by a fall within the facility. Overall falls have improved 24%. We are able to support this claim, as twenty-one J1800 items were reported thus far. Falls with minor injury have improved 26%. Similarly, we were able to conclude that ten falls with minor injury occurred since our deployment. Finally, J1900C items are on track to improve 100%. We are able to conclude that overall falls are happening at a substantially lower rate!

In regards to Gait velocity, Function, Balance, Sunrise Manor has not had at least two reassessments at this time. Therefore we are unable to say, at this time, their overall improvement or decline.

### **9. Traditions at Chillicothe**

For Traditions, we are unable to determine the amount of improvement with I3900. Per the onsite MDS Coordinator, they are unable to pull that specific information. However, we are able to confirm that their quarterly I3900's have improved 100% (10 in quarter one to 0 in quarter three). Overall falls have improved 48%. Only one hundred twelve falls have taken place since our deployment. We are unable to determine the amount of improvement with Falls with minor injury, as there, similarly, was no reported specific information, as noted by the onsite MDS Coordinator. Finally, J1900C items are on track to improve 62%. There has been a reported six falls with major injury since our deployment. We are able to conclude that overall falls are happening at a substantially lower rate

In regards to Gait velocity, they have improved 28%. For Functional ability, Traditions has improved 23%. For Balance ability, Traditions has improved 9%. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that residents at Traditions are improving at all levels!

### **10. Westbrook Place**

For Westbrook Place, I3900 falls has improved, thus far, 83%. There are no active hip fractures within the facility. Overall falls have declined -87%. When consulting with the facility about these numbers, it was confirmed that isolation of their residents due to COVID has resulted in recurrent falls with their hospice residents. Some of these residents have NOT been able to be seen by therapy, even though they've had somewhere between six to seven falls each. Also, it was noted by the onsite MDS Coordinator that over half of the reported falls were coming from their Dementia Unit (a population where utilizing VSTBalance becomes very difficult due to cognitive ability). Falls with minor injury have improved 44% with seven total reports. J1900C items are on track to improve 100%.

In regards to Gait velocity, they have improved 53%. For Functional ability, Westbrook Place has declined -5%. For Balance ability, Westbrook has improved 12%. This data is collected from overall community baselines and compared to those who have been reassessed. What we are able to conclude is that residents at Westbrook Place, while not improving functionally, they are walking quicker and have better balance!

### **Hip Fractures**

For our project goal of reducing hip fractures by 10% we currently look at the I3900 MDS item. We requested the past 12 months of MDS data, prior to implementation of the technology, from the sites to be able to capture the baselines for this goal. A majority of these facilities had reported a low number of hip fractures for the prior year, so hitting a 10% reduction in hip fractures for these facilities would be keeping their number at most the same as it was the prior year. As we learned more about how MDS data items were recorded and reported, specifically for I3900, we have come to the realization that if we are aiming to reduce the amount of hip fractures a facility experiences on-site, then I3900 is not the MDS item we should be looking at. We believe that we should be looking at J1900 C and asking facilities to highlight ones that resulted in a hip fracture; explained further in "Lessons Learned." **We were able to confirm with Amy Hogan per our conversation on 05/03 that I3900 will no longer be considered a necessary or important piece to the overall successful determination of the project**

### **Falls**

Our next project goal of reducing falls and falls with injuries by 10% is obtained by looking at the MDS item numbers J1800 and J1900. To capture our baselines for the goal we collected the prior twelve months of MDS data for the items previously listed. It's reasonable to expect some months/quarters will have a higher number of falls than others. This will lead to the high fall reduction percentages in the expected annual performance to likely balance out, hence our goal of a 10% reduction in falls. We have come to the realization that if we are aiming to reduce the amount of total falls a facility experiences on-site, then J1800 is not the MDS item we should be looking at. We believe to more accurately capture the total amount of falls and falls with injury, then we should be looking at only J1900 B, and C. **We were able to confirm with Amy Hogan per our conversation on 05/03 that J1800 will no longer be considered as important or integral to the overall successful determination of the project.**

When reviewing the numerical data surrounding our assessments, it is important to note that some facilities either have not had residents discharged as of yet or have not used the system. However, from the information that has been gathered up to this point, we have been able to see overall trends of improvements!

### **1. Functional Assessments – Goal: 15% Improvement**

For partnering facilities within this project, the 5x Sit-to-Stand assessment is how facility staff are able to assess a resident's functional abilities. When exporting data surrounding a resident's functional ability, only one facility with adequate data (Westbrook Place) did not experience a direct positive improvement. We believe this is attributed to COVID, isolation of residents, and staff not being able to properly work with or assess the residents. Overall, we were able to show an average facility improvement of over **16%** from overall baselines to reassessment averages across these facilities, meaning the VSTBalance, thus far, has shown proven benefit in identifying functional deficits in the quarter and the year.

## **2. Balance Assessments – Goal: 15% Improvement**

Currently we have achieved an average improvement of **6%**, meaning the VSTBalance, thus far, has shown proven benefit in identifying balance deficits in patients and helping staff improve on those deficits. Overall, we are on track to achieve a 15% balance improvement across all sites. We expect this improvement to continue to increase as care providers continue to work on improving the deficits identified in the assessments and the facilities with negative outcomes to turn positive as they continue to improve and capture additional data. COVID of course did not help in keeping balance scores improving as residents have been confined to their rooms for physical treatments, unable to do normal activities, and staff has been unable to work with them as much as they have wanted. The sitting reach is still also our most problematic assessment having the most user error occur during this test. This has a negative effect on re-assessment scores as user error typically tends to record their reach distance farther than it actually is, making it hard to achieve that incorrect number again when going to do a re-assessment.

## **3. Gait Assessments – Goal: 20% Improvement**

As it currently stands, overall we were able to show an average improvement of **12%** from baselines to reassessment averages across these facilities. While this is under being on track for our yearly goal of a 20% improvement, we attribute the decline to patients being confined in their room for physical treatments and staff unable to fully work with them due to COVID. The VSTBalance System, again, has shown proven benefit in identifying gait deficits and we are not far from our goal of 20% for the year. Overall, we were able to show an average improvement of **27%** from baselines to reassessment averages across these facilities, meaning the VSTBalance, thus far, has shown proven benefit in this form of identifying gait deficits in the quarter and the year.

With these scores, it is important to note a few key features. The first being that baselines and annual targets will continue to shift over the course of our reporting periods. Similarly, as the overall facility baseline changes as more data is captured, this will cause the annual target to adjust to reflect the updated target with the newly gathered baseline data. Also, not all communities have performed discharge assessments with patients. Because of this, we were limited to the amount of data available from specific communities in terms of data for quarter three. In a majority of the sites, staff is unable to bring the equipment to resident rooms, something we were hoping would be solved with the portable battery pack.

Patient satisfaction is a crucial and integral part to the world of Skilled Nursing Facilities. Our goal is to have an average of 75% satisfaction among patients who have taken part in being assessed with the VSTBalance system for the duration of the project. So far with the collected results, we have been able to identify that patients who took the satisfaction survey have overall been 93% satisfied with the system overall, answering “Yes, I enjoy using the VSTBalance.”, when asked if they enjoy VSTBalance and “Yes, I enjoy using it.” when asked if they would use the VSTBalance again. No patients within Q2 or Q3 answered negatively and they chose the best answer. Although patient satisfaction scores are favorable for this project, having users remember to perform the survey has been a challenge (as it is addressed in our challenges).

From here, our goal is to continue to work with each individual site and provide as much support as we can. Each site that is willing to communicate back to us has been involved with multiple questions of how we can continue to provide support and assistance. Ideally once COVID-19 subsides and we can all regain a sense of “relative” normalcy, we will be able to revisit, onsite, with each and every facility. The purpose of this is to continue to drive excellent usage, understand the system’s importance, and brainstorm through any current or potential barriers to the site’s usage.



## 2.2 Implementation Status

Overall, we are pleased with the results we have seen, in light of one of the most devastating events to hit the senior population. COVID, very obviously, has created incredible amounts of stresses and strains related to everyone involved with senior living and senior healthcare. Nevertheless, our partners have fearlessly led their teams through a very troublesome and burdensome time and process. While we planned to revisit the sites during this quarter of the project, COVID and the restrictions placed upon nursing homes made that impossible. The following addresses our involvement, individual coordination, and specific status with each partnering facility:

### **Cedarview:**

On 7/16, it was confirmed that the National Guard provided the onsite COVID testing. They were hoping to start some normalcy with seeing patients out of the room, being able to get to the gym, and have time to train new staff on the VSTBalance system the following week. On 7/29, I was informed that their monitor needed some maintenance to tighten a bolt, however being remote, we were unable to provide assistance until maintenance personnel were able to respond to our request. On 8/7, we received confirmation that their maintenance team was able to tighten their monitor. Also on this confirmation, we were informed that they were becoming more flexible as family visitors were allowed (starting on that day), and residents were permitted in the therapy gym, albeit one at a time. The DOR believed that they might have been able to start using their VSTBalance system shortly, however, they were moving on to a new position, with their last day as DOR being 8/19. Finally, throughout September, I was unable to get in contact with the new DOR. I have, since writing this quarterly report, been able to conduct a training and establish a continued communication base. Thus far, the facility is on track to improve the amount of residents with falls by 57%. Functional ability has improved 6%, balance ability has improved 8%, however gait has remained the same at -4%.

### **Clovernook:**

I was not able to make contact with Clovernook throughout the month of July. I was informed, however, on 8/5 that Clovernook was doing great and their VSTBalance system was up and running. On 8/14, it was communicated that everything was great and still had zero COVID cases onsite. On 9/9, the DOR onsite provided the update that everything is great at Clovernook and the DOR provided a similar response at 9/23. Thus far, the facility is on track to improve the amount of residents with falls by 51%. Function is improving at 39%, Gait is improving at 0% and there are currently no re-assessed patients for the Balance-related assessment.

### **Countryside Manor:**

I was unable to get any correspondence from Countryside Manor throughout July. I was also unable to receive any communication through August. Finally on 9/14, it was confirmed that we would perform a re-training with the onsite team. Previously, our team was met with some hesitation onsite as it was noted that his therapy team was apprehensive to new technology. After the training, the onsite coordinator confirmed that they had an action plan to utilize the VSTBalance System. After that re-training, I have not been able to get in contact with the facility. Thus far, the facility is on track to decrease the amount of residents with falls by 10%. We are unable to track specific improvements or declines in balance, gait, or function as the facility has not used the system since 7/24 and has only assessed 6 patients.



### **The Glen:**

I was unable to make contact with the onsite project lead throughout the month of July. On 8/18, it was discussed that the facility was doing well. They were using the VSTBalance as much as possible. One of the PTAs onsite was described as a "VSTBalance Rock Star!". On 9/24, I was informed that the therapy team had been very busy, which in times of COVID is generally good news! However, the facility was going through many changes in management. I.e., they were going through an entire management change (Admin, DON, and MDS). They did state that they were using the VSTBalance system to the best of their ability. They are also very satisfied with the system! The biggest challenge at the moment is the fact that we are unable to collect MDS data in the traditional sense, as they are hurting from staff shortages. As stated above, their Admin, DON, and MDS, the people who could generate the report, has left the facility and they have not yet found a replacement. This has made it impossible for us to collect their quarter three falls numbers. Our project lead onsite has tried to get the data that we need, however she does not have the supporting staff at this time to help collect. 218 Functional ability has improved 9%, balance ability has improved 9%, and gait has improved 18%.

### **Harrison Pavilion:**

I was unable to make contact with the onsite project lead throughout the month of July. On 8/14, I was able to again connect with our lead, as it was explained that the facility was doing well. Their COVID unit had, in fact, gotten smaller. In other words, they are starting to get back to normal! On 9/16, our lead stated that all was well at the facility. They were slowly getting more freedom to take patients to their therapy gym. They also stated that they were excited to get back to using the VSTBalance System. They did not elect to have additional re-trainings as they stated that they had no problems. Thus far, the facility is on track to improve the amount of residents with falls by 75%. We are unable to track specific improvements or declines in balance, gait, or function due to lack of reassessment data.

### **Lincoln Crawford:**

I was unable to get in contact with our project lead throughout the entire quarter. I was, however, able to finally get in contact past the Q3 time frame. Thus far, the facility is on track to improve the amount of residents with falls by 35%. Functional ability has improved 12%, balance ability has decreased -11%, and gait has decreased -11%.

### **Northcrest:**

On 7/29, it was confirmed that everything there was going well there. The facility was continuing to complete VSTBalance Assessments at the time of evaluation and again upon discharge. I was unable to make contact throughout the month of August. Finally on 9/9, it was relayed to me that the facility, unfortunately, had to put the VSTBalance program on hold. This was due to staffing issues and a COVID outbreak onsite. They assured that when things were to get back to normal, whatever that may be, that they will be re-implementing the same program that the facility was operating under previously. Thus far, the facility is on track to improve the amount of residents with falls by 51%. Functional ability has improved 26%, balance ability has improved 17%, and gait has improved 7%.

### **Sunrise Manor:**

On 7/27, it was confirmed that the facility enjoyed the VSTBalance system because they liked how it challenged their patients with both physical and mental aspects. This makes it a problem-solving and sequencing task which they enjoy! On 8/25, it was identified that everything was still going smoothly at the facility. They were operating nasal tests every two weeks, getting results back in 2-3 days. At that time, they were still COVID negative, and have been since the start of the pandemic. Our project lead did not mention any needs or anything new at the time. They do enjoy our system update with the comment section appearing after every assessment, as opposed to appearing once after all four. Then on 9/16, it was communicated that all was still well there with zero cases. They were soon to be hiring a new PTA. Once the new hire is with the facility and team, I will be helping them access the VSTBalance System and provide training. Thus far, the facility is on track to improve the amount of residents with falls by 24%. We are unable to track specific improvements or declines in balance, gait, or function as the facility at this time.

### **Traditions of Chillicothe:**

On 7/15, it was confirmed that they've had a tough time getting to really use the VSTBalance system as they expected when things started. They experienced a very large amount of patient caseload drop. They then had to keep them in isolation for the first fourteen days of their stay. The facility stated that they do really intend to use this tool to its full extent but it has been truly difficult so far. He apologized for that. The therapists generally enjoy seeing the results of the tests, and some level of analysis into the deficits that the patient presents with, especially so quickly after the tests are complete. My service has been extremely thorough and they've not gone without the assistance they've needed at any point in the process. I was unable to touch base with our project lead during August or September. Thus far, the facility is on track to improve the amount of residents with falls by 48%. Functional ability has improved 23%, balance ability has improved 9%, and gait has improved 28%.

### **Westbrook Place:**

On 7/24, it was confirmed that general isolation of residents due to COVID has caused a lot of falls. Even with hospice residents, some people are falling 6-7+ times as they are not allowed to be seen by Therapy. These patients are screened frequently. There has been a lot of decline associated with isolation (mentally and physically) because of the lack of interaction. People can't walk in the halls or move their wheelchairs. On 9/10, our project lead worked with us to establish some examples as to how their team could utilize the VSTBalance System! Thus far, the facility is on track to increase the amount of residents with falls by 87%. Functional ability has decreased 5%, balance ability has improved 12%, and gait has improved 53%.

Even amidst the pandemic, during this quarter we were still able to have a line of communication between most of the sites. A majority of the partner facilities still participated in update calls throughout the quarter, as well as kept an open line of communication through email.

The actions of our team at VirtuSense, because of these issues have really just been focused on support. We understand that most places are still unable to bring patients to the VSTBalance system and are solely focused on infection control. We do not want to sour any of the relationships we have made with staff members on-site.

Not only have we been able to touch-base on individual phone calls, but participating facilities receive email invitations every week to participate in a remote VSTBalance Training and/or VSTCloud Portal Trainings. Remote VSTBalance Trainings commence twice per week and VSTCloud Trainings commence twice per month.

Moving past this quarter, we plan to continue to provide as much support as we can to the partner facilities during this pandemic.

## **2.3 Implementation Challenges**

One of the more recent challenges that we have been faced with mostly related to this quarter is the lack of short-term patients that have been able to benefit from this system. Elective surgeries have either been stopped or have dramatically decreased. Because of this, the majority of Q3 usage was stemming from the long-term resident side. For long-term patients, improving upon physical mobility is incredibly hard to achieve. As musculoskeletal strength is a determining factor of balance, gait, and function, a lack of such strength means that improving upon baselines is very challenging.

The sitting reach is still also our most problematic assessment having the most user error occur on this test. This could have a negative effect on re-assessment scores as user error typically tends to record their reach distance farther than it actually is, making it hard to achieve that incorrect number again when going to do a re-assessment.

Traditionally when we implement systems to clients, we occasionally experience some push back from staff members on site who are used to doing assessments/exercises in the traditional way where a therapist/clinician observes a patient perform an assessment and then writes down the results. For ninety percent of our participating facilities we did not run into this problem. We are still unable to determine if a lack of usage is due to this issue or COVID.

MDS Collection has also been somewhat hard to collect from organizations. We realize that MDS Coordinators operate under a very specific guideline to ensure that plans-of-care are enacted efficiently and effectively. Nevertheless, at times, collecting this data has proven itself to be pretty difficult. According to part of the Section 1135 Waiver, CMS had decided to waive submission timeframes for MDS Coordinators<sup>1</sup>. The purpose of this waiver is to allow flexibility for facilities while their staff are tied up with carrying for positive COVID patients/residents or taking care of infection control procedures and guidelines for their communities/facilities. We experienced the challenge of staff shortages in regards to MDS data collection as the Glen currently has no one who is able to generate the falls reports for us.

Also, human error is always a factor that can never be eliminated. Thus, some reported data on the cloud can appear to be somewhat skewed. Even as we cannot assume that information is biased or falsified, we have to consider human error if a system user does not assess the resident properly onsite.

Finally, COVID-19 has brought upon the world of Senior Living a strange, yet increasingly terrifying reality. With this, we fully expected a drop in system usage, and have seen a drop in usage. This is not because of the fact of declined proven benefit, but because of staffing, occupancy, and protocol challenges which have been communicated to the VST team. The amount of staff onsite has also caused declines in usage. We have also heard of occupancy and admission rates falling in response to this pandemic. Thus, the number of assessments performed are dwindling. Plus, facilities are continually facing stress from hospitals to admit patients who had been treated for COVID-19. Families potentially are removing family members from their respective communities due to infection fears.<sup>2</sup> Finally, protocols, such as requesting in room treatments have created a great disruption for facility teams. VirtuSense has been able to offer a physical solution to this issue, however, other onsite protocols and guidelines have (such as constant sanitation and wiping down the system) created an additional barrier to perfect usage.

Not only does COVID-19 affect the ability to appropriately assess residents, but it can also lead to health related factors.<sup>3</sup> Residents within these facilities are reportedly facing immense amounts of loneliness because they are confined to their rooms, cannot partake in activities or social groups, or even see family members. Even though facilities are including options of hallway activities and seeing family members through smart devices or through windows, residents are still feeling disconnected, sometimes at an even greater clip. This disconnectedness caused by COVID-19, in turn, has proven to accompany a deteriorating physical and mental health. Within the study, they were able to find that both true disconnectedness (what we are seeing as a result of COVID-19) and **perceived** social disconnectedness both lend a hand to this physical regression. Whenever a resident perceives that they are isolated and are not in touch with society, we then find a newfound causation to musculoskeletal deficits.<sup>45</sup> This mental health only adds to a deteriorating wellbeing (mentally and physically) adding to a risk of fall and declining ambulation, balance, and function.

### 3. STAKEHOLDER PARTICIPATION AND INVOLVEMENT

In this quarter of the project there has been above average participation and involvement from the 10 partner facilities and their staff. Even given the health issues surrounding COVID-19, about half of the partner facilities are still using the system or are using the system with the battery pack or just screening to the best of their abilities. Overall, the staff at the partner facilities have expressed how excited they are to have this kind of technology and can see the benefits of using it.

---

<sup>1</sup> Centers for Medicare & Medicaid Services. (2020). COVID-19 emergency declaration blanket waivers for health care providers. CMS <https://www.cms.gov/files/document/covid19-emergency-declaration-health-care-providers-fact-sheet.pdf>.

<sup>2</sup> Kunz, R., & Minder, M. (2020). COVID-19 pandemic: palliative care for elderly and frail patients at home and in residential and nursing homes. *Swiss Medical Weekly*, 150(1314).

<sup>3</sup> Cornwell, E. Y., & Waite, L. J. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of health and social behavior*, 50(1), 31-48.

<sup>4</sup> Khosravi, P., Rezvani, A., & Wiewiora, A. (2016). The impact of technology on older adults' social isolation. *Computers in Human Behavior*, 63, 594-603.

<sup>5</sup> Iaboni, A., & Flint, A. J. (2013). The complex interplay of depression and falls in older adults: a clinical review. *The American Journal of Geriatric Psychiatry*, 21(5), 484-492.

The therapy and restorative teams have been very involved with using the system. The therapy teams at the partner facilities have been using the system, as much as they are able, to obtain more in-depth data on the musculoskeletal deficits within patients and using that data to adjust the plan of care to better address the mobility issues that the patient is experiencing and were identified by the system. The therapy team has also been adding the biofeedback training games into their plan of care and has the patients perform the games to replace other exercises/activities.

The restorative staff has also been using the system similarly to the therapy staff as much as they are able. They have been using the system to identify deficits, which adjust what restorative program they put the patient on, and then using the system again to check the progress of improvement in the patients. The restorative team has also been utilizing the recommended exercises to supplement their restorative program and give the patient additional exercises to perform to help with improving mobility deficits.

In the project thus far, we have had average participation and involvement from the patients of the partner facilities. While we did not see that many additional patients screened this quarter compared to last quarter, we feel that nine months into the project, we have a good number of patients screened thus far. If we did not have to worry about COVID we believe we would have seen more additional patients screened this quarter than last, as staff members are getting versed in using the equipment and understanding the process of using it in their community much better than the start of the project.

## **4. MANAGEMENT AND ADMINISTRATIVE ISSUES**

The big issue that we've been faced with is turnover. Throughout numerous attempts to get new individuals up to speed, we have only been met with minimal interest. Because of the lack of communication coming from multiple facilities, it is hard to know the specific reason for the lack of communication. The VirtuSense team is only able to assume this is because of COVID, turnover, or general lack of interest.

There also is the present issue of relating the purpose and benefit of the VSTBalance system to current residents.

At this point in time, we have not had any software or procurement issues, nor do we have any planned upcoming procurement actions.

## **5. LESSON LEARNED**

We have been able to experience highlights of learning that we have witnessed thus far throughout the project. To start, COVID-19 has brought upon a new wave of unprecedented challenges. Janitorial/Housekeeping, Admissions, Nursing, Therapy, Dining, Administration, Marketing, and other areas are incredibly and deeply affected by the effects of this terrible pandemic. Luckily, we have been able to learn to be adaptive in our response to what is most feasible during times of crisis. For example, we were able to deploy a portable battery pack that very easily installs onto the back of the system set-up. As stated above, some therapy staff are completely closed out of the gym, and in other sites, they are unable to take the equipment into any patient rooms to prevent the spread of infection. With a system that depends on at least two people being in front of it, a patient and a clinician, we have come to learn that COVID makes good usage very difficult to achieve.

Another lesson learned is to continue to maintain contact with the participating facilities. We have maintained a very consistent communication base with the participating facilities thus far in the project. Although some facilities are more responsive than others, our attempts to get in contact has not ceased.

We also realized that as we collected information from participating facilities, the MDS items are based off of total populations of the communities. When reporting this information, it's important to note that not all residents within a facility are actively participating within the VSTBalance project. 100% of participation for a facility population is not realistic as many residents are either non-ambulatory, bed bound, or are not cognitively able to follow direction for the assessments. So as we collect MDS items, we realized that those total numbers are not reflective of individuals who have been able to be screened with the VSTBalance system. We are inclined to believe a majority of individuals who are suffering from falls within a community have not yet been able to benefit from the VSTBalance objective, standardized measurements.

Patient satisfaction survey usage and gathering was another challenge that we had to adapt to. We quickly worked with the development team to solve this issue and ensure that we had a way to gather the results of the surveys. Another lesson we learned in regard to the survey, was we saw more patients reassessed than we had patients who had taken the survey. With it being a voluntary survey, we know that not all patients will choose to take the survey and submit their general opinions about the VSTBalance, though we believe that some users of the system may also be disregarding the survey, as it is voluntary, and not asking the patient if they would like to answer the five quick questions.

Finally, we realized that even though the project outlines, parameters, and goals are the same, facilities can be very different! Some facilities were extremely excited to have this technology, and the results seen thus far show that with great determination and powerful internal structure, amazing improvements are more than achievable. Nevertheless, every facility participating in the project offers a different aura, attitude, and character. It provides a specific insight into how VirtuSense is able to help on an individual level across all facilities.