Quarterly Report to Ohio Department of Medicaid and CMS

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CMP Request Number: G-2021-04-0300

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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:	04/01/20 – 06/30/20

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. To establish the efficacy of our project in helping residents, we will seek to achieve the following outcomes:

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 Q2 Report

CCH Facilities

J1800

Improvement

J1900 B&C

Improvement

* Includes Clovernook who did not use the system during Q1 or Q2

*94% of J1800 MDS items (since deployment) took place before an initial VSTBalance assessment

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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.

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CCH Facilities*	Before VST (2019) Monthly Average	Monthly Average (After Implementation)	Performance Achieved (Total Average)	Performance Achieved (Individual Average)	Annual Performance Goal
J1800 (Overall)	43	30	29%	28%	10%
J1900B & C (w/injury)	14	9	32%	42%	10%

***NOTE* Includes Clovernook who did not use our system within this quarter.**

The Glen & Traditions*	Before VSTMonthly Average (2019)	Monthly Average (After Implementation)	Performance Achieved (Total Average)	Performance Achieved (Individual Average)	Annual Performance Goal
Falls (Overall)**	42	13	39%	37%	10%
Falls (w/ Major Injury)***	3	<1	26%	76%	10%

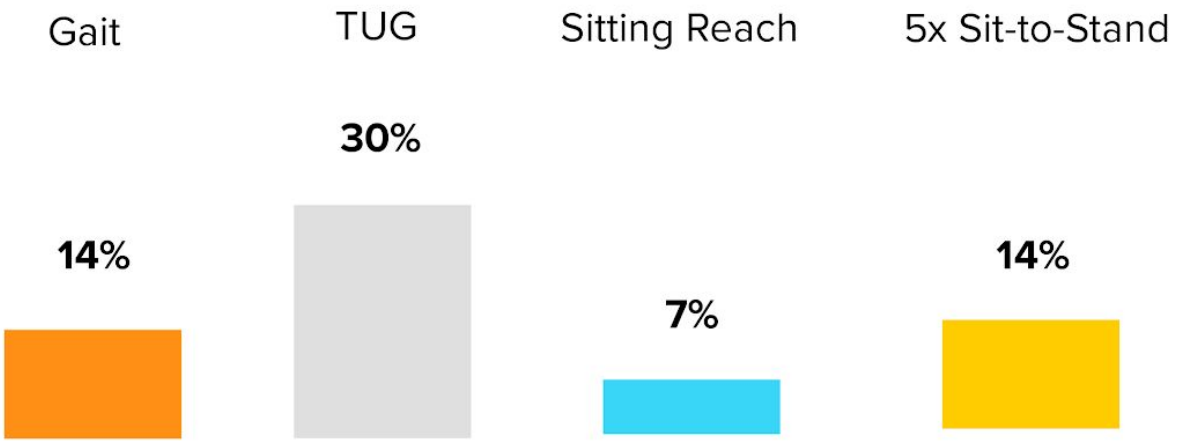
***NOTE* These sites informed VirtuSense that they were unable to pull baseline MDS items. Therefore, we are reporting improvements via Total Falls as opposed to MDS specific items.**
****NOTE** As reported by The Glen MDS Coordinator, one resident fell a total of 30 times between February & March 2020.**
*****NOTE*** Falls with minor injury were not able to be pulled, as according to each site.**

All facilities except Traditions	Before VST (2019) Monthly Average	Monthly Average (After Implementation)	Performance Achieved (Total Average)	Performance Achieved in Current Quarter (Individual Average)	Annual Performance Goal
Hip Fractures	7	3	59%	35%	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	0.33 m/s	0.37 m/s	13%	20%
Balance Scores	10.1 in	10.52 in	7%	15%
Functional Scores	34.37 sec.	29.12 sec.	14%	15%
Resident Satisfaction	N/A	90%	90%	75%

VSTBalance Improvements



255 residents assessed since deployment
91 reassessed residents

Testimonials

"What we like about the system is how it challenges the patient with the physical and mental aspect, really making it a problem solving and sequencing task!"

- Andrew Needles, DOR, Sunrise Manor

"The therapists enjoy seeing the results of the tests and some level of analysis into the deficits that the patient is presented with, especially so quickly after the tests are complete. Your service has been extremely thorough, and we've not gone without the assistance we've needed at any point in the process!"

- Matt Geise, Rehabilitation Manager, Chillicothe National Church Residences

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	Annual Performance on track to achieve to the End of Reporting Period (%)	On Target Y/N
Cedarview	4	3	0	0	0	100%	Yes
Clovernook	13	12	2	0	1	83%	Yes
Countryside Manor	4	3	6	1	2	-50%	No
The Glen	22	20	12	2	2	45%	Yes
Harrison Pavilion	3	2	2	0	1	33%	Yes
Lincoln Crawford	3	2	8	2	2	-167%	No
Northcrest	17	16	2	0	1	88%	Yes
Sunrise	4	3	0	0	0	100%	Yes
Traditions	n/a	n/a	24	10	2	N/A	N/A
Westbrook Place	12	11	2	1	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		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: 26 J1900B: 6 J1900C: 0	J1800: 3 J1900B: 1 J1900C: 0	J1800: 10 J1900B: 3 J1900C: 0		J1800: 60% J1900B: 27% J1900C: 100%	J1800: Yes J1900B: Yes J1900C: Yes
Clovernook	J1800: 81 J1900B: 14 J1900C: 1	J1800: 73 J1900B: 13 J1900C: 0	J1800: 36 J1900B: 18 J1900C: 0	J1800: 10 J1900B: 5 J1900C: 0	J1800: 8 J1900B: 4 J1900C: 0		J1800: 55% J1900B: -29% J1900C: 100%	J1800: Yes J1900B: No J1900C: Yes
Countryside Manor	J1800: 49 J1900B: 12 J1900C: 5	J1800: 44 J1900B: 11 J1900C: 4	J1800: 54 J1900B: 18 J1900C: 6	J1800: 10 J1900B: 5 J1900C: 1	J1800: 17 J1900B: 4 J1900C: 2		J1800: -10% J1900B: -50% J1900C: -20%	J1800: No J1900B: No J1900C: No
The Glen* Unable to report	Total Falls: 218 Minor	Total Falls: 196 Minor	Total Falls: 168	Total Falls: 70	Total Falls: 14		Total Falls: 23% Minor Falls: n/a Major Falls: 80%	Total Falls: Yes Minor Falls: n/a Major Falls:

specific MDS items for 2019	Injuries: n/a Major Injuries: 10	Injuries: n/a Major Injuries:9	Minor Falls: 28 Major Injuries: 2	Minor Injuries: 9 Major Injuries: 1	Minor Injuries: 5 Major Injuries: 0			Yes
Harrison Pavilion	J1800: 64 J1900B: 12 J1900C: 1	J1800: 58 J1900B: 11 J1900C: 0	J1800: 24 J1900B: 2 J1900C: 0	J1800: 5 J1900B: 0 J1900C: 0	J1800: 7 J1900B: 1 J1900C: 0		J1800: 63% 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: 6 J1900C: 0	J1800: 6 J1900B: 1 J1900C: 0	J1800: 11 J1900B: 2 J1900C: 0		J1800: 35% J1900B: 83% J1900C: 100%	J1800: Yes J1900B: Yes J1900C: Yes
Northcrest	J1800: 89 J1900B : 52 J1900C: 1	J1800: 81 J1900B: 47 J1900C: 0	J1800: 48 J1900B: 24 J1900C: 2	J1800: 11 J1900B: 10 J1900C: 1	J1800: 13 J1900B: 2 J1900C: 0		J1800: 46% 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: 18 J1900C: 0	J1800: 5 J1900B: 3 J1900C: 0	J1800: 9 J1900B: 6 J1900C: 0		J1800: 24% J1900B: 5% 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: 142 Minor Injuries: 30 Major Injuries: 6	Total Falls: 34 Minor Injuries: 8 Major Injuries :1	Total Falls: 37 Minor Injuries: 7 Major Injuries: 2		Total Falls: 51% Minor Injuries: n/a Major Injuries: 71%	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: 118 J1900B: 12 J1900C: 0	J1800: 14 J1900B: 2 J1900C: 0	J1800: 45 J1900B: 5 J1900C: 0		J1800: -51% J1900B: 22% 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 assessment scores.	Baseline** FY 2020	Annual Target		Q1 FY 20	Q2 FY 20	Q1 Performance (%)	Annual Performance Achieved to the End of Reporting Period (%)	Positive Improvement?
Cedarview	24.61 sec	20.92 sec		23.1 sec	23.1 sec.	9%	6%	Yes
Clovernook	31.87 sec	27.09 sec		N/A	N/A	N/A	N/A	N/A
Countryside Manor	25.79 sec	21.92 sec		N/A	N/A	N/A	N/A	N/A
The Glen	36.79 sec	31.27 sec		23.47 sec	29.6 sec.	32%	20%	Yes
Harrison Pavilion	30.12 sec	25.6 sec		N/A	N/A	N/A	N/A	N/A
Lincoln Crawford	37.19 sec	31.61 sec		25.85 sec	31.84 sec.	31%	14%	Yes
Northcrest	43.09 sec	36.63 sec		22.75 sec	31.92 sec.	49%	26%	Yes
Sunrise	22.9 sec	19.46 sec		N/A	N/A	N/A	N/A	N/A
Traditions	33.72 sec	28.66 sec		N/A	25.86 sec	N/A	23%	N/A
Westbrook Place	30.82 sec	26.2 sec		38.21 sec	32.42 sec	-15%	-5%	No

Collective Short Term	34.73 sec	29.52 sec		28.73 sec	29.36 sec	17%	15%	Yes
Collective Long Term	30.11 sec	25.59 sec		25.98 sec	25.98 sec	14%	14%	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	End of Q2 FY 20	Q1 Performance (%)	Annual Performance Achieved to the End of Reporting Period (%)	Positive Improvement
Cedarview	11.97 in.	13.77 in.	12.97 in.	12.97 in.	4%	8%	Yes
Clovernook	12.96 in.	14.9 in.	N/A	N/A	N/A	N/A	N/A
Countryside Manor	10.48 in.	12.05 in.	N/A	N/A	N/A	N/A	N/A
The Glen	6.04 in.	6.95 in.	7.7 in.	7.39 in.	28%	31%	Yes
Harrison Pavilion	13.82 in.	15.89 in.	N/A	N/A	N/A	N/A	N/A
Lincoln Crawford	11.72 in.	13.48 in.	10.36 in.	10.54 in	-10%	-10%	No
Northcrest	8.29 in.	9.53 in.	10.77 in.	8.51 in	40%	3%	Yes
Sunrise	12.53 in.	14.41 in.	N/A	N/A	N/A	N/A	N/A
Traditions	10.46 in.	12.03 in.	N/A	11.43 in	N/A	9%	N/A
Westbrook Place	12.14 in.	13.96 in.	14.69 in	12.29 in	14%	1%	Yes
Collective Short-Term	9.21 in	10.59 in	10.92 in	10.15 in	19%	10%	Yes
Collective Long-Term	11.72 in	13.48	11.06 in	10.53 in	10%	4%	Yes

*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	Q1 FY 20	End of Q2 FY 20	Q1 Performance (%)	Annual Performance Achieved to the End of Reporting Period (%)	Positive Improvement
Cedarview	0.51 m/s	0.61 m/s	0.49 m/s	0.49 m/s	-4%	.-4%	No
Clovernook	0.27 m/s	0.32 m/s	N/A	N/A	N/A	N/A	N/A
Countryside Manor	0.23 m/s	0.34 m/s	N/A	N/A	N/A	N/A	N/A
The Glen	0.3 m/s	0.36 m/s	0.38 m/s	0.38 m/s	23%	26%	Yes
Harrison Pavilion	0.37 m/s	0.44 m/s	N/A	N/A	N/A	N/A	N/A
Lincoln Crawford	0.27 m/s	0.32 m/s	0.26 m/s	0.25 m/s	0%	-7%	No
Northcrest	0.26 m/s	0.31 m/s	0.33 m/s	0.27 m/s	32%	4%	Yes
Sunrise	0.45 m/s	0.58 m/s	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	N/A	25%	Yes
Westbrook Place	0.3 m/s	0.36 m/s	0.42 m/s	0.4 m/s	31%	33%	Yes
Collective Short-Term	0.32 m/s	0.38 m/s	0.43 m/s	0.40 m/s	34%	25%	Yes
Collective Long-Term	0.42 m/s	0.5 m/s	0.48 m/s	0.44 m/s	14%	5%	Yes

*Baselines include both Q1 & Q2 Baselines

Project Outcomes Measures - Resident satisfaction of at least 75%	Annual Target	Q1 FY 20	Q2 FY 20	Annual Performance Achieved to the End of Reporting Period (%)	On Target Y/N
Aggregate Data	75%	79%	100%	79%	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 two brought unexpected challenges for the project as all parties have had to work around COVID-19 and the challenges that it brought. As expected, and mentioned in the quarter one 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 would be able to gather re-assessment data in quarter two. 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. 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. 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 60%. We are able to support this claim, as thirteen J1800 items were captured thus far within two quarters. Falls with minor injury have improved 27%. Similarly, we were able to conclude that four 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, 83%. There is one active hip fracture, however this was a fracture that occurred prior to admittance to the facility. Overall falls have improved 55%. We are able to support this claim as eighteen J1800 items were captured since our VSTBalance implementation. Falls with minor injury have declined -29%. Nine falls with minor injury have happened since our implementation. Finally, J1900C items are on track to improve 100%. When considering Clovernook and their substantial increase in falls with minor injury, it is important to note that Clovernook has not yet utilized the VSTBalance System. Later in this report, we identify Clovernook as not being very responsive to our communication, but we are to believe this increase in minor injuries 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. Clovernook has begun utilization of the VSTBalance System only after the 2nd Quarter.

3. Countryside Manor

For Countryside Manor, I3900 falls have declined, thus far, -50%. There are currently two active hip fractures. One was a fracture that occurred prior to admittance and one happened within the facility. Overall falls have declined -10%. We are able to note this claim as twenty-seven J1800 items were since our deployment. Falls with minor injury have declined -50%. 9 falls with minor injury took place since our implementation. Finally, J1900C items are on track to decline -20%. When considering Countryside Manor and their substantial increase in falls across the board, 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 reassessments 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!

In regards to Gait velocity, they have improved 26%. For Functional ability, The Glen has improved 20%. For Balance ability, The Glen has improved 31%. 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, 33%. There are two active hip fractures that were not caused by a fall within the facility. Overall falls have improved 63%. 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, -167%. 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 seventeen J1800 items were captured since our VSTBalance implementation. Falls with minor injury have improved 45%. Similarly, we were able to conclude that three 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 improved -7%. For Functional ability, Lincoln Crawford has improved 14%. For Balance ability, Lincoln Crawford has declined -10%. 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%. There has only been one active hip fracture that was not caused by a fall within the facility. Overall falls have improved 46%. We are able to support this claim, as twenty-four J1800 items were captured since our deployment. Falls with minor injury have improved 54%. Similarly, we were able to conclude that 12 falls with minor injury occurred since our deployment. Finally, J1900C items are on track to decline -100%. We are able to conclude that fewer residents are falling. We also are of the opinion that those residents who are falling at a higher rate, have not yet been assessed on the VSTBalance system. Per conversations from the onsite MDS Coordinator, multiple identified falls were withstood from residents with impaired cognition. Those individuals have not been assessed with the VSTBalance System as the facility believes that their cognition levels are too low to get truly accurate levels of measurement and have opted to not assess those individuals.

In regards to Gait velocity, they have improved 4%. For Functional ability, Northcrest has improved 26%. For Balance ability, Northcrest has improved 3%. 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 fourteen J1800 items were reported from February through June 2020. Falls with minor injury have improved 5%. Similarly, we were able to conclude that nine 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 80%. Overall falls have improved 51%. Only seventy-one 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. However, falls with minor injuries have improved 13% since quarter one. Finally, J1900C items are on track to improve 71%. There has been a reported three 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 25%. 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 -51%. 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. Falls with minor injury have improved 22%. 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, they have improved 33%. For Functional ability, Westbrook Place has declined -5%. For Balance ability, Westbrook has improved 1%. 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. Through our assessments, care staff are able to identify risk among patients and then use that data to adjust care plans. VirtuSense aims to be able to lower the total amount of hip fractures that the ten-partner facilities witness. 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. We track the progress of this outcome by collecting updated MDS data for the reporting period and comparing it to the baseline to see our progress. 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. For the most part, we are on track to achieve our goal in this measure for the quarter and are looking forward to the progress for the year, aside from one or two facilities. Lincoln Crawford reported three I3900 items for the prior year and have already reported four I3900 numbers for this reporting period. In regards to this site, we have already surpassed our maximum goal for hip fractures and aim to keep it as close to two as possible for the year. Countryside Manor is another site where we are not on track to hit this goal. They reported only four I3900 items in the prior year and have already experienced three total hip fractures since our deployment. For the other facilities, we are on track for this outcome measure. 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. We then gathered monthly MDS data from the partner facilities to see the progress we have been able to achieve in reducing the number of falls, or the number of items listed in J1800 and J1900. Thus far in the project, most partner facilities have already seen a reduction in the number of falls. If we break down their prior year falls number into how many falls they experienced on a quarterly basis, then many partner facilities are well under those numbers with them seeing around a 20-60% reduction in J1800 falls. Countryside Manor is experiencing a high number of falls, however it is important to note that this facility has NOT used the system regularly, as six patients have had an assessment. No residents have had any type of reassessment. Thus, we have reason to believe that because Countryside Manor is lacking by way of usage, their over falls number would increasingly get better and improve in J1800, J1900B, and J1900C. Clovernook is an interesting case, as they are still on track for a higher amount of falls with minor injury compared to 2019 data. Even though Clovernook is having a lesser amount of people falling (55% improvement compared to 2019), the number of those falls to result in a minor injury is higher (increase of 29% compared to 2019 data). Northcrest is also in an interesting position as they had a lesser amount of falls (46% improvement compared to 2019) and a lesser amount of falls with injury (54% improvement compared to 2019's data), falls with major injury however, has as increased by 100%. This is because Northcrest had one fall with major injury in 2019 and there was a fall with major injury that had already occurred since deployment. On the reciprocal with Westbrook Place, while the number of falls across total residents have declined (-51%), the number of people who have experienced injury has greatly improved (22%). The purpose of this extremity is noted in the specific "Westbrook Place" portion of the first section. The second to last column in the table above, where the falls numbers are listed, is the fall reduction percentage we are projected to hit if we can keep the fall numbers from since deployment consistent. Given these percentage projections, we expect those numbers to fluctuate as we progress through the year. In other words, 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. Though if we only look at Westbrook Place's baselines of the Q1 compared to Q2, then their improvement jumps from a -15% to positive 5%. Looking at the improvements of the residents who have been re-assessed compared to their baselines, then Westbrook would be on track to hit 15% if they continue to hold an improvement of around 10% over the next six months. The other sites that have performed re-assessments on residents are on track to hit or exceed the 15% improvement, except for Cedarview at a 6% positive improvement (Cedarview's Function score dropped from Q1 [9%] to Q2's 6%.) Overall, we feel we are on track towards achieving our goal in this category for this reporting period and looking forward to yearly progress. We will continue to work on getting the sites to pick up on re-assessing their population once COVID and infection control protocols have passed. Overall, we were able to show an average facility improvement of over **13%** 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

For partnering facilities within this project, the Sitting Reach assessment is how facility staff are able to assess a resident's balance abilities. When exporting data surrounding a resident's balance ability, only one facility (Lincoln Crawford) with adequate data did not experience a direct positive improvement, as they remained the same in their -10% improvement (the facility has not used the system since 4/21). Currently we have achieved an average improvement of ***7%***, 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 except for Lincoln Crawford, Northcrest, and Westbrook Place. For both Northcrest and Westbrook Place, we were able to witness great drops in balance performance between quarters (Northcrest went from a 40% improvement to a 3% improvement and Westbrook Place went from a 14% improvement to a 1% improvement). While we are not at our 15% improvement target in this quarter or for aforementioned facilities with reassessment data, we feel we are overall on track for this goal for the year. While we are not at a 15% improvement yet, it is still towards the beginning of the project and only a small portion of patients have started being re-assessed. 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, 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. We were hoping to travel back to the sites this quarter to try and re-train staff members on this particular assessment, though COVID made that impossible. We expect to continue to have some issues with user error in the sitting reach until we are able to visit the sites again and they have more time for refresher/training courses on the system. As more patients get re-assessed and we begin capturing their progress thus far, this number should continue to improve, especially as we move away from COVID and staff members are fully able to work with their patients. Aside from the facility mentioned in the above goal, a majority of the partner facilities have made good progress in screening a good portion of their population and receiving baseline data.

3. Gait Assessments – Goal: 20% Improvement

For partnering facilities within this project, the Gait assessments are how facility staff are able to assess a patient's gait abilities. When exporting data surrounding a patient's gait ability, all of the partner facilities that had reassessment data for the gait analysis were able to see a positive average improvement among their patients, except for Cedarview and Lincoln Crawford. Cedarview maintained their -4% from Q1 to Q2 and Lincoln Crawford actually declined from a 0% improvement to a -7% decline. As it currently stands, overall we were able to show an average improvement of over **14%** from baselines to reassessment averages across these facilities. While this is just under being on track for our yearly goal of a 20% improvement, we attribute the decline to patients being confined in their room and staff unable to fully work with them due to COVID. Aside from the two aforementioned facilities, all of the partner facilities with re-assessment data are showing average improvements. This means 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. This shows that the VSTBalance helps staff to identify deficits and then use that data to help the resident improve. For this project goal we feel we are on track for the quarter as the sites who have reassessment data are already almost at or on track to hit the 20% improvement, aside from the two aforementioned facilities and Northcrest (Northcrest declined from an average 32% improvement to a 4% improvement). This also puts us on track for the year as we can continue to see improvements in patient gait speed as care providers continue to work on mobility deficiencies and deficits. As we continue to capture re-assessment data and move past COVID, we can expect the numbers to continue to improve on average as residents are able to move around more and staff is able to work with them fully. For partnering facilities within this project, the Timed-Up-and-Go and the Gait assessments are how facility staff are able to assess a resident's gait abilities. Starting with the Timed-Up-and-Go assessment, when exporting data surrounding a resident's gait ability, every single community experienced a direct positive improvement. Overall, we were able to show an average improvement of **30%** 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. Even though specific "Gait" performances have not had as much of an improvement as TUG, it's imperative to note that the Timed-Up-and-Go is another very clear and important indicator of "Gait" ability among residents.

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. For example, as facilities continue to assess their patients, we will see the overall facility baseline change for each site as they assess new patients that have not been on the system, gathering additional baselines that may have not been captured in prior 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 two. We were hoping to gather a good portion of re-assessment data in quarter two as it is well into the recommended 90-day re-assessment, though COVID has proven to make performing assessments and reassessments for these facilities extremely difficult. As mentioned above, residents across the partner facilities have been confined to their rooms in an effort to prevent the spread of infection. 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. If a facility has not yet reassessed any patients, we will not have any data for quarter one or two, hence why some site's quarter one and two data for gait, balance, and function are listed as N/A. While we were expecting more re-assessment data to come in from all sites this quarter because of the 90-day re-assessment recommendation, COVID has made assessing residents incredibly hard as infection control protocols are preventing full access to the equipment. While this is the case for multiple partner facilities, we have already seen some reassessment data from certain sites and have continued to receive more as some sites are still able to wheel the equipment to patient rooms or are allowed to bring patients to the therapy gym.

Patient satisfaction is a crucial and integral part to the world of Skilled Nursing Facilities. Our goal was to have a 75% satisfaction among patients who have taken part in being assessed with the VSTBalance system. So far with the collected results, we have been able to identify that patients who took the satisfaction survey have been 88% 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 answered negatively. 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:

Throughout April, I was unable to get in contact with our VSTBalance Project lead. However on 5/06, I was told that our project coordinator wound up getting ill and had to spend multiple weeks out of work and out of the facility. The MDS Coordinator onsite was, literally, managing the entire facility for a few weeks while I was unable to get in touch with managerial staff onsite. The MDS Coordinator was working the floor as a nurse due to such terrible staffing issues. During this time, for obvious reasons, the MDS Coordinator was unavailable. According to the staff onsite, they are doing “Ok” in regard to PPE, but are constantly on low supply. COVID tests have been arriving semi-regularly from the county as well. When our project lead was ill, and many staff members were either also ill or taking time off, their usage with the system has ceased to exist. Only one staff member has been able to use the system during this time, however as conditions continued to deteriorate, that usage has gone away. Their hopes are to re-initiate usage and start catching up with assessments once they are in less of a dire situation. Their therapy caseload has been consistently low as admissions of new patients has also been nonexistent. On 5/26, I was informed that the facility was still in lockdown with multiple positive cases. They were on hold as the National Guard was to be dispatched to test all staff and residents per Governor orders. After that testing was complete, they were optimistic about seeing more patients/residents. Finally, on 6/04, I was informed that the National Guard had still not arrived at the facility. This meant that many things were on hold. They were very apologetic as they do not have control over these moving pieces. I have not heard from the facility since 6/04. Thus far, the facility is on track to improve the amount of residents with falls by 60%. Functional ability has improved 6%, balance ability has improved 8%, however gait has remained the same at -4%.

Clovernook:

On 4/1, I was informed that Clovernook had planned to set up the VSTBalance into their therapy gym starting the week of 4/6. Previously, Clovernook had stated that they were unable to use the technology previously due a myriad of complications, including therapy renovations. When stating that the newest battery-pack shipments (which were shipped to negate the notion of keeping the VSTBalance System in the gym and help with potential COVID complications) could help this issue, they stated that there were space limitations within the patient rooms. This means the therapy team was unable to return to the gym for quite some time. From there, I was unable to connect with the facility until 5/11, which was when it was communicated that the therapy gym needed to be “deep-cleaned” as it was used as a COVID station for nursing. Once the gym was cleaned, they would move back in and use the VSTBalance system. On 5/20, Clovernook admitted that everything, “has been crazy”. The facility was just trying to keep patients isolated. The gym was still being used as a nurses station for the quarantine unit. Not deep-cleaning had happened at that time. On 6/08, they were still waiting on the construction team to be cleared to get back in the facility for them to finish the therapy gym renovations along with the deep-cleaning. Finally on 6/24, it was confirmed that Clovernook was moving back into the gym. They were anticipating getting the VSTBalance system up and running during the week of 6/29. It is confirmed that Clovernook has finally used the system, however it was after the Quarter 2 time frame. Thus far, the facility is on track to improve the amount of residents with falls by 55%. We are unable to track specific improvements or declines in balance, gait, or function as the facility did not use the technology until after the end of Q2.

Countryside Manor:

I was unable to get any correspondence from Countryside Manor throughout April. Finally on 5/12, I heard from our project lead that his Therapists are feeling comfortable with the VSTBalance system. Previously, our team was met with some hesitation onsite as it was noted that his therapy team was apprehensive to new technology. Nevertheless, it was discussed that Countryside Manor would have a target list of 11 patients who were currently on therapy caseload that were pretty ambulatory. From here, their team would be able to develop a comfort level with the system. After that conversation, I have not been able to get in contact with the facility. Thus far, the facility is on track to increase 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 5/21 and has only assessed 6 patients.

The Glen:

On 4/7, our project lead discussed how their team was met with feelings of high anxiety. What was encouraging for them, however, was that activities were being performed in the hallways in the facility. They were able to use this to help boost morale. However, the very real presence of a dwindling caseload was overwhelming. While patients were enjoying the system and staffing was not an issue at the current moment, COVID definitely was overpowering overall moods within the community. On 4/30, it was discussed that the facility is continually learning how to continue assisting residents during this unpredictable time. There were, at the time, sufficient with PPE and following guidelines.. I have been unable to make contact with our project lead in May and June. Thus far, the facility is on track to improve the amount of residents with falls by 23%. Functional ability has improved 20%, balance ability has improved 31%, and gait has improved 26%.

Harrison Pavilion:

On 4/13 our project lead discussed that he was traveling to Cedarview to help their situation as well as remaining our project lead at Harrison Pavilion. Nevertheless, Harrison Pavilion was still doing “OK”. One main point for their lack of usage was they were unable to locate their VSTBalance Battery Pack which was originally shipped in March to help with COVID. On 5/15, I was able to again connect with our lead, however they were still unable to find their battery pack. On 5/26, our lead stated that he had stopped traveling to Cedarview and was remaining stationary at Harrison Pavilion. We were informed that patients, at this time, were not allowed to come to the gym, so their usage has seen a significant drop. They were still unable to find the battery pack. On 6/04, we were able to discuss that he was going to check in with maintenance to see if the battery pack could have been misplaced. Finally on 6/23, after a final attempt, they still could not locate the original battery pack. VirtuSense shipped out a replacement battery pack and it was confirmed that it wound up in the right hands. Thus far, the facility is on track to improve the amount of residents with falls by 63%. We are unable to track specific improvements or declines in balance, gait, or function as the facility has not used the system since 4/06.

Lincoln Crawford:

I was unable to get in contact with our project lead throughout the month of April. On 5/27, it was confirmed that our main contact was out with COVID-19. Their entire third floor was in isolation with patients. This would act as their COVID unit. The facility has been unable to use the VSTBalance. Their staff & therapy teams were “busy” caring for their residents who were isolated in their beds. The National Guard was to be at their facility to test staff & residents sometime on the week of 5/25. Once things returned to a somewhat normal state, I was told that she would get contact with me to amp up usage again. I was unable to get in contact with our lead throughout the month of June. Thus far, the facility is on track to improve the amount of residents with falls by 35%. Functional ability has improved 14%, balance ability has decreased -10%, and gait has decreased -7%.

Northcrest:

On 4/03, it was confirmed that everything there was going well. They had developed an internal plan which seems to be working great! I have been unable to get in contact with our project lead since then.Thus far, the facility is on track to improve the amount of residents with falls by 46%. Functional ability has improved 26%, balance ability has improved 3%, and gait has improved 4%.

Sunrise Manor:

On 4/13, it was confirmed that everything was going “well” at Sunrise Manor. They were still bringing patients down to the therapy gym if the patient was fine with going to the gym. On 5/26, our project lead discussed that they were only able to have one patient in the gym at a time. Wanted to use the battery pack. They have still yet to find the battery pack that we had sent out originally. 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 has not used the system since 5/19.

Traditions of Chillicothe:

On 4/06, it was confirmed that all of their outpatients were gone. 3-4 of their short-term patients were gone as well. All activities were in-room. Any new admits were required to have a two-week quarantine. They were offering 12-beds for COVID cases. Staffing was down substantially. On 4/23, our project lead stated that their caseload was as low as he's seen it there in nearly 13 years (his tenure at Chillicothe). None of their therapy staff were getting enough hours with the therapy caseload. Supplies were also dangerously low for them. They were very complimentary of the battery pack, stating that it was a very nice addition and that it makes the system easier to manage. On 4/30, admissions were not discontinued, but they were getting very few (5 within April). On 5/22, caseload was around 1/4th of its normal levels with any admits from the hospital having to be isolated in private rooms for 14 days. On 6/01, our project lead stated that they had 9 admits in May (compared to 30-35 within a typical month). On 6/19, they were confident that caseload would trend upwards and they would not need so many restrictions on the time that patients need to stay in-room. Thus far, the facility is on track to improve the amount of residents with falls by 51%. Functional ability has improved 23%, balance ability has improved 9%, and gait has improved 25%.

Westbrook Place:

On 4/21, it was confirmed that they were doing well with the system and had even more residents lined up to use the system! On 5/25, our project lead stated that our system has been able to help her with a quarterly QAPI report which she shares with administration. On 6/16, we were able to discuss that she thinks Westbrook Place is doing well. They are huge proponents and users in the gym. Soon, we will be coordinating a re-training of sorts for her and her team. They will be trying to encourage her team to use it more and even putting resident's on for evaluation specifically for fall prevention. Thus far, the facility is on track to increase the amount of residents with falls by 51%. Functional ability has decreased 5%, balance ability has improved 1%, and gait has improved 33%.

Overall during this quarter of the project, we were really restricted in how we were able to work with the ten partner facilities. Normally we would plan re-visits to all of the sites to ensure that everyone is trained properly on the system, go over how the project has been going on-site, and to help work through any issues that have come up in the first few months of the project after implementation. With not being allowed on-site, we tried switching all re-trainings to a virtual setting in addition to weekly training that had already been implemented in Q1. We quickly came to realize that the staff at the partner facilities did not have much time and attention to divert to anything else aside from infection control. We made sure to make ourselves available for any potential training, should anyone need a refresher course. We were able to schedule a couple training sessions done for staff members who had missed the initial training during the deployment day. The new Administrator at Lincoln Crawford and the new MDS Coordinator at Harrison Pavilion have both received training during this quarter. We are still waiting on confirmation from the new Administrator at Harrison Pavilion, to provide dates in which a training will be most feasible for her. None of these individuals were not in the initial training because they were not in their current roles when the project was first initiated.

Also, we were also hoping to work with the sites to gather much more baseline and re-assessment data as sites were getting a good portion of their initial baselines completed and we were moving past the 90-day recommendation for re-screening patients. As previously mentioned, COVID restricted the gathering of data and assessments during this quarter. With that being said, we have gotten responses from multiple DOR's and MDS coordinators stating that they are eager to get back to normal and be able to start using the VSTBalance system more in their respective facilities. Although the number of residents screened and re-assessed this quarter is significantly less than the first quarter, in total for the first two quarters, we feel we have already screened a good number of residents. So far, for the duration of the project, the partner facilities have been able to screen two-hundred and fifty-five residents across all of the facilities, and have re-screening data on 91 of those residents.

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. We have had trouble communicating with our project lead at the following facilities: Countryside Manor, The Glen, Lincoln Crawford, Northcrest. We suspect this trouble of keeping a good line of communication with them because of outbreak prevention. Aside from these few facilities, we were able to receive responses from DOR's and other key users telling us how they were handling COVID. Most of the responses were, discussing how they were doing everything they can to keep themselves and their residents safe.

The actions of our team at VirtuSense, because of these issues have really just been focused on support. We know that all of these communities are experiencing profoundly difficult times, so we have tried not to be too pushy with them in terms of trying to re-engage screenings and system usage. 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. We have been able to keep into contact with key drivers and have conversations about a game-plan for increasing usage moving past COVID. As stated above, these key drivers are eager to return to a sense of normalcy where they can start using the VSTBalance again and help improve the mobility of their residents. Once this re-surge of COVID cases dies down, we plan to have calls with the sites who are behind in gathering data to work out a plan to increase usage and get more residents on the VSTBalance. Once elective surgeries either start again or at least happen more frequently, these facilities can start to see an increase in their population. They will then have an easier time screening residents and gathering data.

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. While COVID has prevented staff members from being a part of these set training sessions, we still make sure to keep the regular times open in case someone may need training. We have also been able to schedule a couple of training sessions outside of those set weekly training times for a few staff members (previously mentioned..

Moving past this quarter, we plan to continue to provide as much support as we can to the partner facilities during this pandemic. We will continue to work with facilities that have the lesser amounts of data to try and boost usage and get a good plan to start screening residents once populations start to increase again. We also plan to revisit all partner facilities once restrictions on visiting nursing homes have been lifted and the pandemic is over. Until then, we will continue to work with the sites and keep up to date about their infection control protocols and restrictions so that when things ease up, we can start to re-focus on using the VSTBalance and screening residents so care staff can have objective data that will help develop plans of care and improve overall mobility and lower fall risk

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 Q2 usage was stemming from the long-term resident side. It's important to note that this piece of technology focuses on mobility, fall-risk, and improving upon baseline assessments. 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. In fact, maintaining current levels of ambulation and balance are considered successes for these levels of patients. Relating this to the goals and aims of this project, it's very important to note the decline in overall outcomes when comparing Q2 to Q1. We have reason to believe that without the short-term patient population who are most likely to improve upon baselines, a majority of the improvements will lower due to the inability to improve upon a pre-existing "High Risk" long-term patient.

To provide some data to this point, we were able to notice that our premonition of worsening outcomes had, unfortunately, come to fruition. The collective short-term population decreased their overall outcomes by 2% on function while the collective long-term population actually maintained their overall improvement. For balance, the collective short-term population dropped their overall improvements by 9% while the long-term collective dropped 6%. Finally, the short-term collective population dropped their overall gait improvements by 9% and the collective long-term population also dropped at 9%. Our reasoning as to why this issue is seen across our partnering facilities is due to not only the matter of long-term residents being the majority of assessed individuals, but also because of the worsening musculoskeletal system brought upon by isolation. More about isolation conditions is featured and discussed further in this section.

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. To provide context, the patient needs to start with their arms outstretched in front of them, parallel to the floor. We have seen, on multiple occasions, where the test begins with the patient's arms by their side. If the assessment begins with the patient's arms by their side, the VSTBalance system will assume that to be the starting position (outstretched arms). Therefore, when the patient reaches forward, the system will believe the patient reached a very long distance, when in reality they may have only reached a few inches. Our hopes were to travel back to the participating facilities this quarter to try and re-train staff members on this particular assessment. However, COVID made that impossible. We expect to continue to have some issues with user error in the sitting reach until we are able to visit the sites again when staff members onsite have more time for any form of refresher/training courses on the system.

Another problem that we have faced with the project has been top-down communication from participating organizations. For example, if an organization has multiple facilities participating in the project, some facilities seem to be more well-informed of the project and the purposes of it than others. Not only this, but facilities differ in their support for continued communication. If VirtuSense acts upon an issue with a participating facility for any reason, we have not been able to gain additional support to resolve the issue from the participating organization or third party contractor. This has happened on numerous occasions. When trying to get in contact with the respective organization that the facility belongs to, I have been met with little to no response as to how we can resolve the issue at hand. Not only has top down communication from corporate been an issue, but even on-site support has been somewhat shaky at times. For example, I have received little to no word from Countryside Manor or Lincoln Crawford. During this quarter, our anticipation was to continue to provide our support for continuous usage and develop an action plan in the midst of this pandemic. Traditional Standard-Operating-Procedures, for obvious reasons, no longer apply due to current state, county, and facility guidelines and protocols. Therefore, a new usage plan and platform needed to be developed. Unfortunately due to a lack of response and communication back to our team, we have often been met with no response or a seemingly uninterested program participation mindset. To resolve this issue, we have tried and tried again to structure a continuous and scheduled communication for support, however this attempt has proven futile for multiple facilities (a list of which facility has had a lack of communication is listed in the "Implementation Status" section under each facility's update status). From here, we will continue the push to regain lost communication and continue to build relationships as best as we can in the midst of the COVID chaos.

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. However, we are experiencing this problem at Countryside Manor. One of the therapists there pushed back a little on the technology saying that they would prefer to do it the traditional way that they were taught. To try and fix this challenge, we've had multiple discussions with the therapist about their concerns with the technology and talked through most of their issues. We also had a separate discussion with the Therapy Director to clarify the value and importance of the technology to have top-down communication to the on-site staff as well. We were able to work out a plan where the system would be introduced with the more ambulatory and cognitive patients and residents. This way, it would be an easy integration and use of the system without the hardships of a resident/patient who might be hard of understanding instructions or who might not be able to fully complete our four different assessments. Even with this process, system usage has stayed the same. We are still unable to determine if a lack of usage is due to this issue or COVID. However, we can only assume both are at play due to the minimal response and communication from the facility.

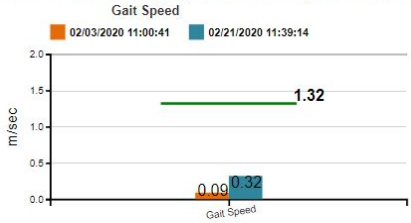
MDS Collection has also been somewhat hard to collect from organizations. We realize that MDS Coordinators operate under a very specific guideline to ensure that plans-of-care or enacted efficiently and effectively. Nevertheless, at times, collecting this data has proven itself to be pretty difficult. Considering COVID-19, collecting this data has proven to be even more taxing on these Coordinators. One reason for this has been because staffing issues witnessed from the facilities. Some facilities have experienced this problem throughout all of COVID, which has ultimately led to MDS Coordinators working the floor (i.e., attending to regular nursing duties). Another reason is because MDS submission requirements for facilities have been relaxed, due to COVID. According to part of the Section 1135 Waiver, CMS had decided to waive submission timeframes for MDS Coordinators[1]. 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.

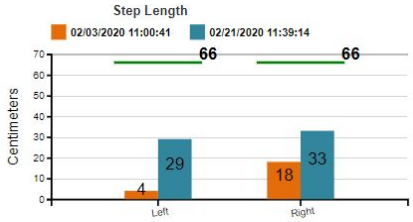
Also, human error is always a factor that can never be eliminated. Thus, some reported data on the cloud can appear to be somewhat skewed. Even as we cannot assume that information is biased or falsified, we have to consider human error if a system user does not assess the resident properly onsite. To provide an example, below is a patient's report pulled from our Cloud Database (name and facility have been intentionally left off). However, one can see in the Gait speed section, the patient had their original assessment performed on 02/03 with a 0.09 m/s gait velocity. Upon re-evaluation or discharge on 2/21, the patient was able to perform with a gait velocity of 0.32 m/s. Even though this is still considered a "Low" mobility for the patient's age group, their improvement in velocity is 256% with a 0.23 m/s improvement.

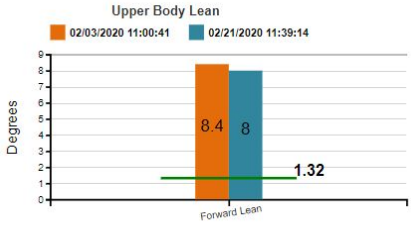
[1] Centers for Medicare & Medicaid Services. (2020). COVID-19 emergency declaration blanket waivers for health care providers. *CMS https://www. cms. gov/files/document/covid19-emergency-declaration-health-care-providers-fact-sheet. pdf*.

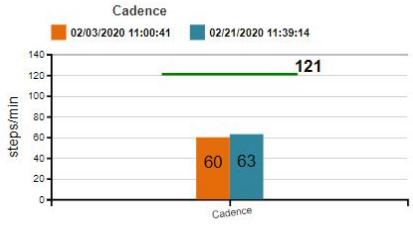
Gait Test

Description:
Gait analysis is the systematic study of human motion for measuring body movements, body mechanics, and the activity of the muscles. Gait analysis is used to assess and treat individuals with conditions affecting their ability to walk.[1]
Overall Mobility:
The patient's gait speed has increased by 0.23 m/sec from 0.09 m/s^{-1} to 0.32 m/s^{-1}.
This change occurred from 02/03/2020 to 02/21/2020
This is a 256% increase in gait speed and the mobility level remained the same i.e., Low..









References:
1. Levine DF, Richards J, Whittle M. (2012). Whittle's Gait Analysis Whittle's Gait Analysis Elsevier Health Sciences. ISBN 978-0702042652
2. Observational Gait Analysis by The Physical Therapy Department, Los Amigos Research & Education Center

Finally, COVID-19 has brought upon the world of Senior Living a strange, yet increasingly terrifying reality. Because of this, VirtuSense has been able to communicate with each and every facility about the transition in focus that they will undergo, a necessity among essential employees. 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 caused declines in usage. Staffing issues can create a multitude of issues as it reduces the amount of resources available for adequate care, treatments, and residential healthcare. There have also been reports from participating facilities that main drivers, lead Physical Therapists, and others are either isolated to another facility or are traveling between facilities. Not only this, but we have heard of occupancy and admission rates falling in response to this pandemic. Thus, the number of assessments performed are dwindling. COVID-19 has even caused more and more focus on specific documentation. In order to avoid potential lawsuits stemming from a provider's response to a positive coronavirus case, we have learned that onsite staff need to record all actions taken once a new piece of guidance has been released. Organizations will document what they previously knew before the issuance of a new guideline, when they officially knew of said guideline, and their response to officially enact the new protocol. Taking PPE protocols, for example, many facilities are using homemade or reused equipment, which causes an additional stress factor as noted by True, Cubanski, Garfield, Rae, Claxton, Chidambaram, and Orgera, "... although coronavirus outbreaks in LTC facilities have been widespread since the crisis began, less attention has been paid to LTC workers' access to PPE, despite reports of shortages in facilities."[2] Plus, facilities are continually facing stress from hospitals to admit patients who had been treated for COVID-19. Not only this, but resident families are pressed with fears of as well. Thus, families potentially are removing family members from their respective communities due to infection fears.

> "The caseload is as low as I've ever seen it here in nearly 13 years. No one is getting enough hours with the therapy caseload alone." - Matt Geise, DOR Traditions at Chillicothe

[2] True, S., Garfield, R., Rae, M., Claxton, G., Chidambaram, P., & Orgera, K. (2020, April 23). COVID-19 and Workers at Risk: Examining the Long-Term Care Workforce. Retrieved from https://www.kff.org/medicaid/issue-brief/covid-19-and-workers-at-risk-examining-the-long-term-care-workforce/

As noted by Kunz Roland and Minder Markus of the Board of the Association for Geriatric Palliative Medicine (FGPG), "While the whole population is at risk from infection with the coronavirus (SARS-CoV-2), older people – often frail and subject to multimorbidity – are at highest risk for severe and fatal disease."[3] Backing this claim is a recent Dashboard regularly updated by the Ohio Department of Health. This report found that within participating facilities who have reported documentation, our facilities are averaging a total of approximately 11 COVID cases among patients with an average of over 6 COVID cases among staff members. At this point in time, there have been 12 deaths from our participating facilities.

Confirmed cases within participating facility residents	Confirmed cases within participating facility staff
114	67

The continued infection fears are not only stemming from the risk of residents potentially catching the virus, but from staff members testing positive with the illness, then spreading to the community. 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. As noted by Cornwall and Waite, "Social disconnectedness is associated with worse physical health, regardless of whether it prompts feelings of loneliness or a perceived lack of social support. On the other hand, at all levels of social disconnectedness (or connectedness), the perception that one lacks social resources may take a toll on physical health"[4]. In other words, 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.[5] Some of the most common symptoms within this social disconnectedness and isolation is anxiety and depression. As outlined by Iaboni and Flint, "Depression and falls have a significant bidirectional relationship. Excessive fear of falling, which is frequently associated with depression, also increases the risk of falls. Both depression and fear of falling are associated with impairment of gait and balance, an association that is mediated through cognitive, sensory, and motor pathways.."[6] This fact also supports the notion that COVID-19 creates a multitude of issues within both the mind and body of SNF residents. The current state of participating facility residents raises the stakes of perceived isolation and depression, thus creating a novel mental health issue. This mental health only adds to a deteriorating wellbeing (mentally and physically) adding to a risk of fall and declining ambulation, balance, and function.

> "We are screening frequently and there has been a lot of decline associated with isolation, mentally and physically, because of the lack of interaction. People can't walk the halls or move their wheelchairs. The general isolation of residents due to COVID has multiple recurrent falls. We have some individual hospice residents who can't be seen by therapy who have fallen 6-7+ times" - Sarah Kline, MS, OTR/L

[3] 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).
[4] 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.
[5] Khosravi, P., Rezvani, A., & Wiewiora, A. (2016). The impact of technology on older adults' social isolation. *Computers in Human Behavior*, *63*, 594-603.
[6] 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.

3. STAKEHOLDER PARTICIPATION AND INVOLVEMENT

In this quarter of the project there has been 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 one patient at a time. The DORs, MDS nurses, and restorative teams have been as involved and using the system as much as they can/are allowed to during COVID. We have gotten some feedback from MDS nurses that due to COVID-19 they have not been as involved as they would like to be, though they expect that to change once things start to return to normal after the pandemic has passed. We have also heard the same response from multiple DOR's (sited in the implementation progress section). We have high hopes to bounce back in usage and gathering data after COVID has passed. 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. Due to the issues described in the implementation challenges, there has been little usage past the initial screening day for this quarter. By the time the second quarter ended, usage seemed to be back on the uptick. Our goal is to virtually re-train staff and to have usage pickup as soon as possible.

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. One quote we received from a Director of Rehab gives some insight into how they are seeing results:

> [The] VST Balance System has been an amazing addition to our therapy department and daily treatments. It has proven to be a nice quantitative measure for assessment and a fun and enjoyable treatment approach for our residents. We now have more quantitative measures to show progression with our residents. Recently a managed insurance was questioning the skilled level of services for a higher level psych-related patient. We were able to show the progression from our VST Balance Eval to discharge and show a reduction in fall risk which assisted in us securing coverage for his skilled stay. – Sarah Kline, MS, OTR/L

The restorative staff has also been using the system similarly to the therapy staff as much as they are able. They use the system to screen and capture data on the patients who are not on therapy caseload. 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. Some examples of the recommended exercises that have been assigned are listed below.

Exercise	#Reps or Duration	#Sets	Days	Frequency	#Days/week	Length(#Weeks)
Gastrocnemius Stretch 	30 **sec**	4	2	Day	7	4
Long Arc Quad (Seated Leg Lift) 	10 **reps**	3	2	Day	3	1
Heel Raises 	10 **reps**	3	3	Week	3	11

***Patient name and DOB have been omitted to ensure privacy**

In the project thus far, we have had great 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 for being six 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. Thus far in the project we have been able to screen 255 patients since implementation. We think involvement from the patients started to pick up as the staff became more knowledgeable about the system and its value after the deployment day. Facility staff have been able to explain the system and convey its value to the patients and their families more clearly, though unfortunately, COVID negatively affected their ability to do screenings. Compared to the 170 patients screened last quarter, as expected, we have seen a significant drop in usage across all sites due to COVID. We have also had great feedback from the patients and the users at the partner facilities. In addition to receiving the results from the patient satisfaction survey, we have also been trying to get quotes from the users of the system to show their, as well as their patients, opinions about the system. Another quote that shows off patient satisfaction comes from Andrew Needles, Director of Rehab, "What we like about the system is how it challenges the patient with the physical and mental aspect really making it a problem solving and sequencing task!" Due to increased fall risk due to social isolation and perceived disconnectedness, as stated previously, we believe that now is more important than ever to keep patient engagement up, which is why we are happy to have good patient involvement and participation leading to a good deal of patients benefiting from the system.

4. MANAGEMENT AND ADMINISTRATIVE ISSUES

We have had limited support from CCH regional and CCH Corporate throughout COVID-19. Throughout numerous attempts, we are only able to work with onsite personnel throughout this pandemic. It is no surprise that another big reason for the lack of communication could be stemming from the staffing issues caused by COVID. It has been documented that multiple facilities have had many staff members testing positive with COVID-19. It's also been documented that some lulls in communication are due to either staff members being pulled in all sorts of directions. On top of this issue, it has also been documented that multiple facilities are losing the amount of team members within the facility, i.e, job losses. For example, Traditions of Chillicothe has reported therapists unable to perform their usual hours. This causes main contacts to focus on multiple other issues related to their team and tasks at hand. As for project staff changes on our end here at VirtuSense, we have not experienced any changes in our staff in regards to the Ohio CMP project.

Another 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. Specifically, a main reason why our resident satisfaction is only at 88% was because Cedarview is our only participating facility to have any resident satisfaction results less than 75%, as they are currently at 50% satisfaction. For the resident surveys, however, we are able to identify the same user assessing the residents. Therefore, we can make the assumption that the individual who is assessing the resident may not be doing a good job of explaining the purposes of the VSTBalance System, why utilizing this system is beneficial to their health, and how to interpret the results. In addition, the specific user was NOT at the initial onsite training. When asking if the individual would like to be a part of our scheduled online training or an individual training outside of those hours, I was told that the Therapy DOR would like to provide the individual's training herself, without the guidance of a VirtuSense representative. From there, we are able to only speculate that this might be an initial cause for the subpar results. We have since tried to connect with the facility and user of the system, with no current contact back from the site.

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. These challenges span across a wide array of SNF departments to keep patients living happily and safely. 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. Once charged, facilities are able to take the system to any patient room or setting without the need of any additional electrical outlet (which was previously necessary). The purpose of the battery-pack is to allow the users of the system the ability to continue to assess patients and provide biofeedback training from a patient's room, as they are continued to be isolated and confined to specific areas. Our goal was to allow an alternative to help facilities continue on with their daily operations, while offering a tangible solution to assist one observed challenge. While this solution has helped give more access to the system in quarter two, we have come to realize there are additional barriers that are preventing perfect usage. 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. Realizing the importance of the project, demonstrating and showing an improvement among SNF patients is our primary goal. We want to ensure that everything VirtuSense is capable of doing at the ground level is met. While we continue to have challenges, we have found that just offering support and talking about what has been going on in facilities with staff members have gone a long way. While they have not been able to act on too much from the discussions we have been having, we have high hopes that once the pandemic has passed, usage will get right back to normal, if not get better! As stated above most of the staff members and main drivers are eager to be able to start using the system again.

Also, one instance where we were able to use adaptive learning to overcome a challenge came with the collection of MDS data from the partner facilities. As we were collecting de-identified data, we came to learn that the reporting of MDS data either varied slightly between sites or we were sent different reports when requesting falls data for the 2019-2020 year. Some partner facilities would send us a facility report, an assessment mix, and some just sent us the numbers for the requested MDS data items. We believe the variation in the reports we received came from some of the MDS coordinators either not understanding exactly what we were needing or were unsure how to exactly pull the requested data. To help address this issue, clear up confusion, and attempt to make the gathering of data consistent, we created a document that the MDS coordinators can use which gives a space to report the number of each item requested and has a section outlining the timeframe of the reporting period we were looking to get data from. This cleared up some confusion we had on our end trying to accurately comprehend the reports they sent us, made sure we were receiving data in a consistent format, and has made the job of collecting the MDS data easier for the MDS coordinators.

In regards to challenges with MDS data, we learned that item I3900 is not totally telling of the benefit of VSTBalance. Specifically, a score of I3900 references if a patient has an active hip fracture which has a relationship to current status, treatments, or monitoring. In other words, this specific item will be hard to reduce as any active hip fractures that do not happen within the facility are out of our control. As more individuals are admitted with an active hip fracture, the I3900 item will continue to increase. In further research and conversations with MDS coordinators participating in the project, we believe the MDS item we should be looking at is J1900 C, falls with major injury, and ask the facilities of these falls with major injury, how many hip fractures resulted in these falls. This will accurately capture the number of hip fractures a facility is experiencing on-site rather than how many patients' care plan is being adjusted by a hip fracture as a pre-existing condition. ***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.***

Similar to the challenge listed above, when looking at the total amount of falls a facility is experiencing, we have come to the realization that the MDS item J1800 does not accurately capture this total number. Again, in further research and conversation with MDS coordinators participating in the project, we have come to find out that J1800 is capturing the number of residents that have experienced a fall since admission or prior assessment. However, this MDS item does not capture if a patient experienced a fall more than once since admission or prior assessment. If we are looking at reducing the total amount of falls these partner facilities are experiencing, then we should be only looking at J1900 A, B, and C, falls with no injury, minor injury, and major injury, to capture the total amount of falls. When looking at the baselines and our progress in regards to falls with injuries, then we should only be looking at J1900 B and C, falls with minor and major injury, to accurately capture the number of falls with injuries these facilities are experiencing. Looking at J1800 for falls and J1900 for falls with injury, will give inaccurate falls numbers for these facilities. For example, if a resident experienced two falls since admission or prior assessment and both were with no injury, then that would be recorded as one entry for J1800 but two entries for J1900. So, if we want the total number of falls a partner facility is experiencing in a given time frame, then we would want to look at the numbers for J1900 A, B, and C. ***We were able to confirm with Amy Hogan per our conversation on 05/03 that J1900 was more conducive to understand the overall success of this project.***

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. Also, as we are only a quarter into the first year of the project, not all residents will have been able to take part in a screening with the system as we are operating off of Therapy Admission and Discharge. If a resident has not had a therapy script, they would not have a baseline or discharge on the VSTBalance system. 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. The patient satisfaction survey was a new feature we added to the VSTBalance solely for the purpose of this project and measuring satisfaction for one of the outcomes outlined in the project. We still had some issues to work through to be able to gather the results of the surveys once they had been taken by the patient after their second or third screening. 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. This is something that we will have to adapt to moving forward into future quarters and think of a new way to approach teaching users about the survey in order to see an increase in the number of the survey results we obtain. Even in quarter two, we still did not get much survey data. This is most likely because of the lack of assessments from the facilities, though we still had a significantly less amount of new survey results than the number of re-assessments for this quarter. We will have to continue to work with the partner facilities to convey the importance of this survey and get them to start getting more patients to take it at the end of an assessment. This is something we were hoping to accomplish during a revisit to the sites, though COVID made going back down to the facilities impossible this quarter. However, we hope we will be able to get a chance to revisit the sites in this upcoming quarter, pending the status of COVID.

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.