

2022

STRONGER

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Sept. 19–21, 2022

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Physical Rehabilitation Program for Long COVID Patients

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Learning Objectives

- Determine which patients are at risk for long-COVID-19 by assessing characteristic symptoms and using various questionnaires.
- Explain the three elements of this physical therapy protocol for long-COVID-19 patients.
- Develop a strategy for replicating the model for your own facility at a relatively low cost without expensive technological or medical intervention.



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Ellenville Regional Hospital

- 25-bed critical access hospital
 - Provides access point to health care system for community
- Financially self-sustaining without a parent company
- Profitable past 16 years
- 14,000 Emergency Department visits annually
- 35,000+ patient encounters annually
- Employs 250
- ERH is successful
 - Delivers on quality, outcomes, financial performance, and leadership at regional, state, and national levels

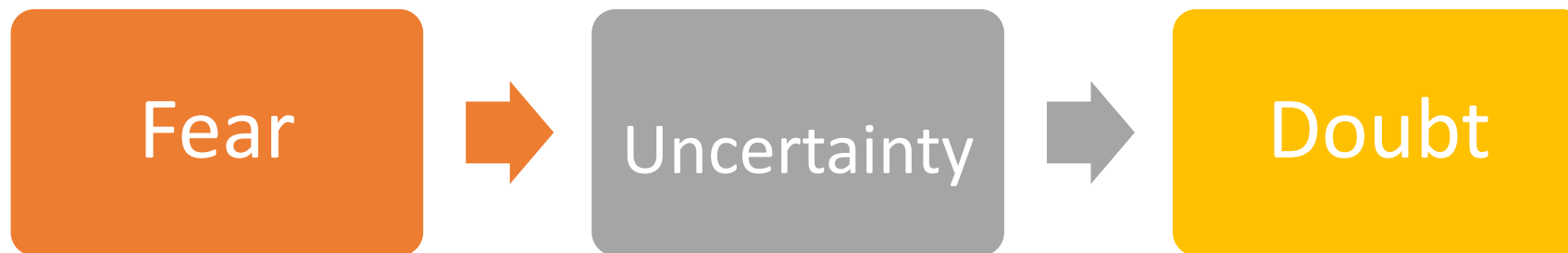


5 Domains Critical for Success



Impact of COVID-19 on a Rural Hospital

- **Employees**
- **Patients**
- **Community**
- **Outcomes**
 - Business Volumes
 - Opportunity for Innovation
 - Rehabilitation applied to COVID
- **F.U.D.**



F.U.D.: Fear, Uncertainty, Doubt

Long COVID



Why develop a program?

Sub-Acute Discharges - Achieved discharge criteria but still experiencing symptoms

- Fatigue
- Low Exercise Tolerance
- Self-Care Shortness of Breath
- Ambulation Level



Design, implement and test

Outpatient Program

- Physical Therapy
 - Strength training
- Respiratory Training
 - Breathing/Endurance
- Speech-Language Pathology
 - Cognition

CDC Post-COVID Definition

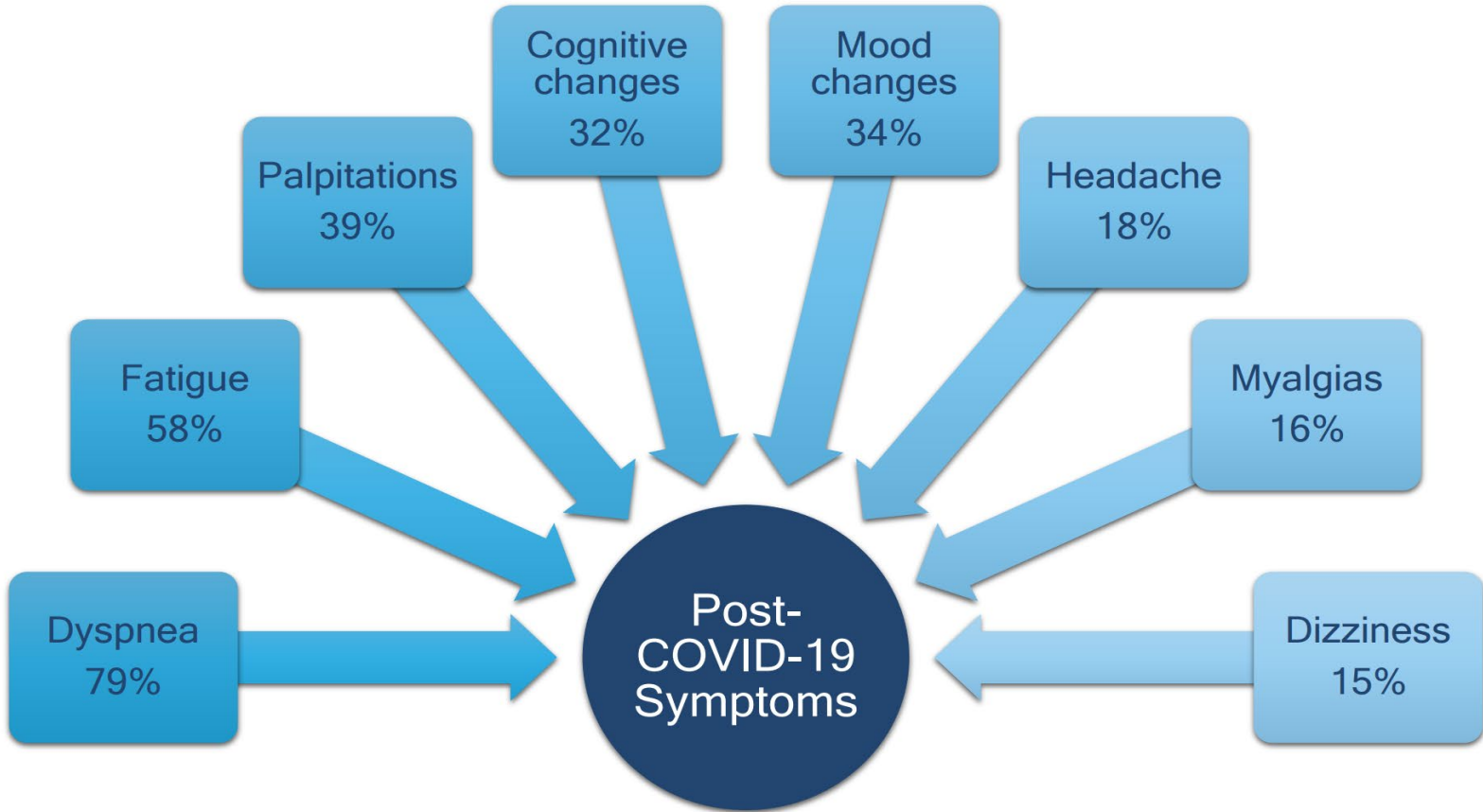
- “Post COVID conditions” is an umbrella term for the wide range of health consequences that are present more than 4 weeks after the active infection with SARS-CoV-2.
- Patients continue to express symptoms after four weeks of the initial positive COVID test.
- Symptoms are not associated with age, co-morbidities, or disease severity.
- Patients are not solely ones that were hospitalized, intubated, or in ICU.
- Many of these patients have never been hospitalized and are in their 40s.

“

FACT – 87% of patients diagnosed with COVID continue to have persistent symptoms 30 days after the diagnosis.

”

Long COVID Characteristic Symptoms



Specific Elements to Develop the Assessment Protocol

- Three elements woven into three different treatment protocols
- Protocols are based on the patient's level of functional impairment:
 - Cardiovascular/ Endurance training
 - Strength Training
 - Neuromuscular Re-education



ERH's Long COVID Program

Key elements to effectively assess the post-COVID population and diagnosis

- Developed THREE categories: Low-Level, Moderate-Level, and High-Level Functioning
- Patients categorized based on evaluation and testing performance

<u>Low</u>	<u>Moderate</u>	<u>High</u>
<ul style="list-style-type: none">• <u>DASI</u> score < 20 points• <u>Global-10</u> score <8 points• <u>6MWT</u>: Patient required 3 or more standing rests and/or required 1 seated rest	<ul style="list-style-type: none">• <u>DASI</u> score 21-40 points• <u>Global-10</u> score 8-15 points• <u>6MWT</u>: Patient required 1-2 standing rests	<ul style="list-style-type: none">• <u>DASI</u> score > 40 points• <u>Global-10</u> score 16-20 points• <u>6MWT</u>: Patient required NO standing or seated rest

June 2021 – Launched Long COVID Program with specific treatment protocols

Evaluation and Screening Process

SUBJECTIVE FORMS

- PROMIS Global- 10 Questionnaire
 - i. PROMIS Global is a subjective tool that assesses the patient's general health; physical and mental health and looks at their overall quality of life.
 - ii. This subjective tool has been shown to have statistical significance
- Duke Activity Score Index (DASI)

OBJECTIVE MEASUREMENTS

- Brief Interview for Mental Status (BIMS)
- Incentive Spirometer
- Grip Strength
- 30-second sit to stand
- 6 Minute Walk Test (6MWT)
- Tinetti Performance Oriented Mobility Assessment (POMA) or BERG Balance Scale
- Upper and Lower quadrant screening (ROM/strength)

HIIT Training (High Intensity Interval Training)

LOW

Step One 4 minutes

- Monitor METs
- # total steps
- Rest 2-3 minutes

20-30w/30R:

- 20-30 seconds work
- 30 seconds rest
- Each exercise 1x

Rest 2-3 minutes

MODERATE

10P/10w/20R (8x):

- 10 seconds **prep**
- 10 seconds **work**
- 20 seconds **rest**
- Repeat 8x

Rest 2-3 minutes
(Switch equipment)

10P/10w/20R (8x):

- 10 seconds **prep**
- 10 seconds **work**
- 20 seconds **rest**
- Repeat 8x

HIGH

10P/20w/10R (8x):

- 10 seconds **prep**
- 20 seconds **work**
- 10 seconds **rest**
- Repeat 8x

Rest 2 minutes
(Switch equipment)

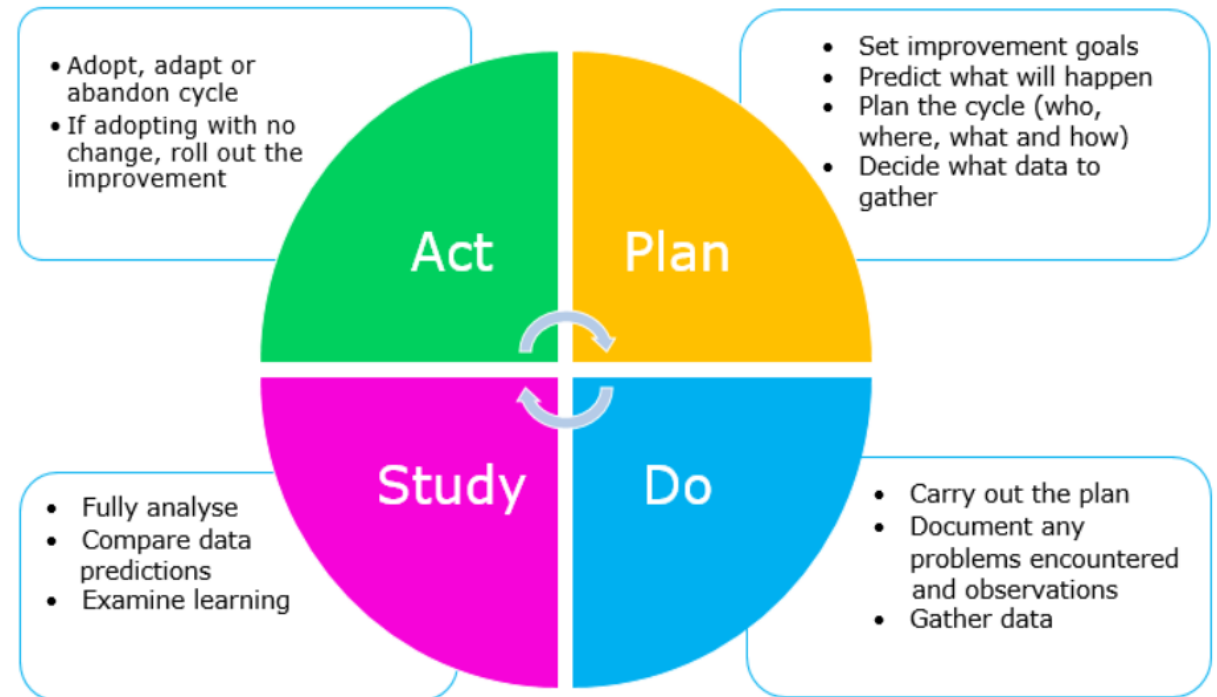
10P/20w/10R (8x):

- 10 seconds **prep**
- 20 seconds **work**
- 10 seconds **rest**
- Repeat 8x

METs: Metabolic Equivalent of Tasks

Data

- 21 participants
- **Improvement Measurements Criteria**
 - Initial Evaluation to Discharge in 6MWT distance – 164 feet considered statistically significant
 - DASI – Indicates improvement in activity level
 - Incentive Spirometer maximal inhalation
- **Exclusions:**
 - 6 non-compliant
 - 1 medically discharged for cardiac issues
 - 1 not appropriate due to profound developmental delay
 - Wheelchair-bound



Data

- **Patient Demographics:**

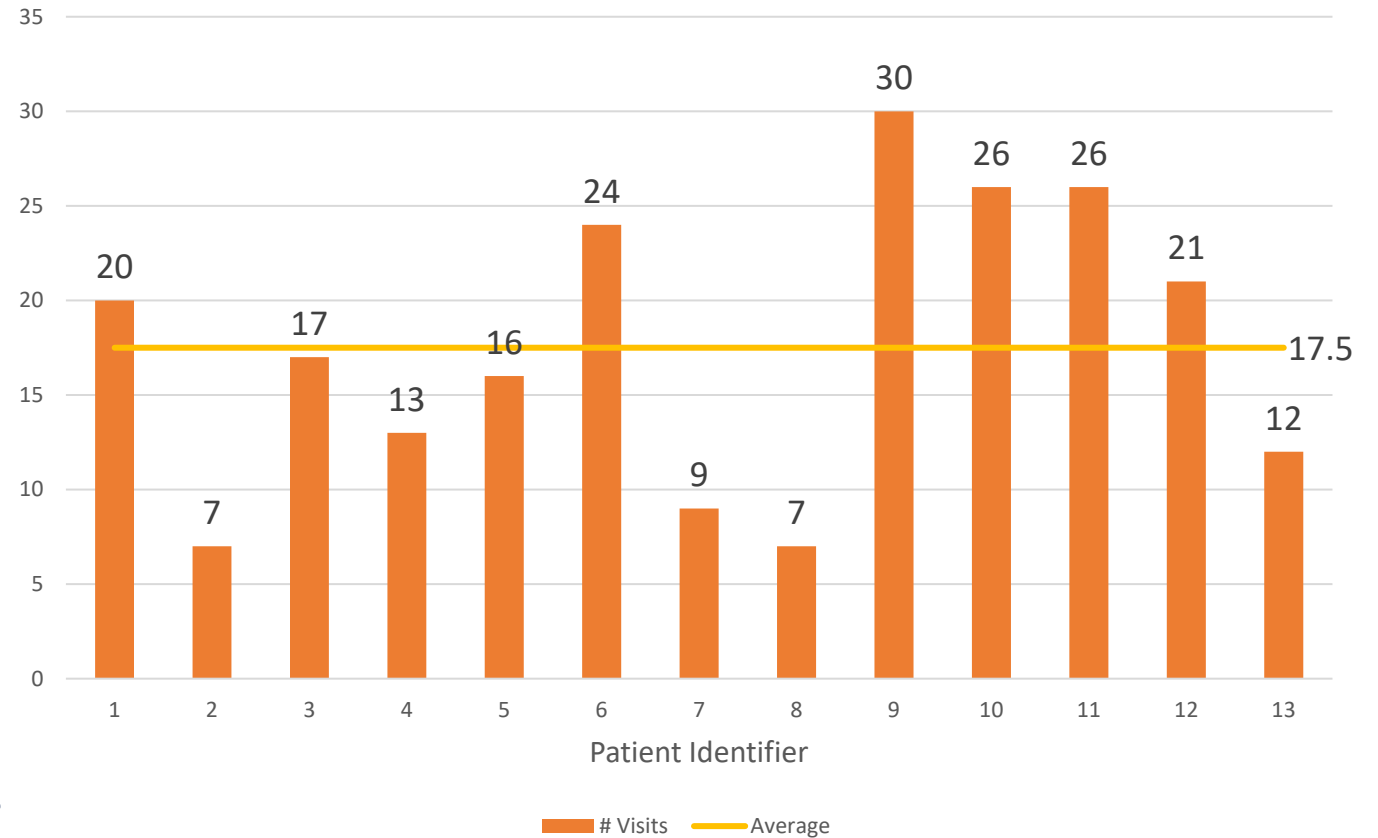
- 9 Females
- 4 Males
- Age Range 39 y/o – 87 y/o
- All patients residing in the community except for one patient

- **Excluded Patient Demographics:**

- 5 Females
- 3 Males
- Age Range 42 y/o – 86 y/o

Total Study Population – 21 patients

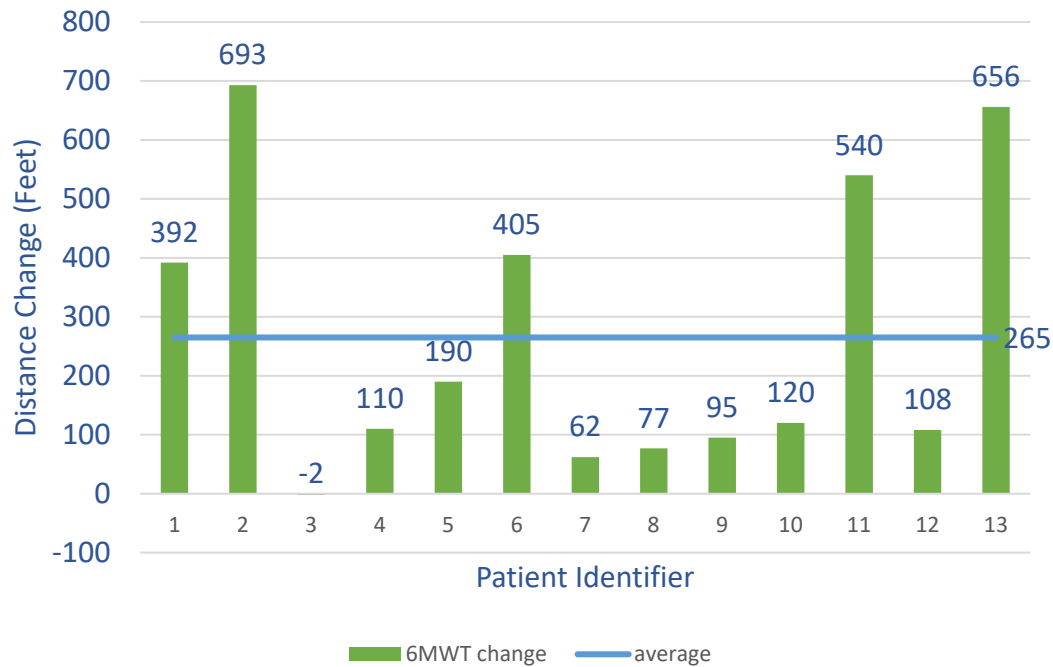
Total # Visits by Patient



Average # of Visits - 17.5

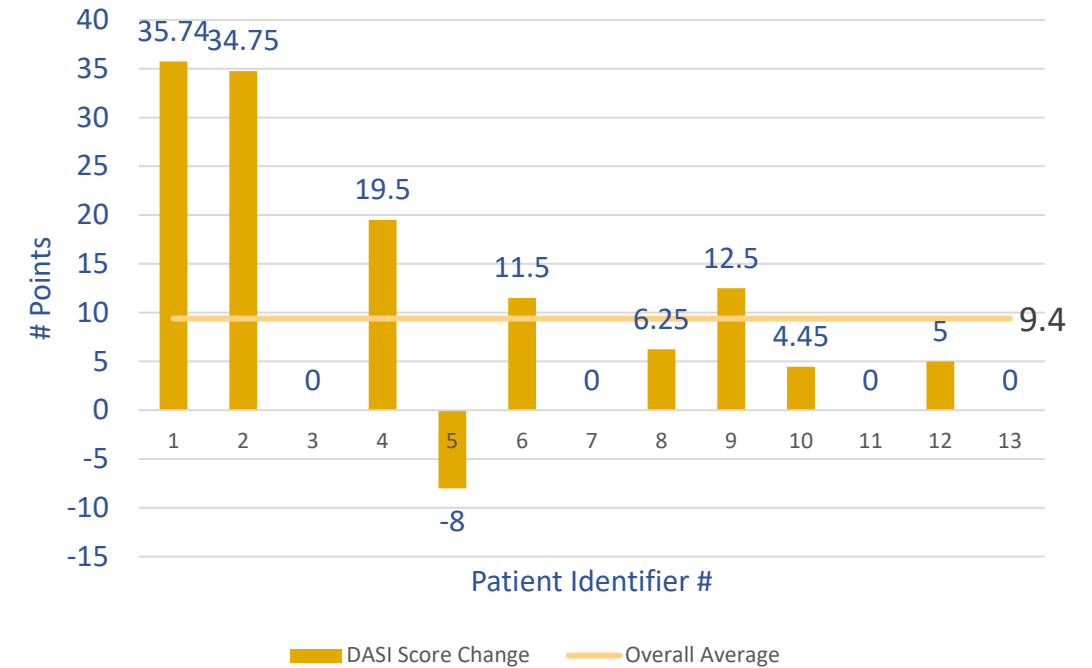
Data

6MWT Distance Change Admission to Discharge



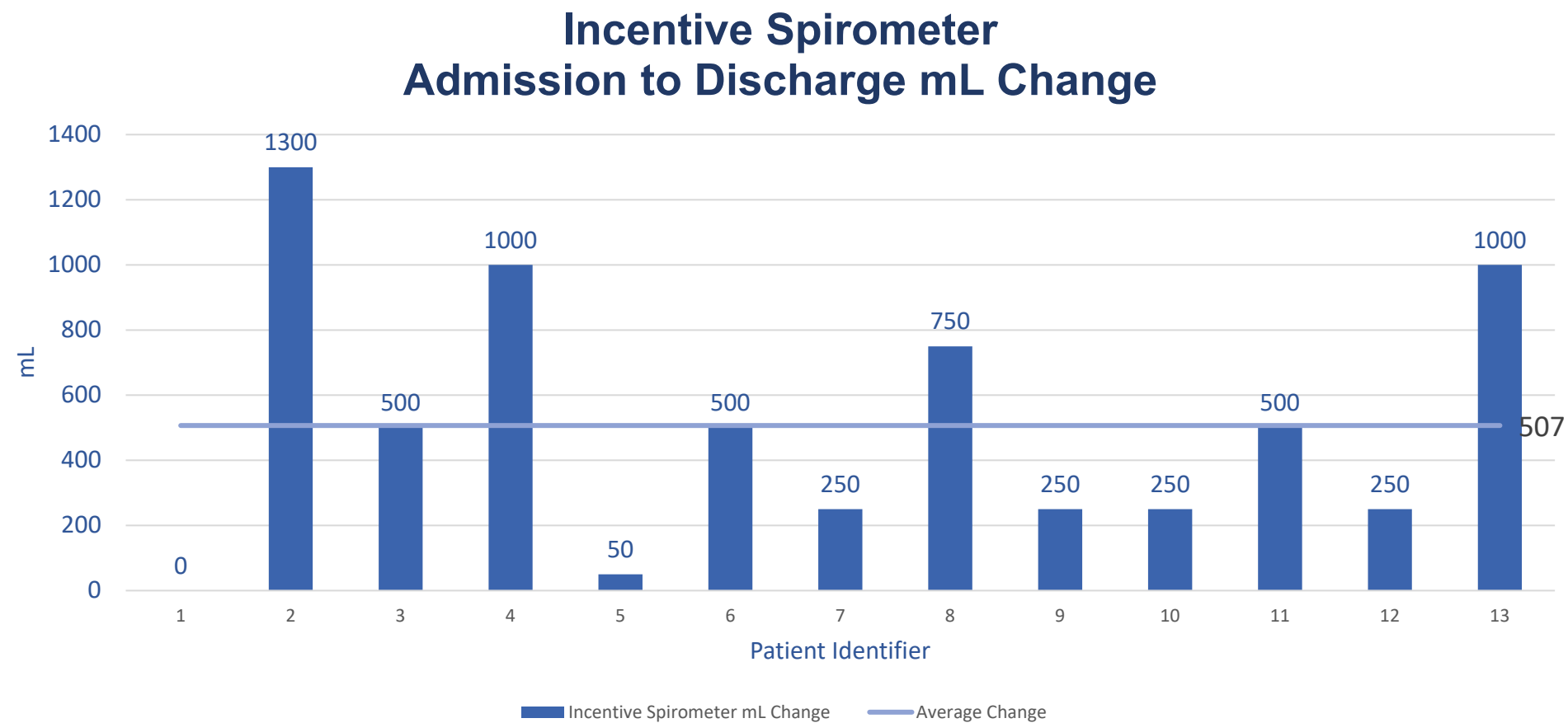
Average 6MWT from Admission to Discharge – 265 feet

DASI Admission to Discharge Score Change



Average DASI Score Change from Admission to Discharge – 9.4 points

Data



Average Change from Admission to Discharge: 507 mL

Replicate the Model



Train both the PTs and PTAs on the protocol to ensure interrater reliability



Patient scheduled for one-hour session twice a week



Incentive Spirometers with replaceable mouthpieces



Agility ladder for high-level functioning patients



Pedometer to accurately measure the six-minute walk with a stopwatch



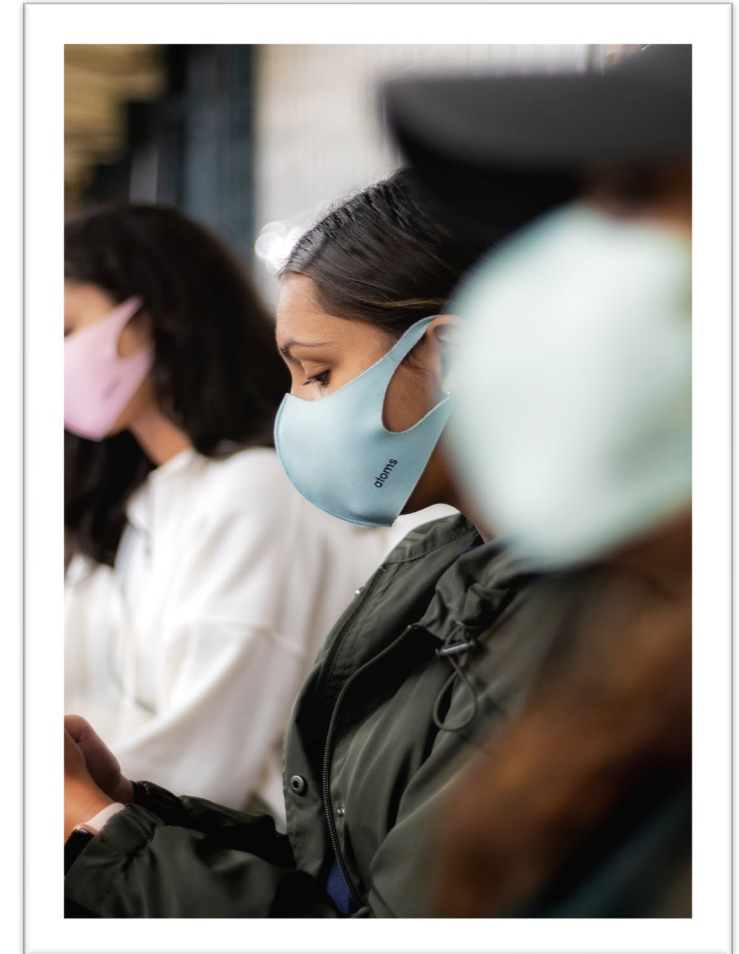
Consultation with the Respiratory Therapist



Consultation with the Speech Language Pathologist

Lessons Learned

- Some objective measurements may be skewed based on endurance levels and post-exertional malaise:
 - For example, if you complete balance testing and 30 seconds sit to stand prior to 6MWT, the patient may not be able to complete 6MWT to their true potential if it was performed first.
 - The order of objective testing should always remain the same from one assessment to the next.
 - There is evidence of psychosomatic overlaying when the Global-10 does not change, but every other objective measure improved with statistical significance.



Key Takeaways

- Patient-centered care comes first
 - Each category of therapy has shown to be effective
 - Each therapy is important for recovery
 - Each patient may not be able to participate in the program in its entirety
 - Modification may be necessary
 - Categories are important to maintain but flexibility in the regiment is a must.
- Long recovery process
- Average length of recovery remains unknown
- Advocacy to insurance companies for continued coverage for the patient using other subjective forms such as LEFS or ABC (lower Extremity Functional Scale, Activity-specific Balance Confidence Scale).
- Mental Health is key (Group sessions or counseling/behavioral therapy is a MUST)
- Utilizing Speech Language Pathology in conjunction with Physical Therapy helps to improve the patients' functional outcomes.

Questions?



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