# Examining Patient Demographics Within a Physical Therapy (PT)-Driven Proning Protocol During COVID-19 Pandemic

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## Published In/Presented At

Wood, C., Stoddard, S.M., Sawyer, D., Pechulis, M., Skrzat, J., Fuse, M., Fox, A., Wetzler, E., Loose, M., Vetter, R., Musco, K., Lenivy, C., & Duka, S. (2022). *Examining patient demographics within a physical therapy (PT)-driven proning protocol during COVID-19 pandemic.* Poster presented at Lehigh Valley Health Network, Allentown, PA.

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# Examining Patient Demographics Within a Physical Therapy (PT)-Driven Proning Protocol During COVID-19 Pandemic

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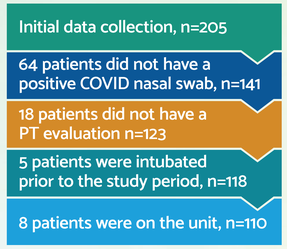
## Purpose and Hypothesis

- The purpose of this study to examine patient demographics within a PT-driven proning protocol on patients admitted with COVID-19.
- We hypothesized there is no difference in patient ethnic composition/demographics between prone positioning groups in relationship to ICU admissions

## Number of Subjects

- 110 subjects were included in this study from the original 205 charts reviewed
  - Inclusion criteria: >18 years old, PT consult, admitted to the medical-surgical ward at Lehigh Valley Health Network (LVHN) between 3/1/2020 – 6/30/2020, (+) COVID-19 test via nasal swab, receiving supplemental oxygen, definitive discharge location
  - Exclusion criteria: Children, pregnant women, prisoners




## Materials and Methods

- A retrospective chart review was conducted of patients admitted to hospital diagnosed with COVID-19 who received a PT Prone Positioning evaluation outside of the intensive care unit (ICU) between 3/1/2020-5/31/2020.
- Patient demographics, hospital course information and Prone Positioning Group were collected
- Patients were categorized into one of three groups based on their ability to achieve the prone position during the PT session:
  - Independent (proning independently)
  - Assistance (need assist to proning)
  - Special Considerations (unable to achieve a proning position)

### INDEPENDENT

- Patient able to achieve and maintain prone position without assistance
- **Plan of Care:** Patient Education, Therapeutic Exercise, Progressive Mobility Training if needed

### ASSISTANCE

- Patient able to achieve and maintain prone position with assistance
- **Plan of Care:** Remediation of Mobility Deficits, Patient Education, Therapeutic Exercise, Rom Exercise Program, Progressive Mobility Training

### SPECIAL CONSIDERATIONS

- Patient unable to achieve and/or maintain prone position despite assistance. Patient may have achieved alternative positioning in 1/4 side lying, side lying, or 1/4 prone.
- **Plan of Care:** Remediation of Mobility Deficits, Patient Education, Therapeutic Exercise, Rom Exercise Program, Progressive Mobility Training

## Results

- Patient demographics and prone positioning group assessed, there was a statistically significant difference in median age between groups (p<0.0001):
  - Independent group (n=50) were younger, with a median age of 49 (IQR:41.0-66.0)
  - Assistance group (n=21) with a median age of 72 (IQR:61.0-83.0)
  - Special Considerations group (n=39) with a median age of 79 (IQR:67.0-86.0).
- There was also a statistically significant difference in median BMI between groups (p=0.0398):
  - Assistance group had lower median BMI of 25.3 (IQR:21.9-32.0)
  - Independent group median BMI of 31.2 (IQR:26.4-35.5)
  - Special Considerations group median BMI 29.5 (IQR:25.0-33.4)
- In addition, there was a significant association between patient ethnicity and the prone positioning groups (p=0.0070).
- In a post hoc analysis, subjects were classified into two categories based on their ability to obtain the prone position:
  - Independent (n=50) subgroup
  - Non-Independent (n=60) subgroups
- There was no significant association between ethnicity and ICU admission:
  - Independent group (n=10,majority Hispanic heritage,20% ICU transfers 10/50)
  - Non-Independent group (n=18,majority white,30% ICU transfers 18/60)
- Associations between ICU transfers and death of patients with COVID-19 based on their ability to achieve the prone position is summarized in another poster presentation.

## Conclusion

- Significant differences were found between ethnicity and prone positioning groups.
- Significant differences were also found for age and BMI between prone positioning groups.
- There were no significant ethnic composition/demographic differences found with those subjects admitted into ICU between patients who were and were not able to independently obtain the prone position

## Outcomes

| Characteristics | Total Sample (N=110) | Prone Positioning Group | | | p-value |
|---|---|---|---|---|---|
| | | Independent (N=50) | Assistance (N=21) | Special Considerations (N=39) | |
| Age, years median(IQR) | 66.0 (49.0-82.0) | 49.0 (41.0-66.0) | 72.0 (61.0-83.0) | 79.0 (67.0-86.0) | <0.0001[a] |
| Ethnicity n(%) | | | | | 0.0070[c] |
| American Indian or Alaska Native | 0 | 0 | 0 | 0 | |
| Asian | 5 (4.6) | 3 (6.0) | 1 (4.8) | 1 (2.6) | |
| Black or African American | 6 (5.5) | 4 (8.0) | 1 (4.8) | 1 (2.6) | |
| Hispanic or Latino | 44 (40.0) | 26 (52.0) | 9 (42.9) | 9 (23.1) | |
| Native Hawaiian or Other Pacific Islander | 0 | 0 | 0 | 0 | |
| White | 51 (46.4) | 14 (28.0) | 9 (42.9) | 28 (71.8) | |
| Other | 4 (3.6) | 3 (6.0) | 1 (4.8) | 0 | |
| BMI, kg/m2 median(IQR) | 29.7 (25.0-33.6) | 31.2 (26.4-35.5) | 25.3 (21.9-32.0) | 29.5 (25.0-33.4) | 0.0398[a] |

Abbreviations: IQR=interquartile range. SD=standard deviation. BMI=Body Mass Index.
[a]Kruskal Wallis test [c]Fisher's Exact test

## Clinical Relevance

- The significant differences between prone positioning groups and patient demographics demonstrate the potential importance of culture and education within this PT-driven non-ICU proning protocol.
- With pandemic policies limiting interpretation services, communication was challenging and could limit a patient's ability to achieve prone.
- However, in post hoc analysis ethnicity did not have an association with ICU admission within prone subgroups.
- Future research can examine the potential effects of culture and ethnicity on clinical outcomes on a larger scale when programs such as a PT-driven Proning Protocol are implemented

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