METHODS

DEFINITIONS: This database contained the following linked elements for each resident: residents in 27 nursing homes in the state of Colorado. HIPAA compliant, de-identified data was obtained from the AnalytiCare anemia and pressure ulcers clinical outcomes including: Anemia Pressure Ulcers Hb Range Exclusion criteria (as reported on MDS):

- Recent reports that have included LTC residents in the study population suggest that anemia may – Reduced quality of life
- Impaired physical functioning
- Increased risk of falls
- Increased risk of dementia and depression
- Anemia has been linked as a pathophysiology factor for the development of PU

Anemia was defined using the World Health Organization (WHO) definition: 

- Anemic status

Race/Ethnicity Cerebral Palsy Hypertension Seizure Disorder

- Arthritis Diabetes Mellitus Paraplegia

- Female Bone Fracture (Pathological) Hip Fracture Quadriplegia

- Total Patients

% or mean (sd)

n=760

Table 5: Logistic Regression Model for Hemoglobin Range and Pressure Ulcer

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% Lower Bound</th>
<th>95% Upper Bound</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkinson's Disease</td>
<td>2.82</td>
<td>1.10</td>
<td>7.26</td>
<td>.032</td>
</tr>
<tr>
<td>Hip Fracture</td>
<td>1.68</td>
<td>0.98</td>
<td>2.89</td>
<td>.059</td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
<td>2.31</td>
<td>1.06</td>
<td>5.04</td>
<td>.350</td>
</tr>
<tr>
<td>Unknown Educational Level</td>
<td>2.39</td>
<td>0.77</td>
<td>7.38</td>
<td>.130</td>
</tr>
<tr>
<td>Arthritis</td>
<td>2.33</td>
<td>1.02</td>
<td>5.32</td>
<td>.046</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>1.12</td>
<td>0.43</td>
<td>2.92</td>
<td>.793</td>
</tr>
<tr>
<td>Paraplegia</td>
<td>2.00</td>
<td>0.68</td>
<td>5.82</td>
<td>.241</td>
</tr>
<tr>
<td>Paralyzed</td>
<td>0.63</td>
<td>0.26</td>
<td>1.50</td>
<td>.343</td>
</tr>
<tr>
<td>Female</td>
<td>2.07</td>
<td>0.91</td>
<td>4.65</td>
<td>.094</td>
</tr>
</tbody>
</table>

Overall, 9.3% of all residents were reported to have PU. The difference in prevalence rates across the full Hb range was significant (P<.001) with a 2.23 higher odds of having a pressure ulcer, when compared to the non-anemic reference case. The impact of anemia interventions was not evaluated. The cause of anemia was not determined. Other important factors relevant to the development of pressure ulcers may not have been assessed due to limitations of the research. This table shows findings for the adjusted model, this time substituting hemoglobin stage for anemia status, and removing the interaction term with gender.

Table 4: Predictive Model of Pressure Ulcers Based on Anemia Status and Hgb Range

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% Lower Bound</th>
<th>95% Upper Bound</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemia Status</td>
<td>2.23</td>
<td>1.76</td>
<td>2.84</td>
<td>.000</td>
</tr>
<tr>
<td>Hemoglobin Level</td>
<td>11 to &lt;12</td>
<td>1.26</td>
<td>0.91</td>
<td>.158</td>
</tr>
<tr>
<td>12 to &lt;13</td>
<td>1.00</td>
<td>0.72</td>
<td>1.35</td>
<td>.999</td>
</tr>
<tr>
<td>13 g/dL</td>
<td>1.00</td>
<td>0.72</td>
<td>1.35</td>
<td>.999</td>
</tr>
</tbody>
</table>

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