A Model for Integrating PNPs as Hospitalists

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Background
Certified pediatric nurse practitioners (CPNPs), specifically CPNPs who are nationally board certified in acute care, possess specialized knowledge and hospital-based clinical training which allows them to care for acutely ill children. Benefits of including CPNPs on a hospitalist service include:

- Provide quality care and promote optimal patient outcomes
- Decrease health care costs
- Decrease length of stay (LOS)
- Fiscally beneficial when working at their full scope of practice
- Improve patient and provider satisfaction
- Improve medical and nursing education

Despite these benefits, there are still barriers due to lack of knowledge regarding their training which allows them to care for acutely ill children. Benefits of including CPNPs into the hospitalist team (see Figure 2) and presented to key collaborators at (CPT code 99222) per Georgia Medicaid (see Table 2).

Aim
To develop a care delivery model that integrates the use of CPNPs as hospitalists in a children’s hospital, emphasizing their fiscal benefit.

Methods
Four main themes were identified in the literature relating to the benefits of using CPNPs in the acute care setting (see Figure 1). IRB review and project approval was obtained. Patients’ electronic health records that met the following criteria were reviewed: ages 1 to 18 years-old admitted to the hospitalist service between November 1, 2019, through March 31, 2020, for one of the top three most common diagnoses.

Patient records reviewed (N = 172) were assessed for LOS in comparison to targeted LOS (TLOS). Cost per hospital day was also collected. Data were analyzed to determine potential cost savings by reducing LOS, inclusive of CPNPs in the new model (see Table 1).

Average annual salaries for physicians and CPNPs in the state of Georgia were utilized to calculate adjusted revenue based on day of admission for a mild severity patient (CPT code 99222) per Georgia Medicaid (see Table 2).1,12

Hospitalist service daily census for 2019-2021 was collected to evaluate patient-to-provider ratios to help determine need for CPNPs.

A new care delivery model was developed outlining how to implement the role of CPNPs into the hospitalist team (see Figure 2) and presented to key collaborators at the institution for consideration of including CPNPs on the pediatric hospitalist service.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number of Diagnoses</th>
<th>Target LOS (days)</th>
<th>LOS Over Target (days)</th>
<th>Cost Per Day</th>
<th>Potential Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronchiolitis</td>
<td>87</td>
<td>3</td>
<td>99</td>
<td>$564</td>
<td>$55,836</td>
</tr>
<tr>
<td>Asthma</td>
<td>50</td>
<td>3</td>
<td>10</td>
<td>$662</td>
<td>$6,620</td>
</tr>
<tr>
<td>Diabetes</td>
<td>35</td>
<td>2</td>
<td>32</td>
<td>$466</td>
<td>$14,912</td>
</tr>
<tr>
<td>Total Potential Savings:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$77,368</td>
</tr>
</tbody>
</table>

Table 1: Potential Savings by Decreasing LOS: November 2019-March 2020.

Outcome
The top three, most common diagnoses were identified as bronchiolitis, asthma exacerbation, and diabetes management (see Table 1).

- Bronchiolitis (n = 87), average LOS of 3.4 days, TLOS of 3 days. Hospital days above target 99, potential cost savings of $55,836.
- Asthma exacerbation (n = 50), average LOS of 2.2 days, TLOS of 3 days. Despite shorter LOS, 16% of patients had LOS above target, a potential cost savings of $6,620.
- Diabetes management (n = 35), average LOS of 2.7 days, TLOS of 2 days. Hospital days above target 19, potential cost savings of $14,912.

Total potential savings by reducing LOS for the top three diagnoses over a time frame of 5 months is $77,368.

Hospitalist average daily census for 2019 was 21 patients. Average daily census for 2020 (11.8) and 2021 (14.3) were much lower, likely due to COVID-19 pandemic. Utilizing pre-pandemic data, the hospitalist service census would likely benefit from the addition of a third provider team.

Discussion
In conjunction with CPNPs high level of education and training, their cost-effectiveness and ability to care for hospitalized children makes the addition of a CPNP-led hospitalist provider team the most fiscally beneficial solution for improving the quality of care and patient outcomes.

Based on patient LOS and patient-to-provider ratios, there is a need for hospitalist CPNPs at Children’s Hospital of Savannah. However, more information is needed on provider and patient satisfaction, resident achievement, and nursing communication.

Implications
To preserve physician retention, maintain a robust residency program, and improve patient access to care, Children’s Hospital of Savannah will need to expand their hospitalist service to include CPNPs as they have the potential to:

- Alleviate physician burn-out1,4,7
- Enhance the residency program2,3
- Improve patient outcomes1,2,5,7

Lessons Learned:
Project needed adequate timing for administrative planning. The impact of COVID-19 made patient-to-provider ratios and hospital growth difficult to determine.

Table 2: Comparison of Adjusted Revenue for Salary Based on CPT Code 99222.1,12

<table>
<thead>
<tr>
<th>Team</th>
<th>Adjusted Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPNP</td>
<td>$19,605</td>
</tr>
<tr>
<td>MD/DO</td>
<td>$40,100</td>
</tr>
</tbody>
</table>

Table 2: Comparison of Adjusted Revenue for Salary Based on CPT Code 99222.1,12

References

Figure 1: Potential Benefits of Hospitalist CPNPs.1-7

Figure 2: Summary of the New Hospitalist Care Team Model Inclusive of CPNPs.