Increase Staff Utilization of Occlusive Interface in Micro-Preemie Babies on BCPAP

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**Problem/Impact Statement:**
A micro-preemie characterizes any baby born before 26 week gestation. Before 26 weeks, neonates are incredibly fragile as their digestive systems are immature, their lungs are not fully developed, and a myriad of other issues resulting from decreased development before birth. Premature neonates present many challenges to care as they need many special precautions taken to overcome their fragility. Intubation is commonly needed for long term respiratory support as micro-preemie’s lungs are not fully developed. An alternative mechanism to support lung development is non-invasive ventilation. However, respiratory failure, positioning, and their high susceptibility for skin break down create problems for non-inverse ventilation. By increasing staff buy in for use of an occlusive interface, while providing various forms of non-invasive ventilation in the NICU, it is shown that there will be fewer complications for micro-preemies needing this support.

**Countermeasures**

<table>
<thead>
<tr>
<th>Action</th>
<th>Owner</th>
<th>Completion Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build survey to send to NICU staff to identify barriers to using an occlusive interface</td>
<td>DI/KK</td>
<td>3/28/2019</td>
<td>Complete</td>
</tr>
<tr>
<td>Survey NICU RN and RRT staff</td>
<td>DI/KK</td>
<td>4/22/2019</td>
<td>Complete</td>
</tr>
<tr>
<td>Analyze survey data collected from NICU staff</td>
<td>DI/KK</td>
<td>4/25/2019</td>
<td>Complete</td>
</tr>
<tr>
<td>Revise neonatal non-invasive ventilation policies to include use of occlusive interface system and get appropriate approvals</td>
<td>DI/KK</td>
<td>5/30/2019</td>
<td>Complete</td>
</tr>
<tr>
<td>Develop educational tools to address concerns raised by the survey results, including a competency check off</td>
<td>DI/KK</td>
<td>5/17/2019</td>
<td>Complete</td>
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<tr>
<td>Provide education to 100% of NICU RN and RRT staff, including completion of the mandatory competency</td>
<td>DI/KK</td>
<td>6/14/2019</td>
<td>Complete</td>
</tr>
<tr>
<td>Resurvey NICU staff to compare comfort level with using occlusive interface</td>
<td>DI/KK</td>
<td>6/29/2019</td>
<td>Complete</td>
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</tbody>
</table>

**Outcomes**

Compared the use of the two interfaces available, RAM and F&P, for the four months prior to and after education focused time. We focused on all babies < 28 weeks gestation age changed from RAM to F&P within one hour of admission to the NICU. We reviewed data 4 months prior and 4 months after project start.

**Next Steps**
Our next steps include continued monitoring of compliance and education. Compliance and Education will include:
- Interface/BCPAP and NIPV policies have been approved and posted online
- Skills Fair Station is scheduled for the NICU Respiratory Therapy staff
- Skills Fair Station for the NICU Nursing staff will be requested by RT to include this interface