Bubble CPAP (bCPAP) is a minimally invasive respiratory support system that is commonly used in Neonatal Intensive Care Units (NICUs) to alleviate the symptoms of Respiratory Distress Syndrome and promote healthy lung development. However, commercial bCPAP systems have a reported failure rate of 35 to 50%. When bCPAP fails, the neonate is effectively removed from respiratory support and is at risk of developing hypoxia related complications.

Augment minimally invasive respiratory support systems for neonates experiencing RDS in order to reduce hypoxia related complications and promote healthy lung development.

Our Goal

A two-solution system that is easy to use, reliable, and reduces the workload on nurses.

Problem Background

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Why Does bCPAP Fail?

1. bCPAP nasal prongs often disconnect from nose
2. These disconnections often go unnoticed, as NICU staff check the systems every 3 to 4 hours and there is not a built-in monitor to track disconnections.

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Features

- Flashing LED light and sound alarm to alert NICU staff
- Alarms 4 seconds after a disconnection to prevent false alarms
- Interfaces with SiPAP and Fisher & Paykel bCPAP systems
- LCD display for user feedback
- Conical shape provides better occlusion and grip in the nares
- Pleated, extendable centerpiece to adapt to various septal widths
- Connectors that move the bCPAP tubing away from neonate’s face
- Series of sizes for neonates 500g to 3000g in weight

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