Delivering Oxygen Only During Inhalation
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Background
Supplemental oxygen is traditionally delivered to sedated hospital patients at a constant flow rate via nasal cannula. The current gold standard in oxygen delivery is a constant flow, which:
- Prevents accurate monitoring of patient breathing and CO2 level, and
- Generates discomfort in patients by drying out their sinuses.

The lack of effective monitoring often results in the nurse being unable to detect patient respiratory depression resulting from inadequate ventilation of the lungs. This often leads to death or severe brain damage if left unchecked [1].

Objective
The goal of this project is to develop an intermittent oxygen delivery device which improves:
- Depressed breathing detection
- Patient monitoring
- Potential for user error
- Patient comfort

Conclusion
- Potential for catastrophic failure significantly reduced due to elimination of human error through automated monitoring and alerts
- Display provides easy access to patient’s breathing and O2 delivery profiles in real time
- Digital readout is much less prone to error of interpretation and malfunction compared to existing pressure gauge
- Replacement of constant oxygen flow with pulses upon inhalation reduces drying of sinuses

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[3] media.digikey.com/Photos/All%20Sensors%20Photos/DLVR-L0xD-E1NS-C-NIxF. JPG