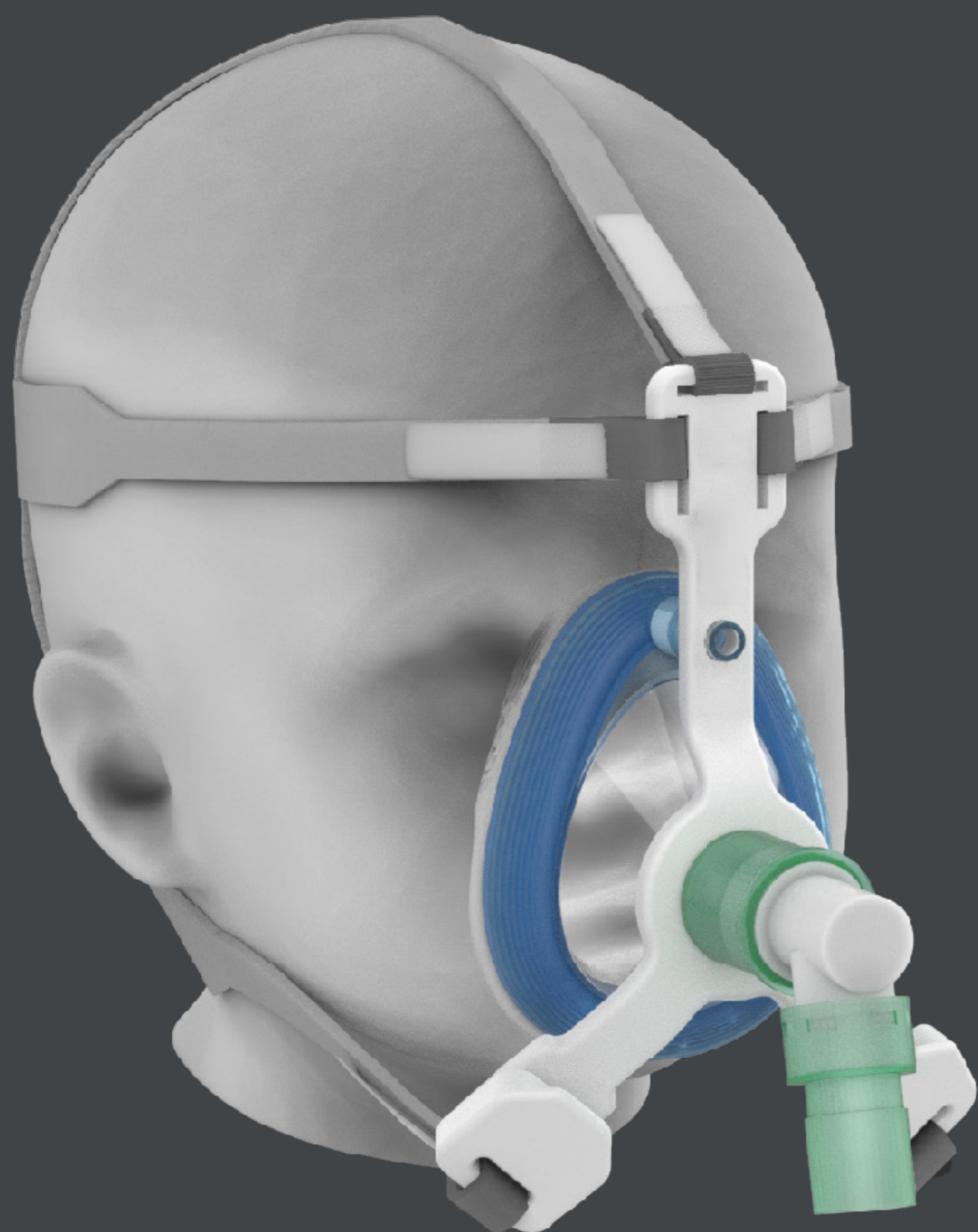
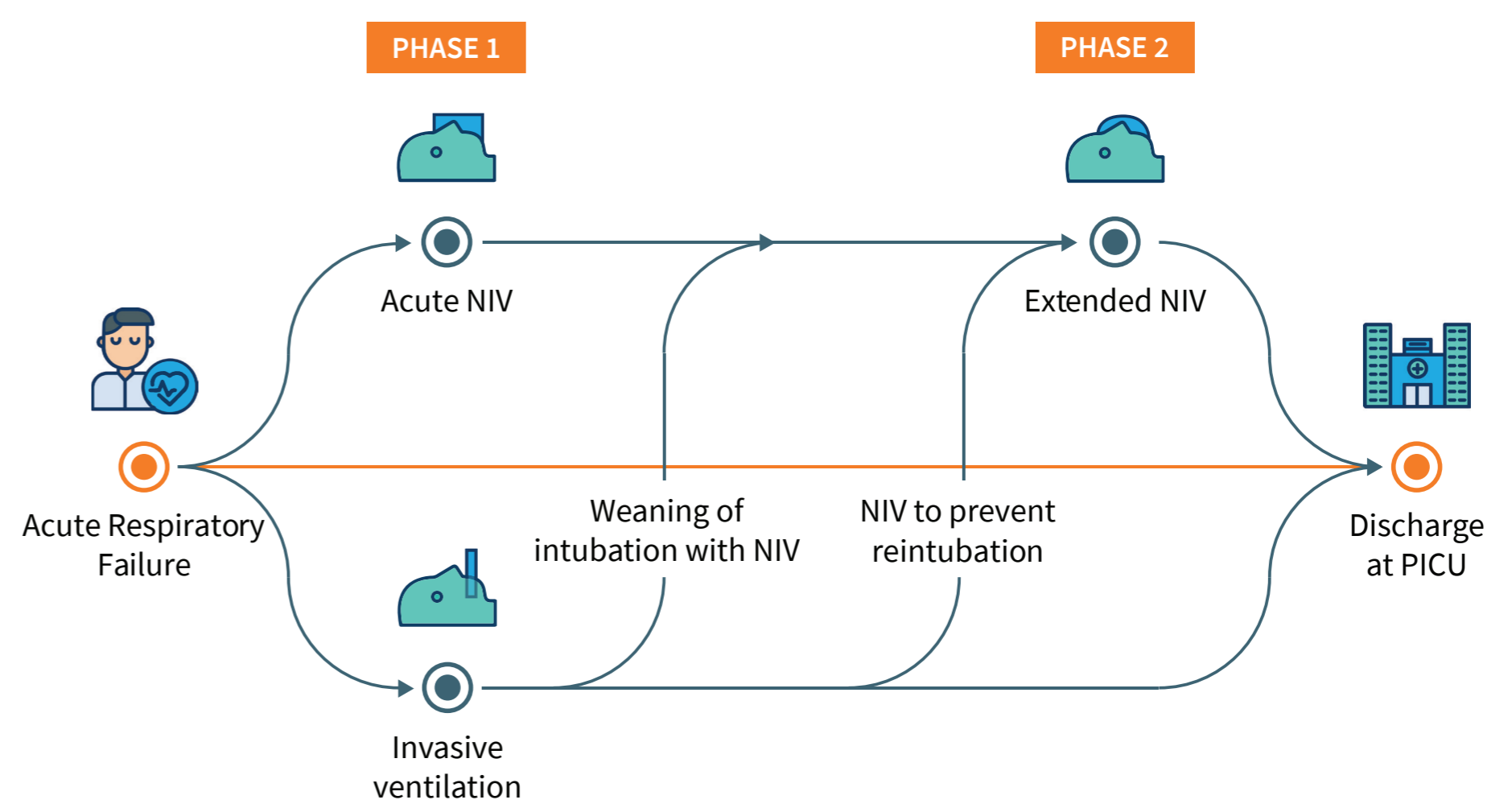


# HOW TAILORING CAN SAVE LIVES

The next generation of non-invasive ventilation masks for paediatric intensive care

Invasive ventilation for children involves several risks and can cause complications, such as airway injuries. Therefore the Paediatric Intensive Care Unit (PICU) preferably uses non-invasive ventilation (NIV). There are not many non-vented masks for small children available and/or they do not fit well, causing high air leakage with the risk of NIV failure. Therefore two tailored masks are developed: for patients who require acute NIV (phase 1), and for patients who need NIV for an extended time (phase 2).



Cartridge gun dispenser



## PHASE 1

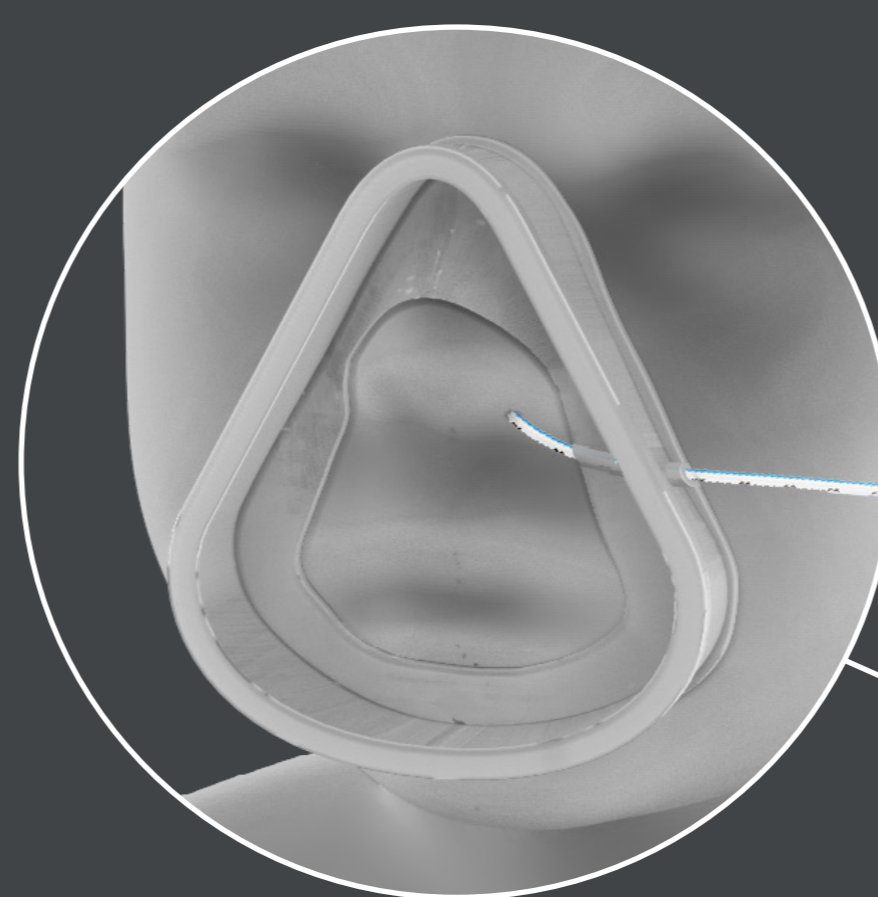
### QUICK CURABLE MASK

This mask is aimed for acute NIV for children below seven year old. The mask is immediately available for patients with acute respiratory failure. The anesthesia mask is tailored to each patient by filling the inflatable cushion with the cartridge gun dispenser with silicone gel. The mask is placed, and the silicone gel is cured in five minutes into the required shape.

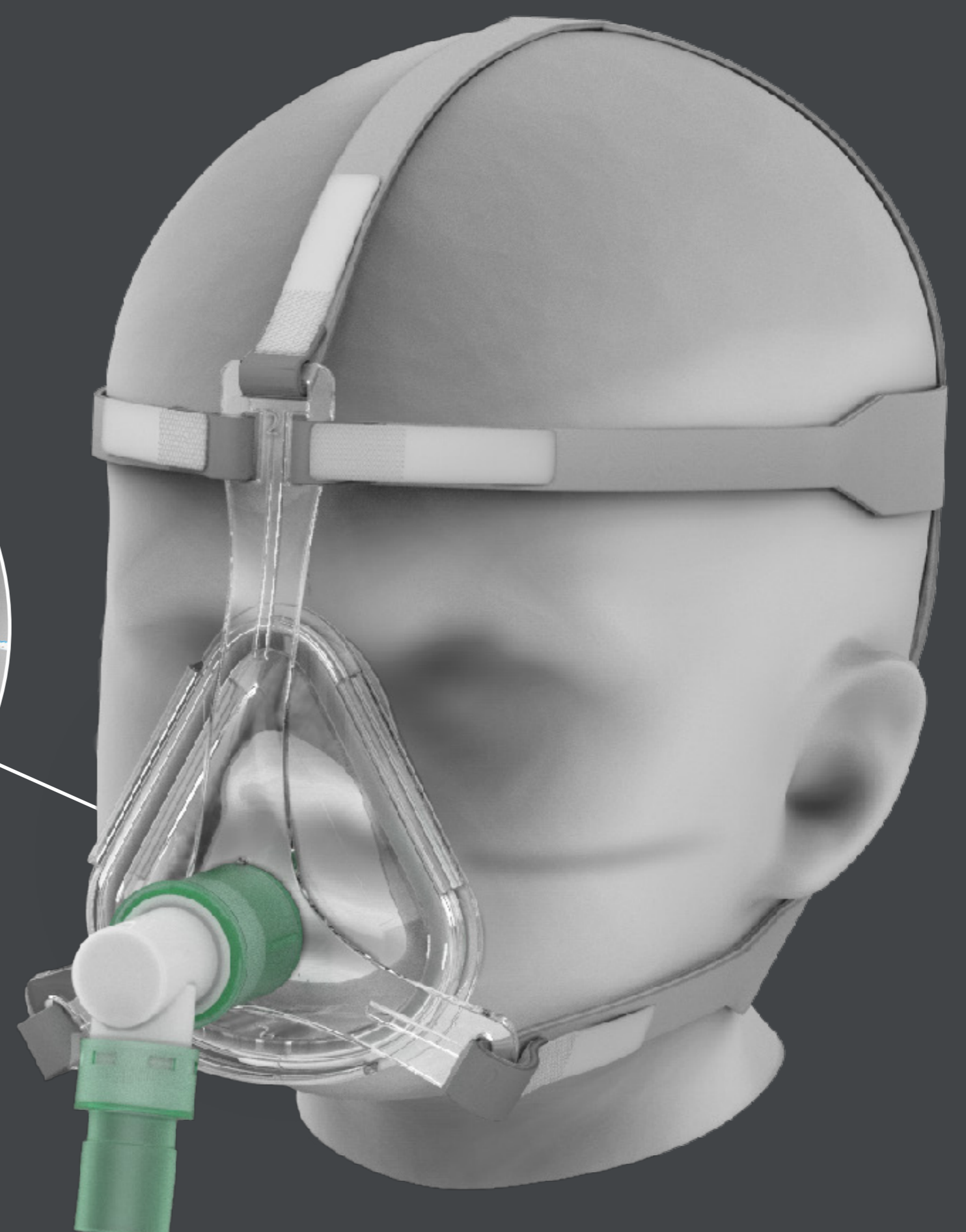
## PHASE 2

### MODULAR MASK

This mask is aimed for patients below seven years old that require NIV longer than 48 hours. For the production of the mask at first the patient's countenance is 3D scanned. Secondly, the tailored cushion is casted in a 3D printed mould. As soon as the tailored part is produced, the mask can be assembled and is ready for use.



Tailored cushion with gap for the nasogastric tube



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Tailored non-invasive ventilation masks for  
paediatric intensive care  
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