

# COVID-19: Very Rapid Updates and Safety (ViRUS)

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## Potential shortage of CPAP / NIV systems on critical care

### What happened?

Due to a shortage of high flow air-oxygen generators to deliver CPAP and/or critical concerns over the oxygen flow through the hospital oxygen pipelines from the VIE's, we may struggle to administer CPAP to suitable patients at times of extremely high demand. In addition, even though most ICU ventilators can deliver good CPAP and NIV, some patients are being ventilated on theatre ventilators, which lack the ability to provide NIV or CPAP and some invasive modes. Many non-ICU ward areas also lack walled/piped air supply which is needed to allow some ventilators or high flow oxygen/CPAP delivery systems to function.

### Why might this be more likely than usual to happen during the COVID-19 pandemic?

Sudden surge of critically ill admissions with increased demand on critical care services and simultaneous usage of high oxygen consumption respiratory/ventilatory support modalities

### How could this have been identified early in its course/how it could have been prevented or mitigated if recognised earlier?

Ensuring ICU ventilators are not relied on for NIV delivery and a stock of independent NIV devices are held. Maintaining central database of all invasive ventilation, non-invasive ventilation and high flow oxygen/CPAP equipment available within the Trust. Mapping of oxygen and air flow capability throughout the hospital and advanced major incident planning for where non-ICU respiratory support areas could be created.

### How have you managed to resolve this issue or create a work around?

Working collaboratively across directorates/specialties to redeploy domiciliary/long-term NIV (BiPAP/CPAP) devices which will be used to deliver CPAP and BiPAP with lower oxygen consumption, either within critical care or if critical care capacity spills over to ward areas. This requires rapid clinical guidance, stock acquisition and training of staff.

Also needs mapping of oxygen supply throughout the Trust and creation of surge ICU areas / respiratory support units (beyond ICU's and Theatres).