



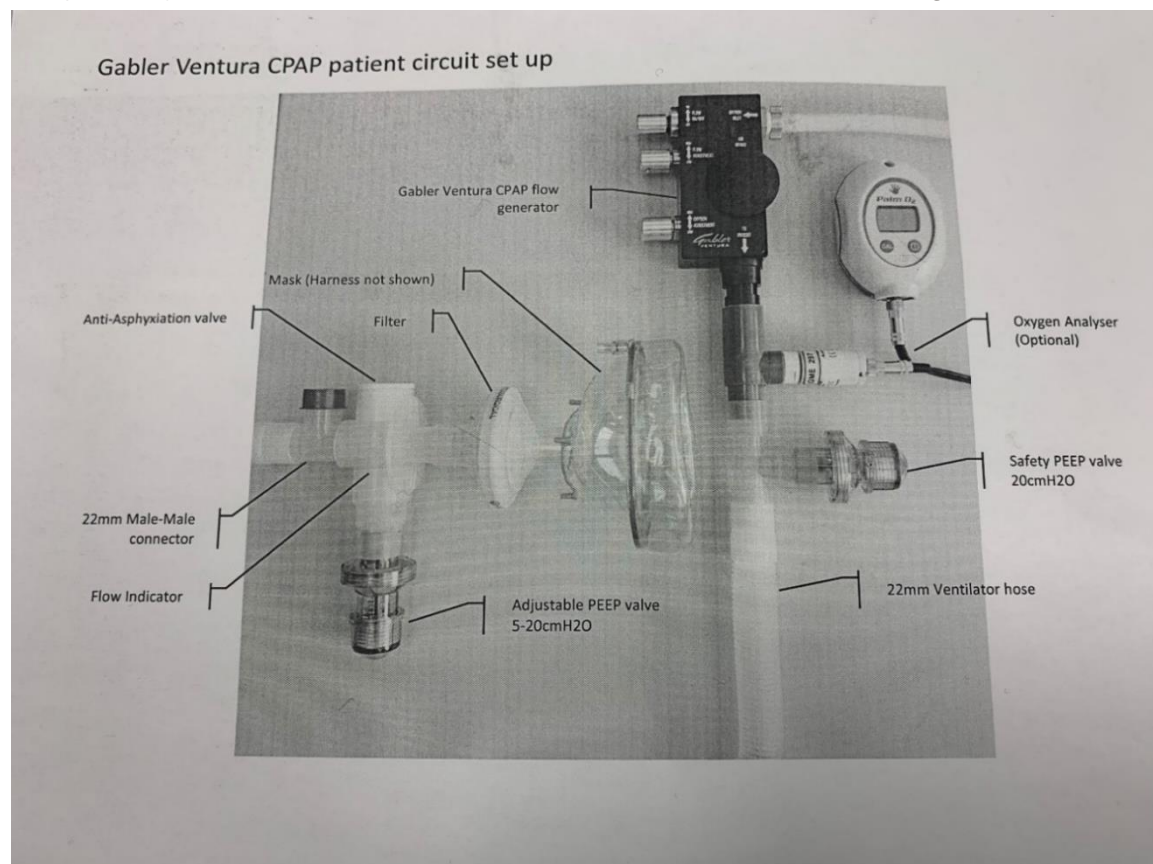
COVID-19 UPDATE

GABLER VENTURA CPAP DEVICE

From the outset of MCSA's COVID-19 response, we have looked at all the different resources, including available beds, healthcare workers and equipment. From day one, we knew that we will never have "enough" of any of the three and part of the each hospital's disaster plan was to provision for the total number of patients that they could look after. We had to make peace with the fact that we probably would never have enough of all three components mentioned above. Part of the pandemic response was also to plan for the implementation of a triage system for allocating scarce resources.

- Beds:
 - Each hospital had to make a decision on how many beds they will create to accommodate both COVID and non-COVID ICU & HC patients
 - Hospitals were advised to plan for a High Dependency Units (HDUs) where patients could be accommodated, based on the nursing resources and oxygen reticulation system of the hospital
- Healthcare Workers:
 - Hospitals were advised to upskill identified staff to assist in the specialised units and in the HDU
 - Hospitals were advised on minimum staffing and team nursing approaches to use during the pandemic and especially the surge period – yet, we still don't have enough skilled people to look after the critically ill patients
 - Short term fixed contracts were also implemented to assist with the shortage of staff
- Equipment:
 - As international literature emerged during the pandemic there was a shift to move from invasive mechanical ventilation to non-invasive ventilation and high flow oxygen therapy
 - MCSA has ordered an additional 120 mechanical ventilators and 114 High Flow Oxygen Therapy (HFOT) devices that have/are being redistributed to the different hospitals as mentioned above. We have also looked into different frugal CPAP devices, including Boussignac, Go-Pap and O2-MAX systems with varying degrees of success in accessing these devices based on the increased international need of these. The cost of these disposable devices range between R1 000 and R1 700 (recoverable from the funder)
 - We are currently trialling the StarMed Ventukit CPAP Hoods at Mediclinic Vereeniging and the feedback has been very good. This is also a fully disposable system, coming in at ± R2 200 (recoverable from the funder)
 - All of these frugal CPAPs were considered based on their oxygen flow rates
 - The 100 new mechanical ventilators all have the capacity to do HFOT as well
 - All the Draeger ventilators in MCSA have a software update that allow them to also perform HFOT

- The Infrastructure department has re-evaluated the oxygen delivery systems of all the hospitals in an attempt to determine what is possible per hospital and to ensure that we don't run into a situation where a hospital will run out of oxygen supply from both a volume and pressure point of view
- We have looked into the Gabler Ventura CPAP flow generator – and are of the opinion (for now) that it will not be a feasible solution, based on the following:



1. Cost – the frugal CPAP devices are less costly:
 - Cost of Gabler device (re-usable): ± R8 000
 - Cost of Oxygen analyser (re-usable): ± R10 000
 - Cost of disposables to be used per patient: ± R1 000
2. Oxygen use – unknown
 - The knob that regulates the flow must be adjusted slowly while watching the flow indicator and the patient's response to the flow to find the "sweet spot". We have no idea what that actual flow is, and will thus be incredibly difficult to predict the oxygen consumption on the whole
3. More difficult to use:
 - The device can either be plugged into the Heyer fitting directly or with an oxygen extension, as seen in the picture. The challenge with this is the fixed oxygen flow meters in the wards, where these devices will typically be used during the surge (High Dependency Unit). For this reason we will need some form of adaptation to the current system to allow a 4bar high flow connection
 - There is no form of definitive values visible on the device (except for the PEEP Valve)
 - The initiation and management of the device/therapy will definitely need a doctor