Protocol for Helmet CPAP

Number of ICU/HDU beds before, during and post COVID: 32 beds before, 54 beds during and 40 beds post COVID.

Hollie Ward - Practice Trainer / Nurse Practitioner
Amanda Harris - Practice Educator

Before COVID-19 what % of your patients received CPAP with a helmet?
Less than 1%, very very rare.

Has this changed in the last 12 months and what is the % now?
In general, 70-80% of our patients would go in a helmet, but 95% of patients with COVID would go into a helmet pre-intubation and post-extubating. We would extubate onto a helmet and usually they will have been on a helmet prior to intubation. Our high dependency were also starting to facilitate more patients on helmets.

What are the main patient benefits comparing helmet with facemask?
From a tissue viability perspective from all the patients who have had helmets on. We haven't had any issues regarding tissue viability on their nose or face compared. We have only had one patient with a sore around the back of their neck. Those that have facemask can get facial sores.

Communication is so much better, they can wear glasses, put their hearing aids on, lip reading is better. They can actually talk whereas with a facemask they tend not to be able to talk because it moves the mask and therefore you break the seal.

Patients are a lot more independent with the helmets. We taught them how to have a drink using a suction catheter through the front port without needing to ask someone to come and take their mask off for a drink. They could eat better and the NG tube came through the helmet so NG tubes were never an issue regarding pressure sores or leaks.

From an independence perspective they were able to get up and move around and do things without the machines constantly alarming for breaking their seal, so the patients felt a lot better.

What are the main benefits for nursing staff?
Normally we work on a 1:1 or 1:2 ratio but during COVID we were working on 1:4 ratio. Patients on a CPAP facemask might need extra support because their mask was leaking and alarms going off but in a helmet this wasn't the case. Because patients were a lot more independent on a helmet from a nursing care perspective it allowed us to do more jobs and increased availability to other patients. Our productivity was probably better.

Are there any negatives for patient or nursing staff?
Other than Type 2 respiratory failure patients that were challenging, the only other challenge was with patients who were really claustrophobic but they didn't tolerate a facemask either. Even though we went straight for helmets over facemasks, I only saw one patient who was really struggling with claustrophobia. Sometimes they steam up so you may need to wipe the screen. It's important to educate users about adjusting straps as some patients can get sore under their arms from the straps.

How do patients tolerate non-humidified gasses?
Not a problem, we didn't have any issues with humidification. As soon as they came off the helmets they went onto humidification. The patients produce enough humidification themselves within the helmet.

One of the concerns is the increased volume in the helmet, how do you ensure adequate flows? What flows do they typically use?
When you turn on the Armstrong Medical FD140 and select helmet mode, it defaults to 60L/min immediately. We stay with the patient until they normalise and maintain the CPAP level. We would adjust the flow to maintain their CPAP level. We never had any problems with too much flow.

How does the FD140 help with delivering safe and effective helmet CPAP?
It was great to have a helmet mode. That safety mechanism preventing flow going to less than 40L/min was fantastic. In an environment where we had a lot of new staff, we knew the patients were kept safe. Teaching staff how to adjust and see the pressures on the screen because you can visualise how much CPAP they are getting in relation to how much flow. It worked perfect for us.