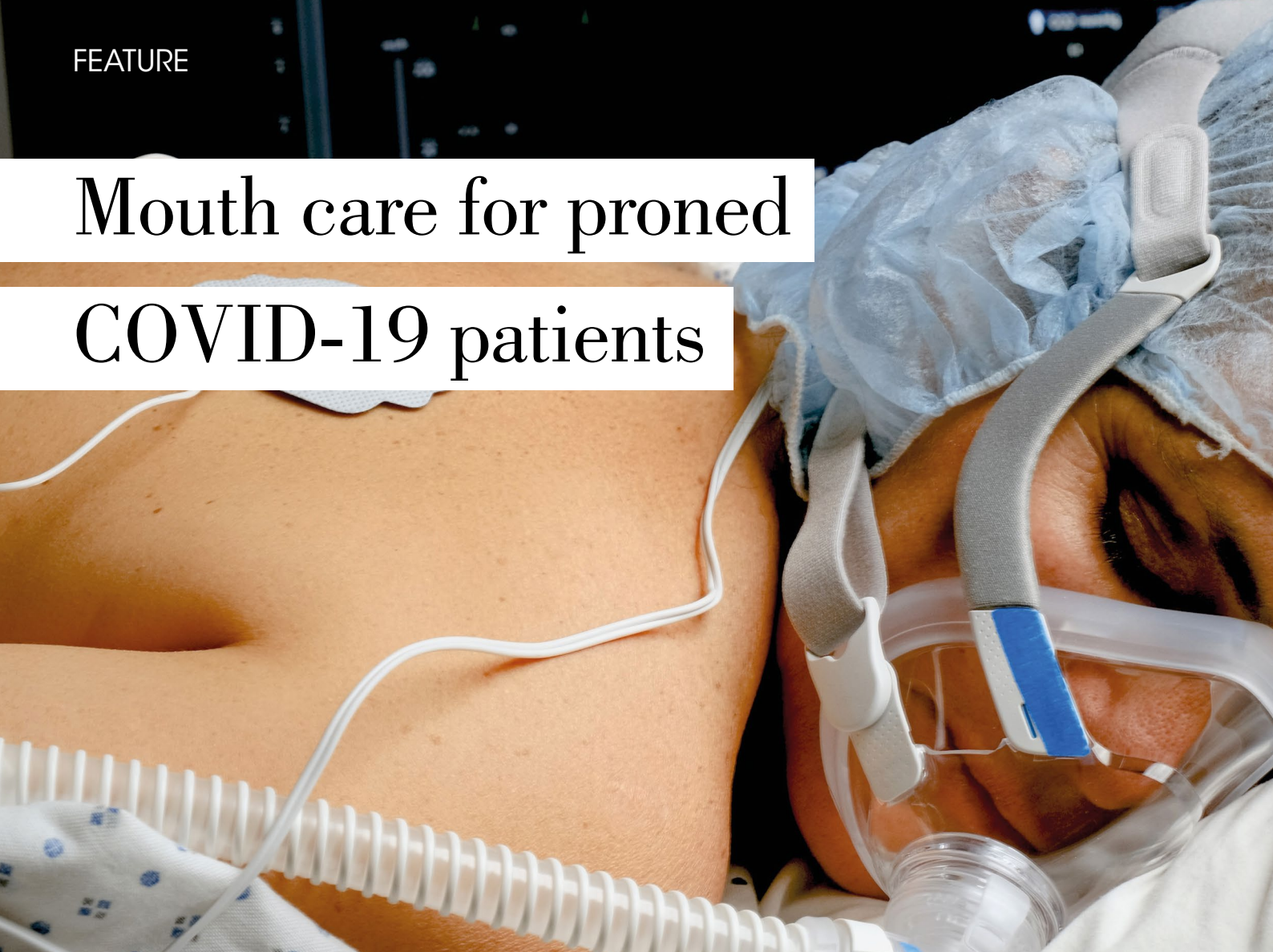


Mouth care for prone COVID-19 patients



Zoe Holt¹ is a dental nurse working in an acute setting as a mouth care lead. During the pandemic Zoe helped develop guidance for pressure sores in COVID-19 patients placed in the prone position.

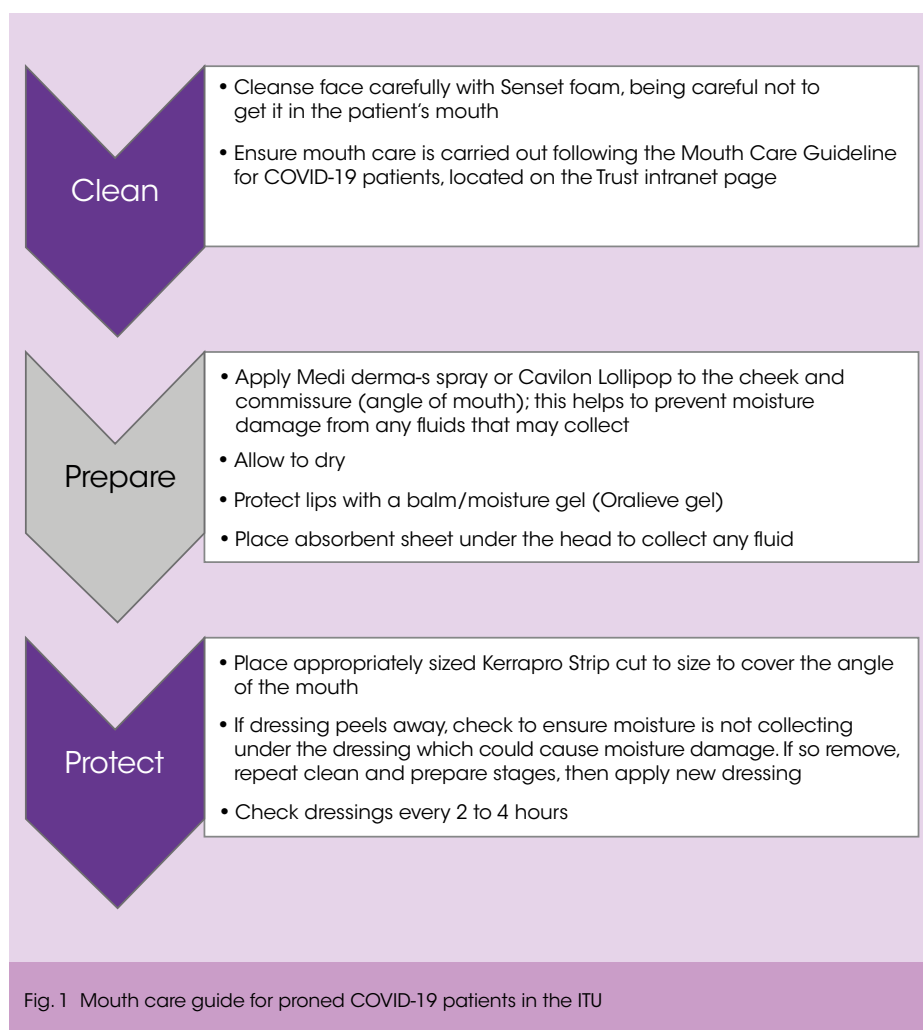
Author information

¹Zoe first qualified as a dental nurse in 2005 while working in general practice. She then worked in a Maxillofacial Department before applying to become the Mouth Care Matters nurse for her hospital trust (<https://mouthcarematters.hee.nhs.uk/>).

Introduction

The Coronavirus pandemic 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) reached the UK in late January 2020. The number of hospital admissions reached a high and our NHS was thrust into a pandemic like nothing we had ever seen. East Kent Hospital University Foundation Trust (EKHUFT), one of the largest hospital trusts in England made up of three acute sites, started to notice an increase in numbers of incidents reported by staff for commissure (angle of mouth)/facial pressure sores as more of our Intensive care unit (ITU) patients needed to be nursed prone.

Proning or prone is the placement of patients so that they are lying on their stomach, with their face to the side; this is used in the treatment of patients in ITU with Acute Respiratory Distress Syndrome (ARDS). One of the most common complications of nursing patients in the prone position is the occurrence of pressure ulcers¹ as patients are repositioned far less frequently (generally only after 16 hours) and significant facial oedema may develop.



After seeing the damage to these vulnerable patients' faces while going through this rigorous treatment, multi-disciplinary team meetings were held and it was highlighted that we had to try to reduce the number of incidents and damage being reported. I sought help from our tissue viability lead nurse to help produce guidance for the ITU teams looking after these prone patients whilst maintaining and providing the best care possible in line with our trust's values.

A number of virtual meetings were held over Zoom (which we were still getting used to). It became apparent that we needed to improve our practices in our ITUs and that the guidance we developed would be shared trust-wide to allow for consistency in patients being treated prone.

Background

Currently in our trust there is no guidance in place for facial sores/damage to the commissure (angle of mouth). We know that when the teams are deciding to prone a patient, appropriate care of the face and mouth should be undertaken to prevent pressure sores and wounds developing, as this

is an important part of patient care. The most common complication of nursing patients in the prone position is the occurrence of pressure ulcers. This can result in a decline in mental health and social functions when weaned off the ventilator.

On closer inspection of the incidents, we were faced with the following challenges when patients were nursed in the prone position:

- Limited mouth opening due to patient being on ventilator and being somewhere between awake and asleep, but most patients with COVID-19 are more heavily sedated to help protect the lungs and they were unable to open their mouths themselves
- Limited space due to endotracheal tube in place. The tracheal tube is a hollow plastic tube that is placed in the trachea (windpipe/airway) through the mouth to the lungs
- Xerostomia (dry mouth) can be caused due to patients receiving oxygen and having the endotracheal tube in the oral cavity, and no stimuli to the oral cavity to help with saliva secretion. Some types of medication can also cause dryness
- Reduced access to the back of the mouth/dentition as patient is lying on stomach with face to the side and tubes in place
- Difficulty in keeping skin dry due to leaking secretions from the mouth as face to the side and patient has no functional swallow as sedated
- Pressure to face due to position
- Length of proning can be up to 18 hours therefore reducing capability of some basic care being carried out
- Patients over the age of 70 are at risk of skin damage through dehydration/other factors
- Medical conditions that affect blood supply eg kidney failure, Parkinson's disease and diabetes that have the ability to add additional complications with healing and puts a strain on the heart's pumping ability
- Reduced oral nutrition once weaned off ventilator due to sores at the angle of mouth, making opening the mouth painful, so there is a need for an alternative route for nutrition to be discussed so that patients do not become malnourished and also to help with recovery and healing

- The use of endotracheal tape (ET tape) to secure tube instead of anchorfast device, this is so that this can be tied tightly to ensure no movement of the tube when being put in the prone position, but this also cuts into the angle of the mouth
 - Possible infection or bacterial colonisation in broken skin from leaking secretions and bacteria from the mouth
 - Trauma to the oral mucosa after having a tube placed: sometimes trauma can occur from equipment used and sometimes the force used to place the tube.
- day ideally with a disposable toothbrush. Try and brush all surfaces of the teeth
 - Avoid using electric toothbrushes as they generate more aerosol spray
 - Use a small headed toothbrush with a long handle for better access
 - Use a smear of toothpaste or a non-foaming toothpaste on a dry toothbrush to prevent the build-up of secretions
 - Carry out gentle oral suctioning or use a single-use suction toothbrush
 - Try to stand to the side of the patient or behind them so your face is not directly in front of their face

to help give guidance for any mouth related issues the patients had sustained, and to be able to advise on any additional resources patients may need to be able to carry out good mouth care.

With looking at the practice in the ITU department and considering the tissue viability and mouth care knowledge we put together the following guide (Fig. 1).

We became aware that when patients were needing to be placed in the prone position to support respiration it was essential that we try to minimise damage. This was especially important for patients who had contributing factors that may impinge on their healing, not just of the mouth and face. For example, the damage sustained may also cause delayed recovery once weaned off the ventilator, ie eating and drinking, as the angle of mouth may be sore and scabbed and this may cause pain/discomfort and limited opening. Our Speech and Language Therapists (SLT) also noted that it had an impact on communication due to pain and discomfort.

This work has highlighted the importance of the multidisciplinary team working together at this pivotal time to deliver the best care we can for our patients. It further highlights the need to look for alternative ways to secure the tube in place in patients' mouth, what we lack in identifying the potential hazards of developing these angle of mouth sores, and how this impacts on our patients who have already been through so much. We will continue to look into this to find methods of further reducing/preventing these wounds.

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Considering the above challenges, we felt that multi-disciplinary team discussions with specialist input, to ensure that the patient's proning plan was discussed ahead of procedure with all the specialists involved in that patient's care, would enable us to try to reduce some of the above challenges, but also acknowledging that sometimes patients were prone as an emergency.

Oral care plan

An oral care plan was to be put in place and carried out before a patient was prone. We followed the mouth care guidance from Public Health England for patients who are COVID-19 positive and COVID-19 negative and on a ventilator.² This enabled us to make sure the oral cavity looked moist and clean before being placed in a prone position for a long period of time as once prone, access to the oral cavity becomes difficult due to position and space.

Before we carried out any mouth care it was important to ensure that the endotracheal tube cuff was inflated to prevent aspiration (when material enters your airway or lungs), and it was important to note how far the endotracheal tube was in the mouth.

The following recommendations were made for mouth care for prone patients:

- Carry out tooth brushing at least once a

- Carry out dry mouth care regularly by moistening the mouth with water or using a dry mouth gel on a toothbrush as needed
- Gently brush the tongue in a forward sweeping action
- Make sure the lips are regularly lubricated with a lip balm or water-based gel.

The key difference for carrying out mouth care for NON-ventilated patients is that patients are more likely to cough so it is important to go gently and take breaks to allow the patient to rest and swallow. It was noted that COVID-19 affected patients' ability to swallow.

Patients who are enterally fed (intake of food via the gastrointestinal [GI] tract; enteral feeding may mean nutrition taken through the mouth or through a tube that goes directly to the stomach or small intestine) are particularly at risk of aspiration pneumonia, so regular mouth care on these patients is essential.

We asked that the mouth care assessment and skin assessment be carried out and recorded regularly. The mouth care lead would follow up any patients who had received an angle of mouth sore whilst being in the prone position, until they were discharged from hospital. This enabled us to check that the sore had healed, but also

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