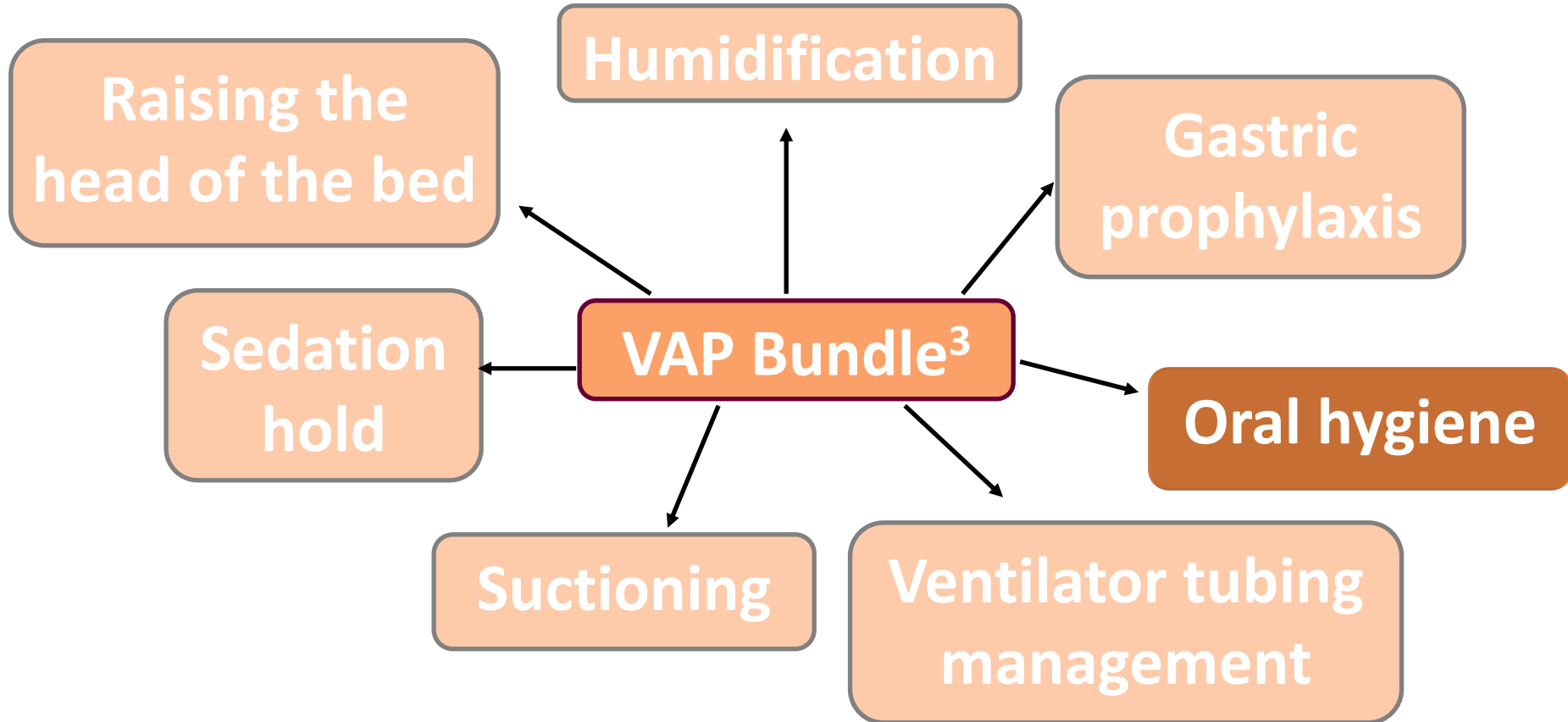


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## Introduction and Aims

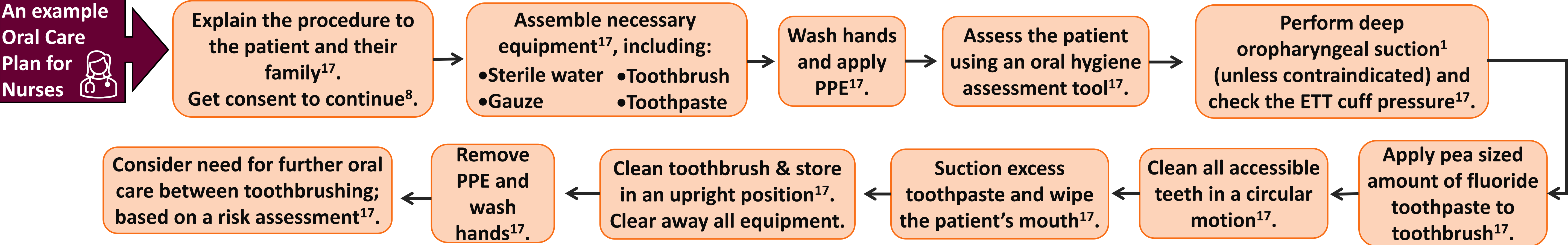
Ventilator Acquired Pneumonia (VAP) is the second most common Healthcare Acquired Infection (HCAI) on Paediatric Intensive Care Units (PICU)<sup>1</sup>. VAP is linked to increased; morbidity, mortality, and costs<sup>1</sup>. However the techniques used to prevent it are relatively inexpensive<sup>2</sup>. It is recommended that care bundles are used in healthcare to instil a consistent approach to evidence based prevention of HCAI throughout an organisation<sup>3</sup>. A VAP bundle is recommended by the NHS<sup>3</sup> and utilised in practice<sup>4</sup>.



### Aims:

- 🔪 Explore how toothbrushing should be incorporated into our oral hygiene practices in order to prevent VAP.
- 🔪 Empower nurses to decrease VAP rates by reducing barriers to toothbrushing.
- 🔪 Effect change long term

Recommendations for Practice	Rationale
A patient’s teeth should be brushed at least twice a day	<ul style="list-style-type: none"><li>• Children &gt; 3 years should brush their teeth twice daily using a fluoride toothpaste<sup>5</sup></li><li>• Patients or their carers will do this at home, and will be unable to do this for themselves whilst intubated <sup>5,6,7</sup></li><li>• All interventions should be in the patient’s best interests, consent should be sought when possible<sup>8</sup></li><li>• Toothbrushing is needed to clear plaque<sup>2,7,9</sup></li></ul>
Utilise an oral care guideline and assessment tool <sup>2,10</sup>	<ul style="list-style-type: none"><li>• Toothbrushing should be utilised as part of good oral care; not as useful as a stand alone intervention<sup>11</sup></li><li>• Preventing VAP should focus on preventing colonisation of the upper airway<sup>2,12</sup></li><li>• Care bundles contribute to low incidence of VAP in Europe<sup>10</sup></li></ul>
Use a cuffed ETT <sup>1, 9</sup>	<ul style="list-style-type: none"><li>• This sits at the narrowest part of the airway<sup>13</sup> to act as a physical barrier against the aspiration of secretions<sup>1,6</sup></li><li>• Need to be aware if it is safely inflated to prevent damage to the trachea<sup>14</sup></li></ul>
Facilitate further research into using toothbrushing to prevent VAP in paediatrics	<ul style="list-style-type: none"><li>• Toothbrushing in the ICU is underresearched<sup>9</sup></li><li>• There is a lack of good quality evidence surrounding the subject<sup>2</sup>; which is recent and specific to PICU</li><li>• It is vital nurses act upon an evidence base<sup>8</sup></li></ul>
Barriers to Toothbrushing	Solutions
Supplies are not available at the point of care <sup>12</sup>	<ul style="list-style-type: none"><li>• Keep supplies and guidelines at the bedside<sup>12</sup></li><li>• Sponges are not as good for removing dental plaque<sup>2</sup>; toothbrushes needed specifically</li></ul>
Compliance to oral care guidance may reduce over time <sup>15</sup>	<ul style="list-style-type: none"><li>• Create ownership of the results by displaying progress for all to see<sup>1</sup></li><li>• Focus on experiential learning<sup>15</sup></li></ul>
Oral care is perceived as being low priority <sup>12</sup> especially during periods of critical illness <sup>16</sup>	<ul style="list-style-type: none"><li>• Educate bedside nurses on the importance of oral care as part of HCAI prevention<sup>3</sup></li><li>• Use anchor fasts as a more secure method of ETT strapping; so accidental extubation can be avoided <sup>4</sup></li><li>• Include nurses regularly on reports of the impact of new interventions on the unit<sup>1</sup></li></ul>
Nurses are not confident delivering oral care <sup>6</sup>	<ul style="list-style-type: none"><li>• Oral care education should be included as part of induction for new nurses<sup>1</sup></li><li>• Encourage experienced nurses to educate their junior colleagues; they are more likely to perform oral care <sup>8,15</sup></li></ul>



## Conclusion

- 🔪 Nurses require further training to learn the importance of toothbrushing in preventing VAP<sup>3</sup>.
- 🔪 Training should aim to be delivered as part of continuing professional development and then supported in the longer term in order to truly effect change<sup>1</sup>.
- 🔪 Senior staff should disseminate their knowledge to improve confidence of junior colleagues<sup>8,15</sup>.
- 🔪 The oral care guideline should encourage a systematic approach to VAP prevention; reducing uncertainty<sup>2, 11</sup>.
- 🔪 Bedspaces should be equipped with all necessary equipment for toothbrushing<sup>12</sup>.
- 🔪 Disseminate information on HCAI prevalence in the local PICU to create awareness<sup>1</sup>.
- 🔪 Research should focus on delivering more high quality evidence in order to reach consensus<sup>2,8</sup>.

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