



### **Guiding Principles to support the implementation of the S.P.E.A.K Project**

The S.P.E.A.K. Project arose as a regional response to a local Serious Incident (SI) relating to the use of a one-way valves in-line with mechanical ventilation in a critical care unit. The subsequent benchmarking survey completed in 2024, uncovered a significant number of adverse events that had occurred nationally with one way valve usage, which drove this patient safety quality improvement project.

The project group involved multidisciplinary team members across multiple units working collaboratively to look at what processes could be put in place to try and minimise harm to patients.

The main themes of concerns or safety issues reported by critical care healthcare professionals in this scoping exercise were:

1. Appropriate cuff management prior to & during one-way valve use
2. Appropriate management of the critical care ventilators & alarms during one-way valve use in-line with mechanical ventilation
3. Staff confidence & knowledge as to how/ where to place a one-way valve in-line with mechanical ventilator circuits

This project sought to develop a set of best practice recommendations in relation to the use of one-way valves in-line with mechanical ventilation in critical care units & supporting resources for staff. The recommendations of this group are that, when utilising a one-way valve in-line with mechanical ventilation critical care units adopt the following practices:

1. Use a critical care ventilator with a bespoke mode to accommodate for cuff deflation & one-way valve use
2. Use a critical care ventilator that staff are familiar with, on a non-invasive mode

The project outputs comprise:

1. S.P.E.A.K algorithm to prompt staff to assess the main safety aspects when using a one-way valve with a patient who has a tracheostomy in situ
2. S.P.E.A.K bedhead signs with clinical prompts & images, when using a one-way valve in-line with an array of critical care ventilators, when a patient is self-ventilating with high flow oxygen therapy & with conventional oxygen therapy via a trachy mask
3. Documentation proformas utilising the S.P.E.A.K algorithm & for the clinical scenarios outlined above
4. Multi-disciplinary staff competencies related to the use of one-way valves, including the use in-line with mechanical ventilation
5. Educational package to support the above implementation

Since finalising this project, there has been a significant amount of interest to share this work nationally across other critical care units either directly or through national forums, for example, CC3N, UKCCNA, ICS, TVN ACCN, LSCCN, SYCCN, WYCCN, ACPRC and the National AHPs in Critical Care Group.



The S.P.E.A.K. project group, on behalf of the Kent, Surrey & Sussex Critical Care Network, are supportive for units to utilise this resource package, as long as the hard work of the group is acknowledged if the work is amended in any way.

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