

# Ventilator safety in use

## We need to ensure

Safety in use is included in specification and procurement

Current knowledge of best practice and risk informs ventilator design and use

Ventilators can be used safely by staff

Patient needs are included in the design brief

## Which requires

User requirements for new ventilators as 'must be met' in tender process

Identifying lessons learned, learning from legacy data to avoid repeating design errors

Manufacturers to understand the operational issues and the context of use

Minimising training time & reduce risk of errors

The human machine interface is designed for Novice users

Ventilators can be operated safely while staff are wearing PPE

Main functions of the device and tasks identified and specified: fitting, breathing support, monitoring, responding, cleaning, maintenance

Do not develop systems or adapt systems to ventilate multiple patients with one system

## Proposed action

Transferring key principles from NHS policy on HFE in procurement & MOD's policy ([JSP 912](#)) into user requirements

Source details of previous incidents involving ventilators to inform user requirements

Manufacturers to engage with users at the earliest opportunity

Maximise positive transfer of learning to the new devices for staff. Usable and easily accessible guidelines for training/user guidelines e.g., video training for the end-users, toolkits

Immediate engagement with NHS procurement process, regulators (including MHRA). HF requirements must be included in procurement

Engagement with politicians, healthcare leaders to influence procurement, design process and sign off. Equipment already on the market to be privileged against attempts of disruptive innovation or experimental solutions

MPV specification to be revised to reflect safety in use requirements

Design to ensure that PPE doesn't impede ability to see/read instructions, operate or move equipment

Assessment and its review to consider What can Go Wrong – failure modes and possibility of human errors and causes linked back to specific equipment

2 weeks design, development and test sprint methodology with human engineering and user trials, task analysis and hazard analysis

## Aim:

Ventilators are safe in use