Health Services Safety Investigations Body

Interim bulletin 2

Oxygen issues during the COVID-19 pandemic

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Reference event and national context

HSIB's first interim bulletin focused on the initial identified safety issues from the reference investigation (HSIB, 2021). This second interim bulletin focuses on findings from the reference event and additional investigation work exploring the role of the Medical Gas Committee (MGC) in NHS trusts.

The Health Technical Memorandum (HTM) for medical gas pipeline systems (MGPS) (DHSC, 2006) sets out the requirement for the MGC. The HTM identifies the MGC as '**fundamental to the operational policy governing MGPS**'. Ownership of the HTM passed to NHS England and NHS Improvement from the Department of Health and Social Care in February 2017.

The Trust had an established MGC. The Trust policy identified that the MGC should include representatives from:

- estates and facilities
- medical engineering
- pharmacy
- operational management
- nursing specialties
- medical specialties.

The Trust policy set out that the MGC should be chaired by a pharmacist or the senior authorised person for MGPS. The MGC was expected to meet at least three times per year.

Between September 2018 and September 2020, the MGC met eight times and was normally chaired by the deputy chief pharmacist. Data showing meeting attendances showed that it was common for the non-clinical specialties and pharmacy to attend. However, the investigation identified a lack of clinical representation.

A senior nursing representative and medical representative did not attend the MGC, although this was set out in the Trust policy. There were 15 possible nursing attendees identified for the MGC. However, nursing representation had only been present at three of the eight meetings, with a maximum of two nursing representatives being present at a meeting in March 2019. The medical director had understood that medical representation was attending the MGC but following the incident the Trust identified that there had been no medical representation at the MGC since 2014.

The Trust understood that this may have been due to a lack of shared understanding about the role of the MGC and challenges in communicating between professional groups. This inhibited the Trust's ability to share clinical and non-clinical knowledge about the role of the MGPS and its impact on patient safety during the COVID-19 pandemic.

The Trust also identified that none of the estates and facilities alerts, or associated guidance, issued by NHS England and NHS Improvement (NHSE/I, 2020 a,b,c,d) had been discussed at the MGC at the time they were issued. Instead, these alerts had been distributed and addressed outside of the MGC by specific members of Trust staff, dependant on the area of speciality considered relevant to the alert.

The investigation has now conducted visits and interviews with other NHS trusts to understand how their MGCs are organised. HSIB has identified similar concerns about a lack of multidisciplinary involvement in the MGC and misunderstandings about its role. These include further examples of a lack of clinical representation, where there have been challenges in convening MGC meetings, and where the role and function of the MGC is not well understood.

The investigation identified that trusts that responded positively to safety alerts and demands on the MGPS were supported by strong MGCs that had helped to facilitate integrated multidisciplinary team working.

Medical Gas Committee

The HTM identifies that the role of the MGC is '**to oversee the general operation and management of the MGPS, and all facets of the MGPS operational policy including the policy review**.' (DHSC, 2006).

The HTM sets out that the MGC should meet at least annually. However, arrangements must be in place for more urgent requirements regardless of the frequency of the meeting. The HTM also sets out requirements for meeting attendees and establishes that the chair of the MGC should report minutes to the trust chief executive or general manager.

In addition to the HTM, NHS England and NHS Improvement guidance (2020c) and NHS Specialist Pharmacy Service (NHS SPS) guidance (2021) have commented on the role of the MGC. The NHS SPS is commissioned by NHS England and NHS Improvement to support medicines optimisation across the NHS. A national patient safety alert from the National Patient Safety Agency (2009) also identified the role of a multidisciplinary group 'such as a Medical Gas Committee' in considering oxygen safety in hospitals.

The most recent guidance from NHS England and NHS Improvement, and NHS SPS, was issued during the COVID-19 pandemic, to reinforce the importance of the MGC and the key role it plays in oxygen safety.

All documentation reflects the importance of multidisciplinary involvement in the MGC to ensure a broad range of knowledge and experience can be brought together, enhance the safety of MGPS systems and effectively respond to any patient safety concerns.

Identified safety issues

The investigation identified that the current range of information concerning the role of the MGC is not consistent. Although issued with the intention to improve safety, current documentation contains differing views on the role of the MGC, key activities, key attendees, and reporting. This may confuse or inhibit the ability for NHS trusts to easily interpret and respond to suggested actions.

A comparison of the relevant documents shows that, in addition to the broad statement within the HTM, there is no shared approach to identify the key functions of the MGC. A comparison of the relevant documents is shown in Table 1.

Table 1 Medical Gas Committee purpose comparisons

Purpose of the MGC	**NPSA**	**NHSE/I guidance**	**SPS guidance**
Prepare policy	X	X	X
Policy review		X	X
Promote/monitor adherence to policy		X	X
Assess training needs		X	X
Coordinate education	X	X	X
Validate competencies		X	
Risk management/ Early warning of risks		X	X
Promote best practice for safety		X	
Disseminate information		X	
Receive and monitor Authorising Engineer report compliance		X	
Review incidents	X		X
O2 cylinder management			X
Develop good housekeeping for O2			X
Safety alert responses			X
Provide assurance around MGPS			X

The HTM also sets out key attendees at the MGC. However, different attendees have been proposed by other documents. Table 2 shows a comparison of the required attendees across the relevant documents with the suggested meeting chair shown as XX.

Table 2 Medical Gas Committee attendees' comparisons

Attendees for MGC	**HTM**	**NHSE/I guidance**	**SPS guidance**
Authorised engineer			X
Authorised person	XX		XX
Quality Controller	X		X
Chief Pharmacist	X	XX	XX
'Clinical'	X		X
'Nursing'	X		X
Estates	X	X	X
Health and Safety	X	X	
Community health		X	
Dental		X	
Clinical skills		X	
Facilities/porters		X	X
Anaesthetist		X	X
Procurement			X
Medical physics			X
Medical gas supplier representative			X
Quorum	N/A	Any 4	N/A

In addition, there is variability in where the MGC is expected to report. The HTM establishes that the chair of the MGC should report minutes to the chief executive, NHS England and NHS Improvement guidance suggests reporting may be via the medicine's management committee, and NHS SPS guidance suggests that mechanisms should be in place to ensure escalation of issues to 'an appropriate level'.

There is an opportunity for definitive NHS guidance to clearly establish the role and structure of the MGC. Further clarity about the importance, role, function and reporting of the MGC may assist NHS trusts in responding to future oxygen safety concerns and ongoing management of the MGPS.

Safety recommendation R/2021/120:

HSIB recommends that NHS England and NHS Improvement urgently issue definitive guidance on the role, function, and key attendees of the Medical Gas Committee. This guidance should identify and encourage key multidisciplinary relationships and board level reporting of medical gas issues.

Further investigation

The ongoing HSIB investigation will continue to explore:

- The current scope and effectiveness of national and professional guidance related to MGPS.
- Limitations in existing infrastructure for MGPS in hospitals.
- Multidisciplinary decision making and understanding of the capabilities of MGPS in light of the COVID-19 pandemic.
- The role of designated people within NHS trusts.

References

Department of Health and Social Care (2006). HTM 02-01: Medical gas pipeline systems, Part B: Operational management [Online]. Available at: https://www.england.nhs.uk/estates/health-technical-memoranda/ (Accessed 4 February 2021).

Healthcare Safety Investigation Branch (2021). I2020/022/IB: Oxygen issues during the COVID-19 pandemic [Online]. Available at: https://www.hssib.org.uk/patient-safety-investigations/oxygen-issues-during-covid-19-pandemic/interim-bulletin-1/ (Accessed 14 August 2024).

NHS England and NHS Improvement (2020a). Estates and Facilities Alert: Use of high flow oxygen therapy devices during the coronavirus epidemic [Online]. Available at: https://www.cas.mhra.gov.uk/ViewandAcknowledgment/ViewAlert.aspx?AlertID=103013 (Accessed 4 February 2021).

NHS England and NHS Improvement (2020b). Estates and Facilities Alert: Oxygen usage [Online]. Available at: https://www.cas.mhra.gov.uk/ViewandAcknowledgment/ViewAlert.aspx?AlertID=103013 (Accessed 4 February 2021).

NHS England and NHS Improvement (2020c). Estates and Facilities Alert: Oxygen supply and fire safety [Online]. Available at: https://www.cas.mhra.gov.uk/ViewandAcknowledgment/ViewAlert.aspx?AlertID=103013 (Accessed 4 February 2021).

NHS England and NHS Improvement (2020d). The COVID-19 Pandemic and actions necessary to mitigate its effect on the performance of Healthcare Cryogenic Liquid Oxygen Systems [Online]. Available at: https://www.sps.nhs.uk/articles/mitigating-the-effect-of-covid-19-on-the-performance-of-healthcare-cryogenic-liquid-oxygen-systems/ (Accessed 4 February 2021).

NHS Specialist Pharmacy Service (2021). Answers to questions on Medical Gases, Oxygen, and the COVID-19 pandemic [Online]. Available at: https://www.sps.nhs.uk/articles/managing-medical-gases-and-oxygen-during-periods-of-high-demand/ (Accessed 4 February 2021).

National Patient Safety Agency (2009). Rapid response report: Oxygen safety in hospitals [Online]. https://www.sps.nhs.uk/articles/patient-medication-safety-alerts-from-the-npsa-and-sps-resources-to-support-their-implementation/ (Accessed 4 February 2021).

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