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| 4-1 Mains oxygen failure v.1 |
| Complete failure of wall or pendant oxygen supply. Failure may be theatre-specific, zone-specific or hospital-wide. |

 START.

❶ Inform the theatre team of the problem, including theatre coordinator (Box A).

❷ Call for help, but be aware failure may be widespread.

❸ Switch to cylinder oxygen supply.

❹ Check remaining cylinder content (Box B):

* Ensure at least one further cylinder always available.

❺ Prolong duration of cylinder oxygen supply:

* Use circle system.
* Use lowest possible fresh gas flow.
* Use lowest possible FiO2.
* Check FiO2 alarms.

❻ Minimise auxiliary gas usage:

* Some ventilator systems are gas-driven. If so, switching to manual ventilation will prolong oxygen cylinder supply.

❼ Evaluate moving to nearby area if oxygen supply there preserved.

❽ Continue to monitor and ensure adequacy of inspired oxygen and volatile agent.

**❾** Workflow:

* Do not start any new case unless clinical priority absolutely requires it.
* Expedite conclusion of current case if clinically appropriate.
* Consider recovering the patient in theatre if recovery also affected (Box C).

❿ Disconnect from failed outlets and do not re-connect until safe to do so (Box D).

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| Box A: ORGANISATIONAL ISSUES |
| Theatre coordinator or equivalent should:* Ensure no new case is started unless clinical priority absolutely requires it.
* Ascertain the extent of the failure throughout the hospital.
* Ascertain the reserve supplies of oxygen.
* Evaluate implications for ongoing supply.
* Ensure any other relevant emergency plans are initiated.
* Coordinate delivery of further oxygen cylinders in good time.
* Ensure individual theatres are kept informed.
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| Box B: OXYGEN CYLINDER: REMAINING CONTENTS  |
| % full(pressure) | **CYLINDER SIZE** |
| **C** | **D** | **E** | **F** | **G** | **J** |
| 100% (137 bar) | 170 L | 340 L | 680 L | 1360 L | 3400 L | 6800 L |
| 50% (69 bar) | 85 L | 170 L | 340 L | 680 L | 1700L | 3400 L |
| 25% (34 bar) | 43 L | 85 L | 170 L | 340 L | 850 L | 1700L |

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| Box C: RECOVERY |
| * Recovery area must be appropriately supplied with cylinder oxygen if also affected.
* Identify patients who do not require supplemental oxygen.
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| Box D: RE-ESTABLISHMENT OF SERVICES |
| * Disconnect equipment from failed wall/pendant outlets.
* When re-established, output may not initially be 100% oxygen.
* Do not re-use outlet until gas composition and quality satisfactorily confirmed by a competent authority.
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4-1

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