Tea Trolley Training

QRH Power Outage: Teaching Guide

Section 1: Basic Knowledge

- Most hospital have two levels of redundancy in addition to the mains power supply.
- Mains power supply:
    - Comes from electrical substation via a transformer.
    - Any white or beige sockets are connected to the mains power supply only
    - These will not function in the event of a power cut
    - Places like offices, waiting areas, outpatient clinic are usually limited to a mains power supply only.
- Secondary Power supply
    - Usually comes from one or multiple diesel generators
    - This will automatically kick in if the mains supply fails.
    - But there is around a 15s delay.
    - Supplies power to vital circuits that either can tolerate a short period of power loss, or essential equipment with its own battery backup.
    - Circuits connected to the SPS are RED
    - Examples include surgical diathermy, transport ventilators, infusion pumps.
      Areas such as radiology, medical wards and surgical wards may only have a SPS.
- Uninterrupted Power supply
    - A backup battery bank that supplies circuits that cant afford any loss of power (even temporary)
    - The UPS *constantly* supplies these circuits and is charged by the mains power supply, so there is no delay or switchover required if power is lost.
    - However, there will be a limit to the battery life.
    - Circuits connected to the UPS are BLUE
    - Areas such as ICU, theatres, cath lab, resus will usually have UPS.

Section 2: The QRH guidelines

In reality these actions will be happening in tandem.

1. Ideally a theatre nurse/support worker will call for help and ...
2. ...contact the local coordinator.
3. Anyone can find a light source but NO NAKED FLAMES
4. Anaesthetist/ODP will focus on patient. Any procedure should be paused if safe to do so. Ventilation and anaesthesia: depends on the lifespan of the ventilator. Optimise lifespan by considering:
    - Manual ventilation
    - Spontaneous ventilation
    - Ambu-bag and portable o2 if transfer needed

- If running gas – be aware that this may be unreliable and consider switch to TIVA with battery-powered pumps.

5 Pulse/BP: manually measure or use portable transport monitors (often found on wards). EMMA device for CO2.

6 Check mains o2 supply intact. Follow separate QRH guideline if not.

7 Minimise the electrical load on the UPS by ensuring correct socket is used for essential equipment.

8 Assess the following
   - Reliability of power supply
   - Duration of surgery
   - Patient condition
   - Consider stopping surgery immediately; continuing to a safe point, or transferring patient to alternative location

9 Prepare recovery facilitiues. Consider alterantive theatres, recovery, ICU or transfer.