香港社會醫學學院
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Administrative Medicine Part II Fellowship Examination 2011
Case Study 3

Q.4

In your role as Director of Medical Services of a 460 bed Hospital, you are the Emergency/Disaster Co-ordinator for Health on your site.

Early in the day you are notified that there was a brief 1- 2 second power blackout in the critical care block that includes ICU and 8 operating theatres. This blackout seemed to self correct, and the emergency generators kicked in appropriately. It is now 4pm. You are chairing a senior staff medical appointments committee. The lights in the meeting room blackout. You wait for the obligatory 15-20 seconds for the emergency generator to kick in or for the main power to resume but nothing happens.

The campus chief engineer calls you and advises that the emergency generators are not working. Subsequently the Director of Nursing (DON) enters the meeting room (with a torch!) and tells you that 8 patients are currently having operations and that there is no electricity available to the operating theatre suite. The DON thinks that the entire campus is blacked out.

You realize that you haven't had a proper disaster planning meeting for several months and as far as you know there exists no subplan for electrical failures, apart from the Y2K documentation.

Nonetheless battery operated equipment is used in the critical care areas (which have been conducting emergency training regularly) and the Hospital Engineer manages to get the emergency generator going after a period of 30 mins. This allows for the resumption of essential power. Mains power resumes 4 hours later.

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You are advised the next day by the engineer and the electricity company representatives that the cause of the problem lies with both the emergency generators and the interconnections with the mains supply. You are also advised that 4 days of costly repairs will be required to permanently fix the problem and that the hospital will be without access to the generators for that period.

What are the issues that arise in these circumstances?

As the Disaster Controller, how will you manage this critical event?

How will you manage the clinical services over the next week?

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Key Points for Examiners

Issues arising include

-ensuring patient safety- reliance on battery power for the total blackout will be necessay
-whether or not a power failure response sub plan exists and the currency of the plan
-adequate evidence of preparation , response , evaluation and debrief: need for a predictable plan such as HEICS (hospital emergency incident command system) or ICS (incident control system) with existence of comprehensive sub plans
-need for predictable chain of command
-scaleable application of disaster response organisational chart both horizontally and vertically such that predefined positions are activated as appropriate to the magnitude of the disaster
-possibility of the shutdown as an ongoing issue (duration at the time of notification is unknown)
-useage of commonly understood language and ensure comprehensive communication systems- use of radios, mobiles and perhaps runners; communication failure is the most common area of concern in disaster management
-need for comprehensive documentation of event
-application of risk management process ie identify risk; analyse risk; evaluate risk; treat risk and document risk-this applies to both the planning phase and the response phase

Initial Management

- a focus of attention re critical care areas- theatres , Labour ward , ICU and CCU eg hand bagging ventilated patients may be required if ventilators do not have battery back up
- immediate verification and consequent activation of an internal disaster including activation of power failure response subplan
- activation of control centre
- assumption of disaster response positions by relevant staff
- staff being allocated to critical care areas, and most likely ensure that staff remain past their shift
- inform and divert ambulances (life threatening only); may have to include life threatening cases as well if the blackout is prolonged (critical decision made by regional authority)

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-cessation of work in the operating theatres if possible- no commencement of new cases
-establishment of communication channels through the disaster controller especially involving engineers and clinical areas
-notification of Area Health Service/ possibly state Health authority
-preparation of public statement and media briefing
-comprehensive documentation of event
-stand down on resumption of services; it is a key requirement to ensure that electricity is functionning correctly for an appropriate period of time
-detailed briefing note including reports from clinical areas , engineer and electrical company

Planned management of Shutdown
-decreased hospital activity to be arranged during 4 day of compromised electrical supply- likely ambulance diversion and theatre closure
-planning meetings with clinical staff and maintenance
-planning meeting with electric company; will determine costs including questioning concerning accountability for electrical utility re guarantee of supply (supply cannot be guaranteed but disruption must be absolutely minimised
-plan to establish disaster control centre for duration of generator maintenance
-communication strategy for staff, and Area Health Service and public
-organise cover for day to day operational management concerning those personnel involved in disaster management function , also
ensure that the disaster response function is covered by adequately trained personnel due to the extended timeframe of the shutdown ie possibly days
-incorporate capacity for planning during the response phase to enable flexibility of the response based on the progress of the maintenance work
-disaster training may be required to ensure key staff appreciate disaster management roles and function
-ensure any costs are identified

Candidates could be asked to talk on intra and inter- cluster support if he/she works for public sector/HA.