SARS Preparedness and Response in Healthcare Facilities

SAFER • HEALTHIER • PEOPLE™

Lessons learned for healthcare

- Healthcare facilities were critical areas in the 2003 outbreak.
- They were essential in controlling the outbreak, despite being among the hardest hit by it.

Lessons learned for healthcare

- Unprotected exposures to unrecognized cases accounted for significant transmission in healthcare facilities.
- Strict adherence to infection control practices is highly effective in preventing transmission.

Lessons learned for healthcare

- SARS stretched healthcare resources to their limits.
- Preparedness planning will be essential to limiting the impact of any future outbreaks.

Key objectives for healthcare facilities

- Multi-disciplinary plan to address a potential outbreak.
- Early identification of cases.
- Rapid and effective isolation of cases.
- Implementation of effective infection control measures.

Key objectives for healthcare facilities

- Ability to manage a small number of SARS patients without disrupting delivery of care.
- Good communication with HCWs, community and public health.

Development of a SARS plan

- Given the range of issues involved, and the speed and complexity of the required response, facilities should consider developing a formal SARS preparedness and response plan.
- This plan may simply be an addition to existing bio-terrorism or emergency response plans.

SARS planning committee

- Designated person to co-ordinate an outbreak response and chair a planning committee.
- Multi-disciplinary planning committee with representation from all groups potentially affected by SARS, e.g.:
  - Medical, nursing, laboratory and support staff.
  - Administration.
  - Infection control

SARS planning committee

- Other groups may need to be adjunct members to consider certain issues, e.g.
  - Labor and unions
  - Mental health
  - Directors of training/teaching programs

Key issues to consider

- Surveillance
- Clinical evaluation
- Infection control measures
- Patient isolation
- Engineering controls
- Exposure evaluation
- Staffing needs and personnel policies
- Access controls
- Supplies and equipment
- Communication

SARS surveillance- The backbone of response

- Early diagnosis and detection can prevent further transmission, while missed cases can lead to large outbreaks.
- Healthcare facilities will play a crucial role in surveillance.
- Surveillance activities must expand as SARS activity escalates.

Surveillance in the absence of SARS

- Clinical features along with epidemiologic data, especially exposure risks, will drive index of suspicion.
- Challenges-
  - How to catch early cases given that SARS is extremely unlikely and the presentation is non-specific.
  - How to screen with no epidemiologic links.

Surveillance in the absence of SARS

- Will need to rely on known risk factors for SARS:
  - Travel to previously affected areas
  - Contact with healthcare facilities
  - Contact with other patients with unexplained pneumonia.

Surveillance recommendations

- Ask all patients hospitalized with unexplained pneumonia about the known risks.
- Report cases to the health department to aid recognition of clusters of unexplained pneumonia.
- SARS testing should be used judiciously, in consultation with public health representatives.

Surveillance in the presence of SARS

- If SARS comes back, surveillance must expand.
- Screen all patients with fever or respiratory symptoms (not just those admitted) for known risks, especially travel to areas where SARS is active OR contact with a SARS patient.

Clinical evaluation

- In the ***absence*** of SARS activity in the world, patients with pneumonia should be evaluated as usual, with addition of screening questions for SARS risks.
- In the ***presence*** of SARS activity, the SARS clinical algorithms (Appendices C2, C3) can help guide evaluation in patients who have SARS risk factors.

Draft-Algorithm to Work Up and Isolate Symptomatic Persons who may have been Exposed to SARS

Fever or Respiratory Illness[1] in Adults Who May Have Been Exposed to SARS

Begin SARS isolation precautions, initiate preliminary work up and notify Health Department[2]

+ CXR

Radiographic Evidence Of Pneumonia

Perform SARS testing

Laboratory evidence of SARS-CoV or No alternative diagnosis

Continue SARS isolation until 10 days following resolution of fever given respiratory symptoms are absent or resolving

Alternative diagnosis confirmed[3]

Consider D/C SARS isolation precautions[5]

- CXR

No Radiographic Evidence of Pneumonia

Alternative diagnosis confirmed[3]

Consider D/C SARS isolation precautions[5]

No Alternative Diagnosis

Continue SARS isolation and re-evaluate 72 hours after initial evaluation

Symptoms improve or resolve

Consider D/C SARS isolation precautions[5]

Persistent fever or unresolving respiratory symptoms

- Perform SARS test
- Continue SARS isolation for additional 72 hours. At the end of the 72 hours, repeat clinical evaluation including CXR

+ CXR

No radiogrpahic evidence of pneumonia

Consider D/C SARS isolation precautions[5]

Clinical evaluation

- Ensure that staff who will evaluate potential SARS cases have access to and appropriate training with personal protective equipment.

Infection control measures

- Make sure HCWs understand the importance of basic infection control practices like isolation and hand hygiene (whether there is SARS or not!).

Infection control measures

- Consider adopting a universal, “respiratory hygiene/cough etiquette” strategy.
- Common and important pathogens are transmitted by respiratory secretions: influenza, pertussis, mycoplasma.
- Controlling respiratory secretions can help reduce transmission.

Respiratory hygiene/ Cough etiquette

- Encourage patients to alert staff if they are suffering febrile respiratory illness.
- Give patients a surgical mask to wear or tissues to cover their noses and mouths.
- Encourage patients to practice hand hygiene after touching their faces.

Respiratory hygiene/ Cough etiquette

- Separate patients with febrile respiratory illness from other patients in the waiting area.
- Manage patients using droplet precautions until it is determined the cause of the respiratory illness is a pathogen that does not require precautions.

Patient isolation

- Though most transmission appears to occur from infectious droplets, there are infrequent episodes where airborne transmission cannot be excluded.
- CDC recommends that SARS patients be managed with airborne PLUS contact precautions.

Airborne isolation

- Potential SARS patients should be placed in airborne infection isolation or negative pressure rooms (AIIRs).
- Healthcare workers should wear a fit-tested N95 (or higher) respirator or personal air purifying respirator (PAPR) in addition to gowns, gloves and eye protection.

Patient cohorting

- Some facilities have few (or no) negative pressure rooms.
- Facilities will need to decide at what point they will choose to cohort patients onto a “SARS unit” in private, but non-negative pressure, rooms.

Advantages of a SARS unit

- Focuses SARS related resources in one area.
- Physically separates SARS patients from others.
- Was an effective strategy in parts Toronto and Taiwan.

Engineering controls

- Determine capacity for airborne isolation in both the ICU and non-ICU settings.
- Determine how a SARS unit might be created:
  - Can any nursing unit be made negative pressure to surroundings?
  - Can rooms on any unit be converted to negative pressure?

Engineering controls

- Identify a space that might serve as a SARS evaluation center in the event of a larger outbreak.
- Determine how best to get patients to and from the evaluation center.

Exposure reporting and evaluation

- Surveillance of exposures may help with early case identification.
- Develop a mechanism for reporting and follow-up of exposed HCWs.

Exposure reporting and evaluation

- Perform symptom surveillance for fever or respiratory symptoms in HCWs with unprotected low-risk exposures.
- Consider furlough of HCWs with unprotected high-risk exposures (i.e. during respiratory procedures).
- Evaluate symptomatic HCWs with the SARS clinical algorithm.

Staffing needs

- SARS posed a unique challenge for staffing needs with increased demands but diminished availability of HCWs due to illness and furlough.

Staffing issues

- Determine staffing needs for varying numbers of SARS patients.
- Consider designating teams to provide initial care in an outbreak:
  - General, multi-disciplinary care team
  - Emergency care/ ICU team
  - Respiratory procedures team
- Consider how teams could be expanded.

Staffing issues

- Caring for SARS patients is emotionally and physically draining for HCWs, especially with prolonged respirator wear.
- Staffing may have to be increased to allow HCWs to have “PPE free” time.

Personnel policies

- A variety of issues to consider:
  - What will be the criteria for furlough?
  - Will furlough be paid or unpaid?
  - How will exposure evaluations and follow-up be done?
  - What assistance can the facility provide to HCWs on home/work quarantine?
  - What mental health assistance can be provided to help HCWs deal with the stress of an outbreak?

Facility Access Controls

- During an outbreak, careful screening of entrants, combined with access controls to the facility can help keep unrecognized cases from entering.

Access controls

- Facilities will also need to establish criteria to limit visitors, especially to SARS patients.
- Criteria for limiting elective procedures and even new admissions may be needed in a large outbreak.

Supplies and Equipment

- Determine the current availability of and anticipated need for supplies that might be needed in an outbreak:
  - Personal protective equipment and hand hygiene supplies.
  - Ventilators
- Consider what back up plans are in place if supplies are limited.

Communication

- Clear and quick communication with the health department, facility staff and public will be crucial to manage the outbreak and control panic.

Health Departments

- Establish a mechanism to share information with the health department:
  - SARS activity in the community
  - SARS activity in the facility
  - Exposures, for contact tracing
  - Information on SARS patients about to be discharged for community isolation

Staff and Public

- Determine ways to update people on SARS activity in the hospital, what control measures are being taken and what they may be asked to do (e.g. entry screening etc).
- Co-ordinate information release with health department so messages are consistent.

Broader Healthcare System Issues

- A large SARS outbreak will generate resource needs that must be addressed at a larger level than one facility:
  - Funding for furlough, lost revenue
  - Supply shortages
  - Staff shortages
  - Regulatory issues

Conclusions

- SARS poses a major challenge to healthcare facilities and staff.
- Healthcare workers around the world demonstrated enormous courage to meet that challenge last year.

Conclusions

- Facilities can help by developing plans to manage SARS (and other infectious emergencies) in advance.
- Facilities should be prepared to move “swiftly and boldly” to implement aggressive control measures.

CDC SARS Preparedness Plan

http://www.cdc.gov/ncidod/sars/sarsprepplan.htm

Thank you!

Home/work quarantine

- To ensure adequate staff in facilities in Toronto, some exposed HCWs were placed on home/work quarantine.
- They were only allowed to travel back and forth to work, but were otherwise required to stay home.
- This might be needed if an outbreak become large.