CDC (1998) Definition of Surveillance

“...the ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know. The final link of the surveillance chain is the application of these data to prevent and control.”

Standard surveillance system

- Standard definitions and protocols
- Targeted high risk population
- Site specific, risk adjusted infection rates (SSI in clean surgery most suited to benchmarking)
- Adequately trained ICN/ICD
- Data dissemination and feedback
- Linking rates with preventive efforts

HAI Surveillance

Should initially include:
- Surgical Site Infection (SSI) after clean elective
- Outbreak surveillance
- HAI, prescribing and antibiotic resistance in intensive care units
Development of standards

Options:
- Apply international standards, why reinvent the wheel? But... Are these applicable, achievable?
- Develop own standards
  - Prerequisite: education, well designed research studies, guidelines, wide consensus
  - Different tiers required to address disparities?

Guidelines

- Available Guidelines
- Most are consensus documents
- What about evidence? Well designed studies based on our situation are required
- Implementing these guidelines: bundle approach

Clean Care

- Hand Hygiene
- Cleaning
- Disinfection
- Sterilization
  - Reuse policy

Hand Hygiene

- Alcohol based hand rubs at point of care
- Sinks and clean running water
- Training

Safe Surgery

- Safe surgery check list
- Improving the timing and selection of antibiotics prior to skin incision can reduce the rate of SSI by up to 50%.

Reuse of single use items
Emergence of Antibiotic Resistance

Both virulent and opportunistic organisms acquire resistance in the hospital.
Resistant organisms not affected by empirical therapy.

Hospital Infection and Drug resistance

- Organisms causing HAI and colonising patients and staff more antibiotic resistant than in the community.
- Now-increasing resistance in community pathogens.
- Emergence of “Super Bugs”.

Antibiotic stewardship

- Education
- Prophylaxis and therapeutic Guidelines
- Surveillance and lab support
- Prospective audit and feedback

SARS

- Febrile respiratory illness first seen in China in Nov 92.
- Causative Agent: SARS Co-V: novel corona virus.
- Virus found in: Sputum, tears, blood, urine, faeces.
- Mode of transmission: Droplets from respiratory tract, talking, coughing, sneezing.
- Contact through Faeco-oral route. Shed in faeces for 30 days.
- Incubation Period: 2-10 days.
- 10% cases require intensive respiratory support: oxygen therapy, ventilator, intubation.
SARS and Ventilation

By 28th May 2003, 3,532 SARS cases in Chinese mainland, including 966 HCW

- Ward A: 61.9 m³, no window, one SARS case, 52 HCW infected (73.2%)
- Ward B: class 10,000 laminar flow, no window, 9 HCW infected (32.1%)
- Ward C: had windows, area 1.1 m², 11 HCW infected (27.3%)
- Ward D: highest ratio of ventilation windows to room volume 96 SARS cases, 5 HCW infected (1.7%) p<0.001

SARS: lessons from Hong Kong

Risk Factors
- Use of ventilators and nebulized bronchodilators
- Cardiopulmonary resuscitation
- Positive airway pressure devices, bronchoscopy endotracheal intubation, airway suction, sputum suction

SARS Future Directions

- Need for stringent infection control measures on regular basis, properly implemented
- HCW to follow standard precautions

SARS Future Directions

- Recognition of super spreaders and their strict quarantine
- Limit high risk procedures
- Environmental hygiene, sewage and waste disposal
- Timely communication
- Establish outbreak response unit

Weaknesses in health systems play a key role in permitting emerging infections to spread.

.........WHO
Safety Climate

Focus on patient
- What does the patient expect?
- Are the expectations met?

PATIENT SAFETY

Indicators
- Design and engineering controls to prevent infection in OT, ICU, OPD, Wards
- Multidisciplinary committee to oversee the program of surveillance, prevention and control of infection, make policy. Records of meetings, minutes and committee reports
- Infection Control Nurse/Director/epidemiologist in place
- Surveillance procedures in place
- Standards of hand hygiene, disinfection, sterilization available and adhered to
- Sentinel events investigated appropriately to find the cause and interventions applied for prevention

EMPLOYEE HEALTH

Indicators
- Maintenance of health inventory on all new employees
- Policy for post exposure prophylaxis
- Educational programs for health care workers
- Universal/standard precautions in place
- Availability of PPE
- Engineering controls such as puncture proof containers, washing facilities.
- Labels such as biohazard labels
- Hepatitis B vaccine availability.
- Records of exposure incidents, post exposure follow up, hepatitis B vaccinations, employee training

ENVIRO NMENTAL SAFETY

Waste Management: Regulation exists: BMW management and handling rules '98 Compliance with the rules for
- Segregation, colour coding, packaging, treatment, transportation and storage, reporting of accidents
- Validation and Maintenance of waste treatment equipment

National Hospital Infections Cell

- Central agency to provide advisory role, leadership, conduct, guide research, surveillance, investigation, laboratory and field studies in Infection Control.
- Develop guidelines and standards eg: disinfection and sterilization, hand hygiene.
- Devise surveillance methodology, coordinate national surveillance of hospital infections and provide comparative data to help hospitals evaluate preventive and control efforts
Hospital Infection Society-India

- National Society of Medical Professionals working in the field of infection control.
- Many of them nodal officers in infection control and waste management for their institutions.
- Includes clinical microbiologists, clinicians, administrators, nurses and CSSD managers.

Role of Hospital Infection Society India

- Network of chapters
- Conduct CME at local level and has a national educational conference every two years
- Major role in Education in Infection Control, curriculum development, Resource for infection control committees
- Develop guidelines through evidence base and consensus groups.
  *Ideally poised to assist NHICC to develop guidelines and standards in infection control for accreditation.*

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