

Aims

- Reduce HAI
- Care for those infected/infectious
- Minimise transmission to other patients, visitors, staff

Methods

- Mandatory policies on infection control
- Education
- Effective implementation
- Monitoring systems with appropriate feedback

Strategies

- Preventing infection - e.g. universal precautions, sterilising, aseptic technique, isolation
- Avoid subverting host defences - reduce invasive procedures, limit immunosuppressants, appropriate antibiotics use (to limit resistance)
- Bolster host defences - immunisation (passive & active), good nutrition

Universal Precautions

- Hand washing after any direct contact with patients
- Preventing two-handed recapping of needles
- Safe collection and disposal of needles (hypodermic and suture) and sharps (scalpel blades, lancets, razors, scissors), with required puncture- and liquid- proof safety boxes in each patient care area
- Wearing gloves for contact with body fluids, non-intact skin and mucous membranes
- Wearing a mask, eye protection and a gown (and sometimes a plastic apron) if blood or other body fluids might splash
- Covering all cuts and abrasions with a waterproof dressing
- Promptly and carefully cleaning up spills of blood and other body fluids
- Using a safe system for health care waste management and disposal

Personal protection

Personal protective equipment (PPE) includes gloves, goggles, masks, gowns and plastic aprons.

- Where possible, use needle-stick prevention devices (i.e., devices where the sharp is sheathed or retracted after use)
- Ensure adequate supplies of personal protective equipment in all areas
- Involve staff in the selection of personal protective equipment as equipment that is of poor quality or uncomfortable to wear will not be used
- Train staff in the correct use of personal protective equipment
- Use influential senior staff as role models to promote personal protective equipment
- Monitor compliance and inappropriate use. Inappropriate glove use wastes resources. Compliance with eye protection often requires additional efforts
- Dispose of used personal protective equipment safely

Isolation

All should use single room and universal precautions.

Strict isolation

- Highly contagious or virulent orgs - SARS, Avian flu, pharyngeal diphtheria, viral haemorrhagic fevers, disseminated HZV/VZ
- Additional precautions: Negative air flow +filters, full PPE, dedicated toilet

Contact isolation

- Highly transmissible but not by airborne droplet - e.g. neonatal conjunctivitis/HSV, VZ, multi-drug resistant bacteria, cutaneous diphtheria
- Additional precautions: Gown & gloves

Respiratory precautions

- Prevent close droplet spread - Hib/Meningococcal meningitis, mumps, measles, pertussis
- Additional precautions: Masks

Enteric precautions

- To prevent short transmission by faecal material - e.g. HepA, GE, parasitic infection
- Additional precautions: Gown & gloves, dedicated toilet

Detention of Disease Carriers

- Legislation exists
- Only employed if patient unco-op and placing others at risk
- Authorising person & applicable diseases varies between states/territories

Hepatitis B immunization

Routine immunization of health workers is effective & cost-effective way to protect them.

HBV is the most infectious blood-borne virus and often the most prevalent.

The long-term sequelae of HBV infection include cirrhosis and hepatocellular carcinoma.

- Immunize health workers early in their career
- Pre-vaccination serological testing is unnecessary
- Use a 0, 1 and 6 months schedule of three injections
- If possible, check antibody levels between two to six months after the last dose
- Do not administer boosters routinely as protection is lifelong

Sterilisation

- Heat
 - Autoclave
 - Saturated but dry steam (faster & more penetrating than hot air)
 - Downward displacement - low pressure - steam @ 121°C - 15mins
 - High vacuum, low temperature - P<20mmHg, steam @ 134°C - 3min
 - Dry heated air - 160°C - 1hr
- Chemical
 - Glutaraldehyde - needs well ventilated area
 - Halogens
 - Iodine
 - Betadine - <1% sol non-toxic to tissues, but >1% needed to be bactericidal
 - Chlorine - hypochlorite good against viruses
 - Organic disinfectants - isopropyl alcohol, formalin, phenols, chlorhexidine
 - Cationic surface active agents - cetrimide - weak bactericidal against G +ve
 - Gases - ethylene oxide -boils at 12°C - non-toxic
 - Heavy metals (Ag, Hg)
- Irradiation