

Needle Stick Injury

Universal precautions

- Hand washing
- Personal protective equipment [PPE]
- Preventing/managing sharps injuries
- Aseptic technique
- Isolation
- Staff health
- Linen handling and disposal
- Waste disposal
- Spillages of body fluids
- Environmental cleaning
- Risk management/assessment

Occupational hazards in Health Care

- Physical stress
- Emotional stress
- Harmful agents
- Toxic
- Allergenic
- INFECTIOUS DISEASES

Occupationally Acquired Infections Resulting from Blood-Borne Transmission

INFECTION	ATTACK RATE(%)	HEALTH CARE WORKERS MOST AFFECTED
HIV	0.1 to 0.4	Nurses,lab workers
Hepatitis B	20 to 40%	All
Hepatitis C	1.2 to 10 %	Oral Surgeons
Ebola Virus	High	Nurses

Sepkowitz KA. Ann Med 1996 Occupationally acquired infections in HCW's

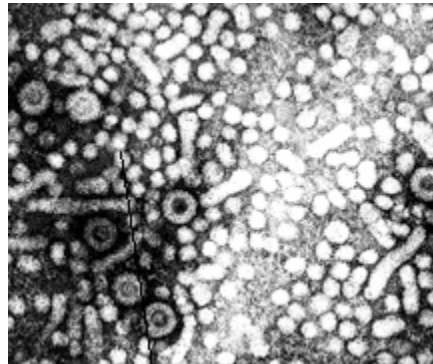
Occupationally Acquired Infections Resulting from Airborne Transmission

INFECTION	ATTACK RATE(%)	HEALTH CARE WORKERS MOST AFFECTED
Tuberculosis	20 to 50	All
Varicella	4.4 to 14.5	All
Influenza	3.8 to 45	Nurses,Doctors
Rubella	13	All
Pertussis	43	All
Parvovirus	27 to 47	Nurses
RSV	42 to 56	All
Adenovirus	22 to 39	ITU's,Ophthalmic Clinics

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Infections transmitted by blood and body fluids

- Hepatitis B
- HIV
- Hepatitis C



Occupational Risk of Hepatitis B

- Much more transmissible than HIV
- Risk after needle stick: 2% - 40%
- 1994 - 1000 health care workers developed HBV infection
- Approximately 200 HCWs die each year

Source: CDC, 1991; 1997

Occupational Risk of Hepatitis C

- HCV - major cause of chronic liver disease
- No vaccine
- No effective post-exposure prophylaxis
- 85% of HCV infected people develop chronic infection

Source: CDC, 1997; NIH, 1997

Occupational Risk of HIV

- Risk after needle stick - 1 in 300
- Exposures from needle sticks or cuts cause most infections

Source: CDC, 1991; 1996

VACCINATION

- Vaccine recommendations
- Hepatitis B Immunisation
- Dose 1
- Dose 2 1 month after first dose
- Dose 3 5 months after second dose
- Anti-bodies are checked after 8 weeks

Post Vaccination Management

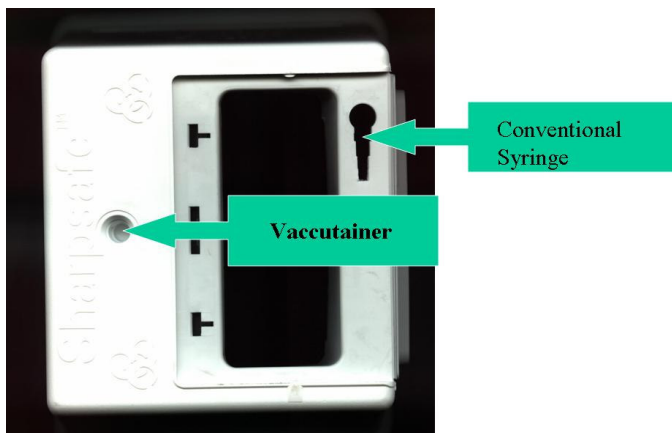
Anti HBs 8 weeks after the third dose							
>100 iu/l	10 - 99 iu/l	1 - 10 iu/l	0				
No further Boosters	Booster dose after high risk exposure	Yearly booster	Perform anti Hbc				
			<table border="1"> <thead> <tr> <th>Positive</th> <th>Negative</th> </tr> </thead> <tbody> <tr> <td>Perform HbsAg to investigate carrier status</td> <td>Repeat course with vaccine from a different manufacturer</td> </tr> </tbody> </table>	Positive	Negative	Perform HbsAg to investigate carrier status	Repeat course with vaccine from a different manufacturer
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Sharp Containers Needle Stick Injuries

- 1). Always avoid re-capping.
- 2). Never hand over used needles to other colleagues.
- 3). Never walk about with used needles in your hand.
- 4). Make use of the V-shaped mechanism to dislodge needles from syringes.
- 5). Seal container when 3/4 full.
- 6). **Sharps:** Needles, Phials, Introduces and Blades.
- 7). Read thoroughly the Needle Stick Injure Policy in your ward.

In case of a needle stick injury:

- I. Encourage bleeding.
- II. Wash the contaminated site thoroughly with soap and running water.
- III. Report any needle stick injures to the
Infection Control Unit.



Do not put your hands or fingers in the sharp containers or try to push sharps down into a full container.

Empty when the container is $\frac{3}{4}$ full



800,000 Needlestick Injuries Occur Each Year in the United States

16,000 of These Are Likely to Be Contaminated by HIV

Up to 80% of All Accident Exposures to Blood Are Caused by Needlestick Injuries

HCWs with Occupationally Acquired HIV/AIDS Infection

Occupation	Documented occupational transmission ²	Possible occupational transmission ³	Total
Nurse	22	33	55
Laboratory technician, clinical	16	16	32
Physician, nonsurgical	6	12	18
Health aide/attendant	1	14	15
Housekeeper/maintenance worker	1	12	13
Emergency medical technician/paramedic	0	12	12
Technician/therapist ⁴	0	10	10
Dental worker, including dentist	0	6	6
Physician, surgical	0	6	6
Technician/dialysis	1	3	4
Technician/surgical	2	2	4
Embalmer/morgue technician	1	2	3
Technician/laboratory, nonclinical	3	0	3
Respiratory Therapist	1	2	3
Other health care occupations	0	4	4
TOTAL	54	134	188

Source: CDC, 1997

Preventable Exposures to Blood/Body Fluids

Description of exposure	Number of workers	(%)
Recapping a used needle	38	26%
Improper disposal of a used needle	94	64%
Skin contact	14	9%
TOTAL	146	100%

As of 1 January, 1997 to August, 2000 at St.Luke's Hospital