

HIV & the Healthcare Worker

T E Madiba

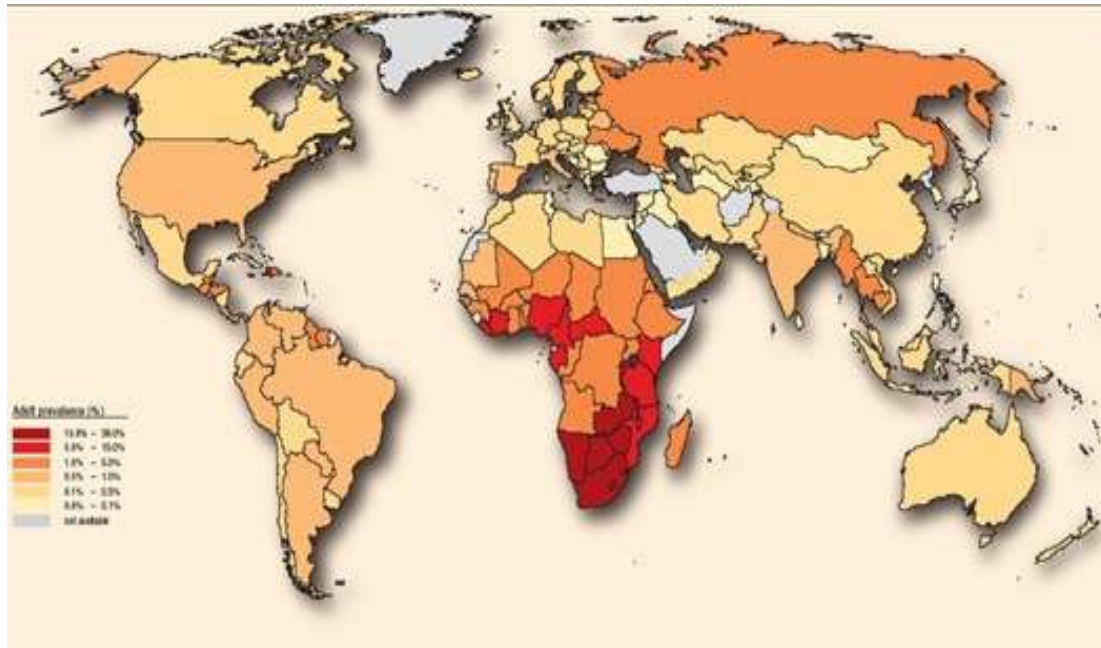
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Department of Surgery



Challenges

- Disease burden
- HIV transmission
- Universal precautions
- Exposure to HIV
- Decision-making
- Legal and ethical aspects
- Conclusion



64%



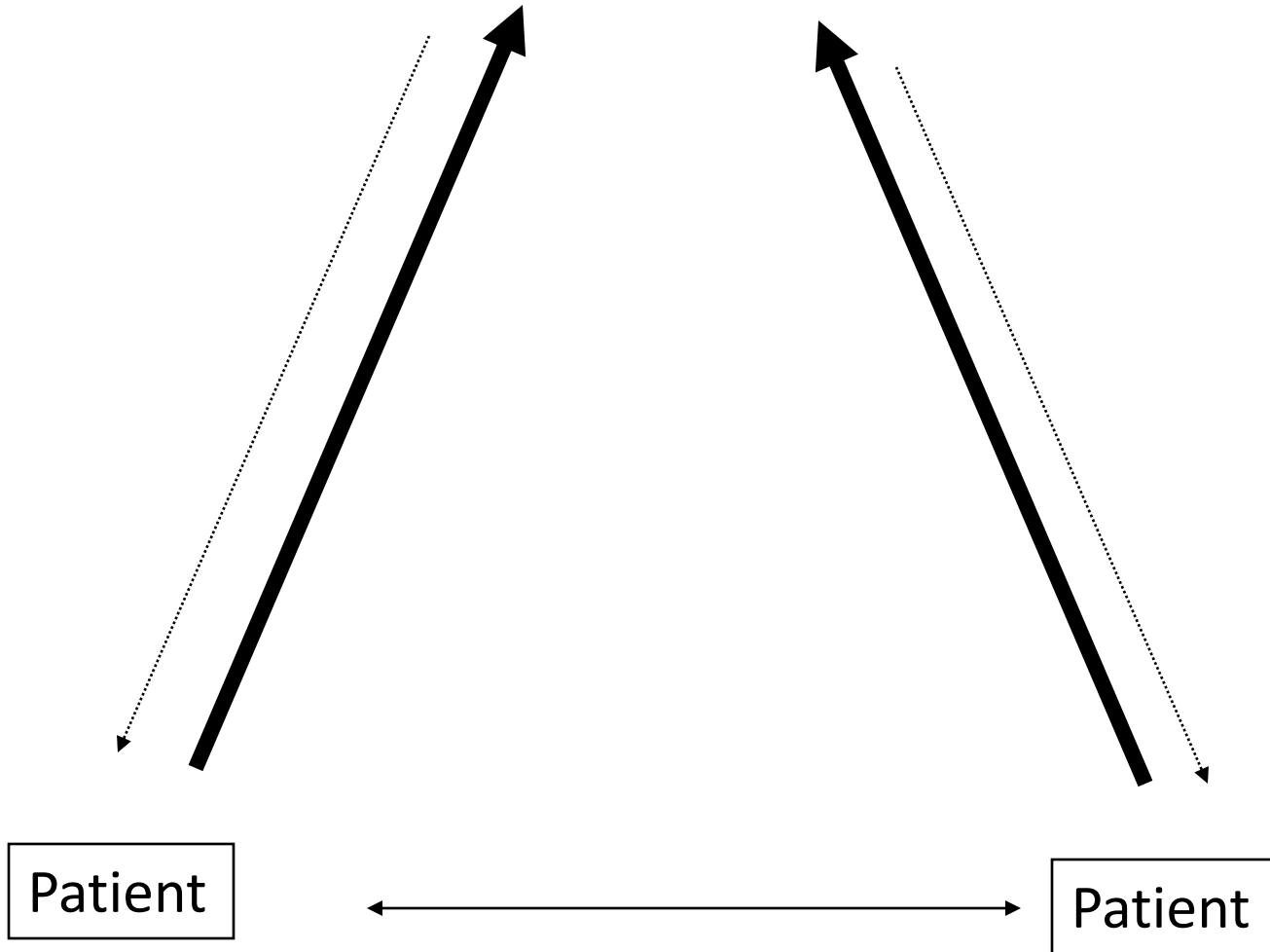
Total: 39.4 (35.9 - 44.3) million

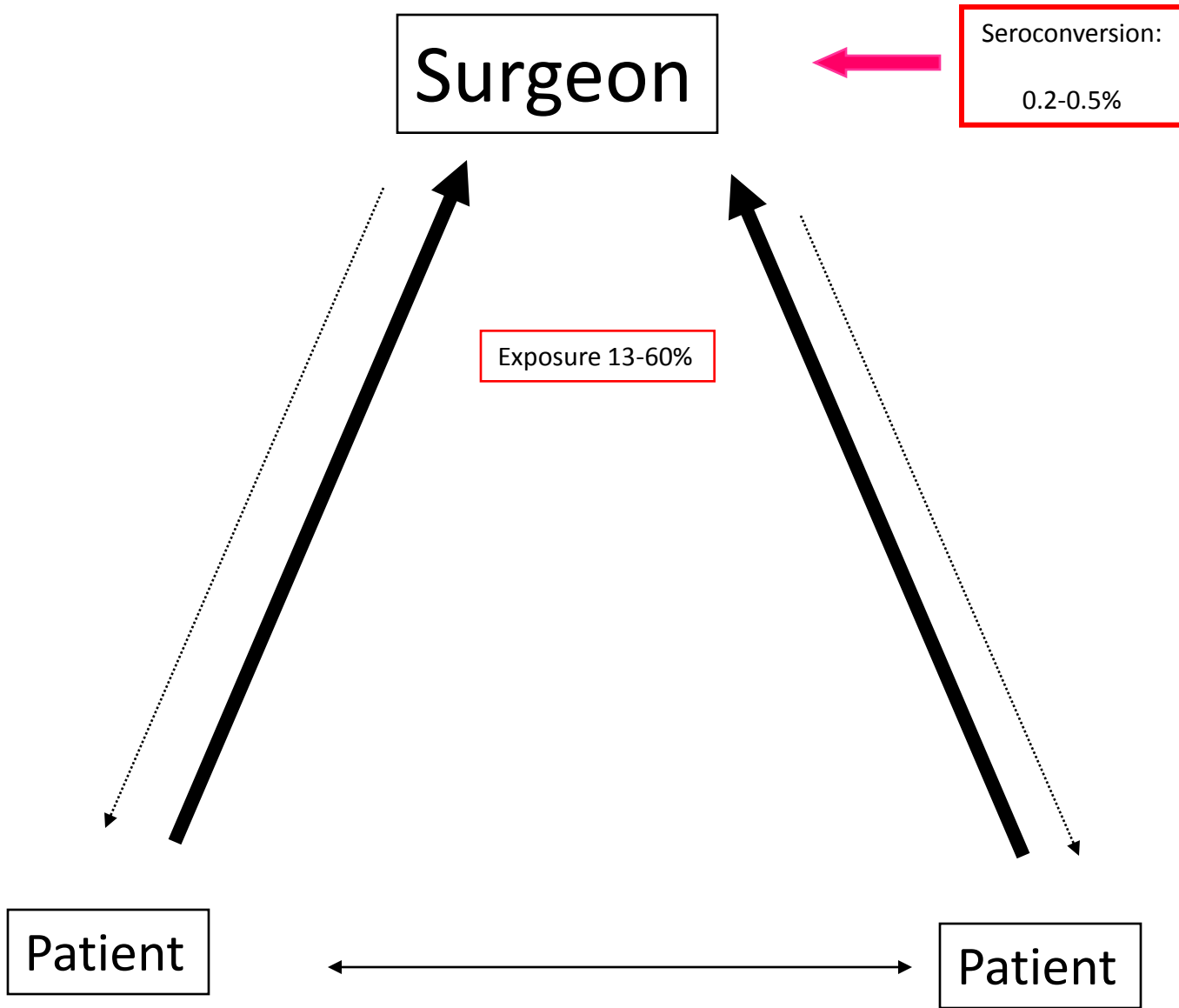


HIV transmission

<u>Author</u>	<u>Year</u>	<u>Country</u>	<u>Transmission</u>
Robinson	1986	USA	Homosexual
Wilson	1989	USA	Homosexual
Wakeman	1990	UK	Homosexual
Kalima	1990	Zambia	Heterosexual
Dietrich	1992	USA	Homosexual
Yii	1995	Australia	Heterosexual
Savioz	1996	Switzerland	Drug
Consten	1996	The Netherlands	Homosexual
Hewitt	1996	USA	Homosexual
Bhagwanjee	1997	South Africa	Heterosexual
Tran	2000	USA	Homosexual
Lewis	2000	Malawi	Heterosexual
Čačala	2006	South Africa	heterosexual

Healthcare worker

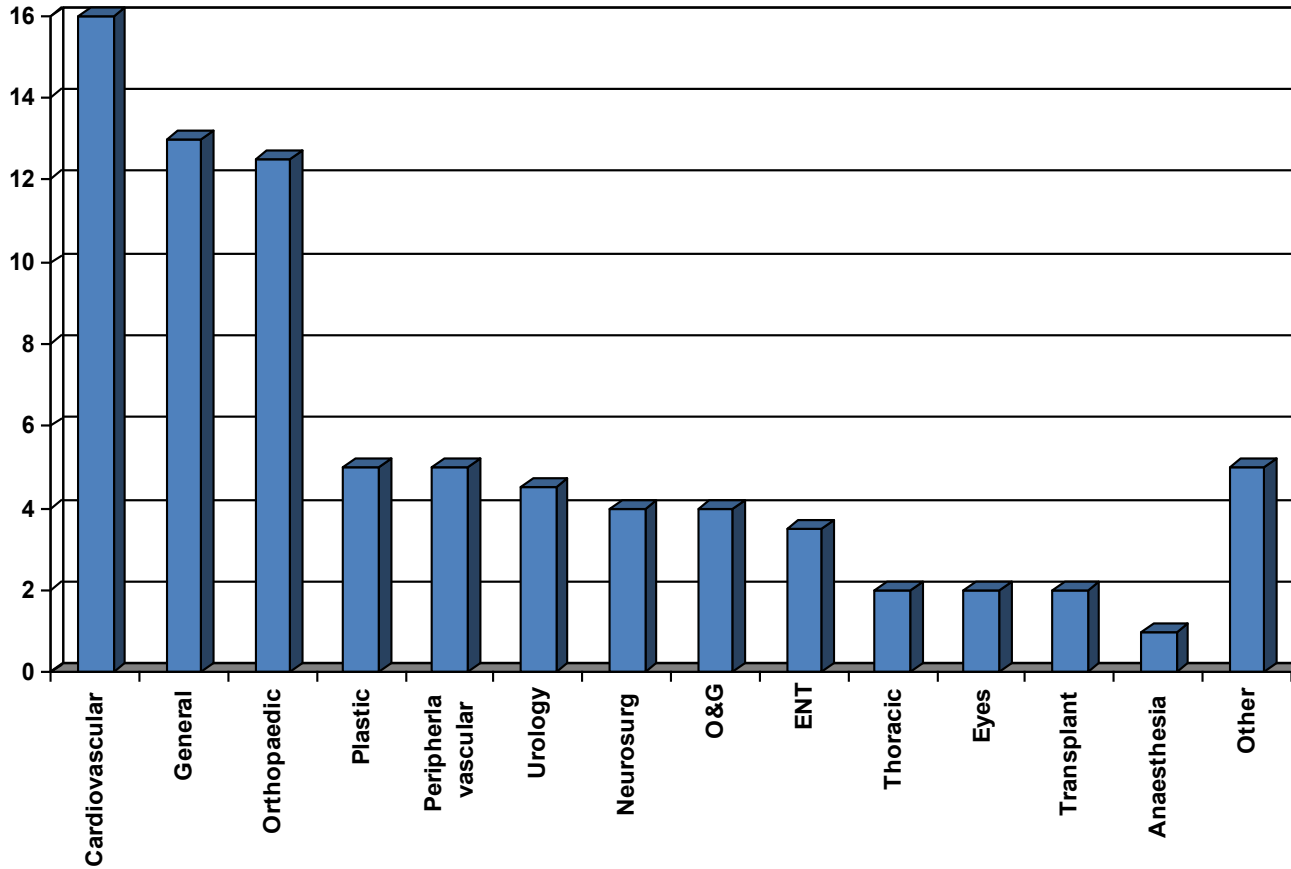




Exposure

- Blood splashes
- Needle-stick injury

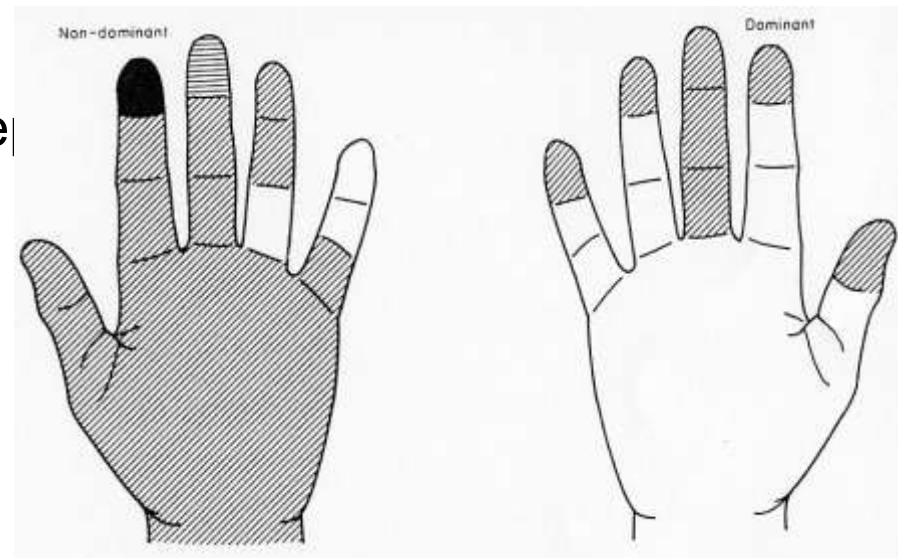
Exposure frequency



Needle-stick Injury during surgery

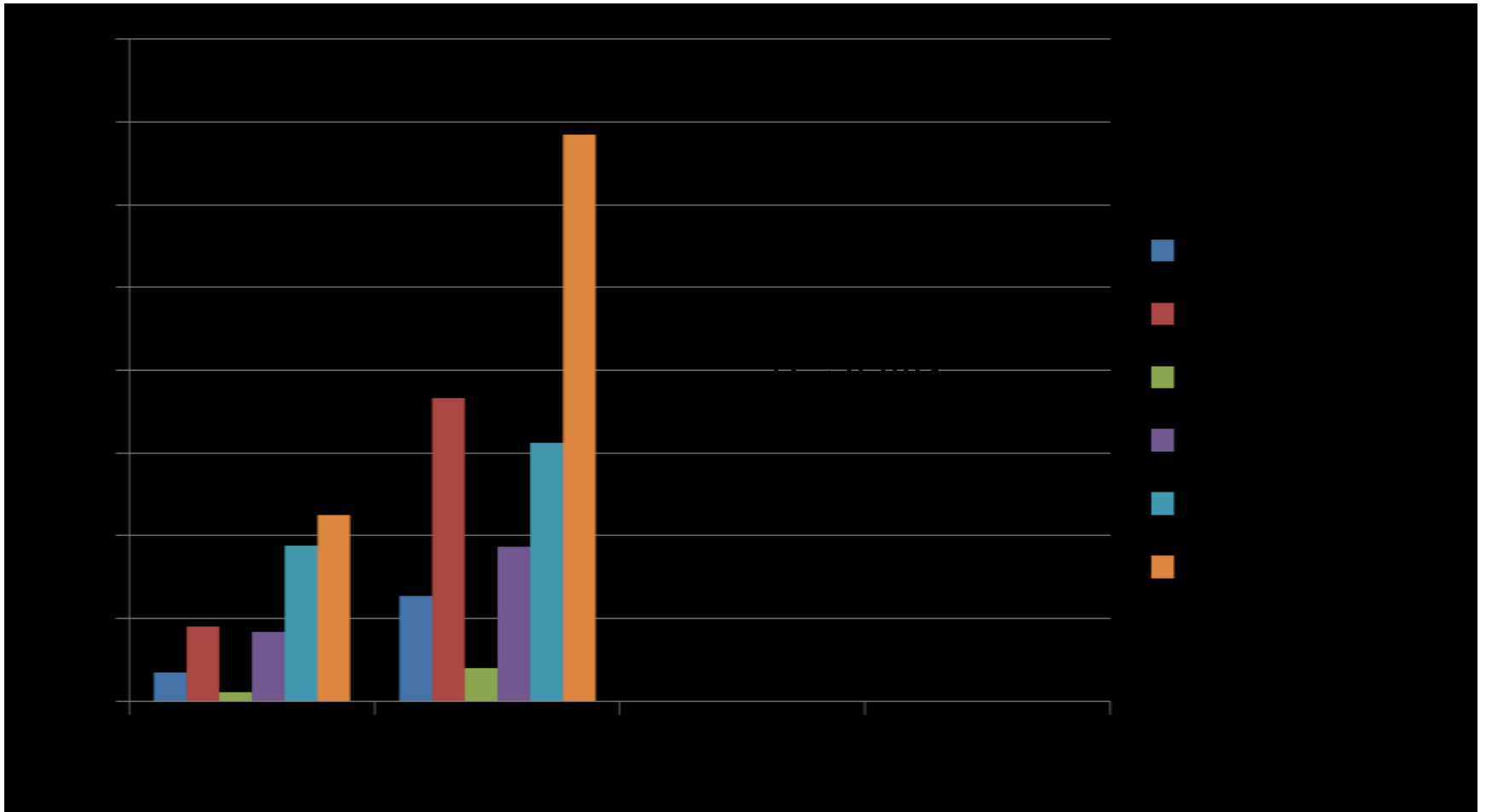
High-risk practices

- Mostly self-inflicted
- During wound closure (esp. mass closure)
- Inadequate assistance
- Holding tissues while stitching
- Excessive adipose tissue
- Manipulation of instruments deep
- Poor visibility
- Re-capping of needles

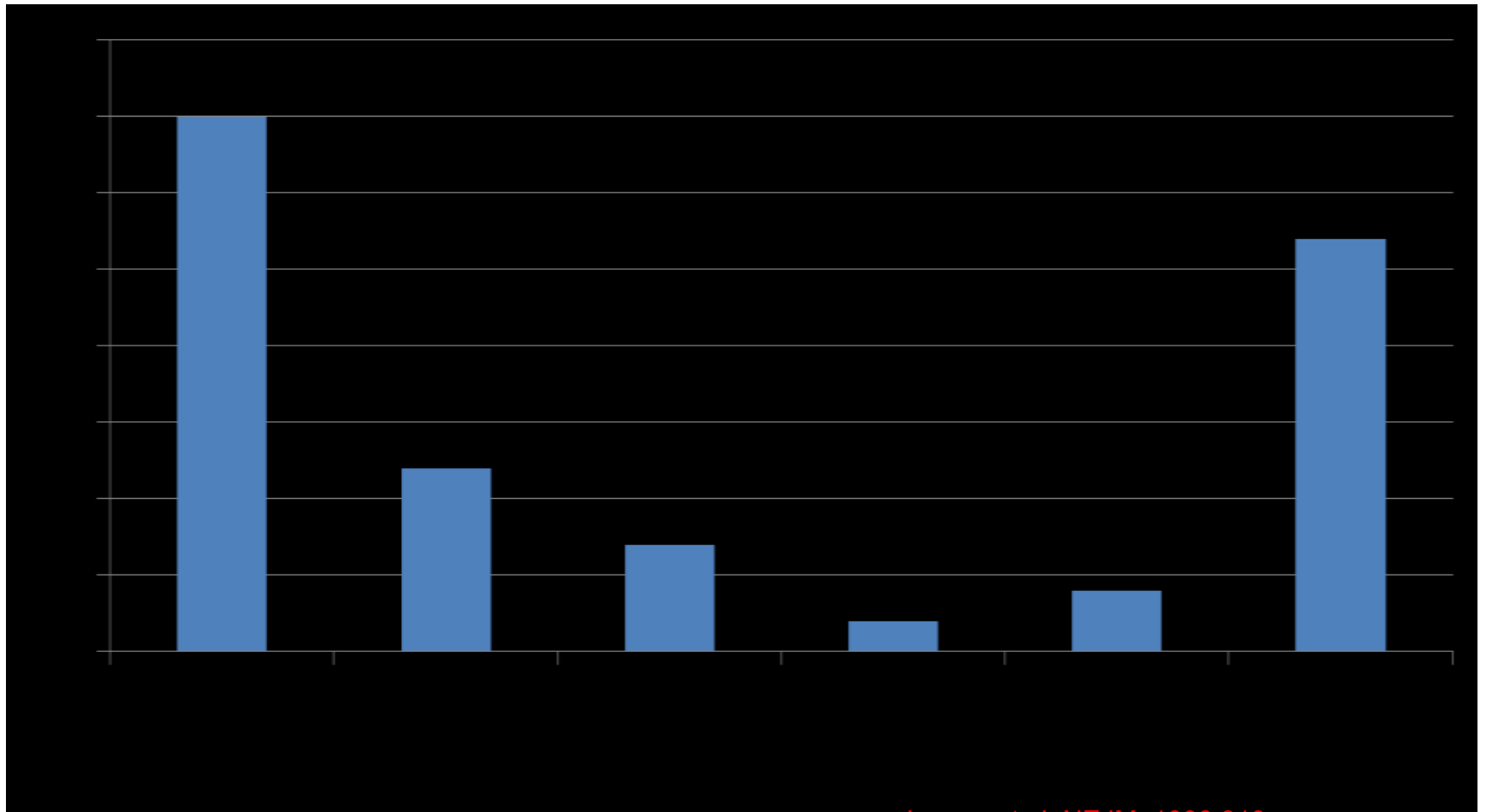


Blood inoculum

Needle type and depth of penetration



NSI risk by device type



Jagger, et al. NEJM, 1988:319

Rate of sero-conversion

Exposure type	HIV	Hepatitis
Percutaneous	0.14	0.4
Hollow needle	0.14	0.6
Blood filled	1.21	0.9
No blood	0	-
Solid needle	0.11	-
Muco-cutaneous	0.43	0.4

Sero-conversion: HIV < Hepatitis

Percutaneous injury

Risk factors for sero-conversion

- Injury
 - Interval between needle use and exposure
 - Depth or severity of exposure
 - Quantity of blood injected
 - Type and bore of needle
- Source patient
 - Clinical status
 - Titre of circulating virus
 - Use of anti-viral agents
- Healthcare worker
 - Use of Universal Precautions (e.g. barriers)
 - Post-exposure management

HIV and treatment outcome

HIV infected patients

- CD4>200: No difference for
 - Admission type
 - Hospital stay
 - Complications
- Higher viral loads
 - Lower CD4 counts
 - Longer hospital stay
 - More complications

HIV-infected patients

Decision making

- HIV positive patients have a similar surgical course to the non-infected patients
- Surgical outcome similar
 - HIV +ve
 - HIV -ve
- HIV +ve patients → Higher incidence of:
 - MODS
 - Wound sepsis
- HIV status should not influence:
 - Admission to hospital or special units
 - Management decisions

Bhagwanjee et al, Durban, BMJ 1997
Čačala et al. Ann RC Surg Engl, 2006
Madiba et World J Surge 2008

National Health Act
Health Professions Act
Surgeon General (USA)

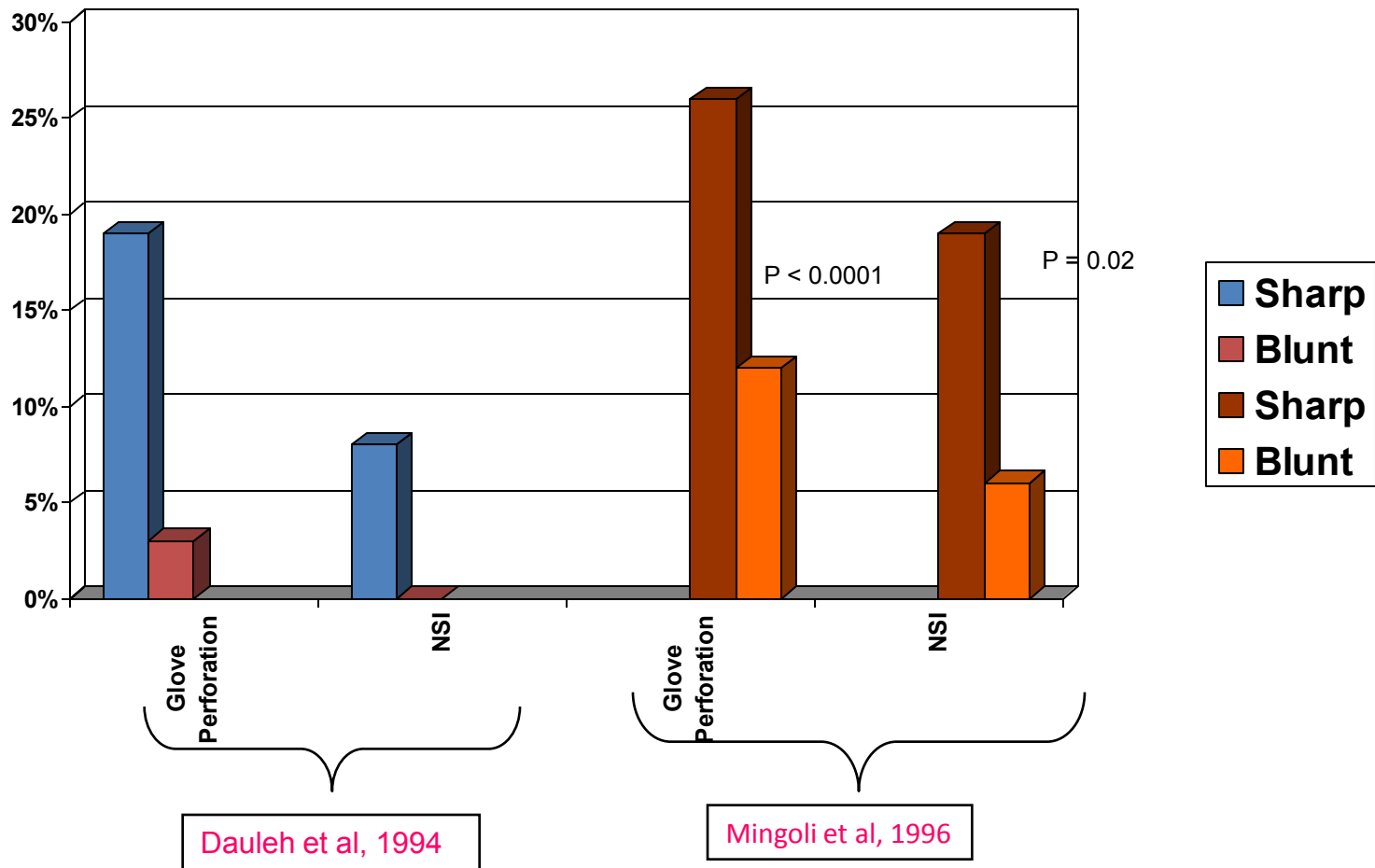
Protection for HCW

Universal precautions

- The scrub up ritual
- Protective clothing
 - Waterproof gown
 - Double-gloving
 - Eye protection (visors or goggles)
 - Footwear protection
- Practice modification
 - No hand-to-hand passage of sharps
 - Minimise use of sharps
 - Correct disposal of sharps
 - Needles not to be re-sheathed
 - Finger not to be used as needle guide

Blunt tip needles

Sharp & blunt suture needles?



Wide-angle visor



Closed loop blood sampling



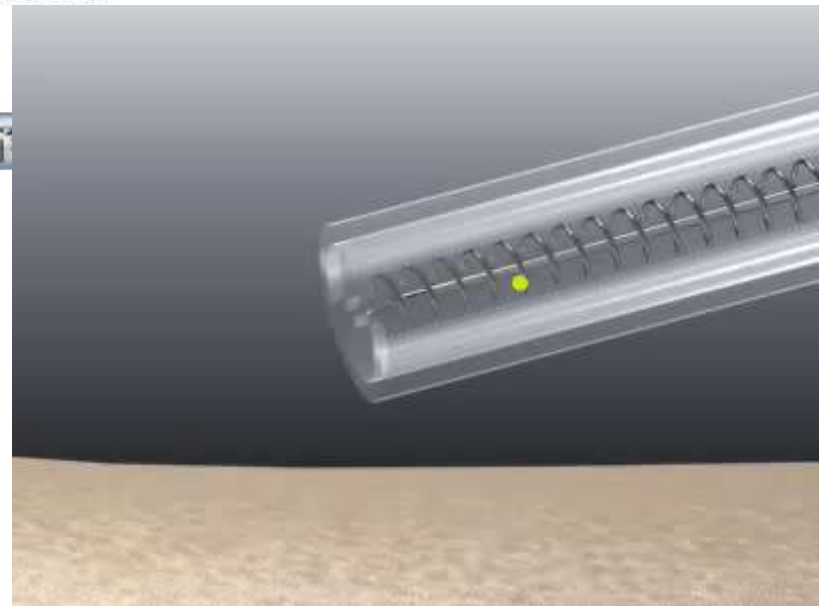
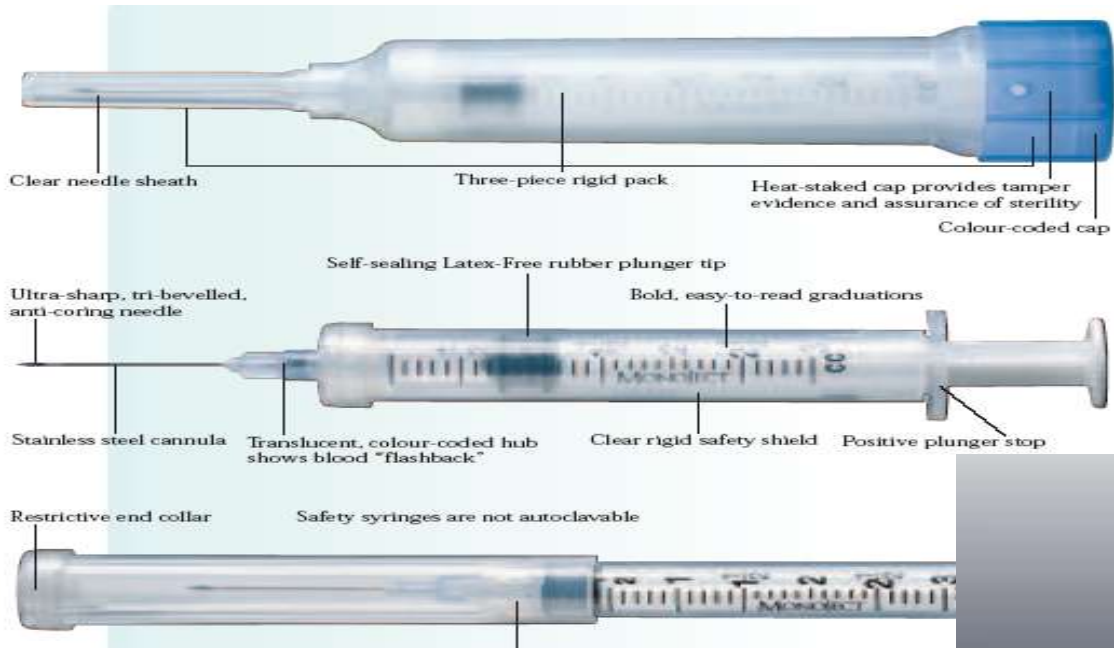
IV Catheter with locking needle tip



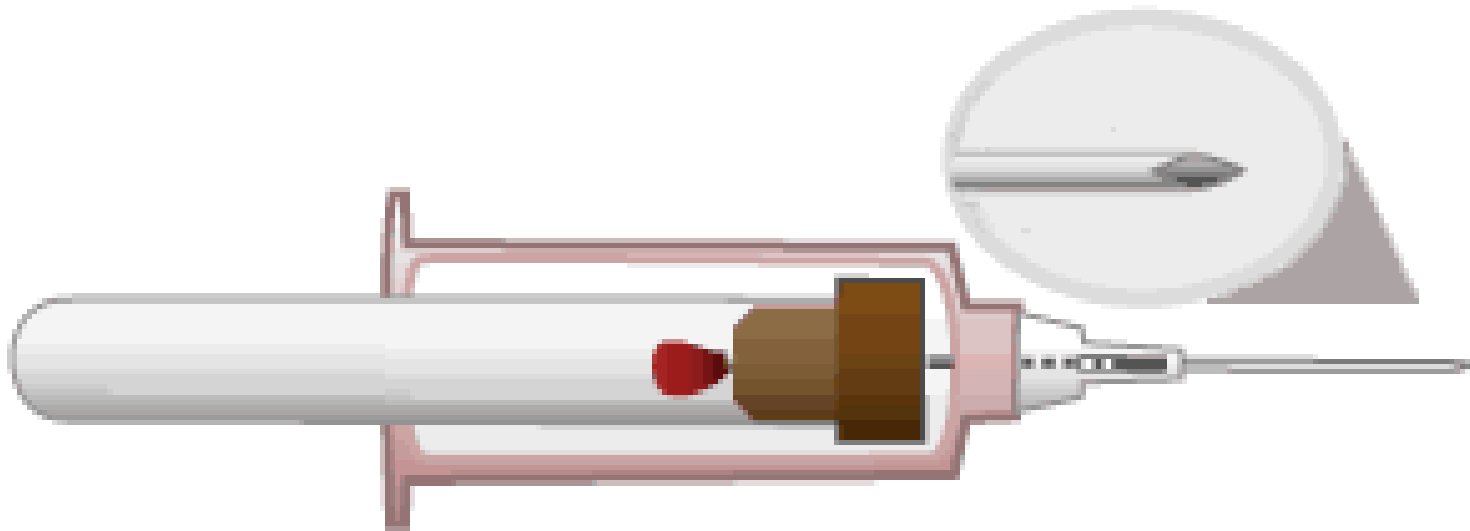
I-V Stylet catheter



Self Sheathing Safety Syringe



Self-blunting needles



Needle-free valves



Need-free tubing



Self Capping Safety Needle



1
Open MONOJECT MAGELLAN package by peeling back paper tabs.



2
Remove protective needle sheath.



3
Draw up medication and administer injection, according to institutional protocol.



4a
...thumb



4b
...finger



4c
...flat surface.

----- Lock the safety shield using any of the following methods (4a - 4b - 4c) -----



5



6



Skin staples



Non-suture wound closure
e.g. Dermabond

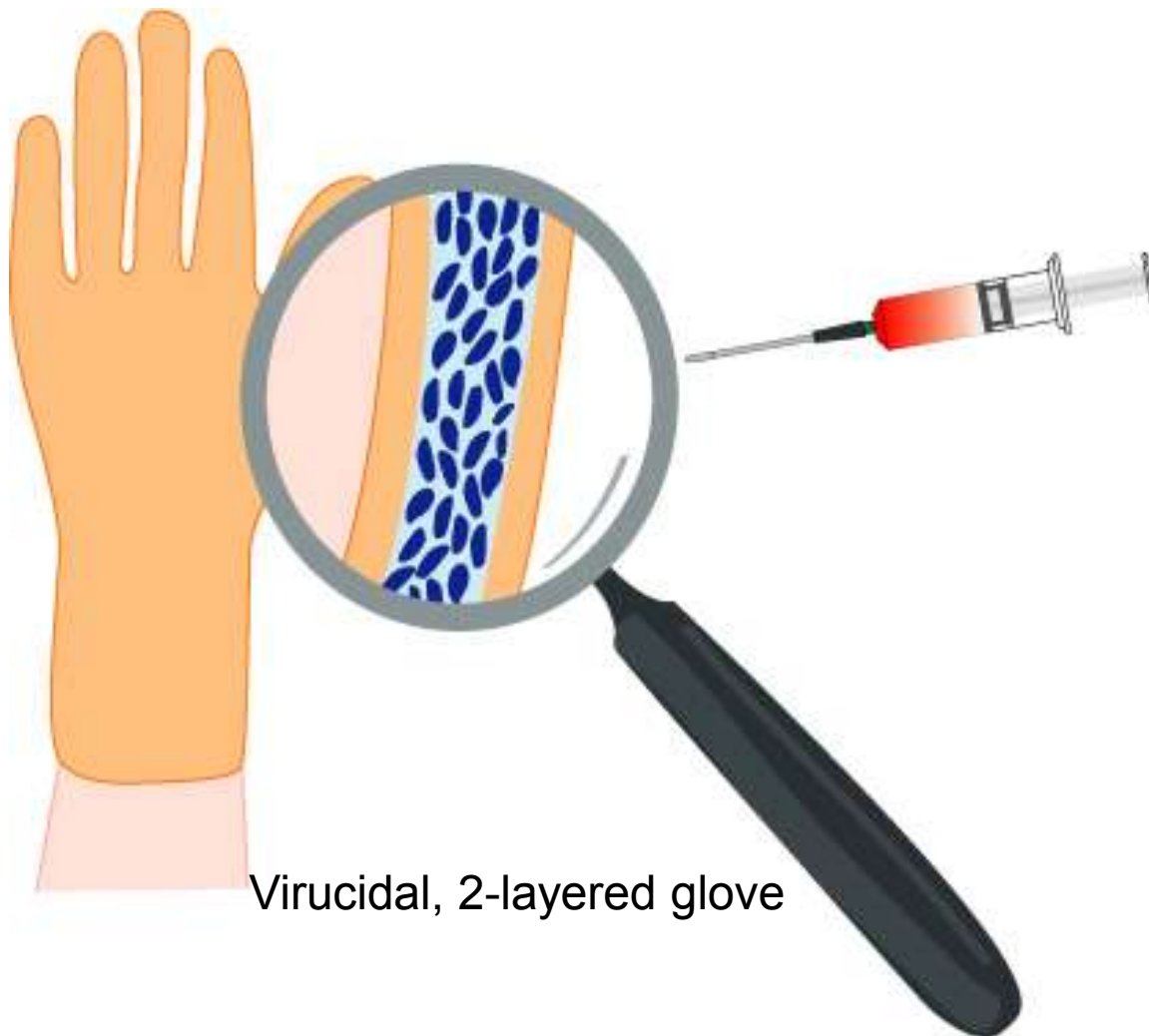
Skin closure

Skin staples



Non-suture wound closure
e.g. Dermabond

Double-gloving



Virucidal, 2-layered glove

Barriers to compliance

- Familiarity with needle-stick and cutting injuries
- Forgetting of safety protocols during crucial times
- Variable acceptance of double gloving and eye protection
- Discomfort and loss of sensitivity in the fingers
- Under-estimation of sero-conversion rates
- ~~Budgetary constraints~~

After exposure

After HIV exposure

- Wash exposure site with soap & water
- Flush exposed mucous membranes:
 - Clean water
 - 0.9% sodium chloride
 - Sterile irrigants
- Report exposure to infection control person
- Screening for HIV status within 24 hours:
 - Healthcare workers
 - Patient

After HIV exposure (Cont'd)

- Post-exposure prophylaxis (PEP).
- First dose as soon as possible after exposure
- Recommended duration 28 days
- Post-exposure follow-up of the HCW
- CDC → Follow-up testing at:
 - 6 weeks
 - 12 weeks
 - 6 months

PEP

Counselling

- Expected adverse events & how to manage
- Advise → PEP not 100% effective
- Patients who test negative → Window period
- Need for continued prophylaxis.

Routine HIV Testing

- Pros

- Epidemiologic data
- Education of HIV+
- Reduce risk
- Precautions

- Cons

- Universal precautions
- Window period
- Emergency operations
- False -ve results

Solution: Universal precautions

Respect for persons

Including patients with HIV infection

Ethical principles

- Autonomy
- Beneficence
- Non-maleficence
- Justice

Patient protection

- The SA Constitution
- National Health Act
- Health Professions Act

Informed consent

- Requirements
 - Voluntary (not coerced)
 - Adequate information
 - Mentally and legally competent patient
- Consent may be given:
 - Expressly
 - » Oral
 - » Written
 - Tacitly
 - » By conduct

Informed Consent

Testing for HIV *

- Patient must:
 - Understand the nature of the test that is proposed
 - Know the benefits, risk and alternatives
 - Know medical and social implications of a positive test
 - Know his/her responsibilities in case of a negative result
 - Give permission for the test willingly
- Mandatory:
 - Pre-test counselling
 - Post-test counselling
 - If no counselling – refer

Confidentiality

Ethical and legal guidelines

- Health care workers must keep all patient information confidential
- Information to others:
 - Can be given under following circumstances:
 - » Only with express consent of the patient
 - » Minors: parent or guardian has given consent
 - » Dead: Next of kin has given consent

Confidentiality Waiver?

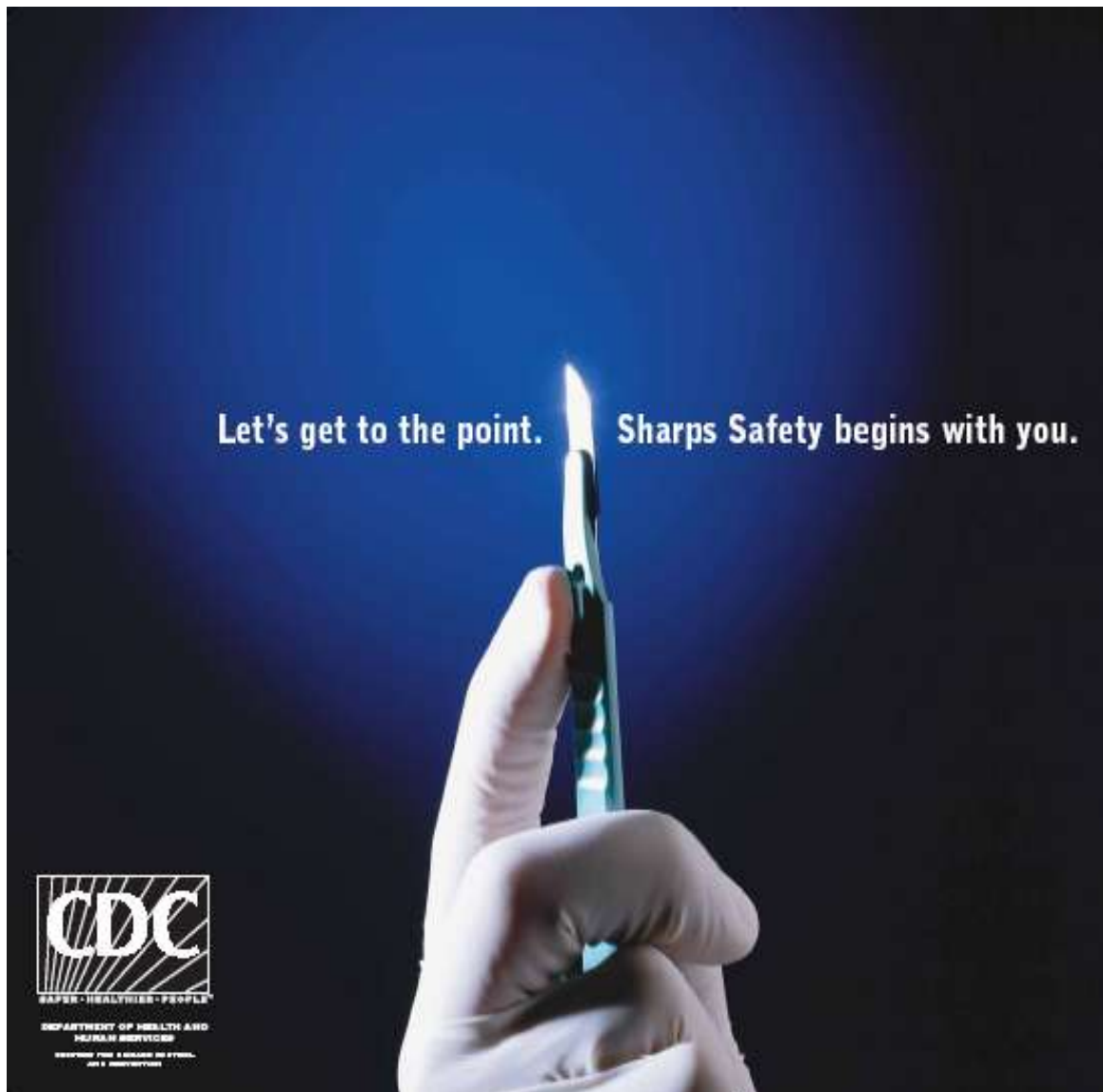
- Information to others
 - No
 - Only with express consent of the patient
- Health care workers
 - Professionally – No!
 - Socially – No!
 - » McGeary case
- Next of kin – No!
 - Exceptions:
 - Danger to spouse

Needle-Stick Injury Dilemma

- Patient awake, gives consent - no problem
- Dilemma
 - Patient under anaesthetic
 - Patient awake but refuses consent
 - No testing without consent
- Anaesthetic
 - Wait until patient awakes
- Refuses or unconscious for long periods
 - Use of store blood

Conclusion

- HIV & AIDS are here to stay
- HIV status does not affect outcome
- Universal precautions
- Testing only with informed consent
- Lobbying of authorities



Universal precautions!!