

HEALTH CARE WORKER RISK OF BBP TRANSMISSION: U.S. PUBLIC HEALTH SUCCESS STORY

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Annual Infections Attributable to Sharps Injuries Among HCWs in 14 WHO Regions

<u>Region</u>	<u>HCV (#)</u>	<u>HBV(#)</u>	<u>HIV(#)</u>
Africa 1	580	3,600	100
Africa 2	1,000	6,200	620
Americas 1	390	40	51
Americas 2	1,000	6,000	70
Americas 3	180	760	14
E. Mediterranean 1	310	2,300	1
E. Mediterranean 2	3,200	6,800	7
Europe 1	290	210	6
Europe 2	690	6,400	1
Europe 3	1,700	8,200	40
Southeast Asia 1	500	1,500	20
Southeast Asia 2	1,000	7,300	70
Western Pacific 1	830	110	0
Western Pacific 2	4,700	16,000	30
<u>Total</u>	16,400	65,600	1,000

Source: Pruss-Ustun et. al. American Journal of Industrial Medicine 2005; 48(6):482-490.

World-wide cases of documented and possible occupational HIV infection among HCW through 1997

<u>Occupation</u>	<u>Documented</u>	<u>Possible</u>	<u>Total</u>
Nurse	49 (52.1%)	45 (26.5%)	94 (35.7%)
Laboratory Worker (cl)	17 (18.0)	19 (11.2)	36 (13.6)
Laboratory Worker (ncl)	3 (3.2)	4 (2.3)	7 (2.6)
Physician (nonsurg)	9 (9.6)	17 (10.0)	26 (9.8)
Physician (surg)	1 (1.1)	14 (8.2)	15 (5.7)
Health Aide	1 (1.1)	15 (8.8)	16 (6.1)
Housekeeper/Maint	3 (3.2)	8 (4.7)	11(4.2)
Emergency Technician	-	10 (5.9)	10 (3.8)
Dental	-	9 (5.3)	9 (3.4)
Embalmer	-	2 (1.2)	2 (0.7)
Respiratory Therapist	1 (1.1)	2 (1.2)	3 (1.1)
Dialysis Technician	1 (1.1)	3 (1.8)	4 (1.5)
Technician (surgical)	2 (2.1)	3 (1.8)	5 (1.9)
Other/Unspec	7 (7.4)	19 (11.2)	26 (9.8)
TOTAL	94 (100)	170 (100)	264 (100)

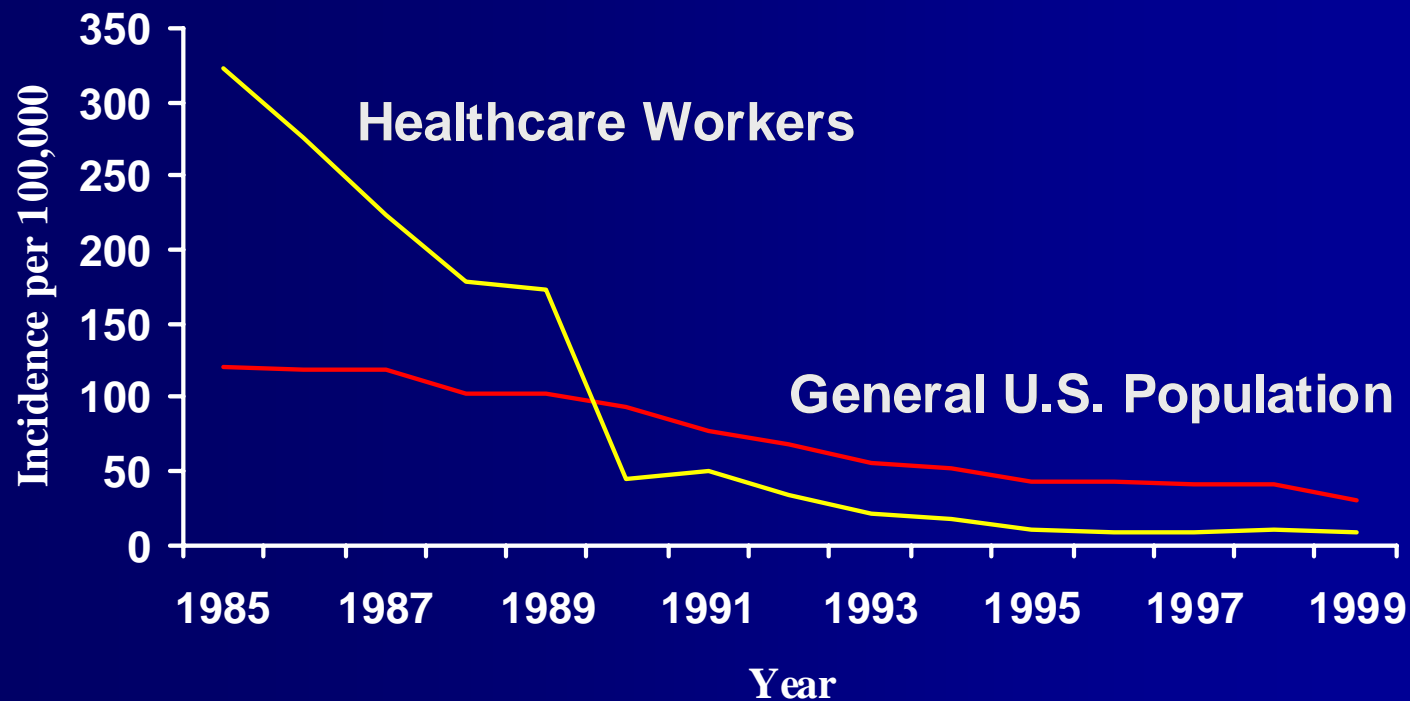
Source: Ippolito G et.al. Occupational human immunodeficiency virus infection in health care workers: worldwide cases through September 1997. *Clinical Infectious Diseases* 1999; 28(2):365-383.

Perception of Most Significant Reason for Needlestick Injuries, 1983 (n=307)

<u>Reason</u> <u>(%)</u>	<u>Total # (%)</u>	<u>Nurses (%)</u>	<u>MD</u>
Carelessness	124 (40)	(38)	(49)
Recapping	76 (25)	(30)	(2)
Perform task	71 (23)	(23)	(32)
Transport	8 (3)	(2)	(4)
Trash	12 (4)	(3)	(4)
Disposal deposit	7 (2)	(2)	(0)
Lack of knowledge re: disposal technique	9 (3)	(1)	(9)

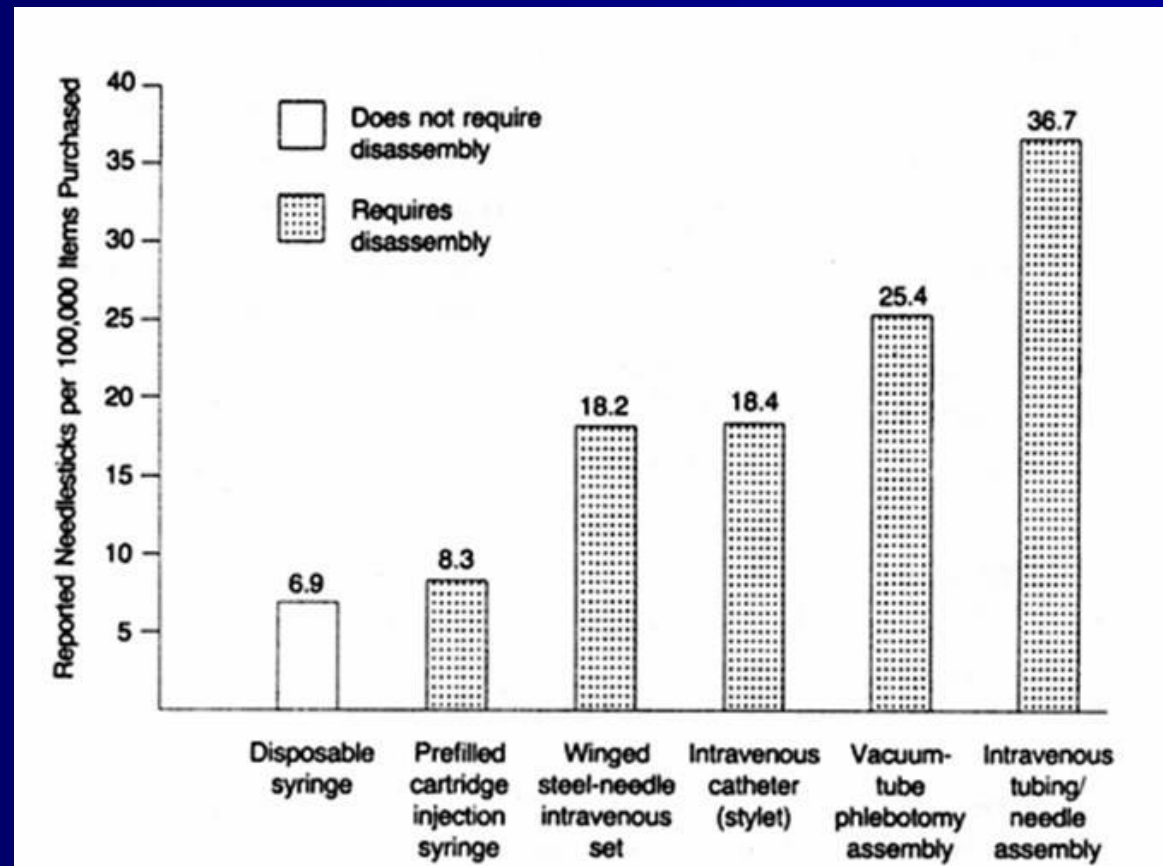
Source: Jackson MM et.al. Perceptions & beliefs of nursing and medical personnel about needlestick handling practices and needlestick injuries. *AJIC* 1986;14(1): 1-10.

Estimated Incidence of HBV infections among HCW and General Population, United States, 1985-1999



U.S. Centers for Disease Control
and Prevention

Needlestick injury rates per 100,000 items purchased (1988)



Source: Jagger JC et.al. Rates of needle-stick injury caused by various devices in a university hospital. *NEJM* . 1988;(319)5:284.

Needlestick & Sharp Object Injury Report

Last Name: _____ First Name: _____

Injury ID: (for office use only) S _____ Facility ID: (for office use only) _____ Completed By: _____

1) Date of Injury: 2) Time of Injury:

3) Department where Incident Occurred: _____

4) Home Department: _____

5) What is the Job Category of the Injured Worker: (check one box only)

- | | |
|--|--|
| <input type="checkbox"/> 1 Doctor (attending/staff), specify specialty _____ | <input type="checkbox"/> 10 Clinical Laboratory Worker |
| <input type="checkbox"/> 2 Doctor (intern/resident/fellow) specify specialty _____ | <input type="checkbox"/> 11 Technologist (non-lab) |
| <input type="checkbox"/> 3 Medical Student | <input type="checkbox"/> 12 Dentist |
| <input type="checkbox"/> 4 Nurse, specify _____ <input type="checkbox"/> 1 RN | <input type="checkbox"/> 13 Dental Hygienist |
| <input type="checkbox"/> 5 Nursing Student <input type="checkbox"/> 2 LPN | <input type="checkbox"/> 14 Housekeeper |
| <input type="checkbox"/> 18 CNA/HHA <input type="checkbox"/> 3 NP | <input type="checkbox"/> 19 Laundry Worker |
| <input type="checkbox"/> 6 Respiratory Therapist <input type="checkbox"/> 4 CRNA | <input type="checkbox"/> 20 Security |
| <input type="checkbox"/> 7 Surgery Attendant <input type="checkbox"/> 5 Midwife | <input type="checkbox"/> 15 Paramedic |
| <input type="checkbox"/> 8 Other Attendant | <input type="checkbox"/> 17 Other Student |
| <input type="checkbox"/> 9 Phlebotomist/Venipuncture/IV Team | <input type="checkbox"/> 15 Other, describe: _____ |

6) Where Did the Injury Occur? (check one box only)

- | | |
|---|--|
| <input type="checkbox"/> 1 Patient Room | <input type="checkbox"/> 9 Dialysis Facility (hemodialysis and peritoneal dialysis) |
| <input type="checkbox"/> 2 Outside Patient Room (hallway, nurses station, etc.) | <input type="checkbox"/> 10 Procedure Room (x-ray, EKG, etc) |
| <input type="checkbox"/> 3 Emergency Department | <input type="checkbox"/> 11 Clinical Laboratories |
| <input type="checkbox"/> 4 Intensive/Critical Care unit: specify type: _____ | <input type="checkbox"/> 12 Autopsy/Pathology |
| <input type="checkbox"/> 5 Operating Room/Recovery | <input type="checkbox"/> 13 Service/Utility (laundry, central supply, loading dock, etc) |
| <input type="checkbox"/> 6 Outpatient Clinic/Office | <input type="checkbox"/> 16 Labor and Delivery Room |
| <input type="checkbox"/> 7 Blood Bank | <input type="checkbox"/> 17 Home-care |
| <input type="checkbox"/> 8 Venipuncture Center | <input type="checkbox"/> 14 Other, describe: _____ |

7) Was the Source Patient Identifiable? (check one box only)

- 1 Yes 2 No 3 Unknown 4 Not Applicable

8) Was the Injured Worker the Original User of the Sharp Item? (check one box only)

- 1 Yes 2 No 3 Unknown 4 Not Applicable

9) The Sharp Item was: (check one box only)

- 1 Contaminated (known exposure to patient or contaminated equipment) was there blood on the device? 1 Yes
- 2 Uncontaminated (no known exposure to patient or contaminated equipment) 2 No
- 3 Unknown

10) For What Purpose was the Sharp Item Originally Used? (check one box only)

- | | |
|---|---|
| <input type="checkbox"/> 1 Unknown/Not Applicable | <input type="checkbox"/> 16 To Place an Arterial /Central Line |
| <input type="checkbox"/> 2 Injection: Intra-muscular/Subcutaneous, or Other Injection through the Skin (syringe) | <input type="checkbox"/> 9 To Obtain a Body Fluid or Tissue Sample (urine/CSF/amniotic fluid/other fluid, biopsy) |
| <input type="checkbox"/> 3 Heparin or Saline Flush (syringe) | <input type="checkbox"/> 10 Finger stick/Heel Stick |
| <input type="checkbox"/> 4 Other Injection into (or aspiration from) IV injection site or IV Port (syringe) | <input type="checkbox"/> 11 Suturing |
| <input type="checkbox"/> 5 To Connect IV line (intermittent IV/piggyback/IV infusion/other IV line connection) | <input type="checkbox"/> 12 Cutting |
| <input type="checkbox"/> 6 To Start IV or Set up Heparin Lock (IV catheter or winged set-type needle) | <input type="checkbox"/> 17 Drilling |
| <input type="checkbox"/> 7 To Draw Venous Blood Sample | <input type="checkbox"/> 13 Electrocautery |
| <input type="checkbox"/> 8 To Draw Arterial Blood Sample <input type="checkbox"/> if used to draw blood was it? <input type="checkbox"/> Direct stick? <input type="checkbox"/> Draw from a Line? | <input type="checkbox"/> 14 To Contain a Specimen or Pharmaceutical (glass item) |
| | <input type="checkbox"/> 15 Other, Describe _____ |

11) Did the Injury Occur? (check one box only)

- | | |
|--|--|
| <input type="checkbox"/> 1 Before Use of Item (item broke/slipped, assembling device, etc.) | <input type="checkbox"/> 16 Device Left on Floor, Table, Bed or Other Inappropriate Place |
| <input type="checkbox"/> 2 During Use of Item (item slipped, patient jarred item, etc.) | <input type="checkbox"/> 8 Other After Use-Before Disposal (in transit to trash, cleaning, sorting, etc.) |
| <input type="checkbox"/> 15 Restraining patient | <input type="checkbox"/> 9 From Item Left On or Near Disposal Container |
| <input type="checkbox"/> 3 Between Steps of a Multi-step Procedure (between incremental injections, passing instruments, etc.) | <input type="checkbox"/> 10 While putting item into Disposal Container |
| <input type="checkbox"/> 4 Disassembling Device or Equipment | <input type="checkbox"/> 11 After Disposal, Stuck by Item Protruding from Opening of Disposal Container |
| <input type="checkbox"/> 5 In Preparation for Reuse of Reusable Instrument (sorting, disinfecting, sterilizing, etc.) | <input type="checkbox"/> 12 Item Pierced Side of Disposal Container |
| <input type="checkbox"/> 6 While Recapping Used Needle | <input type="checkbox"/> 13 After Disposal, Item Protruded from Trash Bag or Inappropriate Waste Container |
| <input type="checkbox"/> 7 Withdrawing a Needle from Rubber or Other Resistant Material (rubber stopper, IV port, etc.) | <input type="checkbox"/> 14 Other, Describe: _____ |

1 of 3

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FOR MICROSOFT® ACCESS
EXPOSURE PREVENTION
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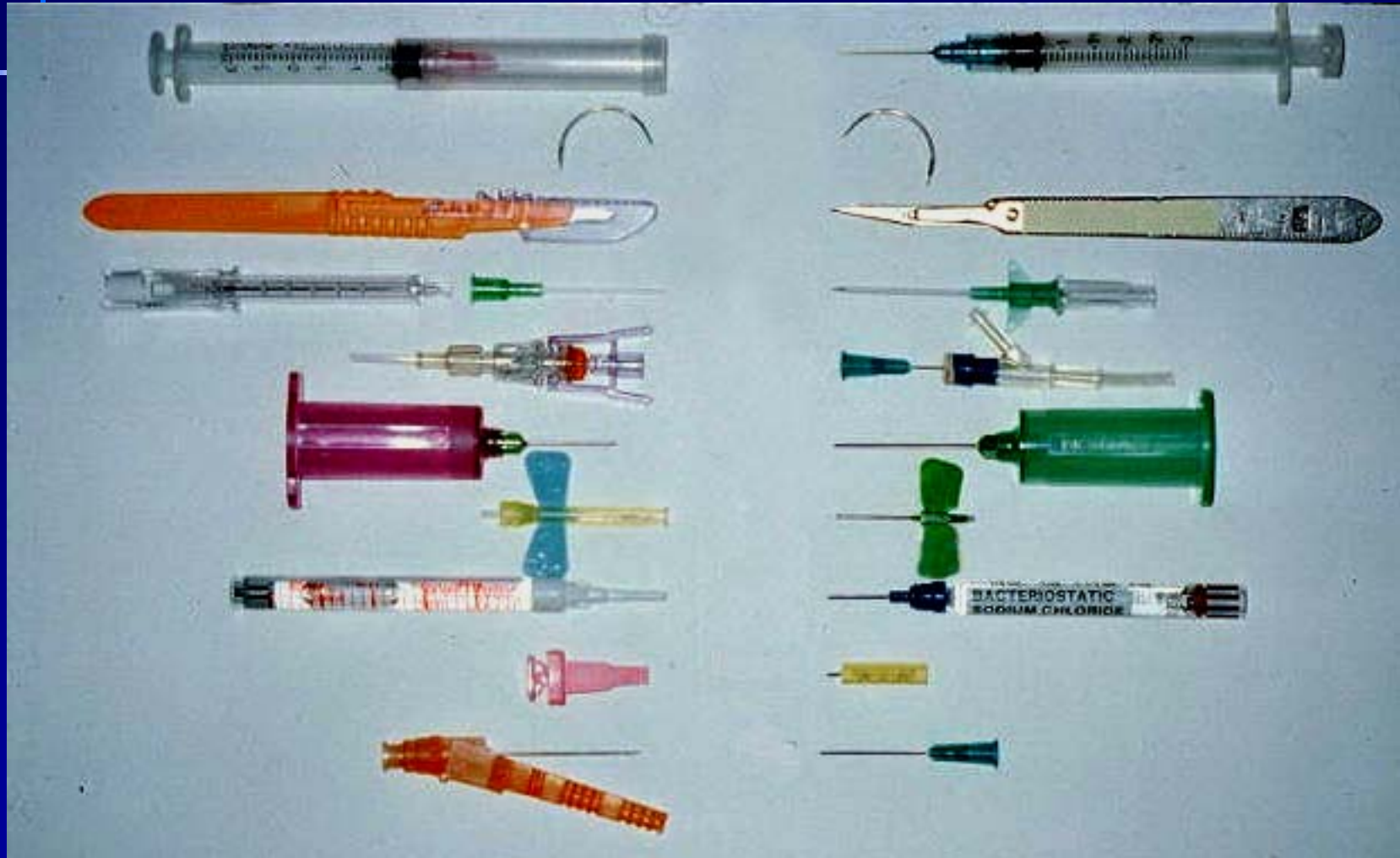
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EPINet (Exposure Prevention Information Network)

A New Generation of Protective Devices

safety-engineered devices

conventional devices

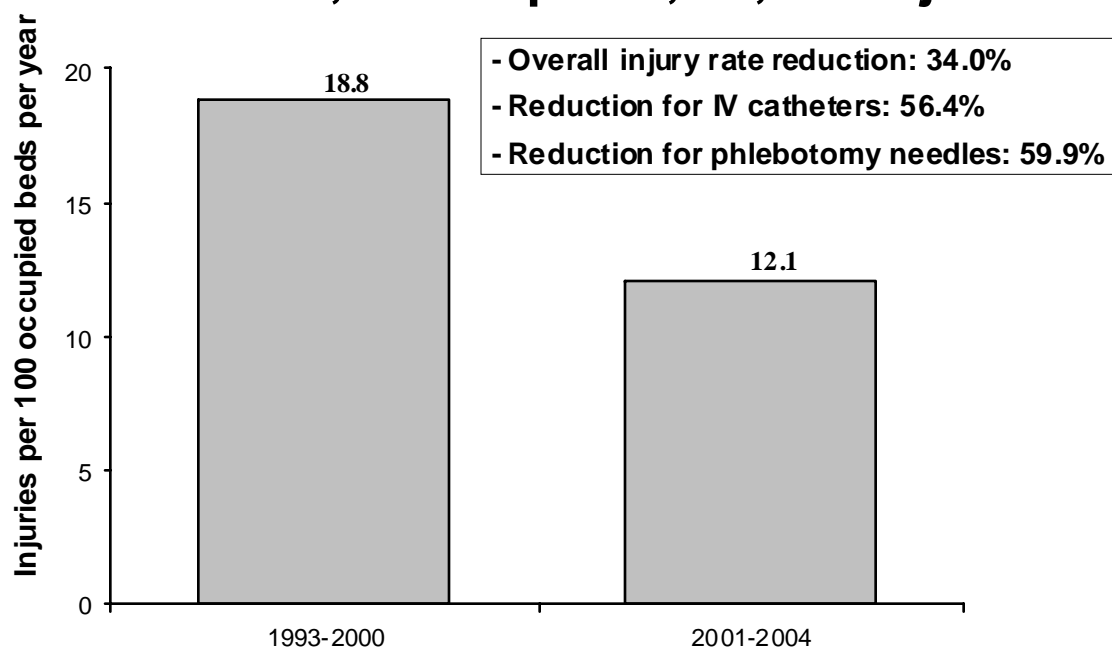


The Needlestick Safety and Prevention Act November, 2000

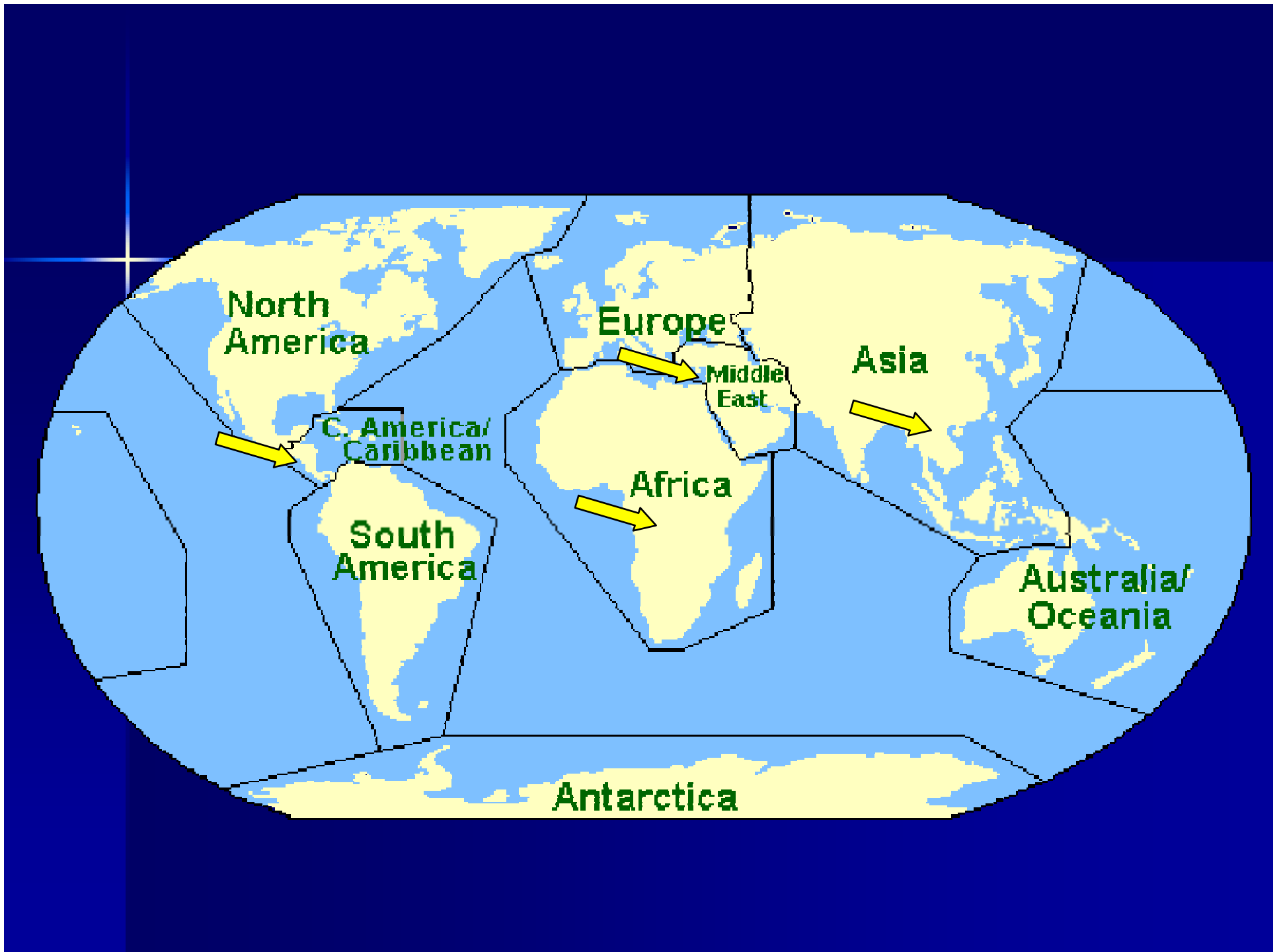


Percutaneous Injury Rates for Hollowbore Needles Before and after passage of Needlestick Safety & Prevention Act

U.S. EPINet, 87 hospitals, 14,301 injuries



Source: Exposure Prevention Information Network, University of Virginia International Healthcare Worker Safety Center



Effective Prevention Strategies

- 1. Universal Hepatitis B vaccination**
- 2. Elimination of unnecessary sharps**
- 3. Gloves, gloves, gloves**
- 4. Moisture-proof barrier garments and eye protection with seals**
- 5. Safety-engineered devices**
- 6. Antiretroviral medications**

Hepatitis B Vaccination Among African Surgeons

Fully vaccinated (3 doses)
39.5%

Partially vaccinated (1-2 doses)
18.5%

Not vaccinated
42.0%

Source: Phillips EK, Jagger JC, Owusu-Ofori A. Blood Exposure Risks to African Surgeons: Survey. Pan African Association of Surgeons, Annual Meeting, Blantyre, Malawi, December, 2006.

1. Surveillance

2. Collaboration

3. Protection

A Final Thought . . .

**Healthcare workers in every
country are a vital national
asset**

A Final Thought . . .

Although we know how to protect their lives the question is often asked:

Can we afford to pay?

A Final Thought . . .



Can we afford not to?