Health Care Worker Health and Safety: **Preventing Needlestick Injury and Occupational Exposure to Bloodborne Pathogens**

World Health Organization
International Council of Nurses

WHO-ICN Project
Preventing Needlestick Injury and HIV among Health Care Workers

- One year project extended for 3 years
- Funded by the US CDC National Institute for Occupational Safety & Health (NIOSH) to reduce occupational exposure and transmission of HIV and other bloodborne pathogens
- Pilot projects in 3 countries: So Africa, Tanzania, & Vietnam will be carried out in collaboration with WHO (hq + regional), MOH, national nurses associations, and WHO Occupational Health Collaborating Centers. Scaling up in southern Africa SADC region to implement successes of the pilot project.

Occupational Hazards are the same . . .

- Biological (SARS, TB, Anthrax, HIV, Hepatitis)
- Chemical (drugs, disinfectants, sterilants)
- Ergonomic (lifting, transfers)
- Stress/Violence (staffing shortages, shift rotation)
- Physical Hazards (radiation,heat,noise)

But work environments are different

Occupational Exposure to Bloodborne Pathogens

2 million exposures per year

In Healthcare workers:

- 40% of Hepatitis B
- 40% of Hepatitis C
- 4.4% of HIV

Are due to needlestick injuries (50% of hospitalized patients in sub-Saharan Africa are HIV +)

WHO Environmental Burden of Diseases Series No. 3

Risk of Virus Transmission Following Percutaneous Injury

Virus	Chance of HCW Infection
HBV	6 – 30 out of 100 people
HCV	3 – 10 out of 100 people
HIV	1 out of 300 people

Risk Factors that Increase the Likelihood of HIV Transmission Following a Needlestick

#1	Deep injury
#2	High viral titer in patient
#3	Visible blood on device
#4	Device in artery/vein

***Treatment of healthcare workers with AZT following needlesticks involving an HIV positive source patient have been shown to decrease the risk of HIV transmission by 80%.

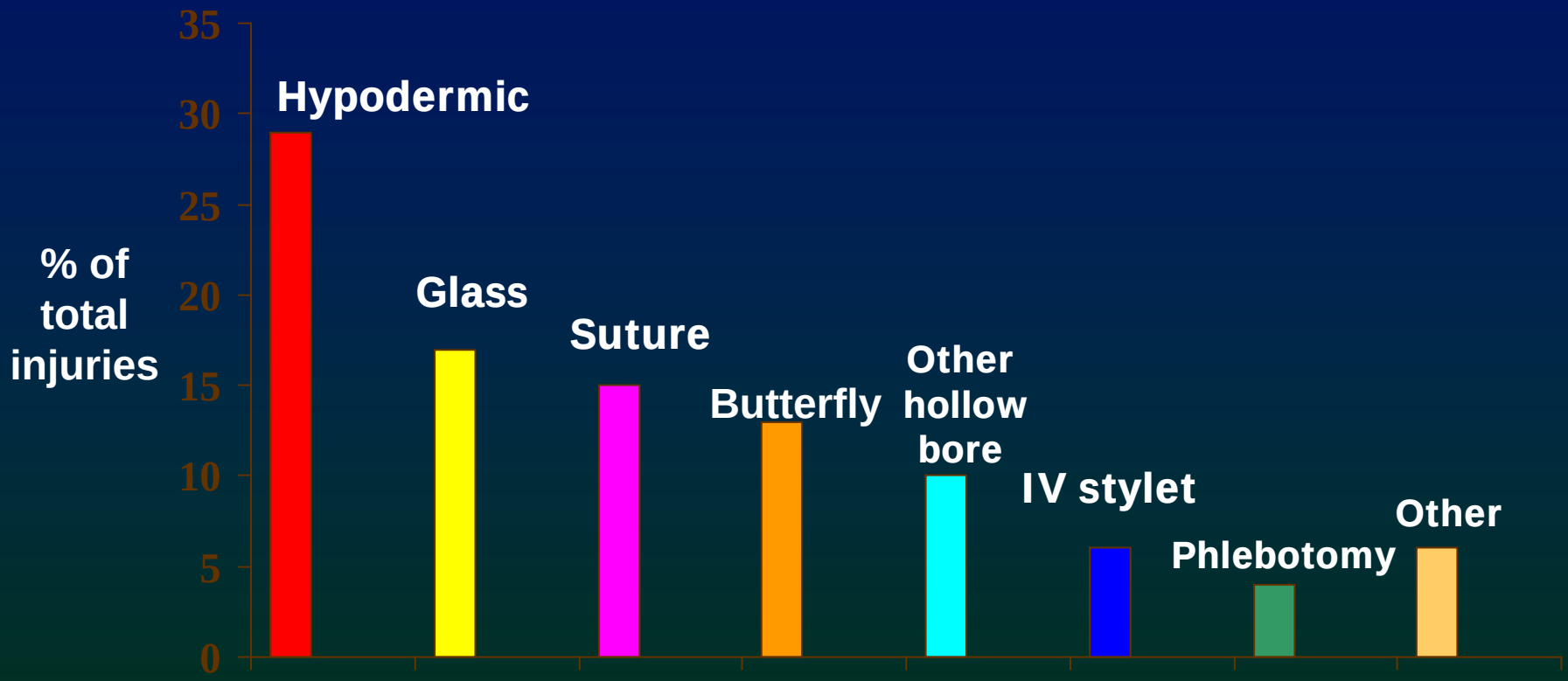
CDC, MMWR 6/98

Highest Risk Needlesticks

Of the 55 CDC documented cases of occupational transmission of HIV, 90% were from contaminated hollow- bore needles that pierced the skin

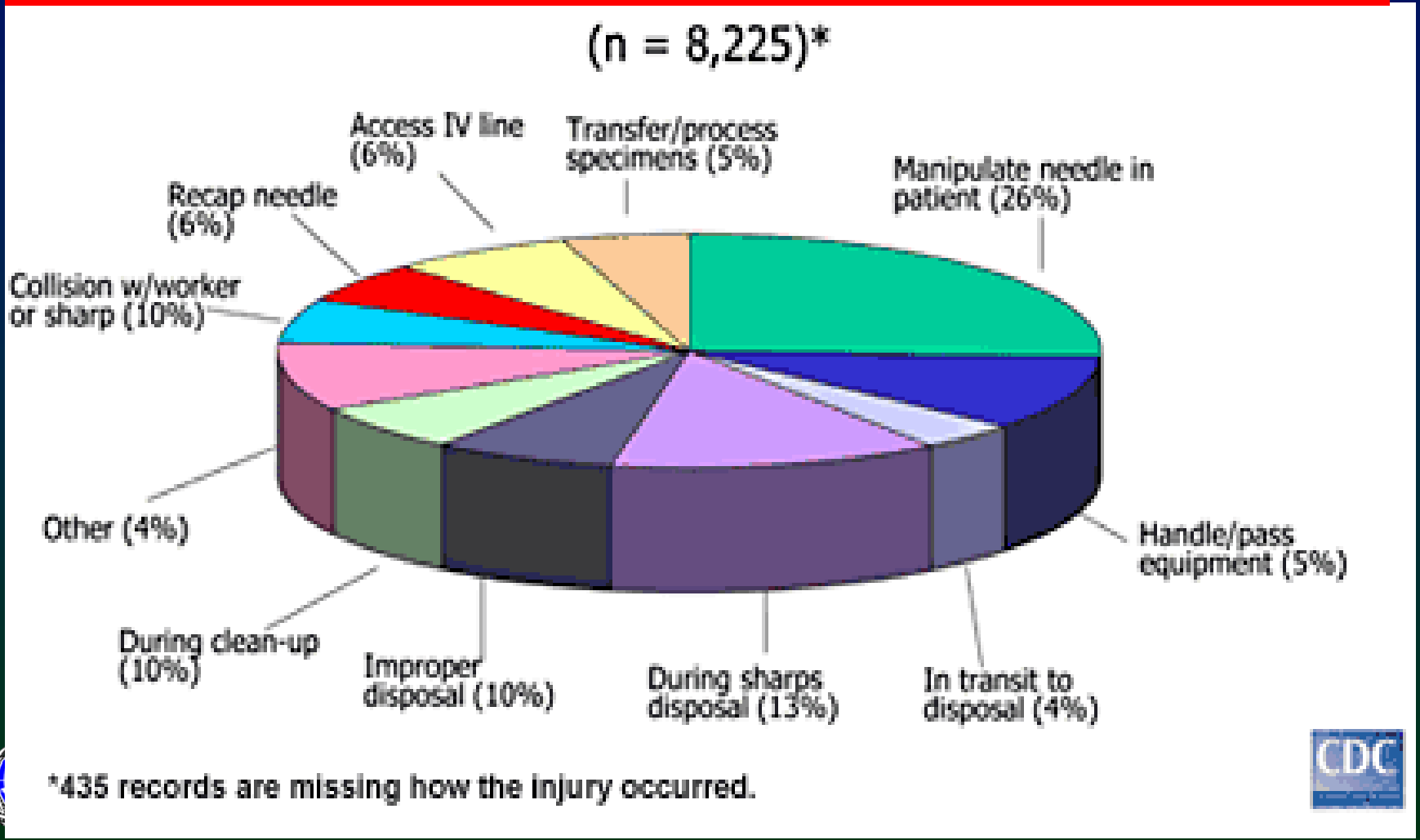
CDC, HIV-AIDS Prevention, 12/98

Devices Associated with Percutaneous Injuries, 1999

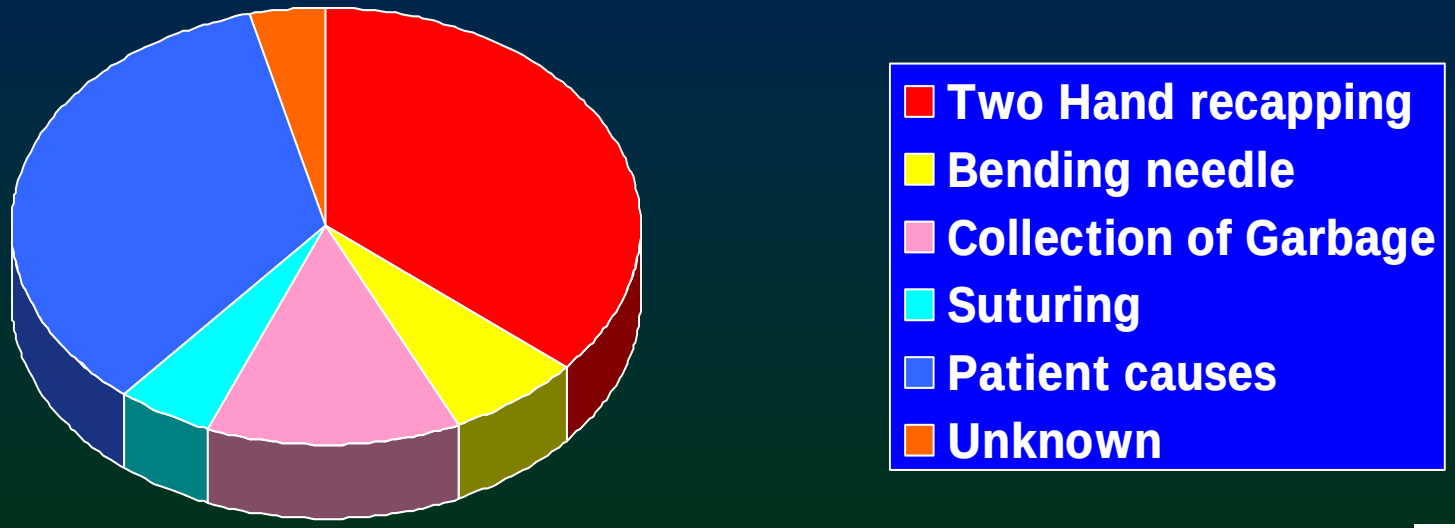


N = 4951 injuries; Source: CDC NaSH data 1995-1999

Circumstances Associated with Hollow-Bore Needle Injuries (US CDC NaSH 6/95-12/01)



Behaviors Associated with Recent Needle Stick Injury
Health Care Worker Survey 2001
(Egypt)

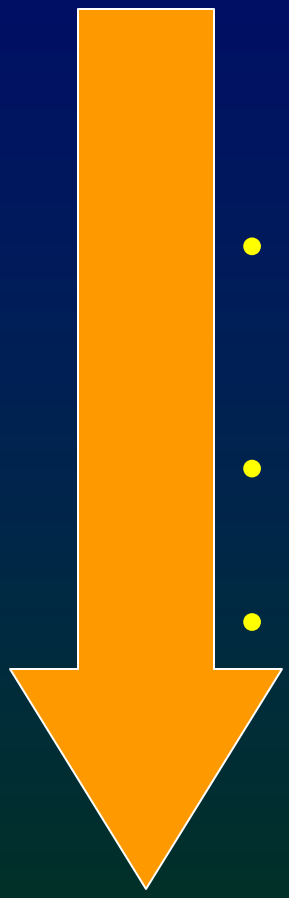


Occupational Exposures

% of hcw with 1 or > nsi/year	2-handed recap
Kenya - 75% (2-3 nsi/yr)	57%
Uganda – 44%	
Burkina Faso – 2000 - 55 % 2003 - 17 %	 71% 32%
EMRO 50% mean of 4 nsi/yr (9 of 23 countries surveyed)	60%
Egypt 4.9 nsi/yr	
South Africa Jr Doctors 91% (55% to HIV) (Cotton, Stellenbach U)	
Cambodia 47%	57%

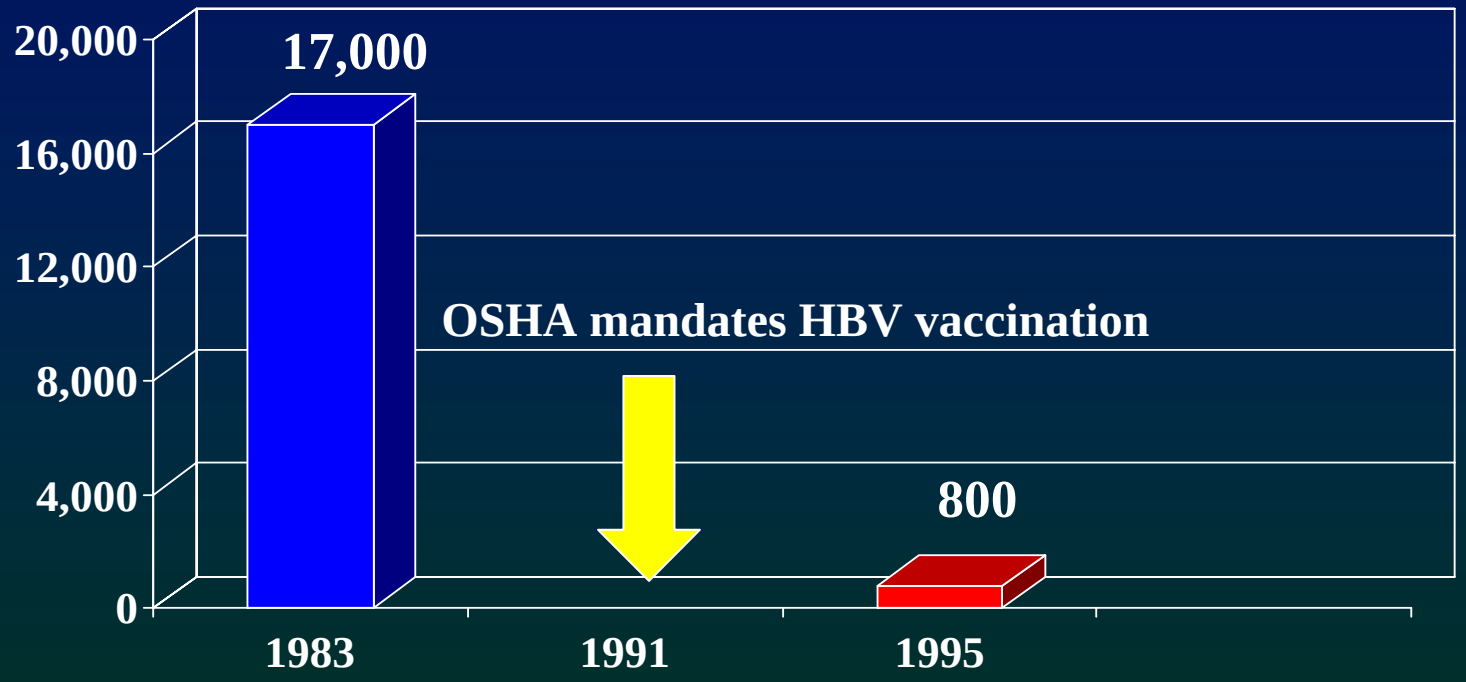
Occupational Health Hierarchy of Controls

In Order From Most to Least Effective



- Elimination or substitution of sharp (eliminate unnecessary injections,jet injectors, needleless IV systems,)
- Engineering Controls (A-D syringes, safer needle devices)
- Administrative and Work Practice Controls (Universal Precautions, no recapping, provision & placement & removal of sharps containers)
- Personal Protective Equipment (gloves, masks, gowns, etc)

Decline in HBV Cases Among Healthcare Workers Following Vaccination



This regulation had the greatest impact in eliminating HBV transmission among healthcare workers.

Mahoney F et al. Archives of Int Med 157 (1997): 2601-2603

But . . . Over 80% of Healthcare Workers Remain Unimmunized in many parts of the world

Despite 95%
Efficacy of HBV
Immunization

A safe injection does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous for other people

Project Goals
Preventing Needlestick Injury and HIV among Health Care Workers

- **Reduce exposure to HIV and other sharps-related infections (Hepatitis B and C) in healthcare workers**
- **Raise awareness on the risks of sharps-related HIV and hepatitis B & C transmission**
- **Implement programmes in 3 countries using existing systems and guidelines (ICN, ILO, WHO)**
  - Assess & address policy gaps
  - Develop nsi surveillance system
  - Train healthcare workers
  - Implement and evaluate the injection safety tool kit

Key Elements of Project Plans

1. Planning Meeting:
   management commitment and worker involvement
2. Initial assessment: infection prevention and control
3. Set up surveillance system
4. Exposure control program including post-exposure follow-up and prophylaxis
5. Information, Education, Communication
6. Materials: sharps containers, PEP, HBV Immun
7. Supportive supervision and monitoring
8. Feedback to site, stakeholders, and MOH on progress

Exposure control planning

- Management Commitment and Worker Involvement
- Determination of Exposure: case definition
- Hepatitis B immunization
- Post-exposure evaluation and follow-up
- Communication of hazards to employees and training
- Recordkeeping (sharps injury log, surveillance system) and use of info/data for prevention
- Procedure for evaluating circumstances surrounding an exposure.
- Implementation of methods of exposure control (apply hierarchy of controls)

REPORTING IS IMPORTANT
(but 40 -70 % of injuries go unreported)

Reporting Ensures

- **Proper treatment & follow-up**
- **Financial compensation, if necessary**
- **Engineering or procedure changes**

Barriers To Reporting

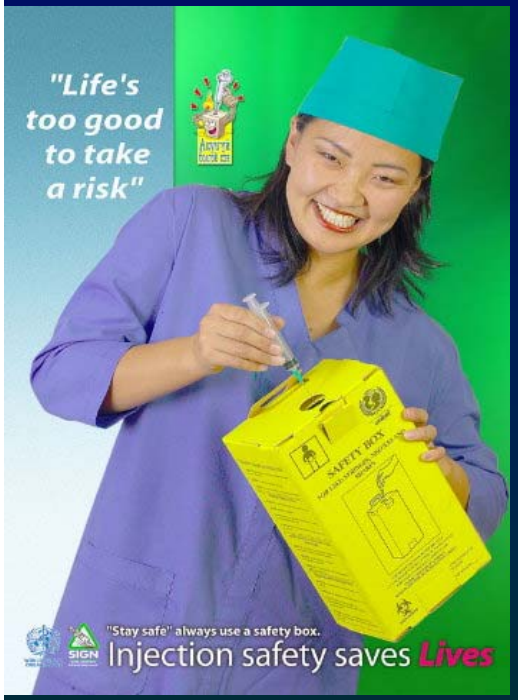
- Fear of being punished or fired
- Lack of awareness of risk of infection
- Lack of assurance of confidentiality
- Emphasis on patient care (unable to leave patient care area for follow-up)
- No employee training on reporting procedures
- No post-exposure treatment/prophylaxis available

Reporting Recommendations

The "SHARPS INJURY LOG" should include:

- **Date, time, and location (work area and site on body of injured) of injury**
- **Case report # of injured**
- **Source patient status (if known)**
- **Type of exposure: blood-filled device, splash, or body fluid exposure**
- **The device involved (type and brand, if known)**
- **A description of the events that resulted in the injury**
- **Post-exposure follow-up: when PEP started if given**

THANK YOU!



For Caring for those who Care!