

## EPINet Report:

# 2005 Percutaneous Injury Rates

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IN 2005, THE INTERNATIONAL HEALTHCARE Worker Safety Center at the University of Virginia collected data on percutaneous injuries and blood and body fluid exposures from 35 healthcare facilities in the United States that use the EPINet surveillance program to track exposure incidents. These facilities voluntarily participate in the collaborative EPINet network coordinated by the Center, and their exposure data are combined into an aggregate database. The 2005 percutaneous injury report and blood and body fluid exposure report are presented on pages 3 and 4, and a list of the facilities that contributed data can be found on page 2.

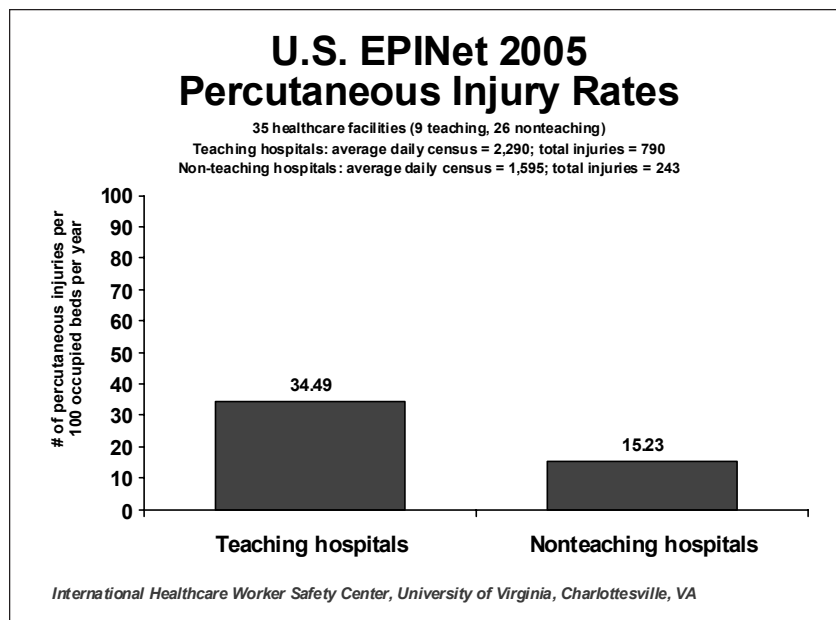
Most of these facilities are part of a state-wide network in South Carolina coordinated by Palmetto Hospital Trust Services; the others are located in Virginia, Pennsylvania, and Nebraska. Nine of the facilities are teaching hospitals, and 26 are nonteaching facilities.

Most of the facilities are acute-care or tertiary-care hospitals or medical centers, some of which have physicians' offices, home health agencies and other outpatient settings affiliated with them. Among the participating facilities is an alcohol and drug abuse agency, a long-term acute-care facility, a skilled nursing facility, and a rehabilitation hospital.

(\* "Occupied beds" is defined as the ADC for the same year in which the data were collected.)

### 2005 EPINet Data Findings

In 2005, a total of 1,033 percutaneous injuries (PIs) were reported by network facilities. The 2005 data yielded these findings (the following rates *exclude* injuries that occurred before use):



- The overall percutaneous injury rate for all network hospitals was 26.58 PIs per 100 occupied beds.

- The average PI rate for teaching hospitals was 34.49 injuries per 100 occupied beds.

- The average PI rate for nonteaching facilities was 15.23 injuries per 100 occupied beds

By comparison, in 2004 the average PI rate for teaching hospitals was 33.19 per 100 occupied beds, and for nonteaching facilities, 18.98 per 100 occupied beds. Forty-one facilities reported data in 2004; the total number of PIs was 1,155.

EPINet data from 2005, as in previous years, revealed great variation among individual facilities in PI

rates: five facilities had a zero PI rate, while two facilities had rates over 50 per 100 occupied beds. The reasons for such variation are not fully understood, but may include the mix of patients, injury underreporting rates, the extent to which a facility has converted to safety devices, and whether it is a teaching or nonteaching institution.

Because of these variables, we cannot assume that a healthcare facility with a low PI rate necessarily has a better safety record than a hospital with a higher rate. For example, a hospital with a high PI rate may do a better job of educating its employees about the need to report needlestick injuries or may have more patients

requiring invasive procedures than another facility with a lower rate. For that reason, comparing rates among hospitals may not be very meaningful. It is more reliable to track injury trends within a single institution over several years, and make historical comparisons as prevention measures are implemented.

### Blood and Body Fluid Exposures

In 2005, a total of 286 blood and body fluid exposures (BBF) were reported by network facilities. The 2005 data yielded these findings:

- The average blood and body fluid (BBF) exposure rate was 7.36 per 100 occupied beds.

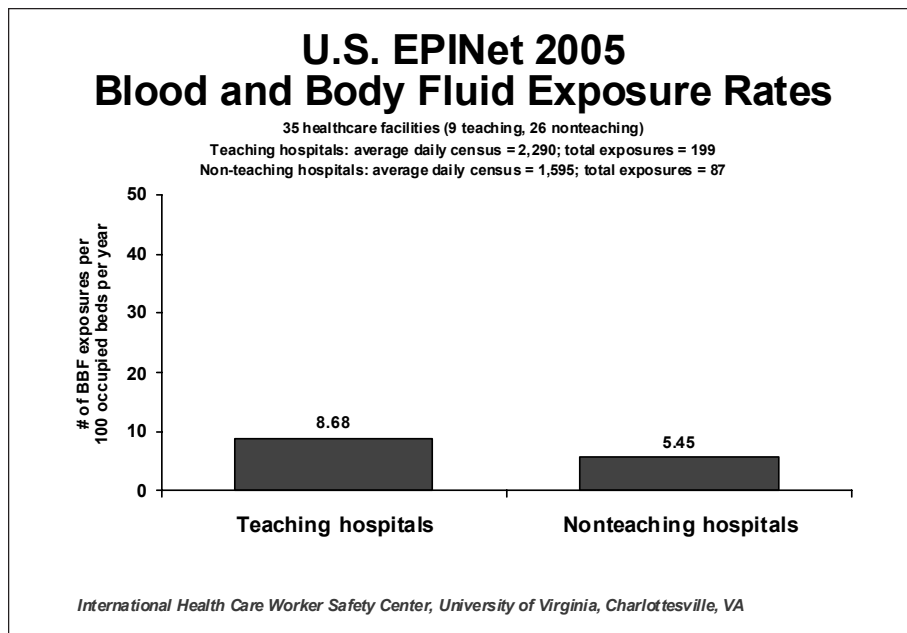
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## EPINet 2005 Percutaneous Injury Rates

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- The average BBF exposure rate for teaching hospitals was 8.68 per 100 occupied beds.
- The average BBF exposure rate for non-teaching hospitals was 5.45 per 100 occupied beds.

By comparison, in 2004 the average BBF rate for teaching and non-teaching facilities was 8.18 per 100 occupied beds. Forty-one facilities reported BBF data in 2004; the total number of BBF exposures was 354. □




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# EPINet Network Hospitals and Healthcare Facilities, 2005

In 2005, 35 hospitals and healthcare facilities participated in a voluntary EPINet data-sharing network coordinated by the International Healthcare Worker Safety Center. For each year of data, we publish an updated list of the participating facilities; we gratefully acknowledge their efforts and contributions.

**Martha Jefferson Hospital** (Charlottesville, VA); **Medical University of South Carolina** (Charleston, SC); **Saint Joseph Hospital** (Omaha, NE); **Saint Vincent Health Center** (Erie, PA).

**Palmetto Hospital Trust Needlestick Prevention Demonstration Project, South Carolina** (Ed Hall, Rebecca Bender, network coordinators) **Abbeville County Memorial Hospital** (Abbeville, SC); **Allendale County Hospital** (Fairfax, SC); **Anderson Area**

**Medical Center** (Anderson, SC); **Bamberg County Memorial Hospital** (Bamberg, SC); **Barnwell County Hospital** (Barnwell, SC); **Beaufort Memorial Hospital** (Beaufort, SC); **Cannon Memorial Hospital** (Pickens, SC); **Clarendon Memorial Hospital** (Manning, SC); **Conway Medical Center** (Conway, SC); **Fairfield Memorial Hospital** (Winnsboro, SC); **Greenville Memorial Medical Center** (Greenville, SC); **Greenville Hospital System (GHS)-Allen Bennett Memorial Hospital** (Greer, SC); **GHS-Hillcrest Hospital** (Simpsonville, SC); **GHS-Marshall I. Pickens Hospital** (Greenville, SC); **GHS-Roger C. Peace Rehabilitation Hospital** (Greenville, SC); **GHS-Roger Huntington Nursing Center** (Greer, SC); **Kershaw County Medical Center** (Camden, SC); **Laurens County Hospital** (Clinton, SC); **Lexington Medical Center** (West Columbia, SC); **Lexington Medical**

**Center Irmo** (Irmo, SC); **Lexington/Richland Alcohol & Drug Abuse Council** (West Columbia, SC); **Loris Community Hospital** (Loris, SC); **Marion Regional Healthcare System** (Marion, SC); **Newberry County Memorial Hospital** (Newberry, SC); **Oconee Memorial Hospital** (Seneca, SC); **The Regional Medical Center of Orangeburg and Calhoun Counties** (Orangeburg, SC); **Self Regional Healthcare** (Greenwood, SC); **Spartanburg Hospital for Restorative Care** (Spartanburg, SC); **Spartanburg Regional Medical Center** (Spartanburg, SC); **Tuomey Regional Medical Center** (Sumter, SC); **Union Hospital District-Wallace Thomson Hospital** (Union, SC). □

# Uniform Needlestick and Sharp-Object Injury Report

## U.S. EPINet Network, 2005, 35 healthcare facilities\*

Total cases = 1,033 (excludes injuries before use); total avg. daily census = 3,885 (\*9 teaching/26 nonteaching hospitals)

### JOB CATEGORY:

M.D. (attending/staff)	110	10.7%
M.D. (intern/resident/fellow)	165	16.1%
Medical student	7	0.7%
Nurse RN/LPN	396	38.5%
Nursing student	13	1.3%
Respiratory therapist	26	2.5%
Surgery attendant	92	8.9%
Other attendant	19	1.8%
Phlebotomist/venipuncture/ I.V. team	50	4.9%
Clinical laboratory worker	7	0.7%
Technologist (non-lab)	37	3.6%
Dentist	1	0.1%
Dental hygienist	1	0.1%
Housekeeper	16	1.6%
Paramedic	3	0.3%
CNA/HHA	4	0.4%
Laundry worker	1	0.1%
Security	1	0.1%
Other student	14	1.4%
Other	65	6.3%

### WHERE INJURY OCCURRED:

Patient room	297	28.8%
Outside patient room	5	0.5%
Emergency department	65	6.3%
Intensive/critical care unit	80	7.8%
Operating room	358	34.8%
Outpatient clinic/office	63	6.1%
Venipuncture	6	0.6%
Dialysis facility	0	0%
Procedure room	43	4.2%
Clinical laboratories	7	0.7%
Autopsy/pathology	10	1.0%
Service/utility area	7	0.7%
Labor and delivery	41	4.0%
Home-care	4	0.4%
Other	44	4.3%

### ORIGINAL PURPOSE OF SHARP DEVICE:

Unknown, N/A	34	3.3%
Injection, IM/subcutaneous	231	22.5%
Heparin or saline flush	4	0.4%
Other injection/aspiration I.V.	15	1.5%
Connect I.V. line	4	0.4%
Start I.V. or heparin lock	43	4.2%
Draw venous blood sample	132	12.9%
Draw arterial blood sample	36	3.5%
Obtain body fluid/tissue sample	13	1.3%
Fingerstick/heel stick	13	1.3%
Suturing	261	25.4%
Cutting (surgery)	76	7.4%
Electrocautery	15	1.5%
Contain specimen/pharmaceutical	4	0.4%
Place arterial line	13	1.3%
Drilling	9	0.9%
Other	123	12.0%

### WHEN INJURY OCCURRED:

During use of device	485	47.3%
Between steps of multistep procedure	144	14.0%
Disassembling device	30	2.9%

Preparing instrument for reuse	10	1.0%
Recapping device	32	3.1%
Withdrawing device from resistant material	9	0.9%
Other after use, before disposal	104	10.1%
Putting device into disposal container	36	3.5%
After disposal, from device:		
- protruding from disposal container	15	1.5%
- piercing side of disposal container	1	0.1%
- left on/near disposal container	2	0.2%
- left on floor, table or other inappropriate place	53	5.2%
- protruding from trash bag or inappropriate disposal container	10	1.0%
Restraining patient	4	0.4%
Other	90	8.8%

### TYPE OF DEVICE CAUSING INJURY:

Disposable syringe	316	31.5%
Prefilled cartridge syringe	22	2.2%
Blood gas syringe	20	2.0%
Syringe, other type	5	0.5%
Needle on I.V. tubing	1	0.1%
Winged steel needle	67	6.7%
I.V. catheter (stylet)	33	3.3%
Vacuum tube blood collection needle	14	1.4%
Spinal or epidural needle	5	0.5%
Unattached hypodermic needle	4	0.4%
Arterial catheter introducer needle	2	0.2%
Central line catheter introducer needle	7	0.7%
Other vascular catheter needle	3	0.3%
Needle, unknown type	15	1.5%
Needle, describe	23	2.3%
Lancet	11	1.1%
Suture needle	249	24.8%
Scalpel, reusable	30	3.0%
Scalpel, disposable	39	3.9%
Razor	4	0.4%
Scissors	3	0.3%
Bovie electrocautery device	15	1.5%
Bone cutter	1	0.1%
Towel clip	3	0.3%
Microtome blade	1	0.1%
Trocar	2	0.2%
Fingernails/teeth	3	0.3%
Retractors, skin/bone hooks	13	1.3%
Staples/steel sutures	4	0.4%
Wire	13	1.3%
Pin	11	1.1%
Drill bit	5	0.5%
Pickups/forceps/hemostats	7	0.7%
Sharp item, not sure what kind	7	0.7%
Other sharp item (describe)	34	3.4%
Medication ampule	1	0.1%
Vacuum tube, glass	1	0.1%
Specimen/test tube, glass	1	0.1%
Glass item, unknown type	3	0.3%
Other glass item	6	0.6%

### SOURCE PATIENT IDENTIFIABLE?

Yes	979	95.3%
No	26	2.5%
Unknown	19	1.9%
Not available	3	0.3%

### INJURED WORKER ORIGINAL USER OF SHARP ITEM?

Yes	661	64.6%
No	339	33.1%
Unknown	8	0.8%
N/A	15	1.5%

### SHARP ITEM CONTAMINATED?

Yes	951	93.1%
No	19	1.9%
Unknown	51	5.0%

### IF INJURY WAS CAUSED BY A NEEDLE, WAS IT A SAFETY DESIGN?

Yes	366	37.4%
No	568	58.0%
Unknown	45	4.6%

### IF YES, WAS SAFETY FEATURE ACTIVATED?

Yes, fully	34	10.2%
Yes, partially	69	20.7%
No	231	69.2%

### IF YES (NEEDLE WAS SAFETY DESIGN), DID INJURY HAPPEN:

Before activation of safety feature	201	64.8%
During activation of safety feature	69	22.3%
After activation of safety feature	40	12.9%

### DEPTH OF INJURY:

Superficial (little/no bleeding)	670	65.6%
Moderate (skin punctured, some bleeding)	324	31.7%
Severe (deep stick/cut, profuse bleeding)	27	2.6%

### BODY PART INJURED:

Arm	20	2.0%
Face/head	2	0.2%
Foot	1	0.1%
Front	1	0.1%
Hand, left	635	62.2%
Hand, right	351	34.4%
Leg	11	1.1%

### GLOVES—Did sharp item penetrate:

Single pair of gloves	640	64.1%
Double pair of gloves	237	23.7%
No gloves	121	12.1%

# Uniform Blood and Body Fluid Exposure Report U.S. EPINet Network, 2005, 35 healthcare facilities\*

Total cases = 286; total avg. daily census = 3,885 (\*9 teaching/26 nonteaching hospitals)

## JOB CATEGORY:

M.D. (attending/staff)	20	7.0%
M.D. (intern/resident/fellow)	35	12.2%
Medical student	2	0.7%
Nurse RN/LPN	140	49.0%
Nursing student	2	0.7%
Respiratory therapist	4	1.4%
Surgery attendant	13	4.5%
Other attendant	5	1.7%
Phlebotomist/venipuncture/ I.V. team	4	1.4%
Clinical laboratory worker	6	2.1%
Technologist (non-lab)	15	5.2%
Housekeeper	1	0.3%
Paramedic	4	1.4%
Other student	3	1.0%
CNA/HHA	8	2.8%
Security	8	2.8%
Other, describe	16	5.6%

## WHERE EXPOSURE OCCURRED:

Patient room	99	34.7%
Emergency department	32	11.2%
Intensive/critical care unit	38	13.3%
Operating room	55	19.3%
Outpatient clinic/office	4	1.4%
Venipuncture	1	0.4%
Procedure room	19	6.7%
Clinical laboratories	7	2.5%
Labor and delivery	13	4.6%
Home-care	2	0.7%
Other, describe	15	5.3%

## BBF<sup>†</sup> INVOLVED IN EXPOSURE:

(more than one item can be checked)\*

Blood or blood products	221	77.3%
Vomit	6	2.1%
Sputum	24	8.4%
Saliva	12	4.2%
Cerebro-spinal fluid	3	1.0%
Peritoneal fluid	4	1.4%
Amniotic fluid	5	1.7%
Urine	9	3.1%
Other body fluid	36	12.6%

## WAS THE BODY FLUID, OTHER THAN BLOOD, VISIBLY CONTAMINATED WITH BLOOD?

Yes	187	78.2%
No	29	12.1%
Unknown	23	9.6%

## EXPOSED PART(S):

(more than one item can be checked)\*

Intact skin	52	18.2%
Non-intact skin	44	15.4%
Eyes (conjunctiva)	192	67.1%
Nose (mucosa)	11	3.8%
Mouth (mucosa)	23	8.0%
Other exposed parts	13	4.5%

## DID THE BLOOD OR BODY FLUID:

(more than one item can be checked)\*

Touch unprotected skin	227	83.8%
Touch skin through gap between protective garments	37	13.7%
Soak through protective garment	2	0.7%
Soak through clothing	5	1.8%

## BARRIER ITEMS WORN AT TIME OF EXPOSURE:

(more than one item can be checked)\*

Single pair latex/vinyl gloves	174	60.8%
Double pair gloves	25	8.7%
Goggles	13	4.5%
Eyeglasses (not protective)	28	9.8%
Eyeglasses with sideshields	5	1.7%
Faceshield	12	4.2%
Surgical mask	51	17.8%
Surgical gown	57	19.9%
Plastic apron	1	0.3%
Lab coat, cloth (not protective)	2	0.7%
Lab coat, other	4	1.4%
Other item	31	10.8%

## CAUSE OF EXPOSURE:

Direct patient contact	146	52.0%
Specimen container leaked/ spilled	23	8.2%
IV tubing/bag/pump leaked	19	6.8%
Other body fluid container spilled/leaked	11	3.9%
Touched contaminated equipment/surface	2	0.7%
Touched contaminated drapes/sheets/gown	1	0.4%
Feeding/ventilator/other tube separated/leaked/spilled	23	8.2%
Other, describe	56	19.9%

## SOURCE PATIENT IDENTIFIABLE?

Yes	275	97.3%
No	5	1.8%
Unknown	2	0.7%
N/A	1	0.4%

## LENGTH OF TIME BBF IN CONTACT WITH SKIN OR MUCOUS MEMBRANE:

Less than 5 minutes	208	75.4%
5-14 minutes	36	13.0%
15 minutes-1 hour	28	10.1%
More than 1 hour	4	1.4%

## AMOUNT OF BBF THAT CAME IN CONTACT WITH SKIN OR MUCOUS MEMBRANE:

Small amount (up to 5 cc)	245	88.4%
Moderate amount (up to 50 cc)	25	9.0%
Large amount (more than 50 cc)	7	2.5%

## EXPOSURE LOCATION

### Largest exposure:

Arm	21	7.6%
Face/head	217	78.1%
Front	3	1.1%
Hand, left	17	6.1%
Hand, right	20	7.2%

### Medium-sized exposure:

Arm	7	5.7%
Face/head	94	77.0%
Front	5	4.1%
Hand, left	8	6.6%
Hand, right	8	6.6%

### Smallest exposure:

Arm	6	26.1%
Face/head	4	17.4%
Front	3	13.0%
Back	1	4.3%
Hand, left	4	17.4%
Hand, right	3	13.0%
Leg	2	8.7%

<sup>†</sup>BBF = blood or body fluids

\*Because more than one item can be checked in this category, percentages total more than 100%.

**NOTE:** The needlestick and sharp-object injury report and blood and body fluid exposure report that appear on pages 3-4 are based on 2005 data from the EPINet data-sharing network coordinated by the International Healthcare Worker Safety Center at the University of Virginia. (A list of hospitals participating in the network appears on page 2.)