

EPINet Report:

2006 Percutaneous Injury Rates

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IN 2006, THE INTERNATIONAL Healthcare Worker Safety Center at the University of Virginia collected data on percutaneous injuries and blood and body fluid exposures from 33 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 2006 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.

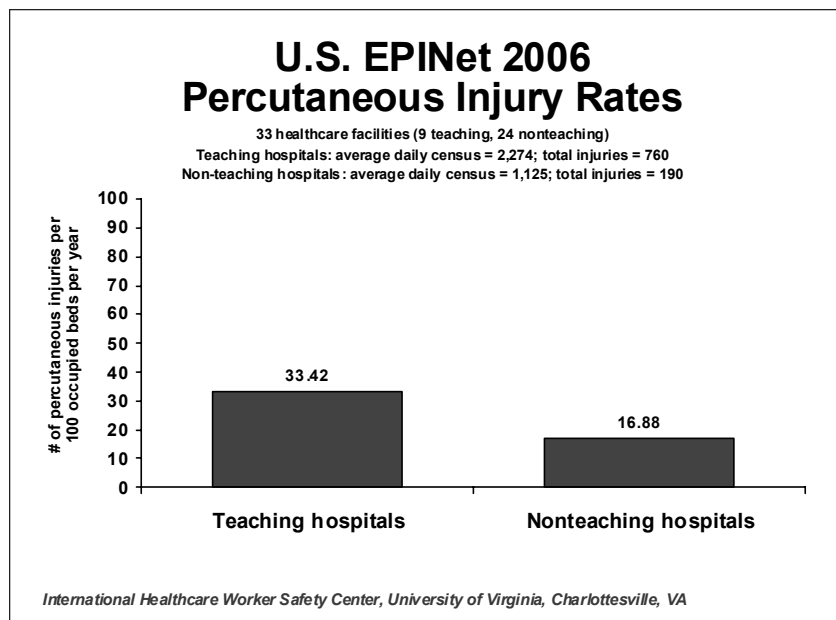
Most of these facilities are part of a state-wide network in South Carolina coordinated by Palmetto Hospital Trust Services; the others are located in Virginia, Pennsylvania, and Nebraska. Nine of the facilities are teaching hospitals, and 24 are nonteaching facilities.

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.)

2006 EPINet Data Findings

In 2006, a total of 950 percutaneous injuries (PIs) were reported by network facilities. The 2006 data yielded these findings (the following rates *exclude* injuries that occurred before use):



- The overall percutaneous injury rate for all network hospitals was 27.94 PIs per 100 occupied beds.
- The average PI rate for teaching hospitals was 33.42 injuries per 100 occupied beds.
- The average PI rate for nonteaching facilities was 16.88 injuries per 100 occupied beds

By comparison, in 2005 the average PI rate for teaching hospitals was 34.49 per 100 occupied beds, and for nonteaching facilities, 15.23 per 100 occupied beds. Thirty-five facilities reported data in 2005; the total number of PIs was 1,033.

EPINet data from 2006, as in previous years, revealed great variation among individual facilities in PI

rates: two facilities had a zero PI rate, while four 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 2006, a total of 250 blood and body fluid exposures (BBF) were reported by network facilities. The 2006 data yielded these findings:

- The average blood and body fluid
- (continued on page 2)

EPINet 2006 Percutaneous Injury Rates

(Continued from page 1)

(BBF) exposure rate was 7.35 per 100 occupied beds.

- The average BBF exposure rate for teaching hospitals was 8.44 per 100 occupied beds.

- The average BBF exposure rate for non-teaching hospitals was 5.15 per 100 occupied beds.

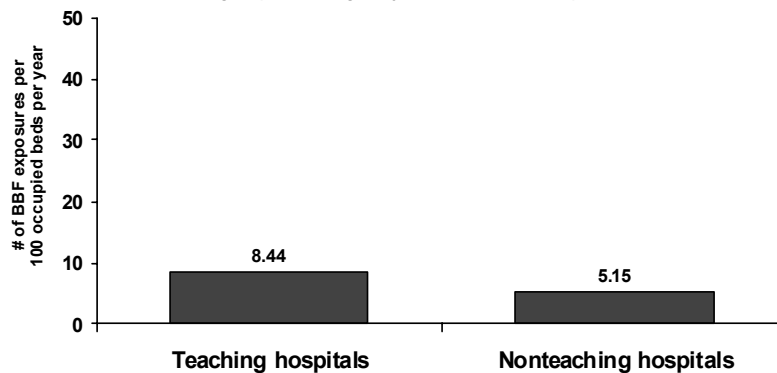
By comparison, in 2005 the average BBF rate for teaching and non-teaching facilities was 7.36 per 100 occupied beds. Thirty-five facilities reported BBF data in 2005; the total number of BBF exposures was 286. □

U.S. EPINet 2006 Blood and Body Fluid Exposure Rates

33 healthcare facilities (9 teaching, 24 nonteaching)

Teaching hospitals: average daily census = 2,274; total exposures = 192

Non-teaching hospitals: average daily census = 1,125; total exposures = 58



International Health Care Worker Safety Center, University of Virginia, Charlottesville, VA

EPINet Network Hospitals and Healthcare Facilities, 2006

In 2006, 33 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 Hospi-

tal (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 Hospital** (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/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); **Patwood Memorial Hospital** (Greenville, 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, 2006, 33 healthcare facilities*

Total cases = 950 (excludes injuries before use); total avg. daily census = 3,400 (*9 teaching/24 nonteaching hospitals)

JOB CATEGORY:									SOURCE PATIENT IDENTIFIABLE?		
M.D. (attending/staff)	126	13.3%	Recapping device	24	2.6%	Yes	890	94.2%			
M.D. (intern/resident/fellow)	149	15.7%	Withdrawing device from resistant material	18	1.9%	No	32	3.4%			
Medical student	11	1.2%	Other after use, before disposal	102	10.9%	Unknown	20	2.1%			
Nurse RN/LPN	344	36.3%	Putting device into disposal container	49	5.2%	Not available	3	0.3%			
Nursing student	6	0.6%	After disposal, from device:			INJURED WORKER ORIGINAL USER OF SHARP ITEM?					
Respiratory therapist	16	1.7%	- protruding from disposal container	5	0.5%	Yes	601	64.3%			
Surgery attendant	74	7.8%	- piercing side of disposal container	2	0.2%	No	312	33.4%			
Other attendant	16	1.7%	- left on/near disposal container	2	0.2%	Unknown	6	0.6%			
Phlebotomist/venipuncture/ I.V. team	38	4.0%	- left on floor, table or other inappropriate place	56	6.0%	N/A	16	1.7%			
Clinical laboratory worker	14	1.5%	- protruding from trash bag or inappropriate disposal container	8	0.9%	SHARP ITEM CONTAMINATED?					
Technologist (non-lab)	40	4.2%	Restraining patient	6	0.6%	Yes	874	93.1%			
Dentist	2	0.2%	Other	75	8.0%	No	9	1.0%			
Dental hygienist	1	0.1%	TYPE OF DEVICE CAUSING INJURY:			Unknown	56	6.0%			
Housekeeper	21	2.2%	Disposable syringe	266	29.3%	IF INJURY WAS CAUSED BY A NEEDLE, WAS IT A SAFETY DESIGN?					
Paramedic	5	0.5%	Prefilled cartridge syringe	21	2.3%	Yes	318	35.8%			
CNA/HHA	6	0.6%	Blood gas syringe	14	1.5%	No	532	59.9%			
Laundry worker	1	0.1%	Syringe, other type	2	0.2%	Unknown	38	4.3%			
Security	3	0.3%	Needle on I.V. tubing	6	0.7%	IF YES, WAS SAFETY FEATURE ACTIVATED?					
Other student	12	1.3%	Winged steel needle	51	5.6%	Yes, fully	24	8.5%			
Other	63	6.7%	I.V. catheter (stylet)	26	2.9%	Yes, partially	63	22.3%			
WHERE INJURY OCCURRED:			Vacuum tube blood collection needle	26	2.9%	No	196	69.3%			
Patient room	233	24.6%	Spinal or epidural needle	1	0.1%	IF YES (NEEDLE WAS SAFETY DESIGN), DID INJURY HAPPEN:					
Outside patient room	6	0.6%	Unattached hypodermic needle	6	0.7%	Before activation of safety feature	173	65.5%			
Emergency department	91	9.6%	Arterial catheter introducer needle	4	0.4%	During activation of safety feature	54	20.5%			
Intensive/critical care unit	70	7.4%	Central line catheter introducer needle	6	0.7%	After activation of safety feature	37	14.0%			
Operating room	333	35.2%	Drum catheter	1	0.1%	DEPTH OF INJURY:					
Outpatient clinic/office	66	7.0%	Other vascular catheter needle	3	0.3%	Superficial (little/no bleeding)	615	65.6%			
Venipuncture	5	0.5%	Other non-vascular catheter needle	1	0.1%	Moderate (skin punctured, some bleeding)	293	31.2%			
Procedure room	33	3.5%	Needle, unknown type	7	0.8%	Severe (deep stick/cut, profuse bleeding)	30	3.2%			
Clinical laboratories	11	1.2%	Needle, describe	44	4.9%	BODY PART INJURED:					
Autopsy/pathology	9	1.0%	Lancet	11	1.2%	Arm	20	2.2%			
Service/utility area	6	0.6%	Suture needle	199	21.9%	Face/head	2	0.2%			
Labor and delivery	36	3.8%	Scalpel, reusable	35	3.9%	Foot	4	0.4%			
Home-care	5	0.5%	Scalpel, disposable	42	4.6%	Front	4	0.4%			
Other	43	4.5%	Razor	7	0.8%	Hand, left	543	59.0%			
ORIGINAL PURPOSE OF SHARP DEVICE:			Scissors	7	0.8%	Hand, right	338	36.7%			
Unknown, N/A	29	3.1%	Bovie electrocautery device	14	1.5%	Leg	10	1.1%			
Injection, IM/subcutaneous	214	22.8%	Bone cutter	1	0.1%	GLOVES—Did sharp item penetrate:					
Heparin or saline flush	2	0.2%	Towel clip	4	0.4%	Single pair of gloves	588	65.0%			
Other injection/aspiration I.V.	21	2.2%	Trocar	1	0.1%	Double pair of gloves	208	23.0%			
Connect I.V. line	3	0.3%	Fingernails/teeth	3	0.3%	No gloves	108	11.9%			
Start I.V. or heparin lock	42	4.5%	Retractors, skin/bone hooks	8	0.9%						
Draw venous blood sample	109	11.6%	Staples/steel sutures	7	0.8%						
Draw arterial blood sample	20	2.1%	Wire	18	2.0%						
Obtain body fluid/tissue sample	17	1.8%	Pin	4	0.4%						
Fingerstick/heel stick	13	1.4%	Drill bit	7	0.8%						
Suturing	210	22.4%	Pickups/forceps/hemostats	4	0.4%						
Cutting (surgery)	82	8.7%	Sharp item, not sure what kind	3	0.3%						
Electrocautery	14	1.5%	Other sharp item (describe)	36	4.0%						
Contain specimen/pharmaceutical	5	0.5%	Medication ampule	2	0.2%						
Place arterial line	20	2.1%	Medication vial	1	0.1%						
Drilling	7	0.7%	Pipette, glass	1	0.1%						
Other	130	13.9%	Vacuum tube, glass	1	0.1%						
WHEN INJURY OCCURRED:			Glass slide	2	0.2%						
During use of device	406	43.2%	Glass item, unknown type	2	0.2%						
Between steps of multistep procedure	144	15.3%	Other glass item	2	0.2%						
Disassembling device	22	2.3%									
Preparing instrument for reuse	20	2.1%									

Uniform Blood and Body Fluid Exposure Report U.S. EPINet Network, 2006, 33 healthcare facilities*

Total cases = 250; total avg. daily census = 3,400 (*9 teaching/24 nonteaching hospitals)

JOB CATEGORY:

M.D. (attending/staff)	15	6.0%
M.D. (intern/resident/fellow)	25	10.0%
Medical student	4	1.6%
Nurse RN/LPN	105	42.2%
Nursing student	5	2.0%
Respiratory therapist	7	2.8%
Surgery attendant	10	4.0%
Other attendant	6	2.4%
Phlebotomist/venipuncture/ I.V. team	4	1.6%
Clinical laboratory worker	6	2.4%
Technologist (non-lab)	15	6.0%
Housekeeper	2	0.8%
Paramedic	6	2.4%
Other student	4	1.6%
CNA/HHA	6	2.4%
Security	6	2.4%
Other, describe	23	9.2%

WHERE EXPOSURE OCCURRED:

Patient room	77	30.8%
Outside patient room	4	1.6%
Emergency department	35	14.0%
Intensive/critical care unit	36	14.4%
Operating room	40	16.0%
Outpatient clinic/office	7	2.8%
Blood bank	2	0.8%
Dialysis	1	0.4%
Procedure room	13	5.2%
Clinical laboratories	4	1.6%
Autopsy/pathology	3	1.2%
Labor and delivery	14	5.6%
Home-care	2	0.8%
Other, describe	12	4.8%

BBF¹ INVOLVED IN EXPOSURE:

(more than one item can be checked)²

Blood or blood products	204	81.6%
Vomit	7	2.8%
Sputum	14	5.6%
Saliva	25	10.0%
Peritoneal fluid	3	1.2%
Pleural	3	1.2%
Amniotic fluid	6	2.4%
Urine	9	3.6%
Other body fluid	34	13.6%

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

Yes	161	75.6%
No	31	14.6%
Unknown	21	9.9%

EXPOSED PART(s):

(more than one item can be checked)²

Intact skin	59	23.6%
Non-intact skin	43	17.2%
Eyes (conjunctiva)	154	61.6%
Nose (mucosa)	12	4.8%
Mouth (mucosa)	29	11.6%
Other exposed parts	7	2.8%

DID THE BLOOD OR BODY FLUID:

(more than one item can be checked)²

Touch unprotected skin	197	82.4%
Touch skin through gap between protective garments	32	13.4%
Soak through protective garment	6	2.5%
Soak through clothing	4	1.7%

BARRIER ITEMS WORN AT TIME OF EXPOSURE:

(more than one item can be checked)²

Single pair latex/vinyl gloves	158	63.2%
Double pair gloves	19	7.6%
Goggles	17	6.8%
Eyeglasses (not protective)	15	6.0%
Faceshield	13	5.2%
Surgical mask	38	15.2%
Surgical gown	43	17.2%
Plastic apron	2	0.8%
Lab coat, cloth (not protective)	3	1.2%
Lab coat, other	3	1.2%
Other item	20	8.0%

CAUSE OF EXPOSURE:

Direct patient contact	112	45.0%
Specimen container leaked/ spilled	17	6.8%
Specimen container broke	2	0.8%
IV tubing/bag/pump leaked	14	5.6%
Other body fluid container spilled/leaked	12	4.8%
Touched contaminated equipment/surface	3	1.2%
Feeding/ventilator/other tube separated/leaked/spilled	28	11.2%
Other, describe	59	23.7%
Unknown	2	0.8%

SOURCE PATIENT IDENTIFIABLE?

Yes	239	96.4%
No	2	0.8%
Unknown	5	2.0%
N/A	2	0.8%

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

Less than 5 minutes	179	74.3%
5-14 minutes	35	14.5%
15 minutes-1 hour	18	7.5%
More than 1 hour	9	3.7%

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

Small amount (up to 5 cc)	221	92.9%
Moderate amount (up to 50 cc)	14	5.9%
Large amount (more than 50 cc)	3	1.3%

EXPOSURE LOCATION

Largest exposure:

Arm	13	5.7%
Face/head	173	76.2%
Front	3	1.3%
Hand, left	16	7.0%
Hand, right	21	9.3%

Medium-sized exposure:

Arm	9	9.2%
Face/head	73	74.5%
Front	1	1.0%
Hand, left	7	7.1%
Hand, right	6	6.1%
Leg	1	1.0%
Foot	1	1.0%

Smallest exposure:

Arm	8	33.3%
Face/head	3	12.5%
Front	4	16.7%
Hand, left	4	16.7%
Hand, right	3	12.5%
Leg	1	4.2%
Foot	1	4.2%

¹BBF = blood or body fluids

²Because 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 2006 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.)