In Italy, Jagger works with SIROH colleagues on major study of safety devices

Since 1987, the Studio Italiano Rischio Occupazionale da HIV (Italian Study Group on Occupational Risk of HIV Infection, or “SIROH”), a unit within Italy’s National Institute for Infectious Diseases at Spallanzani Hospital in Rome, has conducted national surveillance of occupational exposures in healthcare workers. SIROH’s database constitutes the largest and most extensive resource on occupational blood exposures in the world.

Janine Jagger and the staff of the International Healthcare Worker Safety Center have had a long-standing collaborative relationship with members of the SIROH group, including Giuseppe Ippolito, M.D. (Ippolito is scientific director of the National Institutes for Infectious Diseases), Gabriella De Carli, M.D., Vincenzo Puro, M.D., and Nicola Petrosillo, M.D. The fruits of this collaboration have included a book, Prevention, Management and Chemoprophylaxis of Occupational Exposure to HIV (1997), a chapter reviewing occupational exposures to bloodborne pathogens for the textbook Prevention and Control of Nosocomial Infections (4th edition, 2003), and numerous articles in the medical literature (see pp. 2-3).

Jagger arranged a trip to Rome for a week during May 2009 to collaborate on an article utilizing the Italian occupational exposure data to evaluate the impact of safety devices on sharps injury rates in Italy. “Their national occupational exposure surveillance system is the largest and most extensive resource on occupational blood exposures in the world.”

Regional Activities

AFRICA

The Center has released a version of EPINet for sub-Saharan African countries; it solicits information on the hepatitis B vaccination status of injured healthcare workers, and asks whether the device causing injury had an auto-disable feature and whether it was used on a previous patient. For disposal-related injuries, information on the type and location of the disposal container is solicited.

Such data can be used to gauge hepatitis B vaccination coverage of African healthcare workers and improve sharps disposal systems in African healthcare settings.

Janine Jagger and Ginger Parker will travel to the Democratic Republic of Congo this August to help launch a “center of excellence” in occupational exposure prevention at the Bimba Marie Mutombo Hospital in Kinshasa. In partnership with BD, they
the gold standard and a model for researchers worldwide,”
Jagger notes. “Italy was the first
country to translate EPINet and
adopt it at a national level,
which is a source of pride for
me. Dr. Ippolito and colleagues
have always encouraged collabora-
tion and data sharing to ad-
vance international understand-
ing of sharps injuries and de-
velop effective interventions to
prevent them.”

Because Italy has a nationalized
healthcare system with standard-
ized recordkeeping, denomina-
tors for calculating sharps injury
rates—including the number of
deVICES purchased in various
device categories and full-time
equivalents (FTEs) for different
healthcare occupations—can be
obtained. Jagger observes, “Our
Italian colleagues can get de-
nominators that we can only
dream of. In the U.S., it is possi-
ble for one institution to calcu-
late sharps injuries per employee
FTEs, per procedure performed
or by number of devices pur-
chased, but when you try to
merge multiple institutions for
benchmarking, the inconsistenc-
cies in recordkeeping become
prohibitive.”

With Gabriella De Carli and
Vincenzo Puro, Jagger co-
authored a letter, “Needle-
stick prevention devices: we
should already be there,” for
the February 2009 issue of
Journal of Hospital Infection.
The letter presented SIROH data
supporting the efficacy of
safety-engineered devices in
reducing sharps injury risk to
healthcare workers. Data from
16 hospitals (2003-2006)
showed that injury rates for
safety devices were 80% lower
than for conventional ones.
During the same period, 12
cases of occupational hepatitis
C infection occurred in hospi-
tals that had not implemented
safety devices, as well as one
case of occupational HIV. For
11 of the 13 cases, use of
safety-engineered devices could
have prevented the exposures.

“These are important findings,”
Jagger says. “I am hopeful that
these results will have a major
impact on safety policy in
Europe and beyond.”

Joint Publications of the Italian Study Group on Occupational Risk of
HIV Infection and the International Healthcare Worker Safety Center

• 2009: De Carli G, Puro V, Jag-
ger J. Needlestick-prevention
devices: we should already be
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• 2003: Jagger J, De Carli G,
Perry J, Puro V, Ippolito G. Oc-
cupational exposure to blood-
borne pathogens: epidemiology
and prevention. Chapter 28 in:
Wenzel RP, ed., Prevention and
Control of Nosocomial Infections
(4th edition). Baltimore, MD: Lippin-
cott Williams & Wilkins; pp
430-66.

• 2002: Jagger J, Puro V, De
Carli G. Occupational transmis-
sion of hepatitis C virus. Journal
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tion 288(12):1469.

• 2000: Jagger J, Tereskerz PM,
Bentley M, Perry J, Pugliese G,
Wispelwey B, Petrosillo N, Puro
V, Ippolito G. Engineering de-
vices to minimize bloodborne
pathogen exposure. Chapter 83
in: APIC Text of Infection Control
and Epidemiology (revised).
Washington, D.C.: Assn. for Pro-
fessionals in Infection Control
and Epidemiology, Inc.;83(1)-83(7).

• 1999: Ippolito G, Puro V, Hep-
tonstall J, Jagger J, De Carli G,
and Petrosillo N. Occupational
human immunodeficiency virus
infection in health care workers:
worldwide cases through 30 Sep-
tember 1997. Clinical Infectious
will conduct training in EPINet surveillance methods and teach hospital staff about effective interventions to reduce healthcare workers’ blood exposure risk. Mutombo Hospital was established in 2007 by NBA star and Congo citizen Dikembe Mutombo as a model treatment and research hospital for the DRC and western Africa.

**ASIA-PACIFIC**

India’s health ministry declared use of auto-disable syringes mandatory for all government hospitals as of April 30, 2009. The move was spurred in part by an outbreak of hepatitis B infections from reused syringes that resulted in more than 50 deaths. However, there are no mechanisms in place to enforce the decree, which thus far has resulted in poor compliance.

A survey in 2002 estimated that more than 60% of injections in India involved reused syringes or unsterile equipment.

**EUROPE**

Translations of the EPINet Sharps Injury and Blood and Body Fluid Exposure surveillance forms have been completed for the Czech Republic, Slovakia, and Turkey; the EPINet software program is in the process of being translated for these countries as well. The Center is also working on EPINet translations for Poland and Slovenia.

Janine Jagger visited Paris May 4-5 for a meeting of the TC 84 Working Group (Devices for Administration of Medicinal Products and Intravascular Catheters) of the International Organization for Standardization (ISO); she gave talks on safety-engineered needles and disposal containers.

**LATIN AMERICA**

The Center is co-authoring an article comparing Mexican and U.S. EPINet data with colleague Javier Barroso Aguirre, M.D., coordinator of Mexico’s 14-hospital sharps injury surveillance network. Dr. Barroso visited the Center in 2006, where he received assistance in analyzing the first two years of Mexican EPINet data and developing evidence-based prevention recommendations. Dr. Barroso is with the Department of Hospital Epidemiology at the National Institute of Perinatology in Mexico City.

**MIDDLE EAST**

Janine Jagger and Ginger Parker will be in Riyadh, Saudi Arabia, from August 13-18 to participate in a regional training workshop organized by the Gulf Cooperation Council (GCC) Center for Infection Control. The workshop is part of a WHO-sponsored initiative to improve healthcare worker safety and needlestick prevention in GCC member states (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE).

The goals of the workshop are to educate GCC healthcare leaders about the prevention of occupational blood exposures so that they can in turn develop effective programs and policies at institutional and national levels, and to establish a GCC-wide surveillance network using the EPINet exposure surveillance program.

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**Joint publications (cont.)**

- Diseases 28:365-83.
  - 1995:
    - Puro V, Petrosillo N, Ippolito G, Jagger J. Hepatitis C virus infection in healthcare workers. *Infection Control and Hospital Epidemiology* 16:324-5.

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**OUR MISSION:**

**Setting a global standard for healthcare worker protection**

Healthcare workers are a crucial resource in all countries. But in many places, they are at high risk of acquiring preventable, life-threatening occupational infections.

We believe healthcare workers everywhere should be provided with the basic protections that have been shown to prevent exposures and infections. We believe that these measures should be mandatory, and should be provided free of charge to workers:

- Hepatitis B vaccination for all healthcare workers.
- Elimination of unnecessary sharps.
- Availability of safety-engineered needles and sharp medical devices.
- Availability of basic barrier garments for blood intensive procedures.
- Post-exposure prophylaxis for all healthcare workers who sustain an occupational exposure to HIV.
mid-to-high range of rates re-
medics were similar to the all sharps injuries among para-
lower national rates. Rates for 
ies of paramedics, but not 
than rates found in earlier stud-
rates were substantially lower 
ers. California sharps injury 
other types of healthcare work-
analyzed by selected variables 
exposure incidence rates were 
California paramedics were 
of U.S. paramedics. Results for 
was mailed to a national sample 
A survey on blood exposures 

The EPINet Sharps Injury and Blood Exposure Surveillance system is available in 12 different languages (as well as several different English versions). They can be accessed at the Center’s EPINet Global Resources page: http://www.healthsystem.virginia.edu/internet/safetycenter/internetsafetycenterwebpages/EPINetResources/EPINetpage.cfm.