Surveillance of occupational exposures to bloodborne viruses in healthcare workers

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3rd March 2011
Surveillance scheme

- Incidents are reported to the HPA from Occupational Health Departments, GUM Clinics, Infection Control Nurses and Microbiologists and Virologists

**Objectives:**

- Collecting exposure data on healthcare workers exposed to HBV, HCV and HIV
- Investigate type of exposures, occupation and circumstances surrounding the exposures
- Generate evidence base for policy development
- Monitor national policy – HIV PEP
- Education – raising awareness
Exposures by occupational group, 2000-2009

Proportion of reports

Year of incident

Nursing professions
Medical professions
Professions allied to medicine
Ancillary staff
Unknown occupation
Type of exposure by occupation, 2000-2009

- Nurses & healthcare assistants: n=1701
- Midwives: n=92
- Doctors: n=1595
- Dentists/dental nurses: n=151
- Professions allied to medicine: n=300
- Ancillary: n=69

Proportion of reports:
- Mucocutaneous
- Bite/scratch
- PCE unknown needle/sharp
- Other sharp
- Solid needle
- Hollowbore needle
Location of incident, nursing and medical professionals, 2000-2009

Nursing professionals

Medical professionals

Proportion of reports

Year of incident

Ward  Theatre  A&E  Intensive Care Unit  Community  Dental  Other

Ward  Theatre  A&E  Intensive Care Unit  Community  Dental  Other
Exposures to nurses and healthcare assistants, by location, procedure and type of exposure, 2000-2009

Location and type of procedure

Number of reports

Ward

Theatre

A&E

Intensive Care Unit

Line

Blood

Injection

Medical

Patient

Percutaneous

Mucocutaneous
Exposures to doctors, by location, procedure and type of exposure, 2000-2009
Exposures to nurses and healthcare assistants, by location, procedure and mechanism, 2000-2009
Exposures to doctors, by location, procedure and mechanism, 2000-2009

- Ward
- Theatre
- A&E
- Intensive Care Unit

Number of reports

- During procedure
- After procedure before disposal
- During/after disposal

Location and procedure:
Hepatitis C policy & outcome monitoring
Hepatitis C post-exposure testing Guidelines

Known HCV-infected source patient:

1) HCV RNA - 6 weeks
   - 12 weeks

2) Anti-HCV - 12 weeks
   - 24 weeks

- **HCV RNA**: reflects infectivity and presence of replicating virus; appears early in seroconversion phase – from 10 days onwards

- **Anti-HCV**: HCV antibodies reflect that the individual has been exposed to HCV – they appear from 50 to 70 days after exposure

1 Ramsay ME. Guidance on the investigation and management of occupational exposure to hepatitis C Commun Dis Public Health 1999; 2: 258-62
Policy monitoring
Hepatitis C follow-up: 2009 exposures

175 six month reports received

- 66 (38%) tested at all 3 stages
- 68 (39%) tested at 1 or 2 stages
- 41 (23%) not known tested at any stage

- 46 (70%) had correct tests (26% of all reports)

Reasons include:
HCW left the Trust; failed to attend; followed-up elsewhere; information not available
Policy monitoring
Hepatitis C follow-up: 2005-2009¹

1 Date of incident up to 31st December 2009. The number may rise as further reports are received.

Healthcare workers were tested at the correct follow-up stages, of these the proportion where the correct type of tests were carried out.

Of all hepatitis C exposure reports, the proportion where the correct type of tests at the correct follow-up stages were carried out.
HIV PEP policy monitoring
HIV PEP Guidance: September 2008

• PEP should be initiated for all significant exposures

• Initiated ideally within an hour of exposure

• Time interval from exposure after which PEP discouraged is 72 hrs

• PEP should be administered for 4 weeks

• HCWs should be followed-up for at least 12 weeks after the cessation of PEP – consideration of longer follow-up and additional testing in complex cases (e.g. HCW is immunocompromised; source patient is dually infected, etc.)
Choice of regimen: September 2008

**Recommended PEP starter pack:**

One Truvada tablet (245mg tenofovir and 200mg emtricitabine (FTC)) once a day

*plus*

Two Kaletra film-coated tablets (200mg lopinavir and 50mg ritonavir) twice a day

**Guide:**

*Healthcare worker:* pregnancy; existing medical condition; potential interaction with other medications

*Source patient:* stage of infection; CD4+ T-cell count; viral load; treatment history; genotypic/phenotypic; drug resistance or exposed HCW has been handling resistant virus in laboratory
Policy monitoring

HIV PEP regimens prescribed after exposure to HIV positive source, 1998-2009

Proportion of reports (%)

Year of incident

Proportions for different regimens:
- AZT+3TC+Indinavir
- AZT+3TC+Nelfinavir
- AZT+3TC+Nevirapine
- AZT+3TC only
- AZT+3TC+Kaletra
- Kaletra+Truvada
- Other drug combination
- Yes on PEP - drug names NK

Key dates:
- June 1997
- July 2000
- February 2004
- July 2007
- September 2008
Policy monitoring
Number of hours between exposure and initiation of HIV PEP, HIV positive source, 2000-2009

Year of incident

Proportion of reports (%)

- <=1
- >1-3
- >3-12
- >12-24
- >24-48
- >48-72
- >72

n=114
n=96
n=167
n=144
n=105
Policy monitoring
Number of hours between exposure and initiation of HIV PEP, by occupation, HIV positive source, 2000-2009
Policy monitoring

Length of time on HIV PEP, source HIV negative or of unknown HIV status, 2000-2009

Proportion of reports (%)

- 1 day
- 2-3 days
- 4-7 days
- 8-14 days
- 15+ days
Summary

• Percutaneous incidents are the most commonly reported exposures; most involve hollowbore needles and HCV-infected patients
• Medical professionals (doctors and dentists) reported a higher number of occupational exposures than nursing professionals in 2009
• Prevention of exposures occurring after the procedure - adherence to standard infection control procedures and safe disposal of clinical waste
• A large proportion of healthcare workers exposed to HCV-infected patients are not receiving appropriate follow-up
• HCV seroconversions still occurring - two documented cases reported in 2008/9
• A quarter (27%) of healthcare workers exposed to HIV-infected patients who start HIV PEP received it within 1 hour; and 89% within 24 hours of the exposure in 2008/9
Acknowledgements

• All our collaborating and reporting Centres
• Ms Sarah Tomkins – Scientist (Epidemiology)
• Dr Susan Cliffe – Senior Scientist (Epidemiology)
• Colleagues at the Health Protection Agency and the Advisory Group for the surveillance scheme

Website address:
www.hpa.org.uk
Topics A-Z
Bloodborne Viruses (BBVs) and Occupational Exposure