Assessing Exposures

The High, the Low and How to Tell the Difference

Alexis Silverman, RN, CIC
alexis.silverman@peelpolice.ca

Concerns:

- Under vs. Over-evaluating
- Minimizing a high-risk exposure
- Sending everyone to hospital unnecessarily
- Ensuring the right support
- Ensuring the right follow-up
- Filling in the right paper-work

High vs. Low Risk Exposures

- A *high-risk* exposure occurs when there is potential infection with a communicable disease that may be life-threatening
- A *low-risk* exposure occurs when there's not

But What's the Diff?

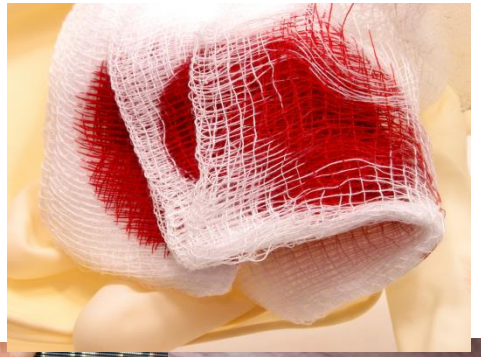
It Depends

And It Depends On…

- What contacted where?
- What disease was it?
- What's the immunization status?

What Contacted Where?

- Blood?
- Body Fluid?
  - Which type?



Sidebar #1

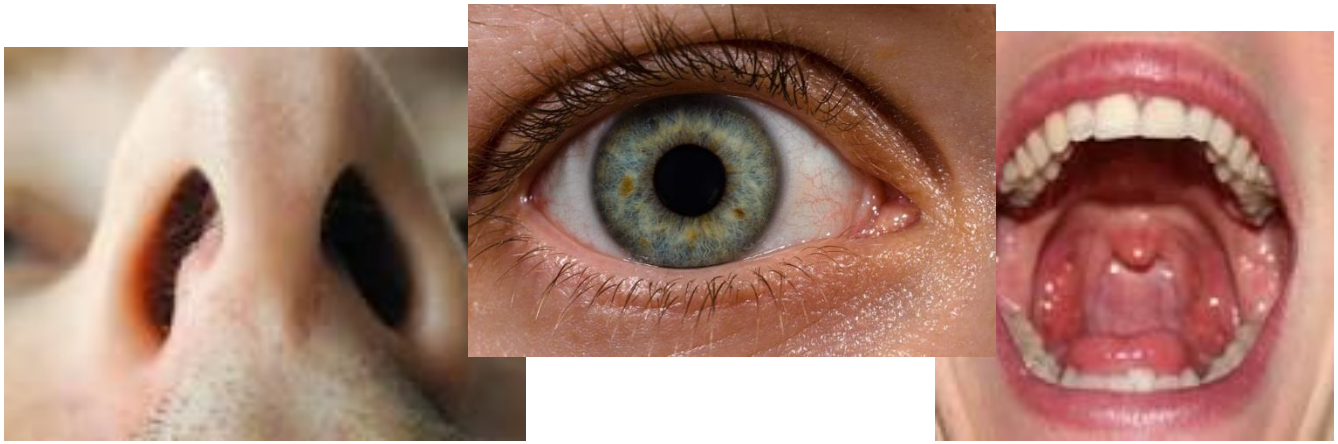
- **Sexual Secretions**
  - Can spread disease
  - Requires contact with:
    - Mucous membranes
    - Non-intact/broken skin
  - Person needs to be *infected* for exposure to cause risk

What Contacted *Where?*

- Portal of Entry?
  - Non-intact/Broken skin?
    - How non-intact/broken is the skin?
    - How bad is the injury?

What Contacted *Where?*

- Portal of Entry?
  - Mucous Membrane?



What Contacted *Where?*

- Portal of Entry?
  - Inhaled?

Sidebar #2

- **Tuberculosis**
  - Requires prolonged contact
  - Person must have active TB disease in the lungs
  - Latent TB infection is not contagious
  - If they know they have TB, they are probably not contagious

What Disease Was It?

- Is there a *known* diagnosis?
  - Public Health will tell you
- Is there a *suspected* diagnosis?
  - Who says?
- Is the diagnosis that there is no diagnosis?
  - No disease = no risk

Note on Paperwork #1

- Public Health will NOT disclose if worker was exposed to HIV, HBV or HCV unless MBTA is completed.
- It's PHIPA people!
- If ED MD prescribes PEP then *MBTA*

What's the Immunization Status?

- **Good**! They're all up to date.
- **Bad**. They haven't been vaccinated
- **Maybe**? They can't remember if they've been vaccinated

But what were they vaccinated against?

Relevant Vaccinations:

- **Blood:**
  - Hepatitis B
- **Respiratory Secretions:**
  - Influenza
  - Pertussis (whooping cough)
  - Mumps
- **Airborne diseases:**
  - Measles
  - Varicella (Chicken Pox)
- **Stepped on a Nail:**
  - Tetanus

Sidebar #3

- **Hepatitis B Vaccination**
  - Series of 3 shots, usually combined with HAV
    - 0, 1, 6 months
  - Test for antibodies >1 month and <6 months post last dose
  - If good, then good for life
  - If not, booster, then test
  - 98% of people convert to being protected after 1st series

Breaking it Down:

- **Respiratory Secretions**
  - Need bacteria/viruses that are a risk to worker
    - Influenza
    - Common cold
    - GAS
    - RSV
    - Meningitis
  - Require contact with mucous membranes
    (PPE? Distance?)
  - Require worker to be susceptible
    (Immunized?)
  - For the most part: ‘Wait and see’ approach

Breaking it Down

- **Blood/Body Fluid**
  - Must be a body fluid that can transmit disease
  - Needs to actually contain a disease
    - HBV
    - HCV
    - HIV
    - iGAS
  - Requires contact with bleeding non-intact skin or mucous membranes

    (PPE? Intact skin? Scab?)
  - Can be Pre-treated (HBV)
  - Treated, (HCV, iGAS)
  - Post-treated, (HBV, HIV, iGAS)

What to Ask:

- What happened?
- Were you wearing PPE?
- What were you doing at the time?
- Are you vaccinated?
- How long were you exposed?

What to Listen For:

- ***High-Risk Activities (without PPE):***
  - Intubation
  - Suctioning
  - Unprotected mouth-to-mouth
  - Investigation of nose/mouth
  - Handling infected wound without PPE
  - Within 2 metres if person has signs/symptoms of Acute Respiratory Illness

What to Listen For:

- ***High-Risk Mechanisms of Exposure:***
  - **Blood/body fluid splash/spray** onto
    - **non-intact skin**
    - **mucous membranes**
  - **Sharps injury** from used sharp
  - **Wound exudate** contacting mucous membranes/non-intact skin **if** person has
    - **signs/symptoms** of **infection**,
    - **Diagnosis of iGAS**

What to Listen For:

- ***High-Risk Mechanisms of Exposure:***
- **Respiratory secretions** contacting mucous membranes/non-intact skin if
  - **Signs/symptoms of Acute Respiratory Illness**
  - **Diagnosis** of **iGAS**
- With patient with **active TB** disease
  - **>4 hrs** in enclosed space
  - **>8-12** hours without ventilation
- **Saliva** on mucous membranes/non-intact skin **without HBV vaccination**

If You Don't Hear the Key Words...

EVERYTHING ELSE
IS
LOW-RISK

Follow-Up?

- Emergency Dept
  - PEP has a ‘best before’ time for maximum effectiveness
- MBTA
  - ***ALWAYS*** if PEP is prescribed
- Education
  - Public Health is your friend
  - PPE reminders
- Emotional Support
  - No blame, no shame
- WSIB

Under vs. Over-Evaluating

- **Over**
- Everyone goes to hospital
- Everyone waits
- Some get treated
- ED staff give you the stink-eye
- Some time/money wasted

- **Under**
- No-one goes to hospital
- No-one gets treated
- ESWs scared to mention exposures
- ESWs at risk
- Trust erodes

That's what tax dollars are for

Notes on Paperwork #2

- WSIB is a good record for what happened
- It is evidence for the future ‘just in case’
- When in doubt – fill it out!

Sidebar #4

- **Exposures are System Failures**
  - Not enough training
  - Not enough support for IPAC
  - Not enough support for vaccination
  - No access to PPE
  - The wrong PPE

Blaming/shaming
the worker
will not fix the problem

Scenarios

- Officer receives needle-stick when searching a vehicle
- Paramedic gets vomit splashed on her cheek
- Firefighter performs CPR on patient with iGAS
- Officer give unprotected mouth-to-mouth to patient whose mouth is bleeding
- Paramedic intubates MI patient without PPE
- Firefighter gets blood-splash into eyes
- Officer with prisoner who says they have HCV
- Paramedic bitten by patient. Bite breaks the skin
- Firefighter bitten by patient through his shirt

Useful Stats:

- **HIV**
  - Sharps injury: 0.3 – 0.5% risk
  - 30-50 out of 10,000 people **might** get infected
  - 9970 – 9950 **won't**
  - Splash/Spray: 0.09%
  - 9 in 10,000 people **might** get infected
  - 9,991 **won't**

Useful Stats:

- **HCV**
  - Sharps injury or blood splash/spray on non-intact skin: 3%
  - 300 out of 10,000 people **might** get infected
  - 9700 **won't**

Useful Stats:

- **HBV**
  - Sharps injury, blood/BF splash/spray on non-intact skin or mucous membranes: 30%
  - 3000 out of 10,000 people **might** get infected.
  - 7000 **won't**

Useful Stats:

- Risk of bacterial meningitis after exposure: **1%**
- 100 people out of 10,000 **might** get infected
- 9900 **won't**
- Rate of invasive Group A Streptococcus:
- 27 per 10,000 population
  - 10% of children carry GAS in their nose
- **Lifetime risk** of Tuberculosis disease after infection: **10**%

The Bottom Line:

- Don’t Panic!
  - Info is available
  - You don’t need to have all the answers
  - The hospital is always there
  - So is Public Health
    - have you talked with yours?
  - So is the OADO and our manual
  - Better more paperwork than less
  - Better your workers feel supported than ignored
  - Infection after exposure is rare
- Get them **vaccinated**

The Bottom Line:

You can’t spread disease without having it, so…

An Exposed Worker can ALWAYS Go Home

Questions?