

Common Bacterial Infections and Safer Injection Practices and Vein Care

**Rebecca Opyc Public Health Nurse
Thunder Bay District Health Unit**

January, 2012



Skin and soft tissue infections are some of the most common infections among injection drug users. However their incidence is difficult to estimate because such infections are commonly self-treated.

(Gordon, Lowy, 2005)

Avoid Infections when injecting

Common Bacteria

Staphylococcus aureus

e.g: MRSA- methicillin resistant staph.
aureus

Group A Streptococcus

e.g: **Invasive:**

Necrotizing fasciitis

Streptococcal toxic shock syndrome

Non-invasive:

“strep” throat, tonsillitis, otitis media, sinusitis, impetigo,
cellulitis, scarlet fever

3 Main ways to pick up an infection from injecting

- 1) Skin
- 2) Air
- 3) Blood

How are they Spread?

- Direct person to person contact
- Discharge from the nose or throat
- Infected wounds or sores on the skin

What May be Seen

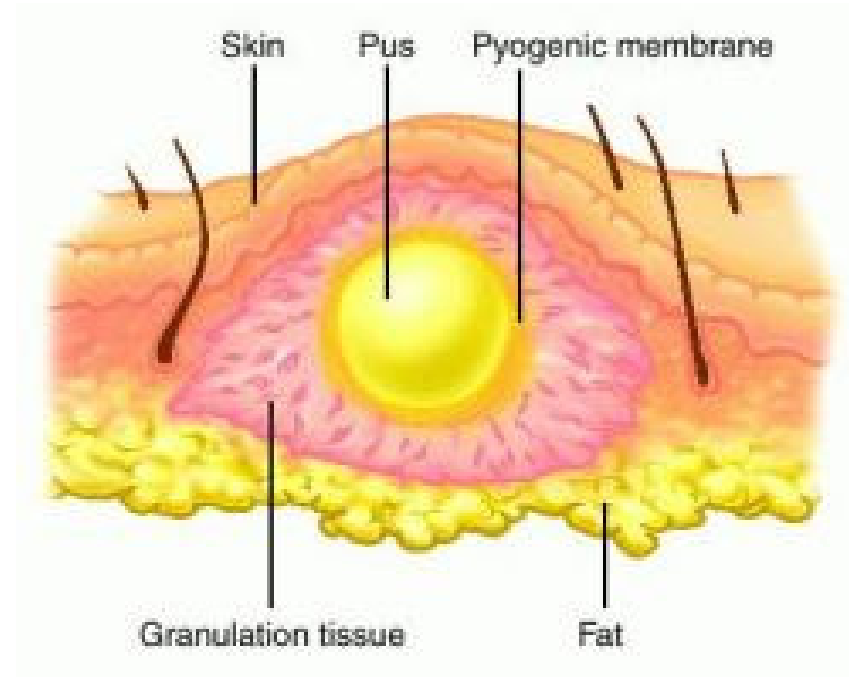
- Abscesses
- Boils (hair follicles become infected and filled with pus),
- Carbuncles (Like a large abscess, often with several heads apparent on the skin)
- Cellulitis
- Impetigo (pus filled blisters)
- Styes (painful swollen infection of eye lid and local glands)

If a client is repeatedly developing these types of wounds and is using safer injection techniques, they may have MRSA.

Antibiotic treatment is needed to treat MRSA.

Abscesses

- An **abscess** is an enclosed localized collection of **pus** surrounded by **inflamed** tissue.
- Generally develops in response to **infection**
- Often forms when foreign bacteria (such as bacteria from the skin surface) are introduced beneath the skin
- - eg. via injection, cuts, wounds etc.



Assessing Abscesses

- Redness of skin (more noticeable in lighter skin)
- Raised skin
- Pain and tenderness
- Warm to touch
- Hardened tissue
- Drainage of pus if it has burst / been lanced
- Possible foul smell if draining

Examples of Abscesses



Abscesses

Group A Streptococcus

- A bacterium in the Streptococcus family whose makeup of the cell wall classifies it as “A”
- Found in the throat and on the skin
- Approx. 15% of population are carriers
- Causes mild to severe infections

Severe/ Invasive Group A Streptococcus

- **Not that common**, reportable by law to public health
- Necrotizing fasciitis—skin, fascia and muscle
- Streptococcus toxic shock syndrome—multiple systems involvement
- Pneumonia
- Septicemia

Necrotizing Fasciitis

- AKA: “Flesh-eating disease”
- Rare infection of the fatty tissue that surround the muscle
- Intense pain, swelling, fever
- Fast onset
- Skin color change to dark purple, may blister
- Urgent medical attention needed
- Death can occur in 12-24 hours



- Necrotizing ulcer after injection of a morphine tablet

Necrotizing Fasciitis

Streptococcal toxic shock syndrome

- Life threatening
- injury major organs, causing them to shut down quickly
- Symptoms are vague... flu-like, muscle aches, diarrhea, vomiting, aches pain usually in a limb, confusion, coma
- Fever, low BP, possible rash

iGAS in Thunder Bay

Started August 2007 and was declared over July 2009

- Had 101 cases
- Normally would see 3-4 cases in 100,000 people per year
- Currently, an increase is noted, 45 cases for 2011 with 1/3 suspected to be IVDU.
- 10 of the 45 cases are co-infected with MRSA (1/2 suspected to be IVDU)

In Thunder Bay,

Most prevalent risk factors associated with the outbreak were:

- Aboriginal race
- Hepatitis C infection,
- Alcoholism
- IVDU
- chronic medical conditions
- homelessness

Who's at Risk

- Anyone can become infected

However, some are at greater risk

- Those with chronic illnesses such as diabetes, heart disease, chronic alcohol use
- Those who use steroids
- Those who inject drugs

Protect Yourself and Family

- Sore throat with fever seek medical attention
- Take care of wounds, keep them covered to avoid infection
- Infected cut, sore or wound with fever seek medical attention
- Complete all antibiotics as ordered

Other Complications

- Cellulitis
- Blood clots and embolisms
- Tetanus
- HIV
- Hepatitis A,B,C

Reducing The Risks of Abscesses and Wounds With Harm Reduction



Hand Hygiene

- Bacteria present on hands removed during mechanical action of washing hands
- Intact skin is the first line of defense, those with a skin condition, cuts or abrasions at greater risk.
- if washing frequently, use skin lotion to help keep skin intact

Cough Etiquette

- Cough or sneeze into your sleeve, or a disposable tissue
- Dispose used tissue in the nearest waste receptacle
- Avoid touching your eyes, nose or mouth
- Clean your hands after coughing and sneezing

Safer Injection

- Wounds and abscesses can potentially be avoided by using safer injection techniques that also help to maintain healthy veins.



Reducing the Risks

How to lessen the chance of getting an infection

- Hand washing before hitting is essential
- Cleanse injection site well
- Inject intravenously instead of skin popping or in the muscle

Avoid,

- Sharing any equipment
- Licking end of needle before a hit
- Re-using a filter
- Sipping water from the spoon
- Touching needle with fingers

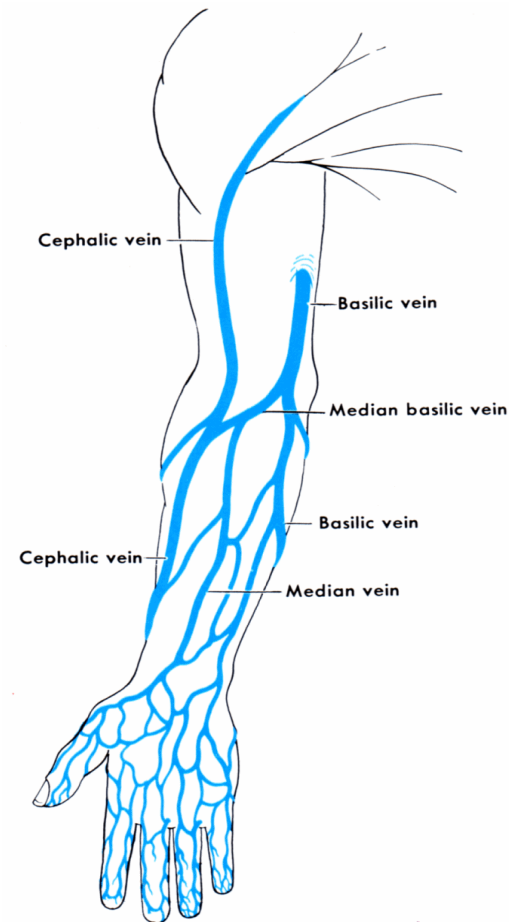
Reducing the risks

Injection Sites - Rotate Them!!

Arms:

The safest place for injecting. The superficial veins on the inside of the elbow being the most accessible.

These sites are less likely to result in damage to surrounding tissue
Injectors should be educated to do everything they can to preserve arm veins as long as possible and rotate arm veins!



Reducing the risks

Limit using the hands, feet and legs

Hands and Feet

- They tend to be small and fragile, so they damage and bruise easily.
- If complications such as infection or cellulitis occur, they are likely to be much more disabling in the hand and feet than in the arm.
- Blood circulates more slowly in the foot veins and they therefore require more time for healing and repair.
- Foot sweat and dirty socks can prevent wounds from healing and increase the chance of infection from bacteria.

Reducing the Risks

Sites to Avoid - Dangerous!

- **Femoral** – Risk of hitting femoral artery causing severe bleeding. Hitting the femoral nerve causing intense pain and possible paralysis. Abscess/ulcer at the injection site.
- **Neck**- Risk of hitting carotid artery, severe bleeding. An abscess or cellulitis in the neck can cause dangerous pressure on nerves or obstruct the airway.
- **Breast** – Veins are very small and liable to break. They are also next to milk ducts which can accidentally fill with trapped fluid. This will lead to infection or abscesses.
- **Penis** - Injecting in the penis is dangerous, with problems like local infections being highly likely. Another problem can be priapism – an erection caused by the veins not reopening. This can last a long time and be extremely painful.

Reducing the Risks

Avoid,

- pre-mixing a hit as bacteria can grow easily
- injecting in any area that is already infected or irritated
- Coughing over equipment

Injecting Safely

- Raise a vein with a tie. A warm environment will also help, as will pumping of the fist and good hydration.
- It is more important to be able to palpate the vein than see it.
- While injecting the needle should point towards the heart (direction of blood flow) at about a 45 degree angle with the bevel (hole) facing up... this decreases blood turbulence, and vein and tissue trauma.
- Once inserted, advise clients to gently draw back to check presence and colour of blood... it should be dark red.
- Apply gentle pressure for 1 minute after injection with a cotton ball to help prevent vein damage.

Skin Cleansing

- Several studies have indicated that proper skin cleansing with **alcohol swabs** prior to injection is the most important step in avoiding infection and abscesses. This may require gentle scrubbing with more than one swab



Hitting an Artery

- Hitting an artery increases the risk of bleeding, infection and swollen tissue.

Signs of Hitting An Artery

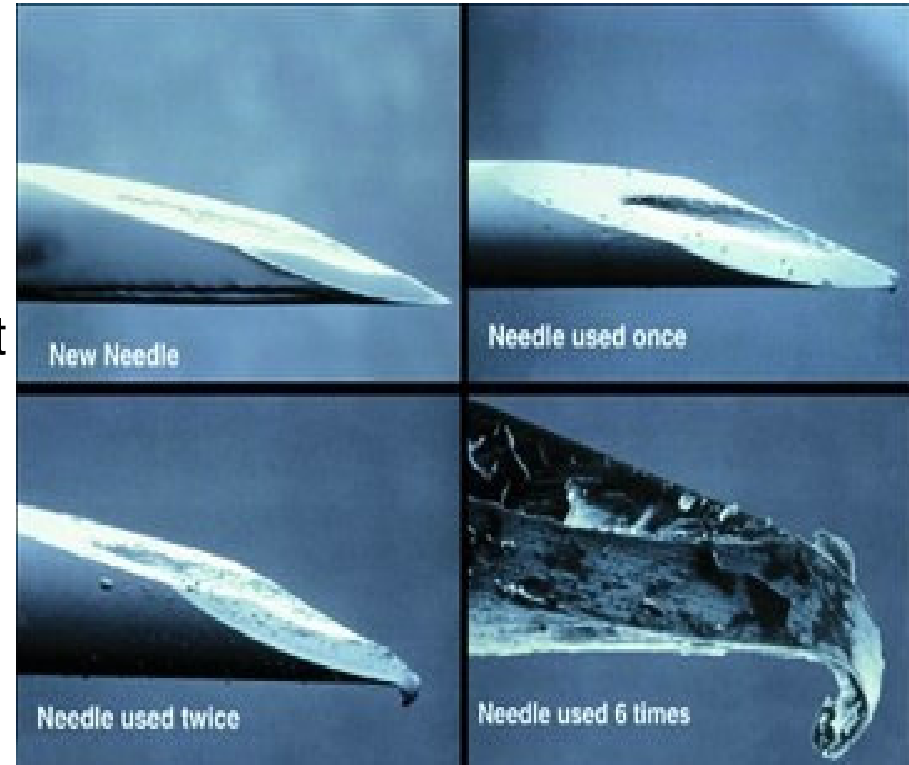
- Frothy red blood that may push the plunger back
- Pain upon injection
- Difficult to stop the bleeding
- If it has a pulse... don't inject there!

If you Hit An Artery

- Do not complete the injection... remove the needle
- Apply pressure for 15-30 minutes, while raising the limb
- Call an ambulance if the bleeding wont stop

Use A New Needle

Even if clients don't share needles, education on using a fresh needle with every injection to prevent the introduction of bacteria and dirt is needed. Used needles also contain shards and become dull which damages veins quickly. Using other people's needles will also lead to the spread of HIV and Hep C and Hep B.



Injecting Safely

References

- Giudice, P. (2004). Cutaneous complications of intravenous drug abuse. *British Journal of Dermatology*, 150,1–10.
- Khalil P., Huber-Wagner S., Altheim S., Burklein D., Siebeck M., Hallfeldt K., Mutschler W., & Kanz GG. (2008). Diagnostic and treatment options for skin and soft tissue abscesses in injecting drug users with consideration of the natural history and concomitant risk factors. *European Journal of Medical Research*, 13(9), 415-424.
- Maloney, S, Keenan, E & Geoghegan, N. (2010). Cleansing skin major reason for skin abscesses – What are the risk factors for soft tissue abscess development among injecting drug users? *Nursing Times*, 106(23), 21-24.
- Murphy E., DeVita D., Liu H., Vittinghoff E., Leung P., Ciccarone D., & Edlin B. (2001). Risk factors for skin and soft-tissue abscesses among injection drug users: A case-control study. *Clinical Infectious Diseases*, 33(1), 35-40.
- The Safer Injecting Briefing- An easy to use comprehensive reference guide to promoting safer injecting.
<http://www.saferinjecting.info/vcbrieftext.html>

References Con't

- Williams, H., Norman, M. Safer Injecting: Individual Harm Reduction Advice, Chapter 11. *Injecting Illicit Drugs*. Retrieved February 20, 2011 from <http://onlinelibrary.wiley.com/doi/10.1002/9780470776339.ch11/summary>
- Safer Injection Handbook – Available at: www.exchangesupplies.org

Thank- you



Rebecca Opyc, PHN
Thunder Bay District Health Unit