Objectives

- To define personal service settings (PSS) and describe the potential infectious risks associated with them;
- To review some of the outbreaks associated with PSS
- To review infection prevention and control issues for PSS
- To describe programs designed to reduce infectious risks in PSS.

What are Personal Service Settings?

- Tattoo parlours
- Nail salons (manicures, pedicures)
- Places providing acupuncture, body piercing, electrolysis, waxing, branding, esthetics, hairdressing and barber services

Infectious risks

- Any personal care procedure that involves puncturing the skin should be considered high risk for blood borne pathogens: HBV, HCV, HIV
- Hepatitis B transmission documented from:
  - Acupuncture, ear piercing, tattooing, jet injections at a weight loss clinic, other body piercing
  - Hepatitis C and HIV from tattooing, body piercing (much less evidence for HIV; 1 possible case related to piercing)

Infectious risks: piercing

- Ear piercing has been associate with multiple infections including BBP
- Recent trend of other body piercings adds to risk with site specific issues (urethritis, mastitis, abscesses etc)
- Primary concern is clean, good quality jewelry, correct shape for the area and well placed

Infectious risks: tattooing/piercings

- Verucca vulgaris (warts)
- Mycobacterium tuberculosis
- Mycobacterium abscessus
- Molluscum contagiosum
- CAMRSA
- Pseudomonas
- Herpes simplex
- Sepsis, toxic shock
- Bacterial endocarditis
- Fungal infections:
  - Subcutaneous zygomosis, caused by Saksenaea vasiformis
Infectious risks: manicure, pedicure

- Less evidence for BBPs but still possible especially if do things like shaving off calluses with a razor
- Common: paronychia, cellulitis, fungal infection (usual suspects Staph and Strep)
- Large outbreak of Mycobacterium fortuitum in multiple states; over 100 women from California and Illinois related to improperly cleaned footbaths at nail salons

Footbaths in nail salons

Vugia et al. EID Vol11; no 4; April 2005

Infectious risk: waxing

- Common: folliculitis
- Also: Herpes simplex, molluscum contagiosum, fungus and HPV.
- Most common mistake leading to infection: Double Dipping

Acupuncture Outbreak Background

- Dermatologist/Pathologist reports cluster of unusual skin infections in 2 individuals she had seen at derm clinic and 2 path specimens she had reviewed to Public Health Department
- All seemed to have a mycobacterium infection: probably M. abscessus
- All had mention of receiving acupuncture and the 2 patients she saw had the same acupuncturist

Mycobacterium abscessus

- Atypical bacteria commonly found in environment
- Rarely causes human illness
- Transmission through wounds or via injectable medication/medical devices

Mycobacterium abscessus (2)

- Incubation period: 1 month to 1 year
- All ages are at risk; more severe in immunocompromised individuals
- Resistance to multiple antibiotics is common

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Mycobacterium abscessus (3)

Symptoms:
- Skin sores or abscesses
- Ulcerative lesions with purulent discharge
- Fever
- Chills

Treatment:
- Antibiotics (up to 6 mo.)

The 'skin'ny on the investigation

- The health unit interviewed the 4 patients and through word to Drs/ and patients identified another 7 people who had acupuncture at the same clinic and had infections
- Public Health conducted an inspection of the acupuncture clinic
- Re-use of improperly sterilized needles identified
- Acupuncturist directed to stop treatments
- Trace back on all clients seen from April 1, 2002 to Dec 13, 2002

Investigation (2)

Dec 20
- Clients advised of potential risk of bloodborne infections
- Acupuncturist served with order under the public health legislation
- Information packages sent to all clients

Outbreak case definition

Suspect
- Skin infection at needle insertion site lasting more than 2 weeks
- Attended either of the two acupuncture clinics

Probable
- M. abscessus infection diagnosis by physician

Confirmed
- Laboratory isolation of M. abscessus

Outbreak investigation

168 clients identified
- 32 (19%) individuals reported lesions
- 5 (15.6%) were suspect;
- 21 (65.6%) probable, and
- 6 (19%) lab-confirmed for M. abscessus

Acupuncture Outbreak - Onset of Skin Lesions
Epidemic Curve

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Epidemiology of Cases
- Median age 49 years (range: 22-81 years)
- 30/32 (93%) female
- Health unit distribution
  - Toronto: 19 cases (59%)
  - York: 8 cases (25%)
  - Peel: 2 cases (6%)
  - Durham: 1 case (3%)
  - North Carolina: 1 case (3%)

Epidemiology of Cases
- Median incubation period (for 22 patients) 1 month (range 0.5-5 months)
- Median time to correct diagnosis: 3 months (range 0-6 months)
- Skin biopsies on 23 patients:
  - 21 granulomatous inflammation
  - 2 non-specific chronic inflammation
- AFB observed in 1 fixed specimen

Epidemiology of Cases
- Mean growth time for 6 culture isolates: 17.5 days (10-24 days)
- All susceptible to Clarithromycin
- Resistant to: cefoxitin, ciprofloxacin, doxycycline, imipenem and sulfamethoxazole (intermediate to amikacin)
- All same AFLP pattern

AFLP typing of M. abscessus strains

Clinical Picture
- Of 24 patients: 9 (37.5%) had 10 or more lesions
  - All lesions were on sites of previous acupuncture
  - 95.8% had lesions on lower extremities
  - 70.8% had lesions on upper extremities
  - 50% of patients had lesions on trunk
- 16 (66.7%) received appropriate antibiotic therapy
  - 15 cases took 6 mos clarithromycin
  - 1 case took 3 mos oral azithromycin
  - 2 took less than 30 days clarithro
  - 1 used naturopathic topical therapy and
  - 5 (20.8%) declined therapy

Clinical Picture
- 23 patients had clinical resolution
- 1 person continued to have active lesions after 12 mos of therapy
- All 24 had residual scarring or hyperpigmentation
- No seroconversions to Hep A, C or HIV

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Possible contamination sources

Reusable needles:
- Sterilized between clients using an autoclave
- Sterilized using chemical sterilant between clients
- Placed in glass jars containing cotton balls soaked in solution before insertion
- Improperly handled

Role of public health

CD investigations/outbreak control
- Investigation of all reportable diseases
- Contact tracing
- Identify source of infection to reduce risk
- Provide education, information or assistance

Surveillance
- On-going monitoring, data collection/analysis
- Reporting to provincial/state and national level

Role of public health (2)

Prevention
- Health Hazard Identification
  - inspections (including Personal Services Settings)
- Health promotion and education for professionals, institutions and the community

Issuing of Orders

- Made by medical officer of health or a public health inspector if:
  - a health hazard exists
  - requirements specified are necessary “…to decrease the effect of or to eliminate the health hazard”

Regulation of acupuncture

- Acupuncturists regulated in BC, Alberta, Quebec and secondary to this outbreak have become regulated in Ontario
- Difficulties with inspection and outbreak investigation
  - problem of identification of premises
  - Unlicensed operators (e.g. tattooing at a weekend fair, home acupuncture, cupping etc)
  - Difficult to know what services provided at each site

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Compliance inspection for PSS

• Wash hands before and after glove use
• Wear new disposable gloves for each client
• Cleanse skin with antiseptic using disposable swab
• Disposable needles
  – single-use, prepackaged sterile, disposable and individually wrapped
  – cannot be re-used on a client
  – opened in front of the client
  – inserted immediately after opening
  – discarded immediately after use
• Discard needles into sharps container

Compliance inspection for PSS

• General:
  – launder linens, towels between clients
  – adequate lighting
  – smooth impervious working surfaces
  – cleaning and disinfection of surfaces, equipment
  – maintain client records for one year

Infection prevention and control measures for all PSS

• Australian study of infection control practices among tattooists and body piercers showed:
  • Only 52% of owners/managers and 26% of staff gave the correct answer for the purpose of disinfection and about 50% of both knew the purpose of sterilization
  • 38% of owners/managers and 56% of staff reported that their infection control compliance could be improved
  • Approximately one quarter of owners/managers reported that the frequency of inspections was inadequate
  • Deficiencies were observed concerning washing of hands, wearing of gloves, and sterilization procedures
  • US study echoed results and showed tattooists with >10 years experience did worse on IC compliance audits

Advice to the Public

• Make sure shop owner and operator are currently licensed
• Don’t get a service if you have, or suspect you have, a skin infection, or if you have diabetes, eczema etc.
• Don’t shave within 24 hours of the appointment; shaving results in nicks or cuts which can be pathways for infection
• Look around the salon, it should be clean, free of trash and set up with clean instruments

Advice to the Public (2)

• If you are having a pedicure there should be no standing water in the footbath; if water is being drained from the bath when you arrive ask that it be cleaned and disinfected
• Ask the technician about infection prevention practices (if they don’t care to talk about it they may not care for you)
• Look for technicians who are not smoking, eating etc while performing a service
• If you have any doubts about the cleanliness of the premise or their adherence to sanitation, leave.

Conclusions

• There are real infectious risks in Personal Service Settings
• In some areas there are regulations and public health inspection and prevention programs BUT
• Even the best can’t keep up with changing services and unlicensed operators
• Users of the service need to be aware of the risks and take precautions too

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Questions?

The Next Few Teleclasses

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