

# I've Got You Under My Skin - Infection Control in Personal Service Settings

**Dr. Bonnie Henry, BC Centre for Disease Control**  
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**I've got you...under my skin**  
 Infection Control in Personal Service Settings

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- ## 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
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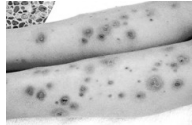
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## Infectious risks: manicure, pedicure

- 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

Table. Mycobacteria, by species, isolated from 30 whirlpool footbaths in 18 nail salons, California, 2000

Mycobacteria	N (%) of spas
<i>Mycobacterium fortuitum</i> *	14 (47)
<i>M. mucogenicum</i> *	7 (23)
<i>M. mageritense</i> *	6 (20)
<i>M. avium</i> complex	5 (17)
<i>M. smegmatis</i> group*	4 (13)
UNTM*	3 (10)
<i>M. simiae</i>	3 (10)
<i>M. goodii</i>	2 (7)
<i>M. neoaurum</i> -like*	2 (7)
<i>M. lentiflavum</i>	2 (7)

\*Rapid growers. UNTM, unidentified nontuberculosis mycobacteria.

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

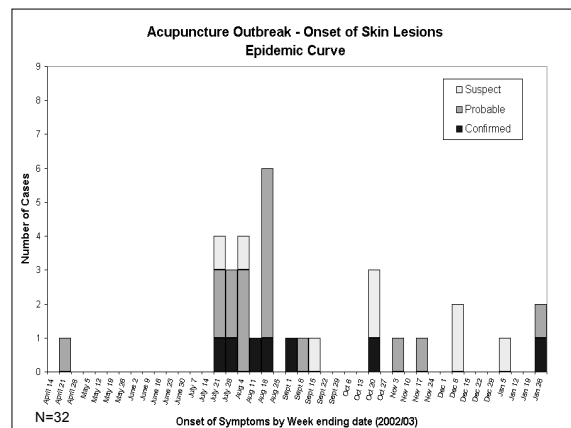
### Confirmed

- 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*



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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%)

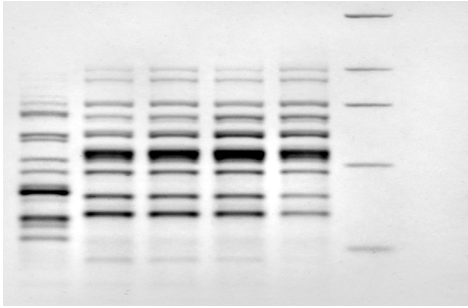
**Epidemiology of Cases**

- Median incubation period (for 22 patients) 1 month (range 0.5-5months)
- Median time to correct diagnosis: 3 months (range 0-6months)
- 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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**Acupuncture clinics probed**

More than 100 patients need to have HIV, hepatitis tests

**And in the news...**

**'Scared for the future'**

**Skin infection shuts clinics**

12 have rare bacterial condition after visiting acupuncturist  
 Toronto health officials cite dirty needles, poor sterilization

**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

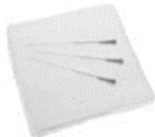
**Surveillance**

- 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 >10years experience did worse on IC compliance audits

1. Oberdorfer. Am J Infect Control. 2003 Dec;31(8):447-56  
 2. Raymond. Public Health Reports, 2001;116(3):249-56

## 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?**

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15 May 08	Adverse Events in Dialysis Speaker: Dr. Matthew Arduino, CDC
22 May 08	Bedpan Decontamination - Manual vs. Mechanical Speaker: Gerlie van Knippengerg Gordebeke, International Consultant Infection Prevention and Hygiene, The Netherlands
19 Jun. 08	Environmental Sampling - Methods and Strategies Speaker: Dr. Lynne Sehulster, CDC
25 Jun. 08	(South Pacific Teleclass) Peripheral Line Sepsis Speaker: Dr. Steve McBride, Auckland District Health Board
26 Jun. 08	CBIC Teleclass 3 - The CIC Examination Process: Computer Based Testing Speaker: CBIC Board Members & Guests
17 Jul. 08	(Free Teleclass) Community-Associated MRSA - What's Up & What's Next Speaker: Dr. Rachel Gorwitz, CDC

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