

# Skin and Soft Tissue Infections Assessment and Management in Rural Settings

Dr. Reena Lovinsky  
Infectious Diseases Specialist  
Medical Director, Infection Prevention and Control  
Scarborough Health Network  
Birchmount and General Hospitals

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# I ACKNOWLEDGE

the land I am standing on today is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples. I also acknowledge that Toronto is covered by Treaty 13 signed with the Mississaugas of the Credit, and the Williams Treaty signed with multiple Mississaugas and Chippewa bands.

# Etuaptmumk “Two-eyed seeing”

- inspired by the teaching of Mi'kmaq Elder, Albert Marshall
- refers to learning to see Indigenous ways of knowing from one eye and Western ways of knowing from the other eye
- using the strengths, gifts and insights from both to gain a well-rounded perspective



# Overview

- General Skin Health in Rural Communities
- Culturally Sensitive Approach
- Skin and Soft Tissue Infections
- Diabetic Foot Infections
- Questions
- Another session: discussing actual cases/photos

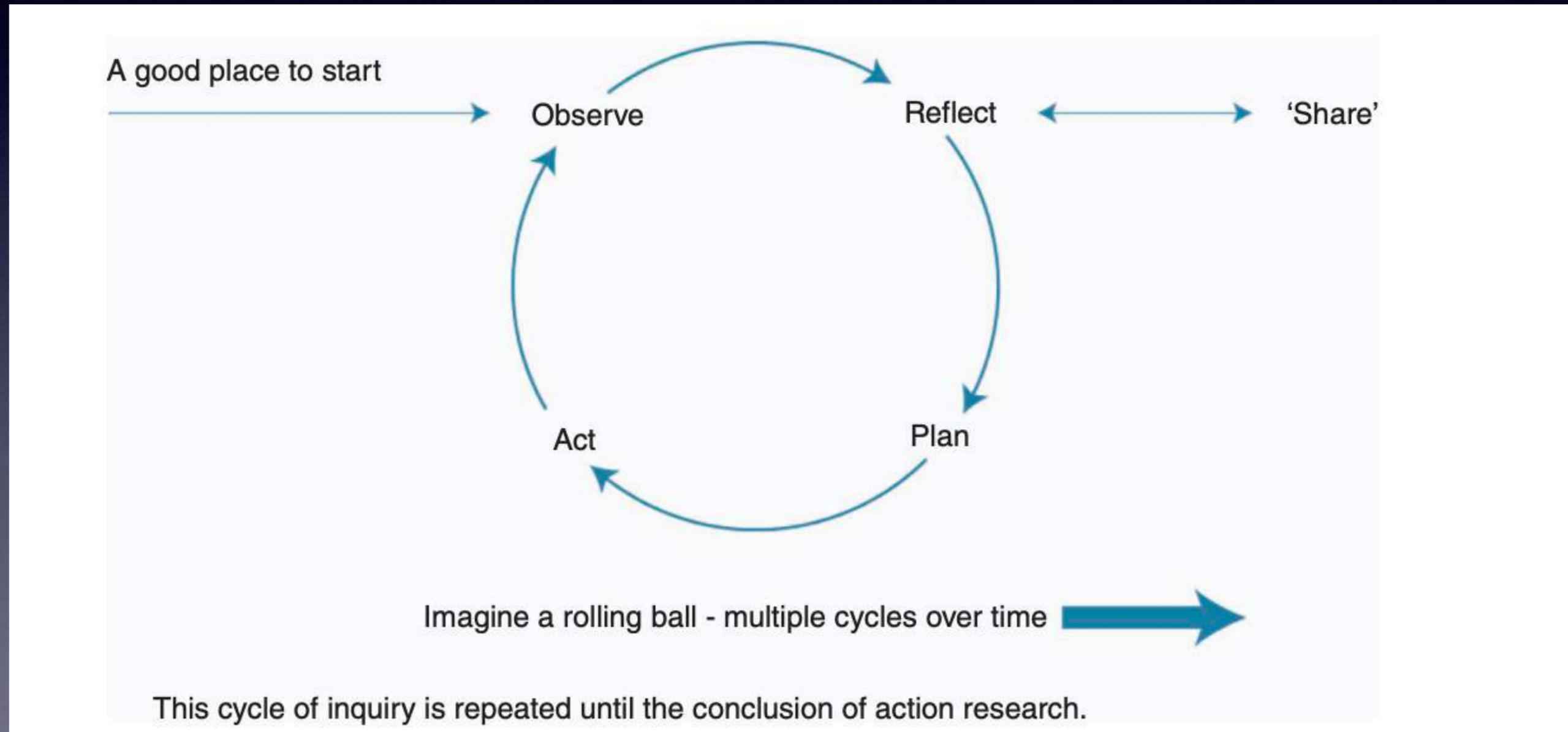
# Skin Infections in Rural Settings

- A paucity of information exists on Indigenous skin disease in Canada
- The skin is a manifestation of both internal and external health
- Indigenous populations face unique challenges and barriers compared to the general Canadian population
- Strategies that empower Indigenous people and build on community strength, culture and connection are more likely to succeed than those that focus on disease alone

# Treatment Strategies for Healthy Skin

- keeping it simple
- using picture-based handouts
- aiming for pro-active care
- using strategies to reduce infection
- addressing co-morbidities
- booking follow-up
- familiarizing yourself with NIHB (non insured health benefits) coverage for wound and skin care
- treating the whole household in cases of communicable infections/infestations
- “tubs not tubes” with plenty of refills

# Reducing recurrence of bacterial skin infections in children in rural communities: new ways of thinking, new ways of working



# Reducing recurrence of bacterial skin infections in children in rural communities: new ways of thinking, new ways of working

- Ask parents to describe their experience with children's skin infections:
  - Children can experience significant pain, stigma, social exclusion, absenteeism, trouble concentrating at school
- Which strategies have worked and which have not
- Crowded living conditions with inadequate bathing facilities, lack of towels, bed linen, soap and laundry facilities are significant barriers
- Ask about traditional remedies and what elements should be part of a effective and culturally appropriate approach to managing skin infections in children
- Skin infections often seen as part of "normal life"

# Risk Factors for Skin Infection in Rural Communities

- Atopic dermatitis (>16.5% of children in Indigenous communities)
- Poverty
- Crowded housing conditions
- Access/cost of basic skin care regimens
- Clean water concerns

# Atopic Dermatitis (Eczema)



- persistent itching and scratching, pain, and skin damage
  - can significantly impact sleep, mood, and even self-esteem
  - can lead to difficulty with attention, negative effects on social and intimate relationships, poor school and work performance, and negative self-image
  - associated with anxiety and depression
    - may cause sufferers to avoid social activities or miss work or school due to their disease
    - can also make it difficult to participate in exercise or sports.

# Atopic Dermatitis

**Table 1: Diagnostic Features of Eczema<sup>6</sup>**

Condition	Diagnostic Features
<b>Atopic Dermatitis</b>	<ul style="list-style-type: none"> <li>• Chronic or relapsing dermatitis</li> <li>• Typical morphology and age-specific patterns (e.g. flexural areas in all age groups; extensors, face, and neck in paediatric population)</li> <li>• Early age of onset of AD</li> <li>• Personal and/or family history of atopy</li> </ul>



**Table 3: AD Patient Counselling Points**

<b>Eczema is a chronic disease</b>	<ul style="list-style-type: none"> <li>• AD typically goes through periods of flares and remissions</li> <li>• Moisturizing is the mainstay of therapy during remission, and anti-inflammatory treatments are needed during flares</li> </ul>
<b>There is no cure for AD, but it can be effectively managed</b>	<ul style="list-style-type: none"> <li>• Patients and caregivers often seek causes or cures for AD, which diverts attention away from the treatment plan</li> <li>• Patients should be counselled on the chronicity of AD and reminded that broad panel allergy testing and restrictive diets are not recommended in the absence of signs and symptoms consistent with an IgE-mediated allergy</li> </ul>
<b>Eczema flares can be managed</b>	<ul style="list-style-type: none"> <li>• Flares can normally be managed by hydrating the skin (bathing and moisturizing appropriately) and reducing inflammation with topical anti-inflammatory medication</li> </ul>
<b>Under-treating, starting treatment too late, or stopping treatment too soon, should be avoided</b>	<ul style="list-style-type: none"> <li>• Treatment of AD flares should begin at the first sign of inflammation</li> <li>• Patients and caregivers often stop treatment before the skin is fully clear of lesions, mistakenly believing that the vast improvement they have seen means the skin is "clear enough"</li> <li>• Clinicians should encourage patients and caregivers to make sure the skin is completely clear of lesions (smooth to the touch and no longer pruritic or red) before stopping treatment</li> <li>• Even though when stopping early the flare may seem to be much less severe, the patient still has chronic active inflammation, and often the skin rapidly worsens</li> <li>• Patients need to be counselled on how to apply the medication, as applying the treatment too sparingly may contribute to under-treatment</li> </ul>
<b>Adherence to therapy is essential for the optimal management of eczema</b>	<ul style="list-style-type: none"> <li>• Poor adherence may be the most significant barrier to optimal care in AD</li> <li>• In a survey of 200 AD outpatients, 24% admitted that they did not adhere to treatment, and experts estimate this percentage could be significantly higher<sup>6</sup></li> <li>• Healthcare provider counselling may improve treatment adherence</li> </ul>
<b>Avoid eczema triggers</b>	<ul style="list-style-type: none"> <li>• Patients should be counselled to attempt to identify and avoid their triggers, and to understand that some AD flares occur despite strict trigger avoidance and diligent skin care</li> <li>• This is often a source of frustration for patients</li> <li>• Many AD flares result from an environmental trigger</li> <li>• Common triggers include harsh or fragranced soaps and self-care products, rough fabrics, overheating and sweating, and winter weather</li> <li>• Often these triggers can be identified but not avoided, such as weather changes</li> </ul>
<b>Lifestyle can impact eczema as well</b>	<ul style="list-style-type: none"> <li>• Activities such as sweating for a young athlete can worsen AD symptoms</li> <li>• Instead of avoiding pleasurable activities, advise the patient to learn about ways to manage the flare that may follow an activity or exposure to a trigger</li> <li>• Additional actions can be taken to help the condition, such as keeping nails trimmed short and filed smooth to help reduce damage done by scratching</li> </ul>

# Winter Skin Care

- Cold air, low humidity can lead to itchy, painful, dry skin
- Important to protect skin from the winter elements, especially hands with gloves
- Humidifier at home
- Moisturize after washing hands or bathing
- Oil based moisturizers, fragrance free (more gentle)
- Keep bathing short (10 min) and use warm not HOT water
- Pat skin dry and while a bit damp apply moisturizer liberally and frequently

# Cultural Approach

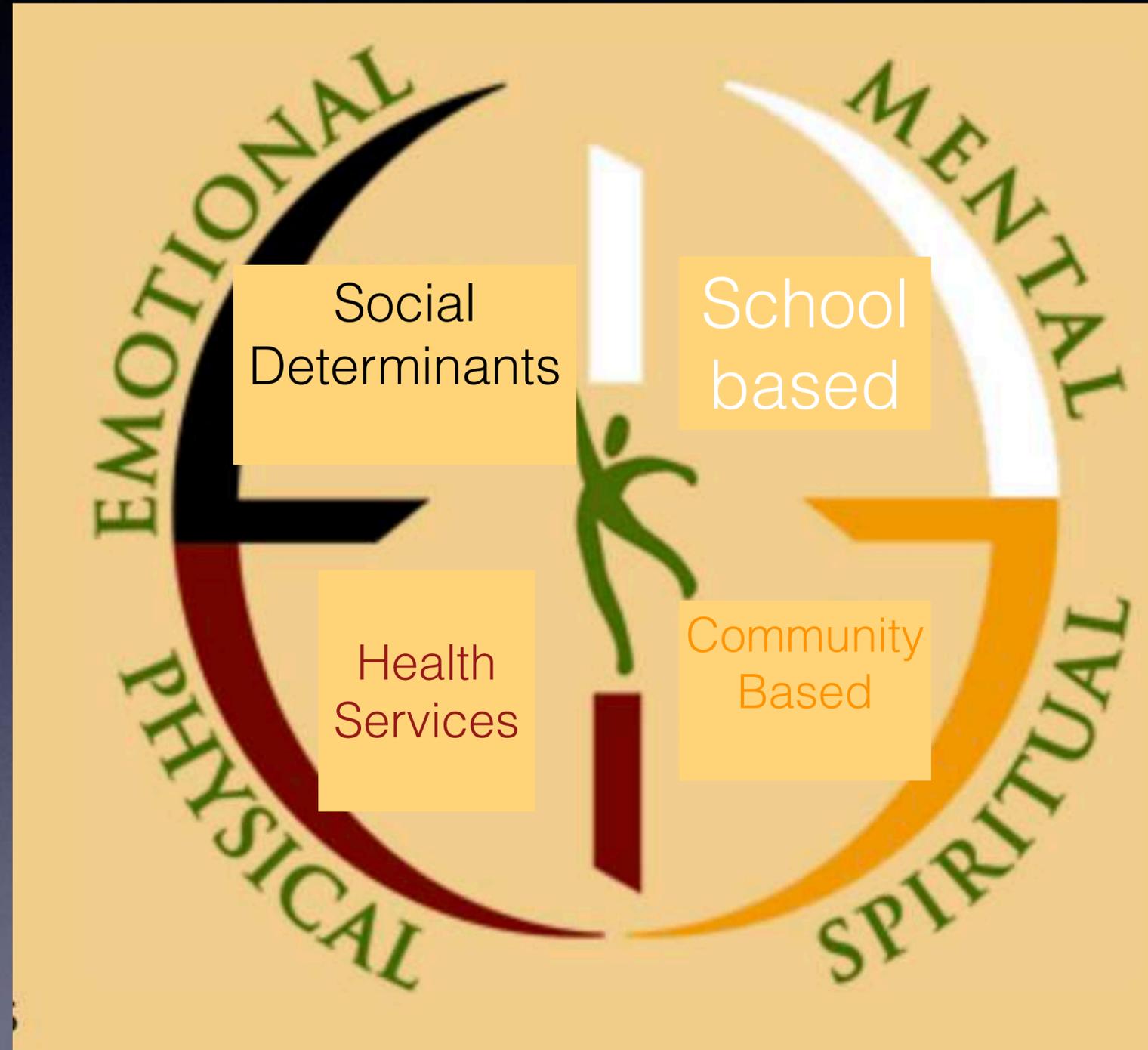
- Strong links need to be forged among school, clinic and community, where children live, learn and play
  - Connect with the land, story telling circles
  - Acknowledge culture and support cultural identity, trans-generational trauma
  - Underpinned by empowerment, consultation and engagement —identify local champions
- Allow time: build genuine and meaningful relationships, trust and respect.
- Embrace traditional remedies (cattails, alders, sagebrush, wild ginger, red willow, Tea Tree oil, Aloe Vera, bison fat).
- Child- and family-centred: gender-specific approaches, linking with grandmothers and women and engaging and empowering fathers.



Medicine Wheel: the acknowledgement from within: where I am, where I'm going and honouring the space I'm in

Interconnected system of teachings relating to the directions, seasons, and elements of life.

# Multi-faceted approach to Skin Health



# Health Services

- \* Clear understanding of the roles of both health and schools and where a shared space may exist.
- \* Easy access to culturally acceptable primary health care (location, hours, outreach, home visiting, drop-in visits).
- \* Provide a 'cultural strategy' for providers, to help them engage with Indigenous clients.
- \* Utilize Indigenous staff and build on roles that connect with the community (Nurses, Liaison Officer, Health Education Officers, Environmental Health Officers)
- \* Include the whole family.
- \* Be proactive, vigilant, and provide early intervention and follow up to confirm success.
- \* Follow a chronic disease model with a care plan.
- \* Health workers advocate for children who don't have a voice.
- \* Use peer educators

# School Based

- Health services educating and informing school staff about signs and symptoms of skin infections.
- Delivering relevant health promotion and hygiene programs in schools
- Importance of having a school nurse either through the Department of Education or through closer involvement of existing health services
- Utilize Indigenous staff and build on roles that connect with the community
- Have a washing machine at school

# Community Based

- Ideally want the entire community buy-in, support of elders
- Include education of kids, parents and the community using demonstrations, learning through observation and imitation, parent child groups, and parenting skills.
- Challenge normalcy, skin infections are not normal and should be treated.
- Use social media
- Needs to be sustainable.

# Social Determinants

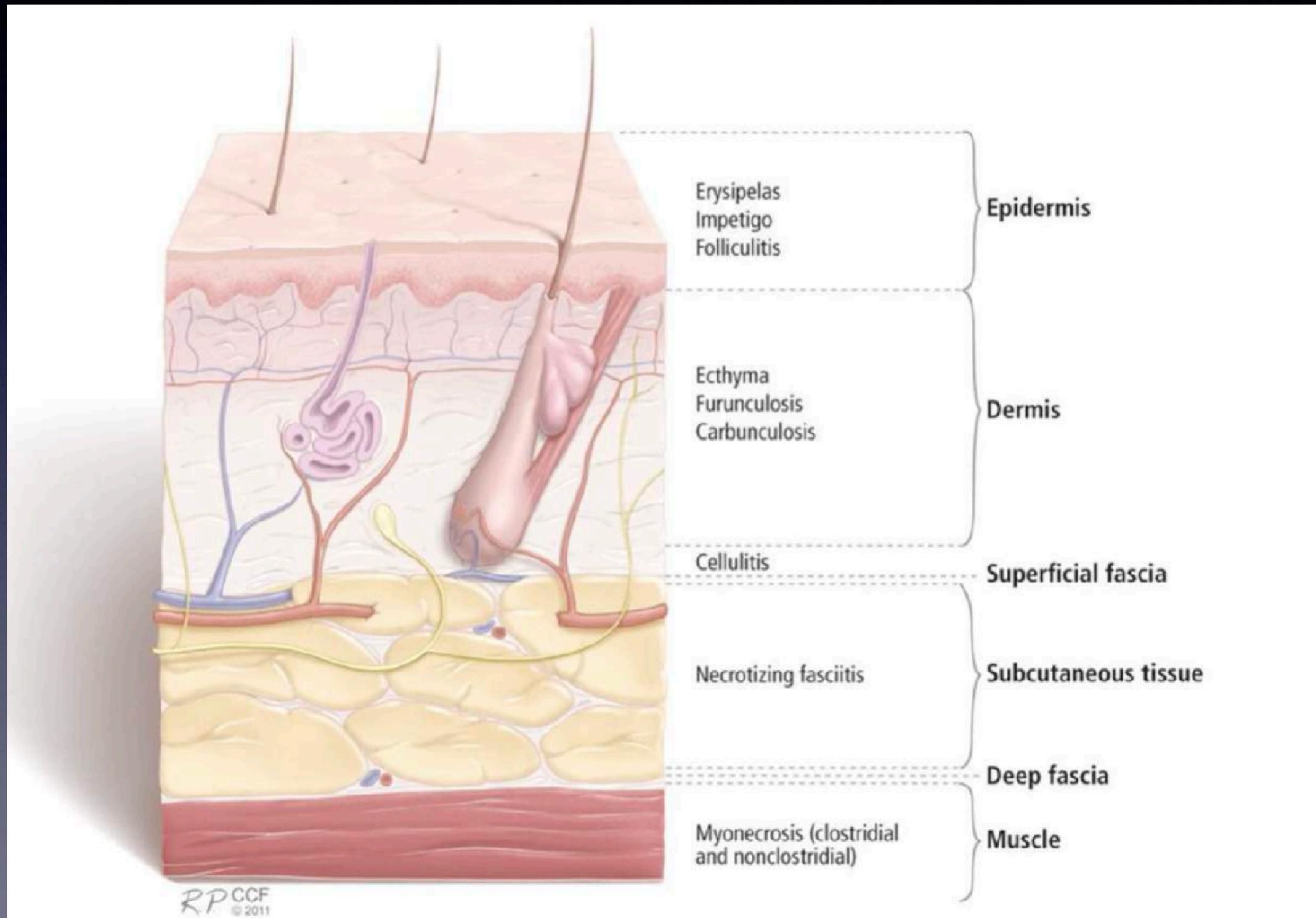
- Practical support for families in need (with home hygiene, laundry).
- Affordable, practical, easy, free, free soap, basic items
- Holistic approach that considers the Indigenous community's definition and concept of health.
- Transport options to obtain medications and hygiene items
- Use existing governance structures to collaborate with health and non-health entities

# Things that Don't Work

- \* One-off strategies or programs.
- \* Lectures about having a clean home.
- \* Judgemental attitudes towards parenting skills.

# Skin and Soft Tissue Infections

# Skin Infections affect Different Layers



# Impetigo

- Infection of the epidermis
- Single or multiple pustules
- Can rupture to form a golden crust
- Exposed skin areas: Face, arms, legs
- Often seen in babies, children or young adults
- Can spread to other family members



# Diagnosis

- Based on classic clinical appearance
- Usually caused by Group A Streptococcus or Staphylococcus aureus
- Treatment: topical antibiotic cream (mupirocin) if localized to a small area
- Or oral antibiotics: Septra or clindamycin (cephalexin or cloxacillin)

# How to Stop Impetigo from Spreading in Households

- Avoid direct skin-to-skin contact with others
  - Skin-to-skin contact spreads impetigo. It should be avoided until you're no longer contagious

Impetigo is contagious until either:

- The blisters and sores crust over
  - You've been treating with an antibiotic for 24 to 48 hours
- Resist the urge to touch (and scratch) your sores
  - Be sure to avoid sharing all personal items, including toys
  - Keep the sores clean and covered

# How to Stop Impetigo from Spreading in Households

- Wash your hands after treating your skin, using the toilet, and when they are dirty
- Use a clean washcloth and towel each time you wash
- Wash all clothing, towels, washcloths, and sheets that you (or your child) has worn or used since getting infected. Wash everything in hot water. Only items that belong to the infected person should be washed together. If you need to wash another family member's clothes or linens, wash these in a separate load
- Disinfect counters, doorknobs, and other surfaces that the person with impetigo has touched. This can prevent others from getting impetigo
- Trim nails so that they are short
- If the skin itches unbearably, apply an anti-itch medicine

# Prevent Getting Impetigo Again

- Treat wounds right away
- Bath or shower after every sports workout, practice, and competition
- Wash your hands after using the toilet and when they get dirty
- Don't sharing personal items like sports equipment, towels, and clothes. These can spread impetigo
- If someone has impetigo:
  - Avoid touching the person's skin
  - Avoid touching everything that person has touched, including towels, sheets, toys, and sporting equipment
- Wear clean clothes. Avoid pulling dirty clothes out of the laundry hamper, especially dirty workout clothes

# Folliculitis

- Inflammation of a hair follicle
- Eruption of red papule or pustules around hair follicles
- Face, arms, upper back, lower legs
- Can be itchy, uncomfortable
- May progress to a carbuncle (small abscess)
- Treatment: good hygiene, soap, warm compresses



# Erysipelas

- Skin infection of the top layer of the skin
- Erythema, well demarcated
- Classically on the face
- Treatment: clindamycin or Septra
- (cloxacillin or cephalexin)



# Cellulitis

- Deep subcutaneous infection of the skin that leads to redness and inflammation
- Painful, red, swelling, enlarged lymph nodes
- Treatment: Septra or clindamycin
- (cloxacillin or cephalexin)
- Will get worse before it gets better even on the correct antibiotic
- Usually see improvement at 72 hours



# Cellulitis Risk Factors

- Break in the skin/injury
- Tinea pedis
- Lymphedema
- Unusual to be bilateral

# Differential Diagnosis

- Dependent rubor
- Redness related to swelling

# Abscess

- Localized infection with accumulation of pus beneath the skin
- Key to management: incision and drainage
- Ribbon or deeper packing if large
- Antibiotics less important
- Cloxacillin or Cephalexin



# What if my patient is allergic to penicillin?

- Are they truly allergic?
  - SOB, anaphylaxis, swelling of tongue or face
- Patients who are allergic to penicillin (not anaphylaxis)
  - can be challenged with keflex
- For true hypersensitivity reaction to penicillins and cephalosporins
  - Clindamycin
  - Septra

# Is it REALLY a Penicillin Allergy

- Approximately 10% of Canadians have a penicillin allergy in their medical record but less than 1% of people have a true penicillin allergy
- Many of the reactions reported are not a true allergy but a side effect of the antibiotic such as nausea or diarrhea or dizziness
- Approximately 80% of people with a penicillin allergy lose their sensitivity after about 10 years

# Why is Penicillin so Important?

- Relative to other antibiotics, penicillin and other antibiotics with a structure that is similar to penicillin (amoxil, ampicillin and cephalexin) can be more effective and less likely to cause MRSA and have a lower risk of C difficile infection
- Using broad spectrum antibiotics as an alternative to narrow spectrum antibiotics like penicillin can increase healthcare costs, increase antibiotic resistance and may mean your patient receives suboptimal therapy

# What Can You do?

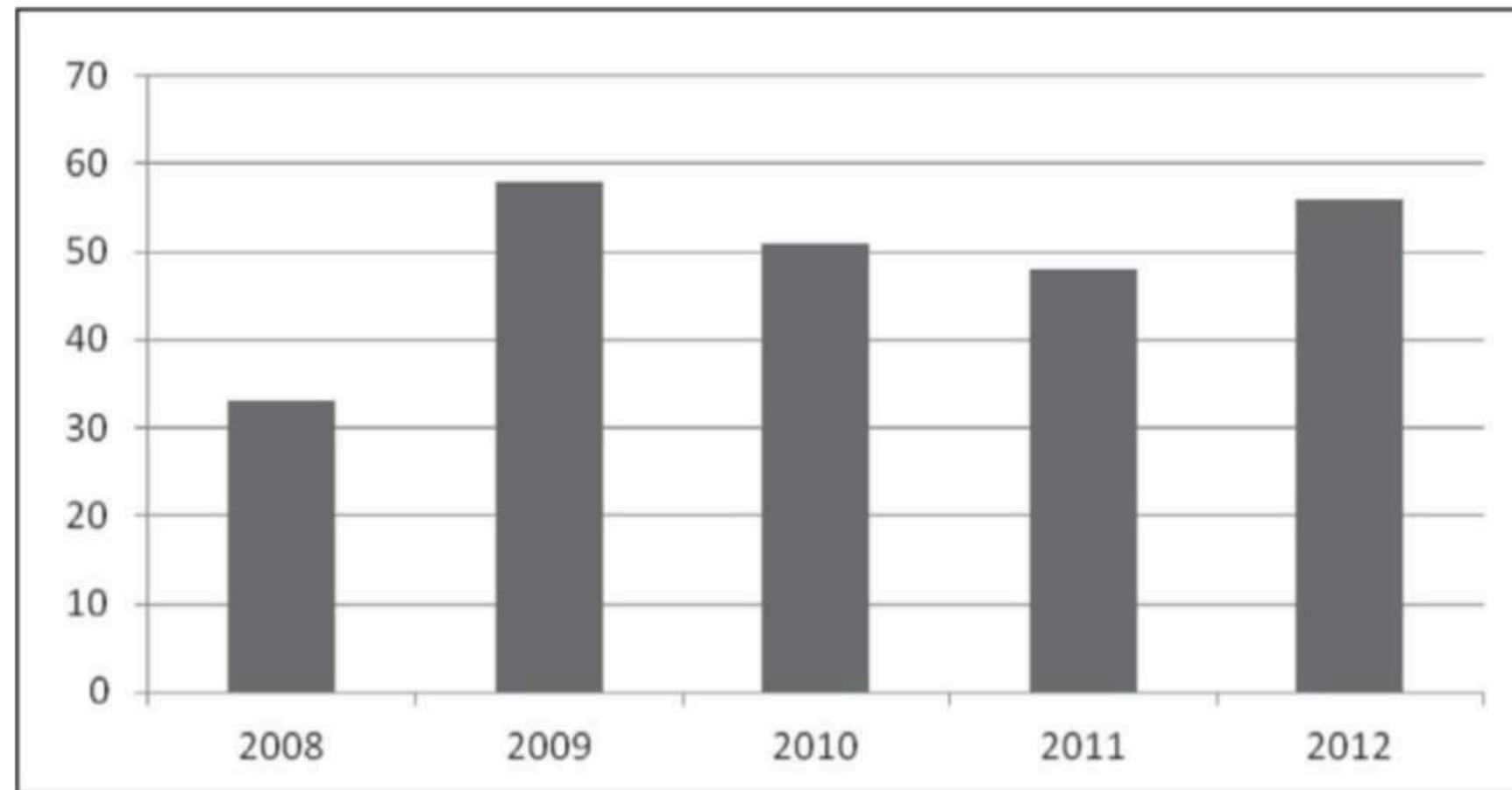
- Correctly identify if your patient has a true penicillin allergy (IgE mediated)
  - Hives, angioedema, swelling of the tongue or face, wheezing, shortness of breath, anaphylaxis
- Questions to ask:
  - What kind of reaction occurred?
  - How long ago?
  - Did you need to go to the hospital?
  - Did you need to go to the ICU?
  - How was the reaction managed?
  - What medication did you take for the reaction if any?

# When do I need to cover MRSA?

- High rates of MRSA in rural communities
- Young patients
- Recurrent infections
- Known colonization
- Risk factors for MRSA in rural communities:
  - overcrowding, frequent skin-to-skin contact between people, participation in activities that result in abraded or compromised skin surfaces, sharing of potentially contaminated personal items, challenges in maintaining personal cleanliness and hygiene, previous antibiotics and limited access to health care

# High Incidence of MRSA in Northern Communities

Figure 1)



*Per cent of methicillin-resistant Staphylococcus aureus isolates according to year of study*

# Highest rates in Young Children

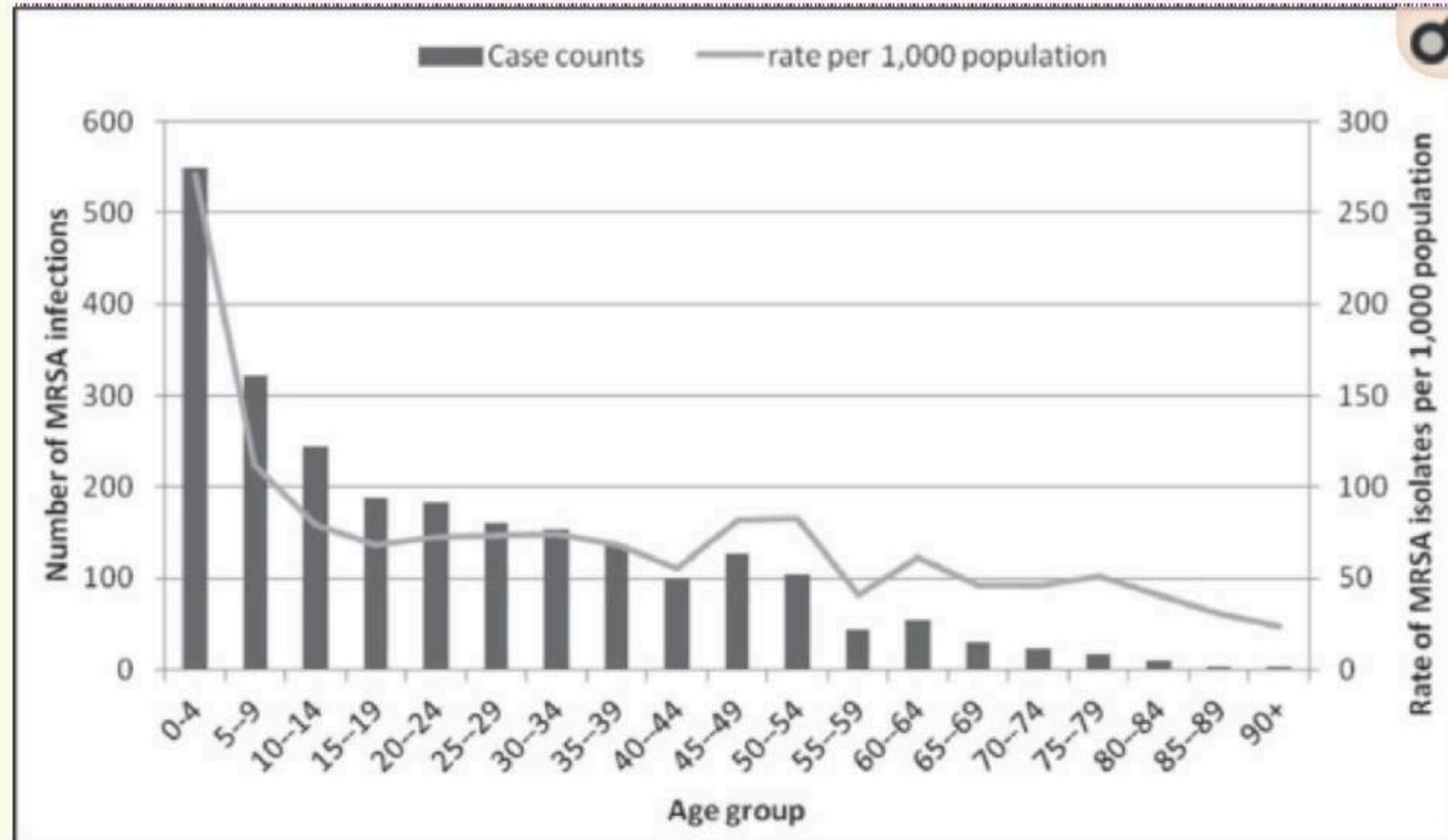


Figure 3)

*Number of methicillin-resistant Staphylococcus aureus (MRSA) infections and rates of MRSA isolates in Northwest Ontario between January 2006 and June 2012 according to age (years) (n=2447)*

# Highest Rates in July and August

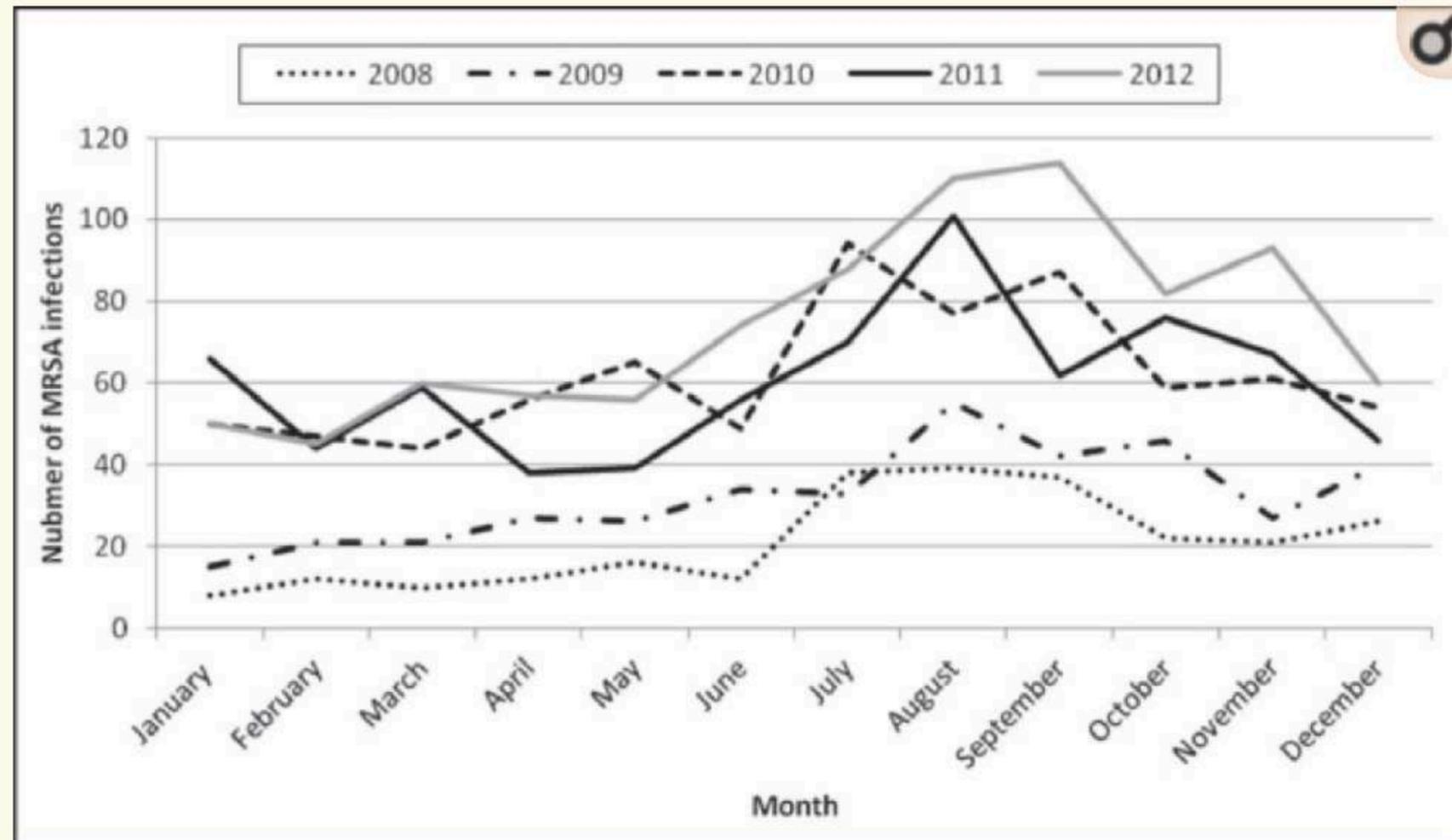


Figure 4).

*Seasonal variation of methicillin-resistant Staphylococcus aureus (MRSA) infections*

# Recurrent MRSA infections are Common

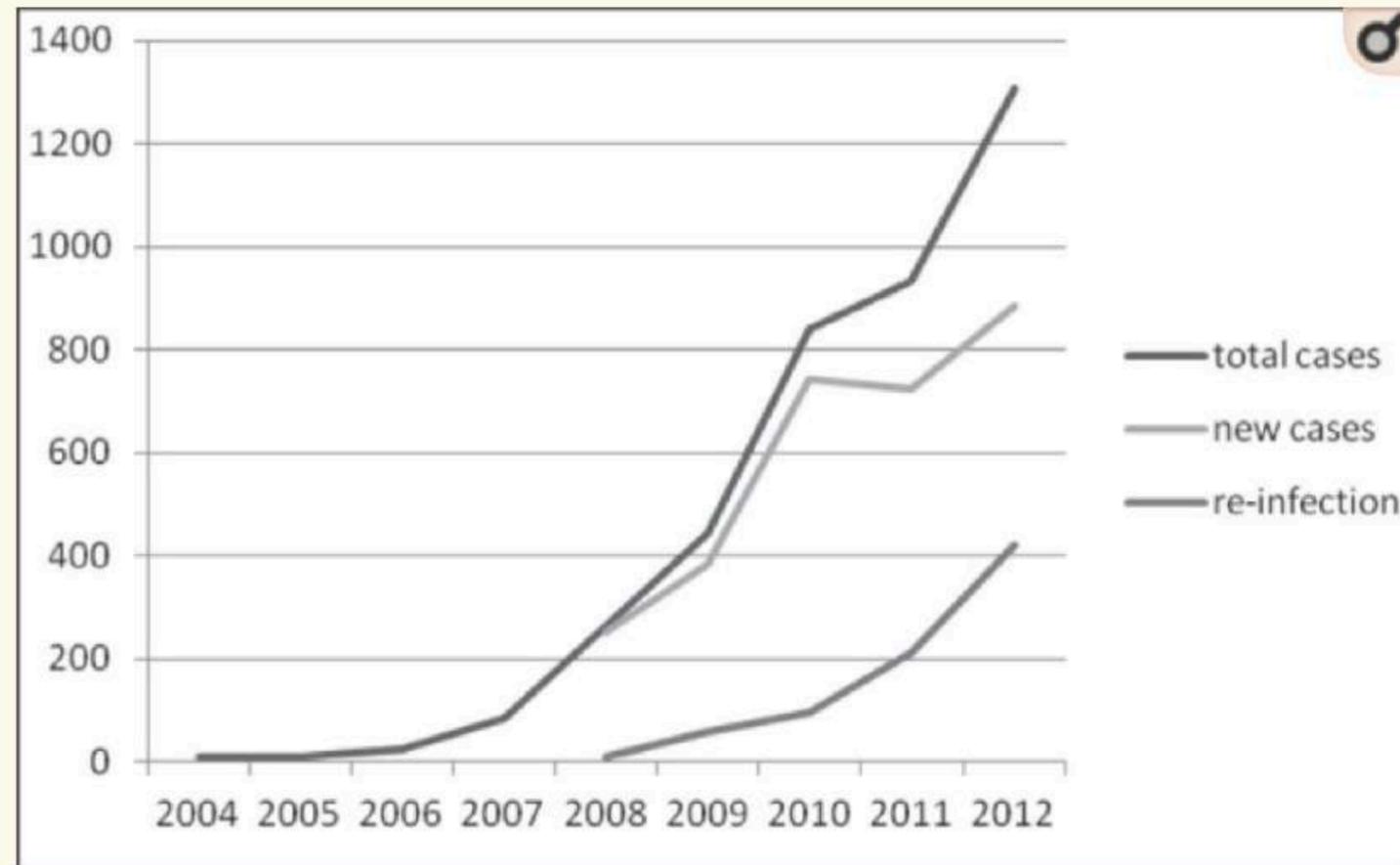


Figure 2)

*Number of new cases, reinfections and total cases of methicillin-resistant Staphylococcus aureus infection according to year of study*

# Antibiotic Choices

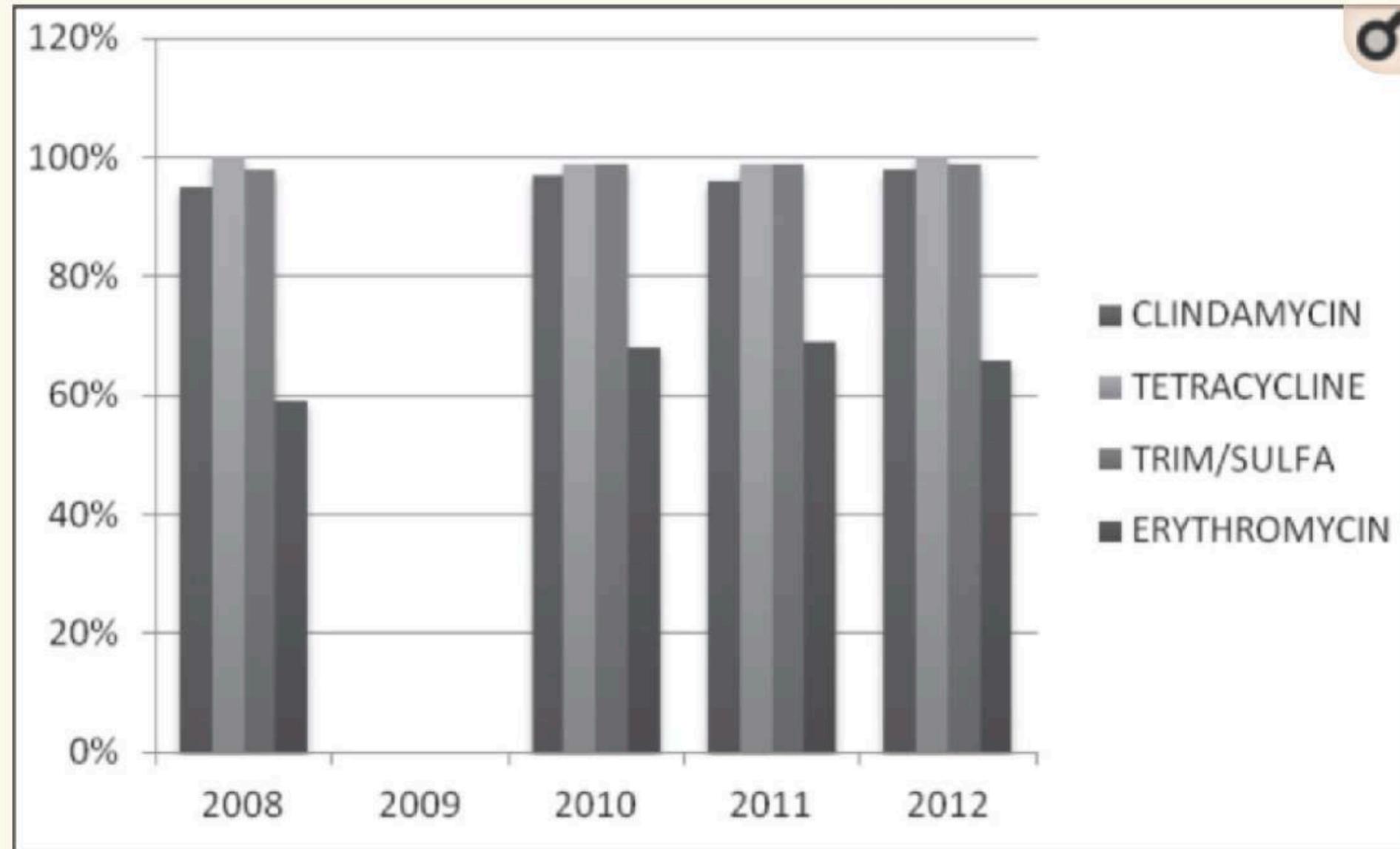


Figure 5).

*Antibiotic sensitivity of methicillin-resistant Staphylococcus aureus isolates (2009 data not available).*

*TRIM/SULFA Trimethoprim/sulfamethoxazole*

# IDSA: MRSA Treatment guidelines

- For a cutaneous abscess, incision and drainage is the primary treatment (A-II). For simple abscesses or boils, incision and drainage alone is likely to be adequate, but additional data are needed to further define the role of antibiotics, if any, in this setting.
- For outpatients with purulent cellulitis (eg, cellulitis associated with purulent drainage or exudate in the absence of a drainable abscess), empirical therapy for CA-MRSA is recommended pending culture results.. Five to 10 days of therapy is recommended but should be individualized on the basis of the patient's clinical response

- For outpatients with nonpurulent cellulitis (eg, cellulitis with no purulent drainage or exudate and no associated abscess), empirical therapy for infection due to  $\beta$ -hemolytic streptococci is recommended (A-II). The role of CA-MRSA is unknown. Empirical coverage for CA-MRSA is recommended in patients who do not respond to  $\beta$ -lactam therapy and may be considered in those with systemic toxicity. Five to 10 days of therapy is recommended but should be individualized on the basis of the patient's clinical response.
- For empirical coverage of CA-MRSA in outpatients with SSTI, oral antibiotic options include the following: clindamycin (A-II), trimethoprim-sulfamethoxazole (TMP-SMX) (A-II), a tetracycline (doxycycline or minocycline) (A-II), and linezolid (A-II). If coverage for both  $\beta$ -hemolytic streptococci and CA-MRSA is desired, options include the following: clindamycin alone (A-II) or TMP-SMX or a tetracycline in combination with a  $\beta$ -lactam (eg, amoxicillin) (A-II) or linezolid alone (A-II).

# MRSA - Tips for Family Members

- Keeping wounds covered with clean, dry bandages; if unable to cover, exclude from contact sports or child care until wound drainage stops or wounds are healed.
- Dispose of used dressings in a plastic-lined garbage container with a sealed lid immediately after they are removed.
- Practice proper hand hygiene using soap and water or an alcohol-based hand gel before and after changing dressings.
- Bathing regularly, and washing clothes and bedding often.
- Avoiding sharing personal items, especially towels, bedding, clothing and bar soap.
- Seeking medical attention if fever or other signs of illness develop, or if a local lesion does not improve within 48 h of starting treatment.
- Regular cleaning of contact surfaces in the home with a standard household cleaner or detergent.
- Annual Influenza vaccine

# Tips for Family Members

- Avoid the following strategies, which are generally NOT recommended:
  - Determining carriage rates among asymptomatic household contacts.
  - Reducing microbial carriage for routine management of CA-MRSA infections, in either endemic infection conditions or during an outbreak.

# Necrotizing Fasciitis

- Pain out of proportion to clinical exam
- Systemically unwell
  - Hypotension
  - Symptoms of Toxic Shock
- Need assessment at a hospital

# Early signs of NF

- Rapid progression of erythema
- May see necrotic skin tissue
- Bullae
- Hypoesthesia (skin is numb)

# Invasive Group A Strep Infections

- Increased incidence in Rural Ontario
- Group A Strep Toxic Shock Syndrome
  - Low Blood Pressure
  - Group A Strep in the blood
- And end organ damage (elevated liver enzymes, creatinine, elevated INR, red rash, can have NF, )
- Can happen peri-partum, post-partum

# Scabies



\*The papules of 1–2 mm between the fingers are evidence of burrowing scabies mites that are very itchy

- Treatment: topical permethrin day 1 and 8 for patient and household contact or oral ivermectin for the individual and their contacts if they failed topical treatment in the last 4 weeks
- Although effective, topical permethrin is oily and uncomfortable in hot humid climates and requires both a private space for application and *functional health hardware* to wash off
- *Health hardware*: describe safe electrical systems, toilets, showers, taps, kitchen cupboards and benches, stoves, ovens and fridges collectively.

# Diabetic Foot Infections

# Diabetic Foot Infection

- Usually needs a multi-disciplinary approach
- Antibiotics, Plastic surgery/Wound care, Vascular Surgery, Endocrinology
  - Manage diabetes
  - Look for peripheral vascular disease
  - Wounds often need debridement or surgery

# Diabetic Foot Ulcer

Grade	Clinical finding
0	Intact skin (impending ulcer)
1	Superficial
2	Deep to tendon bone or ligament
3	Osteomyelitis
4	Gangrene of toes or forefoot
5	Gangrene of entire foot

# Stages can progress quickly

Grade 0 :



**Fig. 7.3:** No ulceration in a high-risk foot

Grade 3 :



**Fig. 7.6:** Osteomyelitis or a deep abscess

Grade 1 :



**Fig. 7.4:** Superficial ulceration

Grade 4 :



**Fig. 7.7:** Localized gangrene

Grade 2 :



**Fig. 7.5:** Deep ulceration that penetrates to the tendon, bone or joint

Grade 5 :



**Fig. 7.8:** Extensive gangrene requiring a major amputation

## Intrinsic factors

- Bony prominences
- Limited joint mobility
- Deformities
- Callus formation
- Previous foot ulcer
- Neuroarthropathy (charcot)

## Extrinsic factors

- Walking barefoot
- Inappropriate footwear
- Falls and accidents
- Objects inside shoes
- Thermal trauma
- Activity level

# Risk Factors -Multifactorial

Neuropathy

Peripheral  
Vascular  
Disease

Abnormal Foot  
Pressures

Hyperglycaemia

Trauma

Foot Deformity

Limited Joint  
Mobility

Previous  
Ulceration  
/Amputation

Poor Vision

Old Age

Duration of  
Diabetes

# Pathogenesis

- Neuropathy
- Peripheral Vascular Disease
- Infection

# Impact of Neuropathy

- Loss of pain sensation
- Trauma —mechanical, thermal, chemical (may go unnoticed)
- Wound progresses (unnoticed/unchecked)
- Callous Formation
- Tissue necrosis
- May have damaged tissue beneath the area of trauma
- Eruption of discharge/ulcer at the surface

# Impact of Peripheral Vascular Disease

- Small blood vessels
- Large blood vessels
  - Decreased blood flow
  - Decreased oxygen to the wound
  - Decreased antibiotic penetration to the wound
- Poor healing

# What to look for on physical exam

- Neuropathy
  - use a 10 g monofilament as part of a foot sensory examination or a feather or broken tongue depressor
- Limb ischemia
- Ulceration
- Callus
- Infection and/or inflammation
- Deformity
- Gangrene
- Charcot arthropathy

# Physical Exam

Characteristics	Neuropathic foot	Ischaemic (neuroischemic foot)
• Skin temperature	• Warm	• Cold
• Pain	• Painless	• Painful
• Skin colour	• Not altered	• Dependent rubor
• Callus	• Thick at pressure point	• Usually not present
• Ulcer	• Usually on tips of toes & plantar surfaces under metatarsal heads	• Often on margins of foot, tips of toes, heels )
• Peripheral pulses		• Feeble / absent
• ABI	• Bounding	• less than 0.9
• Complication	• more than 0.9 • Charcot Joints	• Critical ischaemia

# Management

- Mechanical control
- Metabolic control
- Microbiology control
- Macrovascular improvement
- Medical education

# Antibiotics

- If wound deep to bone —by definition osteomyelitis
- Ideally IV antibiotics or oral antibiotics with good bioavailability
- Often want to cover pseudomonas/gram positives/gram negatives/anaerobes
- Local infection : cloxacillin or cephalexin, clavulin, septria/flagyl (MRSA),
- Osteomyelitis: cephalexin/flagyl or clavulin or septria/flagyl (MRSA)
- IV Tazocin +/- Vancomycin (MRSA)
- No role antibiotics for dry gangrene

# Antibiotics

- When choosing an antibiotic for people with a suspected diabetic foot infection
- take account of:
  - the severity of diabetic foot infection (mild, moderate or severe)
  - previous microbiological results
  - patient preferences

# Education

- Basic foot care advice and the importance of foot care
- Foot emergencies and who to contact
- Footwear advice
- The person's current individual risk of developing a foot problem.
- Information about diabetes and the importance of blood glucose control



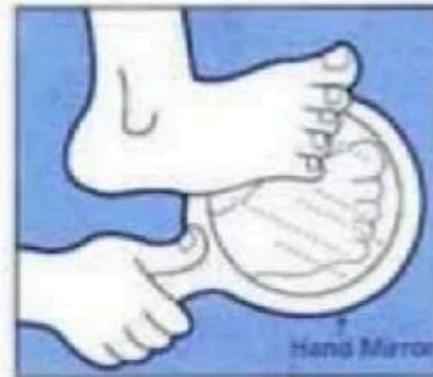
**1** Wash your feet daily with lukewarm water and soap.



**2** Dry your feet well, especially between the toes.



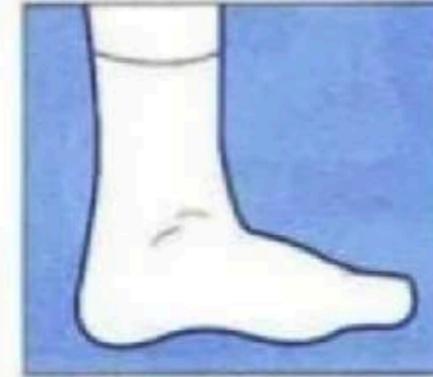
**3** Keep the skin supple with a moisturizing lotion, but do not apply it between the toes.



**4** Check your feet for blisters, cuts or sores, redness or swelling. Tell your doctor right away if you find something wrong.



**5** Use emery board gently to shape toenails even with ends of your toes. Do not use a pocketknife or razor blades.



**6** Change daily into clean, soft socks or stockings, not too big or too small.



**7** Keep your feet warm and dry. Preferably wear special padded socks and always wear shoes that fit well.



**8** Never walk barefoot indoors or outdoors.



**9** Examine your shoes every day for cracks, pebbles, nails or anything that could hurt your feet.

# When does a patient need to come to the hospital?

- When they are too sick to take oral antibiotics
- When they look systemically unwell
- When an abscess is too large for you to incise and drain at the bedside
- Hand infections
- Gas and crepitus in soft tissues
- A cold, white, pulseless extremity

# Lessons learned from: Effectiveness of a Comprehensive Diabetes Lower-Extremity Amputation Prevention Program in a Predominantly Low-Income African-American Population

Category	Definition
0	No loss of protective sensation (can feel the 10-g sensory filament)
1	Loss of protective sensation (cannot feel the 10-g sensory filament)
2	Loss of protective sensation and evidence of high pressure (callus, deformity) or poor circulation
3	History of plantar ulceration or Charcot fracture

**Table 2—Management by risk categories**

Category	Management
0	Education emphasizing disease control, proper shoe fit/design Follow-up yearly for foot screen Follow as needed for skin/callus/nail care or orthoses
1	Education emphasizing disease control, proper shoe fit/design, daily self-inspection, skin/nail care, early reporting of foot injuries Proper fitting/design footwear with soft inserts/soles Routine follow-up every 3–6 months for foot/shoe examination and nail care
2	Education emphasizing disease control, proper shoe fit/design, self-inspection, skin/nail/callus care, early reporting of foot injuries Depth-inlay footwear, molded/modified orthoses; modified shoes as needed Routine follow-up every 1–3 months for foot/activity/footwear evaluation and callus/nail care
3	Education emphasizing disease control, proper fitting footwear, self-inspection, skin/nail/callus care, and early reporting of foot injuries Depth-inlay footwear, molded/modified orthoses; modified/custom footwear, ankle-foot orthoses as needed Routine follow-up every 1–12 weeks for foot/activity/footwear evaluation and callus/nail care

**RESULTS** — Analysis of data showed a reduction in foot-related ulcer days (–49%), hospitalizations, (–89%), hospital days (–90%), emergency room visits (–81%), antibiotic prescriptions, (–57%), foot operations (–87%), lower-extremity amputations (–79%), and missed workdays (–70%) after 1 year of comprehensive foot care compared with the 1-year period before treatment.



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### 2022 Indigenous Skin Spectrum Summit

by [Chronicle Companies](#)

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\$56.50 – \$79.10



[Tickets](#)

A special session of the Skin Spectrum Summit, addressing the specific treatment needs of Canada's Indigenous community.

About this event

#### Date and time

Sat, June 11, 2022  
11:00 AM – 3:00 PM EDT

# Miigwetch

## Thank you for this opportunity

### Thank you, Earth

Thank you Earth, for being here.  
Thank you Earth, for your ruby sky.  
Thank you for the rain  
That hammers down on me  
And ripens everything  
Around me

Thank you for your core  
That burns like the sun  
Thank you for the pounce  
Of nature all around me

I will never regret  
The keen blessing that dwells  
All around us and sneaks  
Upon me like tears  
And a heart beat

Without you  
We would never be here.

-Isabella Venable, Grade 4

# Questions?

To cherish knowledge is to know *wisdom*

To know *love* is to know peace

To honour all of creation is to have *respect*

*Bravery* is to face the foe with integrity

*Honesty* in facing a situation is to be brave

*Humility* is to know yourself as a sacred part of creation

*Truth* is to know all of these things