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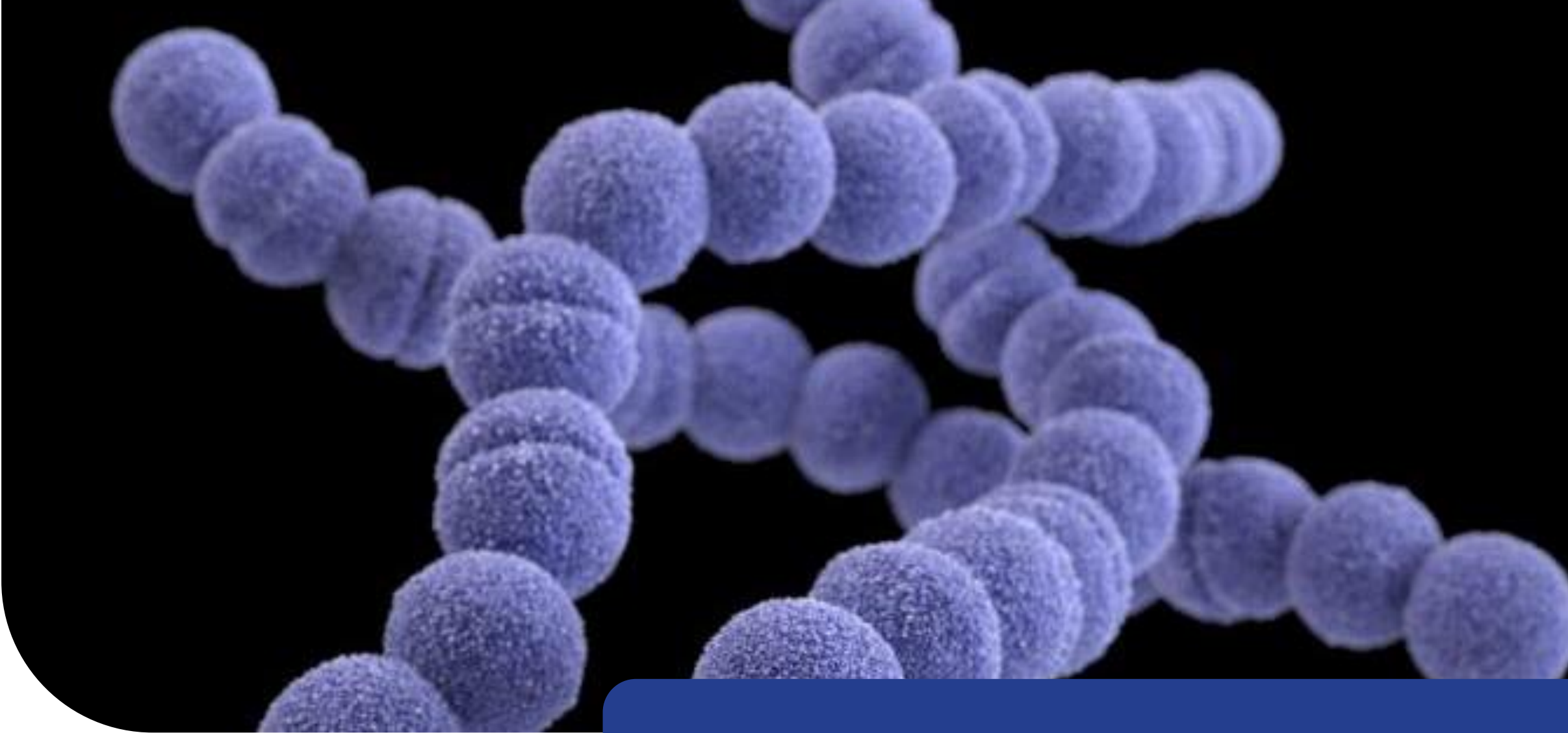
# Group A Strep Prevention in Long-Term Care Facilities

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# Agenda

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- Streptococcus *pyogenes* (GAS) Overview
- GAS in long-term care facilities
  - Control measures
  - Infection prevention
  - Investigations



*Streptococcus pyogenes*



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# Group A *Streptococcus* (GAS), Invasive

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- *Streptococcus pyogenes* is gram positive cocci
- Sometimes also referred to as:
  - Beta-hemolytic Strep
  - Group A Strep
- Common cause of many types of infections
- Transmission via respiratory droplets and direct contact

# Colonization vs. Infection

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## Colonization

Bacteria is present without causing illness

## Infection

Bacteria causes illness

Both can spread the bacteria. However, infected people are more contagious than colonized people.

# Where do GAS bacteria colonize?

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- Throat
- Skin (including wounds)
- Vagina
- Rectum

# Types of GAS Infection

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- Strep throat (streptococcal pharyngitis)
- Scarlet fever (scarlatina)
- Impetigo
- Wound infections
- “Invasive” infections
  - E.g. Bloodstream infections/sepsis
- Streptococcal toxic shock syndrome (STSS)
- Necrotizing fasciitis

# Wound Infections

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- Wounds are a risk factor for both invasive infections and colonization.
- Source of ongoing transmission through:
  - Direct contact with wounds
  - Droplets formed during wound care
  - Contamination of shared equipment



# Invasive GAS Disease

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- Bacteria overcome a person's natural defenses and enter a part of the body where they aren't normally found (e.g. blood).
- Examples:
  - Bacteria enter through sores or breaks in the skin.
  - Chronic illness or a weakened immune system reduces the ability to fight infection.

# Invasive GAS Risk Factors

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- Older Age
- Breaks in the skin
- Chronic illness (e.g. diabetes, heart disease, cancer)
- Indwelling devices (e.g. dialysis catheter)
- Injection drug use

# Streptococcal Toxic Shock Syndrome (STSS)

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- Severe illness with a case fatality rate between 30-70%
- Symptoms:
  - Hypotension
  - Multi-organ involvement by two or more of the following:
    - Kidneys, liver, lungs, blood, skin, soft tissues

# Necrotizing Fasciitis

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- Rapidly progressive infection that destroys deep soft tissues
- Typically occurs after trauma (including minor trauma)
- Symptoms:
  - Pain (often out of proportion to signs of local skin infection)
  - Swelling
  - Redness
  - Tenderness
  - Heat

# How does GAS spread?

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- Direct person-to-person contact
  - Examples:
    - Contact with respiratory secretions
    - Contact with skin/wounds
- Contact with contaminated, shared equipment (e.g. shared wound care supplies)
- Transmission occurs through infected and colonized people.
  - People are more contagious when they have an active infection.
  - Colonized people are less contagious but can still spread the bacteria.

# Duration of Infectiousness

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- People are usually no longer contagious after completing 24 hours of appropriate antibiotic treatment.
  - It is still important to complete the full course of prescribed antibiotics.
- Consider draining wounds to be infectious.
  - Keep wounds covered.
  - If wounds cannot be covered, maintain contact precautions until drainage stops.





# Group A Strep Outbreaks in Long Term Care Facilities



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# Group A Strep Outbreaks in Long-Term Care Facilities

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- Facilitated by:
  - Underlying health risks among residents
  - Close contact between residents and staff
- May involve both staff and residents
- May persist for several months



# Risk Factors in LTCF Outbreaks: Facility Risks

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- Inadequate infection control
  - Improper wound care, hand hygiene, etc.
- Employees working while sick

# Risk Factors in LTCF Outbreaks: Patient Risks

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- Patients receiving skin/wound care or with non-intact skin
- Patients requiring significant nursing assistance
- Underlying medical conditions

# Controlling GAS in LTCFs

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- Infection control and proper wound care
- Staff management
- Resident management
- Surveillance
- Screening and decolonization (if warranted)

# Infection Control – Hand Hygiene

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- Ensure routine, proper hand hygiene.
  - Monitor staff for hand hygiene adherence.
  - Provide feedback to staff.
  - Encourage preferential use of alcohol-based sanitizer (unless hands are visibly soiled).
    - Make hand sanitizer readily available inside and outside patient rooms.

# Infection Control – PPE

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- Maintain appropriate transmission-based precautions:
  - Routine standard precautions (for all residents)
  - Droplet precautions for residents with pharyngitis, wound infections, or suspected invasive disease (e.g. sepsis)
  - Contact precautions for patients with draining wounds that cannot be covered
- Ensure appropriate PPE is readily available
  - Droplet precautions – staff use of face and eye protection, such as goggles and a facemask or face shield
  - Contact precautions – staff use of gown and gloves

# Infection Control – Wound Care

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- Maintain proper wound care, including:
  - Proper hand hygiene
  - Proper use of PPE
  - Proper storing, handling, and transport of medications and supplies
  - Proper cleaning/disinfection of reusable equipment and other items
  - Proper disposal of used materials
  - Audits of wound care practices & feedback to staff on adherence

# CDC IP and Control Assessment Tool

Wound Dressing Change Observations				
All supplies are gathered before dressing change <sup>1</sup>	HH performed before dressing change	Clean gloves donned before dressing change <sup>2</sup>	Multi-dose wound care meds are used appropriately <sup>3</sup>	Dressing change performed in manner to prevent cross-contamination <sup>4</sup>
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Gloves removed after dressing change completed	HH performed after dressing change completed	Reusable equipment cleaned and/or disinfected appropriately <sup>5</sup>	Clean, unused supplies discarded or dedicated to one resident	Wound care performed /assessed regularly <sup>6</sup>	Wound care supply cart is clean <sup>7</sup>
<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes
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Source: CDC. Infection Prevention and Control Assessment Tool for Long-term Care Facilities.  
<https://www.cdc.gov/hai/prevent/infection-control-assessment-tools.html>

# Infection Control – Other

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- Other considerations for best practices:
  - Follow routine cleaning/disinfection protocols
  - Audits of environmental cleaning practices
  - Audits of cleaning and disinfection of reusable equipment and items
  - Signage about basic prevention:
    - Reminders about hand hygiene technique and indications
    - Reminders to avoid working or visiting while ill



# Staff Management

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- Ensure all staff are educated about GAS prevention and proper infection control.
- Encourage staff to monitor for signs and symptoms of GAS infection.
- Report suspected infections to designated facility staff.
- Ensure staff do not work when ill.

# Resident Management

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- Evaluate patients daily for signs and symptoms of GAS infection
  - Examples:
    - New fever
    - Early signs of wound infection
    - Skin lesions
    - Sore throat

# Resident Management (cont.)

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- Implement appropriate transmission-based precautions until:
  - GAS is ruled out **OR**
  - Residents are properly treated
- Maintain a low threshold for obtaining cultures.

# CDC Group A *Streptococcus* (GAS) Testing

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- IDOH works to obtain isolates from positive cultures
- CDC can perform *emm* typing on isolates
  - *emm* gene encodes the cell surface M virulence protein responsible for at least 100 *Streptococcus pyogenes* M serotypes
  - sequence analysis of the portion of the *emm* gene that dictates the M serotype
- Whole Genome Sequencing (WGS) can then be performed to show how related the strains are

# Reasons to Collect Isolates

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- Allows us to make the best recommendations for facilities to keep residents and staff safe
  - Same *emm* types are likely to be due to transmission
  - Inform scope of screening and decolonization
  - Dictates what antibiotic regimens should be prescribed for decolonization

# Surveillance

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- Maintain a list of residents and staff diagnosed with GAS infections. (included in GAS toolkit)
- Actively monitor for new cases for 4 months after last case identified.
  - Timeline resets if new cases are identified.
- Report any new cases (invasive or non-invasive, resident or staff) to IDOH.

# Screening

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- Culturing residents/staff to identify and treat carries of GAS bacteria.
- May be recommended if initial control measures do not stop transmission.
- Decision to screen is made by the facility in conjunction with public health authorities.

# Decolonization

- Individuals who screen positive for GAS carriage should be treated with an appropriate decolonization regimen

**Table 4. Recommended regimens for chemoprophylaxis against group A streptococcal infection.**

Drug	Dosage(s)	Comment(s)
BPG plus rifampin	BPG: 600,000 U im in 1 dose for patients weighing <27 kg or 1,200,000 U im in 1 dose for patients weighing ≥27 kg; rifampin: 20 mg/kg/day po (max. daily dose, 600 mg) in 2 divided doses for 4 days	Not recommended for pregnant women because rifampin is teratogenic in laboratory animals. Because the reliability of oral contraceptives may be affected by rifampin therapy, alternative contraceptive measures should be considered while rifampin is being administered.
Clindamycin	20 mg/kg/day po (max. daily dose, 900 mg) in 3 divided doses for 10 days	Preferred for health care workers who are rectal carriers of GAS <sup>a</sup>
Azithromycin	12 mg/kg/day po (max. daily dose, 500 mg/day) in a single dose for 5 days	Pregnancy category B: human data reassuring (animal positive) or animal studies show no risk <sup>a</sup>

**NOTE.** All regimens are acceptable for nonpregnant persons who are not allergic to penicillin. BPG, benzathine penicillin G; max., maximum.

<sup>a</sup> Pregnancy category as defined in [30, p. 344]. Clindamycin or azithromycin is acceptable for persons allergic to penicillin. If administered to health care workers implicated in an outbreak or to their colonized household contacts, susceptibility testing should be performed.



# Resources

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- [IDOH Invasive Group A Strep Page](#)
- [IDOH GAS Long Term Care Facility Toolkit](#)
- [IDOH Single Case Checklist](#)
- [CDC Group A Strep Page](#)

# Questions?

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