

## Invasive Pneumococcal Disease

### CLINICAL CASE DEFINITION

Invasive Pneumococcal Disease (IPD) is defined as *Streptococcus pneumoniae* (*S. pneumoniae*) isolated from a normally sterile site (e.g., CSF, blood, joint fluid, pleural fluid, pericardial fluid, etc.). The major clinical syndromes of invasive pneumococcal disease include pneumonia, bacteremia, and meningitis.

### CASE CLASSIFICATION

*Confirmed:* a clinically compatible case caused by laboratory-confirmed culture of *S. pneumoniae* from a normally sterile site.

Case classifications for Drug Resistant *Streptococcus pneumoniae* (DRSP) and Invasive Pneumococcal Disease (IPD) are further described as:

- ◆ **Drug Resistant *Streptococcus pneumoniae* (DRSP)** - Isolates causing IPD for which antibacterial susceptibilities are available and determined to be drug resistant; report in MDSS only as *Strep Pneumo, Drug Resistant*. To be drug resistant, the infection must be Invasive AND the isolate must be intermediate or resistant to at least one antimicrobial agent approved for treating pneumococcal infections
- ◆ **Invasive Pneumococcal Disease (IPD)** - Isolates causing IPD which are susceptible, or for which susceptibilities are not available; report in MDSS as *Streptococcus pneumoniae, Inv.*

### TRANSMISSION

- ◆ Person-to-person contact via respiratory droplets, either by direct oral contact or indirectly through articles freshly soiled with respiratory discharges;
- ◆ Self-infection in persons carrying the bacteria in their upper respiratory tract

### INCUBATION PERIOD

Short, probably about 1 – 3 days

### PERIOD OF COMMUNICABILITY

Unknown; presumably can be spread for as long as organism is present in respiratory secretions

### REPORTING/INVESTIGATION

- ◆ All cases of invasive pneumococcal disease are reportable in Michigan
  - Report/ensure reporting of case to the Michigan Disease Surveillance System (MDSS); see Case Classification section above for correct MDSS classification
  - Obtain immunization history information from provider record or MI Care Improvement Registry (MCIR - state immunization registry)
- ◆ Update the MDSS record in a timely manner with new or additional info as it becomes available. Finalize MDSS record when case investigation is complete
- ◆ Investigation and public health follow-up is generally not useful and is not recommended, except in known outbreak situations

- ◆ In the event of death, please mark the Patient Status variable as “Died” on the MDSS case report form

#### LABORATORY CONFIRMATION

- ◆ Laboratory criteria for diagnosis: Isolation of *S. pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid)
- ◆ Serotyping of isolates is encouraged if possible; however, resources are not currently available for serotyping at the state public health laboratory

#### IMMUNITY/SUSCEPTIBILITY

- ◆ Susceptibility is universal; protection results from prior infection or immunization
- ◆ Children are routinely immunized with a multiple-dose series of pneumococcal conjugate vaccine (PCV) which protects against several serotypes of *S. pneumoniae* accounting for the majority of invasive infection – see the [ACIP childhood immunization schedule](http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html) for further details (<http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html>)
- ◆ 23-valent pneumococcal polysaccharide vaccine (PPSV23) should be administered routinely to all adults 65 years of age and older (1 dose); there are selected indications for PPSV23 use in younger persons as well (e.g. immunocompromised persons) – see the [ACIP Adult Immunization Schedule](http://www.cdc.gov/vaccines/schedules/index.html) for details (<http://www.cdc.gov/vaccines/schedules/index.html>)
  - In addition to PPSV23, adults with immunocompromising and specified other conditions should receive 13-valent pneumococcal conjugate vaccine (PCV13) – see the [ACIP Adult Immunization Schedule](http://www.cdc.gov/vaccines/schedules/index.html) for details (<http://www.cdc.gov/vaccines/schedules/index.html>)

#### CONTROL MEASURES

Not applicable, except in outbreak settings. Please see the “Considerations for Streptococcus pneumoniae Outbreaks in Long-Term Care and Nursing Home Facilities” document (available at [http://www.michigan.gov/documents/mdch/Q112\\_Strep\\_Pneumo\\_Tip\\_Sheet\\_385134\\_7.pdf](http://www.michigan.gov/documents/mdch/Q112_Strep_Pneumo_Tip_Sheet_385134_7.pdf)) for more information.

#### LABORATORY PROCEDURES AND CONSIDERATIONS

Not applicable

