



Department of Health and Social Services  
Joel Gilbertson, Commissioner

Division of Public Health  
Doug Bruce, Director

Section of Epidemiology  
John Middaugh, MD, Editor

3601 C Street, Suite 540, PO Box 240249, Anchorage, Alaska 99524-0249 (907) 269-8000  
24-Hour Emergency Number 1-800-478-0084

<http://www.akepi.org>

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## Pelvic Inflammatory Disease (PID):

# Diagnostic Suspicion and Early Treatment Lessen Complications

### Background

PID is the collective term for inflammatory disorders of the female upper genital tract and is an urgent medical condition requiring prompt appropriate treatment to prevent serious complications. Patients often present to the emergency room or acute care clinic where the diagnosis of PID is easily delayed or missed because the symptoms are non-specific. **It is important to maintain a low threshold for the diagnosis of PID** since even mild or atypical PID may threaten the reproductive health of women. **Diagnosis and management of other common causes of lower abdominal pain (e.g. ectopic pregnancy, acute appendicitis, and functional pain) are unlikely to be impaired by initiating empiric antimicrobial therapy for PID.**

PID includes inflammation of the uterine lining (endometritis), fallopian tubes (salpingitis), lower abdominal cavity (pelvic peritonitis), and tubal or ovarian abscess. Prompt treatment of suspected PID usually eliminates the responsible pathogens and resolves inflammation. Conversely, failure to initiate treatment of PID increases the likelihood of prolonged inflammation and scarring. Complications stemming from missed or inadequate treatment of PID include relapsing or chronic pelvic pain, uncomfortable intercourse (dyspareunia), ectopic pregnancy, or sterility.

## Reported PID in Alaska

Between 1998 and 2002, 212 women were reported with PID related to chlamydia (CT), or gonorrhea (GC), or both. In that period, PID was reported in 1.9% of all episodes of all CT infection and in 4.6% of all GC infections in females. Amongst those cases of PID, 75% were reported with CT alone, 15% with GC alone, and 10% with both CT and GC. Co-infection with CT occurred in 40.6% of reported cases of GC-PID. Of those cases with CT-PID, 11.6% were co-infected with CT. The proportion of CT and GC infections in which PID is suspected or diagnosed is under-reported by providers in Alaska, especially cases seen in the emergency room setting, so the percentages noted above should be regarded as conservative figures.

Fig. 1. Chlamydia and Gonorrhea PID in Alaska, 1998-2002 (N=212)

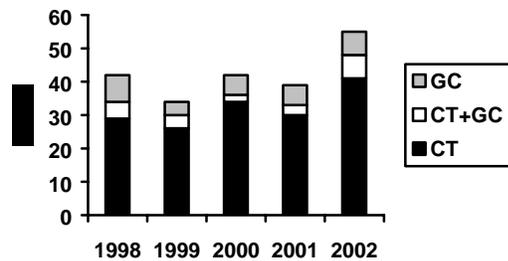
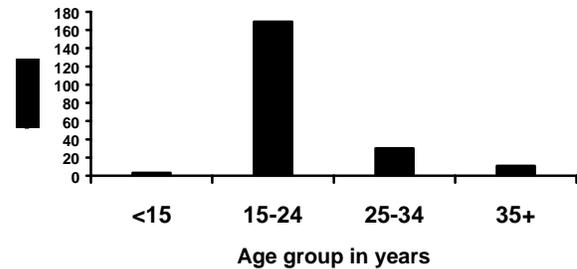


Fig. 2. PID by Age Group, 1998-2002 (N=211)



PID treatment information was complete in 48/55 cases of PID reported by providers in 2002. Of those 48, 32 (66.6%) were treated as recommended in the CDC's "Sexually Transmitted Diseases Treatment Guidelines, 2002". One third of PID patients were inadequately treated and required public health follow-up with providers in order to complete or augment treatment. Treatment did not conform to the guidelines in the following ways; duration shorter than 14 days, dosage too low, use of antibiotics other than the optimum recommended, and antibiotic regimens not broad enough to cover all major etiologic pathogens.

## Diagnosis of PID

Pelvic examination is required to make, or rule out, the diagnosis of PID.

In sexually active young women, or other women at risk for STDs, PID should be suspected when the following minimum criteria are present and no other cause(s) for the illness can be identified:

- uterine/adnexal tenderness

OR

- cervical motion tenderness

When evaluating a woman for lower abdominal or pelvic pain, unusual discharge per vagina, or visibly inflamed and friable cervix, the index of suspicion for PID should be high in any sexually active female.

The following signs support but are not required for the diagnosis of PID:

- Oral temperature greater than 101° F (>38.3° C)
- Abnormal cervical and/or vaginal mucopurulent discharge
- Presence of WBCs on saline microscopy of vaginal secretions
- Elevated erythrocyte sedimentation rate
- Elevated C-reactive protein
- Laboratory documentation of cervical infection with *N. gonorrhoeae* or *C. trachomatis*

Diagnosis of suspected PID may be further supported through specific findings on endometrial biopsy, transvaginal sonography, magnetic resonance imaging, or laparoscopy, although *these extensive diagnostic procedures are warranted only in certain cases.*

## Treatment of PID

**Initiate empiric treatment for PID in every instance of uterine/adnexal tenderness or cervical motion tenderness in sexually active young women, and in other women at risk of STDs, unless another definitive cause for the illness can be identified. Use a CDC-recommended antibiotic regimen to ensure broad spectrum coverage of most organisms linked to PID.**

Appropriate treatment for suspected PID is ensured by: 1) selecting a recommended drug regimen, 2) starting treatment without delay, and 3) continuing treatment throughout a 14-day course. Each of the CDC-recommended treatment regimens provides empiric, broad-spectrum coverage of likely pathogens including *N. gonorrhoeae*, *C. trachomatis*, anaerobes, Gram-negative facultative bacteria, and streptococci.

The decision to treat with an oral or a parenteral regimen depends on the severity of clinical presentation and the characteristics of the patient. Prompt treatment should not be delayed or refused when a patient is unable to pay.

Consider hospitalization for parenteral treatment and observation when any of the following are present:

- A surgical emergency (e.g. appendicitis) cannot be excluded
- The patient is pregnant
- The patient does not respond clinically to oral antimicrobial therapy
- The patient is unable to follow or tolerate an outpatient oral regimen
- The patient has severe illness, nausea or vomiting, or high fever
- The patient has a tubo-ovarian abscess

Table 1: CDC-Recommended Treatment Regimens for PID.

<p style="text-align: center;"><b><i>Parenteral Regimen A</i></b></p> <p><b>Cefotetan</b> 2g IV every 12 hours OR <b>Cefoxitin</b> 2g IV every 6 hours <i>PLUS</i> <b>Doxycycline</b> 100mg orally or IV every 12 hours</p>	<p style="text-align: center;"><b><i>Oral Regimen</i></b></p> <p><b>Ofloxacin</b> 400mg orally twice a day for 14 days OR <b>Levofloxacin</b> 500mg orally once daily for 14 days <i>WITH OR WITHOUT</i> <b>Metronidazole</b> 500mg orally twice a day for 14 days</p>
<p style="text-align: center;"><b><i>Parenteral Regimen B</i></b></p> <p><b>Clindamycin</b> 900mg IV every 8 hours <i>PLUS</i> <b>Gentamicin</b> loading dose IV or IM (2mg/kg of body weight) followed by a maintenance dose (1.5mg/kg) every 8 hours. Single daily dosing may be substituted.</p>	<p style="text-align: center;"><b><i>Alternate Oral Regimen</i></b></p> <p><b>Ceftriaxone</b> 250mg IM in a single dose OR <b>Cefoxitin</b> 2g IM in a single dose and Probenecid, 1g orally administered concurrently in a single dose OR Other parenteral third-generation <b>cephalosporin</b> (eg. ceftizoxime or cefotaxime) <i>PLUS</i> <b>Doxycycline</b> 100mg orally twice a day for 14 days <i>WITH OR WITHOUT</i> <b>Metronidazole</b> 500mg orally twice a day for 14 days</p>
<p>Note: Parenteral regimens should be continued until at least 24 hours after the patient shows substantial clinical improvement, at which time a switch to oral therapy may be made. The treatment regime should total 14 days duration.</p>	<p>Note: If a patient does not respond to oral therapy within 72 hours, re-evaluate to confirm the diagnosis and administer parenteral therapy.</p>

PID treatment regimens tabled above are from the “Sexually Transmitted Diseases Treatment Guidelines, 2002” issued by the Centers for Disease Control and Prevention in MMWR v.51, No. RR-6 (May 10, 2002). The full text of the guidelines, which address the current recommendations for diagnosis and treatment of PID and all other STDs, is available at <http://www.cdc.gov/mmwr/PDF/rr/rr5106.pdf>.

**PID secondary to *N. gonorrhoeae* or *C. trachomatis* must be reported by providers under Alaska Administrative Code (7 AAC 27.00.5) to Public Health. Please call 561-4234 in Anchorage (or 1-800-478-1700) to report each case, and include the organism, the treatment and pregnancy status of the patient. Reports may also be made via a confidential fax line at 907-561-4239.**

## Public Health Follow-up of STDs including PID

The control of STDs over past decades has involved three activities: (1) diagnosis and treatment of cases, (2) partner notification, formerly known as “contact tracing”, and (3) surveillance of trends in the population. Diagnosis and treatment lies principally in the realm of medical practice; partner services and surveillance are undertaken by Public Health.

### *Surveillance*

Chlamydia, gonorrhea, syphilis, HIV infection and AIDS all are reportable STDs in Alaska. Confidential reports are kept in a secure database, analyzed for geographic, age and race trends over time, and interpreted. The antimicrobial regimen of each case of chlamydia, gonorrhea or syphilis is reviewed, and inadequately treated cases are assured appropriate treatment. Providers are informed of appropriate re-testing of cases diagnosed and treated during pregnancy, and follow-up care of the infant is assured.

### *Partner Services*

Each report of chlamydia, gonorrhea, syphilis or HIV infection is interviewed by a trained Disease Investigation Specialist or a Public Health Nurse, counseled regarding reduction of risk of future sexually transmitted infection, and offered assistance with confidential notification of sexual partners (and for HIV, of needle-sharing partners). The names, address or locating information, and description of partners is elicited, and then the partners are contacted, informed of their exposure (the identity of the case is not revealed), and recommended testing and simultaneous treatment for the STD in question. Each partner is also counseled in reducing his/her future risk of acquiring STDs and HIV. In some settings, partners of chlamydia or gonorrhea cases may be offered testing and treatment on the spot; in others, they are referred to local providers or clinics.

Simultaneous treatment of cases and each of their partners is the ideal approach to control of the transmission of infection amongst sexually active persons.

(Submitted by Alison Bell, MD, FRCPC, and Susan Jones, RN, MN.)

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*State of Alaska  
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State of Alaska, Section of Epidemiology  
PO Box 240249  
Anchorage, AK 99524-0249

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