### Nursing Process Focus
Patients Receiving Antibacterial Therapy

**Assessment**
- Prior to administration:
  - Obtain a complete health history (physical, mental), including allergies, drug history, and possible drug interactions.
  - Obtain specimens for C&S before initiating therapy.
  - Perform infection-focused physical examination, including vital signs, white blood cell count, and sedimentation rate.

**Potential Nursing Diagnoses**
- Infection related to inadequate primary defenses.
- Risk for injury related to tissue destruction and adverse effects of drug therapy.
- Deficient knowledge related to information about disease process, transmission, and drug therapy.
- Noncompliance related to therapeutic regimen.

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### Planning: Patient Goals and Expected Outcomes
The patient will:
- Report reduction in symptoms related to the diagnosed infection and have negative results for laboratory and diagnostic tests for the presenting infection.
- Demonstrate an understanding of the drug's action by accurately describing drug adverse effects and precaution.
- Immediately report significant adverse effects such as shortness of breath, swelling, fever, stomatitis, loose stools, vaginal discharge, or cough.
- Complete full course of antibiotic therapy and comply with follow-up care.

### Implementation

**Interventions and (Rationales)**
- Monitor vital signs and symptoms of infection to determine antibacterial effectiveness. (Another drug or different dosage may be required.)

**Patient Education/Discharge Planning**
- Instruct the patient to notify the health care provider if symptoms persist or worsen.
<table>
<thead>
<tr>
<th>Interventions and (Rationales)</th>
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<tr>
<td>Monitor for hypersensitivity reaction. Immediate hypersensitivity reaction may occur within 2–30 minutes; accelerated reaction occurs in 1–72 hours and delayed reaction after 72 hours.</td>
<td>Instruct the patient to discontinue the medication and inform the health care provider if symptoms of hypersensitivity reaction develop such as wheezing; shortness of breath; swelling of face, tongue, or hands; or itching or rash.</td>
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<td>Monitor for severe diarrhea. (The condition may occur due to superinfection or the possible adverse effect of antibiotic-associated pseudomembranous colitis, or AAPMC.)</td>
<td>Instruct the patient to: Consult the health care provider before taking antidiarrheal drugs, which could cause retention of harmful bacteria; Consume cultured dairy products with live active cultures, such as kefir, yogurt, or buttermilk, to help maintain normal intestinal flora.</td>
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<td>Administer drug around the clock to maintain effective levels.</td>
<td>Instruct the patient to: Take the medication on schedule; Complete the entire prescription even if feeling better to prevent development of resistant bacteria.</td>
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<td>Monitor for superinfection, especially in elderly, debilitated, or immunosuppressed patients. Increased risk for superinfections is due to elimination of normal flora.</td>
<td>Instruct the patient to report signs and symptoms of superinfection, such as fever, black hairy tongue, stomatitis, loose, foul-smelling stools, vaginal discharge; or</td>
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<td>Monitor intake of over-the-counter (OTC) products such as antacids, calcium supplements, iron products, and laxatives containing magnesium. (These products interfere with absorption of many antibiotics.)</td>
<td>Advise the patient to consult with the health care provider before using OTC medications or herbal products.</td>
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<td>Monitor for phototoxicity. (Tetracyclines, fluoroquinolones, and sulfonamides can increase the patient's sensitivity to ultraviolet light and increase risk of sunburn.)</td>
<td>Encourage the patient to: Avoid exposure to direct sunlight during and after therapy; Wear protective clothing, sunglasses, and sunscreen when outdoors.</td>
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<td>Determine the interactions of the prescribed antibiotics with various foods and beverages.</td>
<td>Instruct the patient regarding foods and beverages that should be avoided with specific antibiotic therapies; No acidic fruit juices with penicillins; No alcohol intake with cephalosporins; No dairy products/chicken products with tetracyclines.</td>
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<td>Monitor the IV site for signs and symptoms of tissue irritation, severe pain, and extravasation.</td>
<td>Instruct the patient to immediately report pain or other symptoms of discomfort during intravenous infusion.</td>
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<td>Monitor for adverse effects specific to various antibiotic therapies. (See “Nursing Considerations” for each antibiotic classification in this chapter.)</td>
<td>Instruct the patient to report adverse effects specific to the antibiotic therapy prescribed.</td>
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<td>Monitor renal function such as intake and output ratios and urine color and consistency. Monitor laboratory work, including serum creatinine and BUN. (Some antibiotics such as the aminoglycosides are nephrotoxic.)</td>
<td>Inform the patient: About the purpose of required laboratory tests and scheduled follow-ups with the health care provider; To increase fluid intake to 2000–3000 ml/day.</td>
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<td>Monitor for symptoms of ototoxicity. (Some antibiotics, such as the aminoglycosides and vancomycin, may cause vestibular or auditory nerve damage.)</td>
<td>Instruct the patient to notify the health care provider of: Changes in hearing, ringing in the ears, or full feeling in the ears; Nausea and vomiting with dizziness, nystagmus, or dizziness.</td>
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<tr>
<td>Monitor the patient for compliance with antibiotic therapy.</td>
<td>Instruct the patient in the importance of: Completing the prescription as ordered; Follow-up care after antibiotic therapy is completed.</td>
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**EVALUATION OF OUTCOME CRITERIA**

Evaluate the effectiveness of drug therapy by confirming that patient goals and expected outcomes have been met (see “Planning”). See Tables 25.7 through 25.10 for lists of drugs to which these nursing actions apply.
# NURSING PROCESS FOCUS

## Patients Receiving Antitubercular Drugs

### ASSESSMENT

- Prior to administration:
  - Obtain a complete health history (physical/mental), including allergies, drug history, and possible drug interactions
  - Perform complete physical examination, including vital signs
  - Assess for presence/history of the following:
    - Positive tuberculin skin test
    - Positive sputum culture or smear
    - Close contact with person recently infected with TB
    - HIV infection or AIDS
    - Immunosuppressant drug therapy
    - Alcohol abuse
    - Liver or kidney disease
    - Cognitive ability to comply with long-term therapy

### POTENTIAL NURSING DIAGNOSES

- Risk for infection related to inadequate primary defenses, environmental exposure
- Risk for injury related to tissue destruction and adverse effects of drug therapy
- Deficient Knowledge related to information about drug therapy
- Noncompliance related to therapeutic regimen

*continued...*
**NURSING PROCESS FOCUS**

**PLANNING: PATIENT GOALS AND EXPECTED OUTCOMES**

The patient will:
- Report reduction in tuberculosis symptoms and have negative results for laboratory and diagnostic tests indicating TB infection
- Demonstrate an understanding of the drug’s action by accurately describing adverse effects and precautions
- Immediately report effects such as visual changes, difficulty voiding, changes in hearing, and symptoms of liver or kidney impairment
- Complete full course of antituberculosis therapy and comply with follow-up care

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<td>Monitor for hepatic adverse effects. (Antituberculosis agents, such as isoniazid and rifampin, cause hepatic impairment.)</td>
<td>Instruct the patient to report yellow eyes and skin, loss of appetite, dark urine, and unusual tiredness.</td>
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</table>
| Monitor for neurologic adverse effects such as numbness and tingling of the extremities. (Antituberculosis agents, such as isoniazid, cause peripheral neuropathy and depletion of vitamin B6.) | Instruct the patient to:
- Report numbness and tingling of extremities
- Take supplemental vitamin B6 as ordered to reduce risk of adverse effects |
| Collect sputum specimens as directed by the healthcare provider. (This will determine the effectiveness of the antituberculosis agent.) | Instruct the patient in technique needed to collect a quality sputum specimen. |
| Monitor for dietary compliance when patient is taking isoniazid. (Foods high in tyramine can interact with the drug and cause palpitations, flushing, and hypertension.) | Advise patients taking isoniazid to avoid foods containing tyramine, such as aged cheese, smoked and pickled fish, beer and red wine, bananas, and chocolate. |
| Monitor for adverse effects specific to various antituberculosis drugs. | Instruct the patient to report adverse effects specific to the antituberculosis therapy prescribed, such as:
- Blurred vision or changes in color or vision field (ethambutol)
- Difficulty in voiding (pyrazinamide)
- Fever, yellowing of skin, weakness, dark urine (isoniazid, rifampin)
- GI system disturbances (rifampin)
- Changes in hearing (streptomycin)
- Numbness and tingling of extremities (isoniazid)
- Red discoloration of body fluids (rifampin)
- Dark, concentrated urine, weight gain, edema (streptomycin) |
| Establish therapeutic environment to ensure adequate rest, nutrition, hydration, and relaxation. (Symptoms of TB are manifested when the immune system is suppressed.) | Instruct the patient:
- Concerning infectious control measures, such as frequent handwashing, covering the mouth when coughing or sneezing, and proper disposal of soiled tissues
- To incorporate health-enhancing activities, such as adequate rest and sleep, intake of essential vitamins and nutrients, and intake of six to eight glasses of water/day |
| Monitor the patient’s ability and motivation to comply with therapeutic regimen. (Treatment must continue for the full length of therapy to eliminate all M. tuberculosis organisms.) | Explain the importance of complying with the entire therapeutic plan, including:
- Taking all medications as directed by healthcare provider
- Not discontinuing medication until so instructed
- Wearing a medical alert bracelet
- Keeping all appointments for follow-up care |

**EVALUATION OF OUTCOME CRITERIA**

Evaluate the effectiveness of drug therapy by confirming that patient goals and expected outcomes have been met (see “Planning”).

See Table 25.11 for a list of drugs to which these nursing actions apply.