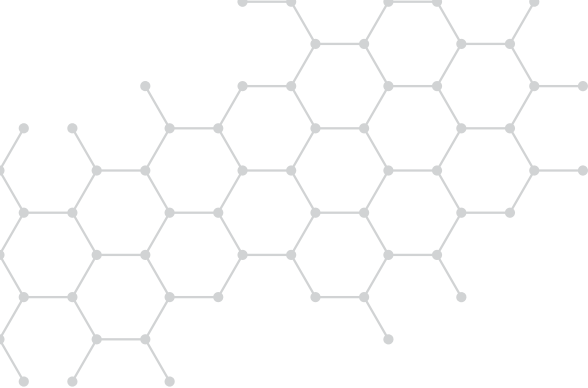


Emergency Antibiotic Guide





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PREFACE

As a primary care physician, prescribing antibiotics for various bacterial infections is an everyday occurrence in my practice. Antibiotics are vital to our health and safety.

One hundred years ago, the top 5 causes of death in America were gastrointestinal infections, tuberculosis, pneumonia, heart disease, and kidney failure (usually related to untreated bacterial infections or poisoning). Since then, advances in medical knowledge, including therapeutics such as antibiotics, have transformed life as we know it, and infections are no longer a top cause of death. However, bacterial infections are still a significant killer in many developing nations, with pneumonia and diarrheal illnesses near the top.

What would happen if you found yourself cut off from modern medical care? Or, when you went to the pharmacy to pick up a prescription for an antibiotic there was nothing left on the shelves? Unfortunately, in such scenarios, bacterial infections will once again become top killers.

In 2004 the last manufacturer in the United States to produce critical ingredients for antibiotics was closed. At the time, few were worried about the closure from a national security perspective. However, today conservative estimates show that over 80% of key ingredients used to make medications in the US are produced overseas, many in China. Thus, from geopolitical instability to natural disasters and global pandemics, the potential threat of US citizens not having access to life-saving medications is real.

This guide is not intended to be an all-inclusive pharmaceutical guide to disease, infections, or medications. Instead, it should be used (along with other more complete texts) as a reference when access to prompt medical attention may not be possible.

The listed infections were selected as the most likely to be encountered in remote locations or austere conditions and those that would be crucial in a bioterror scenario. Whether you are out on an extended adventure or find yourself and your family quarantined to your home due to a global pandemic or bioterror attack, this guide and the accompanying medications it refers to may be the difference between life and death.

Shawn Rowland, M.D.
JASE Medical

**BEFORE TAKING ANY OF THESE MEDICATIONS
YOU SHOULD CONSULT WITH A HEALTHCARE
PROFESSIONAL WHENEVER POSSIBLE.**

Your Kit contains the following antibiotics:

- Amoxicillin-Clavulanate 875 mg tablets
- Azithromycin 250 mg tablets
- Ciprofloxacin 500 mg tablets
- Doxycycline 100 mg capsules
- Metronidazole 500 mg tablets

Be aware that the shelf-life of most solid oral medications is optimized at room temperature 68-77F (20-25C) and when protected from UV light. Whenever possible store medication in a cool, dark & dry place. For more information, see Appendix B.



CONTENTS BY DRUG

Amoxicillin-Clavulanate **01**

Used to treat:

- Bite wounds (animal or human)
- Pneumonia (in combination with Azithromycin or Doxycycline)
- Sinusitis

Azithromycin **04**

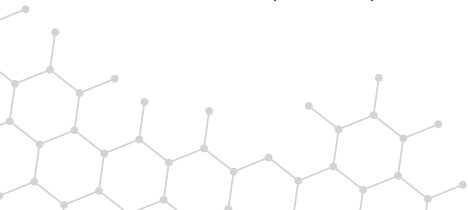
Used to treat:

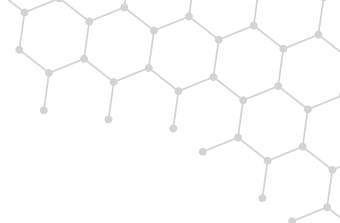
- Pneumonia
- Urinary tract infection
- Traveler's diarrhea

Ciprofloxacin **06**

Used to treat:

- Anthrax exposure and infection (bioterror)
- Plague exposure and infection (bioterror)
- Traveler's diarrhea
- Tularemia (bioterror)





Doxycycline

11

Used to treat:

- Anthrax (bioterror)
- Bites (animal and human)
- Plague (bioterror)
- Skin infection
- Tetanus
- Tularemia (bioterror)

Metronidazole

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Used to treat:

- Bacterial vaginosis
- Diarrhea (caused by *Giardia* and *Clostridioides difficile*)
- Giardiasis
- Tetanus
- Trichomoniasis

CONTENTS BY CONDITION

Anthrax

<i>Medication:</i> Ciprofloxacin	07
Doxycycline	12

Bacterial vaginosis

<i>Medication:</i> Metronidazole	17
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Bites (Animal or Human)

<i>Medication:</i> Amoxicillin-Clavulanate	02
Doxycycline	

Clostridioides Difficile

<i>Medication:</i> Metronidazole	17
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Giardiasis

<i>Medication:</i> Metronidazole	18
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Plague (bioterror)

<i>Medication:</i> Ciprofloxacin	07
Doxycycline	13



Pneumonia

<i>Medication:</i>	Amoxicillin-Clavulanate	02
	Azithromycin	05
	Doxycycline	12

Sinusitis

<i>Medication:</i>	Amoxicillin-Clavulanate	03
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Skin infection

<i>Medication:</i>	Doxycycline	13
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Traveler's Diarrhea

<i>Medication:</i>	Azithromycin	05
	Ciprofloxacin	08

Trichomoniasis

<i>Medication:</i>	Metronidazole	19
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Tetanus

<i>Medication:</i>	Doxycycline	14
	Metronidazole	18

Tularemia (bioterror)

<i>Medication:</i>	Ciprofloxacin	09
	Doxycycline	15

Urinary tract infection

<i>Medication:</i>	Ciprofloxacin	10
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AMOXICILLIN-CLAVULANATE

875 mg/125 mg

(dose is based on the amoxicillin component)

CAUTION - Amoxicillin is a beta-lactam type antibiotic in the same category as penicillin and cephalosporins. DO NOT TAKE IF YOU ARE ALLERGIC TO PENICILLIN OR CEPHALOSPORINS (like cephalexin/Keflex).

EXPIRATION AND STORAGE - see Appendix B

PREGNANCY - Pregnancy Risk Category B (see table in Appendix A)

BREAST-FEEDING - Considered compatible with breastfeeding when used in usual recommended doses.

NOTES - May be taken with meals or on an empty stomach. Take with meals to help with increased absorption and decrease upset stomach.

Used to treat bite wounds (animal or human), pneumonia (in combination with Azithromycin or Doxycycline), sinusitis, amongst other uses.

Bite Wounds

Any kind of wound, including bite wounds, should be thoroughly cleaned. Consult your preferred first-aid manual for instructions on how to properly clean bite wounds.

Used to prevent infection after an animal or human bite as well as to treat wounds that may already be infected after an animal or human bite.

Take ONE tablet by mouth TWICE per day.

To PREVENT infection, continue for 3-5 days.

To TREAT an infection, continue for minimum of 5 days up to 14 days.

Pneumonia

Without the aid of a chest x-ray or blood tests you must rely solely on signs and symptoms to help determine if pneumonia is present; such as fever, chills, chest pain that worsens with inspiration and/or expiration, shortness of breath, and a cough that produces sputum. Amoxicillin-clavulanate can be taken in conjunction with either azithromycin or doxycycline to cover most common causes of pneumonia.

Take ONE tablet by mouth TWICE per day for 5 days with EITHER:

Azithromycin 250 mg, take TWO tablets by mouth on day 1 and ONE tablet on days 2-5. or

Doxycycline 100 mg, take ONE capsule by mouth TWICE per day for 5 days.

Sinusitis

For otherwise healthy individuals who have been experiencing purulent nasal discharge/drainage for less than 4 weeks that may also be accompanied by pain or pressure around the face or head.

Take ONE tablet by mouth TWICE per day for 14 days.



AZITHROMYCIN 250 mg

CAUTION - Azithromycin belongs to the macrolide class of antibiotics. DO NOT TAKE if you have a hypersensitivity or allergy to azithromycin, erythromycin, or any other macrolide.

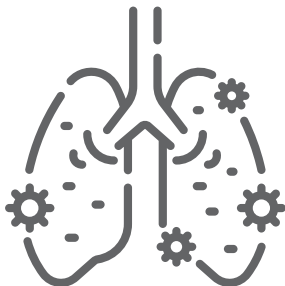
EXPIRATION AND STORAGE - see Appendix B

PREGNANCY - Pregnancy Risk Category B (see table in Appendix A)

BREAST-FEEDING - Present in breastmilk. Monitor infants for GI disturbances.

NOTES - May be taken with meals or on an empty stomach. Take with meals to help with increased absorption and decrease upset stomach.

Used to treat pneumonia and traveler's diarrhea among other infections.



Pneumonia

Without the aid of a chest x-ray or blood tests you must rely solely on signs and symptoms to help determine if pneumonia is present; such as fever, chest pain that worsens with inspiration and/or expiration, shortness of breath, and a cough that produces sputum. Azithromycin can be taken in conjunction with amoxicillin clavulanate to cover most common causes of pneumonia.

Take TWO tablets by mouth on Day 1 and ONE tablet on Days 2-5 with

Amoxicillin-Clavulanate 875 mg, take ONE tablet by mouth TWICE per day for 5 days.

Traveler's Diarrhea

There are many possible causes of diarrhea such as parasitic, viral, and bacterial sources of infection. Traveler's diarrhea is defined as diarrhea that develops in individuals from resource-rich setting during or within 10 days of returning from a resource-limited region. In these regions, bacterial causes are the most common. Most episodes of traveler's diarrhea are self-limited and not often severe. However, the accompanying dehydration can complicate the illness and can pose a more dangerous health hazard than the diarrhea itself.

Take TWO tablets by mouth ONCE per day for 3 days.

CIPROFLOXACIN 500 mg

CAUTION - Ciprofloxacin belongs to the fluoroquinolone class of antibiotics. DO NOT TAKE if you have a hypersensitivity or allergy to ciprofloxacin. EXERCISE CAUTION if taking with anticoagulant medication such as WARFARIN (COUMADIN).

US BOXED WARNING ABOUT FLUOUOQUINOLONES – see appendix D

EXPIRATION AND STORAGE - see Appendix B

PREGNANCY - Based on available data, an increased risk of major birth defects, miscarriage, or other adverse fetal and outcomes have not been observed following ciprofloxacin use during pregnancy. FDA Pregnancy Risk Category C (see table in Appendix A).

BREAST-FEEDING - Ciprofloxacin is present in breast milk, however the relative infant dose is well within limits considered acceptable.

NOTES - May be taken with or without food, however, caution should be exercised if consuming calcium-rich products alone.

Used to treat anthrax exposure and infection, plague exposure and infection, traveler's diarrhea, tularemia, and urinary tract infection.

Anthrax (bioterror) Exposure

Consult local health officials for event-specific recommendations.

Inhalation anthrax results from the inhalation of *B. anthracis* spore-containing particles. The incubation period for inhalation anthrax is estimated to be 1 to 7 days. However, there are reports that show it may be as long as 43 days. In 2001 there was a bioterror event with 4 to 6 days elapsing from exposure to symptom onset. It is imperative that treatment be started if there is a chance of true exposure because within days after symptoms first appear, if left untreated, inhalational anthrax disease is nearly 100% fatal.

For post exposure prophylaxis take ONE tablet by mouth TWICE per day for 60 days.

Plague (bioterror) Exposure

Consult local health officials for event-specific recommendations.

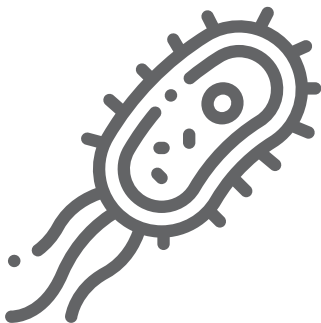
For post exposure prophylaxis take ONE tablet by mouth TWICE per day for at least 14 days and until 2 days have passed without fever.

Traveler's Diarrhea

(as an alternative medication to Azithromycin)

There are many possible causes of diarrhea such as parasitic, viral, and bacterial sources of infection. Traveler's diarrhea is defined as diarrhea that develops in individuals from resource-rich setting during or within 10 days of returning from a resource-limited region. In these regions, bacterial causes are the most common. Most episodes of traveler's diarrhea are self-limited and not often severe. However, the accompanying dehydration can complicate the illness and can pose a more dangerous health hazard than the diarrhea itself.

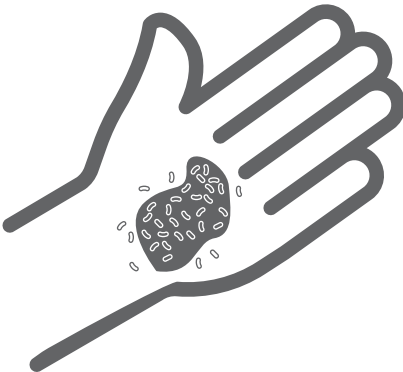
Take ONE tablet by mouth TWICE per day for 3 days.



Tularemia (bioterror)

Consult local health officials for event-specific recommendations. Tularemia has also been identified as a possible bioterror agent. Symptoms include a fast onset of fever, chills, fatigue, headache, lymph node enlargement, eye pain, light sensitivity, or sore throat or cough approximately 3-5 days after exposure. In a bioterror related event the airborne transmission of tularemia is of highest concern. Ciprofloxacin is an ALTERNATIVE medication for mild to moderate cases.

Take ONE tablet by mouth TWICE per day for 14 days.



Urinary Tract Infection (simple and complicated)

Signs and symptoms of a urinary tract infection include burning with urination, more frequent urination, malodorous urine. Signs of a more serious infection include the aforementioned symptoms accompanied by fever, chills, flank pain. Fever and flank pain typically means that the infection has advanced beyond the bladder and may be affecting the kidneys. This is a more serious infection and may require a longer course of antibiotics, these types of infection are classified as 'complicated' urinary tract infections. Without the benefit of a urinary culture to determine the specific bacteria causing the infection you are left to treat with an antibiotic that has good general coverage for most bacterial causes of urinary tract infections.

Simple Infection - Take ONE tablet by mouth TWICE per day for 3 days.

Complicated Infection - Take ONE tablet by mouth TWICE per day for 10 days.



DOXYCYCLINE 100 mg

CAUTION - Doxycycline may cause your skin to be more sensitive to sunlight. Serious sunburns have been reported. As with any medication, DO NOT TAKE if you are allergic to doxycycline or other tetracyclines.

EXPIRATION AND STORAGE - see Appendix B

PREGNANCY - Using doxycycline in regular doses during pregnancy is unlikely to produce substantial risk, but data are insufficient to say that there is no risk. In general, when there is no better alternative medication, doxycycline is OK to use during pregnancy. It is classified by the FDA as a pregnancy risk category B drug (see table in Appendix A).

BREASTFEEDING - Doxycycline is present in breastmilk however it is in concentrations that are generally considered safe.

NOTES - Best if taken on an empty stomach, however, if stomach upset is a concern doxycycline can be taken with food although absorption will be affected.

Used to treat a variety of infections including, but not limited to, wounds from human and animal bites, pneumonia, skin infections, plague, anthrax, tetanus, and tularemia.

Anthrax (bioterror) Exposure

Consult local health officials for event-specific recommendations.

Inhalation anthrax results from the inhalation of *B. anthracis* spore-containing particles. The incubation period for inhalation anthrax is estimated to be 1 to 7 days. However, there are reports that show it may be as long as 43 days. In 2001 there was a bioterror event with 4 to 6 days elapsing from exposure to symptom onset. It is imperative that treatment be started if there is a chance of true exposure because within days after symptoms first appear, if left untreated, inhalational anthrax disease is nearly 100% fatal.

For post exposure prophylaxis take ONE tablet (or capsule) by mouth TWICE per day for 60 days.

Pneumonia

Without the aid of a chest x-ray or blood tests you must rely solely on signs and symptoms to help determine if pneumonia is present; such as fever, chills, chest pain that worsens with inspiration and/or expiration, shortness of breath, and a cough that produces sputum. Amoxicillin-clavulanate can be taken in conjunction with either azithromycin or doxycycline to cover most common causes of pneumonia.

Take ONE capsule by mouth TWICE per day for 5 days with Amoxicillin-Clavulanate 875 mg, take ONE tablet by mouth TWICE per day for 5 days.

Plague (bioterror) Exposure

Consult local health officials for event-specific recommendations.

For post exposure prophylaxis take ONE capsule by mouth TWICE per day for at least 14 days and until 2 days have passed without fever.

Skin Infections

(including infections from animal or human bites, as well as superficial skin infections) - Any kind of wound, including bite wounds, should be thoroughly cleaned. Consult your preferred first-aid manual for instructions on how to properly clean wounds.

Used to prevent infection after an animal or human bite as well as to treat wounds that may already be infected after an animal or human bite. Also treats soft tissue and skin infections including those that may be caused by methicillin-resistant staph aureus (MRSA). Any break in the skin can allow bacteria to enter the deeper tissues and potentially cause an infection. Signs of infection include worsening pain and redness, pus or drainage, as well as systemic signs like fever or chills.

Take ONE capsule by mouth TWICE per day for 7 days or until redness is nearly completely gone. Should not exceed 14 days.

Tetanus (*Clostridium tetani*) Infection

Causes a nervous system disorder characterized by muscle spasms when infected by the *Clostridium tetani* bacterium, which is found in soil. Remember that wound cleansing is the most important step when any skin infection is suspected and especially when contamination with tetanus is a possibility. With limited resources available it will be hard to know when to treat a wound for a possible tetanus infection. For this reason, you should treat an infected wound as a skin infection first by taking doxycycline. If the infection continues to worsen or you notice other symptoms like muscle spasms, you can switch to, or add, metronidazole.

NOTE: Antibiotics to treat a tetanus infection are not very effective. It is best to make sure that your tetanus booster is up to date. The Td or Tdap boosters will provide up to 10 years of protection. Metronidazole is preferred over doxycycline for the treatment of tetanus infection

Take ONE capsule by mouth TWICE per day for 10 days.



Tularemia (bioterror)

Consult local health officials for event-specific recommendations. Tularemia has also been identified as a possible bioterror agent. Symptoms include a fast onset of fever, chills, fatigue, headache, lymph node enlargement, eye pain, light sensitivity, or sore throat or cough approximately 3-5 days after exposure. In a bioterror related event the airborne transmission of tularemia is of highest concern. Ciprofloxacin is an ALTERNATIVE medication for mild to moderate cases.

Take ONE capsule by mouth TWICE per day for 14 days.



METRONIDAZOLE 500 mg

CAUTION - May cause headache or stomach discomfort. Do not use if allergic to metronidazole (Flagyl). DO NOT TAKE with alcohol. Do not consume alcohol within 3 days of last dose of metronidazole.

EXPIRATION AND STORAGE - see Appendix B

PREGNANCY - Should not be taken during first trimester of pregnancy unless there are no other options. Pregnancy Risk Category B (see table in Appendix A)

BREASTFEEDING - Metronidazole is passed into breastmilk at levels that are considered potentially dangerous to infant. Loose stools, oral thrush and perianal fungal infections have been reported in breastfeeding infants. If metronidazole must be taken, breastfeeding should be withheld for 12 to 24 hours after a single dose.

NOTES - Take with food to decrease chances of upset stomach. DO NOT TAKE with alcohol and do not consume alcohol for 3 days after last metronidazole dose.

Used to treat intra-abdominal infections including those caused by certain bacteria and parasites such as diarrhea caused by *Giardia* and *Clostridioides difficile*. Treats some genital-urinary infections such as bacterial vaginosis and trichomoniasis. Can also be used to treat Tetanus infection when no other better options are present.

Bacterial Vaginosis

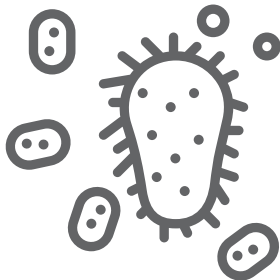
The most common cause of abnormal vaginal discharge in reproductive-age females. Other symptoms include vaginal odor and sometimes may be accompanied by burning with urination, itching, and vaginal redness.

Take ONE tablet by mouth TWICE per day for 7 days.

Clostridioides Difficile (C. Diff) (use when first-line agents such as oral vancomycin are unavailable)

Watery diarrhea (≥ 3 loose stools in 24 hours) is the principal symptom of C. diff and is most often associated with current or recent use of antibiotics (antibiotic use within the previous 4 weeks).

Take ONE tablet by mouth THREE times per day for 10 days.



Giardiasis

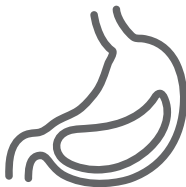
Common in areas with poor sanitation and limited water treatment facilities. Symptoms of acute infection include abdominal cramps, bloating, diarrhea, fatigue, fever (rare), flatulence and nausea. Incubation period from exposure to symptoms ranges from 1 to 2 weeks.

Take ONE tablet by mouth TWICE per day for 5 days.

Tetanus (*Clostridium tetani*) Infection

Causes a nervous system disorder characterized by muscle spasms when infected by the *Clostridium tetani* bacterium, which is found in soil. Remember that wound cleansing is the most important step when any skin infection is suspected and especially when contamination with tetanus is a possibility. NOTE: Antibiotics to treat a tetanus infection are not very effective. It is best to make sure that your tetanus booster is up to date. The Td or Tdap boosters will provide up to 10 years of protection. Metronidazole is preferred over doxycycline for the treatment of tetanus infection.

Take ONE tablet by mouth FOUR times per day for 10 days.



Trichomoniasis

Most common nonviral sexually transmitted disease worldwide with women more commonly infected than men. Symptoms of infection are related to those of bacterial vaginosis although usually with more of an inflammatory reaction. Burning with urination, pain with intercourse, itchiness, thin vaginal discharge, and vaginal odor are all possible symptoms. Most men are asymptomatic when infected. If symptoms are present, they normally consist of penile discharge and/ or pain with urination.

Take ONE tablet by mouth TWICE per day for 7 days.



APPENDIX A

FDA Pregnancy Risk Categories

Risk Category	Definition
A	Adequate and well-controlled studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).
B	Animal studies have not revealed evidence of harm to the fetus but adequate, well-controlled studies among pregnant women have not been conducted.
C	Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.
D	There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.
X	Studies in animals or humans have demonstrated fetal abnormalities and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefits.

APPENDIX B

Expiration Dates and Storage

You've invested in an emergency supply of medication and hopefully will never need to use it. Since these medications won't be used immediately, the question becomes how long do you have before your medications become unsafe?

We recommend that you follow the pharmacy's label on your medication when it comes to expiration dates.

In dire circumstances when there is no other option and the age of your medication is in question it is worth noting that many medications, both prescription and over-the-counter, are perfectly good to use even after as much as 15 years after their expiration date. Thanks to a government cost-savings program called Shelf-Life Extension Program or SLEP, the FDA on behalf of the Department of Defense studied more than 100 drugs and found that the vast majority retained their potency for many years beyond their expiration date. Solid-form antibiotics (tablets and capsules) were included in the study.

To maximize the potency and shelf-life of your medication it should be stored in an airtight, cool, dark and dry place.

APPENDIX C

Medication Disposal

When the time comes to dispose of your expired medications and update your supply there are a couple of options:

1. Drug Take-Back Program

Your local pharmacy or health department may offer a 'drug take-back program'. This is the preferred way to dispose of expired, unwanted, or unused medicine.

2. Household Trash

When drug take-back programs aren't available, federal guidelines recommend throwing the medicines away in the household trash after mixing them with a substance like dirt, kitty litter, or used coffee grounds and then sealing the mixture in a container like a plastic bag or other container.

NOTE - Some dangerous medications like narcotics should be flushed down a toilet or sink. The FDA maintains a list of dangerous medications that should be flushed when no drug take-back program is available.

APPENDIX D

US BOXED WARNING REGARDING FLUOROQUINOLONES

Fluoroquinolones have been associated with disabling and potentially irreversible serious adverse reactions that have occurred together, including: tendinopathy and tendon rupture, peripheral neuropathy, and CNS effects. Discontinue ciprofloxacin immediately and avoid the use of fluoroquinolones in patients who experience any of these serious adverse reactions. Because fluoroquinolones have been associated with serious adverse reactions, reserve ciprofloxacin for use in patients who have no alternative treatment options.

Emergency Antibiotic Guide