JAMES MADISON UNIVERSITY
UNIVERSITY HEALTH CENTER

ANTIBIOTIC STEWARDSHIP
a letter to our patients

Dear James Madison University Health Center Patient,

According to the World Health Organization, antibiotic resistant bacteria is one of the greatest public health threats today. In the U.S. alone this leads to more than 2 million infections and over 23,000 deaths each year.

Antibiotic resistant bacteria should be a concern for everyone since it is a problem that can affect any of us. A major contributor to this problem is inappropriate prescribing of antibiotics. Prescribing antibiotics (or expecting antibiotics) for viral illnesses or illnesses that will resolve on their own is not appropriate and is an area that outpatient health centers must focus on. In addition, problems with medication side-effects, allergic reactions, and secondary infections resulting from antibiotic use are major concerns.

With a goal to practice safe, evidence-based medicine, we are focusing on *Antibiotic Stewardship*. Simply put, *Antibiotic Stewardship is choosing the right antibiotic at the right time at the right dose for the right duration*. The goal is to optimize clinical outcomes while minimizing unintended consequences.

Medical studies from outpatient settings show the following diagnoses are commonly associated with inappropriate antibiotic prescribing: sore throat (pharyngitis), cough illness (frequently called "bronchitis"), sinus congestion (rhinosinusitis), conjunctivitis (pink eye), and the common cold (upper respiratory infections). Overwhelming medical data show that 90% or more of these illnesses are viral related and will not improve with antibiotics. Antibiotics should only be used when a medical test (like a strep test) or clinical findings (such as pneumonia) clearly supports the need for such medication.

Many patients (and you may be one) have received antibiotics in the past for an illness that would have gotten better on its own without the antibiotic. As a result of this experience, you may believe that you need an antibiotic when you develop a similar illness. It is important to realize that the antibiotic was likely unnecessary and you would have gotten better just as fast without taking it.

We know no one wants to be sick and every one of us wants to get better as fast as possible. Most of these common viral illnesses take anywhere from 5-14 days to run their course and antibiotics will not change that. Self-care (rest, fluids, and over-the-counter medications directed at your symptoms) is all that can be done for these illnesses. At times patients may feel that their medical provider "didn't do anything" for them. It is important to recognize that 1) there may be nothing specific a medical provider can do since these viral illnesses must resolve on their own, and 2) the medical provider is making sure there is not a more serious illness and can provide you with recommendations on how to treat the illness.

The James Madison University Health Center takes pride in practicing evidence-based medicine and is committed to caring for our patients based on best medical practices. This is reflected in our commitment to fight the development of antibiotic resistant bacteria.

Sincerely,
Andrew T. Guertler, MD
Medical Director, University Health Center
James Madison University

Antibiotic Stewardship

• Using results from good medical studies to know when to use an antibiotic.
• Following expert guidelines (Centers for Disease Control and the Infectious Disease Society of America) to determine when an antibiotic should be used.
• Using the right antibiotic at the right time at the right dose for the right duration.
• Working with and educating patients about this important issue.

Problems With Antibiotics

Community Issues

• There is a GLOBAL problem with drug-resistant and multidrug resistant bacteria.
• This is an issue throughout the United States as well as the world.
• The primary cause for this is the inappropriate use of antibiotics.

Individual Concerns

• Allergic reactions or significant side-effects (about 5 in 100).
• Drug-Drug interactions.
• Medical problems caused by an antibiotic – this is unusual but can be fatal.

Do I Need Antibiotics for My Cough?

- About 90% of cough-related illnesses are caused by viruses.
- Antibiotics do not cure viral infections. They will resolve on their own.
- The presence of sputum, either clear or discolored, does not help indicate who may need antibiotics.
- Chest colds lasting more than 3 weeks are unusual and may be a reason for a course of antibiotics.
- We want to identify the cause of the cough to help direct treatment. The following things can cause patients to cough:

Diagnosis	Cause	Treatment
Pneumonia	Bacteria or virus	Antibiotics if bacteria is suspected. (Likelihood of pneumonia is <1% if vital signs AND lung exam are both normal).
Head Cold	Virus	Treat symptoms with over-the-counter medication. Focus on limiting post-nasal drainage.
Chest Cold	Virus	Treat symptoms with over-the-counter medication. Focus on decreasing the cough.
Influenza	Influenza virus	Treat the most bothersome symptoms with over-the-counter medication.
Asthma	Many causes	Albuterol inhaler and sometimes steroids (inhaler or pills).
Allergies	Many causes	Allergy pills and steroid nasal sprays are the most common treatments.

Are My Head Cold Symptoms Being Caused by a Bacterial Infection?

How long have you been sick?

_____ Less than 10 days
_____ 10 days or longer

What are your symptoms?

_____ Pain in my upper teeth
_____ Facial/sinus pain
_____ Green nasal discharge
_____ Decongestants do not help at all
_____ I was getting better then I got worse

Physical signs:

_____ One-side sinus tenderness
_____ Purulent discharge in nose or throat

Total Score:

_____ How many signs and symptoms?

Concerning symptoms or signs:

Persistently high fever (>102 F)
Patient appears severely ill
Swelling and/or redness around an eye
Double vision, eye protrusion, neurologic signs

Probability that you have a bacterial infection

Total Score	Sick less than 10 days*	Sick for 10 or more days
0	1%	5%
1	2%	25%
2	5%	50%
3	15%	75%
4 or more	30%	95%

*The fewer the days of illness, the lower the probability of a bacterial infection

Do I Need Antibiotics For My Sore Throat?

- Most sore throats (85-90%) in the college-aged population are caused by viruses.
- Antibiotics do not cure viral infections.
- We use the following tables to determine if a Rapid Strep Test should be done to determine if you have Strep throat. If the Probability is >15%, a Strep Test is recommended.

Symptoms and Signs		Score
Questions	Age 3-15 years Age 16-44 years Age > 44 years	+1 0 -1
	NO cough	+1
Exam	Temperature >38 C (100.4 F)	+1
	Tender, swollen neck lymph nodes	+1
	Swollen tonsils OR exudate on tonsils	+1
	Total Score	

Score	Probability of Strep Throat	
	Close c.ontact in last 2 weeks or there is an epidemic of strep throat.	
	No	Yes
4+	50%	65%
3	30%	45%
2	15%	25%
1	8%	15%
0	1%	2%

- If a strep test is obtained and is positive, antibiotics are helpful and will be prescribed.
- Viruses can cause very painful throats but usually the symptoms resolve in 5-6 days.
- Infectious mononucleosis is a viral illness that can cause a very sore throat with very swollen tonsils and lymph nodes. This will be discussed if the medical provider thinks that this may be present.

Do I Need Antibiotics For Pink Eye?

Pink eye (conjunctivitis) is inflammation of a thin membrane that covers the white of the eye. This can be caused by infections (viruses or bacteria), allergies, chemicals, contact lens use (especially extended-wear) and a few other rare causes. Bacterial conjunctivitis is less common in patients older than the age of 5. BUT the most common cause of pink eye from infection in college students is viruses. This is why young children will frequently be treated with antibiotic drops and why adults do not need antibiotic drops.

Pink eye will cause eye irritation (like a sandy feeling) but not significant eye pain. Discharge can be watery or thicker with a yellow or green color. Your eyelids may be glued shut in the morning from the discharge.

Medical studies of infectious conjunctivitis have shown the following results:

1) Viral causes are more common in adults especially when the patient has an associated head cold.
2) Yellow or green colored eye discharge does NOT mean the infection is from a bacteria.
3) Viral pink eye will resolve on its own usually within 5 days.
4) Bacterial pink eye will resolve on its own (no antibiotic eye drops) typically within 7 days.
5) Both are contagious and passed along by direct contact so hand washing is a key component to limiting spread.

There are some home and over-the counter remedies you can use to help decrease symptoms.