Antibiotic Stewardship: Targeting Prescribing

February 1, 2019
12:30 p.m. – 1:30 p.m. CT
Upcoming Sessions

- Thursday, February 14th - **Antibiotic Stewardship: Managing Demand** (11:00 a.m. – 12:00 p.m. CT)

- Friday, March 22nd - **Antibiotic Stewardship: Conquering Measurement** (12:30 p.m. – 1:30 p.m. CT)
Your HRET HIIN CDI Team

Lydie Marc, MPH, CHES  
Program Manager  
HRET

Barb DeBaun, RN, MSN, CIC  
Improvement Advisor  
Cynosure

Martha Hayward  
Patient and Family  
Engagement Project Consultant  
AHA/HRET

Paul Cholod, MS  
Data Analyst  
HRET

Steve Tremain, M.D., FACPE  
Physician Improvement Advisor  
Cynosure
Guest Speakers

Casey Driscoll, CPHQ
HIIN Project Director
Montana Hospital Association

Darrell Childress, Pharm. D. BCPS
Antimicrobial Stewardship Pharmacist
East Alabama Medical Center

Roy Caldwell, Pharm. D.
Clinical Pharmacist/Antibiotic
Stewardship Committee Chairman
Vail Health Hospital
AGENDA

- Welcome and Introductions
- Montana Antibiotic Stewardship Collaborative
- Using Antibiotics to Reduce Bacterial Resistance
- Antibiotic Stewardship at the Community Level
- Questions and Answers
- Bring it Home
HRET HIIN CDI Education Strategy

- Antibiotic Stewardship
- Diagnostic Stewardship
- Laboratory Stewardship
Polling Question

We have a state-wide Antibiotic Stewardship Collaborative:
A) Yes, but we are just getting started
B) Yes, and it is high functioning
C) No, but we are thinking this would be a good thing to have
D) No, not a priority currently
Montana Antibiotic Stewardship Collaborative

Casey Driscoll, CPHQ, Montana Hospital Association
Our Story of Success

- **Situation:**
  - In 2017 antibiotic stewardship programs (ASP) became a requirement for Critical Access Hospitals (CAHs)
  - Several programs received funding to support CAHs and other facility types in implementing ASPs
  - Each program had limited funds, resources, and/or expertise

- **Solution:**
  - Five organizations managing eight different programs/funding sources joined to form the Montana Antibiotic Stewardship Collaborative
MT ABS Collaborative – Partners and Programs

- Montana Hospital Association (MHA)
  - HIIN
  - Rural Hospital Flexibility Grant (Flex)
  - STRIVE

- Mountain-Pacific Quality Health
  - Quality Innovation Network – Quality Improvement Organization (QIN-QIO)
  - ICAR/K-1

- Montana Department of Public Health & Human Services (MT DPHHS)
  - Communicable Disease Epidemiology Program
  - Montana Quality Assurance Division (QAD) – Flex

- Montana State University – Montana Office of Rural Health and Area Health Education Center (AHEC)
  - Small Hospital Improvement Program (SHIP)

- University of Montana – Skaggs School of Pharmacy
  - K-1/ELC Program (Funded by MT DPHHS)
MT ABS Collaborative - Mission

- Combine and utilize resources, expertise, skills and staff from the participating programs to create and implement a statewide antibiotic stewardship strategy.

- Focus on aligning and streamlining strategy, services, education and hands-on technical assistance that:
  - Eliminate duplication of effort
  - Reduce costs and burden
  - Deliver efficient, effective and high value-added ABS services to the hospitals and clinics in Montana
Goals and Value-Based Outcomes

Project Goal:

- Implement the seven inpatient and four outpatient Centers for Disease Control and Prevention (CDC) core elements in 85% of the recruited hospitals and clinics by 12/31/18
  - 77% of inpatient facilities have reached goal (as of 11/8/18)
  - 91% of outpatient facilities have reached goal (as of 12/1/18)
Goals and Value-Based Outcomes

Outcome Goal:
- Reduce C. difficile Infection (CDI) rates across MT by 10% by 12/31/2018 (Baseline: 4.88%)
  - FY2018 CDI Rate: 2.78% (MT HIIN data)

Process Goal:
- Establish Days of Therapy (DOT) for antibiotic usage as a standard measure (inpatient) for 75% of hospitals by 12/31/2018
  - 80% of recruited inpatient facilities are using DOT (as of 1/8/18)
Strategies for Sustainability and Action

- Regional Health Improvement Collaborative (RHIC) is in place
- Commitment from all members to continue
- Expansion
  - Expanding existing ABS collaborative to include HAI focus
  - Create additional collaboration around:
    - Opioids
    - Behavioral Health
    - Chronic Disease
Recommended Actions

- Identify existing programs in your region that are focusing on the same topic
- Identify return on investment (ROI) for each/aligned deliverables (make collaboration a win-win)
- Focus on providing value-added services/resources that reduce burden and improve efficiency
- Use data to drive strategy and decisions
- Include strategy, planning and activities that include service delivery and also collaborative/partnership development and team building training
Resources

- **Website**
  - Resources, Education, Implementation Guides, Tools, Contacts

- **Blog**
  - Consistent outreach
Thank You!

Questions? Please contact:
Casey Driscoll, CPHQ
406-457-8045
Casey.Driscoll@mtha.org
Polling Question

Our hospital maintains a current antibiogram:
A) Yes, and it is used to guide prescribing practices
B) Yes, but utilization is not hardwired
C) No, but we sure wish we did
Using Antibiograms to Reduce Bacterial Resistance

Darrell Childress, Pharm.D. BCPS
Antimicrobial Stewardship Pharmacist
East Alabama Medical Center
Opelika, AL
Objectives

1. Describe antibiotic usage at EAMC and the correlation with bacterial resistance.
2. Discuss the use of enhanced antibiograms.
3. Review EAMC resistance trends before and after the institution of an enhanced antibiogram.
East Alabama Medical Center

- 340-bed acute care regional referral center
- Antimicrobial Stewardship Team
  - Infectious Diseases Physician, pharmacists, clinical microbiologists, and infection prevention nurses
- Officially started in 2010
EAMC 2009 Top 10 Antimicrobials

LEVOFLOXACIN 146.84
CEFAZOLIN 92.89
VANCOMYCIN 56.94
CEFTRIAXONE 49.14
PIPERACILLIN/.. 38.77
METRONIDAZOLE 32.31
VANCOMYCIN 32.01
GENTAMICIN 29.13
CLINDAMYCIN 17.32
SULFAMETHOXAZO... 15.81
Levofloxacin Sensitivities for Urine *E. coli*
EAMC’s Antibiogram

- Published yearly according to the Clinical & Laboratory Standards Institute (CLSI) M-39 document.
  - Available in paper and electronic link via EMR
- Stratified data
  - Community and Hospital acquired pathogens
  - Urine and non-urine sources
- Empiric guideline recommendations
  - Based on IDSA guidelines and bacterial resistance data
EAMC’s Antibiogram

### Hospital Acquired

#### Gram-Positive

<table>
<thead>
<tr>
<th>Source</th>
<th>Species</th>
<th>Resistant</th>
<th>Intermediate</th>
<th>Sensitive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sources Except Urine</td>
<td>Staphylococcus aureus</td>
<td>22%</td>
<td>38%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterococcus spp.</td>
<td>42%</td>
<td>35%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pseudomonas aeruginosa</td>
<td>28%</td>
<td>44%</td>
<td>28%</td>
<td></td>
</tr>
</tbody>
</table>

#### Gram-Negative

<table>
<thead>
<tr>
<th>Source</th>
<th>Species</th>
<th>Resistant</th>
<th>Intermediate</th>
<th>Sensitive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sources Except Urine</td>
<td>Escherichia coli</td>
<td>25%</td>
<td>40%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Klebsiella pneumoniae</td>
<td>44%</td>
<td>38%</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterococcus faecalis</td>
<td>35%</td>
<td>25%</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>

#### Urine Isolates Only

<table>
<thead>
<tr>
<th>Source</th>
<th>Species</th>
<th>Resistant</th>
<th>Intermediate</th>
<th>Sensitive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staphylococcus aureus</td>
<td>33%</td>
<td>44%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterococcus spp.</td>
<td>38%</td>
<td>32%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pseudomonas aeruginosa</td>
<td>40%</td>
<td>25%</td>
<td>35%</td>
<td></td>
</tr>
</tbody>
</table>

### Community Acquired

#### Gram-Positive

<table>
<thead>
<tr>
<th>Source</th>
<th>Species</th>
<th>Resistant</th>
<th>Intermediate</th>
<th>Sensitive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sources Except Urine</td>
<td>Staphylococcus aureus</td>
<td>28%</td>
<td>35%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterococcus spp.</td>
<td>40%</td>
<td>35%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pseudomonas aeruginosa</td>
<td>25%</td>
<td>35%</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>

#### Gram-Negative

<table>
<thead>
<tr>
<th>Source</th>
<th>Species</th>
<th>Resistant</th>
<th>Intermediate</th>
<th>Sensitive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sources Except Urine</td>
<td>Escherichia coli</td>
<td>25%</td>
<td>40%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Klebsiella pneumoniae</td>
<td>44%</td>
<td>38%</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterococcus faecalis</td>
<td>35%</td>
<td>25%</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>

#### Urine Isolates Only

<table>
<thead>
<tr>
<th>Source</th>
<th>Species</th>
<th>Resistant</th>
<th>Intermediate</th>
<th>Sensitive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staphylococcus aureus</td>
<td>33%</td>
<td>44%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterococcus spp.</td>
<td>38%</td>
<td>32%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pseudomonas aeruginosa</td>
<td>40%</td>
<td>25%</td>
<td>35%</td>
<td></td>
</tr>
</tbody>
</table>

### MDRO Rates

For Antibiotic Questions

Contact Darrel Childress

PharmD BCP, at Extension 3419 or email darrel.childress@eams.org

American Hospital Association

Advancing Health in America
## Empiric Treatment Guide

<table>
<thead>
<tr>
<th>INFECTION TYPE</th>
<th>PATHOGENS</th>
<th>EMPIRIC TREATMENT</th>
<th>ALTERNATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESPIRATORY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP/VAP*</td>
<td><strong>MRSA/MSSA</strong></td>
<td><strong>Vancomycin</strong> (Pharmacy to Dose)</td>
<td><strong>Penicillin Allergy:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>P. aeruginosa</strong></td>
<td><strong>Zosyn 4.5 gm IV Q8hrs</strong> (4 hr infusions)</td>
<td><strong>Vancomycin (Pharmacy to Dose)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>K. pneumoniae</strong></td>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td><strong>S. pneumoniae</strong></td>
<td><strong>Tobramycin (Pharmacy to Dose)</strong></td>
<td><strong>Tobramycin (Pharmacy to Dose)</strong></td>
</tr>
<tr>
<td><strong>CAP</strong></td>
<td><strong>MRSA/MSSA</strong></td>
<td><strong>ICU Two Drug Regimen:</strong></td>
<td><strong>Non-ICU:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>S. pneumoniae</strong></td>
<td><strong>Levaquin 750 mg IV Q24hrs</strong></td>
<td><strong>Zithromax 500 mg IV Q24hrs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>P. aeruginosa</strong></td>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td><strong>H. influenzae</strong></td>
<td><strong>Rocephin 2 gm IV Q24hrs</strong></td>
<td><strong>Rocephin 1 gm IV Q24hrs</strong></td>
</tr>
<tr>
<td><strong>INTRA-ABDOMINAL</strong></td>
<td><strong>E. Coli</strong></td>
<td><strong>Zosyn 3.375 gm IV Q8hrs</strong> (4 hr infusions)</td>
<td><strong>Maxipime 2 gm IV Q12hrs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>P. mirabilis</strong></td>
<td></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td><strong>P. aeruginosa</strong></td>
<td></td>
<td><strong>Flagyl 500 mg IV Q8hrs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Anaerobes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clostridium difficile</strong></td>
<td></td>
<td><strong>WBC &lt;15,000 or SrCr &lt; 1.5 X Baseline:</strong></td>
<td><strong>WBC ≥15,000 or SrCr ≥1.5 X Baseline:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Vancomycin 250 mg PO/QID</strong></td>
<td><strong>Vancomycin 250 mg PO/QID</strong></td>
</tr>
<tr>
<td>INFECTION TYPE</td>
<td>PATHOGENS</td>
<td>EMPIRIC TREATMENT</td>
<td>ALTERNATIVE</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>INFECTION TYPE</strong></td>
<td></td>
<td><strong>PATHOGENS</strong></td>
<td><strong>EMPIRIC TREATMENT</strong></td>
</tr>
<tr>
<td><strong>PATHOGENS</strong></td>
<td></td>
<td><strong>ALTERNATIVE</strong></td>
<td></td>
</tr>
<tr>
<td>BACTEREMIA*</td>
<td>MRSA/MSSA</td>
<td><strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
<td><strong>Penicillin Allergy:</strong></td>
</tr>
<tr>
<td></td>
<td><em>E. Coli</em></td>
<td><strong>AND</strong></td>
<td><strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
</tr>
<tr>
<td></td>
<td><em>K. pneumoniae</em></td>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td><em>S. pneumoniae</em></td>
<td><strong>Zosyn 3.375 gm IV Q8hrs</strong> <em>(4 hr infusions)</em></td>
<td><strong>Azactam 2 gm IV Q8hrs</strong></td>
</tr>
<tr>
<td>CELLULITIS</td>
<td>MRSA/MSSA</td>
<td><strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Group A Streptococcus</em></td>
<td><strong>AND</strong></td>
<td></td>
</tr>
<tr>
<td>DIABETIC FOOT INFECTION*</td>
<td>MRSA/MSSA</td>
<td><strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
<td><strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
</tr>
<tr>
<td></td>
<td><em>Group B Streptococcus</em></td>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td><em>K. pneumoniae</em></td>
<td><strong>Zosyn 3.375 gm IV Q8hrs</strong> <em>(4 hr infusions)</em></td>
<td><strong>Unasyn 3 gm IV Q6 hrs</strong></td>
</tr>
<tr>
<td></td>
<td><em>E. Coli</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>P. aeruginosa</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MENINGITIS</td>
<td><em>S. pneumoniae</em></td>
<td><strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
<td><strong>CSF Shunts:</strong> <strong>Vancomycin</strong> <em>(Pharmacy to Dose)</em></td>
</tr>
<tr>
<td></td>
<td><em>N. meningitidis</em></td>
<td><strong>AND</strong></td>
<td><strong>AND</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rocephin 2 gm IV Q12hrs</strong></td>
<td><strong>Merrem 2 gm IV Q8hrs</strong></td>
</tr>
<tr>
<td>URINE</td>
<td><em>E. Coli</em></td>
<td><strong>Rocephin 1 gm IV Q24hrs</strong></td>
<td><strong>Gentamicin</strong> <em>(Pharmacy to Dose)</em></td>
</tr>
<tr>
<td></td>
<td><em>K. pneumoniae</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>P. mirabilis</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Certain infections may warrant use of broad spectrum antibiotics (Carbapenem, etc.)
Levofloxacin Sensitivities for Urine *E. coli*
Antimicrobial Stewardship

- After the implementation of EAMC’s enhanced antibiogram
  - Levofloxacin usage decreased 59%
  - *E. coli* urine sensitivities increased 27%
- Clinical and empiric pathways via local culture data can increase the impact of antimicrobial stewardship
Thank You!

Darrell Childress, Pharm.D. BCPS
Antimicrobial Stewardship Pharmacist
East Alabama Medical Center

darrell.childress@eamc.org
Polling Question

My hospital's antibiotic stewardship program is:
A) Focused solely on antibiotics prescribed in the hospital
B) Expanded to include community-based settings such as clinics or primary care offices
C) We don't have a program in place (yet)
Antibiotic Stewardship at the Community Level

Roy Cardwell PharmD
Clinical Pharmacist/Antibiotic Stewardship Chairman
Vail Health Hospital
Stewardship at Vail Health (Vail, CO)

- Vail Health is a small community hospital (56 bed)
  - Three external urgent care/emergent care locations

- Vail Health Clinics include:
  - Shaw Cancer Center
  - Endocrinology
  - Cardiology
  - Plastic/reconstructive surgery
  - Internal Medicine
  - Howard Head Physical Therapy
One Year Retrospective Audit of Vancomycin Protocol

- Previous protocol represents prescriber dosing of vancomycin (2013-2016)
- Desired first trough is 10-20 mg/dL
  - More invasive infections (i.e. deep-seated SSTI, PNA, CNS, etc.) goal is 15-20 mg/dL
  - Loading doses were not routinely used

- Initial Trough Concentrations
One Year Retrospective Audit of Vancomycin Protocol (cont.)

- Moved to pharmacist managed protocol (2016-2018)
- Desired first trough was 10-20 mg/dL (15-20 mg/dL for invasive infections)
  - Loading doses (25-30 mg/kg) utilized for more invasive infections
  - Improved first trough > from approx. 44% - approx. 77%
Improving UTI Treatment at Vail Health

- **Study duration 2015-2017**
- **Pre-study treatment duration:** 11 days
- **Goals:**
  - Decrease total duration from 11 days to 3-5 days for acute uncomplicated UTI
  - Decreased use of FQ for the treatment of UTIs
- **Interventions:**
  - Education of providers through guideline implementation and order sets
  - Prospective audit and feedback from the pharmacy department
- **Results:**
  - Decreased average treatment duration to 4 days (still some outliers)
  - Decreased FQ use from 65% - 38%
- **Room for improvement:** Urgent Care average treatment duration = 6 days
Practitioner Education

Welcome to the VHH Bugs and Drugs Website

**Stewardship news**

GRAND ROUNDS presented by Ray Cardwell PharmD and Erin Johnson PharmD

entitled

Antimicrobial Stewardship: How did we get here, and where are we headed? (click link below)

Antimicrobial Stewardship grand rounds.pptx

**Quarterly Newsletters**

- VVMC Fall 2013 Bugs and Drugs Newsletter.docx
- VVMC Winter 2016 Bugs and Drugs Newsletter.docx
- VVMC Spring 2016 Antibiotic Stewardship Newsletter.docx
- VVMC Summer 2016 Antibiotic Stewardship Newsletter.docx
- VVMC Fall 2016 Antibiotic Stewardship Newsletter.docx
- VVMC Winter 2017 Antibiotic Stewardship Newsletter.docx
- VVMC SPRING 2017 Antibiotic Stewardship Newsletter.docx
- VVMC SUMMER 2017 Antibiotic Stewardship Newsletter.docx
- VVMC Fall 2017 Antibiotic Stewardship Newsletter.docx

**Antibiograms**

- VHH antibiogram 2017.pdf
- antibiogram 2017.xlsx
- antibiogram 2018.xlsx

**Prescribing Guidance**

- Antimicrobial Guidebook.docx
  - Management of Adults Hospitalized with Skin and Soft Tissue Infection (SSTI).docx
  - Management of Adults Hospitalized with Urinary Tract Infection.pptx
  - Recommended Treatment Duration of Common Infections.pdf

**Please contact a member of the stewardship team or the inpatient pharmacy for a pocket-sized guidebook for prescribing.**
Outpatient Provider Education

- Report urgent care prescribing statistics Quarterly
- Prescribing is further broken down based on diagnosis
  - Urgent care medical director sits on stewardship committee
- Distributed “guidebook” to largest primary care group (not part of VHH)

<table>
<thead>
<tr>
<th>Prescriber</th>
<th>Appropriate antibiotics prescribed for indication (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK NP</td>
<td>81</td>
</tr>
<tr>
<td>EP PA-C</td>
<td>68</td>
</tr>
<tr>
<td>PL NP</td>
<td>71</td>
</tr>
<tr>
<td>NR NP</td>
<td>78</td>
</tr>
<tr>
<td>HB PA-C</td>
<td>88</td>
</tr>
<tr>
<td>IC NP</td>
<td>66</td>
</tr>
</tbody>
</table>

VHH Antimicrobial Guidebook

- Easy reference to improve antimicrobial stewardship
- Located on the VHH intranet homepage
- Contact a member of the stewardship team for a pocket reference (x7284)
Ongoing Community Education

- Ad appears on 20 interconnected TVs throughout Vail Health
- Includes waiting rooms in the hospital, cancer center, physical therapy offices, and urgent cares.

Antibiotic resistance has become one of the largest health threats worldwide. Antibiotic resistance affects at least 2 million people in the United States each year.

(970) 479-7253 | vailhealth.org

Facts to help you be Antibiotic Aware:
- Antibiotics aren’t always the answer
- Antibiotics do not work on viruses
- Antibiotics only treat bacterial infections
- Take antibiotics exactly as prescribed
- Antibiotics save lives when prescribed appropriately
- Antibiotic use is the number one modifiable risk factor for antibiotic resistance

(970) 479-7253 | vailhealth.org

Vail Health is committed to improving the prescription process by healthcare professionals to preserve antibiotics for future generations.

(970) 479-7253 | vailhealth.org
Community Education (cont.)

- Newspaper and Vail Health Magazine
  - Magazine is distributed throughout Eagle Valley, to grocery stores and physician offices for waiting rooms
“It’s a good thing I was only mildly curious!”
Thank You!

Questions? Please contact:

Roy Cardwell PharmD
970-479-7284
cardwell@vailhealth.org
Questions?
Upcoming Sessions

- Thursday, February 14th - Antibiotic Stewardship: Managing Demand (11:00 a.m. – 12:00 p.m. CT)

- Friday, March 22nd - Antibiotic Stewardship: Conquering Measurement (12:30 p.m. – 1:30 p.m. CT)
HRET Resources

http://www.hret-hiin.org/topics/clostridium-difficile-infection.shtml