ANTIBIOTIC STEWARDSHIP

National and International Imperative

James M. Keegan, MD
Aly Howard, Pharm.D.
Angela Jackley – SD Department of Health
Brandon Cruise – Data Analytics, Regional Health
Personal History

- Born in Kingsport, Tennessee
- Education
  - Emory University, Atlanta, Georgia
  - United States Air Force Major Ellsworth AFB South Dakota
    - Commendation: Meritorious Service
    - Chief of Medical Staff
- Infectious Disease Fellowship, U of Vermont
Personal History

- 1986-1990: Clinical Practice of Infectious Disease with Fred Kerns, MD, Charleston WV
- 1990-2005: Clinical Practice Infectious Disease
- 1990-Present: Medical Director of Infection Control, Rapid City Regional Hospital and Regional Health (Western SD)
- 2001-Present: Medical Director Antibiotic Stewardship, Rapid City Regional Hospital
Personal History

- 2005-2013: Administrative leadership in Regional Health
  - Vice President Quality
  - Chief Medical Officer
  - Chief Executive Officer of Regional Health Physicians
  - 1 of 5 senior executive team members
- 2013-James M. Keegan MD LLC
- 2014-onewest Healthcare Consulting LLC
- Principals/members:
  - Stacey Schaefer, MHA, BSOT
  - Randee Mason, RN, BSN, CPHQ
  - Matthew Long, BS, CEO Spearfish Surgical Hospital and Multispecialty Clinics
Antibiotic Stewardship

- THE ZOO IN YOU
Pharmacist learning objectives

- Identify the significant risks associated with antibiotic use.
- Describe benefits of collaborative opportunities with antibiotic stewardship programs.
- Evaluate the patient safety aspects of appropriate antibiotic pharmacotherapy.
- Explain how enhanced diagnostics are being utilized to decrease antibiotic use.
- Identify the core elements for successful antibiotic use.
- Identify potential pharmacy contributions in implementation and cost saving strategies of an antibiotic stewardship program in a rural community.
Pharmacy Technician learning objectives

- Identify key microbes and antibiotics that are associated with antibiotic resistance.
- Describe important patient safety aspects of appropriate antibiotic use.
- Identify potential pharmacy contributions in implementation and cost saving strategies of an antibiotic stewardship program in a rural community.
Antibiotic Stewardship

- “...resistance to antibiotics has become a major threat to public health.” - World Health Organization
Antibiotic Stewardship

- Letter from Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA) to Centers for Medicare & Medicaid Services (CMS) recommending antibiotic stewardship as a condition for participation
Antibiotic Stewardship

“Unnecessary [antibiotic] use contributes to emergence of antimicrobial drug-resistant bacteria, an emerging public health crisis that contributes to greater rates of illness and death and economic costs as high as $4 billion per year” - CDC Journal Emerging Infectious Disease
Antibiotic Stewardship

“Antibiotic prescribing in hospitals is inconsistent and often inappropriate—contributing to the emergence of antibiotic resistance, according to an analysis of hospital antibiotic prescribing by the US Centers for Disease Control (CDC).”
Antibiotic Stewardship

“At community hospitals, one of three patients with bloodstream infections receives inappropriate, empiric antimicrobial therapy...” - Duke University
Antibiotic Stewardship

- “Patients getting powerful antibiotics to treat a broad range of infections are up to three times more likely to get another infection from an even more resistant microbe.” - Thomas Frieden, CDC
Western South Dakota
## Antibiotic Stewardship

### RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Peak</th>
<th>Current</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSA</td>
<td>15%</td>
<td>50%</td>
<td>38%</td>
<td>60-70%</td>
</tr>
<tr>
<td>S. Pneumo</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>5-10%</td>
</tr>
<tr>
<td>CRE</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Rising</td>
</tr>
<tr>
<td>Clostridium difficile</td>
<td>1/10-1/2 Nat. Ave</td>
<td>Same</td>
<td>Same</td>
<td>Nat. Ave.</td>
</tr>
<tr>
<td>NAP 1</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>Present in most states</td>
</tr>
</tbody>
</table>
Antibiotic Stewardship

- **Patient Care Example:**
  - MRSA sepsis twice the mortality rate of sensitive staph sepsis
Antibiotic Stewardship

- Rapid City Regional Hospital (RCRH)
  - 417 Licensed beds
  - Ernst & Young $1 million antibiotic annual cost savings
## Antibiotic Stewardship

<table>
<thead>
<tr>
<th>Location/Type of Facility</th>
<th>Number of Beds</th>
<th>Cost Savings/Reductions</th>
<th>AS Team Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe, Louisiana Community Hospital</td>
<td>120</td>
<td>$177,000/ 1 Year</td>
<td>ID Specialist, Clinical Pharmacist</td>
</tr>
<tr>
<td>Dallas, Texas LTAC Hospital</td>
<td>60</td>
<td>$159,580/ 15 Months</td>
<td>ID Specialist, Director of Pharmacy</td>
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<tr>
<td>Dorchester, Massachusetts Community Teaching Hospital</td>
<td>159</td>
<td>$200,000-250,000/ 1 Year</td>
<td>ID Specialist, ID-trained Pharmacist</td>
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<tr>
<td>Baltimore, MD Large tertiary care, teaching medical center</td>
<td>800</td>
<td>$2,949,705/ 3 Years</td>
<td>ID Specialist, Clinical Pharmacist</td>
</tr>
<tr>
<td>Winston-Salem, NC Academic Medical Center</td>
<td>880</td>
<td>$920,070 to $2,064,441 per year over 11 years</td>
<td>2 ID Specialists, 3 Clinical Pharmacists</td>
</tr>
</tbody>
</table>
CDC Recommended Core Elements for Successful Antibiotic Use

- Leadership Commitment
- Accountability
- Drug Expertise
- Active Oversight
- Tracking
- Reporting
- Ongoing education
Antibiotic Stewardship

- Innovative Patient Safety Opportunity?
  YES!

- onewest Healthcare Consulting
Name two global organizations that have formalized highly-resistant bacteria as a priority:  ______  ______

Is your body’s natural bacterial flora beneficial for overall health? (T/F)

Can the rise of highly-resistant bacteria be reversed? (T/F)
Antibiotic Stewardship

Thank you for your time and attention