Engaging Stakeholders: The Houston Perspective

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• This is an 88 year-old male admitted for right sided chest pain and fever.
• Patient has known CAD, at fib
• History RHD-s/p AVR and pacemaker insertion
• T-101°, P-100 irreg, BP 90/50
  – Decreased breath sounds on right
  – Grade 2/6 SEM
  – Abd benign
  – Ext-trace edema, no rash
  – Neuro intact
• WBC 18,500, LA 3.2, creat 1.1
• Imaging-next slide
• Patient was seen by a consultant and started on vancomycin, cefepime, and metronidazole
• Day 2 patient underwent a VAT
• Pleural fluid gram stain many WBCs, few gram-positive cocci in pairs, and gram-negative rods
• Culture: *Peptostreptococcus, Fusobacterium*, and *Provetella*
• After 1 week patient transferred to a step down unit. Consultant recommends continue current antimicrobial therapy for a total of 6 weeks.
• On transfer you are asked to evaluate current plan.
Objectives

• Introduction
• Analyze the current state of antimicrobial stewardship within Harris county
• Describe the characteristics of the facilities with stewardship programs
• Stakeholder engagement
• Changing physician behavior
• Key elements for successful antimicrobial stewardship
“Microbes are educated to resist penicillin and a host of penicillin-fast organisms is bred out... In such cases the thoughtless person playing with penicillin is morally responsible for the death of the man who finally succumbs to infection with the penicillin-resistant organism. I hope this evil can be averted.”

When and Who Said this?
### Power of Antibiotics

<table>
<thead>
<tr>
<th>Disease</th>
<th>Pre-Antibiotic Death Rate</th>
<th>Death With Antibiotics</th>
<th>Change in Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Pneumonia¹</td>
<td>~35%</td>
<td>~10%</td>
<td>-25%</td>
</tr>
<tr>
<td>Hospital Pneumonia²</td>
<td>~60%</td>
<td>~30%</td>
<td>-30%</td>
</tr>
<tr>
<td>Heart Infection³</td>
<td>~100%</td>
<td>~25%</td>
<td>-75%</td>
</tr>
<tr>
<td>Brain Infection⁴</td>
<td>&gt;80%</td>
<td>&lt;20%</td>
<td>-60%</td>
</tr>
<tr>
<td>Skin Infection⁵</td>
<td>11%</td>
<td>&lt;0.5%</td>
<td>-10%</td>
</tr>
</tbody>
</table>

*By comparison...treatment of heart attacks with aspirin or clot busting drugs⁶*

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Policy Statement on Antimicrobial Stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS)

“antimicrobial stewardship and other efforts to limit the emergence and transmission of antimicrobial resistance must be viewed as the fiduciary responsibility of all healthcare institutions across the continuum of care.”
Goals of Antimicrobial Stewardship Programs

- Optimize Patient Safety
- Reduce Resistance
- Decrease or Control Costs
Costs of Antimicrobials

Clinical cure vs Therapeutic failure

Impact on hospital/outpatient/society

- Allergy
- Resistance
- Adverse events
Why We Need to Improve Antibiotic Use

• Antibiotics are misused and overused across the continuum of care
• Antibiotic misuse adversely impacts patients and society
• Antibiotics are the only drug where use in one patient can impact the effectiveness in another.
• Improving antibiotic use improves patient outcomes and saves money
• Improving antibiotic use is a public health imperative
Unnecessary Use of Antimicrobials in Hospitalized Patients

• Prospective observational study in ICU
• 576 (30%) of 1941 antimicrobial days of therapy deemed unnecessary

Most Common Reasons for Unnecessary Days of Therapy

- Duration of Therapy Longer than Necessary: 192 days
- Noninfectious or Nonbacterial Syndrome: 187 days
- Treatment of Colonization or Contamination: 94 days

## Common Outpatient Clinical Syndromes and Overtreatment

<table>
<thead>
<tr>
<th>Condition</th>
<th>% bacterial</th>
<th>Overtreatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>pneumonia</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>acute bronchitis</td>
<td>&lt;&lt; 5 %</td>
<td>70%</td>
</tr>
<tr>
<td>rhino-sinusitis</td>
<td>&lt;&lt;5 %</td>
<td>95%</td>
</tr>
<tr>
<td>UTI</td>
<td>100%</td>
<td>70% in elderly</td>
</tr>
<tr>
<td>cellulitis</td>
<td>100%</td>
<td>30%</td>
</tr>
</tbody>
</table>
The Perfect Storm
Antimicrobial Resistance
Trends in Antimicrobial Resistance

- MRSA
- VRE
- Group 2 carbapenem-resistant *Pseudomonas aeruginosa*
- Group 2 carbapenem-resistant *Acinetobacter spp.*
- Azole-resistant *Candida spp.*

Antibiotic Development

Total # New Antibacterial Agents

'83-'87 16
'88-'92 14
'93-'97 10
'98-'02 8
'03-'07 6
'08-'12 1
Infectious Disease Mortality in the United States During the 20th Century

US deaths declined by ~ 220 per 100,000 in 15 years

Is this the post antibiotic era?

Other medical technologies reduced deaths by ~ 20 per 100,000 over the next 45 years

Stop the killing of beneficial bacteria

Concerns about antibiotics focus on bacterial resistance — but permanent changes to our protective flora could have more serious consequences, says Martin Blaser.

*Nature* 2011;476:393

**Collateral Damage**

- Average child receives 10-20 courses of antibiotics before age 18
- Antibiotics affect our resident microbiota and may not fully recover after a course of antibiotics
- Overuse of antibiotics may be contributing to obesity, DM, IBD, allergies, and asthma
WHO Report 2014

- All regions are experiencing resistance to carbapenems
- Resistance to FQ common
- Third-generation ceph ineffective to treat GC in multiple countries including US
- Key measures such as tracking and monitoring are inadequate and more needs to be done in improving appropriate antibiotic use, infection prevention, handwashing, and vaccinations
• $20 billion in excess direct healthcare costs
• costs to society for lost productivity as high as $35 billion a year (2008 dollars)
• The use of antibiotics is the single most important factor leading to antibiotic resistance
• ↑ C. difficile infections
Four Core Actions

- Preventing infections and preventing the spread of resistance
- Tracking resistant bacteria
- Improving the use of today’s antibiotics (antimicrobial stewardship)
- Promoting the development of new antibiotics and developing new diagnostic tests for resistant bacteria
Stewardship in Community Hospitals

Clin Infect Dis 2011; 53:S8
Hospital Antimicrobial Stewardship in the Nonuniversity Setting

Kavita K. Trivedi, MD\textsuperscript{a,*}, Kristi Kuper, PharmD, BCPS\textsuperscript{b}

KEYWORDS

- Antimicrobial stewardship
- Community hospitals
- Small hospitals
- Rural hospitals
- Long-term acute care hospitals

KEY POINTS

- Inappropriate antimicrobial use and antimicrobial resistance are problems that persist across the healthcare continuum.
- Several hospitals with limited infectious diseases resources have found ways to use available personnel to perform antimicrobial stewardship activities, with documented improvements in antimicrobial use and reductions in resistance and cost.
- Specific antimicrobial stewardship strategies are more feasible and effective in settings with limited infectious diseases resources.
Assessment of Antimicrobial Stewardship Activities in a Large Metropolitan Area

David M. Jacobs, PharmD, BCPS[^1^,^2^], Kristi Kuper, PharmD[^3^], Edward Septimus, MD[^4^], Raouf Arafat, MD, MPH[^5^], and Kevin W. Garey, PharmD, MS[^6^]
Survey Characteristics

82 Hospital / LTAC Pharmacists Contacted

Phone Survey
No. (%) Respondents
51 (62.2%)

Phone Survey
No. (%) Non-respondents
31 (37.8%)

Online Survey
No. (%) Respondents
22 (43.1%)

Online Survey
No. (%) Non-respondents
29 (56.9%)
1. Does your healthcare facility have antimicrobial stewardship program (ASP)?
2. Has it been approved by the Medical Staff?
3. Do you have a Physician champion involved in your ASP?
4. Do you have a clinical pharmacist involved in your ASP?
5. Which of the following are you using to monitor the use of antimicrobials?
6. Is there a current antibiogram available for your facility?
7. What do you need to improve your stewardship capabilities?
Number of Healthcare Facilities with an Antimicrobial Stewardship Program

- Yes, 28 (55%)
- No, 19 (37%)
- Within 12 months, 4 (8%)
Acute Care Hospital vs. Long Term Acute Care

Long Term Acute Care / Rehab
- ASP Program: 8
- ASP w/in 12 Months: 2
- No ASP Program: 6

Acute Care Hospital
- ASP Program: 20
- ASP w/in 12 Months: 2
- No ASP Program: 13
Antimicrobial Stewardship Programs within Acute Hospitals

Community Hospital
- 13 ASP Program
- 1 ASP w/in 12 Months
- 1 No ASP Program

Academic Medical Center
- 6 ASP Program
- 1 ASP w/in 12 Months
- 1 No ASP Program
Antimicrobial Stewardship Programs within Acute Hospitals based on Average Daily Census

- **≤100**: 10 ASP Program, 2 ASP w/in 12 Months, 6 No ASP Program
- **101-300**: 3 ASP Program, 2 ASP w/in 12 Months, 8 No ASP Program
- **301-500**: 3 ASP Program, 3 No ASP Program
- **≥500**: 3 ASP Program, 3 No ASP Program
Physician Information Regarding the Antimicrobial Stewardship Programs

- Physician Champion: 20 Yes, 8 No
- Infectious Disease Specialty: 20 Yes, 2 No
- Physician Compensation for ASP: 14 Yes, 8 No
Pharmacist Information Regarding the Antimicrobial Stewardship Programs

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical PharmD Involved in ASP</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>PharmD Post Graduate Training</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Antibiogram</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>
Strategies within the Antimicrobial Stewardship Programs

- Education
- Dose Optimization
- IV to PO
- Guidelines
- Streamlining

- LTAC (n=1)
- No Medical Training (n=3)
- Medical Training (n=5)
Conclusions

• 63% of all facility respondents have or will have an antimicrobial stewardship program
  – 8/12 (67%) of LTACH respondents have an ASP
  – Epicenter of ASPs is the Texas Medical Center

• Facilities (<100 beds) are the institutions more likely to NOT have a formal stewardship program

• Core and supplemental strategies are being accomplished without a formal program

• Survey does not indicate how effective current programs are
Engaging the Staff in the Work: Building the Team

- Champion(s)
- Supporters (stakeholders)
- Leadership
Antimicrobial Stewardship Team

Multidisciplinary Team Approach to Optimizing Clinical Outcomes*

Hospital Epidemiologist

Infectious Diseases

Director, Quality

Chairman, P&T Committee

Infection Prevention

Medical Information Systems

Microbiology Laboratory

Clinical Pharmacy Specialists

Decentralized Pharmacy Specialist

Hospital and Nurse Administration

AMP Directors

- Cl. Pharmacist
- Physician Champion

Partners in Optimizing Antimicrobial Use such as ED, hospitalists, intensivists and surgeons

*based on local resources

Modified: Dellit et al. CID 2007;44:159-177.
Stakeholders To Do List
Directors of Pharmacy

• Identify ASP Pharmacist lead
• Work with facility leadership to redistribute pharmacy resources to ASP work as appropriate based on local needs and gap analysis
• Establish staff development plan to elevate staff competence
  – Competency- Pharmacy
  – External (MAD-ID and SIDP)
• Establish **partnership** with Physician Champion
• Complete Gap Assessment for Medication Management Sections
• Collect, report and track assigned program metrics monthly
Role of Infection Prevention

- Timely communication to team when MDROs are identified
- Prevention of MDRO in health care facilities
- Monitor trends in antimicrobial resistance
- Educate team about NHSN definitions of HAIs
- Collaborate with microbiology, pharmacy, medical staff, and administration to plan and implement effective interventions
Microbiology Competency Items

- Specimen Collection and Testing
- Identification and susceptibility testing for clinically significant pathogens
- Basic, confirmatory and specialized resistance testing methods
- Use of CLSI standards
- Cumulative antibiograms
- Timely notification of MDRO findings
- Recognize new patterns of resistance and save isolates for confirmation
Physician To Do List

• Stewardship is every physician's responsibility
• Select physician champion
• Develop an effective antimicrobial stewardship team
• Education the medical staff and administration about the urgency and value of an effective antimicrobial stewardship team
• Program must be approved by the Physician Executive Committee
• Comply with infection prevention especially hand hygiene
• Assure that microbiology is aware of how to detect new resistance mechanisms (e.g. CREs, NDM1) and new CLSI break points
Physician Champion

- Basic knowledge of antibiotics*
- Must show interest in taking a leadership role in the local community
- Respected by his or her peers
- Good interpersonal skills
- Good team player
- Practicing physician if possible
- Basic understanding of human factors and culture transformation

*Does not need to be an infectious disease specialist.
What can the individual physician do?

• Obtain appropriate cultures before starting antibiotics
• Review antibiotic use in past 48-72 hours – can we de-escalate? or
• Stop antibiotic in patients with alternative noninfectious diagnosis
• Optimize dosing and duration of antibiotic therapy
• Avoid unnecessary use, especially viral URIs (75%)*

*Must implement across the continuum of care community wide
Challenges

- Literature may not be clear for some infectious diseases
- Everyone thinks they know how to use antibiotics
- Providers perceive autonomy is lost
- Medico legal implications of responsibility for patients
- Difficulty proving impact of program (Ønational measures or benchmarking)
- Financial pressures dictating decisions
  - Pharmaceutical manufacturers
  - Hospitals
  - Insurance companies
  - Patients
Common Misconceptions

- If ID consultant approves or uses an antibiotic, it must be appropriate
- Retrospective data collection and analysis can result in change in behavior
- The adoption of IT will automatically make data collection, analysis and change in behavior easy
- Restricting certain antibiotics will reduce antibiotic misuse and overuse
Physician Barriers

- Physician accountability and acceptance of need for improvement
- Misperceptions
- Misalignment of incentives
- Lack of definition of appropriate use of antimicrobial agents
- Lack of standardized, risk-adjusted measures
- Adaptive/behavioral changes needed to change prescribing practices
(Mis)Perception of the Problem

• Numerous survey studies find that clinicians perceive antimicrobial overuse is a problem generally, but not locally\(^1,2\)
• Other medical specialties responsible for overuse\(^3\)
• Antimicrobial resistance is a macro problem but of limited concern at the bedside (local level)
  – Resistance is a “theoretical” \(^4\) or “intellectual” \(^5\) concern, not a practical one

3. Szymczak et al. ICHE 2014:35
Some Stakeholders Do Not Align

- Pharmacy director, physician, and hospital goals should align on patient safety and efficacy of treatments
- However, they approach that mutual goal from different points of view

A Collaborative Approach to Treatment Algorithms and Align Stakeholders’ Goals
• A) Antibiotics are withheld. The patient develops sepsis, shock, and requires transfer to the ICU

• B) Antibiotics are given. The patient does well (no infection identified), but develops a rash, and C. difficile infection
Much antibiotic use is based on fear of missing a diagnosis

- Fear factors:
  - missing an infection (80%)\(^1\)
  - criticism by peers
  - patient complaints
  - law suits

- Only 13% of doctors feel they overprescribe\(^1\)

- Fear of C. difficile is low
  - Only 30\(^1\)

\(^1\) Abbo L, et al. ICHE 2011;32;714-8

Physicians’ attitudes about antibiotic use.
Current Challenges

What is not happening reliably?

- Review of prior culture results / antibiograms
- Antibiotic restraint
  - Double coverage
  - Treatment of asymptomatic bacteriuria
  - Treatment of colonizing/contaminating organisms
  - Treatment of noninfectious fever
- Re-consideration of the diagnosis
- Narrowing coverage at 48-72 hours
- Treating for an appropriate duration
Driving Inappropriate Use

De-escalation Barriers

• All cultures are negative and….
• “The patient improved on all 3 antibiotics, so they need all 3”
• The patient does not improve
• Patients being treated for more than 1 possible infection
  – Pneumonia and UTI
  – CLABSI and UTI
Changing Prescriber Behavior

- Engagement of senior physician leadership (clinical and administrative) is critical
- Address stewardship message to the clinical leadership within existing clinical groups (rather than just the trainees or the ID doctors)
- ID should not be excluded from stewardship process
- Understand local culture and patient population
Antimicrobial Stewardship and Behavior Change

• Antimicrobial stewardship (AS) aims to optimize use of antimicrobials to improve patient outcomes and reduce collateral damage

• AS interventions use different strategies (both persuasive and restrictive) to change the prescribing behaviors of frontline clinicians
  – Passive education-limited impact
  – Audit and Feedback-
    • with and without real-time “academic detailing”
  – Restricted Formularies
  – Prior Approval
Reassessment of IV Antibiotic therapy Using a Reminder of Direct Counseling

• Before and after study to evaluate support to clinicians to de-escalate-perspective audit and feedback

• 3 strategies were implemented over 3 consecutive 8-week periods
  – Conventional management by attending physician (control group)
  – Distribution of a questionnaire to physician (questionnaire group)
  – Distribution of questionnaire followed by advise from an ID physician (Q-IDP)-”academic detailing”

*J Antimicrob Chemother* 2010; 65:789
YOUR PATIENT HAS BEEN RECEIVING AN INTRAVENOUS ANTIBIOTIC THERAPY FOR 72 HOURS

At this point in time, you should consider adapting the therapy based on your clinical observations and results of cultures available on Mediweb. Possible modifications include:

1) modification of antibiotic therapy by targeting the documented pathogen,
2) and/or switch to oral therapy,
3) or discontinuation of an empirical treatment no longer necessary

Inappropriate use of antibiotics contributes to therapeutic failures, emergence of bacterial resistance and avoidable drug reactions. Intravenous treatment may expose your patient to specific complications such as thrombophlebitis or bacteremia.

Please answer the following questions and leave the completed questionnaire in the medical chart of your patient (it will be collected tomorrow):

1. At the time you are reading this message the antibiotic therapy:
   A. □ Has been interrupted or will be interrupted in the following 24 hours
   B. □ Will be continued

If your answer is B:

2. Give the reason for continuing the antibiotic therapy:
   A. □ Prophylaxis
   B. □ Treatment of a documented infection
   C. □ Empirical treatment

3. Will you consider one of the modifications mentioned below in the following 24 hours?
   A. □ Switching to oral therapy
   B. □ De-escalating therapy to target the documented pathogen
   C. □ Decreasing the planned duration of therapy
Reassessment of IV Antibiotic therapy Using a Reminder of Direct Counseling-Results

- At day 4: 49% and 55% of prescriptions were modified in the control group and the questionnaire group respectively ($P=0.35$)
- In contrast more prescriptions (66%) were modified in Q-IDP group compared to controls ($P=0.004$)
- Stopping therapy in absence of bacterial infection occurred significantly more often in Q-IDP group than control ($P=0.0001$) or questionnaire group ($P=0.002$)
Understanding the Determinants of Antimicrobial Prescribing Within Hospitals: The Role of “Prescribing Etiquette”

- Qualitative semi-structured interviews with doctors, pharmacists, nurses/midwives in 4 teaching hospitals (n=39)
- Three themes related to prescribing etiquette:
  
  **Decision-making autonomy**
  
  – Senior doctors make whatever decisions they want and no one questions it
  – One doctor does not want to interfere with another doctor’s decision

_Clin Infect Dis. 2013; 57:188_
Durability of Benefits of an Outpatient Antimicrobial Stewardship Intervention After Discontinuation of Audit and Feedback

Figure. Standardized Rates of Broad-Spectrum Antibiotic Prescribing Before, During, and After Audit and Feedback

JAMA Published online October 10, 2014
Contextual and Environmental Factors

• Time pressures
  – Pressure to discharge quickly discourages a “watch and wait” approach\(^1\)
  – Practice volume and throughput pressures discourage adequate communication with patients

• Ease of accessing diagnostic testing systems and acting on results \(^2\)
  – Diagnostic uncertainty is a key driver for drug use and overuse\(^3\)

2. May et al. ICHE 2014:35
Lessons Learned for Successful Stewardship

• Although ASP interventions have had limited success at some facilities, we can do better
  – Direct (passive) educational approaches generally do not result in sustained reductions in prescribing \(^1\)
  – Restrictive policies can be circumvented
    • “Stealth dosing” \(^2\)
    • Misrepresenting clinical information \(^3,4\)
  – Audits can be “gamed” \(^5\)

• To bring about lasting change, clinicians need to hard wire new culture about what is considered prudent antimicrobial prescribing\(^6\)

1. Arnold et al. Cochrane Database of Systematic Reviews 2005:4
2. LaRosa et al. ICHE 2007:28
4. Linkin et al. ICHE 2007:28
5. Szymczak et al. ICHE 2014:35
Lessons Learned for Successful Stewardship continued

Prescribing drivers

– Lack of conclusive microbiology
– Diagnostic uncertainty
– Insecurity
Lessons Learned for Successful Stewardship (ASP) continued

• When developing any quality improvement intervention, we need to understand attitudes, motivation and intentions of those whose behavior we wish to change\(^1\) and the local social/environmental context\(^2\)

• Despite evidence to suggest the importance of social and behavioral factors, this is frequently overlooked in design and implementation of AS interventions\(^3\)

1. Pronovost BMJ 2011:20
Elements of Safer Care

• Must contain all three
  – Summarize and simplify what to do (KISS)
  – Measure and feedback on outcomes
  – Improve culture by building expectations of performance standards into work processes

• Need appreciation of how or why components work

*Lancet* 2009;374:444-5
How Will We Get There?

Technical Work

Evidence-based interventions

Adaptive Work

Local culture
Why does Culture Matter?

• Safety culture influences the effectiveness of other safety and quality interventions
  – Can enhance or inhibit effects of other interventions

• Safety culture can change through intervention
  – Best evidence so far for culture interventions that use multiple components (e.g.: CUSP, Positive Deviance)

### How Will We Get There?

<table>
<thead>
<tr>
<th>TECHNICAL WORK</th>
<th>ADAPTIVE WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work that we know we <em>should do</em>: Right diagnosis, right drug, right dose, right duration, and right de-escalation</td>
<td>The intangible components of work, like ensuring team members speak up with concerns and hold each other accountable</td>
</tr>
<tr>
<td>Work that lends itself to standardization (e.g., measurement, audit and feedback, EBOS/CPOE, CDS, clinical pathways)</td>
<td>Work that shapes the <strong>attitudes, beliefs, and values</strong> of clinicians, so they consistently perform tasks the way they know they <em>should</em></td>
</tr>
<tr>
<td>Build an effective antimicrobial stewardship team Accountability</td>
<td></td>
</tr>
<tr>
<td>Evidence-based treatment</td>
<td>Local culture</td>
</tr>
</tbody>
</table>
Summary

• Changing prescriber behavior is a key factor in improving antibiotic use in the long term
  – Need to evolve from top down stewardship approach to a bottom up approach
• But, changing behavior is hard and the solution most likely multi-factorial  
  Shapiro Clin Ther 2002:24
  – More emphasis on shorter duration and de-escalation given expanding evidence base
• Enhancing comfort level with new rapid microbiology approaches-results must be actionable and add value
• Ongoing benchmarking and feedback at institutional and provider level
  – Need to engage senior leadership
  – Need to engage physician leadership-must be physician directed
The Outlier (Outlaw) Physician

• Usually feel they have the best interests of their patients
• “My patients are special”
• Tend to be insecure in clinical judgment
• Usually are outliers in more than one aspect of their care
• Tend to show widespread over-utilization in all facets of patient care

Source: My observations and interviews
The Approach to the Problem
Prescriber

• Carefully plan your approach:
  – Pick your battles
  – Timing is important
  – Want home field advantage
  – Avoid heat of the moment confrontations (generate light not heat)

• Do your homework
  – Gather as much data as possible
    • DUE: Service and physician specific for several drugs
    • Interview Clinical PharmDs, and discretely other MDs
    • Discuss with CMO
  – Understand the MDs Practice and Patient Population
  – Look into the MDs own professional literature
The Insecure Problem Prescriber

– CME for the prescriber and cohort practice
– Establish or implement evidence based guidelines and protocols
– Hand-holding—may want to suggest more consults and stay “signed on” longer
– Assign a mentor
– Reason and bargain/negotiate
Antibiotic Treatment in Hospitals Checklist

1. **Leadership commitment:** Dedicate necessary human, financial, and IT resources
2. **Accountability:** Appoint a single leader responsible for program outcomes-this is usually a physician
3. **Drug expertise:** Appoint a single pharmacist leader to support improved prescribing
4. **Act:** Take at least one prescribing improvement action, such as “antibiotic timeout”
5. **Track:** Monitor prescribing and antibiotic resistance patterns
6. **Report:** Regularly report to staff prescribing and resistance patterns, and steps to improve
7. **Educate:** Offer education about antibiotic resistance and improving prescribing practice

MMWR March 2014
Key Elements for Successful AMP

- Establish compelling need and goals for ASP
- Senior leadership support
- Effective local physician champion
- Adequate resources and competencies (pharmacy, infection preventionist [IP], microbiology, information technology [IT])
- Primary objectives: optimize clinical outcomes and reduce adverse events, not reduce costs
- Good teamwork
- Agreed upon process and outcome measures
Hospital Course

- Patient was seen by a consultant and started on vancomycin, cefepime, and metronidazole
- Day 2 patient underwent a VAT
- Pleural fluid gram stain many WBCs, few gram-positive cocci in pairs, and gram-negative rods
- Culture: *Peptostreptococcus, Fusobacterium, and Provetella*
- After 1 week patient transferred to a step down unit. Consultant recommends continue current antimicrobial therapy for a total of 6 weeks.
- On transfer you are asked to evaluate current plan.

**What would you recommend?**
If you want to go Fast, go alone.
If you want to go Far, go together.
We choose to go to the moon in this decade and do other things, not because they are easy, but because they are hard, because the goal will serve to organize and measure the best energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win.