Implementing an Antimicrobial Stewardship Program in a Community Hospital—

A Tale of Two Cities

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Disclosure

- Speaker has nothing to disclose.

Poplar Bluff Regional Medical Center (PBRMC)

- Community (rural), for-profit hospital
- Located in Poplar Bluff, MO (150 miles south southwest of St. Louis)
- Owned by Health Management Associates (Naples, FL)
- Licensed beds-423
- Average census—150-200
- No ID physician on staff

Jefferson Memorial Hospital (JMH)

- Community (suburban), not-for-profit hospital
- Located in Crystal City/Festus, MO
- Licensed beds—226 beds
- Average census—140-175
- Two ID physicians on staff
  - 1—Sees patients
  - 2—Works with antibiotic stewardship—sees few patients

Antibiotic Stewardship at JMH

- Team of health care professionals
  - ID physician (sees few patients)
  - Clinical pharmacist
  - Medical microbiologist
  - Infection control practitioner
- Use of computer system
  - TheraDoc

TheraDoc (JMH)

- TheraDoc—proprietary computer system
  - Interfaces with lab and pharmacy systems
  - Reports out patients with:
    - Positive cultures and no Rx
    - Culture and current Rx do not make sense
    - Rx without corresponding culture

Antibiotic stewardship process (JMH)

- Clinical pharmacist gathers information from TheraDoc
- Reviews charts for further information
- Leaves recommendations for adjustments to therapy
  - IV to po
  - Better selection based on C&S
  - Comments based on response/ADR to therapy

Antibiotic stewardship process (JMH)

- Results of floor activity reviewed with committee weekly
- Results of interventions submitted monthly to hospital administration showing cost-avoidance and other savings from interventions
- MD to be available for back-up with "resistant" MD

Antibiotic stewardship (JMH)

- Positives
  - Interaction with team of healthcare providers for feedback
- Negatives
  - MD on service not well-respected by medical staff
  - Cost of TheraDoc program

Antibiotic stewardship (PBRMC)

- Team of health care professionals
  - 2 clinical pharmacy specialists
  - Neither with ID specialty training
  - NO ID physician
  - All attending community physicians
- No specific computer system

Antibiotic stewardship process (PBRMC)

- Clinical pharmacy specialists receive printout of patients on all antibiotics
- Review each patient by comparing prescribed drugs vs. lab reports of renal function, CBC, and C&S
- Recommendations called to MD (serious) or left as note (lesser)

Antibiotic stewardship process (PBRMC)

- Responsible for all kinetic monitoring
  - Automatic with vancomycin/ aminoglycoside orders
  - All pharmacists participate in dosing (esp. after hours/weekends)
- Look for opportunities for intervention
  - IV-po
  - Better utilization based on C&S
  - Response to therapy/monitoring of ADR

Antibiotic stewardship process (PBRMC)

- Results monitored by:
  - Numbers of interventions
  - Physician satisfaction/compliance
  - Cost per adjusted patient day
    - Reported to medical staff via P&T
    - Reported to HMA Corporate Pharmacy
      - PBRMC rated #1 of 68 hospitals in company

Antibiotic stewardship (PBRMC)

- Positives
  - Huge fall in cost per adjusted patient day
    - Fall from $13/day--$6-7/day
  - Tremendous respect from medical staff
    - Manage ID complications for 2 IM physicians, 1 CV surgeon, 1 general surgeon, and 2 orthopedic surgeons
- Negatives
  - NO ID physician

Example at PBRMC

- Smith 309W March 4
- Dr. Johnson
- Patient currently receiving ceftriaxone for UTI. Culture and sensitivity reveals >10^5 Ecoli sensitive to all drugs tested
- Evidence-based literature reveals increased risk of MRSA infections with overuse of 3rd generation cephalosporins
- May we change to cefazolin 1 gm IV q8h?

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Example at PBRMC

- Call to Dr. Williams
- Patient is receiving ceftriaxone/azithromycin for treatment of pneumonia.
- Culture reveals growth of Ps. aeurginosa. It is sensitive to several drugs including ceftazidime, quinolones, ceftazidime, and piperacillin/tazobactam.
- I would suggest d/c'ing current regimen and starting piperacillin/tazobactam and gentamicin.

What's required?

- Knowledge of ID therapeutics
  - Start with material in Koda-Kimble and DiPiro
  - Also check—Owens R, Ambrose PG, Nightengale CH (eds):Antibiotic Optimization, 2005. Published by Taylor and Francis
- Working relationship with lab
  - To be able to get data for turnaround
  - Data for antibiogram
- Develop rapport with MD's
  - It's all about trust!!
- Need for an expensive computer system
  - Nice, gets data together
  - Is it worth the $$??