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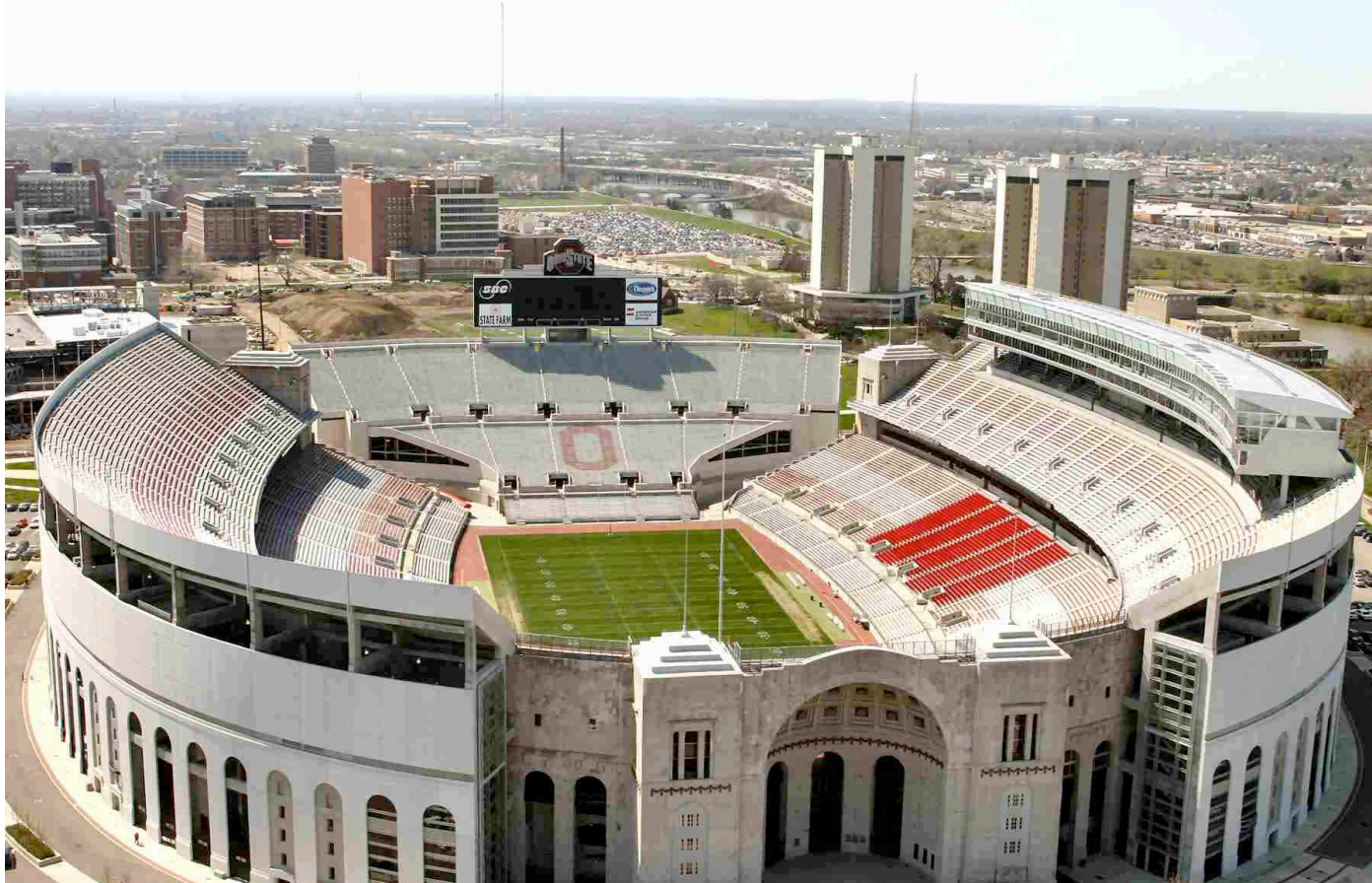




Outline

- Impact of antimicrobial resistance
- Role of antimicrobial stewardship programs
- Media influence
(consumer advocacy groups, newspapers)
- Examples of antimicrobial stewardship
- Centers for Medicare & Medicaid Services (CMS)

The Ohio State University Football Stadium





Impact of Antibacterial Resistance

- Each year an estimated 1.7 million patients in U.S. hospitals acquire an infection resulting in around 100,000 deaths¹
- This results in an additional \$6.5 billion in health care expenditures²
- On October 1, 2008, CMS **limited reimbursement** for hospital-acquired conditions deemed preventable
 - catheter-associated urinary infections
 - vascular catheter-associated infections
 - surgical site infections following:
 - coronary artery bypass graft (CABG): mediastinitis
 - bariatric surgery
 - select orthopedic procedures (spinal, shoulder)



1. Klevens et al. *Public Health Rep.* 2007;122(2):160-166. 2. Stone et al. *Am J Inf Control.* 2005;33(9):542-547.



Health-care Associated Infections

The Cost Impact

Table 1.
Hospital-Acquired Conditions Nonreimbursable Effective October 1, 2008^{37,a}

CMS Ruling Date and Condition	No. Cases ^b	Average Charge (\$) ^c	HAI
Final FY 2008			
Catheter-associated UTI	12,185	44,043	Yes
Vascular catheter-associated infection	29,536	103,027	Yes
Mediastinitis post CABG	69	299,237	Yes
Foreign object retained after surgery	750	63,631	No
Air embolism	57	71,636	No
Blood incompatibility	24	50,455	No
Stage III or IV pressure ulcers	257,412	43,180	No
Falls and trauma	193,566	33,894	No
Final FY 2009			
DVT/PE	149,010	50,937	No
SSIs following select procedures			
Orthopedic ^d	269	148,172	Yes
Bariatric	37	233,614	
Glycemic control ^e			
Diabetic ketoacidosis	11,469	42,974	No
Nonketotic hyperosmolar coma	3,248	35,215	
Hypoglycemic coma	212	36,518	

Table 2.
Examples of the Impact of POA and MS-DRG Changes^a

Variable	Time Period		
	Before Oct. 1, 2008		On or after Oct. 1, 2008
Principal diagnosis	Atrial fibrillation	Atrial fibrillation	Atrial fibrillation
Secondary diagnosis	None	Catheter-associated UTI	Catheter-associated UTI, not POA
Procedure	Temporary pacemaker	Temporary pacemaker	Temporary pacemaker
Medicare DRG ^b	Cardiac arrhythmia without CC	Cardiac arrhythmia without CC	Cardiac arrhythmia without CC
Medicare weight ^b	0.5227	0.8287	0.5227
Average LOS (days)	2.4	3.9	5.4
Reimbursement (\$)	3839	6086	3839

^aOnly to be used as an example. POA = present on admission, MS-DRG = Medicare-severity, diagnosis-related grouping, UTI = urinary tract infection, CC = complication or comorbidity, LOS = length of stay.

^bRefers to the relative cost of treatment for a DRG as compared to the national average.

Ref Kuper K. et al Am J Health-Sys Pharm 2009 66;488-94



6 Top Resistant Pathogens

Infectious Diseases Society of America “Hit List”

- **Gram-negative pathogens**
 - *Pseudomonas aeruginosa*
 - Extended spectrum β -lactamase (ESBL)-producing *Klebsiella pneumoniae*
 - *Acinetobacter* species
- **Gram-positive pathogens**
 - Community-associated methicillin-resistant *Staphylococcus aureus* (MRSA)
 - Penicillin-resistant *Streptococcus pneumoniae* (also resistant to macrolides)
 - Vancomycin-resistant enterococci (VRE)

Infectious Diseases Society of America. <http://www.idsociety.org/Content.aspx?id=3530>.
Talbot GH et al. *Clin Infect Dis*. 2006; 42:657-68.





THE WALL STREET JOURNAL.

WSJ.com

THE INFORMED PATIENT | SEPTEMBER 3, 2008

Curbing Antibiotic Use In War on 'Superbugs'

By LAURA LANDRO

Hospitals are turning to a new breed of antibiotic SWAT team to win the war against "superbugs" -- the bacteria that are outmaneuvering nearly every weapon in the arsenal of drugs long used to fight them.

The efforts, known as antimicrobial stewardship programs, team top pharmacists, infectious-disease specialists and microbiologists. The groups monitor the use of a hospital's antibiotics and restrict prescriptions of specific drugs when they become less effective at fighting infections. The heightened vigilance comes as the federal Medicare program plans to begin refusing to pay hospitals to treat preventable infections that patients contract while under the facilities' care.



THE WALL STREET JOURNAL.

WSJ.com

Hospital Infections: Preventable and Unacceptable

\$2.5 million awarded by a jury in a medical malpractice suit against a heart surgeon. The patient had a pacemaker surgically implanted and developed MRSA. It was so severe that he had 15 operations, spent 84 days in the hospital, and lost his right leg, part of his left foot, a kidney, and most of his hearing.


The medical community can't afford to be complacent.

We have the knowledge to prevent infections.

What is lacking is the will.



McCaughey B. *The Wall Street Journal*. August 14, 2008. <http://online.wsj.com/article/SB121867229022038907.html>.



Tom Brady's Infection Brings More Attention to Staph Epidemic [PR Newswire]

Release Date: 10/24/2008

PR Newswire via NewsEdge :

NFL Champion Quarterback Tom Brady has acquired an infection during knee surgery

Colts add statement to story about Manning's treatment for staph infection

Here is the scary note of today.



New Drugs for Superbugs

Oprah "O" Magazine Oct 2008

It turns out that part of the feedback in Peyton Manning's recovery from his knee injury was a staph infection.

With the controversy over Kellen Winslow's medical problem and with Tom Brady reportedly having multiple procedures to clean out a knee infection,

Last week it was reported that Kenny George, the 7-foot-7 center for UNC-Ashville had part of his foot amputated from a staph infection complication.

Study Finds Spread of Resistant Staph

By THE ASSOCIATED PRESS

Published: April 7, 2005

By The Associated Press

Dangerous drug-resistant staphylococcus infections are showing up at an alarming rate outside hospitals and nursing homes in the United States, researchers are reporting today.

Until recently, these hard-to-treat cases were seen only in hospitals and other health-care settings, where they can spread to patients with open wounds or tubes and cause serious complications. Now doctors are seeing resistant strains among inmates, children and athletes.

Expert: 'We may never get rid of our hospital superbugs'

Herald.ie, August 28, 2008

Hospital bugs like MRSA and C Diff may always be with us, a top consultant microbiologist with Ireland's Health Protection Surveillance Centre has warned. The priority in hospitals around the world is to minimize the incidence of Healthcare-Associated Infections as much as possible, and Fidelma Fitzpatrick, MD, believes hospitals have procedures in place to prevent them. But eventually eliminating MRSA, C Diff, and other infections in hospitals or the community is problematic because "as long as there is healthcare, there will be HCAs," she added.

Methicillin-Resistant *Staphylococcus aureus* Disease in Three Communities

Scott K. Fridkin, M.D.,
Laurie Thomas,
John A. Jernigan, M.D.,
Ruth Lynfield, M.D., and
Surveillance Program

INFECTIOUS DISEASES

Resistant Staph Finds New Niches

Huge, painful boils and abscesses that must be cut open and drained before they can heal: These are the scary symptoms of a major outbreak of a drug-resistant microbe among hundreds of jail inmates and gay men in the United States. A recent surge in cases has epidemiologists scrambling to understand what's going on—and wondering if a well-known pathogen is on the verge of becoming a much bigger problem. Focus on the microbe, methicillin-resistant *Staphylococcus aureus* (MRSA),

people never notice it. But sometimes MRSAs can cause severe skin and soft tissue infections and, when they reach the lungs, pneumonia—with fatal consequences if treatment comes too late. Toxic shock syndrome is another potentially serious result. In contrast to hospital strains, community-acquired MRSA is usually susceptible to a range of antibiotics, making treatment relatively easy once it's diagnosed. MRSA infection is not a reportable disease in the United States, so firm numbers are hard to come by. But

Multidrug-resistant *Acinetobacter baumannii*

Aharon Abbo,* Shiri Navon-Venezia,* Orly Hammer-Muntz,* Tami Krichali,*
Yardena Siegman-Igra,* and Yehuda Carmeli*

June 26, 2007, 12:34 pm

Hospitals Adopt Search and Destroy Tactics for Superbugs

Posted by Jacob Goldstein



In an effort to reverse the spread of drug-resistant bugs, hospitals are starting to aggressively seek out potentially dangerous infections, Theo Francis writes in today's WSJ.

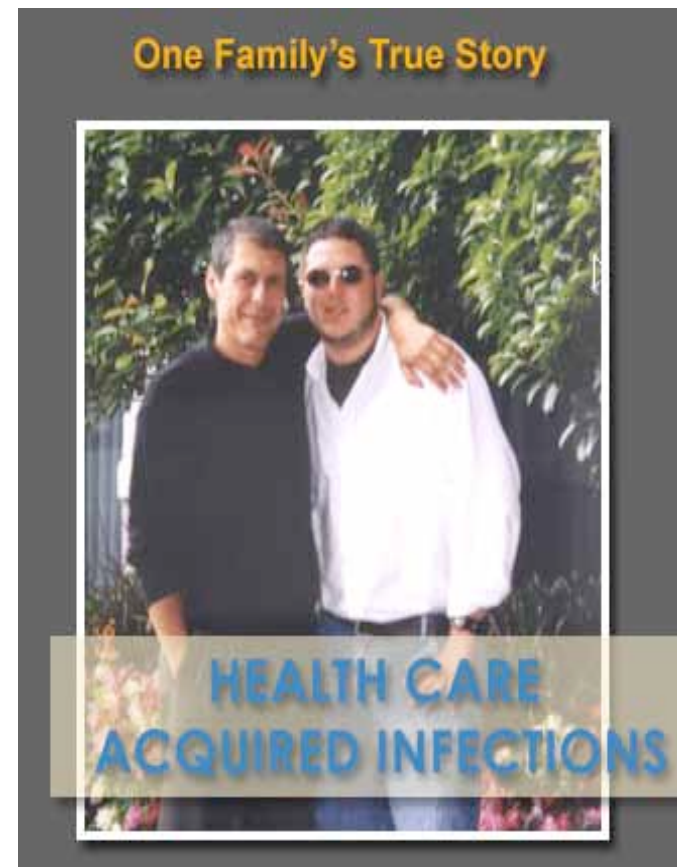
Some hospitals are now testing many patients for methicillin-resistant *Staphylococcus aureus*, or MRSA, even if they show no sign of the infection—a strategy known as active surveillance. (Patients can harbor the bacteria on their skin or in their nose without knowing it.) New technology is helping hospitals test for the bacteria more quickly, and some early adopters say the

added expense of the testing pays off by preventing complications from arising and reducing the spread of the disease.

Consumer Advocates

safecarecampaign.org

- In 1 year
3 family members in
3 different states in
3 different hospitals
had healthcare-
acquired (HCA)
infections
- 1 is recovering
- 1 is well
- 1 is dead



Consumer Advocate Web Site

What are Health Care Acquired Infections?

One Family's True Story

What is MRSA?

Hand Hygiene

Surgical Site Infections

For the Patient

Look for this SYMBOL OF SAFE CARE throughout the **GUIDE** for even more in-depth infection prevention information.

Ventilator-Associated Pneumonia

Urinary Tract Infections

Catheter-Related Bloodstream Infections

C difficile

VRE

Preventing Infections: Prudent use of Antibiotics



The Quick Reference **GUIDE** to Preventing Health Care and Community Acquired Infections

More technical information regarding serious and important life-saving intervention practices is provided below. Discuss these recommended preventions with your medical team prior to surgery if possible.

1. Appropriate Use of Prophylactic Antibiotics

Administer antibiotics within 1 hour before surgical incision* Prophylactic antibiotic consistent with national guidelines. Discontinuation of prophylactic antibiotics within 24 hours after surgery. (Due to the longer infusion time required for vancomycin, it is acceptable to start this antibiotic (e.g., when indicated because of beta-lactam allergy or high prevalence of MRSA) within 2 hours prior to incision.)



SURGICAL SITE INFECTIONS

2. Use Clippers

The use of razors prior to surgery increases the incidence of wound infection when compared to clipping, depilatory use, or no hair removal at all. Clippers are suggested over razors.

3. Maintenance of Postoperative Glucose Control

Stringent glucose control in surgical intensive care unit patients reduces mortality.

4. Maintenance of Postoperative Normothermia

What information is available on your hospital's web site?

Why have Antimicrobial Stewardship?



Antibiotics are unlike any other drugs in that use of the agent in one patient can compromise its efficacy in another.

Anyone can prescribe antibiotics despite a lack of specialized training.

Unlike an antihypertensive agent, which benefits only the patient for whom it is prescribed, antimicrobials can impact countless others.

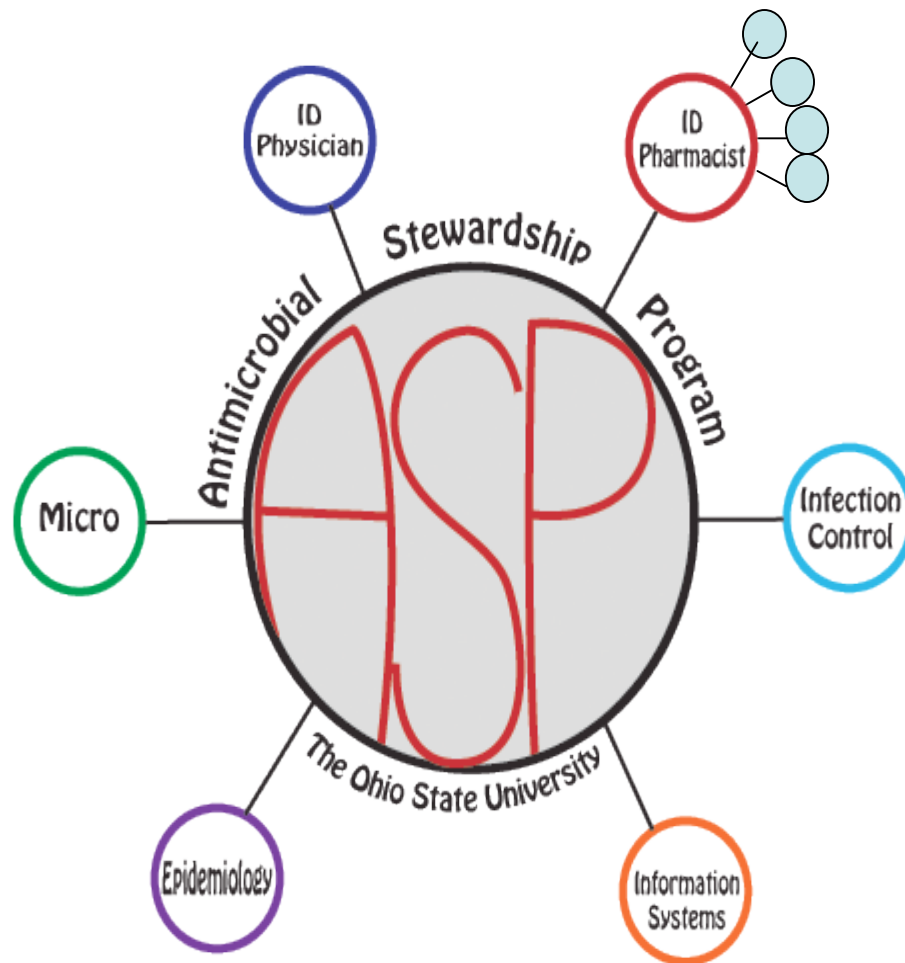
Resistant microorganisms can be spread to patients who have never received an antibiotic.

You can't "catch cancer" from the patient next to you.

You CAN catch MRSA or many other drug-resistant microorganisms!

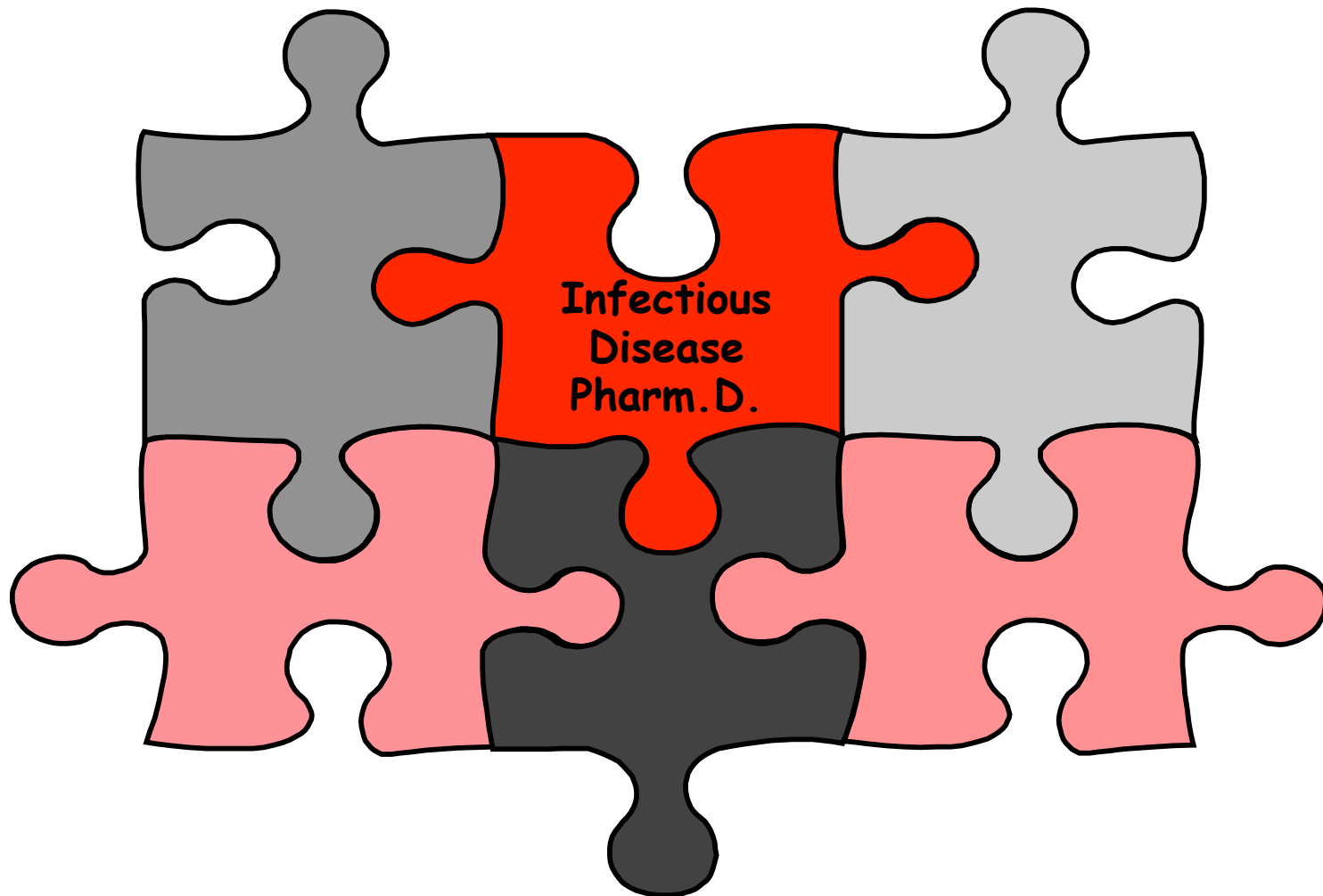


OSU Antimicrobial Stewardship Program





What if your “team” looks like this?





Selling Your Program to Hospital Administration

- Delineate your BATNA*
- Use your own hospital data to build your case
- Prepare for negotiation
- Talk to the medical staff
- Remember they must know and trust the “steward”

*Best alternative to negotiating an agreement

McQuillen DP et al. *Clin Infect Dis*. 2008; 47:1051-63.

Ury W. *Getting past no: negotiating your way past confrontation to cooperation*. New York, NY: Bantam Books; 1991.



NEW PROGRAM TO IMPROVE ANTIBIOTIC USE

Antimicrobial Stewardship Program (ASP)

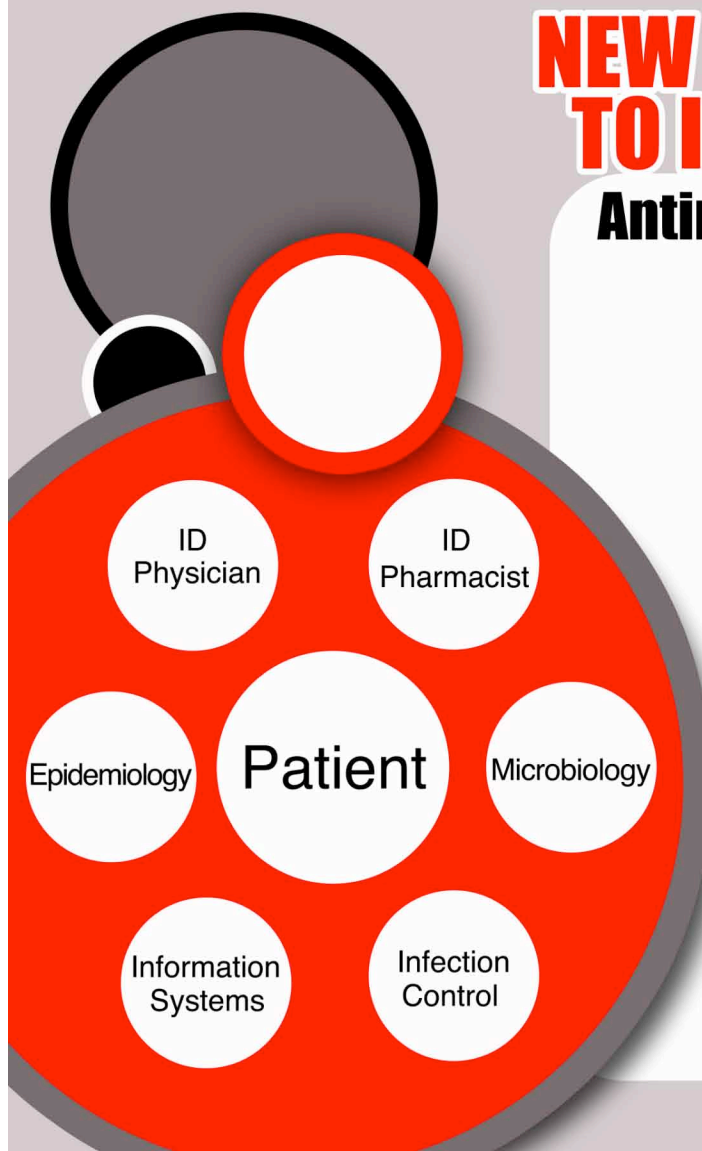
Antibiotic resistance continues to rise.

We are faced with limited antibiotic choices for patients infected with multi-drug resistant organisms.

ASP will provide guidance to clinicians in selecting the most effective antibiotic for the patient's condition.

Changes in the process of prescribing antibiotics and the availability of antibiotics when requested outside of evidence-based criteria are being implemented.

ASP consists of a multidisciplinary team of Infectious Disease physicians, pharmacists, microbiologists, infection control practitioners, and epidemiologist. The team is led by an Infection Disease Physician, Kurt Stevenson MD., MPH and Infectious Disease Pharmacists Debbie Goff PharmD, FCCP., Karri Bauer PharmD., and Jeremy Taylor PharmD., BCPS



Impact of Antibiotic Stewardship Programs

Hospital Size	Team Members	Antimicrobial Cost Outcomes	Drug Resistance & Infectious Outcomes
250 beds	MD, Pharm.D., microbiologist, data analyst	Cost-savings over 18 months \$913,236	Increased cefepime use & decreased 3 rd generation cephalosporin use correlated with decreased resistance
120 beds	MD, pharmacists, infection control specialist, microbiologist	Antibiotic cost/pt-day decreased \$18.21 to \$14.77. Saved \$177,000	Not reported
575 beds	MD, pharmacists	Cost/pt-day decreased \$18.00 to \$14.40	Reduced resistance for several bug-drug pairs
1200 beds	4 ID MDs	Saved \$322,000	Decreased resistance rates
900 beds	MD, Pharm.D., microbiologist	Saved \$1,841,203 over 3 years	Decreased resistance rates

McQuillen DP et al. *Clin Infect Dis*. 2008; 47:1051-63.



Tools to Get Started

- **Practice Guidelines**
IDSA & Society for Healthcare Epidemiology of America publication
Dellit TH et al. *Clin Infect Dis*. 2007; 44:159-77.
Owens RC Jr. *Diagn Microbiol Infect Dis*. 2008; 61:110-28.
Pagani L. *Clin Infect Dis* 2009;48:626-32
- **Knowledge** of Medicare reimbursement as it relates to antimicrobial stewardship
Centers for Medicare & Medicaid Services
Surgical Care Improvement Project
<http://www.cms.hhs.gov>
- Meet the other “**team members**” in your hospital
Learn what they do and how they do it
- A compendium of strategies to prevent healthcare-associated infections in acute care hospitals
Yokoe D. et al. *Infect Control Hosp Epidemiol* 2008;29(suppl 1) S1



What Can the Microbiologist Do?

- **Antibiograms**

unit-specific for ICUs and house-wide

combination antibiograms

Example: *P. aeruginosa* resistant to cefepime

20% amikacin

100% aztreonam

83% ciprofloxacin

39% tobramycin so cefepime + amikacin best combination

- **Diagnostic tests** to help you make better antibiotic decisions

vancomycin MIC for MRSA

rapid (2 hours) Cepheid Xpert MRSA/SA blood testing

Hodge test to detect carbapenemases

- Text message multi-drug resistant (MDR) organisms
- Clonal characterization of resistant strains can help focus appropriate intervention

Dellit TH et al. *Clin Infect Dis.* 2007; 44:159-77.



ASP Team Approach to MRSA

New rapid test to detect *S. aureus* in blood culture

Old
method

Micro performs gram stain
Preliminary results called to
MD

Patients with gram positive
cocci in clusters
Start vancomycin

Definitive cultures results
2 days later
Most just continue on vanco

New
method

Micro performs new test 24/7
Results in 2 hours
called to
MD and PharmD

PharmD calls MD
to discuss ATB

Effective therapy
Or
No therapy



What Do Epidemiology and Infection Control Practitioners Do?



- IC receive daily culture results and list of MDR organisms to identify which patients must be in isolation
- Both monitor post-op infection rates and benchmark them against national data
- Both monitor compliance with surgical prophylaxis guidelines
- Both track patients with *Clostridium difficile* infections (CDI) and identify rates of CDI/10,000 patient-days

Evidence-Based Strategies for

- Bundled approach **CDI**
antimicrobial use, infection control, and proper environmental cleaning
- Curtail use of 3rd generation cephalosporins
- In an effort to ensure that antibiotics were given within 4 hours to meet CMS core measures, many patients received antimicrobials unnecessarily
- Consequently, 50% of patients who received antibiotics for community-acquired pneumonia (CAP) who developed CDI were later found not to have had CAP
- 1/3 died from their CDI



Owens RC Jr et al. *Clin Infect Dis*. 2006; 42(Suppl 4):S173-81.

Polgreen PM et al. *Infect Control Hosp Epidemiol*. 2007; 28:212-4.



Impact of Antibiotic Resistance

Infection and Causative Organism	Increased Risk of Death (OR)	Attributable Length of Stay (days)	Attributable Cost (\$)
MRSA bacteremia	1.9	2.2	6,916
MRSA surgical infection	3.4	2.6	13,901
VRE infection	2.1	6.2	12,766
Resistant <i>Pseudomonas</i> infection	3.0	5.7	11,981
Resistant <i>Enterobacter</i> infection	5.0	9	29,379

Total cost of antimicrobial resistance is estimated to be \$30 billion annually.  Cosgrove SE. *Clin Infect Dis.* 2006; 42(Suppl 2):S82-9.



Extreme Drug Resistance (XDR)

Acinetobacter baumannii

- “Extensive drug resistance” in *M. tuberculosis* was “CNN breaking news”
- XDR *Acinetobacter baumannii* is documented in several U.S. hospitals

Antibiotic	XDR
Imipenem	√
Ampicillin/ sulbactam	√
Piperacillin/ tazobactam	√
Cefepime	√
Ciprofloxacin	√
Amikacin	√
Tigecycline	√
Colistin	√


Paterson DL et al. *Clin Infect Dis*. 2007; 45:1179-81.

Colistin Resistance

- 265 isolates of *Acinetobacter* from 2 Korean hospitals
- Forty-eight isolates (18.1%) and 74 isolates (27.9%) were resistant to polymyxin B and colistin, respectively.

Ko KS et al. *J Antimicrob Chemother.* 2007; 60:1163-7.





Surrogate for Serious Infections Caused by MDR Gram-Negative Bacilli Colistin Use at OSUMC

Year	Cost
2003-2004	\$2,375
2007-2008	\$23,309

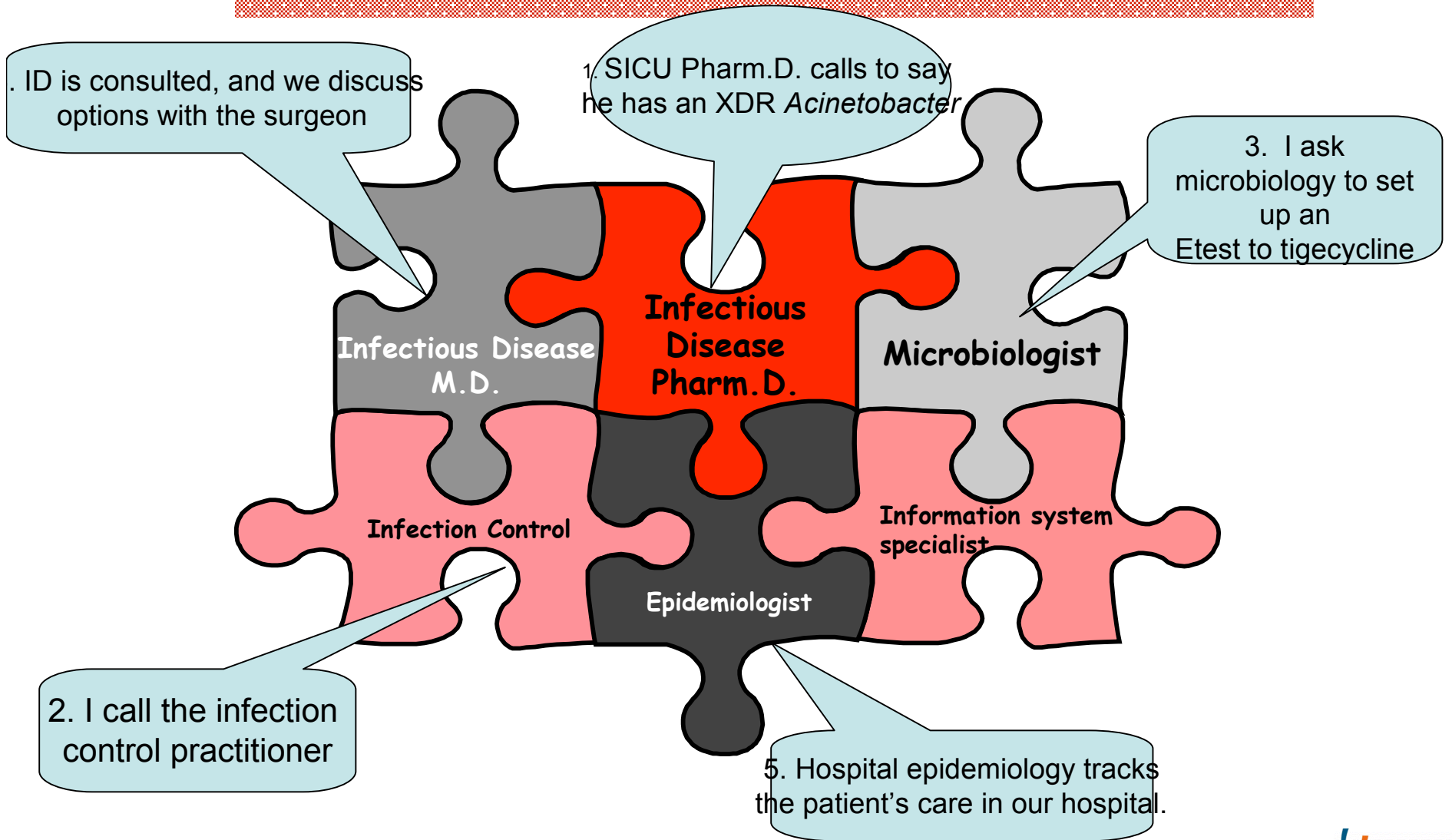
Colistin is only prescribed for MDR organisms when there are no other options.



How does an
antimicrobial
stewardship team
actually work
together?

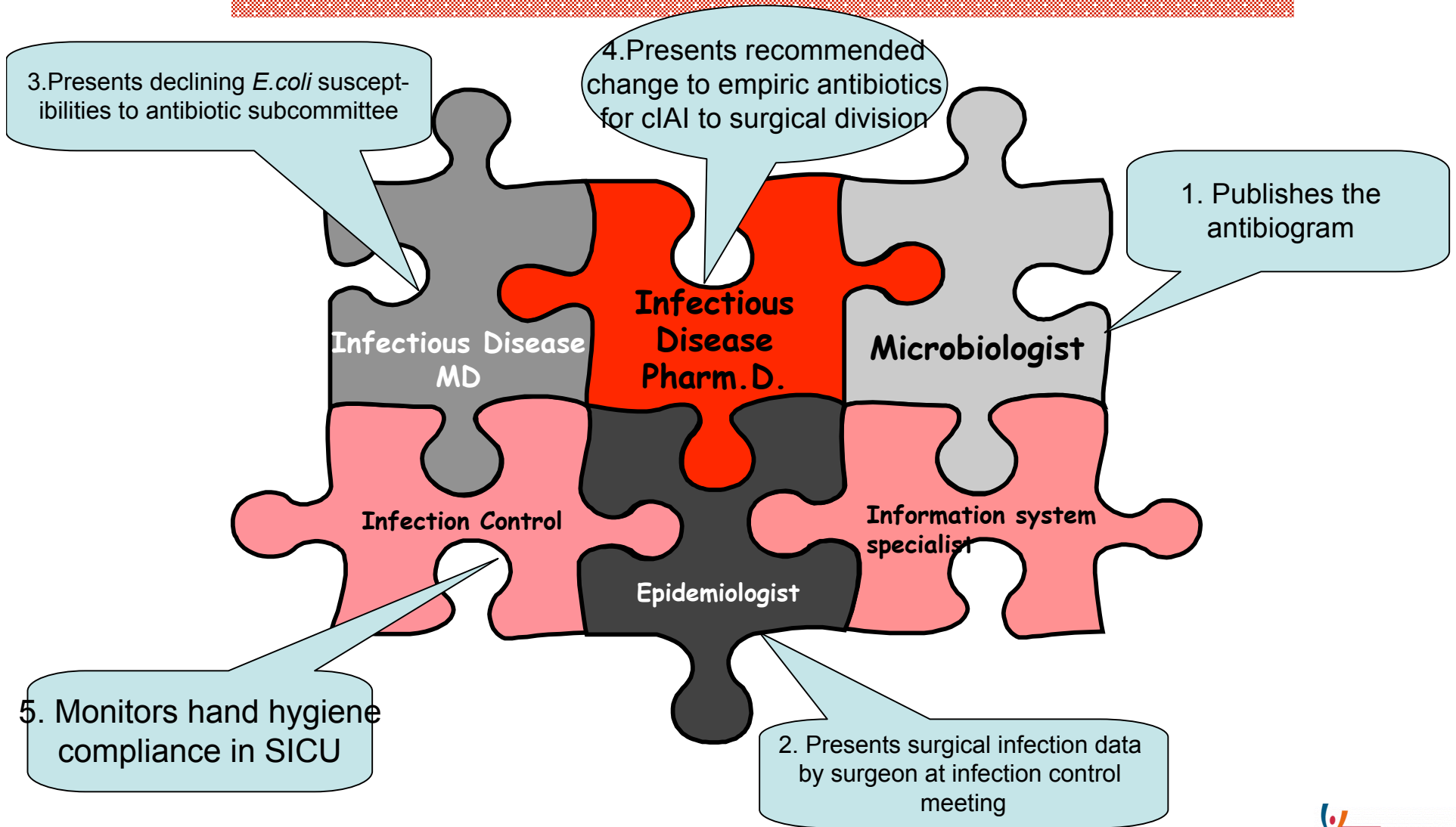


ASP Team Approach to Acinetobacter



Schafer JJ et al. *Pharmacotherapy*. 2007; 27:980-7.

ASP Team Approach to cIA Infections



cIAI = complicated intra-abdominal infection


Complicated Intra-Abdominal Infections Common Pathogens
 “Use local susceptibility data to guide therapy”

Facultative & Aerobic Gram-Negatives	
<i>Escherichia coli</i>	71.3%
<i>Klebsiella</i> spp	14.3%
<i>Pseudomonas aeruginosa</i>	14.1%
<i>Proteus</i> spp	5.2%
<i>Enterobacter</i> spp	5.1%
Other gram-negatives	12.3%
Gram-Positive Organisms	
<i>Streptococcal</i> spp	38.0%
<i>Enterococcus faecalis</i>	11.6%
<i>Enterococcus faecium</i>	3.4%
<i>Enterococcus</i> spp	7.8%
<i>Staphylococcus aureus</i>	3.5%

Anaerobic Organisms	
<i>Bacteroides fragilis</i>	34.5%
Other <i>Bacteroides</i>	71.0%
<i>Clostridia</i> spp	29.2%
<i>Prevotella</i> spp	12.0%
<i>Peptostreptococcus</i> spp	16.7%
<i>Fusobacterium</i> spp	8.6%
<i>Eubacterium</i> spp	16.5%
Others	19.4%

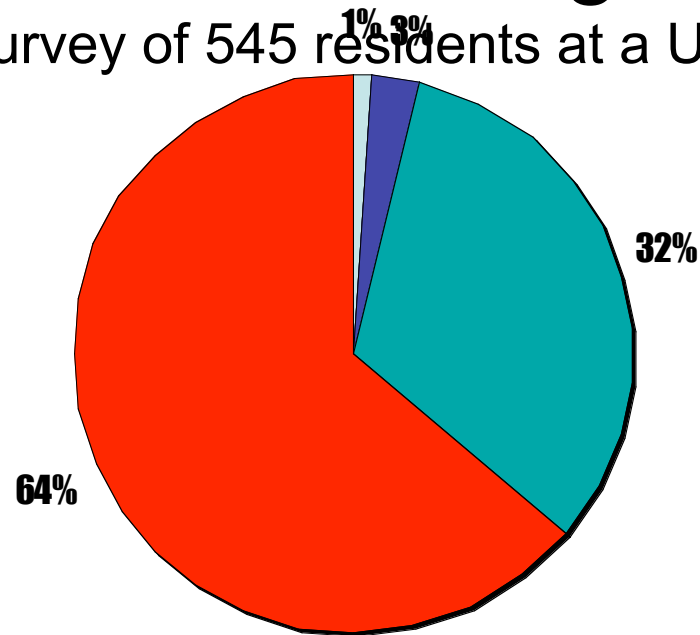
Incidence of various bacteria
 in 702 patients with intra-abdominal
 infections





Do MD's Use Hospital Antibiograms?

Online survey of 545 residents at a University Teaching Hospital



□ always □ frequently □ occasionally □ never



Mermel et al. *Clin Inf Dis.* 2008;46;1789.



OSUMC SICU and Hospital Antibioqram 2007

Organism	Ampicillin/ sulbactam		Ertapenem
	SICU	hospital	SICU hospital
<i>E. coli</i>	42%	45%	100%
<i>E. coli</i> ESBL- producing	0%	0%	100%
<i>K. pneumoniae</i>	75%	78%	100%
<i>K. pneumoniae</i> ESBL- producing	0%	0%	100%
<i>Anaerobes</i>	+	+	+
<i>Enterococcus</i>	+	+	-



Plan of Action

CPOE screen template

- Ampicillin/sulbactam is not an effective empiric option at OSUMC for community-acquired cIAI
- Results presented to the surgical division
- In collaboration with our surgeons and others, we developed CPOE antibiotic ordering screens by disease state
- Each team member contributed different data

Abdomen Non-ICU

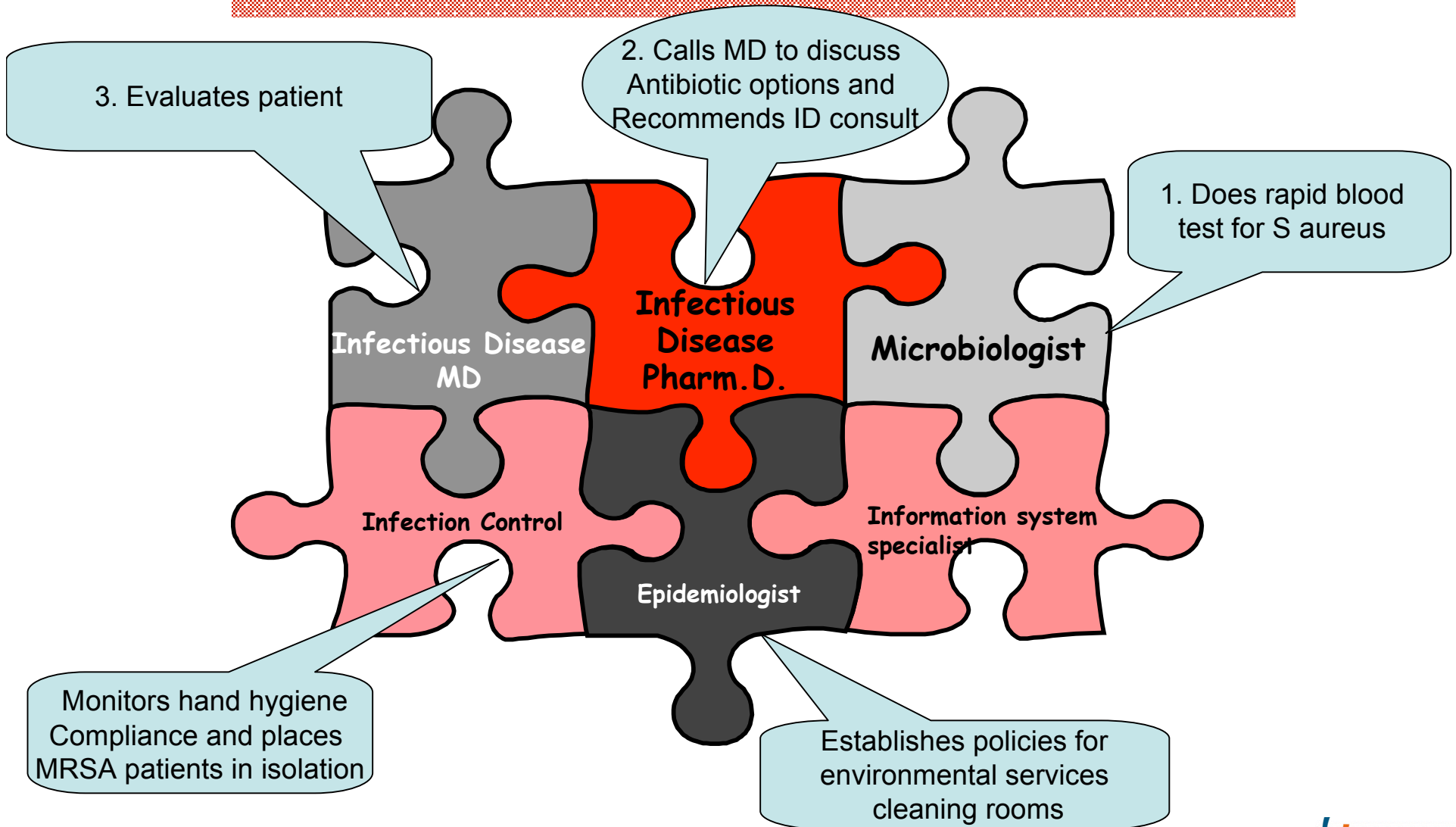
C difficile

Upper GI (esophagus, stomach, proximal small bowel)

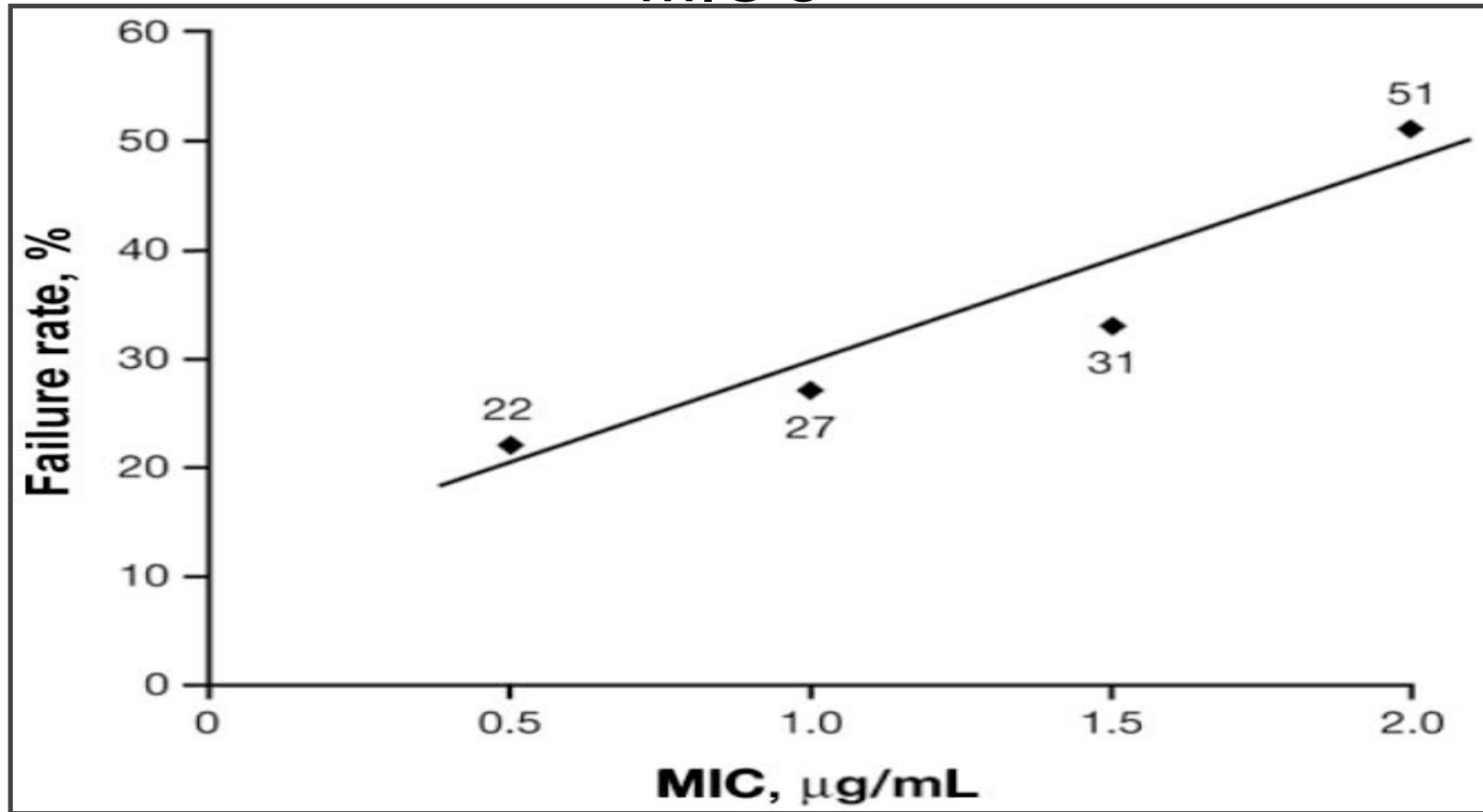
Lower GI (distal small bowel, appendix, colon)

Biliary, cholangitis,

ASP Team Approach to MRSA bacteremia



Vancomycin failure as a function of rising MIC's



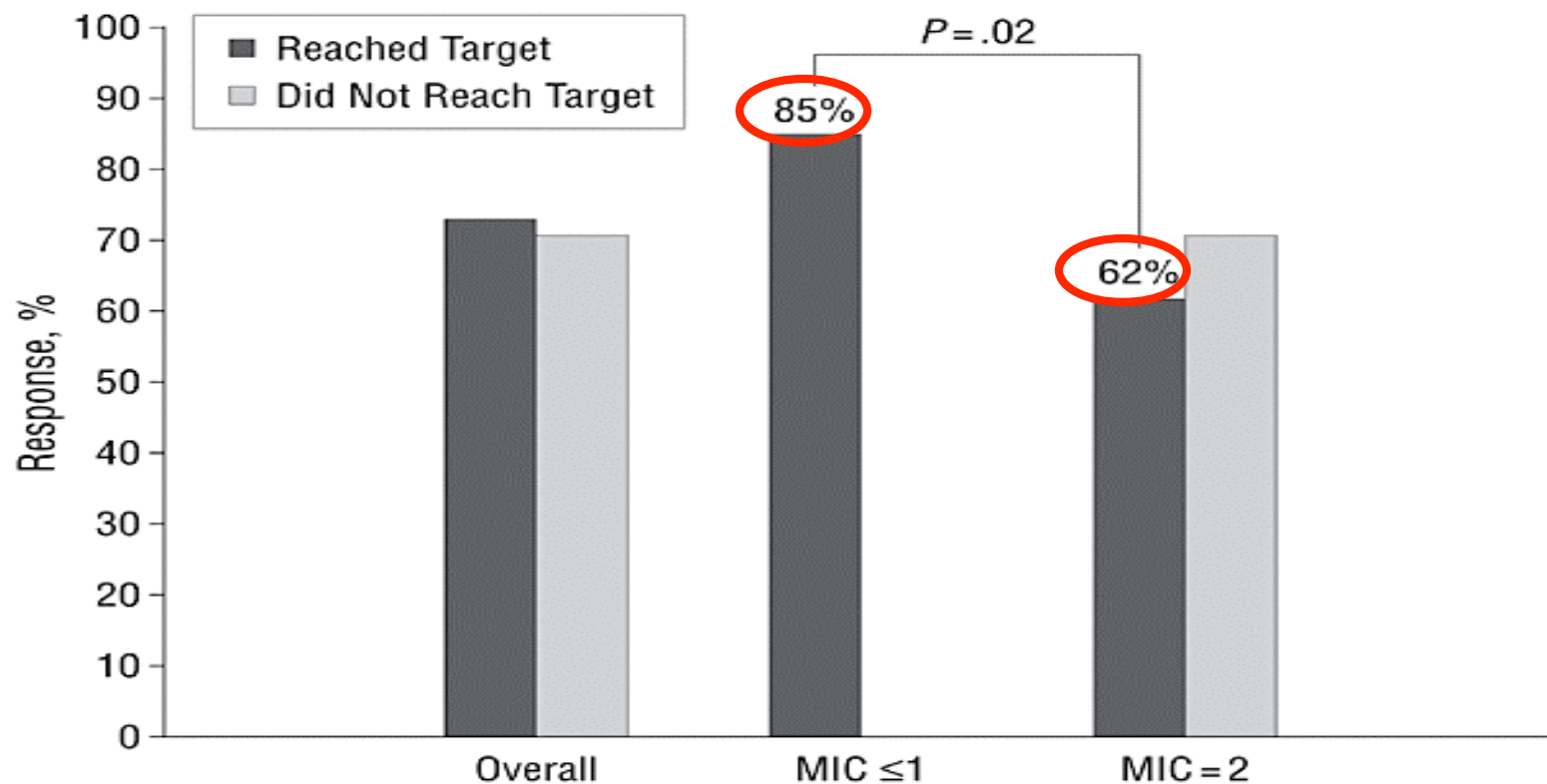
Moise-Broder P. CID 2004;38:1700-5



Does increasing the vanco dose to achieve troughs ≥ 15 increase efficacy or nephrotoxicity?



Efficacy of Target-Based Vancomycin Therapy



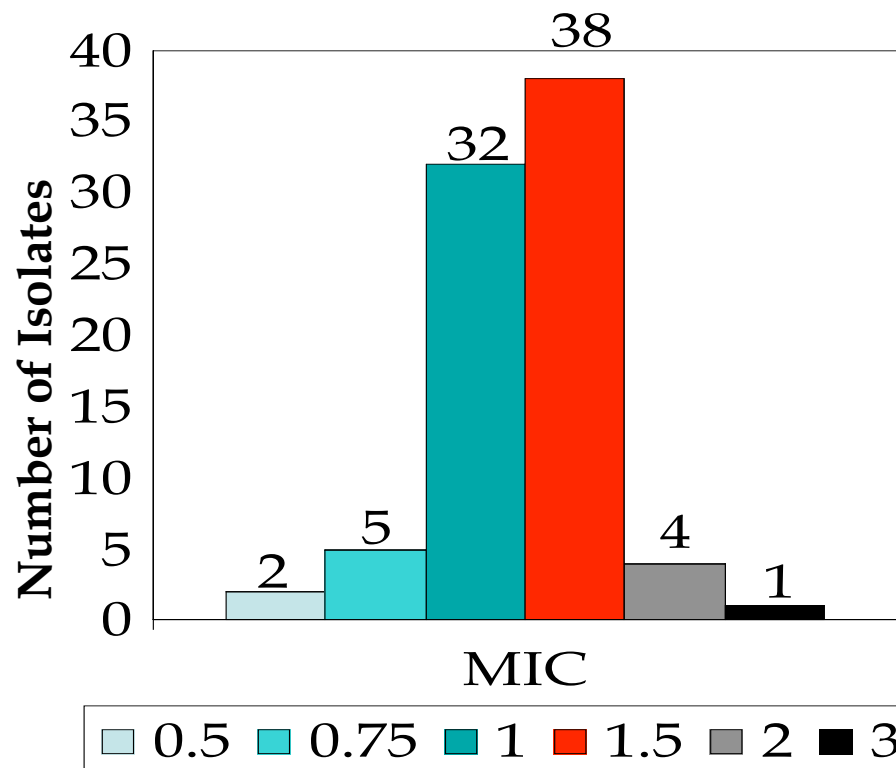
*Initial response rate of 74% was achieved if the target trough was attained regardless of MIC

Safety of Higher Vancomycin Troughs

Characteristic	High Trough (15-20 µg/ml) (n=63)	Low Trough (<15 µg/ml) (n=32)
Mean age, (y)	72.4	72.7
Male (%)	40	44
Nephrotoxicity (%)	12	0
Duration of vancomycin (d)	15	15.3
Concomitant nephrotoxic agents (%)	30	25
Serum creatinine level, mean, mg/dl		
Baseline	1.2	0.9
Peak	1.4	1.0
Discharge	1.1	0.8

OSUMC MRSA blood isolates tested by Etest

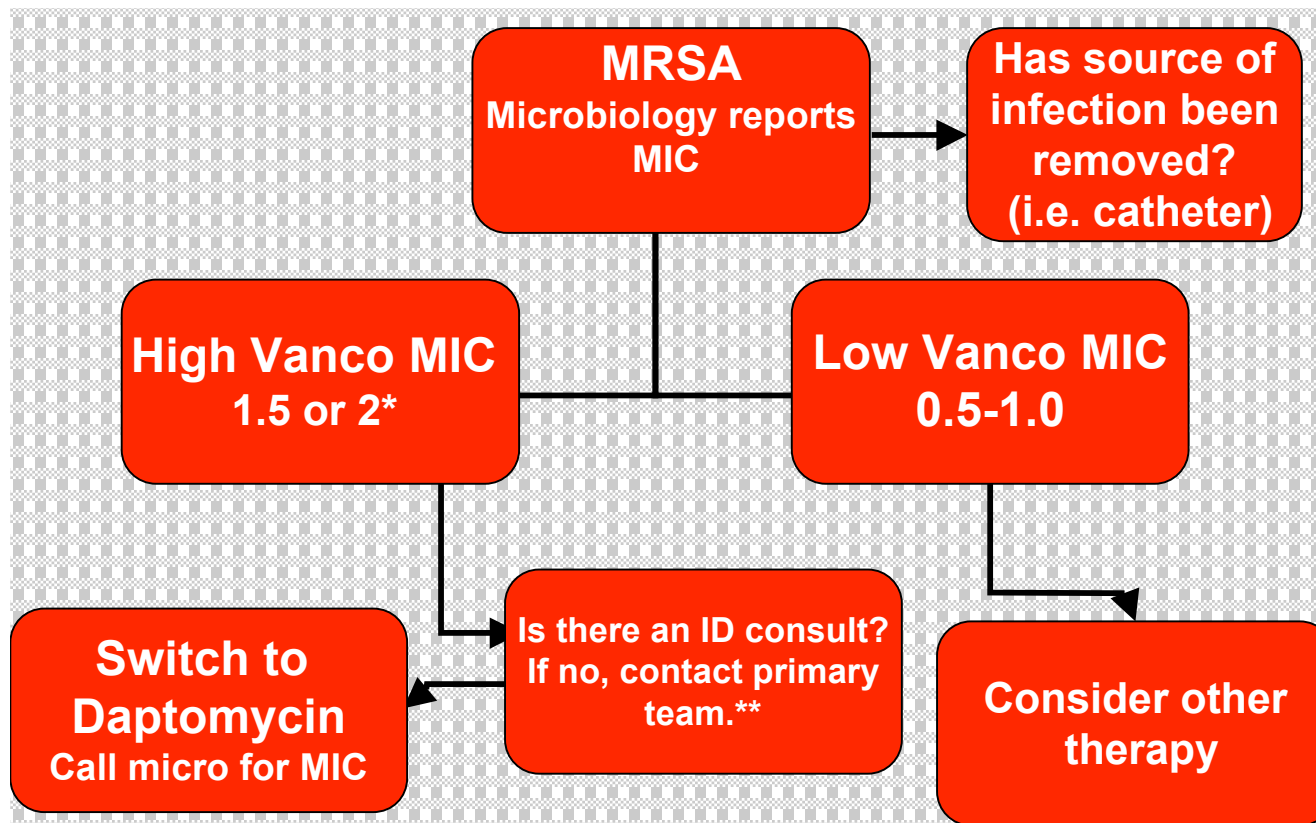
- Total # patients: 60
- Total # MRSA isolates with MIC data: 82



53% isolates have High (≥ 1.5) MICs

91% isolates have MIC ≥ 1.0

OSUMC Management of Patients with Persistent* MRSA Bacteremia on Vancomycin 4/08



+ Rifampin
42 patients with MRSA endocarditis, the addition of rifampin prolonged bacteremia 9 vs 7 days

+ Gent
No clinical trials evaluating the combination vs vanco alone. Increased nephrotoxicity.

Ref Deresinski CID 2007;44

Linezolid is not approved for MRSA catheter related bloodstream infections
Mortality higher in recent study of catheter related blood stream infections

*Persistent MRSA bacteremia is defined as 2 positive blood cultures for ≥ 5 da
ID consult recommended



New ASHP Therapeutic monitoring of Vanco ASHP and IDSA

- Based on evidence that *S.aureus* exposure to trough serum vanc conc. $<10\text{mg/L}$ can produce VISA like characteristics, its recommended that **trough levels be $>10\text{mg/L}$**
- In order to achieve rapid attainment of target conc. ($15\text{-}20\text{mg/L}$) for seriously ill patients, a **LD of $25\text{-}30\text{mg/kg}$ (ABW)** can be considered
- Trough levels of $15\text{-}20\text{mg/L}$ should achieve an AUC/MIC of >400 if the MIC is ≤ 1 .
- A targeted AUC/MIC > 400 is not achievable with conventional dosing if the MIC >2 , therefore **alternative therapies should be considered.**
Rybak et al AJHP 2009;66:82-98



Antimicrobial Stewardship and CMS

What's our Role?

- Core measures are submitted and available for public viewing on JCAHO and CMS websites.
JCAHO: www.qualitycheck.org
CMS: www.hospitalcompare.hhs.gov
- Consumers should be given the opportunity to make informed decisions regarding their health care.
- Hospitals should improve the quality of care they provide.





2009 CMS “Never Events”

Catheter-associated urinary infections	Air embolism
Surgical site infections Mediastinitis after CABG Bariatric surgery Select orthopedic surgery	Blood incompatibility
	Falls
Vascular catheter-associated infections	Object left in after surgery
Deep vein thrombosis or pulmonary embolism after knee or hip replacement	Pressure ulcers
	Complications from poor glucose control



Publicly Reported Core Measures

- Acute myocardial infarction
- Heart failure
- Community-acquired pneumonia
- Surgical Care Improvement Project (SCIP)



SCIP

- 30 million operations performed annually in the U.S.
- Surgical site infections (SSI) are among the most common complications: **~500,000 annually**
- **Each SSI increases length of stay by ~7 days**
- **Patients who develop SSI**
 - are 60% more likely to spend time in the ICU
 - are 5 times more likely to be readmitted
 - have twice the mortality
- Other complications: cardiovascular, respiratory, & thromboembolic

Nichols RL. *Emerg Infect Dis.* 2001; 7:220-4.

Agency for Healthcare Research and Quality. <http://www.ahrq.gov/research/jun07/0607RA12.htm>



SCIP Measures

CABG & other cardiac surgeries, hip/knee arthroplasties, hysterectomies, colorectal and vascular surgery

- Prophylactic **antibiotics** received within 1 hour prior to surgical incision
- Prophylactic **antibiotic** selection for surgical patients
- Prophylactic **antibiotics** discontinued within 24 hours after surgery end time (48 hours for CABG/cardiac surgery)

Stop Antibiotics Within 24 Hours

Percent of Surgery Patients Whose Preventative Antibiotic(s) are Stopped Within 24 hours After Surgery

The rates displayed in this graph are from data reported for discharges January 2006 through December 2006.

January 2007 through December 2007

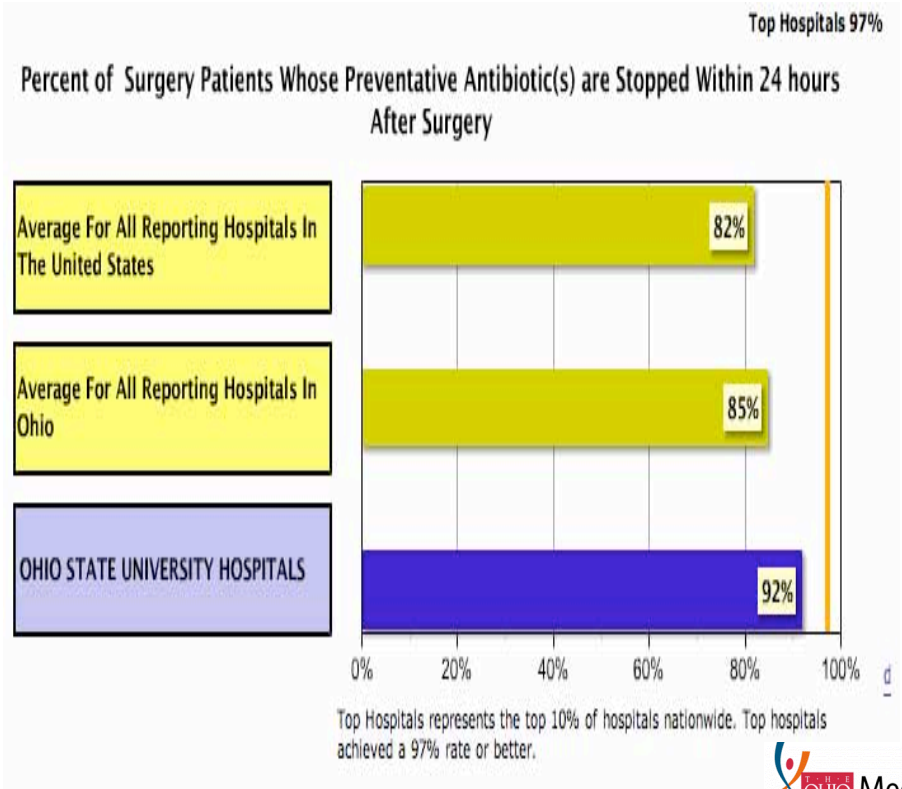
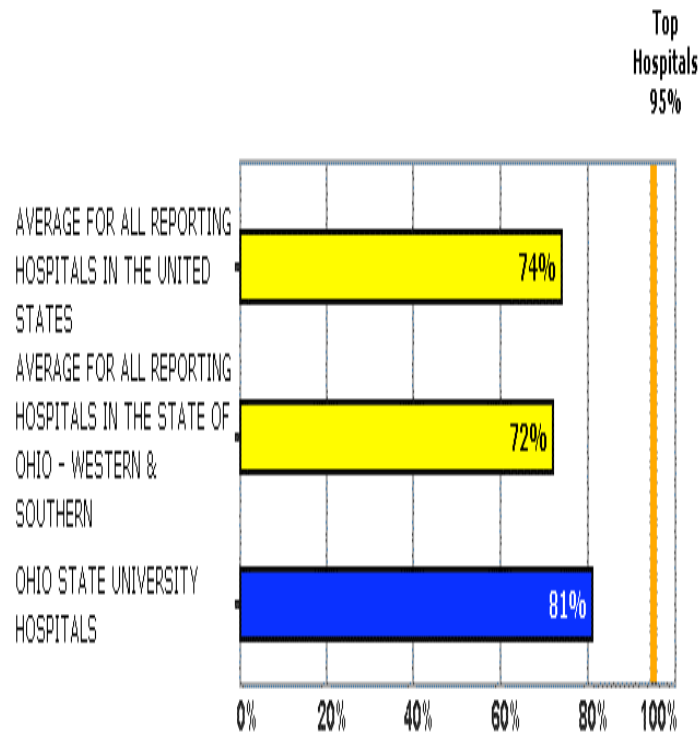
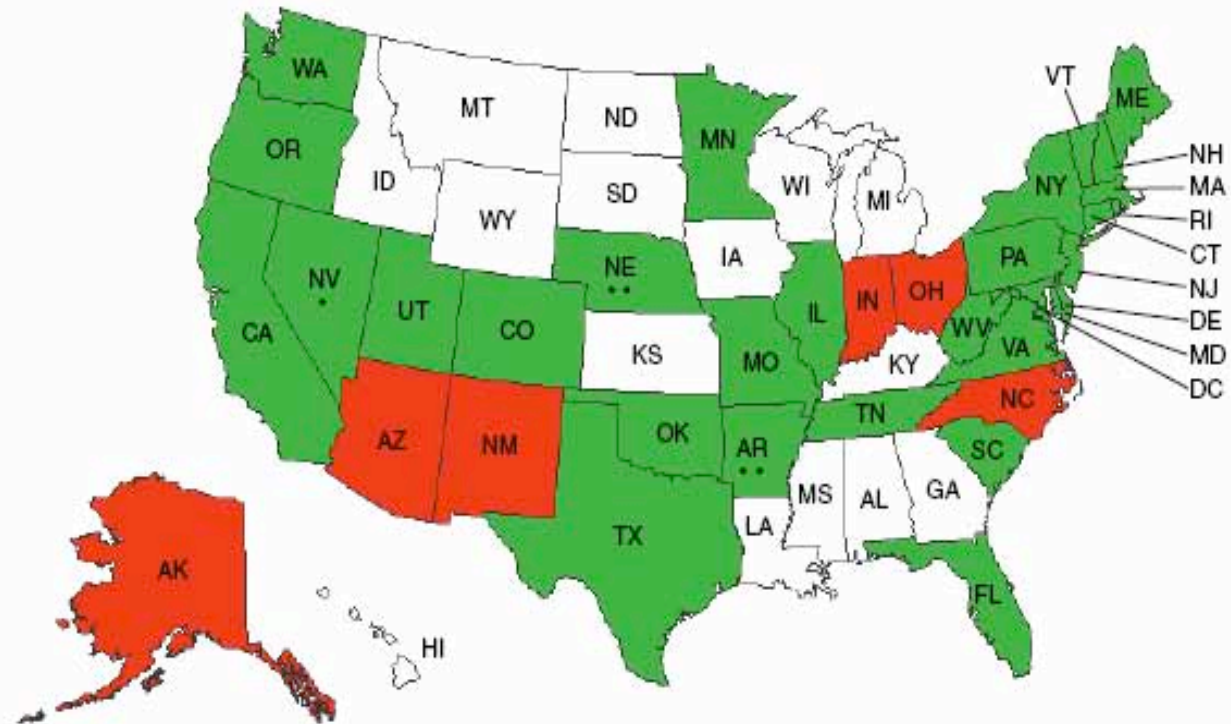


Figure 1. Health-care-associated reporting laws and regulations. Copyright 2008—Association for Professionals in Infection Control and Epidemiology, Inc. Last updated 06/30/2008.



- States with study laws
- Mandates public reporting of infection rates
- Mandates reporting only to state government
- Voluntary
- No active health-care-associated infection legislation

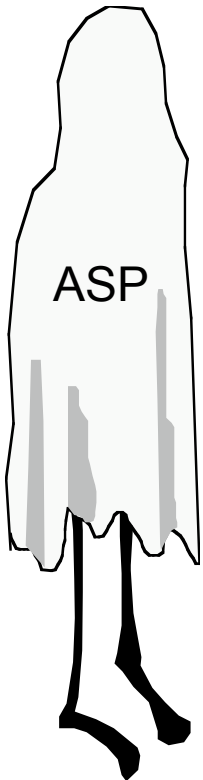


Resources

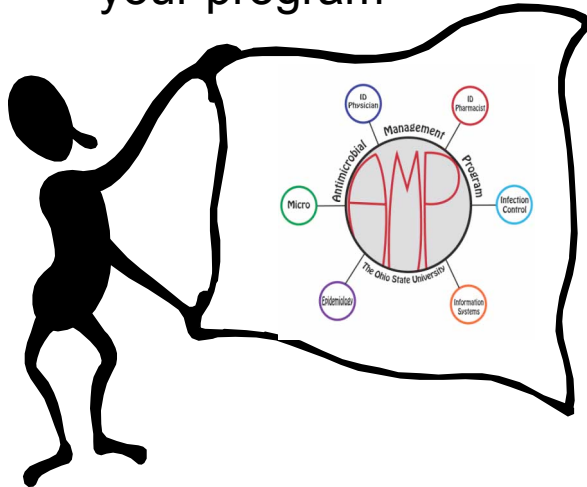
- Compendium of Strategies to prevent Healthcare-Associated Infections in Acute Care Hospitals
www.preventingHAIs.com
- www.cdc.gov
- www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals/09

Managing Resistance with Antimicrobial Stewardship Programs

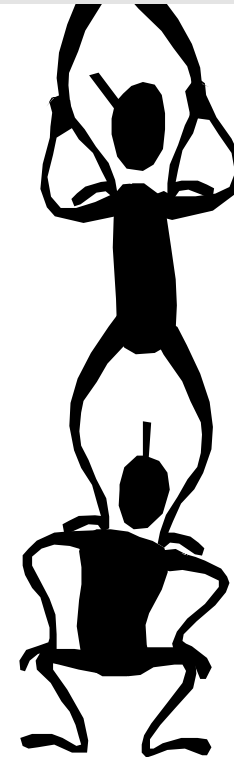
They must know and trust the steward!



Advertise & Promote your program



You're part of a team



A successful program Means the patient wins

