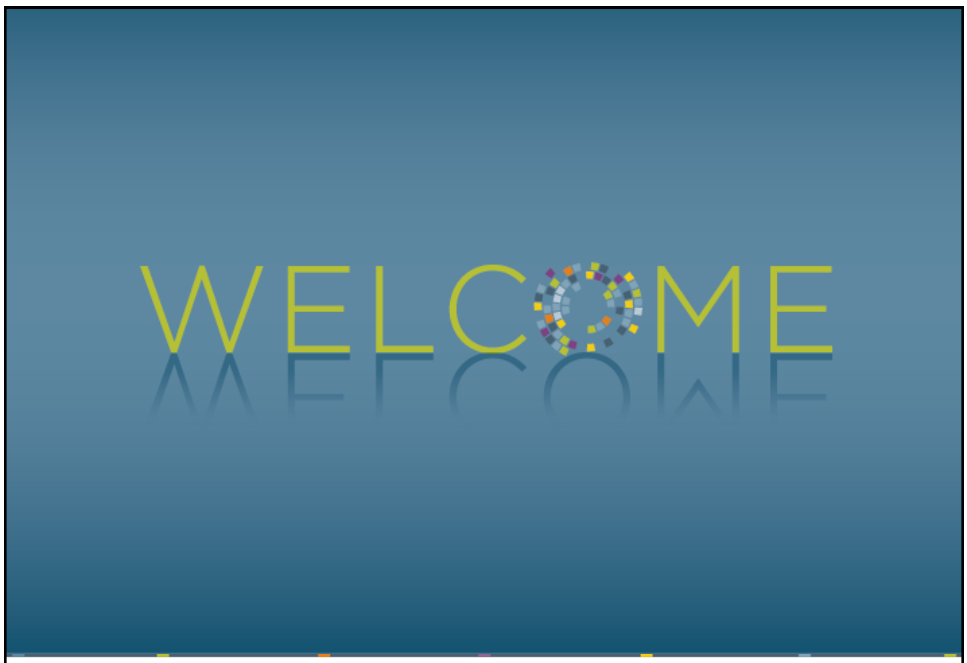
National Quality Partners: Antibiotic Stewardship Kick-Off Webinar

NATIONAL QUALITY FORUM

May 20, 2015, 10:00-11:30 am ET



Speaker

Wendy Prins, MPH, MPT
Vice President, National Quality Partners

NQF's National Quality Partners…

…collaborate through "Action Teams" to catalyze and accelerate improvement on the priorities and goals of the National Quality Strategy to improve quality, improve health, and reduce healthcare costs

NQF's National Quality Partners…

…maximize the impact of high-leverage drivers—payment, public reporting, consumer engagement, and accreditation and certification—that each of us brings to bear

NQF's Work: Framed by the National Quality Strategy

Three aims to improve healthcare

BETTER CARE

MORE AFFORDABLE CARE

HEALTHIER PEOPLE IN HEALTHIER COMMUNITIES

The National Quality Strategy: 6 Priorities

National Quality Partners—Action Team Results

MATERNITY ACTION TEAM CONTRIBUTED TO A

73% national reduction of early elective deliveries (EED) by promoting accountability through accreditation, use of hard stop policies, and consistent messaging about the harms of EED.

The Leapfrog Group Data (2010-2013)

PATIENT FAMILY ENGAGEMENT ACTION TEAM LAUNCHED

a national conversation around the development of the *Patient Passport*, a patient-centered tool to facilitate conversations between individuals, their families, and providers about things that matter to them.

READMISSIONS ACTION TEAM CONTRIBUTED TO A

3.8% national reduction in readmissions from nursing homes by promoting awareness and driving uptake of patient-focused evidence-based programs in this setting to safely reduce readmissions.

AHCA/NCAL Quality Initiative Skilled Nursing Progress Report, Third Quarter 2013

The Look Forward: 2015-2016 NQP Efforts

- Reducing antimicrobial resistance through aggressive antibiotic stewardship

- Improving advanced illness care through authentic patient and family engagement

Antibiotic Stewardship National Quality Partners

- Peggy O'Kane, National Committee for Quality Assurance
- John Bartlett, Johns Hopkins Medicine
- David Gilbert, Providence Health
- Ed Septimus, Hospital Corporation of America
- Brad Spellberg, LAC+USC Medical Center
- Arjun Srinivasan, Centers for Disease Control & Prevention
- Andres Rodriguez, Infectious Diseases Society of America
- Eve Humphreys, The Society for Healthcare Epidemiology of America
- Don Goldmann, Institute for Healthcare Improvement
- Leah Binder, The Leapfrog Group
- …and growing

Speaker

Christine K. Cassel, MD
President and CEO

Background

- President's Executive Order and National Strategy (Sep 2014)
- PCAST Report to the President (Sep 2014)
- National Action Plan for Combating Antibiotic-Resistant Bacteria (Mar 2015)
- Support from NQF members for Action Team

National Action Plan: Goals

1. **Slow the emergence and spread of resistant bacteria and infections**
2. **Strengthen national one-health surveillance efforts**
3. Advance development and use of rapid and innovative diagnostic tests
4. Accelerate basic and applied antibiotic research and development for prevention, surveillance, and control
5. Improve international collaboration and capacities

National Targets For 2020

TABLE 1: National Targets to Combat Antibiotic-Resistant Bacteria
By 2020, the United States will:
For CDC Recognized Urgent Threats:
Reduce by 50% the incidence of overall *Clostridium difficile* infection compared to estimates from 2011.
Reduce by 60% carbapenem-resistant Enterobacteriaceae infections acquired during hospitalization compared to estimates.
Maintain the prevalence of ceftriaxone-resistant *Neisseria gonorrhoeae* below 2% compared to estimates from 2013.
For CDC Recognized Serious Threats:
Reduce by 35% multidrug-resistant *Pseudomonas spp.* infections acquired during hospitalization compared to estimates from 2011.
Reduce by at least 50% overall methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections by 2020 as compared to 2011.*
Reduce by 25% multidrug-resistant non-typhoidal *Salmonella* infections compared to estimates from 2010-2012.
Reduce by 15% the number of multidrug-resistant TB infections.[1]
Reduce by at least 25% the rate of antibiotic-resistant invasive pneumococcal disease among <5 year-olds compared to estimates from 2008.
Reduce by at least 25%the rate of antibiotic-resistant invasive pneumococcal disease among >65 year-olds compared to estimates from 2008.

Source: National Action Plan for Combating Antibiotic-Resistant Bacteria

Goal 1: Slow Emergence and Spread – Outcomes

- Establish antibiotic stewardship programs in all acute care hospitals and improve stewardship across all healthcare settings
- Reduce inappropriate antibiotic use by 50% in outpatient settings and 20% in inpatient settings
- Establish State Antibiotic Resistance (AR) Prevention (Protect) Programs in all 50 states

Goal 1: Slow Emergence and Spread – Objectives

- Strengthen antibiotic stewardship in inpatient, outpatient, and long-term care settings
  - Alignment with CDC Core Elements
  - Compliance with Conditions of Participation
- Implement annual reporting of antibiotic use in inpatient and outpatient settings and identify variation at geographic, provider, and patient levels

Goal 2: Strengthen National One-Health Surveillance – Outcomes

- Creation of a regional public health network for resistance testing
- Routine reporting of antibiotic use and resistance data to NHSN by 95% of Medicare-eligible hospitals, DOD, and VA healthcare facilities

Goal 2: Strengthen National One-Health Surveillance – Objectives

- Enhance reporting infrastructure and provide incentives
  - Require reporting to NHSN as part of CMS IQR
  - CDC has submitted new measure proposals to NQF
- Add electronic reporting of antibiotic use and resistance data to Stage 3 Meaningful Use for EHR systems
  - CDC and partners will submit an AU electronic clinical quality NHSN-reporting measure to NQF and CMS

NQF Implementation

- Convene stakeholders on priority measure domains
- Convene payers and specialty groups on impact of payment on antibiotic use and value-based purchasing
- Be prepared for assessment and endorsement of measures relating to healthcare-facility antibiotic use and hospital reporting of data
- Encourage measure developers to accelerate development of new models

The Crisis of Antimicrobial Resistance

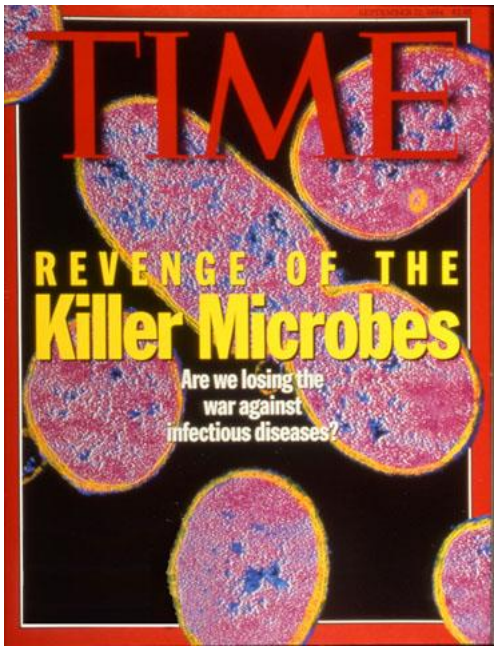
The Need for Urgent Action

Ed Septimus, MD, FACP, FIDSA, FSHEA
Medical Director Infection Prevention and Epidemiology, HCA
Professor, Texas A&M Health Science Center
Professor, Distinguished Senior Fellow, School of Public Health, George Mason University
edward.septimus@hcahealthcare.com

HCA | Clinical Services Group

NO DISCLOSURES

HCA | Clinical Services Group



HCA | Clinical Services Group

HCA | Clinical Services Group

Power of Antibiotics

Disease	Pre-Antibiotic Death Rate	Death With Antibiotics	Change in Death
Community Pneumonia[1]	~35%	~10%	**-25%**
Hospital Pneumonia[2]	~60%	~30%	**-30%**
Heart Infection[3]	~100%	~25%	**-75%**
Brain Infection[4]	>80%	<20%	**-60%**
Skin Infection[5]	11%	<0.5%	**-10%**
By comparison…treatment of heart attacks with aspirin or clot busting drugs[6]			***-3%***

[1]IDSA Position Paper '08 Clin Infect Dis 47(S3):S249-65; [2]IDSA/ACCP/ATS/SCCM Position Paper '10 Clin Infect Dis In Press; [3]Kerr AJ. Subacute Bacterial Endocarditis. Springfield IL: Charles C. Thomas, 1955 & Lancet 1935 226:383-4; [4]Lancet '38 231:733-4 & Waring et al. '48 Am J Med 5:402-18; [5]Spellberg et al. '09 Clin Infect Dis 49:383-91 & Madsen '73 Infection 1:76-81; [6]'88 Lancet 2:349-60

HCA | Clinical Services Group

Why We Need to Improve Antibiotic Use

- Antibiotics are misused across the continuum of care
  - Studies indicate that up to 50% of antibiotic use is either unnecessary or inappropriate across all type of health care settings [1]
- Use of antibiotics in animals-~80% of antibiotics sold in US are used in animals primarily to promote growth and prevent infection [2]
  - Molecular methods have confirmed that resistant bacteria in animals are consumed by humans resulting in infection
  - Up to 90% of antibiotics used in animals are excreted in urine and stools and can disperse in fertilizer, groundwater, and surface runoff
- Antibiotic misuse adversely impacts patients and society
  - ↑Antimicrobial resistance(AR) and *C difficile infections*
- In 2011 a national survey found that 60% of infectious diseases physicians had seen a pan-resistant, untreatable infection in the last year [3]
- Improving antibiotic use improves patient outcomes and saves money
- Improving antibiotic use is a public health imperative-WHO considers AR an emerging threat to global stability

1. *Clin Infect Dis 2007; 44:159-177*
2. *Clin Infect Dis* 2013; 56:1445-1450
3. *Clin Infect Dis 2014; 59:S17-S75*

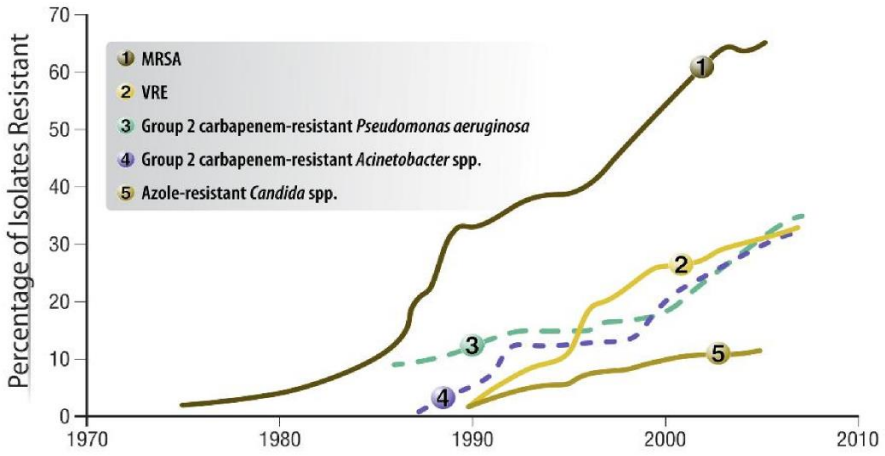
HCA | Clinical Services Group

Common Outpatient Clinical Syndromes and Overtreatment

Condition	% bacterial	overtreatment
pneumonia	70%	30%
acute bronchitis	<< 5 %	70%
rhino-sinusitis	<<5 %	95%
UTI	100%	70% in elderly
cellulitis	100 %	30%

HCA | Clinical Services Group

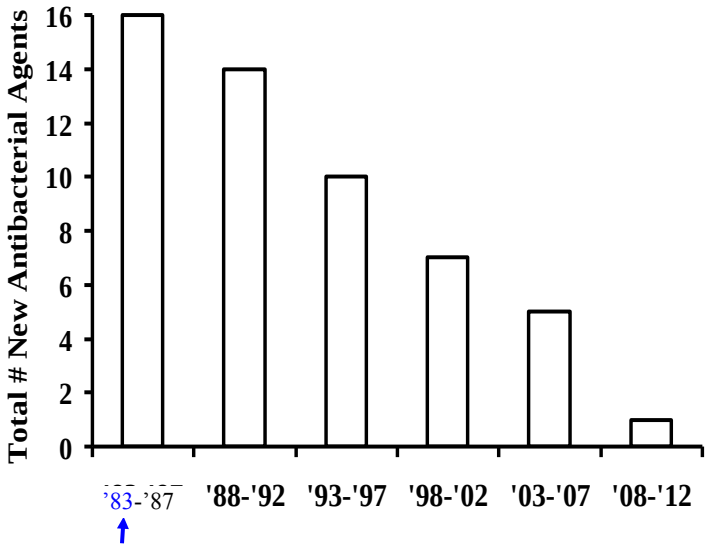
Trends in Antimicrobial Resistance



Adapted from Wenzel RP, et al. *Infect Control Hosp Epidemiol.* 2008;29:1012-1018.

HCA | Clinical Services Group

Antibiotic Development



Antibacterial Drug Shortages From 2001 to 2013: Implications for Clinical Practice

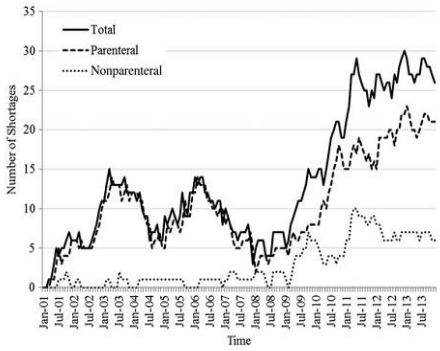


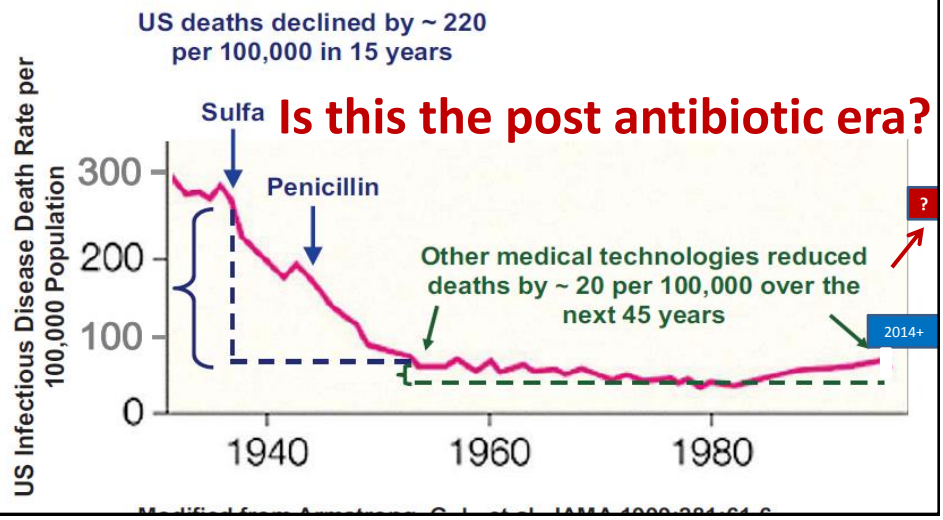
Figure 1. Trends in drug shortages, 2001–2013.

- Many shortages involve gold-standard therapy (e.g. aztreonam, TMP/SMX, pip/tz)
- Shortages impact clinicians' ability to treat infections, including multidrug-resistant pathogens for which there is a limited selection of effective antibiotics
- 46% of antibacterial shortages are used to treat high-risk pathogens such as MRSA, CRE, and *Pseudomonas*

Clin Infect Dis published online April 22, 2015

HCA | Clinical Services Group

Infectious Disease Mortality in the United States During the 20th Century



World Health Day – 7 April 2011

Antimicrobial resistance and its global spread

•**Antimicrobial resistance: no action today no cure tomorrow**

We live in an era of medical breakthroughs with new wonder drugs available to treat conditions that a few decades ago, or even a few years ago in the case of HIV/AIDS, would have proved fatal. For World Health Day 2011, WHO will launch a worldwide campaign to safeguard these medicines for future generations. Antimicrobial resistance and its global spread threaten the continued effectiveness of many medicines used today to treat the sick, while at the same time it risks jeopardizing important advances being made against major infectious killers.

WHO considers AR an emerging threat to global stability

HCA | Clinical Services Group

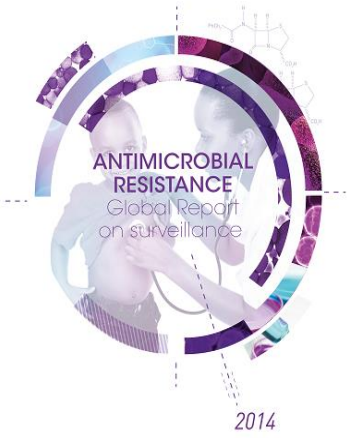
Policy Statement on Antimicrobial Stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS)

- **"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."**

Infect Control Hosp Epidemiol 2012;33(4):322-327

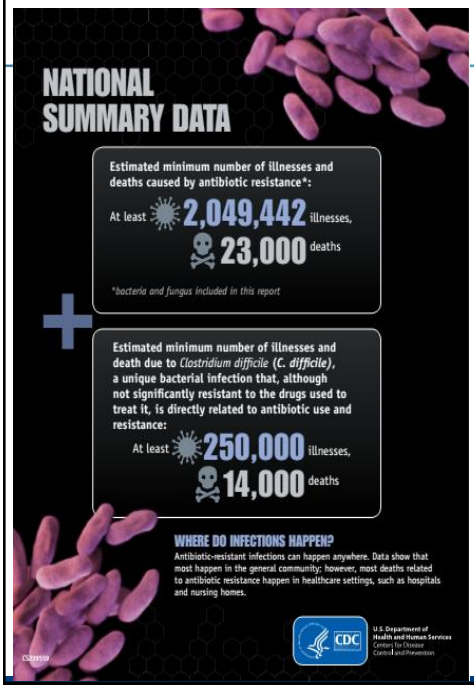
HCA | Clinical Services Group

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

HCA | Clinical Services Group



- $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[1]
  - 453,000 case 2011
  - 29,000 deaths 2011

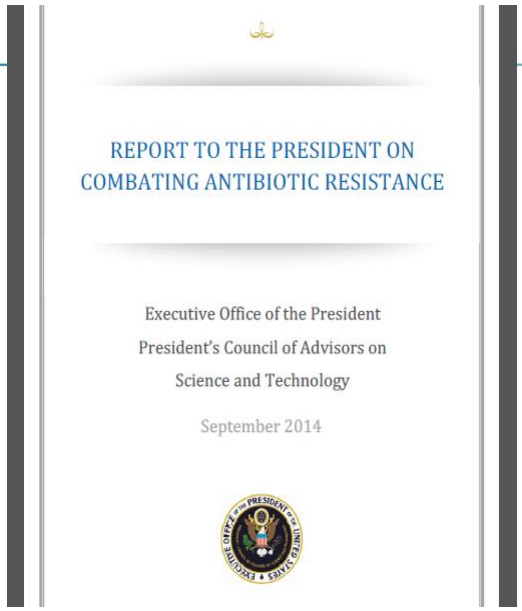
1. N Engl J Med 2015; 372:825-834

HCA | Clinical Services Group

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

HCA | Clinical Services Group


REPORT TO THE PRESIDENT ON
COMBATING ANTIBIOTIC RESISTANCE

Executive Office of the President
President's Council of Advisors on
Science and Technology

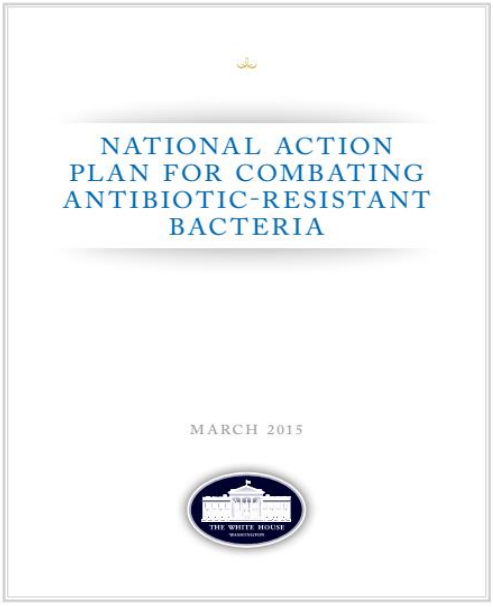
September 2014

HCA | Clinical Services Group

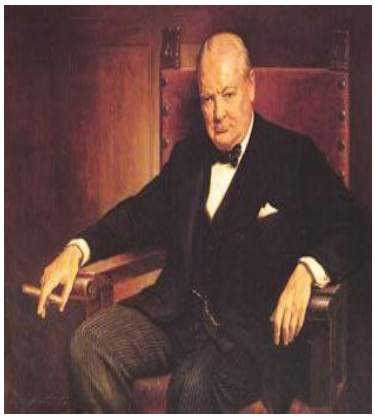
Report from the President's Council of Advisors on Science and Technology

- Eight high level recommendations to the president to combat antibiotic resistance:
  - Ensure strong federal leadership
  - Effective surveillance and response
  - Fundamental research
  - Clinical trials with new antibiotics
  - Increase economic incentives for new antibiotics
  - **Improve stewardship of existing antibiotics**
  - Limit the use of antibiotics in animal agriculture
  - Ensure effective international coordination

HCA | Clinical Services Group



HCA | Clinical Services Group



SUCCESS IS NOT FINAL,

FAILURE IS NOT FATAL:

IT IS THE COURAGE TO CONTINUE THAT COUNTS

Winston Churchill

HCA | Clinical Services Group

Measures and Tools for Stewardship in Hospitals

CAPT Arjun Srinivasan, MD
Associate Director for Healthcare Associated Infection Prevention Programs
Division of Healthcare Quality Promotion
beu8@cdc.gov

Nothing to Disclose

Where Do We Want to Be?

- Every hospitalized patient gets optimal antibiotic treatment.
- Every hospital in America has an active antibiotic stewardship program to accomplish that goal.
- Every stewardship program uses proven best practices.

Turning This Into A National Program for Antibiotic Stewardship

- Education on interventions and implementation
- Measurement
  - Total antibiotic use and appropriate use
  - Prevalence of stewardship programs
- National goals
- National policies
- Research to expand implementation and develop new interventions.

What Is The Current Status of Antibiotic Stewardship Programs?

- To get a better picture of stewardship programs, CDC added questions to the 2015 annual facility survey of the National Healthcare Safety Network (covers hospital activities in 2014).
- Questions based on items outlined in CDC "Core Elements for Hospital Antibiotic Stewardship Programs."

Core Elements for Antibiotic Stewardship Programs

- Leadership commitment from administration
- Single leader responsible for outcomes
- Single pharmacy leader
- Antibiotic use tracking
- Regular reporting on antibiotic use and resistance
- Educating providers on use and resistance
- Specific improvement interventions
- http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html

NHSN Annual Facility Survey- Antibiotic Stewardship

- 12 questions based on the 7 core elements.
- Responses received from 4091 acute care hospitals.

NHSN Annual Facility Survey- Antibiotic Stewardship

Element	N	%
Leadership	2457	60.1
Accountability	2949	72.1
Drug Expertise	3566	87.2
Act	3844	94.0
Track	3211	78.5
Report	2767	67.6
Educate	2827	69.1

NHSN Annual Facility Survey- Antibiotic Stewardship

Count of Elements	N	%
0	103	2.5
1	160	3.9
2	279	6.8
3	324	7.9
4	359	8.8
5	441	10.8
6	685	16.7
7	1740	42.5

NHSN Annual Facility Survey- Antibiotic Stewardship

- A substantial percentage of US hospitals do have stewardship programs that incorporate all, or almost all, of the core elements.
- But more than half still do not.
- Programs are not limited to large, academic hospitals
  - Smaller hospitals have clearly found ways to get this done.

National Healthcare Safety Network Antibiotic Use Option

- Captures electronic data on antibiotics administered, along with admission/discharge/transfer data.
- Calculates rates of administration for use:
  - By facilities to monitor interventions on single units or facility wide
  - To collect aggregate information on antibiotic use at a regional and national level
  - Eventually, to create antibiotic use benchmarks.

Update on NHSN AU Option

- Close to 100 facilities are now submitting data.
  - Good mix of large/small and academic/non-academic.
- Growing enrollment in AU remains a high priority for CDC.
- We would love to add you!

Developing an Antibiotic Use Measure

- Experts in stewardship have long called for a some type of national measure or measures related to antibiotic stewardship.
- Measurement is key to efforts to tie stewardship to quality improvement work.
  - "What gets measured gets done"

Challenges With A Quality Measure on Antibiotic Use

- Will require good benchmarking to help facilities know if they are outliers.
- The goal is not 100% or zero.
- Being an "outlier" does not necessarily mean there is a problem.
  - The measure would suggest areas where further review is warranted.
- Always have to be alert for unintended consequences.

Antibiotic Use Measure

- CDC worked with various partners who are submitting AU data to NHSN to help develop and refine a potential measure based on the data being submitted:
  - Days of therapy per 1000 patient days present.
- Goal was to develop a measure that could help inform stewardship efforts.

Antibiotic Use Measure

- CDC submitted a measure proposal to the National Quality Forum in April, 2015.
- The proposed measure is comprised of several different measures of categories of antibiotic agents and patient care locations.

Proposed AU Measure

- Locations categories
  - Adult and pediatric
  - ICU and ward
- Agent categories
  - Broad spectrum gram negative agents
    - Primarily active against community pathogens
    - Primarily active against hospital pathogens
  - Anti-MRSA agents
  - Agents primarily for surgical prophylaxis
  - All antibiotics

AU Measure

- For each measure and location, we propose summarizing use with a "Standardized Antibiotic Administration Ratio" or "SAAR".
- SAAR would be a risk adjusted summary measure of AU, where an SAAR of 1.0 would be "expected" use given a particular set of facility characteristics.

Next Steps for Antibiotic Use Measures in Hospitals

- How do we use the SAAR to help stewardship programs assess and then improve antibiotic use?
- Can we develop a structural measure of antibiotic stewardship programs based on the CDC Core Elements?
- Can we develop quality measures that focus on antibiotic prescribing for specific conditions?
  - E.g. A measure of how much asymptomatic bacteriuria is treated unnecessarily?

The Choosing Wisely® Campaign

Daniel Wolfson
May 20, 2015
NQF Antibiotic Stewardship Action Team Kick-off Webinar

No disclosures to report

The *Choosing Wisely*® Campaign

Choosing Wisely is an initiative of the ABIM Foundation to help physicians and patients engage in **conversations** about the overuse of tests and procedures and support physician efforts to help patients make smart and effective care choices.

"5 Things" Lists

	Viral respiratory and adenovirus illnesses
American Academy of Allergy, Asthma & Immunology	Don't order sinus computed tomography (CT) or indiscriminately prescribe antibiotics for uncomplicated acute rhino sinusitis.
American Academy of Family Physicians	Don't routinely prescribe antibiotics for acute mild-to-moderate sinusitis unless symptoms last for seven or more days, or symptoms worsen after initial clinical improvement
American College of Emergency Physicians	Avoid prescribing antibiotics in the emergency department for uncomplicated sinusitis.
American Academy of Pediatrics	Antibiotics should not be used for apparent viral respiratory illnesses (sinusitis, pharyngitis, bronchitis).
Infectious Diseases Society of America	Avoid prescribing antibiotics for upper respiratory infections.
American Academy of Ophthalmology	Don't order antibiotics for adenoviral conjunctivitis (pink eye).
	Ear infections
American Academy of Family Physicians	Don't prescribe antibiotics for otitis media in children aged 2–12 years with non-severe symptoms where the observation option is reasonable.
American Academy of Otolaryngology - Head & Neck Surgery Foundation	Don't prescribe oral antibiotics for uncomplicated acute tympanostomy tube otorrhea.
American Academy of Otolaryngology - Head & Neck Surgery Foundation	Don't prescribe oral antibiotics for uncomplicated acute external otitis.
	Bacteriuria and UTIs
American Geriatrics Society	Don't use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.
Infectious Diseases Society of America	Don't treat asymptomatic baacteriuria with antibiotics.
	Prophylaxis
American Academy of Otolaryngology - Head & Neck Surgery Foundation	Don't routinely use perioperative antibiotics for elective tonsillectomy in children.
American College of Emergency Physicians	Avoid antibiotics and wound cultures in emergency department patients with uncomplicated skin and soft tissue abscesses after successful incision and drainage and with adequate medical follow-up.
American Academy of Ophthalmology	Don't routinely provide antibiotics before or after intravitreal injections.
American Academy of Dermatology	Don't routinely use topical antibiotics on a surgical wound.
Infectious Diseases Society of America	Avoid prophylactic antibiotics for the treatment of mitral valve prolapse.
	Dermatitis
Infectious Diseases Society of America	Don't use antibiotic therapy for stasis dermatitis of lower extremities.
American Academy of Dermatology	Don't use oral antibiotics for treatment of atopic dermatitis unless there is clinical evidence of infection.
	Miscellaneous
American Urological Association	Don't treat an elevated PSA with antibiotics for patients not experiencing other symptoms.
American Academy of Allergy, Asthma & Immunology	Don't overuse non-beta lactam antibiotics in patients with a history of penicillin allergy, without an appropriate evaluation.

Society Antibiotic Recommendations

- **Viral respiratory and adenovirus illnesses**
  - **AAAI**
    - Don't order sinus computed tomography (CT) or indiscriminately prescribe antibiotics for uncomplicated acute rhino sinusitis.
  - **AAFP**
    - Don't routinely prescribe antibiotics for acute mild-to-moderate sinusitis unless symptoms last for seven or more days, or symptoms worsen after initial clinical improvement
  - **ACEP**
    - Avoid prescribing antibiotics in the emergency department for uncomplicated sinusitis
  - **AAP**
    - Antibiotics should not be used for apparent viral respiratory illnesses (sinusitis, pharyngitis, bronchitis).
  - **IDSA**
    - Avoid prescribing antibiotics for upper respiratory infections.
  - **AAO**
    - Don't order antibiotics for adenoviral conjunctivitis (pink eye).

ABIM FOUNDATION Choosing Wisely

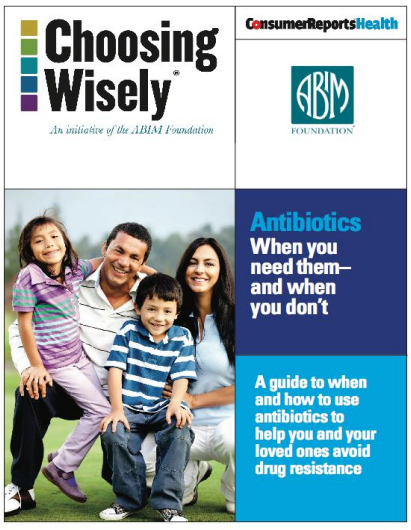
Choosing Wisely Grants
Focus on Reducing Antibiotic Overuse

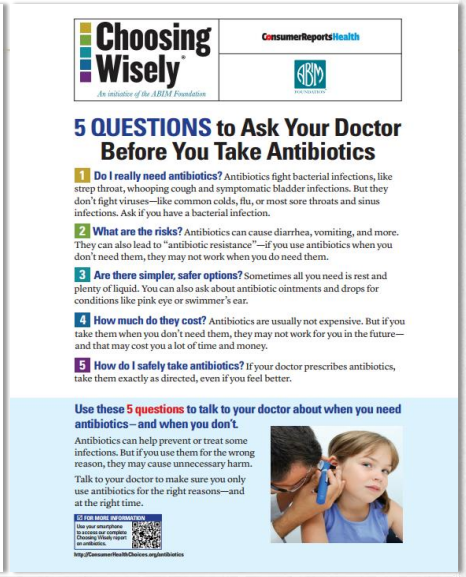
Interventions will include:

- Incorporating clinical decision support, including in some cases best practice alerts in EMRs
- Providing clinicians with feedback and benchmarking
- Engaging physician champions
- Providing supportive clinician education

Robert Wood Johnson Foundation

ABIM FOUNDATION Choosing Wisely





Supply v. Demand

Patient pressure may be stronger in the doctor's mind than in the patient's.

- 1% of parents made direct verbal request for antibiotics. Physicians perceived an expectation for antibiotics 34% of the time. Study concludes parents who receive contingency plan have increased satisfaction. [1]
- Twenty-three studies were reviewed. Although physicians may believe that they have to do something (ie, order a test, prescribe a medicine) to satisfy patients' expectations for the visit, the literature suggests that patients frequently desire information.[2]

[1] *Arch Pediatr Adolesc Med* 2001;155:800-806
[2] *Arch Fam Med*. 2000;9:1148-1155

ABIM FOUNDATION Choosing Wisely

For More Information

Choosing Wisely website: www.choosingwisely.org

The Medical Professionalism Blog: blog.abimfoundation.org

Twitter: @ABIMFoundation & @WolfsonD

Discussion

- What is your organization working on to improve antibiotic stewardship?
- What assistance do you need from your colleagues who have joined today?
- What resources do you have to share?

To continue the dialog after today, please join the NQP Antibiotic Stewardship Group on LinkedIn

https://www.linkedin.com/grp/home?gid=8226675&goback=%2Eanb_8226675_*2_*1_*1_*1_*1_*1

THANK YOU