



# Methicillin-Resistant *Staphylococcus Aureus*

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Health Watch USA

Nov. 14, 2016

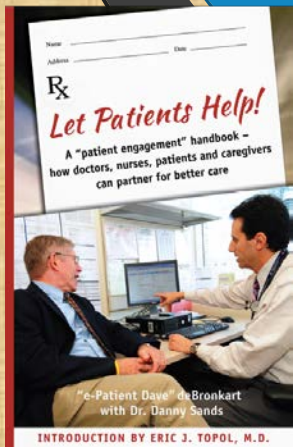
This presentation is the explicit  
opinion of Kevin T. Kavanagh, MD, MS



# Fundamental Principle

“Patient” is not  
a third person word.

Your time will come.



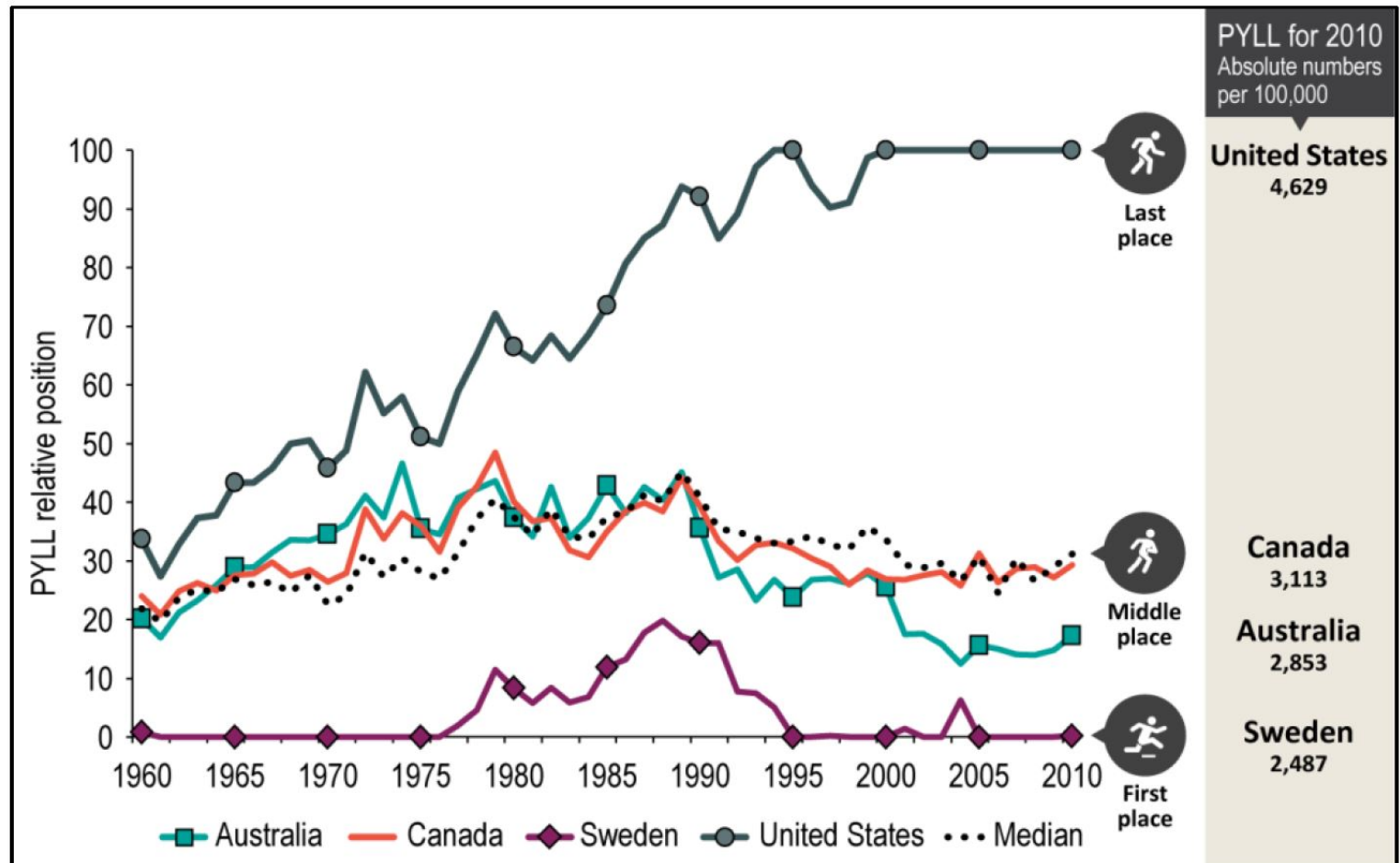
*From "Let Patients Help"*

© 2013 @ePatientDave & @DrDannySands

# Potential Years of Lives Lost

## A Surrogate For Health System Performance

**Figure 2** All-cause PYLL, 1960 to 2010: Relative positions



From: Canada's International Health System Performance Over 50 Years. Canadian Institute for Health Information, Oct. 2016.

# Multi-Drug Resistant Organisms

**The United States Is Missing Its Targets For Resistant Bacteria, including MRSA & C.Difficile, Reduction in Hospitals.**

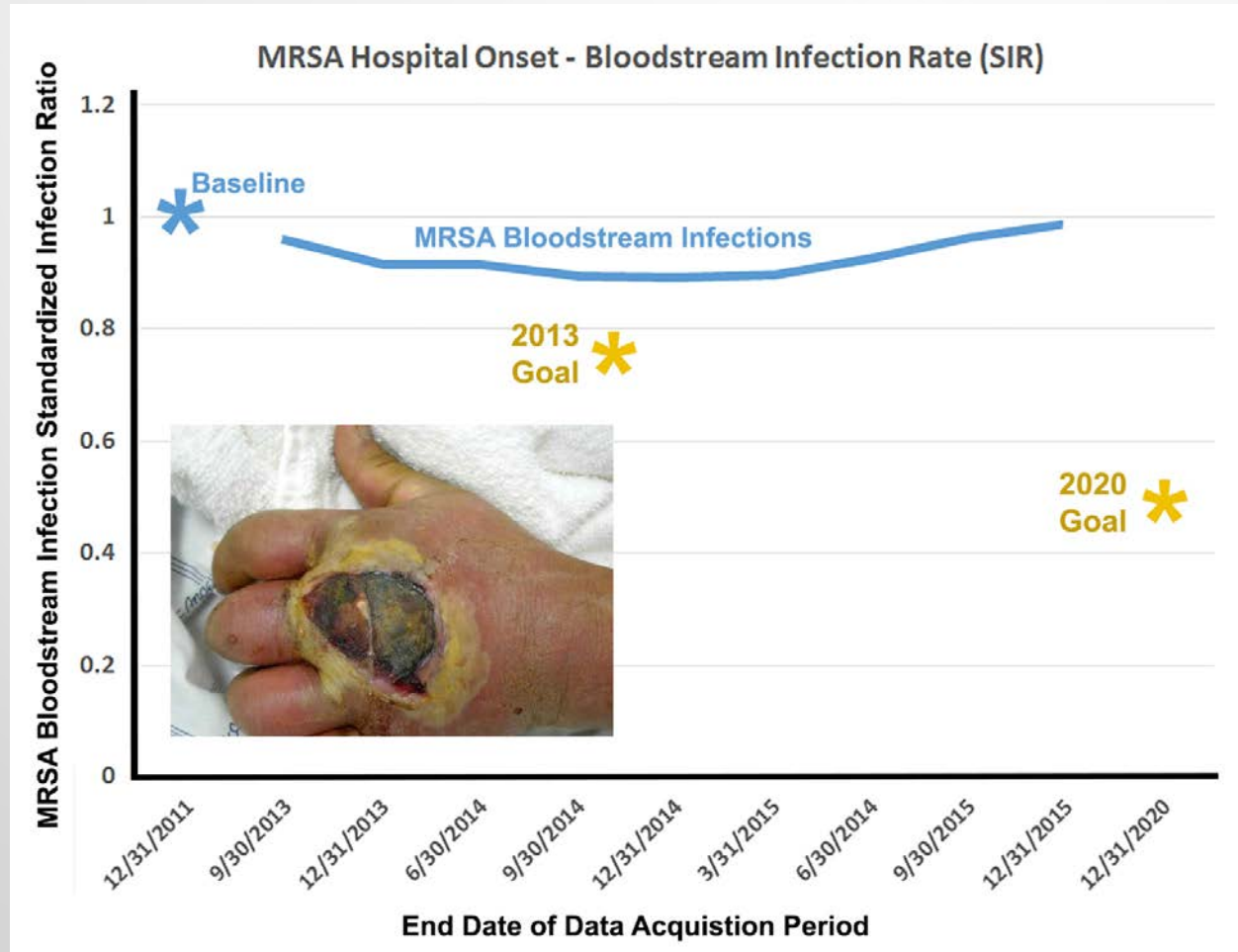
**Table 1: 2013 Targets and Progress Made by 2014**

Measure (and data source)	Original target for 2013 (from 2009 baseline)	Progress made by 2014
Invasive MRSA (NHSN)	50% reduction	36% reduction
Facility-onset MRSA (NHSN)	25% reduction	13% reduction

From: National Targets and Metrics. Office of Disease Prevention and Health Promotion.  
Accessed on Oct. 22, 2016 from <https://health.gov/hcq/prevent-hai-measures.asp>

# MRSA Evidence Based Policy

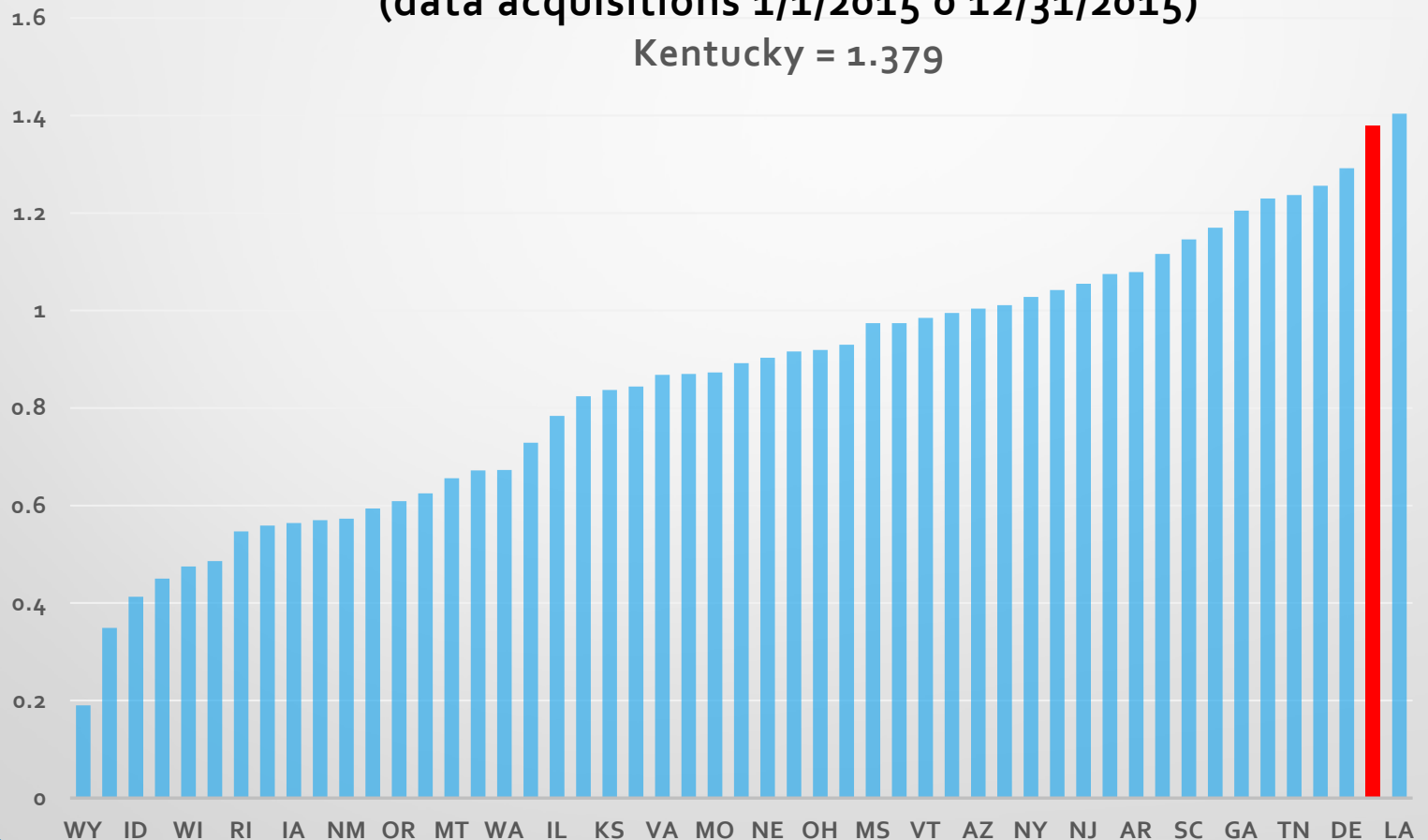
There May Be Little Or No Improvement In Control:



# MRSA Bloodstream Infections

MRSA Standardized Infection Ratio in The 50 States  
(data acquisitions 1/1/2015 o 12/31/2015)

Kentucky = 1.379



# Two MRSA Control Strategies

## The United States Is Missing Its Targets For MRSA Reduction:

- Testing of asymptomatic patients which may harbor the bacteria (Surveillance) along with Isolation and/or decolonization.
  - Surveillance and Isolation has been adopted Nationwide By The United Kingdom.
- Unit Wide Daily Chlorhexidine Bathing Protocols. This has been adopted by many facilities in the United States.



# Research Integrity

Dr. Richard Horton, the Editor of *The Lancet*, stated, “The case against science is straight forward: much of the scientific literature, perhaps half, may simply be untrue.”(1)

Charles Seife from the Arthur L. Carter Institute of Journalism at New York University has stated, “When the FDA finds significant departures from good clinical practice, those findings are seldom reflected in the peer-reviewed literature, even when there is evidence of data fabrication or other forms of research misconduct.”(2)

(1) Horton R. Offline: What is medicine’s 5 sigma? *The Lancet*. Vol 385 April 11, 2015 Accessed from <http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736%2815%2960696-1.pdf>

(2) Seife C. Research misconduct identified by the US Food and Drug Administration: out of sight, out of mind, out of the peer-reviewed literature. *JAMA Intern Med*. 2015 Apr;175(4):567-77. doi: 10.1001/jamainternmed.2014.7774. PMID: 25664866.



# Engagement By The State Is Important Hospital Accreditation Surveys

**Table 7**  
**Hospital 60-Day Validation Survey Results by AO**  
**(FYs 2008-2014)**

	AOA/ HFAP FYs 2008 - 2013	AOA/ HFAP FY 2014	DNV GL FYs 2009 - 2013*	DNV GL FY 2014	TJC FYs 2008 - 2013	TJC FY 2014	Total FYs 2008 - 2013	Total FY 2014
60-Day Validation Sample	29	7	31	20	496	76	556	103
SA: Condition - level Deficiencies	19	4	16	3	232	34	267	41
Missed by AO	19	4	14	3	190	32	223	38
Disparity Rate	66%	57%	45%	15%	38%	42%	40%	38%
Sampling Fraction	.04	.11	.08	.20	.07	.07	.07	.09

\*DNV GL hospital accreditation program received initial CMS-approval September 2008. Therefore, there were no DNV GL Hospital validation surveys conducted in FY 2008.

# Reporting to the Health Department is Essential for Public Safety

- Patients should know when outbreaks of dangerous pathogens occur in healthcare facilities.
- Outbreaks of Norovirus on cruise ships are reported to the public but dangerous pathogens in healthcare facilities are not.
- Reporting by facility is preferable but at least regional reporting should be done.

# Benefits of Reporting – Public Safety

Washington Business Journal

Exclusive: First-ever study of superbugs in D.C. hospitals shows how prevalent they are

May 3, 2016, 7:54am EDT **Updated** May 3, 2016, 5:25pm EDT

- CRE in Washington DC.
- 8 subacute and 8 acute care facilities (including—MedStar, Howard University, Children’s National)
- Tested 1021 asymptomatic hospital patients.
- Found 5.1% positive for the “nightmare bacteria” CRE, 6.4% positive for carbapenem resistant bacteria.

# Benefits of Reporting – Knowledge

*Centers for Disease Control and Prevention*

# MMWR

Morbidity and Mortality Weekly Report

Weekly / Vol. 65 / No. 7

February 26, 2016

## **Verona Integron-Encoded Metallo-Beta-Lactamase–Producing Carbapenem-Resistant Enterobacteriaceae in a Neonatal and Adult Intensive Care Unit — Kentucky, 2015**

Anna Q. Yaffee, MD<sup>1,2</sup>; Lynn Roser, MSN<sup>2</sup>; Kimberly Daniels<sup>2</sup>;  
Kraig Humbaugh, MD<sup>2</sup>; Robert Brawley, MD<sup>2</sup>;  
Douglas Thoroughman, PhD<sup>2,3</sup>; Andrea Flinchum, MPH<sup>2</sup>

## **Health Department Working With Healthcare Facilities**

- A rare form of resistance found in 8 patients, in 4 different types of bacteria, in two different wards.
- Demonstrates that the transmission of resistance between different types of bacteria is clinically important.
- No patient developed an infection.



# The Regulation Does Not Address Antibiotic Utilization

## Estimating National Trends in Inpatient Antibiotic Use Among US Hospitals From 2006 to 2012

ONLINE FIRST

James Baggs, PhD<sup>1</sup>; Scott K. Fridkin, MD, MPH<sup>1</sup>; Lori A. Pollack, MD, MPH<sup>1</sup>; Arjun Srinivasan, MD, MPH<sup>1</sup>; John A. Jernigan, MD, MS<sup>1</sup>

[\[+\] Author Affiliations](#)

*JAMA Intern Med.* Published online September 19, 2016. doi:10.1001/jamainternmed.2016.5651

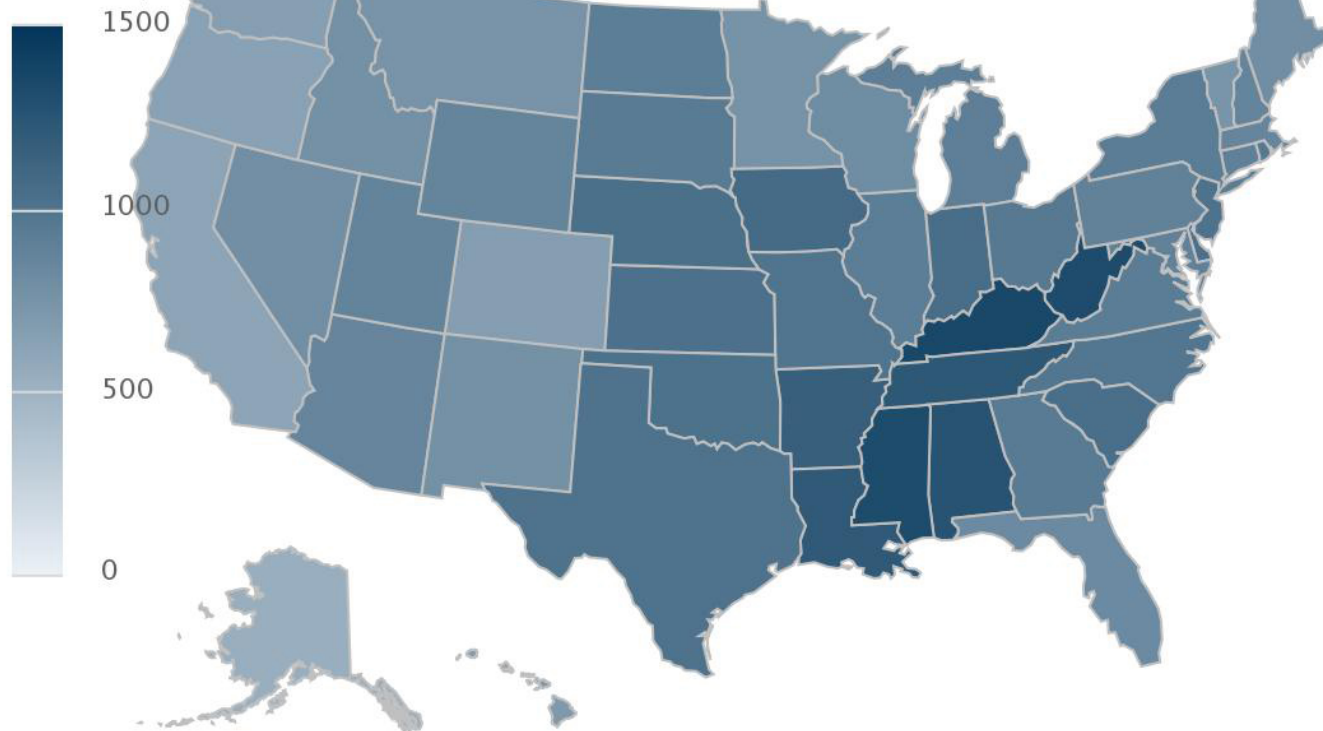
**“Overall DOT (Days of Therapy) of all antibiotics among hospitalized patients in US hospitals has not changed significantly in recent years.”**

# The Regulation Does Not Address Antibiotic Utilization

## Use of All Antibiotics in 2012

Source: IMS Health

Prescriptions/  
1000 Pop



*Use of All Antibiotics*  
**Kentucky**  
1,357 Prescriptions per 1000 Pop

Center for Disease Dynamics, Economics & Policy (cddep.org) © Natural Earth



# Need for Health Department Engagement

- Drug resistant bacteria is a huge problem.
- The data we have sheds doubt that the epidemic being controlled.
- We need more comprehensive and timely data.
  - Research.
  - Coordinate effective interventions.
  - No one facility or facility type can impact the epidemic alone. Remember hospitals are less than 20% of the healthcare facilities in Kentucky.



If we do not change our  
direction,

we are likely to  
end up where  
we are headed.

Ancient Chinese Proverb

