

# Healthcare Associated Infections

One of the top 10 leading causes of death in the United States

<http://www.ahrq.gov/qual/hais.htm>

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This presentation is the express opinion of Dr Kevin T. Kavanagh, MD, MS, FACS

# Size of Problem

- **1 in 20 U.S. Hospital Patients Develop a HAI.**
- **1.7 Million Infections, Nearly 100,000 Lives Lost Each Year**
- **Kentucky – An annual cost of almost 400 million dollars & almost 1400 lives lost from 23,000 HAI.**

## Healthcare Associated Infections (HAI)



**Nationally, deaths equal more than one Boeing 767 crashing every day.**

## HAI Burden

Public Health Issue	Deaths Per Year
HAI	100,000
Motor Vehicle Traffic Accidents	42,031*
Breast Cancer	40,598†
HIV / AIDS	17,489†

# Marked Reductions Can Be Achieved

## Expected Achievable Reductions:

- CLABSI 65% to 70% (Some have achieved zero)
- CAUTI 65% to 70%
- Ventilator Associated Pneumonia 55%
- Surgical Site Infections 55%

Not implementing protocols to achieve these results means unnecessary lives lost.

Source: Umscheild, et al. Infection Control and Hospital Epidemiology, Feb. 2011

<http://www.ncbi.nlm.nih.gov/pubmed/21460463>

# CLABSI - Central Line Associated Blood Stream Infections

- Central Line Associated Blood Stream Infections  
Deadly infections of treatment catheters which are inserted into deep veins.
  - Prevention protocols were first reported in 2004.
  - These protocols have been slow to be adopted by the healthcare industry.
  - 65% to 70% preventable.
  - Some ICUs in the Nation have achieved and maintained a rate of zero.

- Kentucky has a Poor Reporting System: - Preliminary data shows that only 2 outbreak reports have been made so far by KY Hospitals in 2011 (see letter in handout).
  - One MRSA (Methicillin-Resistant Staph. Aureus infection)
  - One Acinetobacter.
- Outbreak reporting in Kentucky is “Mandatory” but the CDC Definition leaves much to the eye of the beholder and, thus, they can be viewed as almost voluntary.

- Health Department Engagement.
  - Data Needed for Grants.
- Motivate Provider Improvement. (Similar to School Standardized Testing.) Community can follow improvement in their facility.

There are many good programs such as the CUSP Program run by the KHA which addresses CLABSI. But participation is poor only 33 hospitals and this number used to be higher.

# Data For Action – Community Engagement

- Motivate Changes in Community Behavior.
  - Hand Washing
  - Cleanliness
  - Antibiotic Overutilization.

HWUSA Op-Ed with the CDDEP:

[http://www.cddep.org/blog/posts/outpatient\\_antibiotic\\_utilization\\_highest\\_west\\_virginia\\_and\\_kentucky](http://www.cddep.org/blog/posts/outpatient_antibiotic_utilization_highest_west_virginia_and_kentucky)

- **Roger Wagner, Pike County, Ky, School Superintendent:**

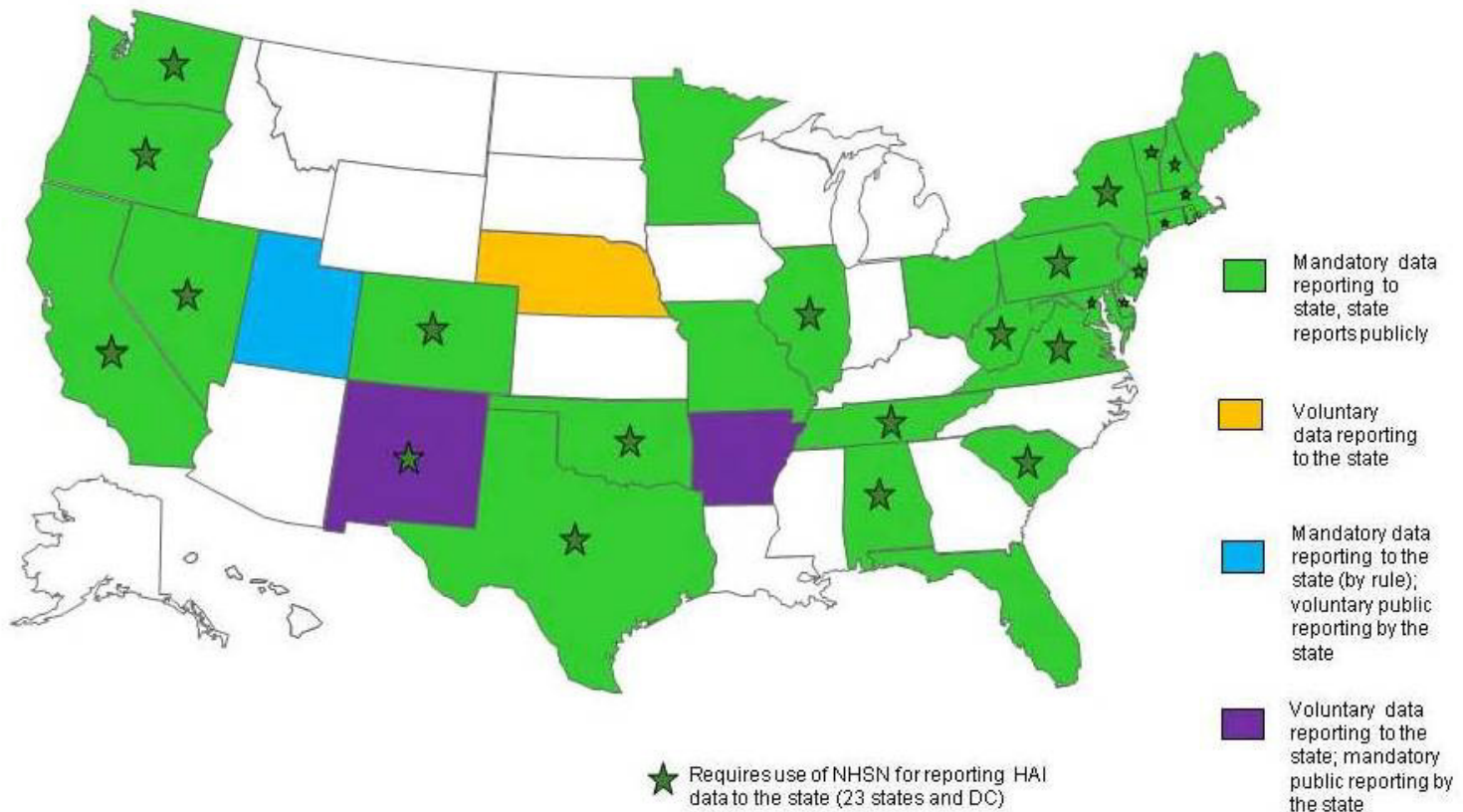
“We need some way of reporting. Particularly our school system needs to know if this exists out there. For a parent to call me and say, ‘do we have an outbreak of MRSA in Pike County?’ If I can’t identify it. A couple of them have called me personally. My answer is ‘Well I do not know.’ Parents don’t like you saying that to them, they want an answer. I can see that as being a big issue.”

-- Aug .1, 2011, Elementary and Secondary Education Subcommittee.

- **“Lastly, tracking infections is key. These findings demonstrate the vital need to continue to monitor drug-resistant bacteria. If we want to stop resistant bacteria in their tracks, we have to know where to begin and how we are doing.” – Dr. Arjun Srinivasan, MD, Division of Healthcare Quality Promotion, CDC**
- **Medical Reports about Drug-Resistant Infections: May 29<sup>th</sup>, 2011** <http://blogs.cdc.gov/safehealthcare//?p=1450>

# Public Reporting

## Healthcare-Associated Infections Reporting Laws as of January 2011



- **“State initiatives on public reporting of healthcare-associated infections play an important role in the Federal effort to prevent healthcare-associated infections.”**
- **Don Wright, MD, MPH Deputy Assistant Secretary for Healthcare Quality, Office of the Assistant Secretary for Health, U.S. Department of Health and Human Services.**

# AHRQ Now Taking A Lead

- AHRQ awards \$34 million to expand fight against healthcare-associated infections --  
Nov. 2, 2011

<http://www.ahrq.gov/news/press/pr2011/haify11pr.htm>

- **NEED DATA to APPLY FOR GRANTS**

- **Almost 1200 CDC practices to address healthcare acquired infections. There are over 500 strongly recommended practices. The CDC has not effectively prioritized standards for HAI Control.**

**US GAO report 2008 <http://www.gao.gov/new.items/d08283.pdf>**

**Public Reporting incentivizes providers to use best practices of control.**

- **Community Problem - All facilities need to report.**

**Many Hospitals consider patients high risk for being a MRSA carrier, if transferred from another:**

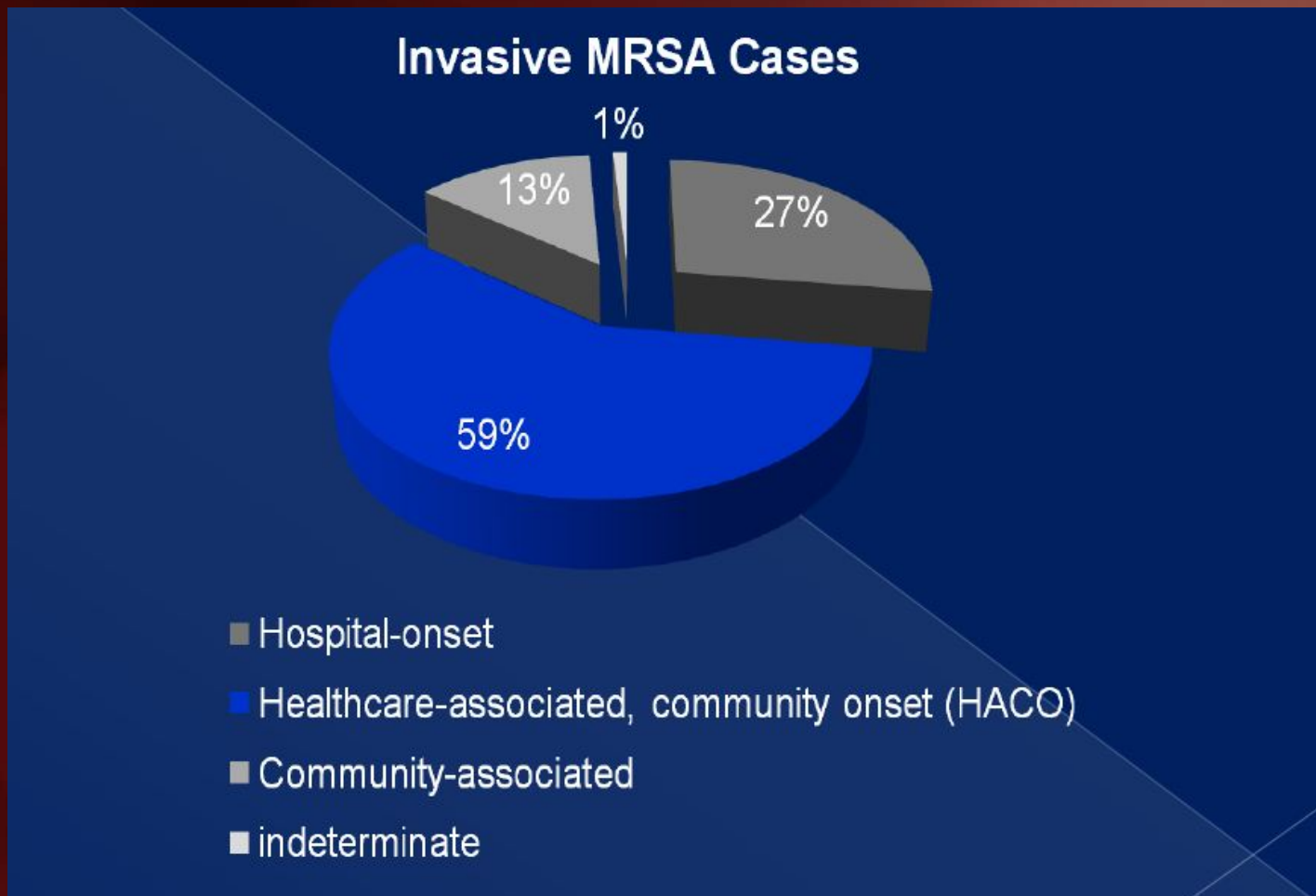
- **Hospital or**
- **Nursing Home**

# MRSA Infections In Nursing Homes

- State of Maine 2011 Report – MRSA Positive on Admission to hospitals if a patient has spent at least one night in the last six months in a nursing homes.
- Total of 36 Hospitals. (“\*” < 10 Patients Tested)

Number of Hospitals	Rate of MRSA on Admission from Nursing Homes
2 (2*)	0%
2	1% to <10%
12	10% to <20%
13 (1*)	20% to < 30%
6	30% to < 40%
1	40% or Greater

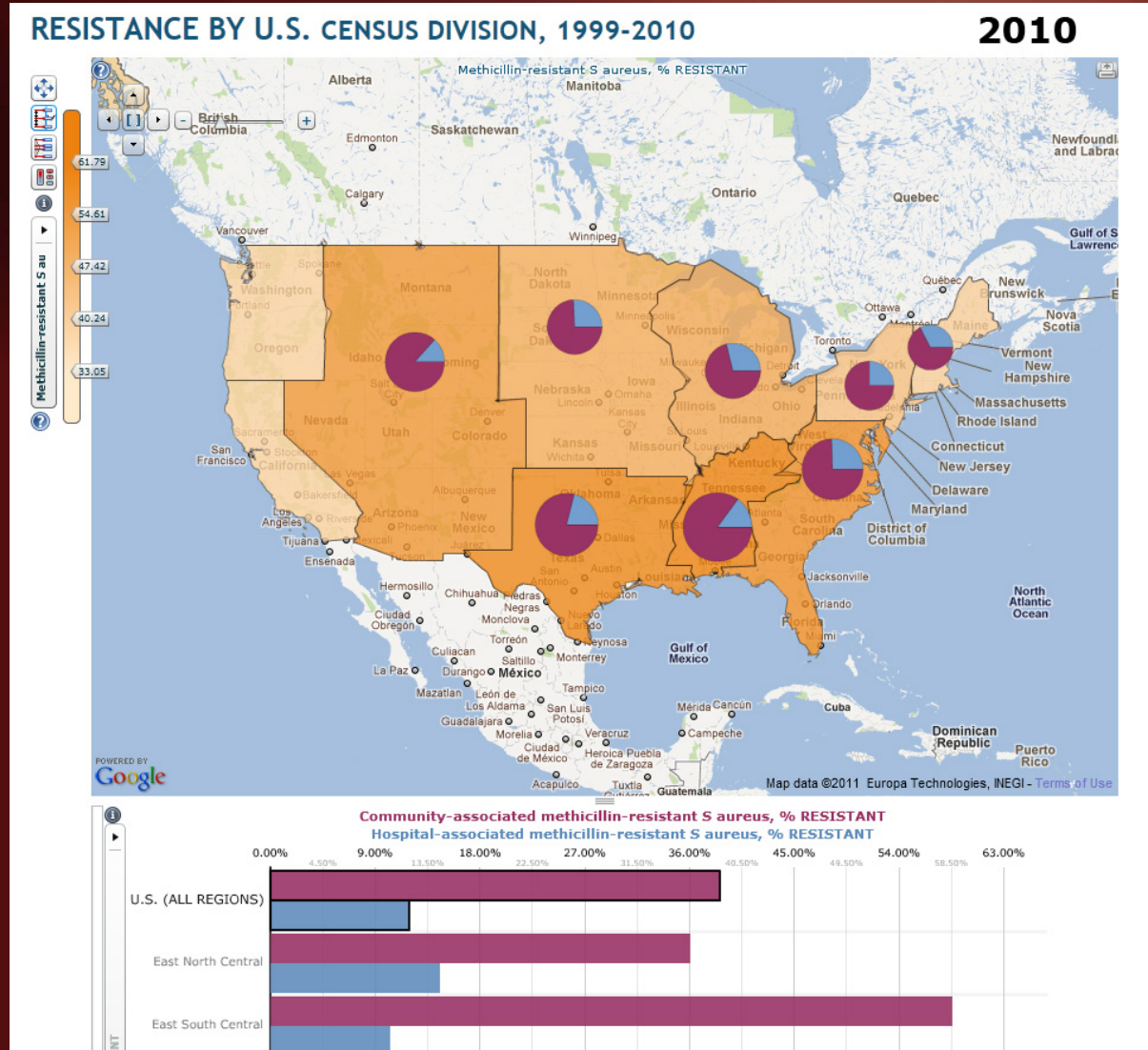
# MRSA – Healthcare Associated



# MRSA In South Central Region

25% - 30% of individuals carry Staph aureus. Kentucky is in the region where almost 70% of the Staph cultures are MRSA positive. (CDDEP)

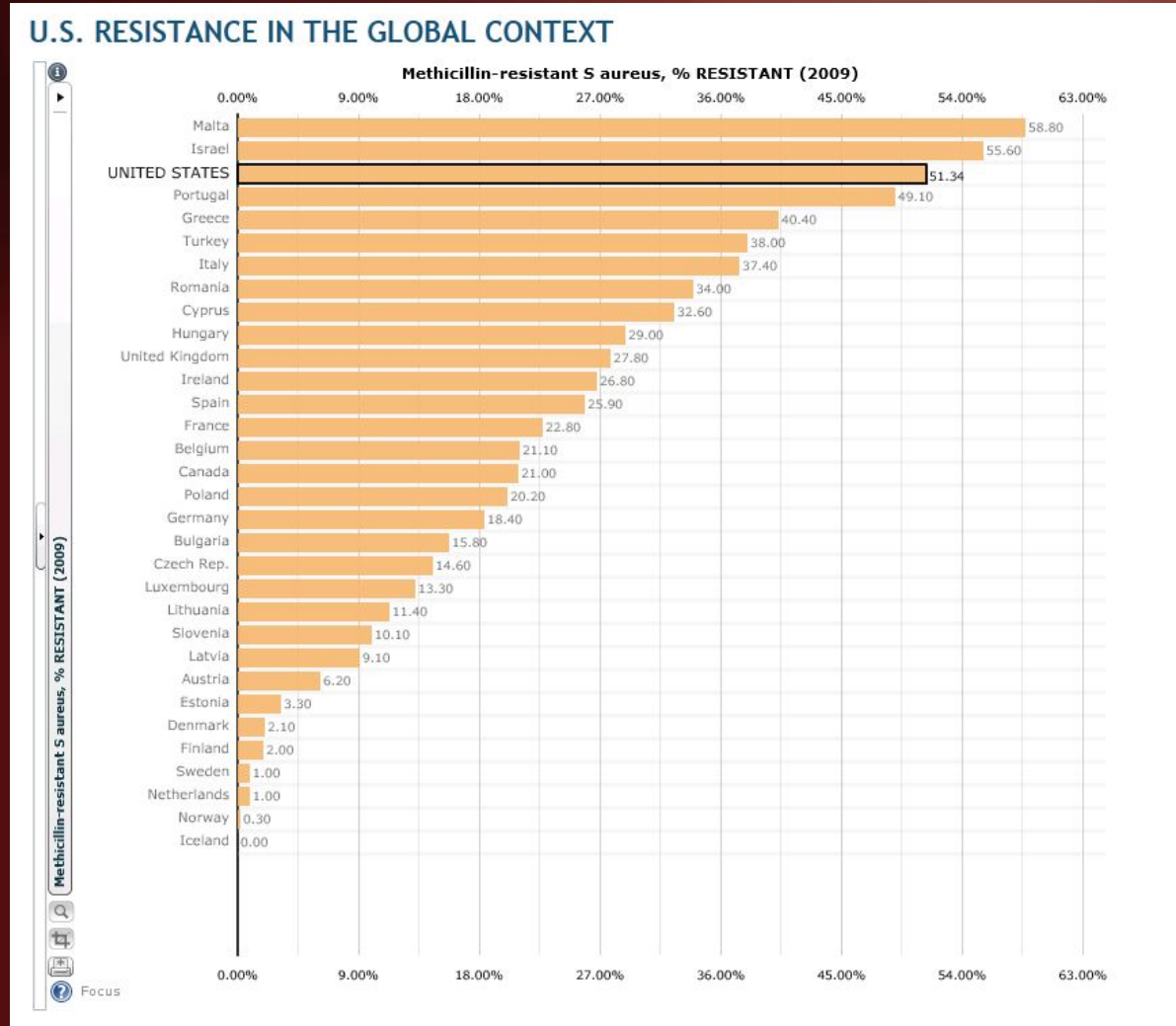
So far in 2011, only one MRSA Outbreak is known to be reported to the KY Health Dept by Acute Care Facilities.



# MRSA In the World

The United States has one of the highest percentages of MRSA found in Staph cultures in the world. (CDDEP)

Only Israel and Malta have higher rates.



# Europe – Doing Better

- In Scandinavian countries and the Netherlands, the proportion of MRSA in staph infections is less than 5%  
<http://www.cddep.org/ResistanceMap/bug-drug/MRSA>
- Northern Europe uses search and destroy tactics going into the community and testing contacts.
- In European countries MRSA decreased 13%
- <http://www.ncbi.nlm.nih.gov/pubmed/20929368>

# Europe – Doing Better

- **“Mandatory public reporting reduced healthcare infections in France.”**

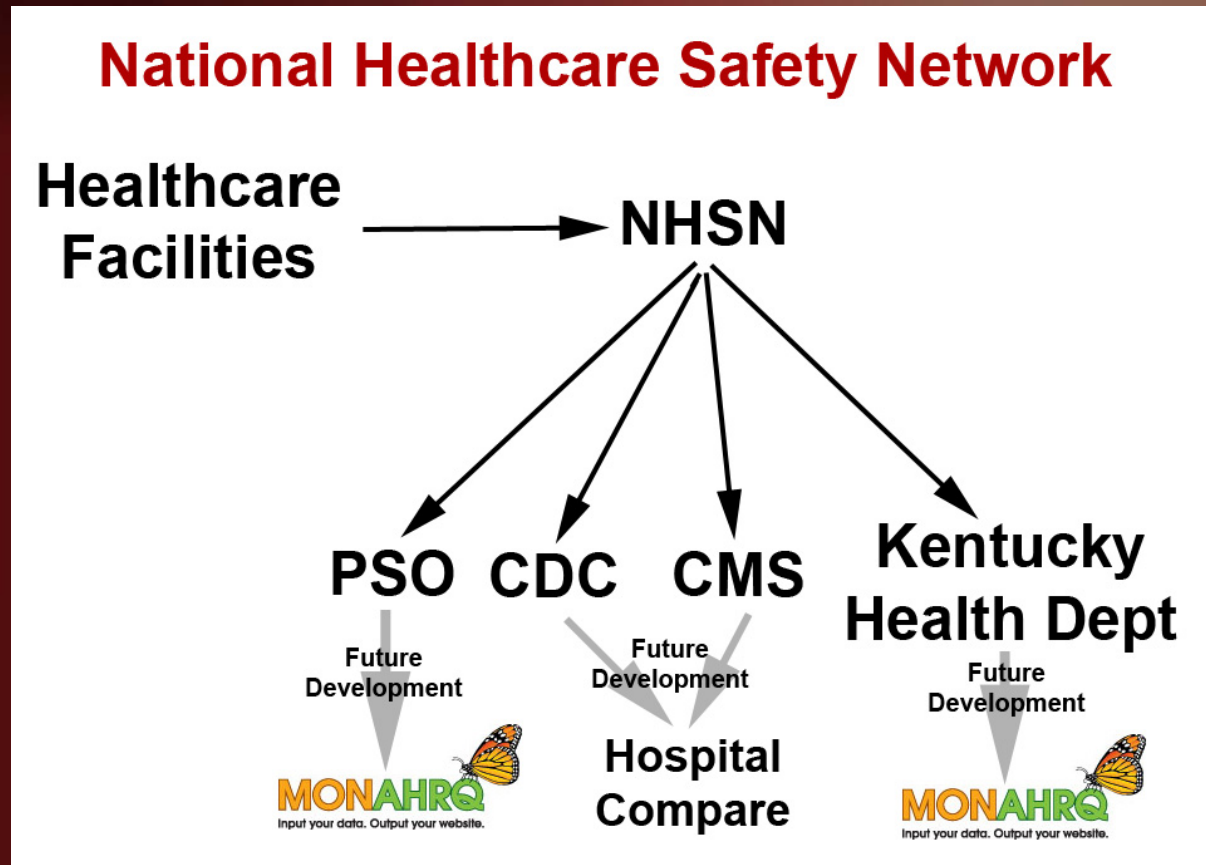
Methicillin-resistant *Staphylococcus aureus* infections decreased by 40%.

<http://www.mcknights.com/mandatory-public-reporting-reduces-healthcare-infections-in-france/article/166082/>

# NHSN Reporting System

- Alignment & Uniformity in what data is submitted. Align with CMS reporting requirements.
- One place to submit and the required information is the same.

**Non-  
Duplicative  
System**



# Other States Switching to NHSN

- **Pennsylvania has switched to NHSN.**
- **Ohio possibly switching from reporting to the State to NHSN, needs legislative action.**

# Federal Reporting - NHSN

- Central Line Associated Blood Stream Infections in ICU Only
- Catheter Associated Urinary Tract infections – 2012 Collection, 2014 Payment Determination.
- Surgical Site Infections – 2012 Collection, 2014 Payment Determination.
- MRSA Bacteremia (Bloodstream Infection) – 2013 Collection, 2015 Payment Determination.
- Clostridium Difficile – 2013 Collection, 2015 Payment Determination.

# Federal HAI Mandatory Reporting

- CLABSI -- ICU's only
- MRSA -- Blood Stream Infections Only
- C. Diff. Reporting does not include nursing homes, which have significant problems.
- Does not include other Multi Resistant Drug Organisms
- Does not mandate reporting by Nursing Homes or Critical Access Hospitals.
- State Verification of Data.

# Public Reporting in Kentucky

## St Joseph Healthcare & Norton Healthcare Publicly Report

In 2009 -- Example to the right shows a greater than 50 fold increase in Central Line Associated Blood Stream Infections (CLABSI) in a rural hospital compared to major medical centers.

										Key	
										Significantly better than U.S. average	Green
										Near U.S. average	Yellow
										Significantly worse than U.S. average	Red
										No statistical comparison done	Grey
Lower is better	Saint Joseph Berea	Saint Joseph East	Saint Joseph Hospital	Saint Joseph London	Saint Joseph Martin	Saint Joseph Mount Sterling	Flaget Memorial Hospital	Kentucky	U.S.		
Cath-associated urinary tract infections in ICU	3.05 in 655 cath days	1.69 in 1777 cath days	4.32 in 13662 cath days	0.0 of 1935 cath days		0.00 in 207 cath days	0.0 of 751 cath days		3.4		
Cath-associated bloodstream infections in ICU	10.20 in 196 line days	0.00 in 927 line days	0.25 in 12140 line days	0.2 of 1729 line days		0.00 in 39 line days	0.0 of 83 line days		1.5		
Vent-associated pneumonia in ICU	0.00 in 57 vent days	0.00 in 469 vent days	1.82 in 4404 vent days	0.0 of 1278 vent days		0.00 in 57 vent days	0.0 of 92 vent days		2.2		
Surgical site infections for selected surgeries		6.3 of 2056 procedures	8.2 of 2444 procedures				7.8 of 639 procedures				
Community and hospital acquired MRSA	30.55 of 5564 patient days	5.40 of 37037 patient days	4.87 of 88566 patient days	21.3 of 29626 patient days	130.1 of 4197 patient days	19.54 of 7063 patient days	9.5 of 7566 patient days				
Community and hospital acquired c. difficile	1.44 of 5564 patient days	0.92 of 37037 patient days	0.46 of 88566 patient days		0.7 of 4197 patient days	0.42 of 7063 patient days	1.5 of 7566 patient days				

Saint Joseph Health System January 1, 2009 to December 31, 2009, comparative data January 1, 2006 to December 31, 2008

# Public Reporting in Kentucky

In 2011—  
Marked  
Improvement.

St Joseph is  
an example of  
a high  
performance  
facility where  
the total  
number of  
CLBSIs were 2

	Key
Significantly better than U.S. average	<span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>
Near U.S. average	<span style="background-color: #FFFF99; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>
Significantly worse than U.S. average	<span style="background-color: #FF0000; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>
No statistical comparison done	<span style="background-color: #D3D3D3; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>

Lower is better	Saint Joseph Berea	Saint Joseph East	Saint Joseph Hospital	Saint Joseph London	Saint Joseph Martin	Saint Joseph Mount Sterling	Flaget Memorial Hospital	Kentucky	U.S.
Foreign object retained after surgery	0 of 1175 patients	2 of 10881 patients	1 of 17773 patients	0 of 8477 patients	0 of 833 patients	0 of 2185 patients	0 of 2602 patients		
Air embolism	0 of 1175 patients	0 of 10881 patients	0 of 17773 patients	0 of 8477 patients	0 of 833 patients	0 of 2185 patients	0 of 2602 patients		
Reaction to incompatible blood	0 of 1175 patients	0 of 10881 patients	0 of 17773 patients	0 of 8477 patients	0 of 833 patients	0 of 2185 patients	0 of 2602 patients		
Open skin wounds with deep tissue injury	0 of 1175 patients	0 of 10881 patients	2 of 17773 patients	2 of 8477 patients	0 of 833 patients	0 of 2185 patients	0 of 2602 patients		
Falls and trauma	0 of 1175 patients	3 of 10881 patients	10 of 17773 patients	3 of 8477 patients	0 of 833 patients	1 of 2185 patients	1 of 2602 patients		
Catheter-associated urinary tract infection	0 of 1175 patients	1 of 10881 patients	13 of 17773 patients	0 of 8477 patients	0 of 833 patients	0 of 2185 patients	2 of 2602 patients		
Vascular catheter-associated infection	0 of 1175 patients	0 of 10881 patients	2 of 17773 patients	1 of 8477 patients	0 of 833 patients	0 of 2185 patients	1 of 2602 patients		
Poor control of blood sugar	0 of 1175 patients	0 of 10881 patients	0 of 17773 patients	1 of 8477 patients	0 of 833 patients	0 of 2185 patients	0 of 2602 patients		
Selected surgical site infections		0 of 350 patients	0 of 974 patients	0 of 139 patients			0 of 10 patients		
Blood clots after hip/knee replacement	1 of 15 patients	6 of 549 patients	1 of 98 patients	1 of 126 patients			0 of 209 patients		

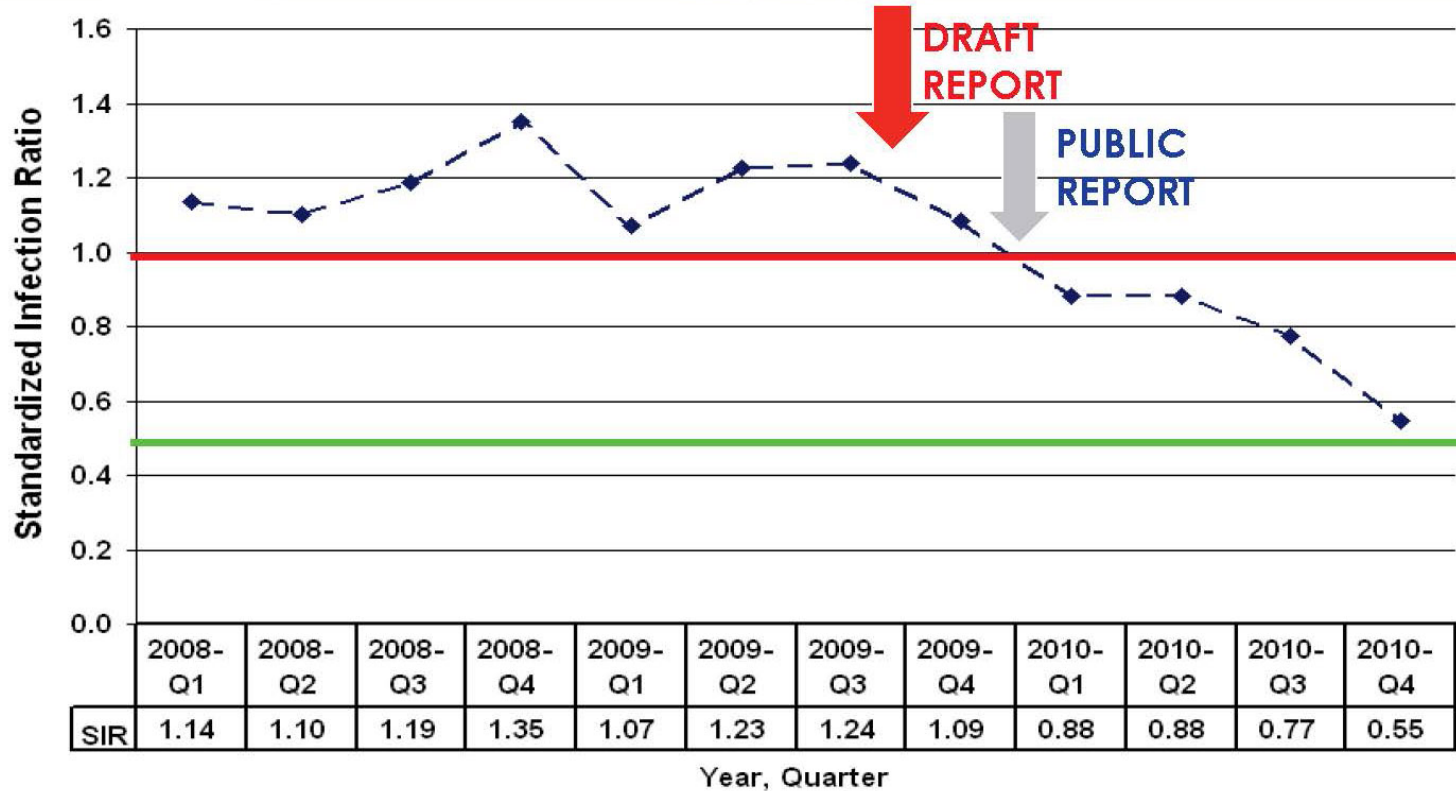
- Patients who are at high risk or immunosuppressed are more likely to develop an infection.
- **BUT ONLY IF EXPOSED TO THE BACTERIA**
- **Consumer Union (Publisher of Consumer Reports)**

To receive the top rating for CLABSIs  
Prevention from Consumer Union a hospital  
will have to have at least 1000 catheter days  
and NO CLABSIs.



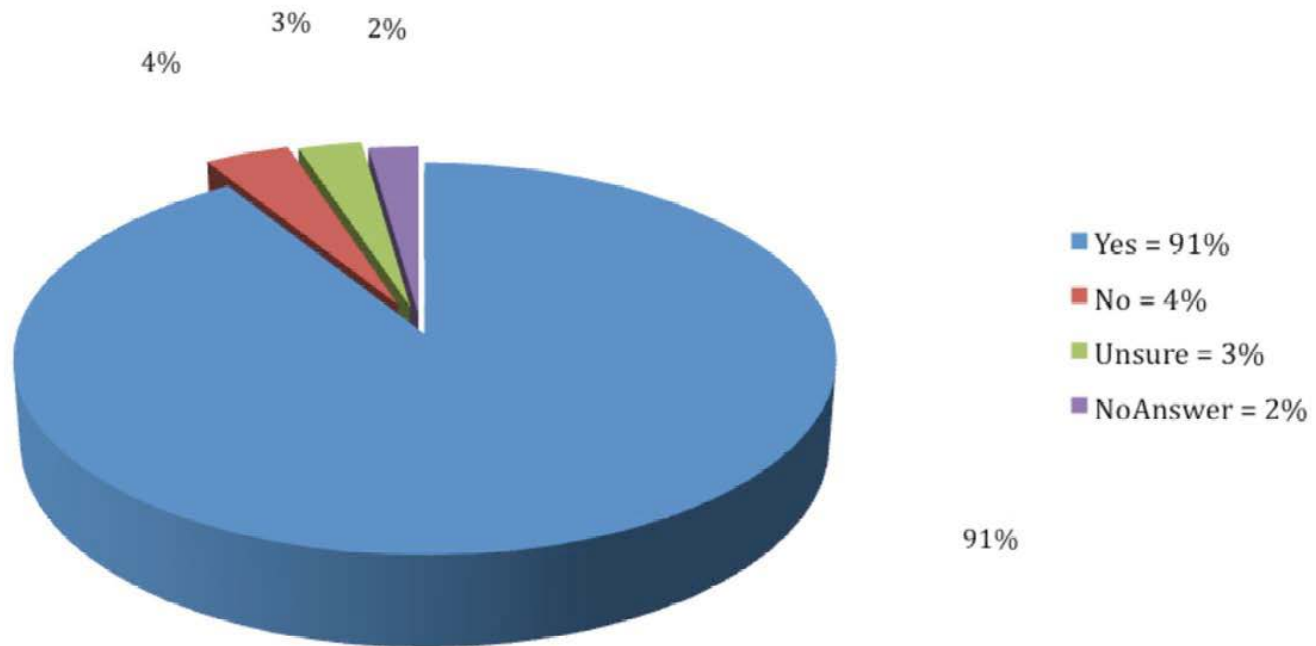
# Tennessee CLABSI

## CLABSI Adult & Pediatric ICUs, Tennessee, 1/2008-12/2010



# HAI – Public Wants Reporting

Do you support requiring hospitals to report all hospital-acquired infections to the State Health Department?



# Comments on Transparency

- **‘Doug Leonard, President of the Indiana Hospital Association, said the industry needs to “embrace transparency. Sometimes we don't like the results of that, but I think transparency is good for us and good for the public.” Even if the data are off by 50 percent or more, Leonard said, “it really doesn't matter, because one injury or one error is wrong,” and hospitals should focus on preventing errors rather than disputing the numbers.’**

-- Courier Journal June 12, 2011

