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Health Watch USA
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HAI — CRE — MRSA



Public Reporting of Healthcare Associated Infections

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

Size of Problem

Healthcare Associated Infections (HAI)

- 1 in 20 Hospitalized Patients develop an 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.



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

Top Three Drug Resistant Bacteria

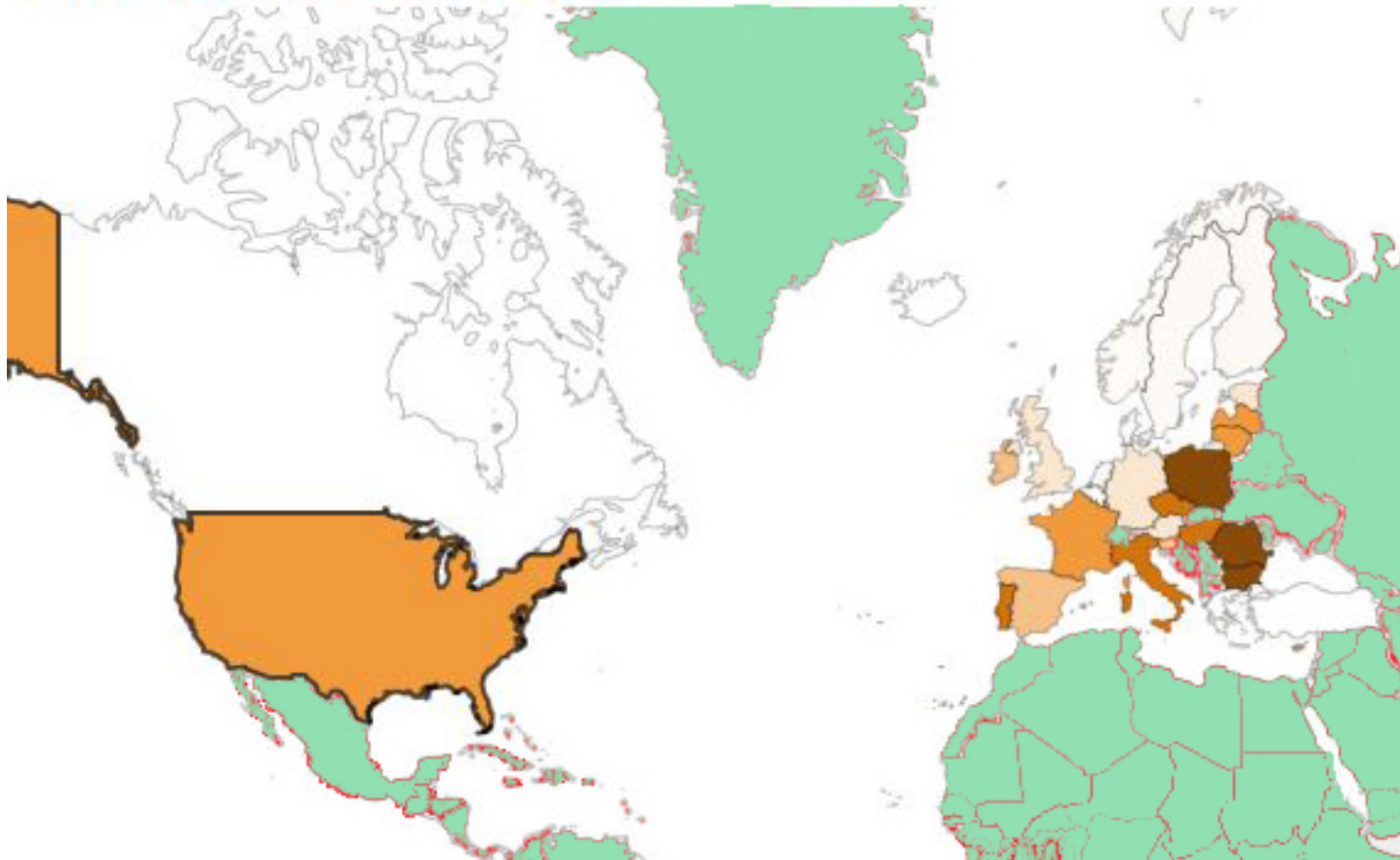
Most Healthcare Associated Infections are From Drug Resistant Bacteria

- ☞ MRSA – Deadly Staph Infection – Soft Tissues and Skin
- ☞ CRE — The Virtually Untreatable GI Bacteria
- ☞ C. Difficile – The Deadly GI Infection

World Resistance — All Pathogens

WORLD RESISTANCE AT A GLANCE: ALL PATHOGENS

CDDEP 2009

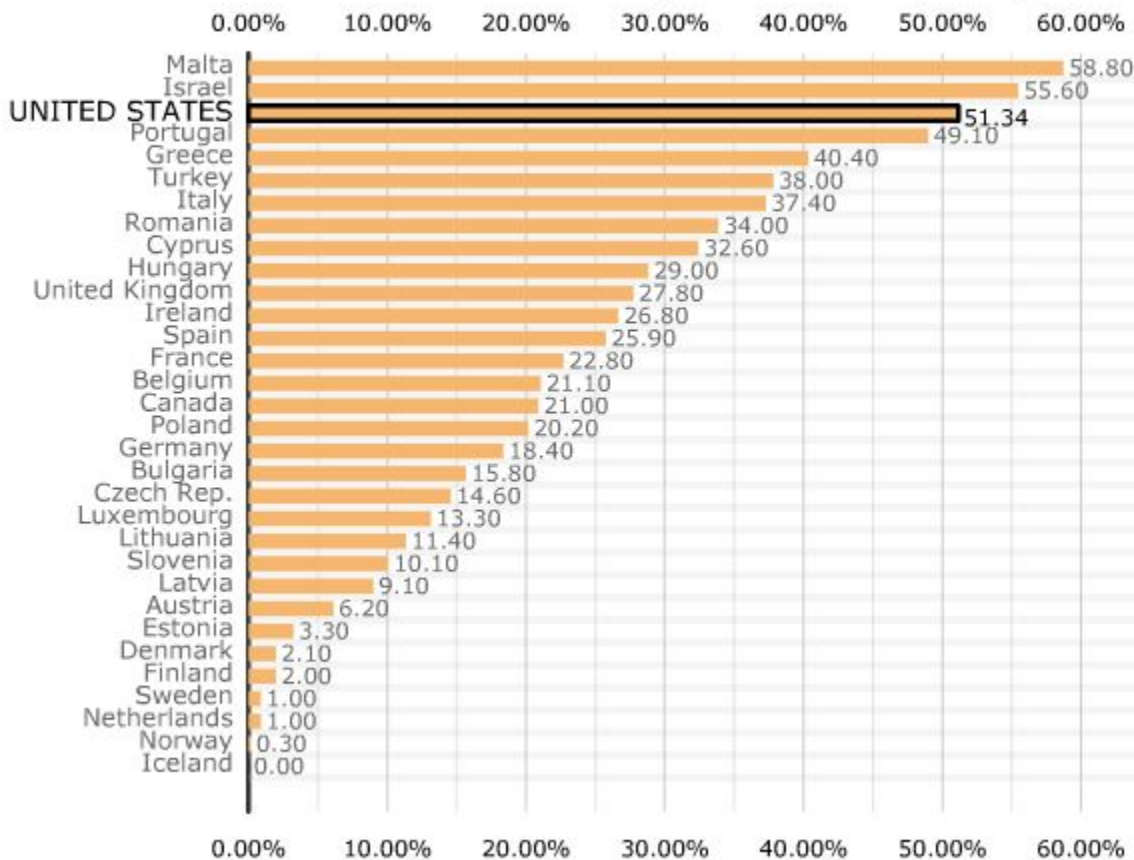


Dark Brown: Worse; White: Best; Green: No Data



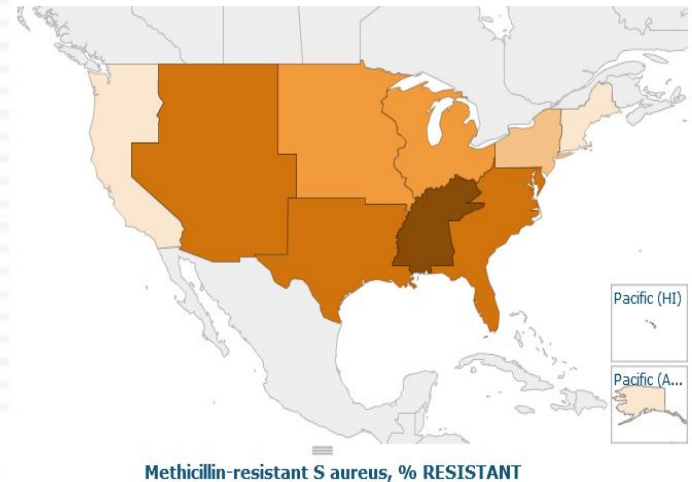
MRSA Common in the USA

Methicillin-resistant *S aureus*, % RESISTANT (2009)



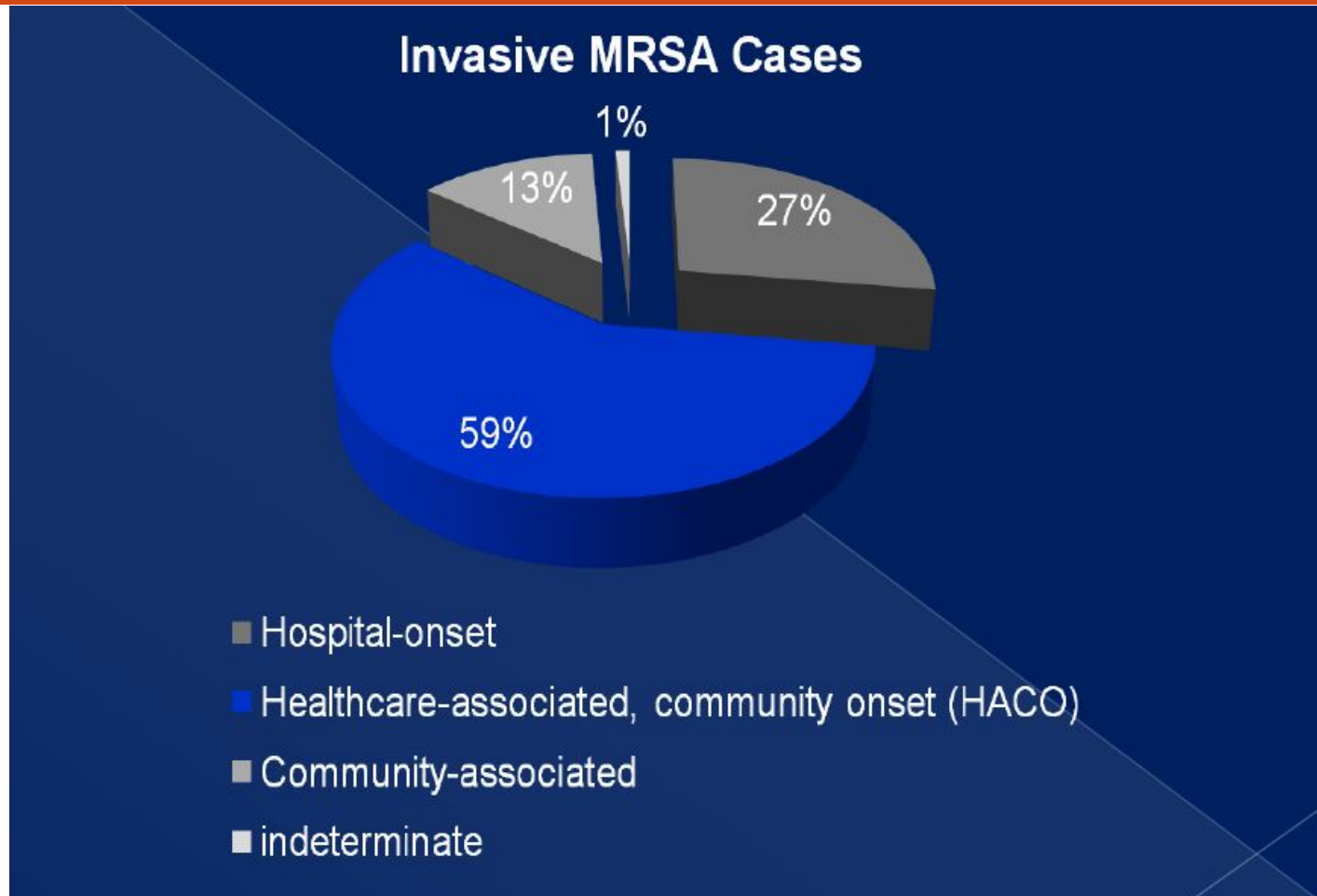
The Percentage of Staph Cultures Which Are MRSA Positive in the United States are one of the Highest in the World.

In the Region Where Kentucky Resides 68.97% of Staph Cultures are Positive for MRSA.





MRSA – Healthcare Associated





MRSA



- ☞ Deadly rapidly progressing infection. Can Kill within hours.
- ☞ It is now in the communities.
- ☞ The MRSA case on the left would not be required to be reported under Federal Mandates.

“Eric Allen went to bed March 1, thinking he had a light flu. By the time he staggered into the hospital in London, Ky., the next day, he was coughing up bits of lung tissue. Within hours, organs failing, he was in a coma. Allen hadn't been near a doctor or a hospital. Same with the next victim, a 54-year-old man, who came in days later and died within hours. And the victim after that, a 28-year-old woman, dead on arrival.”



We do not have good numbers

- ⌘ The CDC's estimate of **80,500 (CDC)** invasive MRSA cases in 2011, the most recent year of data, was celebrated as a significant decline from previous years. **(11,385 Deaths)**.
- ⌘ But that same year, there were nearly **460,000 (AHRQ)** hospitalizations involving an MRSA diagnosis, according to hospital billing data collected by the U.S. Agency for Healthcare Research and Quality (AHRQ).
- ⌘ The (AHRQ) data suggest those hospitalizations resulted in nearly **23,000 (AHRQ)** deaths. **(Twice the CDC Estimate)**.

USA Today, Dec. 16, 2013, Peter Eisler



We do not have good numbers

Table 1. Outbreaks* in Healthcare Facilities--Kentucky, 2013

Organism	Hospital	Long Term Care Facility	Correctional Healthcare Facility	Outpatient Facility
<i>Burkholderia cepacia</i>	1	0	0	0
<i>Campylobacter</i> spp	0	1	0	0
<i>Clostridium difficile</i>	1	3	0	0
Carbapenem-resistant Enterobacteriaceae	0	1	0	0
GI illness, unspecified	0	20	0	1
Influenza	2	50	1	0
Methicillin-resistant <i>Staphylococcus Aureus</i>	0	1	0	0
Non-tuberculosis mycobacteria	2	0	0	0
Norovirus	2	25	0	0
Norovirus, suspected (unconfirmed)	1	13	0	0
<i>Pseudomonas aeruginosa</i>	2	0	0	0
Respiratory illness, unspecified	0	2	0	0
Scabies	0	4	0	0
Vancomycin-resistant Enterococcus	2	0	0	0
Total	13	120	1	1

Preliminary Data

Healthcare Associated Infections

- 902 KAR 2:020 Section 5. Outbreaks or Unusual Public Health Occurrences. (1) **If, in the judgment of a health professional licensed under KRS Chapters 311 through 314, or a health facility licensed under KRS Chapter 216B,** an unexpected pattern of cases, suspected cases, or deaths which may indicate a newly-recognized infectious agent, an outbreak, epidemic, related public health hazard or an act of bioterrorism, such as smallpox, appears, a report shall be made immediately by telephone to the.....

Definition of an outbreak is when the number of infections are above the facility's baseline. The definition of a baseline is up to the facility.

Healthcare Associated Infections

- ✎ Whether or not to report is largely in the eye of the beholder, Note the lack of MRSA outbreaks in 2013 despite the “Cluster of Cases” reported by USA Today from London, KY.
- ✎ The Health Depts. needs to know what the baselines are.
- ✎ The citizens of Kentucky have a right to know what these baselines are at their community facilities.



We do not have good numbers

If you can
treat it ,
If you can
bill for it ,
Then you can
report it.





We Have a Cow Map, We Can Have A HAI Map

Beef cow density by county



This map plots the beef cow inventory per cropland acre by county based on data from the 2007 Census of Agriculture. For this map, county inventories of beef cows, excluding cattle on feed, were divided by the number of acres in cropland production for each county. The 10 most beef cow-dense counties included: Kenedy, Texas (10,469 beef cows per acre); Catron, N.M. (3,340 beef cows per acre); Grant, N.M. (1,953 beef cows per acre); Thomas, Neb. (1,717 beef cows per acre); Osceola, Fla. (1,686 beef cows per acre); Okeechobee, Fla. (1,528 beef cows per acre); Jim Hogg, Texas (1,421 beef cows per acre); Taylor, Fla. (1,368 beef cows per acre); Tuolumne, Cal. (1,225 beef cows per acre), and Gila, Ariz. (1,174 beef cows per acre).



MRSA — It can be reduced

- ✎ “Since 2007, the Veterans Health Administration – the nation's largest health care system – has screened all hospital patients for MRSA. Carriers are isolated and treated with special precautions.”
- ✎ “Hospital Corp. of America — the nation's largest health care provider — embraces a different approach. High-risk patients, usually in intensive care, are “decolonized” by wiping them down with antiseptic solution and antibiotic ointment.”



Many Facilities Not Doing Enough

∞ “Many hospitals and other health care facilities where MRSA is common, such as nursing homes, have been slow to adopt such tactics.”

USA Today, Dec. 16, 2013, Peter Eisler



Many Facilities Not Doing Enough

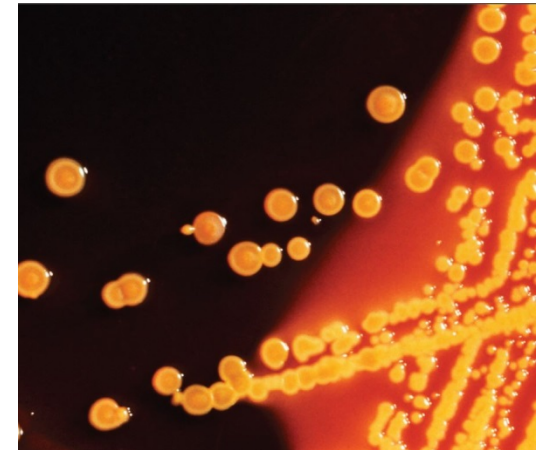
- ∞ The lack of response by facilities maybe due to confusion created by two arguably poorly implemented studies published in major medical journals
 - In one, known MRSA patients did not receive medical treatment for MRSA or the recommended decolonization.
 - In the other, contact precaution staff compliance was poor; and it took 5 days to get the admission cultures back.

- ∞ Decolonizing or treating everyone, may carry the risk of promoting bacterial resistance.

See: *A Perspective on How the United States Fell Behind Northern Europe in the Battle Against Methicillin Resistant Staphylococcus Aureus.* *Antimicrobial Agents and Chemotherapy.* (Ahead of Print. Oct. 7, 2013.) Dec. 2013 57(12):5789-5791. PMID: 24100502 <http://aac.asm.org/content/57/12/5789.full.pdf> .

Carbapenem-resistant Enterobacteriaceae

- ⌘ A group of 70 bacteria – Very deadly and virtually resistant to all antibiotics.
- ⌘ Most live in the gut – E. Coli & Klebsiella
- ⌘ Individuals can become carriers.
 - They can spread the bacteria.
 - They can become ill when their immunity drops.
- ⌘ Infections in the bloodstream have almost a 50% fatality rate.
- ⌘ First reported in a patient in North Carolina in 2001



Nightmare Bacteria - CDC Director Dr. Tom Frieden

CRE is on the Rise. In the United States:

- ✎ 4% of US Hospitals and 18% of Long Term Care Facilities have reported at least one case of CRE.
- ✎ “CREs increased most for the worrisome *Klebsiella pneumoniae*, jumping from 1.6 percent to 10.4 percent between 2001 and 2011, a rise of 550 percent.”
-- JoNel Aleccia, More bad news about ‘nightmare bacteria, Mar. 5, 2013.
http://vitals.nbcnews.com/_news/2013/03/05/17195353-more-bad-news-about-nightmare-bacteria-cdc-says?lite

Nightmare Bacteria - CRE

Reported Cases in Louisville

✎ *The Courier-Journal* reported that approximately 20 CRE cases have been treated in Louisville hospitals over the past two years. Yet, the Kentucky Department for Public Health has received only one report of an outbreak.

-- Melanie Wolkoff Wachsman, Medical News -- May 2013



Nightmare Bacteria - CRE

Table 2. Healthcare Facilities Reporting¶ Cases of Infection or Colonization with Emerging Pathogens of Public Health Importance--Kentucky, 2013

Organism	Hospital	Long Term Care Facility	Other
Carbapenem-resistant Enterobacteriaceae (<i>Escherichia coli</i>)	5	0	0
Carbapenem-resistant Enterobacteriaceae (<i>Klebsiella pneumoniae</i>)	12	3	0
Carbapenem-resistant Enterobacteriaceae (other spp)	12	1	2
Cephalosporin-resistant <i>Klebsiella</i>	1	0	0
Multi-drug resistant <i>Acinetobacter</i>	1	0	0
Vancomycin-resistant <i>Enterococcus</i>	2	1	2
Other MDRO	4	1	1
Total	37	6	5

¶ In 2013, the Health Healthcare-Associated Infections Prevention Program of the Kentucky Department for Public Health requested that healthcare facilities voluntarily report cases of infection or colonization with certain pathogens of public health importance that are not otherwise reportable. This table shows the number and type of facilities that have reported cases in 2013 by pathogen. These voluntary reports are sometimes made by the facility that identifies the pathogen and may not reflect where the infection or colonization was acquired, since it may have been present on admission.

Drug Resistant Organisms - Spread

☞ Spread from Hospital to Nursing Home

☞ Spread from Nursing Home to Hospital

Infections, are unlike other patient safety events, if one facility in the referral region performs poorly, it places all facilities at risk.

“...the transmission dynamics of nosocomial pathogens, especially of multiple antibiotic-resistant bacteria, is not exclusively amenable to single-hospital infection prevention measures.” Int J Med Microbiol 2013
PMID: 23499307

<http://www.ncbi.nlm.nih.gov/pubmed/23499307>

“Our simulation demonstrated that each hospital's decision to test for MRSA and implement contact isolation procedures could affect the MRSA prevalence in all other hospitals.” Health Affairs 2012 PMID: 23048111

<http://www.ncbi.nlm.nih.gov/pubmed/23048111>

Places Infrastructure at Risk



Resistant Bacteria — First Steps

- ☞ **“To prevent the emergence and further spread of CRE, a coordinated regional control effort among healthcare facilities is recommended.”**

Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE)
2012 CRE Toolkit. CDC. CS231672-A

<http://www.cdc.gov/hai/pdfs/cre/CRE-guidance-508.pdf>

**The same can be said for all Drug Resistant Organisms.
Data for action is needed.**

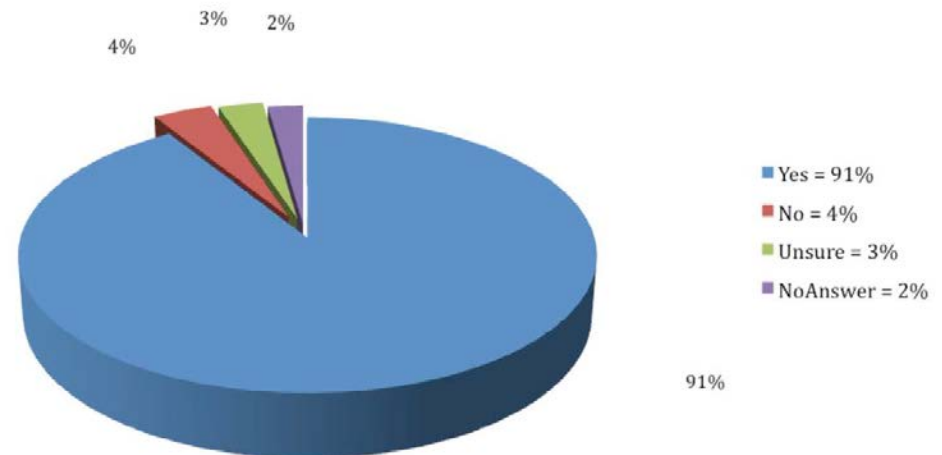
Current Federal HAI Reporting System

- ☞ Only a few bacteria are reported.
- ☞ Reporting of results has a significant delay.
- ☞ Only a few types of facilities are reporting. Critical Access Hospitals and Nursing Homes are not required to report.

Health Department
Engagement is Key to Track
Down the Source.

The NHSN Standardizes
Reporting.

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



Poll: Senator Harper-Angel, Feb. 2010

We Need a Different Plan

☞ **Insanity: doing the same thing over and over again and expecting different results.**

– Albert Einstein

☞ In Northern Europe – Less than 5% of Staph Cultures are MRSA Positive.

☞ In the United States – 50% of Staph Cultures are MRSA Positive.

☞ In the Region Kentucky Resides – Almost 70% of Staph Cultures are MRSA Positive.

We Need a Different Plan

☞ ‘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

