

The incidence of MRSA infections in the United States: Is a more comprehensive tracking system needed?

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United States MRDO Tracking Systems

- National Healthcare Safety Network (NHSN) – Hospital Compare. Hospitals which participate in Medicare's Prospective Payment System.
- Emerging Infection Program (EIP) – Nine metropolitan areas.
- Billing Records – University Healthcare Consortium (UTC)
- The Surveillance Network (TSN) - Outpatient Laboratory Data
- US Military and Veterans' Administration Health Systems



United States MRDO Tracking Systems

- **Different Subject Populations”.**
 - Military Facilities, Medical Centers
 - General Population, Pediatric Population
 - Restricted Geographic Areas
- **Different HAI Definitions.**
 - Hospital Onset MRSA (Healthcare VS. Community Acquired).
 - Infections
 - All MRSA
 - Bloodstream
 - Invasive MRSA
 - Laboratory Cultures (Surrogate Metric)
- **Confusing Terminology: “Community Onset Healthcare Associated”.**

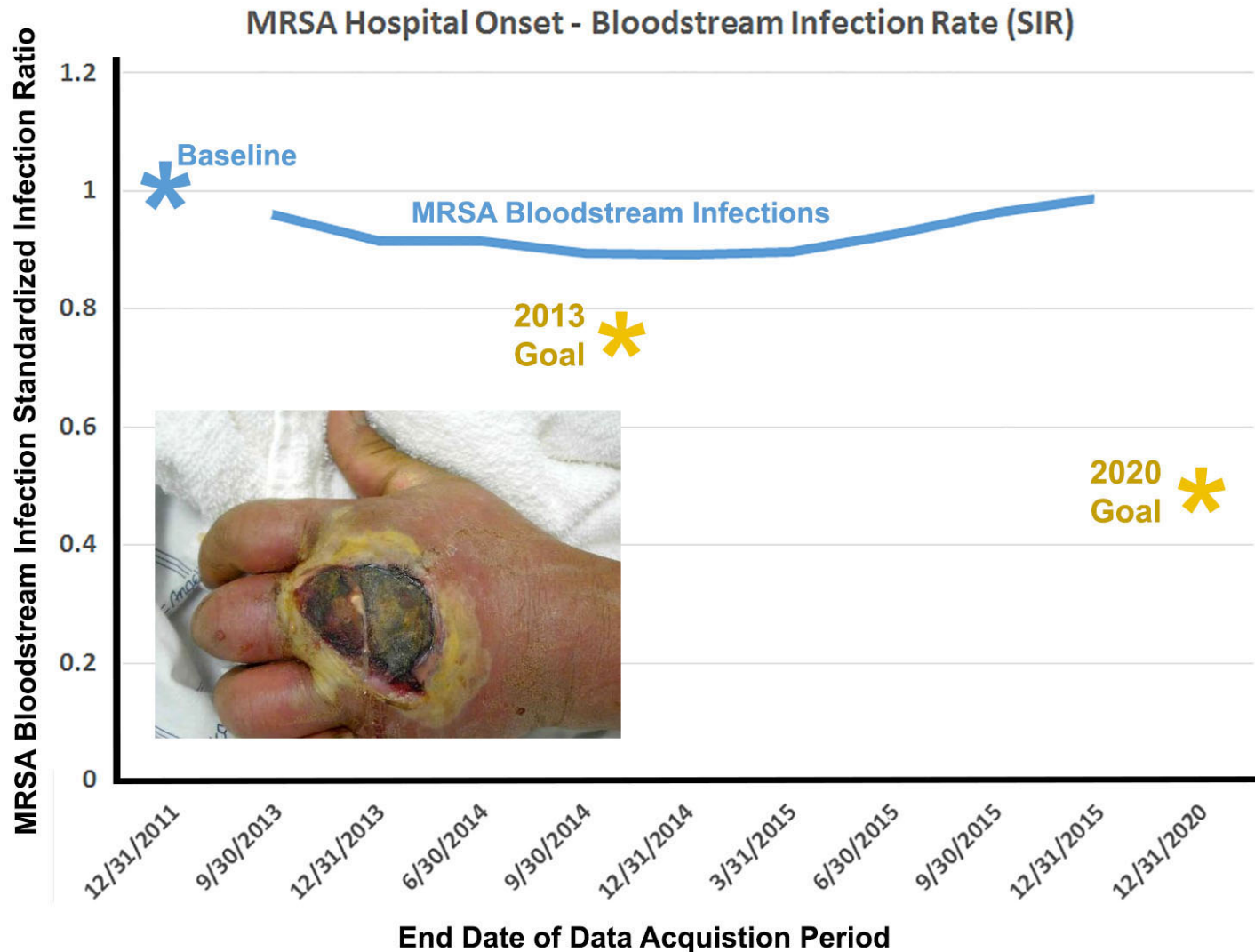


United States MRDO Tracking Systems

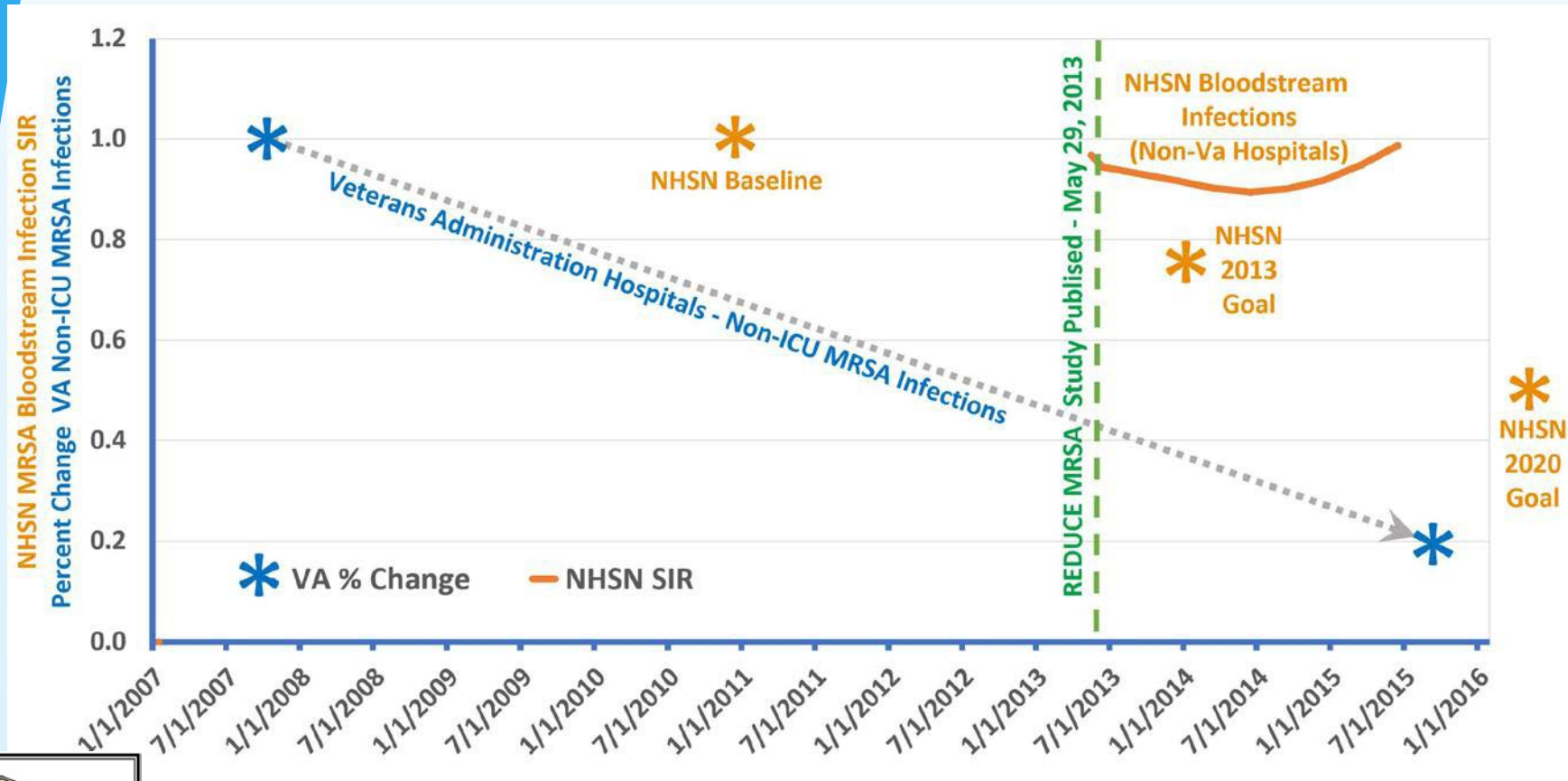


**This MRSA
infection
would NOT
be defined
as Invasive.**

Incidence of MRSA Blood Stream Infections



Incidence of MRSA Blood Stream Infections



Incidence of MRSA

Table 1		NHSN data from https://data.medicare.gov/data/hospital-compare		
Acquisition Dates	Average Facility SIR	Average National SIR	Number of Facilities	
1/1/2013 to 9/30/2013	0.95876	0.96766	1666	
1/1/2013 to 12/31/2013	0.91540	0.94380	1889	
7/1/2013 to 6/30/2014	0.91484	0.91766	1906	
10/1/2013 to 9/30/2014	0.89426	0.90195	1904	
1/1/2014 to 12/31/2014	0.89134	0.89422	1916	
4/1/2014 to 3/31/2015	0.89717	0.90124	1911	
7/1/2014 to 6/30/2015	0.92568	0.91835	1899	
10/1/2014 to 9/30/2015	0.96378	0.94811	1825	
1/1/2015 to 12/31/2015	0.98812	0.98740	1830	



Is MRSA on the Rise in the United States??

- **CDC, said NO!**
 - Due to aberrations caused by changing methodology on how to track community acquired infections.
 - EIP data did not show an increase.
- **But we are NOT on Track for a 50% Reduction in Bloodstream Infections by 2020!!**



BUT WAITE??

“Due to aberrations caused by changing methodology on how to track community acquired infections.”

NHSN down adjusts hospital MRSA infections rates if there is a high rate in the community.

We also adjust for bed size and being a teaching hospital.



BUT WAITE??

The EIP Data still showed an increase in Hospital Acquired MRSA.

- It was not statistically significant
- But only a portion (six of nine) of EIP Labs were analyzed.



Everyone Agrees!!

We are no where near on track for meeting the 2020 goal of a 50% reduction in MRSA Bloodstream Infections.



Why Needed

- Unfortunately, most research on common protocols used to control MRSA have significant research integrity problems which has clouded policy formation.

Bad Data, Bad Policy, Dead Patients



Why Needed

- Similar to the FDA, post protocol implementation monitoring is desperately needed. We need to know what works and what does not.
- For Example:
Chlorhexidine Bathing VS. Surveillance and Isolation



Data Integrity Concerns

- World Health Organizations Recommendations on Surgical Site Antisepsis.
 - Changing of date window for study inclusion
 - Leaving a large negative study out
 - Including studies whose concentration of alcohol antiseptics is not known.
- Two Antiseptics VS. One Antiseptic (Chlorhexidine plus Alcohol VS. Povidone Iodine Alone).
- Charles Denham Affair.
- Daily Chlorhexidine Bathing
 - Apparent Spinning of data
 - Changing of metrics after trial initiation (major metric added after trial completion.
 - Use of a surrogate metric for the primary outcome.



