

Validation Study Pilot Study: Tennessee

Marion Kainer MD MPH

ARRA HAI grantee meeting

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Validation: Tennessee

- **Very limited resources**
 - After public reporting mandate, no additional resources to perform validation
- **Targeted approach**

Validation

- **Internal validation (within NHSN)**
 - **Pathway**
 - **Organism is pathogen/ Common skin contaminant**
 - **Max . # of pt-days**
= # of days in month * bed # (+/- 5%)

Max # of central line days <+ # of patient days

External Validation

Methodology: CLABSI

- Letter to microbiology laboratory director
- All positive BC taken in the ICU in CY 2008
 - Grouped by ICU, sorted by patient name or identifier then by date of collection
- Hospitals that were $> 95^{\text{th}}$ or $<5^{\text{th}}$ percentile for that ICU vs NHSN
- Random selection of other facilities

Validation: CLABSI

- **Asked to pull 22 medical charts for on-site review (plan to review 16 charts per site):**
 - **2 x CNS or Staph epi (one with 1 isolate, one with 2 isolates within 72 hours)**
 - **1-2 x MRSA**
 - **1-2 x MSSA**
 - **1-2 x Candida or other yeast**
 - **Random selection of other positive blood cultures**

Validation Studies: Chart Review

	Entered into NHSN		
TDH determination	Yes	No	Total
CLABSI Yes	46	13	59
CLABSI No	4	157	161
Total	50	170	220

Kainer 2009 (unpublished data)

Validation Study: Chart Review

- **Sensitivity:**
 - 46/59
 - 78.0% (Range: 40% to 100%)
- **Specificity:**
 - 157/161
 - 97.5% (Range: 80% to 100%)

Validation Study: Chart Review

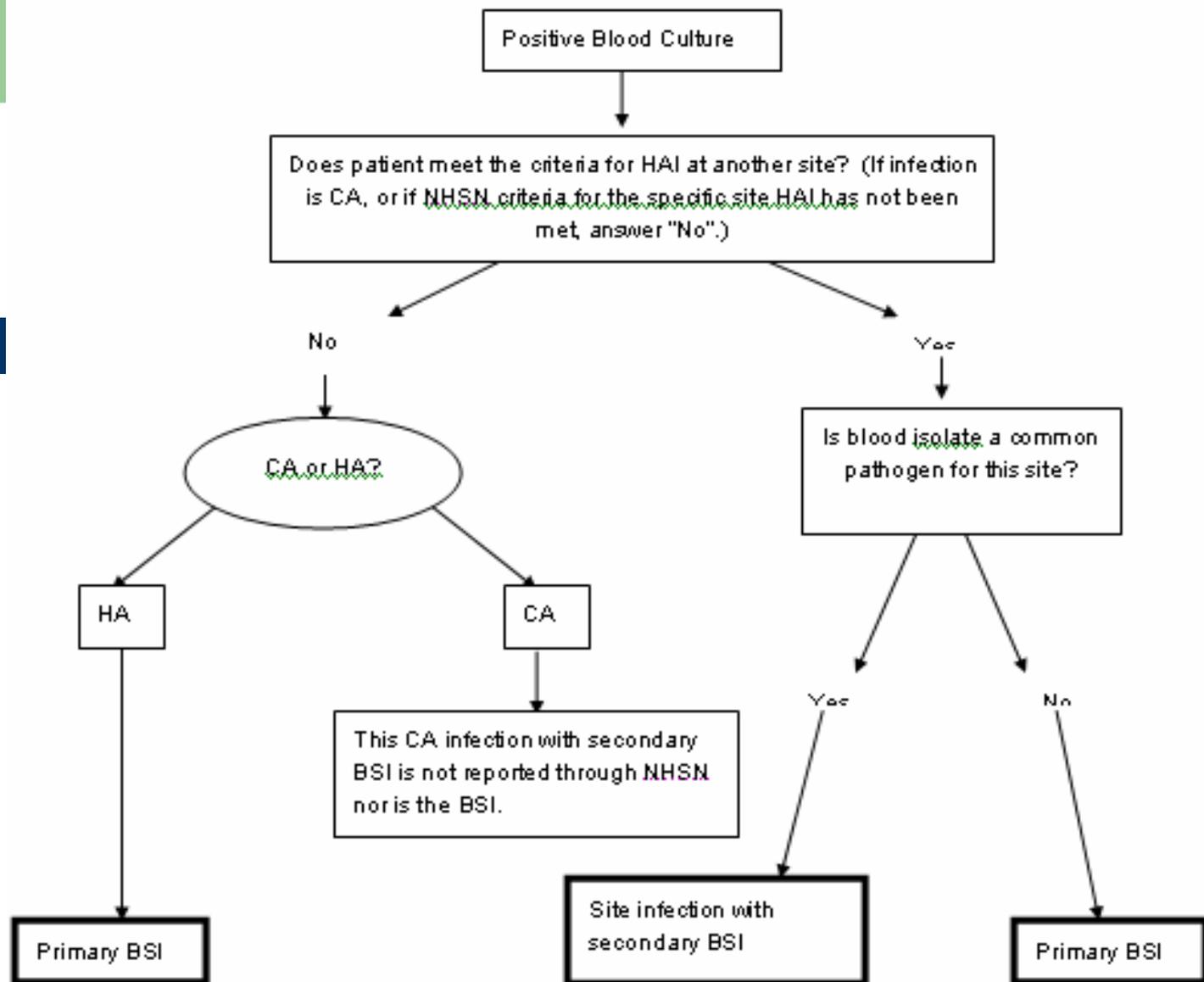
- **Positive Predictive Value (PPV):**
 - $46/50 = 96\%$
- **Negative Predictive Value (NPV):**
 - $157/170 = 92\%$

During Visit

- **Questioned IPs on definitions of how collect denominator data etc...**
- **Reviewed raw denominator data collection tools**
- **Reviewed central line cart/ check-list**

Discrepancy:

- “Over-calling” of CLABSI by IP
 - Single skin contaminant
 - 2 skin contaminants, but vary in antibiotic susceptibility by ≥ 2 antibiotics
- “Under-calling” of CLABSI by IP
 - Attribute the positive BC to another site, even though NHSN criteria for infection at other site not met.
 - *Candida* spp. from respiratory tract
 - Definition of pneumonia



BSI= bloodstream infection
HAI= healthcare-associated infection
CA= community acquired

NHSN Newsletter

Pneumonia Definition

- **Must have CXR changes**
- **Signs and Symptoms (at least one)**
- **Laboratory (bacterial):**
 - **Pleural fluid**
 - **Histopath**
 - **Positive quantitative culture (BAL, protected specimen brushing)**
 - **NOT: sputum or endotracheal aspirate (unless IMMUNOCOMPROMISED)**
 - **See definition algorithm**

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