Government of Western Australia
Department of Health

Validating HA-SABSI data – is it worth your while?

Rebecca McCann
Healthcare Associated Infection Unit
Communicable Disease Control Directorate
Department of Health, WA

No disclosures or conflict of interest

Outline

- Overview of HISWA
- Our HA-SABSI Process
- What our data is used for
- Data collected and what we have found
- Is it worth your while?

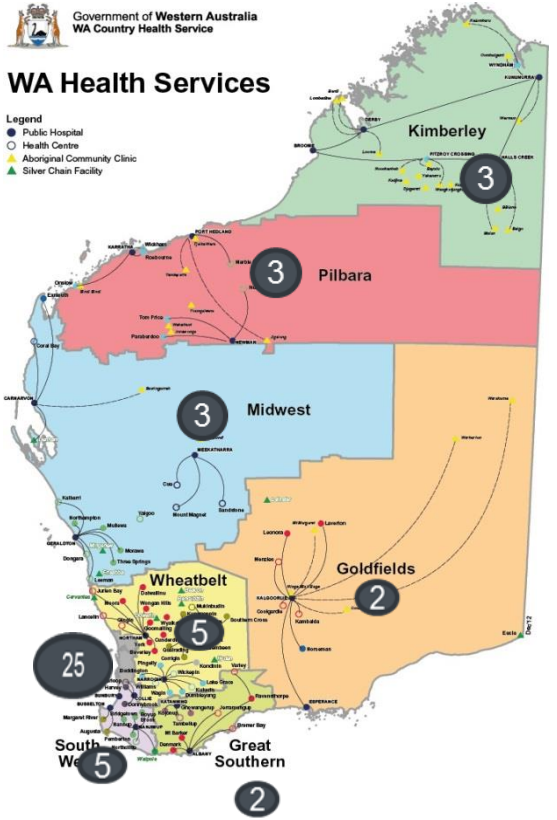
HISWA Program

- **Collaborative consultation March 2005**
  - indicators selected by consensus
  - voluntary private & public
  - data collection commenced July 2005
  - 10 public, 6 private, 5 HAI indicators
  - HA-SAB commenced 2007

- **Mandatory Indicators 2009**
  - public hospitals and contracted private hospitals
  - state HAI surveillance policy
  - 8 HAI indicators included as mandatory

HISWA Program

- **HISWA 2019**
  - 10 indicators
  - 34 public, 14 private
- **Plus**
  - 12 private haemodialysis units
- **Do not submit**
  - 50 small hospitals
  - provide community and aged care services



S.aureus

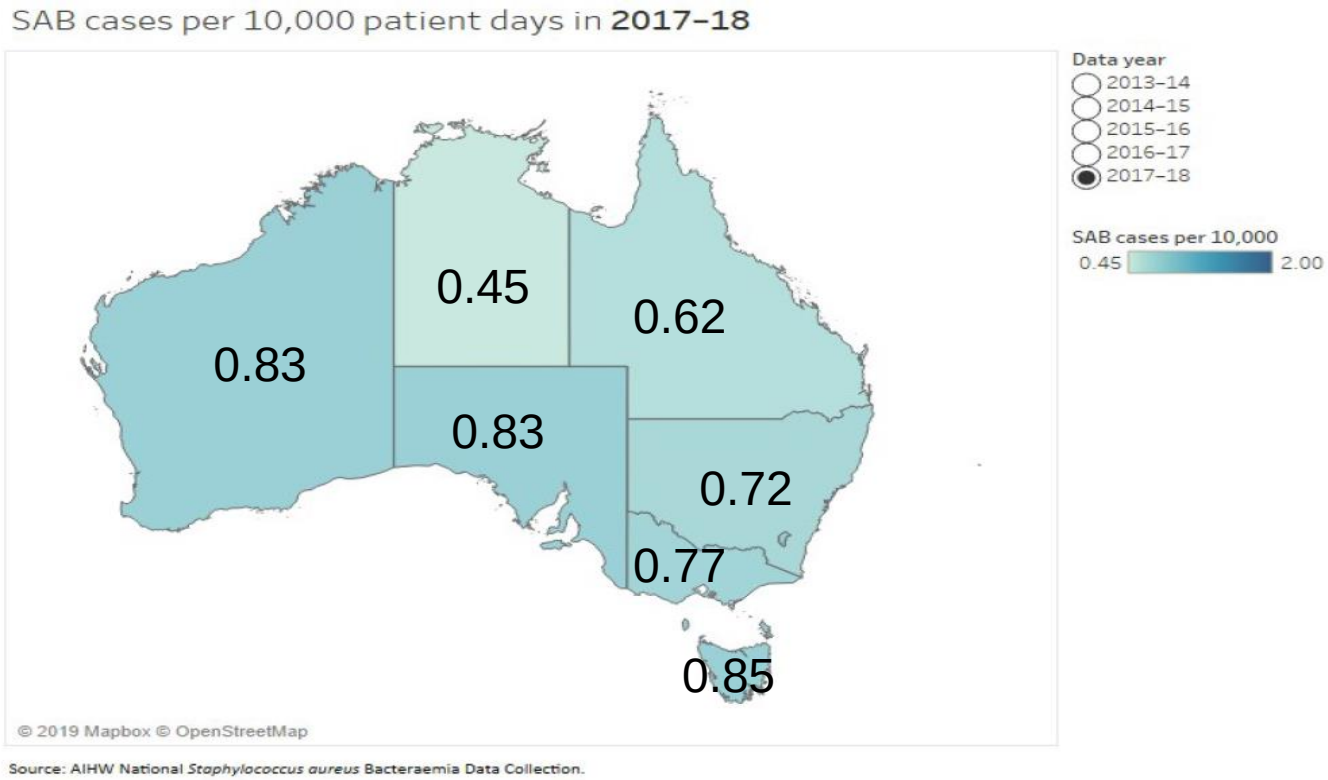
- *S.aureus*
  - gram positive, skin / nares
  - approx. 30% of us are colonised
  - pathogenic - wide range of infections – mild to severe
  - SSTI, osteomyelitis, endocarditis, PJIs, sepsis
  - most common cause of HA-BSIs

- SABSI
  - ↑ length of stay and ↑ costs ↑ antimicrobial use
  - marked ↑ morbidity and ↑ mortality
  - attributable median mortality 25% - 50%
  - large % of HA-SABSI are preventable
  - CA-SABSI large burden on healthcare system

HA-SABSI Data Use

- Outcome measure
  - Nationally
    - National Healthcare Agreement
    - MyHospitals website
    - AIHW Annual Report
  - State level
    - Health Service Performance Measure
    - Contractual KPI for CHEs
- **Improve patient care**

HA-SABSI Data Use



Source: AIHW National *Staphylococcus aureus* Bacteraemia Data Collection.

HA-SABSI Data Use

IE WEST AUSTRALIAN

News

thewest.com.au

Major hospital has most 'superbug' infections

IDREW TILLETT
NBERRA

r Charles Gairdner Hospital has A's highest infection rate for adly "superbugs" among pat-nts, new figures have revealed.
The hospital is the only one in the ate above the national bench-ark for infection rates for golden aph, according to yesterday's dated version of the Federal vernment's MyHospitals web-e.
t is the first time the data has en made public.
But doctors and health officials have downplayed the result, saying it is not a sign of deeper problems with patient care at the hospital.

Golden staph is one of the most common superbugs that can be spread in hospitals and is often resistant to antibiotics.

Australian National University infectious disease expert Peter Collignon, who developed the national benchmark of no more than two cases of staph for every 10,000 days of patient care, said golden staph killed 20 per cent of people whose blood was infected within 30 days.

Analysis of data for public hospitals in Perth and major regional centres showed 140 cases of golden staph were reported during 2010-11, but this was dominated by Sir Charles Gairdner (52), Royal Perth (38) and Fremantle (24) hospitals. Details were not given for smaller country or private hospitals.

Sir Charles Gairdner Hospital had an infection rate of 2.12 per 10,000 bed days, Royal Perth 1.21 and Fremantle 1.26.

Although Sir Charles Gairdner had the highest infection rate in WA, it compared favourably with some interstate hospitals.

At least four Sydney hospitals had a higher infection rate. Royal Adelaide Hospital was also higher.

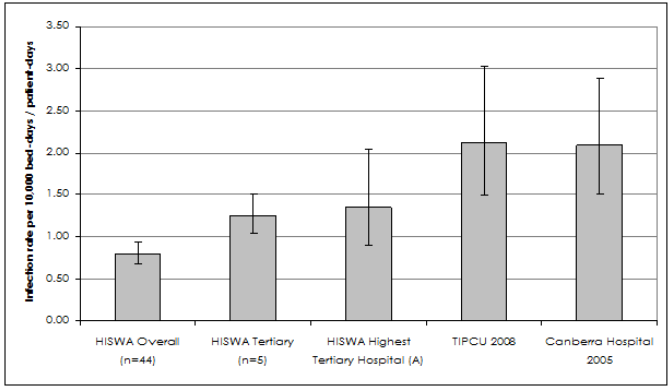
A spokeswoman for Sir Charles Gairdner Hospital said no patients had been admitted to intensive care or died as a result of acquiring golden staph.

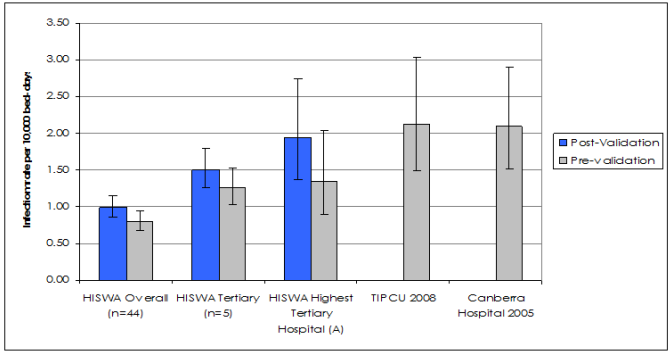
"The hospital has stringent infection control procedures which are continually reviewed to ensure the risk of infection remains low," she said.

Australian Medical Association WA branch president Dave Mountain said the biggest hospitals tended to have higher rates of infection because they treated more people and the sickest patients.

HAIU - Why We Validate

- *Van Gessel et.al, Healthcare Infection*, 2010, 15, 21-25
  - 77% sensitivity , 99.6% specificity
  - 45 missed events
- Routine since 2009
  - Public sector data only
  - No private hospital validation



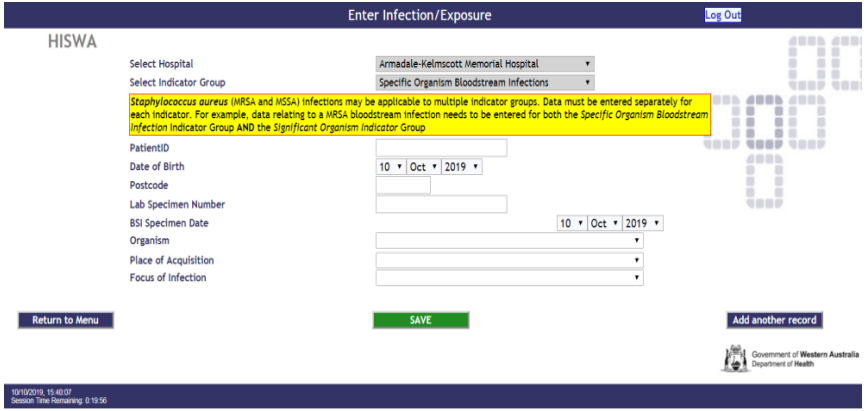


HA-SABSI – Why Missing Cases?

- Reasons for omissions
  - classification errors
    - definition not applied correctly
    - incomplete investigation
    - experience and knowledge
  - systems and processes
    - internal surveillance processes
    - staffing / leave cover issues
    - not receiving laboratory reports – internal comms
  - care between hospitals and sectors
    - initial care at hospital A and presents unwell hospital B
    - no prior admission Hx at the hospital presenting at – so not Ix

ICPs - SABSI Validation Process

- Contributors
  - review infection data
  - use national definition
  - determine if HAI v CAI
  - internal validation process
  - online data submission



HAIU – SABSI Validation Process

- Routine since 2009
  - monthly download of all MSSA / MRSA BCs
  - on line clinical review all cases
  - presumptive HAI v CAI
  - cross check with HISWA database
  - non-congruent – discussion with hospital IP&C / IDPs
  - CA-SABSI data collected concurrently

Data Collected

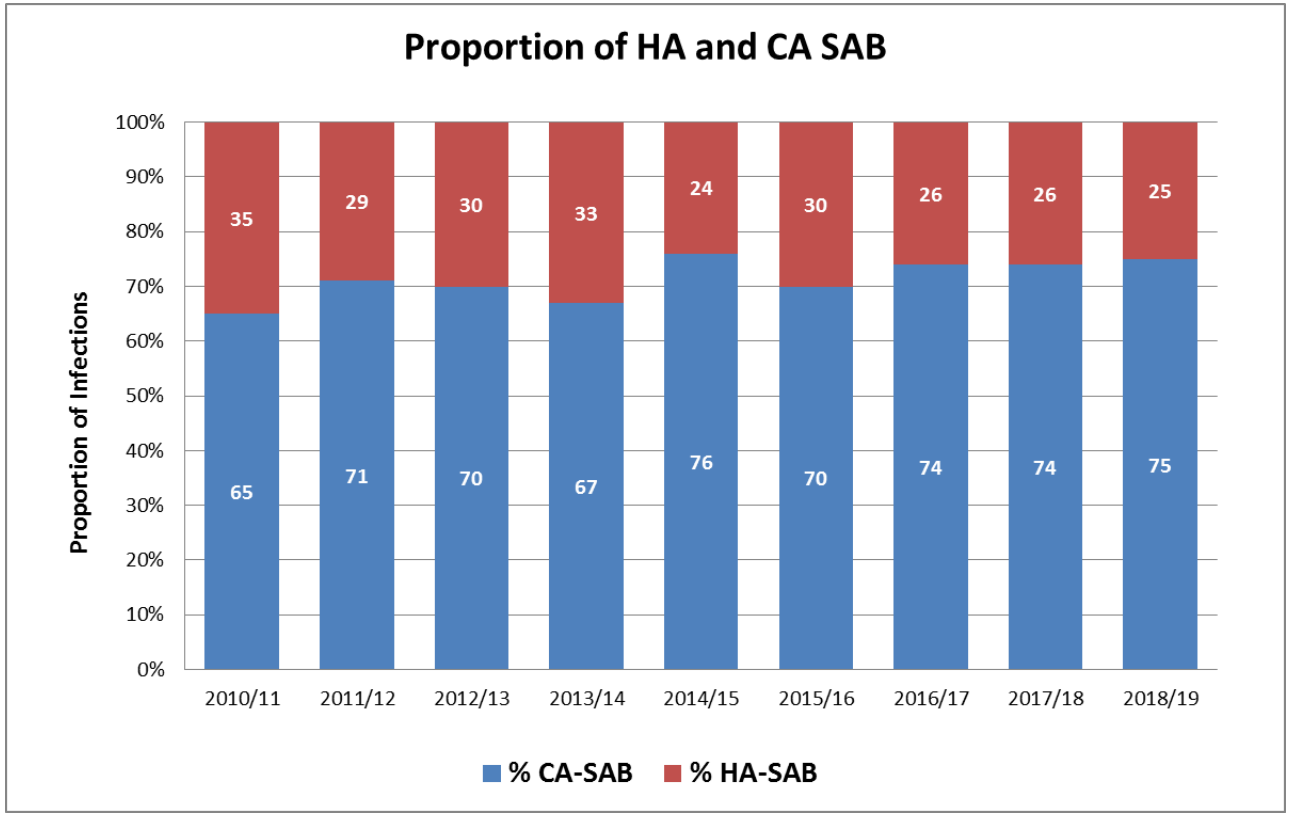
- Demographics; RCF, hospital/ward where collected
- MSSA, MRSA, time & date collected
- Date of admission, discharge, LOS
- 30 day all cause mortality
- Time of BC relative to admission <48 or >48 hours
- Any procedures elsewhere - date /place of same
- Separation type: formal, deceased, DAMA
- Can see state-wide hospital admission history

- HA-SABSI
  - attributable source
    - IVD and type of IVD
    - non-IVD
    - procedural, neutropenia

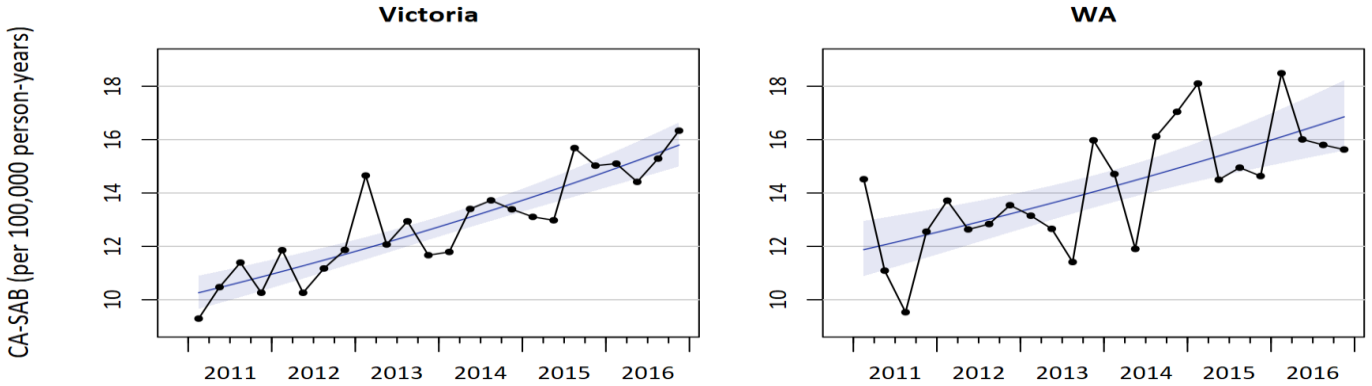
- CA-SABSI
  - infective focus / POE
  - some co-morbidity info
  - IVDU, Joint Injections

What We Have Found

SAB - Community or Healthcare



Increasing CA-SAB

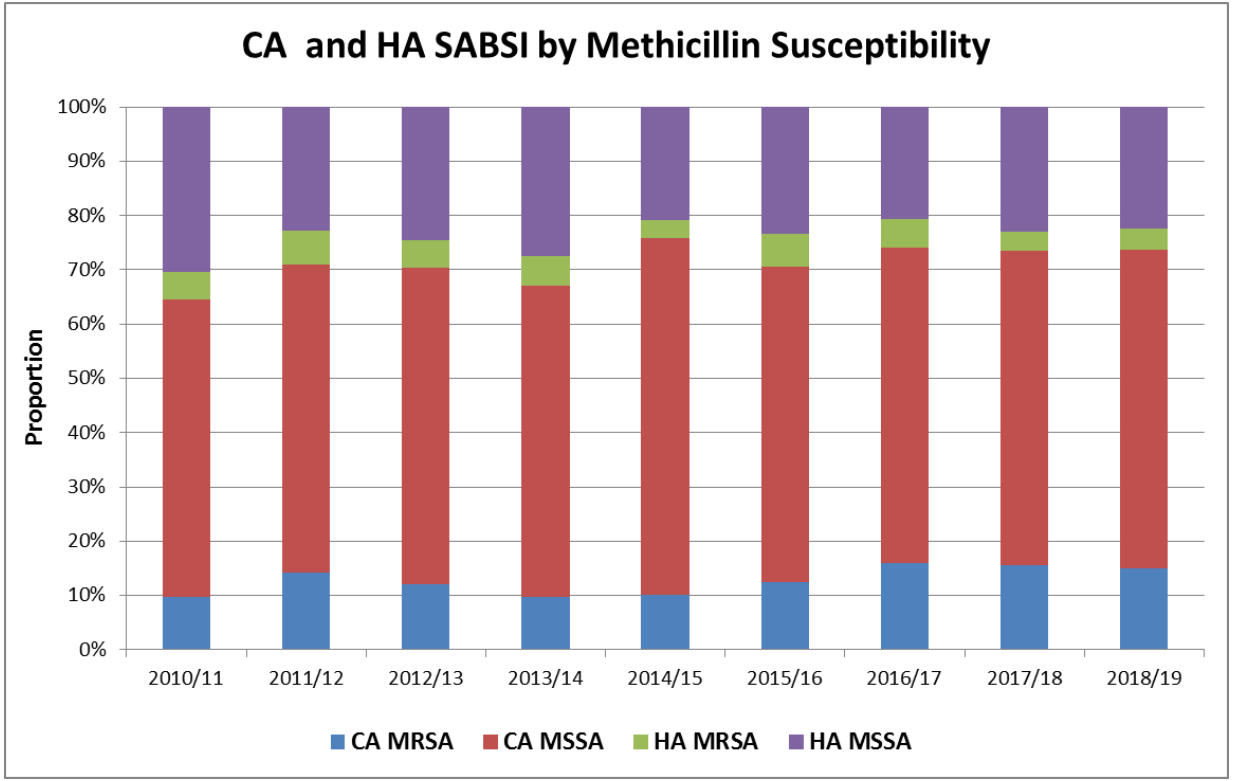


- *Increased incidence of community-associated* Staphylococcus aureus *bloodstream infections in Victoria and Western Australia, 2011–2016* - Imam et al, Med J Aust 2019; 210 (2): 87-88

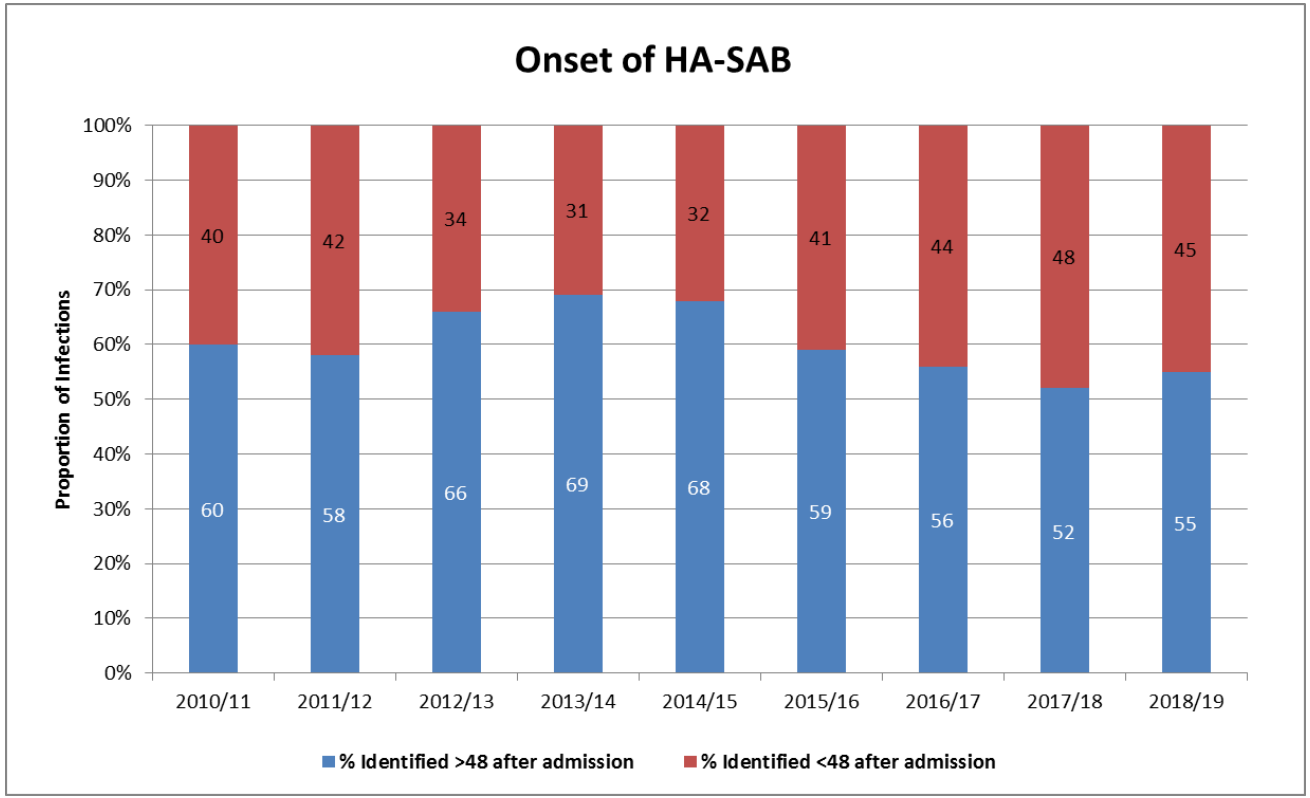
CA-SABSI – But REALLY Healthcare

- **July 2010 – June 2019**
  - 135 RCF SAB
  - 52 Non HISWA SAB
    - GP surgeries, radiology, DSUs, SJA, cruise ship, overseas, interstate
    - 20 associated with IA cortisone injections

MSSA and MRSA



HA- SABSI Onset



HA-SABSI – The Missing Cases

- **Since July 2010**
  - 310 missed HA-SABSI
    - 211public hospitals
    - 54 private hospitals
    - 45 private haemodialysis units
  - 20 HA-SAB declassified
    - definition incorrectly applied
    - recurrent but < 14 days from previous episode
    - contaminant

Conclusions

- Majority of missed HA-SABSI events are associated with imperfect systems.
- Validation ensures all HA-SABSI are captured and classified correctly.
- Our HA-SABSI data is valid, reliable and provides true rates.
- Validation process facilitates communication between HCFs and +ve clinician engagement.
- Surveillance data has credibility with clinicians.
- Identifies areas for further research & policy development to improve patient outcomes for both CA and HA SAB.
- We believe - time investment is worthwhile.

Acknowledgements

- WA Infection Prevention Nurses and HISWA Contributors
- PathWest Laboratory Medicine
- WA IDPs, microbiologists and scientists
- The HAIU Team
  - Michelle Stirling, Mariyam Athifa
  - Simone Tempone, Claire Parker