Healthcare Acquired Infection Surveillance in the SHA

“If a tree falls in a forest and nobody is around to hear it, how can we ensure it makes a sound?”
I would like to acknowledge that we are gathering on Treaty 4 territory and the Homeland of the Métis, Lakota, and Dakota. Recognizing this history is important to our future and our efforts to close the gap in health outcomes between Indigenous and non-Indigenous peoples by knowing what the land and the traditional people of the land offer us.
Epidemiologists

What my friends think I do

What my parents think I do

What society thinks I do

What grandma thinks I do

What I think I do

What I really do
HAI Surveillance and Health Outcomes

• Why does it matter?
• To whom does it matter?
• How can we make sure it matters?
Why perform HAI surveillance?

3,063 hours = ~25%
To whom does it matter?

Rosie’s story - https://www.youtube.com/watch?v=BQeC04q9Iis
Surveillance in Action: SCH SSI Surveillance Process

• Elective Total Hip and Knee surgeries done at SCH
• Breast implant/tissue expander surgeries done at SCH
• Look for SSI occurring within 90 day after operative procedure
• Passive Surveillance (lab reports, admission diagnoses, reports from ICPs)
# Increased Hip/Knee SSI Rates

## Hip SSIs

<table>
<thead>
<tr>
<th></th>
<th>Apr – Aug 2019</th>
<th>Apr – Aug 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total Procedures</td>
<td>423</td>
<td>554</td>
</tr>
<tr>
<td>Rate</td>
<td>0.47</td>
<td>0.54</td>
</tr>
</tbody>
</table>

## Knee SSIs

<table>
<thead>
<tr>
<th></th>
<th>Apr – Aug 2019</th>
<th>Apr – Aug 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Total Procedures</td>
<td>488</td>
<td>890</td>
</tr>
<tr>
<td>Rate</td>
<td>0.41</td>
<td>1.46</td>
</tr>
</tbody>
</table>
Increased SSIs with *S. aureus*

• Skin organism = person-person not environment transmission
• 3/3 hip infections grew *S. aureus*
• 7/13 knee infections grew *S. aureus*
Common Denominator

• OR Theatre? No
• Surgeon? No
• Assistant Surgeon? No
• Anaesthesiologist? No
• Nurse? Yes

  • Manager confirmed a common nurse in 7/10 of the SSIs where S. *aureus* was identified
  • Manager disclosed that nurse had a hand hygiene accommodation
Pandora’s Box – Gaps Identified

- Hand hygiene accommodations
  - Are there other staff with hand hygiene accommodations?

- Privacy
  - IPAC was not made aware when staff had a hand hygiene accommodation

- Staff Swabbing
  - No identified process when need to swab staff during SSI investigations
Closing the Gaps

• Met with Accommodations, OR Manager, and OHS:
  • Need for working group
  • Need for IPAC algorithm for accommodations
What can we do with surveillance data?
Why?

- Vancomycin-resistant *Enterococcus* (VRE) outbreak
  - Regina General Hospital, 2013
  - Medical inpatient unit
  - 8 months duration
  - Environmental sampling
    - Extensive contamination
    - Patient charts, hand rails, pyxis machine, nursing station, storage room, staff kitchen
Improvements Projects 2015-17

- Standardized cleaning practices, updating WS/Job Duties and assisting clinical partner with their practices
- Updating cleaning products
- Incorporating technological tools and updated cleaning supplies
- Sticky note exercises
- Seasonal Cleaning – room closed for 24 hours
- Vinyl Curtains
- Acute Care EPI, standardized surveillance and reports
- Auditing program – UV and Visual
- LTC support with 4 ICPs.
- IPAC walk through with EVS, facilities and unit staff
Improvement Projects

“Sticky Note” Exercise

• Colour coded
• Patient rooms, exam rooms, nursing stations, equipment
• Outcomes:
  o Cleaning locations
  o Schedules
  o Areas and equipment not being cleaned
Results

Through this work we established strong collaborative working relationships with RQHR’s support services; as these healthcare providers play a vital and integral role in the operation of the IPAC Department. We assisted the Environmental Services Department in analyzing the current state of their practices, procedures and products for cleaning and disinfection at the Regina General Hospital and Pasqua Hospital in addition to identifying improvement projects. This significant work resulted in improving patient and healthcare worker safety. Between 2015 and 2018, the healthcare-associated infections and colonization rate in the RQHR decreased by:

- 62% for methicillin-resistant Staphylococcus aureus,
- 74% for extended-spectrum beta-lactamases, and
- 44% for vancomycin-resistant Enterococcus (VRE)

Furthermore, the total number of outbreaks at Regina General Hospital and Pasqua Hospital decreased by 67%; and the total number of outbreak days for VRE decreased by 95%. Overall, through Senior Leadership investing in IPAC activities and the IPAC Department working in partnership with multifunctional groups, this work has resulted in significant savings to the health region of more than 1.5 million dollars.
Total cost* of healthcare-associated VRE colonization cases in the first three months (Jan - Mar), Regina General Hospital and Pasqua Hospital, Regina, Saskatchewan, 2016 - 2019

- 2016 (78): $1,400,022
- 2017 (69): $1,238,481
- 2018 (47): $843,603
- 2019 (5): $89,745

Surveillance year (total number of VRE cases)
HAI Surveillance in Saskatchewan – Pre-SHA

HAI - CDI 2012

SSI 2015 (paused in 2016)

HAI –CDI (V2) 2016

2017...
Future HAI surveillance goals

- SSI (V2) TBD
- MRSA – BSI TBD
- CLABSI TBD
- CPO TBD

- Streamlined quarterly and annual reports – 2023-05-16_Q2-Report.pdf (picnet.ca)
- Explore data collection software with ADT and lab system interfaces
- Interactive HAI dashboard
Influencing Change/Driving Improvement

• Relationships
• Leverage and lead through influence
• Communicate
• Small tests of change (PDCA cycle)
• Celebrate “wins”
• Share the learning
KEY MESSAGES

• Epidemiologists ≠ Foot Doctors
• Infection surveillance - core function of IPAC
• HAI surveillance processes can be used to inform practice and improve outcomes
• Surveillance is time and resource intensive, but advances in technology and automation have potential to decrease burden in time
• We all have the ability to influence change and to make improvements that will impact our patients
• The work you do matters!!
THANK YOU

For more information, visit saskhealthauthority.ca.