

SURVEILLANCE DATA AUTOMATION – IMPROVING PATIENT SAFETY AND PRODUCTIVITY OF AN INFECTION CONTROL TEAM

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DISCLOSURES

None



OUTLINE

1. Surveillance

- ARO (MRSA, VRE, CPO) and CDI

2. Automated Reports

- Monthly Unit Feedback (ARO/CDI)
- Automated reporting to ADS

3. Productivity and Efficiency

4. Future state



PROVIDENCE HEALTH CARE

2 acute care hospitals - 534 beds

5 long term care facilities - 637 beds



SURVEILLANCE (ARO AND CDI) - HISTORIC

- Print out notifications from the microbiology laboratory
- Paper surveillance forms filled out by ICPs
- Manual input of paper surveillance forms into a database

INFECTION PREVENTION AND CONTROL
PROVIDENCE HEALTH CARE

ARO ID: _____

PHC IPAC SURVEILLANCE FORM – ARO

SECTION A: PATIENT DEMOGRAPHICS

Surname: _____ Given name(s): _____ DOB (dd/mm/yyyy): _____

MRN: _____ Visit number: _____ Sex: M F Unk

SECTION B: ANTIBIOTIC RESISTANT ORGANISM DATA

1. Organism: MRSA VRE CPO

2. Alert date (dd/mm/yyyy): _____

3. Admit / visit date (dd/mm/yyyy): _____ Time (h:mm): _____
(If case was notified from another facility use collection date/time for admission date/time)

4. Collection date (dd/mm/yyyy): _____ Time (h:mm): _____

5a. Previous PHC negative screen? (most recent) No Yes, date (dd/mm/yyyy): _____

5b. Was this negative screen from current admission? No Yes N/A

6. Alerted at PHC for another ARO? No Yes

7. Alerted/known as a hemodialysis patient? No Yes (if yes, let HO know)

8. Was patient admitted to PHC at time of specimen collection?
 Yes -- SPH MSJ MSJ-ECU HPH BF Langara Youville PHC Hospice
 No -- SPH-ER MSJ-ER Clinic, specify: _____ Other, specify: _____

9. How was patient identified?
 Positive PHC lab report
 Positive lab report from another facility, specify: _____ (Go to question 13)

10. From which body site was the organism detected?
(check all that apply)
 Nares Sputum/resp. specimen Surgical wound
 Throat Blood Other, specify: _____
 Perineum Urine Unknown
 Rectum Skin/soft tissue/wound

11. Was this organism detected by a special screening program?
 No Yes (if yes, check one below)
 ICU admission screening Hemodialysis prevalence screening -- (let HO know)
 ICU prevalence screening Other -- specify: _____ (CSICU, CHCU)
 MEDUARO (SPH and MSJ)

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ARO ID: _____

12. When was specimen collected relative to the PHC admission date/time?
(If not admitted, go to question 13)
 < 72 hours Unit of specimen collection: _____ (Go to question 13)
 > 72 hours Unit of specimen collection: _____

a) Has patient spent > 72 hours on the collection unit? No Yes (if yes, go to question 13)
 b) Did patient spend more time on preceding vs. collection unit? No Yes Unit: _____

For questions 13 to 16, please consult patient history in SCM, CareConnect, and Sunsur

13. Has patient been alerted or has a positive lab report for this organism at another facility in CareConnect or Sunsur? (at time of PHC collection)
 No
 Yes, specify facility/care connect code: _____

14. Has patient been admitted to a HCF (acute or residential) in the previous 4 weeks (before collection date)?
 No (Go to question 17)
 Yes
 Current admission < 4 weeks (Go to question 17)
 Unknown (Go to question 17)

15. When was patient last discharged/transferred from a health care facility? dd/mm/yyyy: _____

16. From which facility and unit was patient last discharged or transferred?
 PHC, acute specify facility: _____ Unit (discharged): _____
 PHC, residential specify facility: _____ Unit (discharged): _____
 Other acute care facility specify facility: _____
 Other residential care facility specify facility: _____
 Unknown

17. Was this case identified through contact tracing? No Yes If yes, MRN: _____

SECTION C: APPLICATION OF CASE DEFINITION

PHC-associated? No Yes
 If yes, reason: Collection date > 72 hours after admission
 Collection date within 4 weeks of previous PHC admission (> 24 hours)
 (If multiple admissions within 4 weeks, PHC admission must be the most recent)
 If yes, attributable unit: _____ (review question 12 or 16)

ICP Initials: _____ Date completed (dd/mm/yyyy): _____
 Entered by: _____ Date entered (dd/mm/yyyy): _____

Comments:

 Contact unit (contact precautions and contact tracing)
 Clinical specimen assessment
 Resources for patient safety



SURVEILLANCE (ARO AND CDI) – NEED FOR AUTOMATION

- Separate databases for ARO and CDI
- Transcription errors
- ICP daily work structure change



SURVEILLANCE (ARO AND CDI) – AUTOMATED DATABASE

The screenshot displays the 'Infection' software interface, which is a web-based form for data entry. The interface is organized into several sections:

- Header:** Includes a menu bar (File, Home, Create, External Data, Database Tools) and a toolbar with various icons for actions like 'Add New', 'Save', 'Print', and 'Find'.
- Search and Filter:** A search bar with 'Search by Visit Nbr' and a dropdown menu. Below it are tabs for 'All Patients', 'Patients with Incomplete Episodes', and 'Patients with Incomplete CDI Outcomes'.
- Patient Information:** Fields for MRN (00000000), Birthdate, Gender, Patient Name, and Death Date.
- Visit Details:** Fields for Visit Nbr, Start Date/Time, Admit Date/Time, Discharge Date/Time, Floor, PHC Visit Nbr, Discharge Date, Prior VCH Facility, Discharge Date, Facility/Unit/Vch, Infectious Disease, Age, Care Level, and checkboxes for MRSA, C. diff, Hemodialysis Alert, VRE, TB, and CPO.
- Episode Information:** Fields for Episode and Organism, and checkboxes for 'All Episodes' and 'Incomplete Episodes/Outcomes'.
- Identification:** Checkboxes for PHC Lab, Other Lab, Other Alert, Colonoscopy, Hist/Path Diagnos, and Contact Tracing MRN.
- Special Screening:** Checkboxes for No, ICU Admission, ICU Persistence, MEDURD, Hemodialysis Persistence, CSICU, DCU, and Other.
- Negative Screen:** Checkboxes for None, Prior Visit, and Current Visit, with Date, Day, and Hours fields.
- Collection:** Fields for Specimen, Collection Date/Time, Care Level, After Admission, Hours since visit start (>=72), Days since prior abcty (>=35), Collection Unit, Unit Hours (>72), Prior Unit, Unit Hours (>72), Ph ac 72 hrs before collection, Care Program, Care Team, Prior CDI Date/Date, and Prior CDI Episode Type.
- Alerts:** Checkboxes for MRSA, CPO, VRE, and TB, with associated text input fields.
- Application of Case Definition:** Fields for CDI Episode Type/Duplicate, PHC Associated Episode, Reason, Facility/Unit, Care Program, and Care Team.
- ICP's Comment:** A large text area for entering comments.
- CDI 30-Day Outcome:** Fields for Date, Admitted to ICU, Admitted to OR, Related Co-surgery, Outcome, Date, Cause of Death, and Complete/ICP/Date.

At the bottom, there are pagination controls for 'Episode 1 of 1', 'Visit 1 of 1', and 'Patient 1538 of 1538'.



SURVEILLANCE (ARO AND CDI) - VALIDATION

Pre implementation - January to April 2018

- 661 episodes reviewed – 96.2% accuracy

Post implementation - April to July 2018

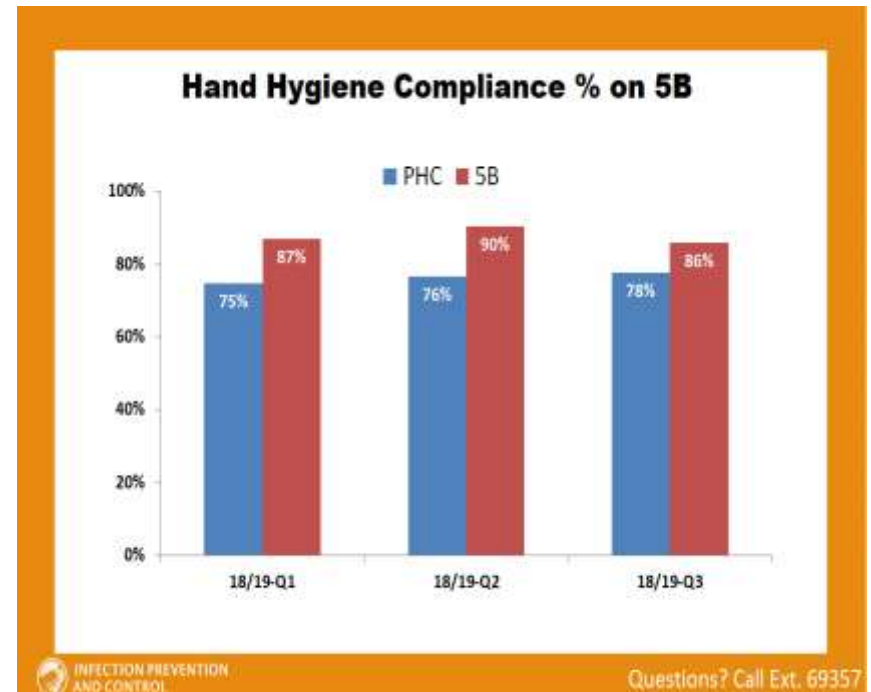
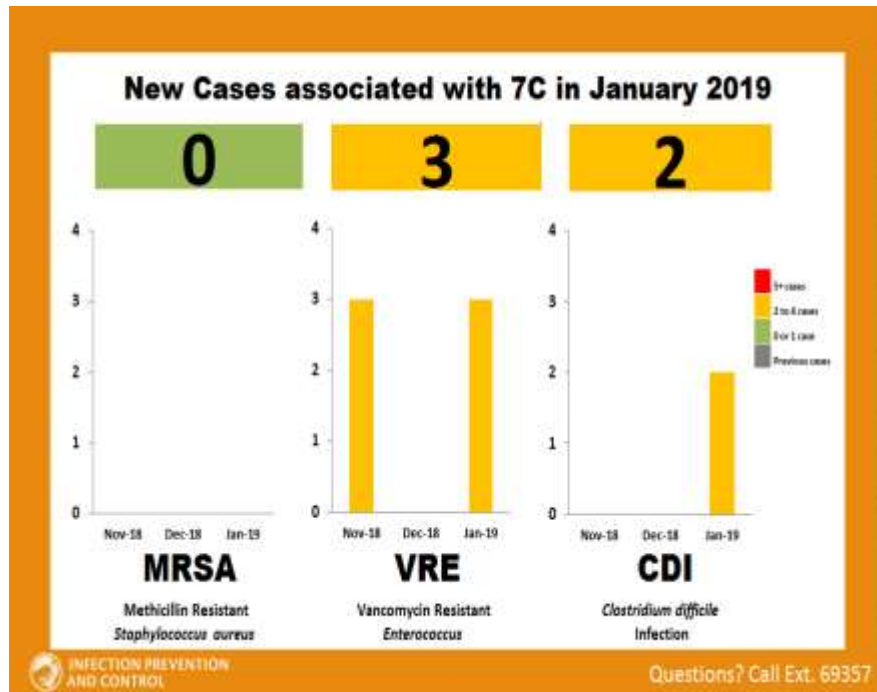
- 578 episodes reviewed – 98.9% accuracy

Continued quarterly validation (5% of episodes)



AUTOMATED REPORTS

- Monthly Unit Feedback Boards
- Automated reporting to administrative decision support dashboard



PRODUCTIVITY AND EFFICIENCY

- 6 Infection control practitioners dedicated to daily rounding on units
- Education specialist responsible for creating all education materials
- Construction specialist responsible for all construction related issues



FUTURE STATE

- Continue collaboration with Administrative Decision Support
 - New electronic medical records platform
- Establish collaboration with surrounding health authorities
- Explore automation for SSIs and CLABSI



QUESTIONS

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