

2015 Davies Award Winner

Ontario Shores

Core Metric: Infection Prevention & Control **Executive Brief**

About

Ontario Shores Centre for Mental Health Sciences (Ontario Shores) is a public teaching hospital specializing in comprehensive mental health and addiction services for those with complex, serious and persistent mental illness. The facility, located in Whitby, Ontario, Canada has 15 specialized inpatient units and extensive outpatient and community services, serving a total regional population of approximately 2.8 million. The organization is staffed by approximately 1,300 employees with 326 inpatient beds servicing over 115,000 patient days annually and approximately 60,000 annual outpatient visits.

Clinical Value

- Experienced only one outbreak post implementation
- Reduced outbreak days from 47 to 7

Overview

With patients encouraged to leave their units and interact with patients from other units, Ontario Shores recognized the increased risk of infection transmission and outbreak. To reduce this risk, they implemented an Infection Prevention and Control (IP&C) improvement plan. The goals were to improve the symptom surveillance system within the EMR to optimize the tracking process, and change policies and protocols for precaution initiation to enhance patient safety.

An improved symptom surveillance workflow enabled nurses to efficiently initiate precautions in the absence of a physician order. New policies and procedures reduced outbreak days from 47 to 7, enhancing patient and staff safety.

Situation

As a mental health care facility, Ontario Shores faced special IP&C challenges. Patients spent more time in communal spaces where social engagement was key to recovery and reducing stigma. Regular interaction between patients from different units increased risk of transmission.

Due to a steadily increasing number of outbreaks, Ontario Shores embarked on an initiative to improve IP&C by reducing transmission, with the goal of reducing the number of outbreaks from six in 2013/2014 to zero in 2014/2015. They transitioned from an inefficient paper process for documenting, tracking and communicating symptoms to an EMR-enabled system. Nurses completed the Febrile Respiratory Illness assessment (FRI) electronically with results printing in IP&C. An IP&C status board was also implemented to enable IP&C practitioners to quickly identify patients with symptoms that might require follow up and initiate precautions.

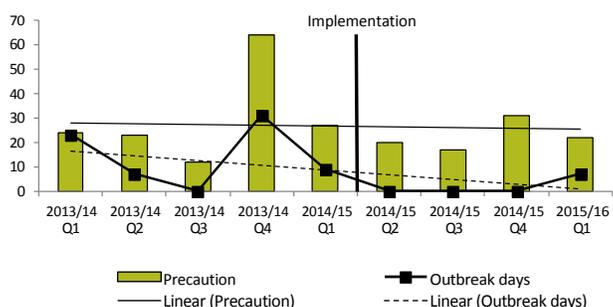
Ontario Shores implemented additional, new EMR-based processes and decision support to improve precautions initiation and communication among teams. They enabled nursing staff to initiate precautions without consulting providers. An automatic decision support message prompted the nurse to update the plan of care if precautions were added, removed or changed. The FRI was modified so that a “yes” response to any of the symptoms resulted in an “Infection Control Concerns” field displaying within the FRI and triggered an alert on the status board. IP&C Practitioners were able to monitor the status board from any EMR-enabled workstation in the hospital. New processes also allowed IP&C Practitioners to identify the need to follow up with units to provide education and support, initiate additional precautions when needed and proactively prevent transmission.

In addition, Ontario Shores streamlined documentation and communication process between nurses and the IP&C team. Standardized EMR documentation for infection precaution improved data quality and tracking by clinicians.

Outcomes

Implementation of the new IP&C procedures, enabling timely initiation of precautions and efficient symptom surveillance, reduced transmission and increased patient safety. This was evidenced by only one outbreak in the 12-month period following implementation. While the number of patients on precautions remained fairly stable, the trend line for outbreak days was negative, showing how implementation of the new workflow reduced transmission.

Transmission, shown as number of patients on precautions versus number of outbreak days



Since implementation of the status board, Ontario Shores experienced only one enteric outbreak, which lasted only seven days, compared to the year prior to implementation, which had 47 outbreak days (respiratory and enteric, combined). Following implementation of new procedures, Ontario Shores didn't experience any respiratory outbreaks during an influenza season, in a region that had a record number of cases.

Because Ontario's Public Health department mandates that new patients can't be admitted to a unit experiencing an outbreak, Ontario Shores' near-elimination of outbreaks decreased patient wait times to receive care.

The new surveillance system also gave Ontario Shores the potential to identify novel microorganisms of epidemiologic significance, allowing them to collaborate with other facilities to track emerging infectious illnesses.

Financial Considerations

Infection prevention and control costs totaled \$219,868, including human resources, software license and implementation fee. While Ontario Shores couldn't calculate the economic impact, they did identify areas with the potential for cost avoidances and realized cost savings from discontinuing printing results from the FRI. They also achieved savings by reducing the number of outbreaks, costs of antibiotics and antivirals, antiviral prophylaxis for patients and staff, housekeeping and staff sick days. They also avoided additional costs due to delayed patient transfer and discharge during outbreaks and increased wait times.

Lessons Learned

Ontario Shores shared these insights:

- ❖ Including point of care staff in the development and testing phases is integral to increasing end user engagement and promoting buy-in to new processes.
- ❖ Implementation of the new process was relatively easy because end users had been involved in development and testing, and had already undergone substantial training.
- ❖ A Clinical Informatics Analyst was available via direct line for support for two months after implementation to help manage the status board and interpret data.
- ❖ Giving nursing staff the ability to initiate precautions without an order promoted ownership, with many nurses taking the initiative to report symptoms and change precaution status without physician orders.
- ❖ The one outbreak that occurred post-implementation provided many lessons for improvement. The outbreak occurred on a new unit with staff who weren't present during implementation and hadn't undergone the same intensive training. Thus, the FRI wasn't regularly completed at 11 a.m. or even during IP&C working hours. So, an alert wouldn't be flagged and followed up with until the next working day.
- ❖ Despite initiation of precautions by nursing staff, not all staff on the unit were aware that the patient was on precautions, and the patient attended group sessions and used shared computer spaces without proper precautions. This particular unit had a different staff-mix compared to the other units, with a higher proportion of allied staff and fewer nurses. From this experience, IP&C more strictly followed up on daily missing FRI data, and IP&C procedures were communicated effectively to all staff through education and reminders.

Since 1994, the HIMSS Nicholas E. Davies Award of Excellence has recognized outstanding achievement of organizations who have utilized health information technology to substantially improve patient outcomes while achieving return on investment. The Davies Awards program promotes EHR-enabled improvement in patient outcomes through sharing case studies and lessons learned on implementation strategies, workflow design, best practice adherence, and patient engagement.

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