

Using a New Electronic Medical Record System to Enhance Hepatitis B Surveillance in Hemodialysis Patients at Scarborough Health Network



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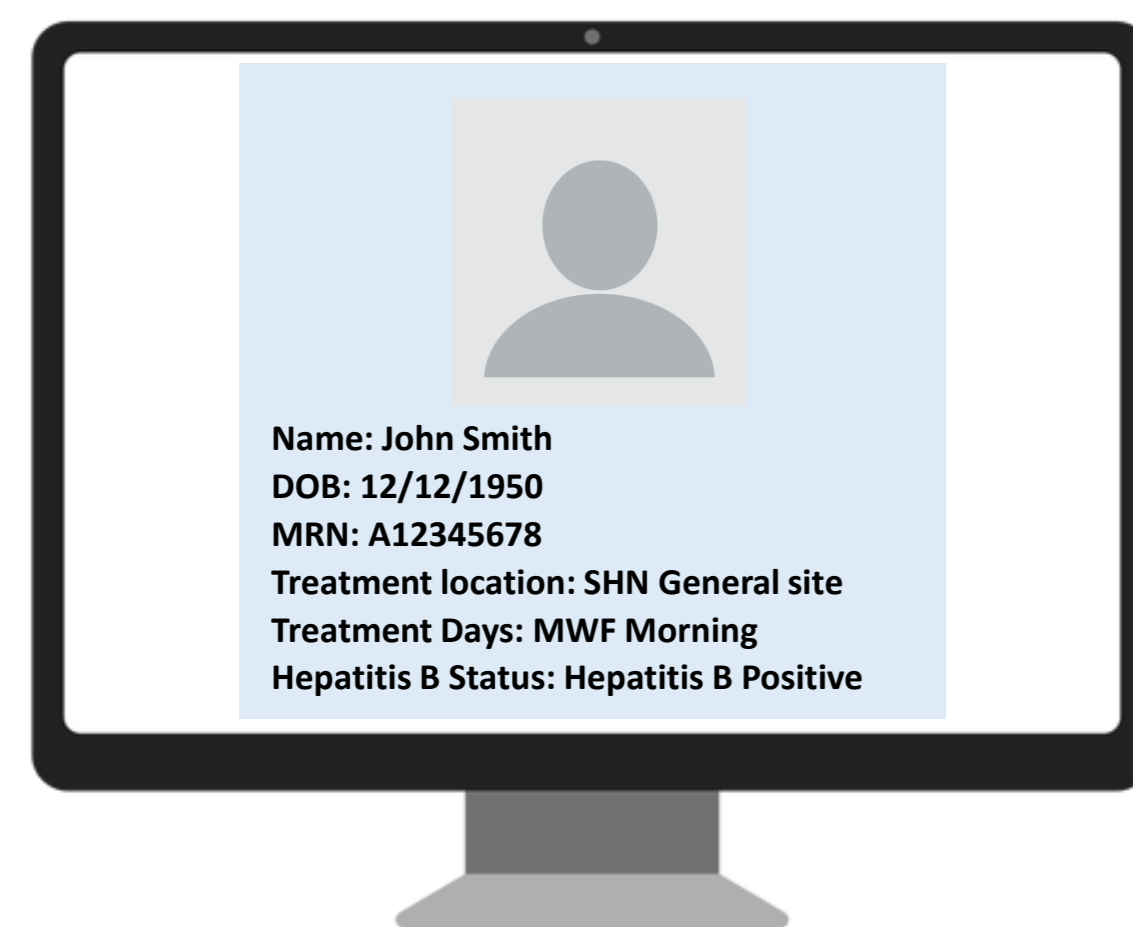
Issue

Scarborough Health Network's (SHN) Hemodialysis (HD) program provides care for over 700 patients and is one of the largest regional Nephrology programs in North America. HD patients are at high risk of acquiring blood borne pathogens including Hepatitis B Virus (HBV). Preventing transmission of infections within this program requires robust surveillance protocols. Sustaining surveillance for HBV while recently transitioning to a new electronic medical record (EMR) system has presented many challenges.

Project

In collaboration with the SHN HD program and the EMR Analysts, the Infection Prevention and Control (IPAC) Department designed and customized tools in the EMR to facilitate an enhanced, comprehensive and efficient surveillance system. Both the IPAC and HD program staff have access to these tools to ensure patients eligible for HBV immunization are identified, to conduct monthly testing for patients susceptible to HBV in accordance with best practice recommendations and to review hepatitis lab reports on HD patients.

A new flag was added to the main patient profile for all HD patients which quickly tells the user if a patient is hepatitis B positive, immune, or susceptible. An infectious disease flowsheet was also added to provide a single location for documentation of HBV immunizations, antibody titres, and test results for other infections of concern such as hepatitis C and tuberculosis. Features of SHN's former EMR system were utilized in this flowsheet to provide a familiar experience for users. Several reports were developed to pull and organize important real-time data such as hepatitis B lab results for patients within a selected time frame. Another report displaying which HD patients are eligible for HBV immunization was also developed to ensure timely immunization.



Flowsheets

Infectious Diseases Flowsheet

	HD TREATMENT 19/06/2022	HD TREATMENT 11/08/2022	HD TREATMENT 20/01/2023	HD TREATMENT 27/05/2023
Hepatitis B Status	Needs vaccination	Needs vaccination	Needs vaccination	Immune
HBsAb Total	Non-reactive			
Date	18/05/2022			
HBsAb Total	Non-reactive			
Date	18/05/2022			
Initial HBsAg Total	Non-reactive			
Date	18/05/2022			
Primary Vaccine Series		Recombivax	Recombivax	Recombivax
0 month		21/06/2022	21/06/2022	21/06/2022
1 month		21/07/2022	21/07/2022	21/07/2022
6 month		21/12/2022		21/12/2022
Post HBsAb Titre				321.38
Date				20/02/2023
Secondary Vaccine series				
0 month				
1 month				
6 month				
Post HBsAb Titre				
Date				
Booster Doses				
Booster #1				
Booster #2				
Post HBsAb Titre				
Date				
Hepatitis C Anti HCV				
Hepatitis C Status				

Reports

Nephrology Patients Hepatitis B

MRN	Patient	DOB	Location	Shift	Infection Status	Hep B Status	Status Date	Latest HBsAg Titre
A123456	Smith, John	12/12/1950	General	MWF AM		Previous Positive	1/1/2023	
B126457	Lerma, Jennifer	1/1/1954	Yee Hong	TTS AM	MRSA; CPE	Hep B Positive	12/1/2023	
A129456	Rastgoo, Bahareh	10/05/1956	General	TTS eve	COVID-19	Need vaccination	5/2/2023	

Last updated 29/5/2023 @ 11:30

Reports

Nephrology Patients Abnormal Hep B

1/5/2023 - 20/5/2023

MRN	Patient	DOB	Location	Shift
A126543	Nazarali, Nadia	12/11/1966	General	MWF Noc
A547427	Smith, Jack	1/12/1955	Corporate Dr	TTS AM

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Results

The IPAC Department has encountered several successes and improvement opportunities since introducing these tools on the EMR. A major challenge for implementation has been slow adoption of these tools by frontline nurses and physicians. Increasing workloads, especially during the COVID-19 pandemic, and a lack of experience with the new EMR are two barriers identified by frontline staff. To support use of these tools, the Hemodialysis program's HBV policy has been updated to reflect the use of the EMR for decision making regarding isolation and immunization of HD patients. All frontline HD staff received initial training on locating and entering information on the EMR and program leaders were trained on how to use the available reports. All newly hired nurses are now trained on how to enter information on HBV on the EMR and how to use the EMR to identify HBV status of a patient.

A key success has been improved efficiency of collecting and organizing data through the EMR reports. Users no longer have to rely solely on receiving and reviewing individual HBV lab results through fax or an inbox system on the EMR and instead, can pull real-time data whenever it is needed. Frontline staff can easily identify the HBV status of the patient as it is flagged on each patient's chart. Use of these new tools has the potential to enhance patient safety and ensure rapid and accurate identification of susceptible patients and new cases of HBV infection.

Next Steps

The IPAC Department and Hemodialysis program continue to work together to develop the HBV policy to support implementation of the new tools in the EMR and better adhere to best practice recommendations for HBV management in HD patients. Education for staff will continue to be provided through new hire orientation, unit huddles and an annual competency assessment for nurses. Continuous collaboration between the IPAC Department and Hemodialysis program is crucial to facilitate lasting practice changes.

