

CASE STUDY

THERADOC® HELPS HOSPITALS SIGNIFICANTLY REDUCE CAUTIs

Urinary tract infections are the most common type of healthcare-associated infection (HAI), and approximately 75 percent are associated with a urinary catheter.¹ According to the Centers for Disease Control and Prevention (CDC), 15–25 percent of hospitalized patients receive urinary catheters during their hospital stay, and the most important risk factor for developing a catheter-associated urinary tract infection (CAUTI) is prolonged use of urinary catheters.¹ The Society for Healthcare Epidemiology of America (SHEA) estimates that 17–69 percent of CAUTIs may be preventable, which means that each year up to 380,000 infections and 9,000 deaths related to CAUTIs could be avoided.²

A growing number of hospitals, including Parkland Health & Hospital System in Dallas and Research Medical Center in Kansas City, Mo., are turning to electronic surveillance to help them address CAUTIs and improve patient care. Both facilities are using TheraDoc®, an electronic clinical surveillance system that delivers advanced informatics to help facilities protect patients and maximize the performance of healthcare teams, with the goal of significantly reducing the incidence of CAUTIs and other HAIs.

ELECTRONIC INFECTION SURVEILLANCE

The Infection Control Assistant®, powered by TheraDoc, streamlines the infection surveillance process. TheraDoc clinical surveillance technology interfaces with a number of data sources within a hospital and provides real-time, actionable information that helps infection preventionists (IPs):

- Identify and confirm infections sooner
- Spot trends that could be missed with manual surveillance
- Improve efficiency and streamline workflow
- Devote more time to interventions and education

The system also automates National Healthcare Safety Network (NHSN) reporting and compliance, and allows workflow views to be configured to address specific needs or initiatives. TheraDoc, founded in 1999, is now used by more than 1,000 hospitals across the country.

Parkland Hospital implemented the Infection Control Assistant in 2011 and recently began using the software as part of a program to address CAUTIs. “I realized how easy it is to utilize the program to help our hospital monitor CAUTIs and device days, keep staff informed, and simplify reporting,” said La’Titia Houston, MPH, BSN, RN, Infection Preventionist at Parkland.

In 2012, Research Medical Center (RMC), part of the HCA Midwest Division, adopted TheraDoc as part of a pilot program in the healthcare network. Due to the success of the pilot, all HCA hospitals are now using TheraDoc to enhance clinical surveillance,

RESULTS

Parkland Hospital’s Foley catheter device day rates decreased by an average of 47 percent and CAUTIs were reduced by 43 percent.

Research Medical Center reduced CAUTI Standard Infection Ratios (SIRs) for MICU by 70 percent, SICU by 75 percent and house-wide by 78 percent.

PARKLAND HEALTH & HOSPITAL SYSTEM

Parkland Health & Hospital System, serves Dallas County Texas, has 950 beds and an average of more than 1 million patient visits annually. The Parkland system has more than 50 clinics, five ICUs, a surgical center, and a nursing home, and is affiliated with the University of Texas Southwestern as a teaching hospital. Parkland employs 20 infection preventionists to manage infection control in both inpatient and outpatient departments.

RESEARCH MEDICAL CENTER

Research Medical Center is a 590-bed hospital and Level I Trauma Center in Kansas City, MO. RMC is the hub for the HCA Midwest Region, consists of seven hospitals and outpatient centers, clinics, physician practices, and surgery centers. The facility processes labs for seven different hospitals, making infection prevention a high priority. RMC currently employs three IPs and plans to expand the department as their responsibilities have increased.

identify infection trends, provide real-time data for taskforce meetings, and streamline reporting. “TheraDoc is a game changer—infection surveillance would be a monumental task if we didn’t have TheraDoc,” said Roberta Mott, BSN, RN, Infection Prevention and Employee Health at RMC. “On occasion, I have had to manually review infection data, and it’s miserable. TheraDoc provides customization and increases efficiency, which is essential to our workflow. I really love TheraDoc and its ease of use.”

REDUCING CAUTIs

The IP staff at Parkland Hospital uses TheraDoc to review urinary catheter device usage for all patients in each of its five intensive care units, flag the number of device days, and receive daily microbiology reports, with the goal of minimizing unnecessary placement and facilitating prompt removal of indwelling catheters. “Many patients come to the hospital with trauma situations or other co-morbidities, and an infection resulting from a urinary catheter could compound their status,” Houston said. “Our goal is to remove the catheter as soon as possible—if it’s not in, the patient can’t get a catheter-associated infection.”

Daily reporting also has enhanced communication between IPs, nurses, and physicians at Parkland Hospital. “By capturing the date of insertion and monitoring device days, IPs are able to review and communicate to the nurses when a Foley catheter has been in for more than five days,” Houston said. “The reports from TheraDoc allow the nurses to evaluate the reason for catheter placement in more detail and collaborate with the attending physicians to consider removing the catheter or using alternative methods.”

In addition, open communication between the IPs, nursing staff, and physicians has allowed closer relationships, furthering their joint goal of delivering patient-centered care. Since the facility launched its CAUTI initiative with TheraDoc, Parkland Hospital has significantly reduced both Foley device days and infections.

“Using TheraDoc to monitor catheters in and beyond the five-day window after insertion helped us reduce device days by nearly 50 percent, and CAUTIs now average just four a month,” Houston said. “Limiting device days means our patients have a much lower chance of getting an infection, which means a safer hospital stay.”

Table 1: Parkland Hospital reduced Foley catheter device days and CAUTIs by about 50 percent with the help of TheraDoc

Foley Catheter Device Days & CAUTI Rates	2012	2015
Average Device Days Per Month	3,000-5,000	1,500-2,800
Average CAUTIs Per Month	7	4

Houston said that HAIs, and specifically CAUTIs, are monitored by both the Centers for Medicare & Medicaid Services and the State of Texas. Poorly performing hospitals can be penalized by the CMS financially via a reduction in hospital payments, and results are publicly displayed on HospitalCompare.gov. Parkland Hospital has been actively pursuing a quality improvement initiative focused on CAUTI prevention, and TheraDoc has been invaluable in the process.

“Because we’re a large teaching hospital, we have a high staff turnover rate,” Houston said. “It’s important for us to have a system in place that helps us educate

staff, bring new personnel up to speed on our processes, and quickly and easily obtain the necessary reports and information to meet these important CAUTI protocols.”

At RMC, a nurse-driven Foley catheter removal protocol was implemented to help minimize device days as part of a CAUTI prevention program. Hospital IPs support this initiative using TheraDoc’s real-time alerts and reports to document indications for catheter placement, and to monitor dates and times of catheter insertions and removals. The system also provides accurate and timely microbiology data for rapid interventions.

“The real-time data that TheraDoc provides allows for real-time interventions,” Mott said. “It also allows us to direct education where needed. We can focus on prevention efforts in a targeted area with specific Foley management education, as well as training regarding urine culture collection. In addition, nurses have been empowered to make decisions regarding catheter removal based on daily reports, real-time data, and Foley continuation criteria.”

Since adopting TheraDoc in 2012, CAUTI rates have steadily declined at RMC. “Our CAUTI outcomes are measured by standard infection ratios (SIRs), which we reduced more than 50 percent in the medical and surgical ICUs, and house-wide CAUTI rates also were reduced more than 50 percent,” Mott said.

Table 2: TheraDoc helped Research Medical Center reduce CAUTI rates by more than 50 percent in its MICU, SICU, and house-wide

RMC Standard Infection Ratios	2012	2015
MICU CAUTI SIR	2.1	0.63
SICU CAUTI SIR	2.3	0.58
House-wide CAUTI SIR	5.32	1.18

ENHANCED SCREENING & REPORTING

The infection prevention teams at both hospital systems agree that with TheraDoc, practitioners receive the right information at the right time to make timely interventions. By streamlining the data-collection process, automated surveillance enables hospitals to report more information, both within the organization and to outside entities, improve the quality and consistency of information reported by IP staff, and facilitate benchmarking.

“Before we had TheraDoc, Parkland IPs had to look in four or five different places to get the information they needed,” said Calvin White, MS, CIC, Infection Prevention Manager at Parkland Hospital. “It could take hours to go through all the data and generate meaningful information.”

TheraDoc has allowed Parkland Hospital to move from multiple databases and Excel spreadsheets to one system where all information can be easily accessed by IPs throughout the hospital based on their individual needs and assignments.

“Without TheraDoc, we’d be spending so much time trying to capture and organize data that we wouldn’t have time to go out to the floors, educate our staff, and manage infection prevention,” White said. “I wouldn’t want to work here without TheraDoc.”

In addition to CAUTI surveillance, RMC uses TheraDoc to monitor a variety of HAIs, including central line-associated blood stream infections and *Clostridium difficile*, and infection rates for both also have dropped significantly since the adoption of the system. Mott said that a key feature of TheraDoc is Patient Trace, which allows her to run bed traces to identify infection clusters and potential HAI problems within an area of the hospital.

“We use the Patient Trace functionality to identify potential HAI clusters,” she said. “It provides immediate access to an easy-to-read layout of the hospital locations where a patient has been housed at various times during his or her hospital stay so that we can determine potential problem units.”

Required NHSN and CMS reporting also is a labor-intensive and time-consuming process if done manually. In addition, IPs at both hospitals must provide regular reports that track infection rates, trends, issues, and overall improvements to Infection Control Committees, HAI review teams, local and state public health agencies, and their hospitals’ executive teams. The ability to automatically collect data and electronically report it via TheraDoc eliminates duplicated efforts and human error, allowing staff to save time and generate accurate reports that meet a variety of reporting requirements.

“TheraDoc allows us to customize reports to see only select procedures and sort however we want,” Mott said. “At RMC, we use it to create reports for our local/state public health department and for the NHSN. It makes reporting faster and more accurate, eliminating possible human error.”

EVOLVING FOR THE FUTURE

Parkland Hospital and RMC reflect a growing imperative to use information technology to positively impact patient safety and the quality and efficiency of care, and both hospitals have plans to enhance their use of TheraDoc in the future.

According to Mott, RMC plans to take advantage of additional functionality that TheraDoc offers and to ensure that all IPs—new and current—are taught how to use the solution proficiently.

“Once everyone learns how to use the system, our jobs can be done much faster,” Mott said. “With the efficiency TheraDoc provides, we will have more time to educate staff, work with frontline caregivers, implement programs to reduce infection rates, help protect our patients from harm, and provide a safe environment—which is our goal above all else.”

Parkland Hospital’s next steps include providing reports to nurses and units on a daily basis, ensuring standard usage of the application by all IPs, and tracking hospital-wide infection trends. Parkland also plans to expand the use of TheraDoc for NHSN reporting of CAUTIs to all units.

“In a hospital this large, or any hospital, it’s important to focus our attention on what’s most important—patient safety,” Houston said.

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1. Centers for Disease Control and Prevention. Catheter-associated Urinary Tract Infections (CAUTI). Accessed June 28, 2016. https://www.cdc.gov/HAI/ca_uti/uti.html.
2. Centers for Disease Control and Prevention. Guideline for Prevention of Catheter-associated Urinary Tract Infections, 2009. Accessed June 28, 2016. [././www.cdc.gov/hicpac/cauti/005_background.html](https://www.cdc.gov/hicpac/cauti/005_background.html).

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