CONCISE COMMUNICATION

Postdischarge Surgical Site Infection Surveillance Practices in Washington Acute Care Hospitals

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Little is known about postdischarge surveillance practices currently in place among American hospitals. This survey describes practices used by acute care hospitals covered by Washington State's legislated mandate for public reporting of surgical site infections. While the vast majority of facilities use multiple techniques, wide variation in practices was discovered.

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Many surgical site infections (SSIs) manifest after a patient's hospital discharge. Previous studies found that the percentage of infections occurring after discharge ranges from 13% to 84%.[1-11] It has long been documented that the risk factors and epidemiology of postdischarge infections differ from those that manifest while in the hospital.[7,8] Additionally, active surveillance programs with feedback to surgeons have been shown to reduce SSI rates by 30%–40%.[12] There are numerous single-system or single-site studies on postdischarge SSI surveillance methods. However, little is known about the practices currently in place. There are no established guidelines for best practices in postdischarge SSI surveillance. This survey describes and assesses the various methods of postdischarge SSI surveillance used in acute care hospitals in Washington.

METHODS

A survey instrument was adapted from one used in a previous study in the United Kingdom[13] and e-mailed to infection control departments in acute care facilities required to report SSIs in Washington State.[14] Information collected included methods for surveillance, both passive and active; electronic data sources used; definitions used for reporting; and the systems' impact on number of SSI events detected. Descriptive statistics were used to generate frequencies. Hierarchical cluster analysis was used to examine groupings of hospitals with common surveillance methods.[15] Percentages shown in "Results" include only those hospitals performing postdischarge SSI surveillance.

RESULTS

Surveys were sent via e-mail to the 74 acute care facilities in Washington State with SSI reporting requirements. Sixty-five facilities (88%) responded. Infection control or quality improvement professionals completed the survey. Of those who responded, 62 (95.4%) performed postdischarge SSI surveillance and reported using 1 or more methods. Most facilities reported using a combination of 2–4 different surveillance methods to capture SSI events (27.3% reported using 2; 35.5%, 3; 29.0%, 4). Only a small number of hospitals used 1 (1.6%), 5 (4.8%), or 6 (1.6%).

Sixty of the hospitals (97%) performing postdischarge SSI surveillance reported following procedures without implants 1 month after discharge. One hospital reported following these procedures for up to 2 months and one for various lengths of time. Of the 59 hospitals that performed procedures with implants, 58 (98.3%) continued postdischarge surveillance for 12 months, and 1 hospital followed these types of procedures for 24 months.

Methods of postdischarge surveillance are shown in Table 1 for those who reported having a program in place. Eight (13%) reported using other methods, which included reviewing daily operating room schedules and receiving reports of infection from home health. Fifty-eight (94%) reported using some form of electronic data in their surveillance program. Sources of electronic data are displayed in Table 2. Other electronic data sources included Meditec, Theradoc, and electronic return to surgeon reports and postoperative surgical procedures.

Sixty-one (98%) hospitals reported using the National Healthcare Safety Network (NHSN) criteria to define postdischarge SSI. When outpatient clinics reported SSIs to hospital infection control programs, 18 (29.0%) used NHSN definitions, 30 (48.4%) used clinical definitions, and 10 (16.1%) used both. One facility did not receive reports from others, and 2 did not respond to this question. Of the 12 hospitals that contacted patients as part of their surveillance, only 8 reported the percentage of patients who failed to respond, which ranged from 5% to 52%, with a median of 20%. Seven facilities contacting patients did so by telephone only, 1 by postcard or questionnaire only, and 4 by both postcard and telephone. Only 1 facility reported prompting patients who failed to reply. Twenty-three of the 39 facilities that reported exchanging lists with surgeons sent prompts to those who did not reply.

Postdischarge surveillance revealed cases to investigate for 51 hospitals (82%) not otherwise detected, 9 (14.5%) found cases that had been detected from other sources, and 0 never found a case. Two hospitals did not respond to this question. Once postdischarge data were collected, hospitals reported using them for various activities, including reporting internally and externally, charting trends, and determining interventions. Nine facilities had tried another method of postdischarge surveillance in the past but were no longer using it. Methods discontinued included exchanging patient lists with surgeons and having physicians self-report. Reasons for discontinuing included inaccuracy, lack of software support, and the time required. No hospitals had formally calculated the costs of the postdischarge surveillance activities.

DISCUSSION

The majority of postdischarge SSI surveillance programs in Washington are detecting infections that occur after surgical patients are released from the hospital. It is possible that some questions were misinterpreted since all survey data were self-reported and were not validated for accuracy.

There were no clear similarities among the hospitals in surveillance methods used, either in number performed or by similar types of methods. No commonalities appeared among hospitals despite how the facilities were grouped. Various methods were tried, including grouping by parent organization, profit structure, case mix complexity strata, and whether the hospitals were critical access.

It has been noted in previous studies that patient and surgeon contacts for postdischarge surveillance have disadvantages. Whitby et al[16,17] found low interobserver agreement between the patients and infection control nurses, and patient education resulted in patients overdiagnosing infections. Additional issues with patient contact include time, cost, and low response rate. Surgeon questionnaires may also be problematic, as some studies have reported low response rates and low sensitivity.[9,11,18] Because of these limitations, patient and surgeon contact should serve as supplementary methods. Use of electronic data has shown promise as a means of detecting these infections, and with the application of algorithms, the efficiency of using such methods is increased.[19-21] The majority of hospitals in Washington are already using some form of electronic data. However, many may lack the full scope of data necessary for detection of postdischarge SSI, so data-sharing agreements between hospitals, health maintenance organizations, and insurers will be important, as noted by Platt et al.[22] The Health Information Technology for Economic and Clinical Health Act provides incentives to hospitals to invest in computer systems that meet meaningful use criteria. If these systems are properly designed, they will make surveillance and reporting of healthcare-associated infection more efficient.[23]

TABLE 1. Postdischarge Surveillance Methods

Postdischarge surveillance methods	Percent
Monitor readmissions[a]	95.2
Patient lists exchanged with surgeons	62.9
Direct observation by infection control professional	41.9
Monitor postoperative clinic records	40.3
Monitor laboratory cultures	27.4
Patient telephone survey	17.7
Other methods	12.9
Patient returned postcard or questionnaire	8.1
Monitor postoperative antimicrobial prescriptions	6.5

[a] Monitor their own facility readmissions. As a best practice, infection control professionals should also communicate readmission following surgery elsewhere to the infection control professional at the original hospital.

TABLE 2. Postdischarge Surveillance Data Sources

Postdischarge surveillance electronic data sources	Percent
Electronic laboratory reporting	82.8
CPT, ICD-9, or other electronic health record notation	81.0
Other electronic data sources	13.8
Electronic readmission reports	12.1
Computerized prescriber order entry	6.9

NOTE. Percentages are based on 58 hospitals reporting having computer information resources. CPT, *Current Procedural Terminology*; ICD-9, *International Classification of Diseases, Ninth Revision.*

There is little published work outside single hospitals or single hospital systems on postdischarge methods that are currently being used. Because there are no recommendations guiding this surveillance component, we expected that there would be large inconsistencies between mandatory reporters. This survey of hospitals in Washington State confirmed that there is little to no consistency among hospitals, sometimes even within the same hospital system. Public reporting of SSIs is mandated by legislation in many states and nationally by new participation rules adopted by the Centers for Medicare and Medicaid Services. In order to ensure that all hospitals in all states are being fairly represented, it will be necessary to know how each hospital is performing postdischarge surveillance and how this impacts their SSI rates. Validation of surveillance accuracy and efforts to unify postdischarge surveillance practices are of critical importance.

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