Validation of National Healthcare Safety Network Dialysis Event Data — Georgia, 2015

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Background

Georgia outpatient hemodialysis facilities are required to report dialysis event (**DE**) data monthly to the National Healthcare Safety Network (NHSN). Three types of DEs are reported by users:

- Intravenous antimicrobial starts (**AMX**)
- Positive blood cultures (**PBC**)
- Pus, redness, or increased swelling at the vascular access site (**PRS**)

There must be ≥21 days between two dialysis events of the same type for the second to be reported as a separate event (21 day rule).

The Georgia Department of Public Health (DPH) validated reporting of DEs against CDC definitions to identify barriers and improve data quality.

Methods

Patient medical records from January 1 – June 30, 2015 were reviewed in 30 outpatient hemodialysis facilities in the Atlanta metropolitan area.

- 16 facilities were randomly selected; 14 were selected due to high catheter utilization rates (>30%) and few PBCs, or having no reported DEs
- Up to 30 patient medical records were reviewed at each facility
- Following completion of record review, a concordance check was performed to classify each dialysis event (AMX, PBC, PRS) as either correctly, under-, or over-reported to NHSN
- DPH also conducted follow-up of hospitalized patients to determine if a PBC from specimens collected within one calendar day after hospital admission were recorded and reported to NHSN
- Dialysis center staff members responsible for NHSN DE data collection and reporting were surveyed to evaluate surveillance knowledge and practices

Results

Table 1. Characteristics of Sampled Hemodialysis Facilities, Atlanta Metropolitan Statistical Area (n=30)

Characteristic	Facilities (n=30)
Large Dialysis Organization (LDO)	22 (73%)
Independent	7 (23%)
Nonprofit	1 (3%)
Mean # of dialysis stations (range)	18 (10-30)
Mean # of in-center patients, January – June, 2015 (range)	51 (21-148)

Figure 2. Validation Results by Final Determination of Dialysis Event Type, January 1 - June 30, 2015 (n=332)

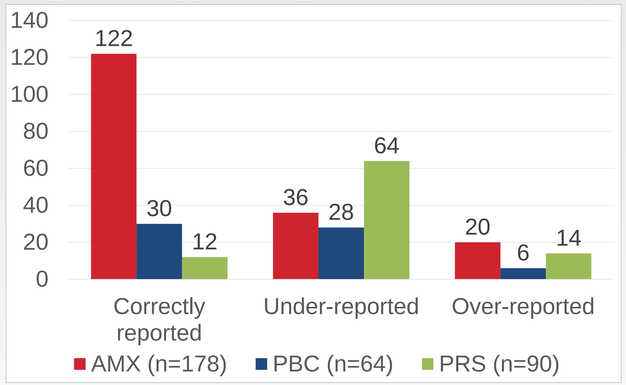
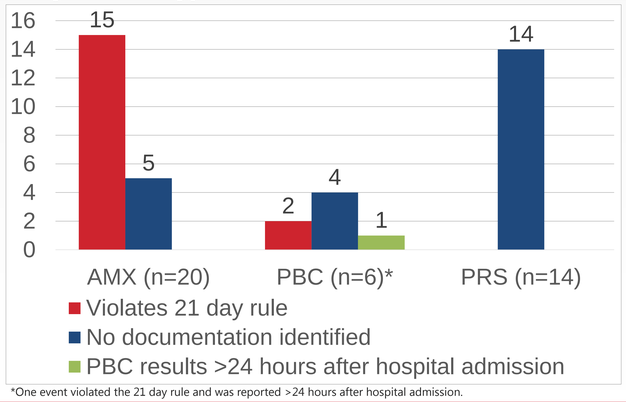


Figure 3. Identified Source of Over-Reporting by Dialysis Event Type (n=40)



*One event violated the 21 day rule and was reported >24 hours after hospital admission.

Record Review

We reviewed 876 patient medical records and identified **332 DEs that occurred during January - June 2015,** including 178 (54%) AMX, 64 (19%) PBC, and 90 (27%) PRS.

- **AMX**: 20% (36) were under-reported and 11% (20) over-reported to NHSN
- **PBC**: 44% (28) were under-reported and 9% (6) over-reported to NHSN
- **PRS**: 71% (64) were under-reported and 16% (14) over-reported to NHSN

Of these 332 events, the majority of AMXs were over-reported by violation of the 21-day rule. Over-reporting of PRS was due exclusively to lack of documentation in the patient medical record.

DPH conducted follow up on 65 patients that were hospitalized during the validation timeframe to verify if they had a positive blood culture from specimens collected within one calendar day after admission. Eighteen PBCs were identified that were not found during the initial record review phase, 10 (56%) of which were under-reported to NHSN.

Survey

Among 28 surveyed staff members, common DE reporting issues included:

- Incorrect reporting of patient vascular access for monthly denominators (15, 54%)
- Being unable to identify at least one NHSN-defined DE (11, 39%)
- Being unaware of the 21-day rule (9, 32%), which may have contributed to the majority of AMX events being over-reported

Conclusions

Reporting deficiencies were identified among all types of DEs. DPH recommends the following to all hemodialysis facilities to improve the accuracy of data reported to NHSN:

- Ensure staff have a strong working knowledge of the CDC Dialysis Event Protocol
- Address gaps in communication with hospitals, which may contribute to under-reporting of PBCs collected during hospital admissions
- Establish protocols for identifying, documenting, and reporting events in a timely manner
- Adequately document event details to reduce over-reporting of events

Consistent and accurate documentation of DEs can help facilities detect problems, identify trends, evaluate infection prevention activities, and engage staff in quality improvement.

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