Hospital Sepsis Program Core Elements:
Findings from the 2023 NHSN Annual Survey Among Kentucky Hospitals

KDPH HAI/AR Prevention Program

Clay Bryant | NHSN Program Lead

October 24, 2024

Background: Sepsis Core Elements

- On August 24, 2023, CDC released the Hospital Sepsis Program Core Elements (Sepsis Core Elements).
  - The Sepsis Core Elements serve as a guide to help hospitals develop multiprofessional programs to monitor and to optimize early identification, management, and outcomes of patients with sepsis.

Hospital Sepsis Program Core Elements

Hospital Leadership Commitment
Dedicating the necessary human, financial, and information technology resources.

Accountability
Appointing a leader or co-leaders responsible for program goals and outcomes.

Multi-Professional Expertise
Engaging key partners throughout the hospital and healthcare system.

Action
Implementing structures and processes to improve the identification of, management of, and recovery from sepsis.

Tracking
Measuring sepsis epidemiology, management, and outcomes to assess the impact of sepsis initiatives and progress toward program goals.

Reporting
Providing information on sepsis management and outcomes to relevant partners.

Education
Providing sepsis education to healthcare professionals, patients, and family/caregivers.

CDC https://www.cdc.gov/sepsis/core-elements.html

References: CDC. Hospital Sepsis Program Core Elements. Atlanta, GA: US Department of Health and Human Services, CDC; 2023. Available at https://www.cdc.gov/sepsis/core-elements.html

Background: National Healthcare Safety Network

- CDC's National Healthcare Safety Network (NHSN) is the nation's most widely used surveillance system for tracking patient and healthcare personnel safety measures.

- Hospitals reporting data to NHSN are required to complete an annual survey which includes questions regarding patient safety practices.

- Questions on hospital sepsis program practices were first added to the 2022 NHSN Patient Safety Annual Survey to describe baseline practices and were expanded in 2023 to reflect the practices recommended in the Sepsis Core Elements.

References: Dantes RB, Kaur H, Bouwkamp BA, et al. Sepsis Program Activities in Acute Care Hospitals—National Healthcare Safety Network, United States, 2022. MMWR Morbidity and mortality weekly report. Aug 25 2023;72(34):907–911. doi:10.15585/mmwr.mm7234a2

2023 Annual Survey Completion

Table 1: Number of Hospitals that Completed a National Healthcare Safety Network, Patient Safety Component 2022 and 2023 Annual Hospital Survey

Facility Type	Number of Hospitals that Completed a 2023 Survey n (%)
HOSP-GEN	67 (93.1%)
HOSP-CAH	28 (90.3%)
Total	95 (92.2%)

Hospital Leadership Commitment

Sepsis Program Characteristics in Acute Care and Critical Access Hospitals–National Healthcare Safety Network, Patient Safety Component 2023 Annual Hospital Survey

Facility leadership has demonstrated commitment to improving sepsis care by:

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Providing sepsis program leader(s) with sufficient specified time to manage the hospital sepsis program.	60 (63.2%)	47 (70.2%)	13 (46.4%)
Providing sufficient resources, including data analytics and information technology support, to operate the program effectively	65 (68.4%)	50 (74.6%)	15 (53.6%)
Ensuring that relevant staff from key clinical groups and support departments have sufficient time to contribute to sepsis activities.	64 (67.4%)	54 (67.2%)	19 (67.9%)
Appointing a senior leader to serve as an executive sponsor for the sepsis program.	64 (67.4%)	54 (67.2%)	10 (35.7%)
Identifying sepsis as a facility priority and communicating this priority to hospital staff.	80 (84.2%)	59 (88.1%)	21 (75.0%)
None of the above	3 (3.16%)	2 (2.99%)	1 (3.57%0

Accountability

Sepsis Program Characteristics in Acute Care and Critical Access Hospitals–National Healthcare Safety Network, Patient Safety Component 2023 Annual Hospital Survey

Our facility has one leader or two co-leaders responsible for sepsis program or committee management and outcomes.

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Yes	81 (85.3%)	63 (94.0%)	18 (64.3%)
No (we have no designated leaders)	13 (13.7%)	3 (4.48%)	10 (35.7%)
No (we have more than 2 leaders)	1 (1.05)	1 (1.49%)	0 (0.0%)

If yes or no (we have more than 2 leaders) selected in (the above question regarding sepsis leaders): What is the professional background of the sepsis program or committee leaders(s)?

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Advance Practice Provider (APP)	7 (8.54%)	6 (9.38%)	1 (5.56%)
Nurse	65 (79.3%)	51 (79.7%)	14 (77.8%)
Physician	34 (41.5%	28 (43.8%)	6 (33.3%)
None of the above	2 (2.44%)	2 (3.13%)	0 (0.0%)

Our facility tracks the following hospital sepsis metrics.

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Progress towards achieving hospital goals for sepsis treatment and/or outcomes	75 (79.0%)	57 (85.1%)	18 (6.43%)

Multi-professional Expertise

Our facility has a committee charged with monitoring and reviewing sepsis care and/ or outcomes - **this committee includes representatives from the following hospital locations or services**

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Our facility has a committee charged with monitoring and reviewing sepsis care and/ or outcomes	88 (92.6%)	66 (98.5%)	22 (100.0%)

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Emergency Department	82 (93.2%)	64 (97.0%)	18 (81.8%)
Hospital Medicine	73 (83.0%)	57 (86.4%)	16 (72.7%)
Neonatal Intensive Care	5 (5.68%)	3 (4.55%)	2 (9.09%)
Critical Care/Intensive Care (excluding Neonatal intensive care)	65 (73.9%)	55 (83.3%)	10 (45.5%)
Obstetrics/Labor and Delivery	15 (17.1%)	13 (19.7%)	2 (9.09%)
Pediatrics	7 (7.95%)	5 (7.58%)	2 (9.09%)
Infectious Disease	39 (44.3%)	29 (43.9%)	10 (45.5%)
Antimicrobial Stewardship	60 (68.2%)	43 (65.2%)	17 (77.3%)
Pharmacy	71 (69.3%)	53 (65.2%)	18 (81.8%)
Laboratory	61 (69.3%)	43 (65.2%)	18 (81.8%)
Information Technology	39 (44.3%)	32 (48.5%)	7 (31.8%)
Data Analytics	51 (58.0%)	44 (66.7%)	7 (31.8%)
None of the above	1 (1.14%)	0 (0.0%)	1 (4.55%)

Action

Our facility uses the following approaches to assist in identification of sepsis upon presentation to the hospital

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Manual screening for clinical instability (e.g., MEWS, NEWS score)	27 (28.4%)	22 (32.8%)	5 (17.9%)
Electronic health record (EHR)-based screening for clinical instability	57 (60.0%)	44 (65.7%)	13 (46.3%)
Manual screening for sepsis criteria	43 (45.3%)	34 (50.8%)	9 (32.1%)
Electronic Health Record (EHR)-based screening for sepsis criteria	88 (92.6%)	62 (92.5%)	26 (92.9%)
None of the above	1 (1.05%)	0 (0.0%)	1 (3.57%)

Our facility uses the following approaches to assist in identification of sepsis throughout hospitalization

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Manual screening for clinical instability (e.g., MEWS, NEWS score)	27 (63.2%)	22 (71.6%)	5 (42.9%)
Electronic health record (EHR)-based screening for clinical instability	60 (63.2%)	48 (71.6%)	12 (42.9%)
Manual screening for sepsis criteria	39 (41.1%)	30 (44.8%)	9 (32.1%)
Electronic Health Record (EHR)-based screening for sepsis criteria	86 (90.5%)	62 (92.5%)	24 (85.7%)
None of the above	2 (2.11%)	1 (1.49%)	1 (3.57%)

Action Cont.

Our facility uses the following approaches to promote evidence-based management of patients with sepsis

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Hospital guideline or care pathway for management of sepsis	71 (74.7%)	52 (77.6%)	19 (67.9%)
Hospital order set for management of sepsis	91 (95.8%)	65 (97.0%)	26 (92.9%)
Structured template for documentation of sepsis treatment	52 (54.7%)	40 (59.7%)	12 (42.9%)
Standardized process for verbal hand-off of sepsis treatment	36 (37.9%)	27 (40.3%)	9 (32.1%)
Sepsis Response Team	16 (16.8%)	12 (18.9%)	4 (14.3%)
Rapid Response Team with training in sepsis management	25 (26.3%)	22 (32.8%)	1 (10.7%)
None of the above	1 (1.05%)	0 (0.0%)	1 (3.57%)

Our facility uses the following approaches to promote rapid antimicrobial delivery to patients with sepsis

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Stocking of common antimicrobials in locations outside the pharmacy	90 (94.7%)	64 (95.5%)	26 (92.9%)
Immediate processing of new antimicrobial orders in patients with sepsis	62 (65.3%)	48 (71.6%)	14 (50.0%)
Orders that default to ordering immediate administration of new antimicrobials	36 (37.9%)	29 (43.3%)	7 (25.0%)
Pharmacists on-site in key locations outside the pharmacy	39 (41.1%)	33 (49.3%)	6 (21.4%)
None of the above	1 (1.05%)	0 (0.0%)	1 (3.57%)

Action Cont.

Our facility uses the following approaches to facilitate recovery after sepsis hospitalization

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Communicating a patient's sepsis diagnosis and care plan to the patient's primary care physician	56 (59.0%)	42 (62.7%)	14 (50.0%)
Providing contact information for a clinical staff at the hospital to addresses post-discharge questions and/or troubleshoot post-discharge issues	44 (46.3%)	35 (52.2%)	9 (32.1%)
Contacting patients within 2 days of discharge by clinical staff to follow-up on discharge instructions, symptoms, and/or issues	32 (33.7%)	22 (32.8%)	10 (35.7%)
Screening patients for new functional and/or cognitive impairment after sepsis and referring patients to relevant evaluation or support services	25 (26.3%)	20 (29.9%)	5 (17.9%)
Reconciling and optimizing medications prior to hospital discharge	69 (72.6%)	53 (79.1%)	16 (57.1%)
Screening patients for social vulnerability and referring to available support services as needed	71 (74.7%)	52 (77.6%)	19 (67.9%)
None of the above	8 (8.42%)	3 (4.48%)	5 (17.9%)

Tracking

Our facility tracks the following hospital sepsis metrics

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Hospital sepsis epidemiology (e.g., number and characteristics of sepsis hospitalizations	55 (57.6%)	42 (62.7%)	13 (46.4%)
Hospital sepsis treatment (e.g., time-to-antibiotics, type, and volume of fluid delivery)	84 (88.4%)	62 (92.5%)	22 (78.6%)
Hospital sepsis outcomes (e.g., mortality, length of hospitalization)	78 (82.1%)	63 (94.0%)	15 (53.6%)
Progress towards achieving hospital goals for sepsis treatment and/or outcomes	75 (79.0%)	57 (85.1%)	18 (6.43%)
Use of hospital sepsis tools (e.g., how often sepsis order-set is used)	71 (74.7%)	54 (80.6%)	17 (60.7%)
Usability or acceptability of hospital sepsis tools (e.g., clinician acceptance)	49 (51.6%)	37 (55.2%)	12 (42.9%)
Impact of hospital sepsis tools (e.g., impact on sepsis alert or order-set on treatment or outcomes)	54 (56.8%)	44 (65.7%)	10 (35.7%)
None of the above	3 (3.16%)	0 (0.0%)	3 (10.7%)

Describe your facility's use of manual chart review for sepsis performance evaluation and improvement

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
We review all sepsis hospitalizations	53 (55.8%)	36 (53.7%)	17 (60.7%)
We review all sepsis hospitalizations with adverse outcomes (e.g., all hospitalizations with in-hospital mortality)	7 (7.37%)	7 (10.5%)	0 (0.0%)
We review a sample of sepsis hospitalizations (e.g., a random sample)	33 (34.7%)	24 (35.8%)	9 (32.1%)
We do not complete routine chart reviews of sepsis hospitalizations	2 (2.11%)	0 (0.00%)	0 (7.14%)

Reporting

Sepsis treatment and/or outcome data are reported to unit-based or service-based leadership at following frequency

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Continuously (e.g., a sepsis dashboard that updates in real-time)	22 (23.2%)	16 (23.9%)	6 (21.4%)
At least monthly	52 (54.7%)	37 (55.2%)	15 (53.6%)
At least quarterly	15 (15.8%)	10 (14.9%)	5 (17.9%)
At least annually	2 (2.11%)	2 (2.99%)	0 (0.0%)
Not reported or reported less often than annually	4 (4.21%)	2 (2.99%)	2 (7.14%)

Feedback data provided to clinician and/or unit-based leadership on sepsis treatment and outcomes includes the following elements at least annually

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
Unit-specific or service-specific data	63 (69.2%)	45 (69.2%)	18 (69.2%)
Clinician-specific data	54 (59.3%)	47 (72.3%)	7 (26.9%)
Benchmarking or comparative data (i.e., comparison to other similar units or hospitals)	64 (70.3%)	49 (75.4%)	15 (57.7%)
Temporal trends (i.e., how treatment or outcomes have changed overtime)	50 (55.0%)	42 (64.6%)	8 (30.7%)
None of the above	1 (1.10%)	(0.0%)	1 (3.85%)

following answers selected: "continuously," "at least monthly," "at least quarterly," or "at least annually"

Education

Our facility provides education on sepsis to the following groups as part of their hiring or onboarding process

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
APPs	34 (37.4%)	26 (40.0%)	8 (30.8%)
Certified nursing assistants	18 (19.8%)	15 (23.1%)	3 (11.5%)
Nurses	74 (81.3%)	59 (80.8%)	15 (57.7%)
Patient care technicians	12 (13.2%)	9 (13.9%)	3 (11.5%)
Physicians	49 (53.9%)	36 (55.4%)	13 (50.0%)
Trainees (for example, medical students, residents, nursing students)	26 (28.6%)	18 (27.7%)	8 (30.8%)
None of the above	14 (15.4%)	5 (7.69%)	9 (34.62%)

Our facility provides sepsis education to the following groups at least annually, for example through lectures, staff meetings, etc.

Survey Questions and Responses	All Hospitals n (%)	HOSP-GEN n (%)	HOS-CAH n (%)
APPs	36 (39.6%)	27 (41.5%)	9 (34.6%)
Certified nursing assistants	22 (24.2%)	16 (24.6%)	6 (23.1%)
Nurses	74 (81.3%)	59 (90.8%)	15 (57.7%)
Patient care technicians	19 (20.9%)	13 (20.0%)	6 (23.1%)
Physicians	47 (51.7%)	34 (52.3%)	13 (50.0%)
None of the above	11 (12.1%)	4 (6.15%)	7 (26.9%)

Questions?

DPH.HAI@ky.gov