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VNS Health

Lost in Transition:

Who Gets Sepsis Documented in Home Health Care?

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Acknowledgment

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Background

The burden of sepsis and the need for continued care

- Severe and costly condition caused by the body's dysregulated response to infection
- Associated with long-term physical, cognitive, and psychological consequences
- **1.7 million** sepsis survivors each year in the US
  - **70%** of sepsis survivors are rehospitalized at least once after discharge
  - **1/3** of sepsis survivors are discharged to home health care (HHC) for recovery
- Older adults are particularly vulnerable due to multiple chronic conditions

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Background

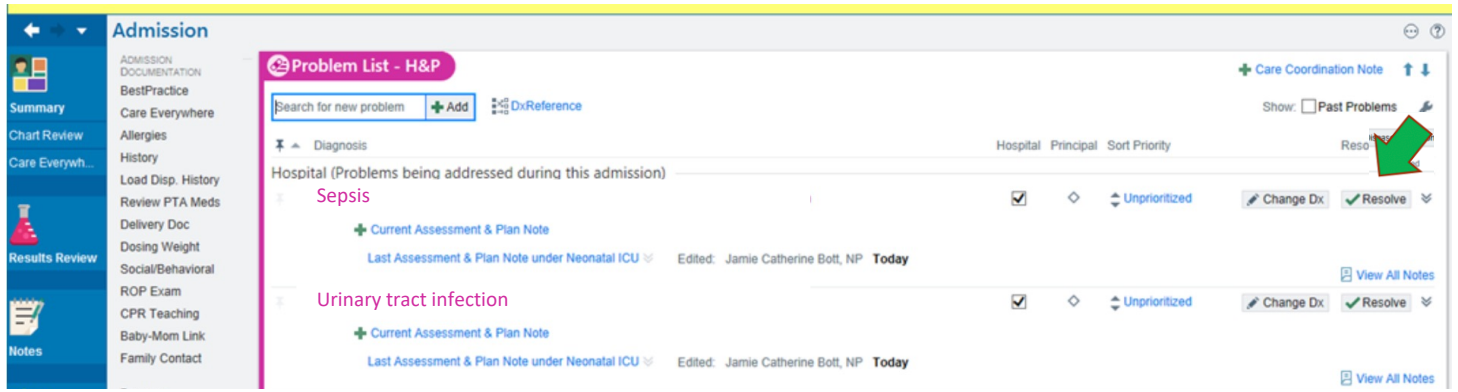
Accurate identification and information transfer

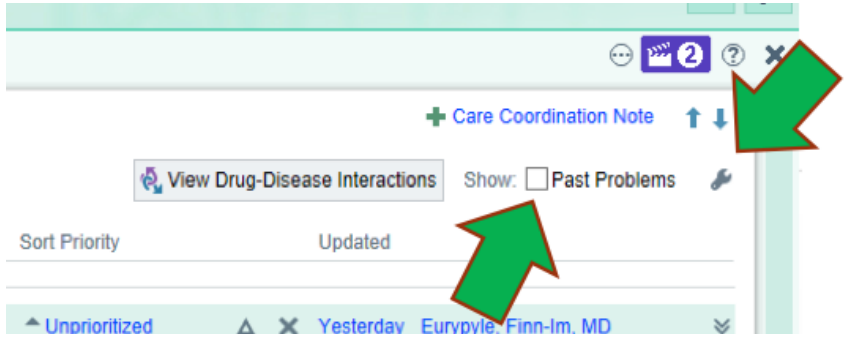
- Accurate documentation ensures that sepsis history is visible to the next care team
- Effective information transfer facilitates continuity across hospital, home health, and outpatient settings
  - Enhances patient safety and care coordination
  - Promotes awareness of ongoing risks and supports tailored care planning
  - Reduces missed opportunities for early detection of deterioration

Source:
https://medstaff.chsbuffalo.org/wp-content/uploads/2019/08/Problem-List-and-Principle-list-for-attendings.pdf
http://ghsnicuresidenthandbook.weebly.com/epic.html

Background

Consequences of sepsis getting resolved





- As patient near discharge, sepsis is often marked as “resolved”
- Frequently listed under past medical history in discharge summaries with other medical histories often not associated with their current hospitalization (or omitted entirely)

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Background

What is known:

- Cross sectional cohort study
- 2013-2014 Medicare beneficiaries treated for sepsis and transitioned to home care (n=165,228)
- Sepsis only documented in **4%** of the cases
  - The five most common primary diagnoses listed upon HHC admission
    - Pneumonia (10.2%)
    - Other aftercare (9.5%)
    - Congestive heart failure (8.4%)
    - UTI (8.4%)
    - Obstructive chronic bronchitis (6.2%)

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JAMDA

journal homepage: www.jamda.com

Original Study

Sepsis Survivors Transitioned to Home Health Care: Characteristics and Early Readmission Risk Factors

Check for updates

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(M1010) List each **Inpatient Diagnosis** and ICD-9-C M code at the level of highest specificity for only those conditions treated during an inpatient stay within the last 14 days (no E-codes, or V-codes):

	Inpatient Facility Diagnosis	ICD-9-C M Code
a.	_____	__ __ __ . __ __
b.	_____	__ __ __ . __ __
c.	_____	__ __ __ . __ __
d.	_____	__ __ __ . __ __
e.	_____	__ __ __ . __ __
f.	_____	__ __ __ . __ __

(M1012) List each **Inpatient Procedure** and the associated ICD-9-C M procedure code relevant to the plan of care.

	Inpatient Procedure	Procedure Code
a.	_____	__ __ . __ __
b.	_____	__ __ . __ __
c.	_____	__ __ . __ __
d.	_____	__ __ . __ __

☐ NA - Not applicable
☐ UK - Unknown

Source: CMS. OASIS C. https://shpdata.com/media/1393/oasis-c_manual_complete.pdf. Accessed October 10, 2025.

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Study Objective

Examine whether patient clinical characteristics and care utilization patterns differ based on sepsis documentation upon HHC admission.

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Methods

Study Design

- Retrospective cohort study

Data Source & Sample

- MEDPAR + OASIS D (2021-2022)
- Medicare fee-for-service (FFS) beneficiaries

Eligibility Criteria

- Older adults (age $\geq$ 65 years)
- Hospital stays with explicit sepsis diagnoses (ICD-10 R65.20, R65,21)
- HHC start of care assessment completed within 30 days following index hospital discharge
- Not ESRD or metastatic cancer patients

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Methods

Statistical Analysis

- **(1) Clinical characteristics comparison**
  - Categorical: Pearson's chi-square tests
  - Continuous: Wilcoxon rank-sum or two-sample t-tests
- **(2) Healthcare utilization outcome:**
  - Time-to-start of care (SOC) assessment
  - 7-day readmission
- All analyses were conducted in R (v4.3.1) with statistical significance set at 0.05

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Results

Sample characteristics

- 22,890 index stays (21,514 patients)
  - Age: 78.7 (SD 8.2) years
  - Sex: 50.7% female
  - Race: 80.2% non-Hispanic White
  - Living arrangement status: 78.6% living with others
  - Sepsis type: 60.8% severe sepsis (vs. septic shock)
  - Number of chronic conditions: 5.5 (SD 2.0) conditions

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Results

Only 8% of sepsis survivors had sepsis documented on HHC assessment at admission

Table 1. Bivariate association between clinical characteristics and sepsis documentation status

	Sepsis documented (n=1850; 8.1%)	Sepsis not documented (n=21040; 91.9%)	p-value
Sepsis POA, %	95.2	92.4	< .001
Medical admission, %	85.0	82.2	.002
Hospital LOS, days (SD)	6.7 (4.8)	8.2 (7.3)	< .001
Therapies at home*,%	22.3	19.1	< .001
UTI, %	41.7	37.5	< .001
CHF, %	36.9	39.7	.020
Behavioral health symptoms, %	30.2	33.0	.016
Stasis ulcer, %	1.1	2.0	.006
ADL**	5.2 (1.7)	5.4 (1.7)	< .001
Prior device use, %	65.7	68.8	.010

Abbreviations. ADL= activities of daily living; CHF= congestive heart failure; IV= intravenous; LOS= length of stay; POA= present on admission; SD= standard deviation; UTI= urinary track infection
Notes. *IV or nutritional therapies at home; **Nine ADL items including grooming, dressing (upper/lower extremity), bathing, toilet transferring, toilet hygiene, transferring, ambulation, and feeding. ADL scores have been calculated by summing up normalized individual ADL item values (normalization completed by dividing the score of each individual ADL item by its max score to account for differing scoring scales of ADL items)

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Results

Care utilization pattern varied by sepsis documentation on OASIS assessment

	Sepsis documented	Sepsis not documented	p-value
Time-to-SOC assessment, days (SD)	2.1 (2.1)	2.6 (3.4)	<.001
7-day readmission, %	6.8	7.6	.196
Abbreviations. SD= standard deviation; SOC= start of care			

Table 2. Unadjusted associations between sepsis documentation at HHC admission and care utilization outcomes

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Discussion

Persistent gaps in sepsis recognition during care transitions

- Gaps in information transfer during hospital-to-HHC transitions remain
- “Resolved” sepsis at hospital discharge often leads to missed opportunities for ongoing monitoring and readmission prevention
- Clinical differences suggest sepsis may be overshadowed by comorbid conditions of older adults (e.g., heart failure), resulting in inconsistent recognition

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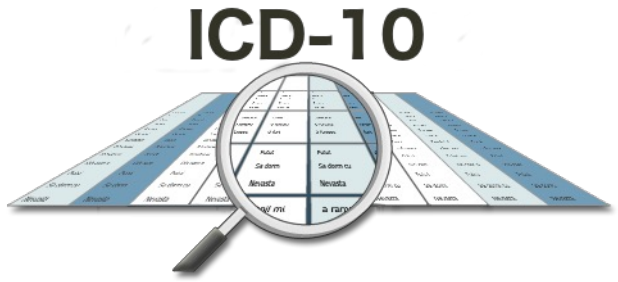

Discussion

Opportunities to improve recognition and continuity of care

- New ICD-10 code **(Z51.A: Sepsis Aftercare)**, effective October 2024, offers a practical mechanism to improve documentation and monitoring
  - Raise awareness and promote use of Z51.A in discharge and referral documents to strengthen communication across transitions in care
  - Allow targeted screening and monitoring to prevent unnecessary readmissions
  - Improve sepsis survivor identification, supporting timely monitoring, safer transitions, and better outcomes

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Discussion

Strengths and limitations

Strengths	Limitations
Large, nationally representative sample	Data primarily collected for billing purposes
Examines hospital-to-HHC transitions by linking MEDPAR and OASIS files	Lack of adjustment for confounders
Novel focus on the association between documentation pattern and outcomes	

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Future Implications

- **Improve documentation and continuity of care**
  - Promote and actively use the new ICD-10 Sepsis Aftercare code (Z51.A) to enhance recognition and communication across care settings
- **Address complexity of coexisting conditions**
  - Older adults often have multiple chronic conditions
  - Sepsis complicates existing health problems and worsens outcomes
  - Need to examine cross-disease interactions, rather than examining conditions in isolation
- **Advance Patient-centered care**
  - Develop subgroups of older adults with similar characteristics to guide personalized care planning and resource allocation

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Thank You

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Questions

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