Pathways of Care Post-Discharge in Medicare-Insured Patients with Overt Hepatic Encephalopathy

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STUDY OBJECTIVE

To describe healthcare patterns among Medicare-insured patients with overt hepatic encephalopathy (OHE), including care setting, specialist consultation, and continuity of care surrounding an OHE event

KEY RESULTS

1. Patients frequently transitioned across care settings post-discharge, with notable shifts from community and acute inpatient care to long-term care (LTC) settings, including home health agency
2. Specialist involvement was limited, with only 30-40% of patients who saw a hepatologist or gastroenterologist both pre-admission and post-discharge
3. Discontinuity of care was common (41%), with many patients not having a follow up with the same physician after the OHE hospitalization

CONCLUSION

Among Medicare-insured patients, OHE is associated with a substantial LTC burden, with most receiving post-discharge care in LTC settings. The need for advanced care following an initial hospitalization underscores the impact of OHE on patient autonomy.

Frequent care transitions, low specialist involvement, and provider discontinuity may limit adequate follow-up and access to treatment.

These findings highlight an unmet need for more coordinated, specialist-driven, and continuous care for patients with OHE.

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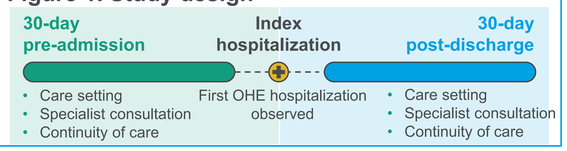
BACKGROUND

- Overt hepatic encephalopathy (OHE) is a neurological complication of cirrhosis that may necessitate long-term specialized care[1,2]
- Adequate patient support and continuity of care may facilitate access to timely treatment, particularly for vulnerable populations, such as Medicare-insured patients
- We described healthcare patterns and continuity of care surrounding OHE-related hospitalization among Medicare-insured patients

METHODS

- A retrospective cohort study using Komodo Research Data (KRD 01/2016 – 09/2023)
- **Study population:** Medicare-insured patients with an initial OHE hospitalization (index hospitalization)
  - OHE hospitalization was defined as an inpatient stay with i) a primary diagnosis for OHE and a diagnosis-related group (DRG) code (441, 442, 443) OR ii) a prescription fill for rifaximin 550mg twice-daily with ≥30 days of supply
- Care settings, specialist consultation, and continuity of care were assessed during the following periods:
  - **30-day pre-admission**: 30 days before the index hospitalization
  - **30-day post-discharge**: 30 days after the index hospitalization
- Care settings included long-term care (LTC) facilities (skilled nursing facility [SNF], hospice, home health agency [HHA]) and home-based settings (acute inpatient [IP], community)
- Continuity of care was defined as having the same physician involved both pre-admission and post-discharge

Figure 1. Study design



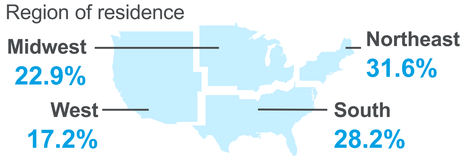
RESULTS

Figure 2. Patient demographics (N = 4,131)

Age (years), mean: 68.3

Female: 48.8%

Region of residence



a. Other includes Alaska, Hawaii, Puerto Rico & Guam.

Figure 3. Clinical characteristics

Length of index OHE hospitalization (days), mean	8.2 days
MELD-Na among patients with a MELD score[b], mean	16.5
Indicators of portal hypertension	
Ascites	59.5%
Varices	46.0%
Hepatorenal syndrome	4.5%
CirCom score, mean	**2.3**
Frailty index, mean	**22.8**
Comorbidities	
CCI score[c], mean	6.0
Most common comorbidities[d]	
Hypertension	82.0%
Coagulopathy	52.6%
Dehydration and electrolyte imbalance	51.7%
Diabetes with chronic complications	41.1%
Alcohol use	38.9%

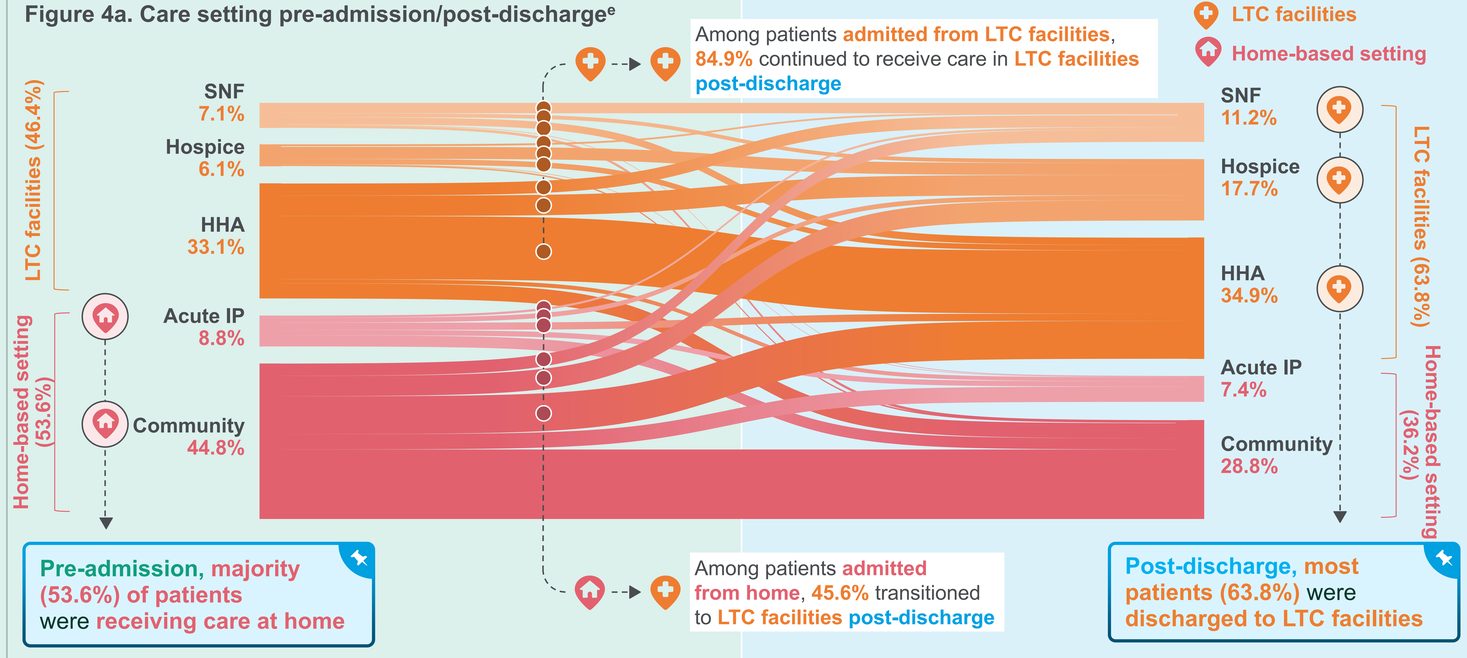
CCI: Charlson comorbidity index; CirCom: cirrhosis-specific comorbidity scoring system; MELD: model for end-stage liver disease; MELD-Na: model for end-stage liver disease with sodium
b. MELD-Na scores were calculated between the start of the baseline period up to 30 days post-discharge from the index OHE event from bilirubin, sodium, creatinine, and International Normalized Ratio (INR) test results within 10 days of one another. If a patient had more than one available MELD score, their most recent score was used. In total, 376 (9.1%) patients had a MELD-Na reported; c. Source: Jepsen P, Vilstrup H, Lash TL. Development and validation of a comorbidity scoring system for patients with cirrhosis. Gastroenterology. 2014;146(1):147–156; d. Categories are not mutually exclusive.

Healthcare patterns and discontinuity of care

30-day pre-admission — Index hospitalization — 30-day post-discharge

Care setting

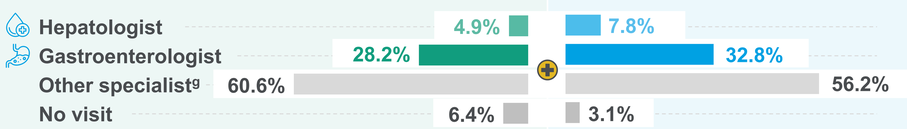
Figure 4a. Care setting pre-admission/post-discharge[e]



HHA: home health agency; IP: inpatient; LTC: long-term care; SNF: skilled nursing facility
e. Sequences of care setting pre-admission and post-discharge were described in a Sankey diagram. Nodes represent all care settings observed pre-admission or post-discharge. Links represent the proportion of patients receiving care at each node.

Specialists consulted

Figure 4b. Specialists consulted[f]

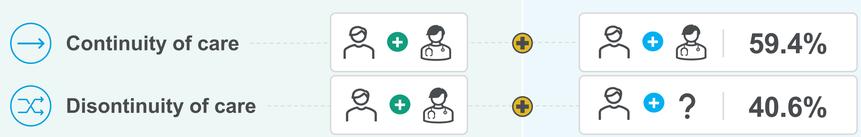


Despite experiencing an OHE hospitalization, **only ~30-40%** of patients were **seen by hepatologists and/or gastroenterologists** both pre-admission and post-discharge

f. Patients were assigned to mutually exclusive categories using a hierarchical approach in the order of: hepatologists, gastroenterologists, and other. Patients with no specialist visits were categorized separately; g. Other specialists included all physician specialists other than hepatologists and gastroenterologists, including family medicine and internal medicine.

Continuity of care

Figure 4c. Continuity of care[h]



40.6% of patients experienced **discontinuity of care around the index hospitalization**, with a change in treating physician between pre-admission and post-discharge

h. Patients were classified as having continuity of care if a patient had the same physician involved both pre-admission and post-discharge. Discontinuity of care was defined as no pre-admission physician being observed post-discharge.

References
1. Ferenci P. *Gastroenterol Rep.* 2017;5(2):138-147.
2. Vilstrup H, et al. *Hepatology.* 2014;60(2):715-735.

Limitations This claims-based study is subject to common limitations including billing inaccuracies and missing data. Patients with OHE were identified using an algorithm developed in collaboration with medical experts based on real-world clinical practice for coding for OHE. Results pertain to Medicare-insured populations and may not be representative of all US adults with OHE.

Disclosure ABJ has provided paid consulting services to Salix/BHC, Mallinckrodt Pharmaceuticals, and Madrigal Pharmaceuticals. Other authors: PGS, RB, KE, KY and AG are employees of Analysis Group ULC, a consulting company that has provided paid consulting services to Bausch Health. LPC and OO are employed by Bausch Health. This study was undertaken by Analysis Group ULC sponsored by Bausch Health.