Hospital Course and Epidemiologic Characteristics of Inpatient Rehabilitation Patients With Pain Syndrome Compared With National Benchmarks

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Background and Methods

Why It Matters

Chronic pain affects 20.9% of US adults (51.6 million); 6.9% have high impact chronic pain.

Pain syndrome is a distinct Rehabilitation Impairment Category (RIC 16) under the IRF Prospective Payment System, yet its epidemiologic and hospital course profile has never been compared with national IRF benchmarks

Prior work established comparable functional outcomes in this population; demographic, social, payer, admission discharge, and transfer characteristics remained uncharacterized.

Study design

Retrospective, aggregated-level comparative analysis of national UDSMR data (UDS-PRO Comprehensive Performance Reports), January 1-December 31, 2025.

National level analysis; no facility or regional stratification IRB exemption (de-identified data).

Categorical outcomes: Pearson chi-square, relative risks with 95% CIs, effect size by Cramér's V. Continuous outcomes: descriptive only (no variance estimates in aggregate reporting).

Data Source and Cohorts

Pain syndrome cohort: RIC 16, n=965 (impairment group codes 07.1-07.3, 07.9; neck/back/extremity pain, spondylosis, disc disorders, without focal neurologic deficit).

National comparison cohort: all impairment categories n=661,244 discharges (all payers).

Study Objective

Compare demographic, social, and admission-discharge characteristics of IRF patients with pain syndrome (RIC 16) against national IRF benchmarks using UDSMR aggregate data.

Key Results

1 Admission Source

More often admitted from home / home with home health (8.3% vs 3.4%); less often from short term acute hospitals (89.8% vs 93.6%). $\chi^2(5)= 113.69$, $p<0.001$; Cramér's V= 0.013

2 Discharge Disposition

Higher community discharge (86.0% vs 78.0%); lower discharge to SNF (7.3% vs 10.3%) and to acute care (6.8% vs 10.0%). $P < 0.001$; Cramér's V = 0.008

3 Early Transfer to Acute Care

43% lower risk of early transfer; 7.8% vs 13.7%; RR 0.57 (95% CI 0.46-0.71); $\chi^2(1) = 28.39$, $p < 0.001$

4 Demographic / Social Profile

More female (56.6% vs 50.3%), living alone (34.2% vs 27.1%), widowed (25.0% vs 18.7%), divorced (11.9% vs 9.0%), and Medicare beneficiaries (79.8% vs 71.1%)

5 Regulatory & Reimbursement

CMS presumptive compliance far lower: 14.6% vs 72.0%; RR 0.20 (95% CI 0.17-0.23); $\chi^2(1) = 1,571.9$, $p < 0.001$. Facility payment per patient lower: $20,028 vs $24,235 (17%).

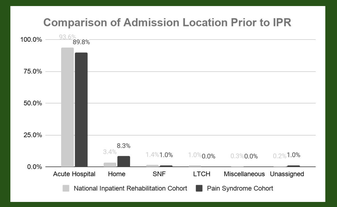


Figure 1. Comparison of admission location prior to IPR between the national inpatient rehabilitation cohort and pain syndrome cohort. IPR = inpatient rehabilitation. SNF = Skilled Nursing Facility. LTCH = Long-Term Care Hospital.

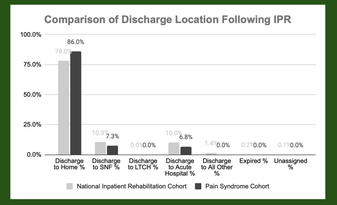


Figure 2. Comparison of discharge location following IPR between the national inpatient rehabilitation cohort and pain syndrome cohort. IPR = inpatient rehabilitation. SNF = Skilled Nursing Facility. LTCH = Long-Term Care Hospital.

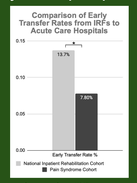


Figure 3. Comparison of early transfer rates from IRFs to acute care hospitals between the national inpatient rehabilitation cohort and pain syndrome cohort. IRF = inpatient rehabilitation facility. Asterisk denoting statistically significant difference between the two rates.

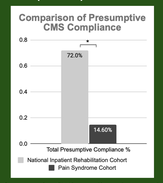


Figure 9. Comparison of presumptive CMS compliance between the national inpatient rehabilitation cohort and pain syndrome cohort. IRF = inpatient rehabilitation facility. Asterisk denoting statistically significant difference between the two rates.

Take-Home Message

Despite a social profile usually predicting worse outcomes (more living alone, widowed, divorced), pain syndrome patients achieved higher community discharge and 43% lower early transfer to acute care. Their low CMS presumptive compliance reflects regulatory classification - pain syndrome is not among the 13 qualifying conditions - not clinical inappropriateness.

Discussion

This is the first characterization of hospital course and epidemiology for IRF pain syndrome patients versus national benchmarks, complementing prior functional outcome data.

Favorable Hospital Course

Higher community discharge and lower early transfer are consistent with lower medical complexity and higher baseline function.

Achieved despite social risk factors (living alone, unmarried) that predict institutional discharge in stroke and IRF populations.

The CMS Compliance Paradox

The 60% rule requires ≥ 60% of IRF patients carry one of 13 qualifying conditions; pain syndrome is not among them.

The 14.6% presumptive compliance therefore reflects regulatory classification, not poor outcomes, a tension between policy and clinical reality.

Effect Sizes and Interpretation

All categorical differences, though significant given the large N, had small to negligible effect sizes (Cramér's V ≤ 0.049). Clinically meaningful signals are early transfer, community discharge, and the regulatory/reimbursement findings.

Limitations

Aggregate registry data (no patient-level modeling); single year (2025); heterogeneous pain etiologies; discharge location ≠ CMS "successful community discharge" (≥31 days without readmission/death).

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