Hospitalizations, 30-day Readmissions and Place of Death in PACE: Results from the Clinical and Operational Data Analysis Committee (CODAC)

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Study Objectives:

1) Compare results to a previous analysis using data from 2008-2010
2) Analyze variations in hospital utilization measures across PACE organizations (POs)

Calculate hospital utilization measures:
- 30-day all-cause readmission rates
- Discharges per 1000
- Days per 1000
Study Objectives:

To evaluate the proportion of PACE participants who die in the hospital vs. other settings

Analyze variations across PACE organizations with respect to in-hospital deaths
Data Sources


Hospitalization Data Sources:
- Risk Adjustment Processing System (RAPS) return files
- Encounter Data System return files (EDS)

Enrollment/Death dates Data Source:
- HICN to MBI Crosswalk files
**Methodology : Hospitalizations Study**

**Hospital Utilization Measures:**
- RAPS and EDS data were pooled together

**Only Inpatient episodes were used:**
- **RAPS:** Provider type = ‘01’ and ‘02’
- **EDS:** Service Type = ‘I’

**Inpatient episodes were identified as:**
- **Index admission:** any admission that does not result in death or disenrollment from PACE
- **30-day readmission:** any admission that happens within 30 days of discharge from an index admission
Hospital Utilization Measure Formulas:

• 30-day All-Cause readmission rates:
  \[(\text{Total 30-day readmission count} / \text{Total number of Index admissions}) \times 100\]

• Hospital discharges per 1000
  \[(\text{Total discharges} / \text{Person years in PACE}) \times 1000\]

• Hospital days per 1000
  \[(\text{Total LOS in CY} / \text{Total member months in CY}) \times 1000 \times 12\]
Limitation:

- All results reported assume that RAPS/EDS data identified as “hospital inpatient” are true hospital stays.
- Some 1 or 2 day stays may have been observation stays that should have been reported as “hospital outpatient.”
- Including these 1 or 2 day stays as inpatient stays when they may actually be observation stays may overstate all hospital utilization measures.
Methodology: Place of Death Study

HICN/MBI Crosswalk Data:

Enrollment and Disenrollment dates were used to establish the exposure to PACE during each calendar year.

Death dates were used to determine if death occurred during a hospitalization (or shortly after).
Place of Death Formulas:

- Percent of In-hospital deaths:

\[
\text{(Number of In-hospital deaths/ Total number Deaths)} \times 100
\]
Results
30-day All-Cause Readmission Rates: Current Analysis

- 2014: 17.2% (70 PACE Sites)
- 2015: 18.1% (76 PACE Sites)
- 2016: 19.1% (84 PACE Sites)

11% increase between 2014 and 2016
30-day All-Cause Readmission Rates: Combined with Previous Analysis

![Graph showing readmission rates over time with specific data points: 19.3 in 2008/2009 for 55 PACE Sites, 19.1 in 2009/2010 for 61 PACE Sites, 17.2 in 2014 for 70 PACE Sites, 18.1 in 2015 for 76 PACE Sites, and 19.1 in 2016 for 84 PACE Sites.]}
Variation in 30-day All-Cause Readmission Rates by PO 2016

N = 84 PACE sites
Range: 3.4% – 32.5%
Mean: 19.1%
Hospital Discharges/1000: Current Analysis

7% increase between 2014 and 2016
Hospital Discharges/1000: Combined with Previous Analysis
Variation in Discharges/1000 by PO: 2016

N = 84 PACE sites
Range: 181.6 – 1218.1
Mean: 541.7
Hospital Days/1000*: Current Analysis

*Data used to calculate hospital days per 1000 were trimmed at the 99th percentile

6% increase between 2014 and 2016
Hospital Days/1000*: Combined with Previous Analysis

- 2008/2009: 3439.9
- 2009/2010: 3473.2
- 2014: 3393.9
- 2015: 3416.6
- 2016: 3601.1
Variation in Days/1000 by PO: 2016

N = 84 PACE sites
Range: 1038.7 – 7565.5
Mean: 3601.1
In-Hospital Deaths
PACE Deaths: 2014 - 2016

• 2014
  • 70 PACE Sites
  • 9.8% Mortality Rate Overall

• 2015
  • 76 PACE Sites
  • 10.2% Mortality Rate Overall

• 2016
  • 84 PACE Sites
  • 9.6% Mortality Rate Overall
Deaths in PACE Overall: 2014 - 2016

- **2014**
  - No Hospitalization during the CY: 45.0%
  - In-hospital deaths: 24.3%
  - Died w/in 3 days of discharge: 20.5%
  - Died w/in 4-7 days of discharge: 4.8%
  - Died w/in 4-7 days of discharge: 4.0%

- **2015**
  - No Hospitalization during the CY: 45.0%
  - In-hospital deaths: 24.3%
  - Died w/in 3 days of discharge: 20.3%
  - Died w/in 4-7 days of discharge: 4.9%
  - Died w/in 4-7 days of discharge: 5.4%

- **2016**
  - No Hospitalization during the CY: 46.4%
  - In-hospital deaths: 24.3%
  - Died w/in 3 days of discharge: 20.5%
  - Died w/in 4-7 days of discharge: 4.8%
  - Died w/in 4-7 days of discharge: 4.0%
Variation of In-hospital PACE deaths by PO

2014

Range: 0% - 64%
Median: 20%
Variation of In-hospital PACE deaths by PO

Range: 0% - 54%
Median: 17%

2015
Variation of In-hospital PACE deaths by PO

2016

Range: 0% - 81%
Median: 19%
Why such variation across POs?

Research Questions:

- Does the location of a PACE site influence the proportion of in-hospital deaths?
- Are there other program-level factors that might influence the proportion of in-hospital deaths?
Comparing by Hospital Referral Region: 2015

% of In-hospital Deaths: PACE vs Community Duals Age 75+

Points above the 45-degree line denote POORER PACE performance compared to local outcomes.

Points below the 45-degree line denote BETTER PACE performance compared to local outcomes.

HRR Performance

PACE
## Comparing by Program-level Factors

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Parameter Estimate</th>
<th>P-Value</th>
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</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>7.224</td>
<td>0.380</td>
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<tr>
<td>% in hospital deaths – Community Duals Age 75+</td>
<td>0.349</td>
<td>.213</td>
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<tr>
<td>Age of PACE Site (ref: Pace Site age&gt;10 years)</td>
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<tr>
<td>PACE Site age 0-5 years</td>
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<td>PACE Site age 6-10 years</td>
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<td>% Long Term Institutional</td>
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<td>Number of Enrollees (ref: &gt;485 enrollees)</td>
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<td>&lt;155 Enrollees</td>
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<tr>
<td>221-485 Enrollees</td>
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</tbody>
</table>
In Conclusion…

• Results of the Hospitalization utilization analysis will be shared with the NPA Quality committee to help identify sites with consistently low hospital utilization rates and to follow up with these sites to identify best practices in this area from which other POs may benefit.

• Results of the Place of Death analysis will be shared with both the NPA Quality Committee and the NPA Palliative End-of-Life Care Workgroup with the objective of identifying opportunities for quality improvement initiatives in end-of-life care.
Questions and Comments