Improving Providers Utilization of I-PASS® Handoff in Hospitalized Leukemia Patients

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**Background**
- 80% of healthcare mistakes due to poor handoff communication (Blazin et al., 2020; Lee et al., 2016; O’Toole et al., 2019)
- Causes of 30% of malpractice complaints (Joint Commission, 2017)
- Leading to 1,744 deaths and cost $1.7 billion over 5 years (Joint Commission, 2017)
- Inadequate handoff practice impacts vulnerable older adult population (Vogmar & Mujahid., 2015)
- Leukemia providers’ utilization of the I-PASS handoff consistently well below AHRQ’s benchmark

**Inquiry Question**
Does an educational intervention encouraging providers’ utilization of the I-PASS measurably change the proportion of handoff days when evaluated over an 8-week period in hospitalized leukemia patients?

**Framework**

**Results**
- The proportion of 30–90-day handoff counts (N=4,259 (44.2%)) after simulation training was measurably higher than the baseline handoff counts of (N=24,132 (30.6%)) collected on leukemia providers between 9-1-2019 – 9-5-2021.
- Corresponding RRT calls/ICU transfers within the same time frame showed 1089 & 1149 vs 122 & 156.
- A Fisher’s Exact 1-sided test showed the proportional difference between 44.2% post intervention and 30.6% at baseline is statistically significant above the 95% confidence level for a p ≠ 0.000.
- Control chart evaluated the stability of the data over time showed downward trend in RRT calls/ICU transfers.

**Discussion**
- A measurable, clinically significant handoff counts noted with 44.2% pilot intervention vs baseline 30.6%.
- Simulation training on I-PASS increased tool’s utilization for patient care transition.
- Corresponding RRT calls/ICU transfers showed downward trend with increased I-PASS use.
- Structured handoff system like I-PASS improves handoff communication.
- Project findings align with landmark and recent studies of the I-PASS.
- Small sample size (n=17) with short time frame.
- No control for seasonal variation.

**Practice Implications**
- Continuity of hospital care.
- Lower healthcare costs.
- Prevent omission of important data.
- Shortened length of stay.
- Reduced medical mistakes.

**Further Recommendations**
- Leadership enforces handoff policy.
- Yearly performance re-in servicing of leukemia providers.
- Future research.
- Need longer project duration randomization and diverse sample.

**Conclusion**
- I-PASS handoff communication represents clinical advancement in patient safety.
- Built in elements in I-PASS improve handoff between providers.
- Provide cost savings for patients and healthcare systems.
- Use of evidence-based tool benefit patients and hospital systems.
- Project results provide opportunity for meaningful change.
- Improve patient outcomes.

**Methods**
- Project Design: Quality Improvement (QI) using Plan-Do-Study-Act framework.
- Population: A convenient non-probability sampling method from leukemia Advanced Practice Providers (APPs, n=17)
- Setting: Leukemia floors at MD Anderson Cancer Center
- Measurement: EPIC/Connect Care One version of electronic health record (EHR)/SSPS25 analysis
- Fisher’s Exact Test Results of Handoff Proportion Between Baseline & Pilot Data

**Literature Review**
Studies related to I-PASS Tool identified:
- Improved handoffs.
- Decreased preventable adverse events.
- Reduce medical mistakes.
- Timely identification of critically ill patients (Clarke et al., 2016; Huth et al., 2016; Starmar et al., 2014).
- No change in ICU LOS or duration of mechanical ventilation.
- Improve provider confidence in handoff.
- Improve provider readiness and workflow.
- Increased compliance after simulation training (Desmedt et al., 2020; Parent et al., 2017; Starmar et al., 2014).

**Gap Analysis**
Inconsistent handoffs, practices by email, verbal reports, and/or no handoff communication from leukemia providers in the hospital, where 80% of significant incidents related to miscommunication, may result in low I-PASS usage, and RRT calls/ICU transfers.

**Results Table**

<table>
<thead>
<tr>
<th>Value</th>
<th>df</th>
<th>Asymptotic Significance (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
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<tr>
<td>722.703</td>
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<td>0.000</td>
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</tr>
</tbody>
</table>

**Chi-Square Tests**

- Continuity Correction: 222.081 1 0.000
- Likelihood Ratio: 690.529 1 0.000
- Fisher’s Exact Test: 0.000 0.000
- N of Valid Cases: 88379

- a: 0 cells (0%) have expected count less than 5. The minimum expected count is 395.50.
- b: Computed only for a 2x2 table.

*I-PASS: A mnemonic framework to standardize patient handoff process*