Hospital Readmission after the ICU – What Difference Could a Post-ICU Clinic Make?

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**Introduction**

Until recently – perhaps unsurprisingly – in ICU outcome discussions, there has been a little comment as to what happens to our patients after they leave the ICU. Care provided by the ICU team is centrally in-patient in the ICU. The profound physical and neuropsychological residua of critical illness have received the most attention (1), hospital readmission-prevention strategies in this population are not well studied.

As part of the Society for Critical Care Medicine’s 10-institution Project THRIVE, we have had a Post-ICU Clinic (PICUC) for patients who have “graduated” from the ICU and been discharged to home, long-term acute care hospital (LTACH), or a skilled nursing facility (SNF). In the context of the PICUC, little has been written on hospital readmission in this patient group after discharge (1); a 6-year retrospective review of our data showed that patients discharged from the hospital after an ICU admission for sepsis/respiratory failure and/or delirium had a 20% readmission rate at 30 days. The last major study found no patient benefit was conferred with a PICUC (2). We report herein the 30 day readmission rate in our post-ICU population, stratified by PICUC enrollment or refusal to enroll.

**Methods**

The PICUC has functioned since November 2016 in pilot mode. Data from the Geisinger Health Plan (GHP) noted ICU patients with sepsis, respiratory failure and/or delirium had a 30 day readmission rate of 20%. Patients were evaluated for enrolment while in the ICU and were followed by the PICUC team while in the ICU and on the floor. We asked all GHP patients – or their families – with any of the above problems to enroll in the clinic, usually when preparing to leave the ICU for the floor. Those agreeing to enroll were called within 48 hrs of hospital discharge, sometimes seen at their homes by a lay Community Health Associate (CHA), and were brought to clinic within 2 weeks, and then at 1, 3, 6, 9, 12, 24, 36 months; in clinic they were evaluated by PICUC Team – RN, intensivist and neuropsychologist; there were no physical therapists or nutritionists. Through April 2017, 117 patients were asked to enroll.
## Results

<table>
<thead>
<tr>
<th></th>
<th>Total Population</th>
<th>Enrolled</th>
<th>Non-Enrolled</th>
<th>p =</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 117</td>
<td>N = 29 (25%)</td>
<td>N = 88 (75%)</td>
<td></td>
</tr>
<tr>
<td>Age (SD)</td>
<td>61.9 (15.6)</td>
<td>61.8 (12.9)</td>
<td>61.9 (16.4)</td>
<td>0.9642</td>
</tr>
<tr>
<td>Male (%)</td>
<td>59 (50%)</td>
<td>8 (28%)</td>
<td>51 (58%)</td>
<td>0.0054</td>
</tr>
<tr>
<td>APACHE IVa (SD)</td>
<td>69.1 (31.9)</td>
<td>58.2 (18.9)</td>
<td>72.9 (34.5)</td>
<td>0.0052</td>
</tr>
<tr>
<td>APS</td>
<td>57.4 (30.2)</td>
<td>47.6 (16.8)</td>
<td>60.7 (33.0)</td>
<td>0.0067</td>
</tr>
<tr>
<td>ARF (%)</td>
<td>112 (96%)</td>
<td>28 (97%)</td>
<td>84 (95%)</td>
<td>&gt;0.99</td>
</tr>
<tr>
<td>Sepsis (%)</td>
<td>53 (45%)</td>
<td>11 (38%)</td>
<td>42 (48%)</td>
<td>0.3962</td>
</tr>
<tr>
<td>Delirium (%)</td>
<td>63 (54%)</td>
<td>10 (34%)</td>
<td>53 (60%)</td>
<td>0.0190</td>
</tr>
<tr>
<td>Delirium Days (SD)</td>
<td>1.97 (2.84)</td>
<td>1.24 (2.36)</td>
<td>2.20 (2.96)</td>
<td>0.1140</td>
</tr>
<tr>
<td>30 d Readmit (%)</td>
<td>27 (23%)</td>
<td>2 (7%)</td>
<td>25 (28%)</td>
<td>0.0208</td>
</tr>
</tbody>
</table>

## Discussion

The PRACTICAL study (2) suggested no benefit for a Nurse run PICUC. Our data, from a group of ill post-ICU patients suggest otherwise. Initiating a relationship prior to hospital discharge, phone calls at 24–48 hrs after discharge from hospital, medication reconciliation prior to discharge and in PICUC, and thoughtful listening to patients when asked about eating, sleeping, and going out in public appears to have significantly decreased readmission rates. Medication reconciliation and ensuring – through phone calls and occasionally home visits – that this high risk population has the resources needed to avert readmission appear to be the most important interventions. The reason for the readmission is unclear but may be related to chronic critical illness, a selection bias and/or the higher delirium rate; the latter is known to impact outcome (3). We recently began a novel Reader program in which volunteers read to and interact with our patients. Preliminary data review of this program to decrease social isolation in the ICU shows a decrease in delirium days. There is both quality/outcome and financial rationale to aggressively follow this population in a PICUC; minimal resources are needed.
References:

