Assessing Quality of End-of-Life Communication and Documentation in Intensive Care Patients using a Conceptual Framework and Quality Indicators

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INTRODUCTION

- Most deaths in Canada occur in hospitals – 19% in intensive care units (ICU). As a result, communication with patients and their substitute decision-makers about end-of-life (EOL) issues - including but not limited to Advance Care Planning (ACP) - is an important part of ICU care, especially for those at high risk of dying.

- We evaluated EOL communication in two such cohorts: (a) those admitted from personal care homes (PCH), and (b) those receiving extracorporeal membrane oxygenation (ECMO). The advanced form of artificial life support with two subtypes:
  - v-ECMO – for severe isolated respiratory failure
  - v-ECMO – for severe cardiorespiratory failure

METHODS

- Inclusion criteria: Patients admitted 2000–2017, to any of four Winnipeg adult ICUs: 1 medical-surgical, 1 cardiac surgical, other from a PCH or on ECMO at any point during the ICU stay.

- Exclusion criteria: ICU length of stay < 24 hours


- Rating for rescaled scores:
  - 54–99% poor; 50–74% good; 75–84 very good; 85–100% excellent.

- Elapsed time from ICU admission to first recorded ACP status (ACP elapsed time) – from either charted progress notes or the provincial ACP form located in the patient’s chart.

- Manual abstractation of medical records to identify the presence/absence of the 18 items.
  - Single abstractor (TP)

- Reabstracted 10% of charts to assess test-retest agreement of composite score – via kappa index (k)

- Assessment of variables related to composite weighted percent score – via ordinary least squares (linear) regression

Figure 1. Conceptual framework

- Introduction:
  - Home or Community Settings
  - Institutionalized Settings

- Processes:
  - Advanced Care Planning
    - Conversations about values, wishes, preferences
    - Selection of substitute decision makers
    - Development of ACP directions
  - Documentation:
    - ACP documents
    - GOID documents
    - Care plans
  - Goals of Care Discussion
    - Clarification of previous ACP conversations, values, preferences
    - Information on diagnosis, prognosis, risks/benefits of treatment
    - Options for care and treatment

- Outcomes:
  - Care consistent with patient’s values and goals

Figure 2. Quality Indicators List

Goals of Care Discussion

Since hospital admission, members of health care team has talked to patient and/or substitute decision maker about:

- G1: poor prognosis or limited time left to live
- G2: artificial life support options
- G3: comfort care as the goal of treatment
- G4: arranging time for GOID meeting
- G5: patient’s earlier discussions or written documents about the use of life-sustaining treatments
- G6: what treatments they prefer to have or not if they develop a life-threatening illness
- G7: what is important to them as they consider health care decisions
- G8: questions or clarifications re patient’s goals of care
- G9: fears or concerns of EOL care
- G10: right to change decisions around goals of care at any point
- G11: what patients would want with ACP status if patient did not have capacity to consent
- G12: available allied health services (spiritual, social work)
- G13: information about GOID read prior to GOID meeting

Documentation

- D1: documentation of any Goals of Care Discussion
- D2: ACP status present in the medical record is consistent with patient’s care
- D3: standardized regional ACP form is present in medical record
- D4: documentation of ACP conversation details is in patient’s medical record
- D5: ACP documents from the community are present in the medical chart

RESULTS

- Data is presented as mean ± SE, p-values are from chi-square test. For Likert scale, mean ± SE, p = 0.05

<table>
<thead>
<tr>
<th>Results</th>
<th>PCH</th>
<th>ECMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>67.2 ± 1.3*</td>
<td>66.0 ± 2.2*</td>
</tr>
<tr>
<td>Age (y)</td>
<td>48 (44%)</td>
<td>44 (42.7%)</td>
</tr>
<tr>
<td>Disease category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>21 (19.6%)</td>
<td>52 (50.5%)</td>
</tr>
<tr>
<td>Infectious</td>
<td>36 (33.6%)</td>
<td>23 (22.2%)</td>
</tr>
<tr>
<td>Neurological</td>
<td>22 (20.6%)</td>
<td>22 (20.6%)</td>
</tr>
<tr>
<td>All Others</td>
<td>20 (26.6%)</td>
<td>5 (4.9%)</td>
</tr>
<tr>
<td>PACHEF score (points)</td>
<td>23 ± 0.5*</td>
<td>28 ± 0.8*</td>
</tr>
<tr>
<td>APS points</td>
<td>12.6 ± 0.5*</td>
<td>13 ± 0.8*</td>
</tr>
<tr>
<td>APS score (points)</td>
<td>9.4 ± 0.5*</td>
<td>11 ± 0.8*</td>
</tr>
<tr>
<td>GCS (points)</td>
<td>11 ± 0.5*</td>
<td>0 ± 0.5*</td>
</tr>
<tr>
<td>ACP status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v-ECMO at any point</td>
<td>91 (90.8%)</td>
<td>12 (11.7%)</td>
</tr>
<tr>
<td>v-ECMO without v-ECMO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACP status</td>
<td>No limitations</td>
<td>29 (29.6%)</td>
</tr>
<tr>
<td>Comfort Care</td>
<td>32 (33.6%)</td>
<td>44 (42.2%)</td>
</tr>
<tr>
<td>Other limitations</td>
<td>43 (40.2%)</td>
<td>4 (3.9%)</td>
</tr>
<tr>
<td>Mean elapsed ACP time (days)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital length of stay (days)</td>
<td>22.9 ± 3.6</td>
<td>32.8 ± 3.5</td>
</tr>
<tr>
<td>Hospital mortality</td>
<td>40 (37.4%)</td>
<td>50 (45.8%)</td>
</tr>
</tbody>
</table>

Table 2. Goals of Care Discussion

- Sensitivity: 52%, Specitivity: 82%, Area under ROC curve: 0.72

Table 3. Quality of Communication

- PCH: 99%, ECMO: 100%

DISCUSSION

- EOL communication was better quality in high risk populations, PCH and ECMO cohorts, compared to the general ICU population evaluated in prior studies.

- The younger ECMO cohort had lower quality of EOL communication compared to PCH cohort despite having higher mortality and disease severity.

LIMITATIONS

- Evaluation of EOL communications by chart review could fail to identify undocumented conversations.

- Documentation practices are variable.

- Excluded medical charts from inter-hospital transfers.

- Did not test inter-rater reliability.

- Did not assess long-term outcomes.