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, an advanced form of artificial life support with two subtypes)
  - v-aECMO – for severe isolated respiratory failure
  - v-vECMO – for severe cardiorespiratory failure

METHODS

- Inclusion criteria: Patients admitted 2000-2017, to any of four Winnipeg adult ICUs 1 medical, 1 surgical, 1 medical-surgical, 1 cardiac surgical), either from a PCH or on ECMO at any point during the ICU stay.
- Exclusion criteria: ICU length of stay < 24 hours
- 18 Yes/No EOL Communication Quality Indicators (CMAJ 189(30): E980-E989, 2017)
  - composite score and two subcategories:
    (i) Goals of Care Discussion [13 indicators], and
    (ii) Documentation [5 indicators]
  - Weighted percent scoring: sum of the individual yes/no items, weighted by importance scores (created and validated by the original authors, J Pain Symptom Manage 49(6):1070-80, 2015), and then rescaled to 0-100
  - Rating for rescaled scores:
    ≤49% poor; 50-74% good;
    75-84 very good;
    ≥85% 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 abstraction of medical records to identify the presence/absence of the 18 items
  - Single abstractor (TP)
  - Re-abstracted 10% of charts to assess test-retest agreement of composite score – via kappa index (κ)
- Assessment of variables related to composite weighted percent score – via ordinary least squares (linear) regression
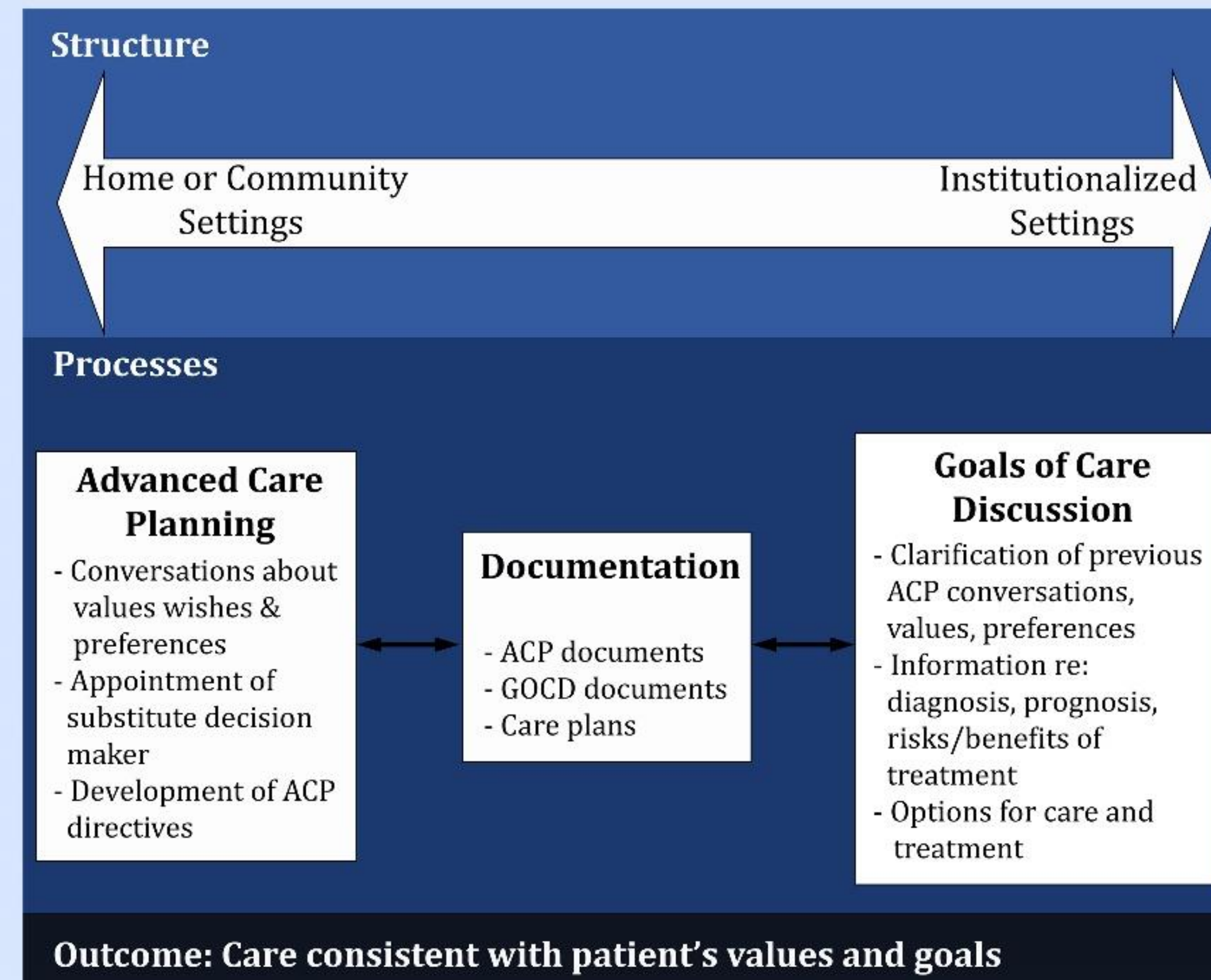
Structure

Home or Community Settings → Institutionalized Settings

Processes

Advanced Care Planning
- Conversations about values wishes & preferences
- Appointment of substitute decision maker
- Development of ACP directives

Documentation
- ACP documents
- GOCD documents
- Care plans

Goals of Care Discussion
- Clarification of previous ACP conversations, values, preferences
- Information re: diagnosis, prognosis, risks/benefits of treatment
- Options for care and treatment

Outcome: Care consistent with patient's values and goals

Figure 1. Conceptual framework

Figure 2. Quality Indicators List

Goals of Care Discussion

Since hospital admission, member 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 GOCD meeting
G5. patient's prior discussions or written documents about the use of life-sustaining treatments
G6. what treatments they prefer to have or not have 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 patient would want with ACP status if patient did not have capacity to consent
G12. available allied health services (spiritual services, social work)
G13. information about GOCD to read prior to GOCD 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

- κ = 0.93: very high test-retest agreement of chart abstraction
- 210 patients, divided between the two subgroups
- Cohort characteristics (Table 1)
  - 88% of ECMO cohort received V-A ECMO
  - Substantial differences between PCH and ECMO cohorts
  - Both cohorts had high severity of illness, and high hospital mortality
  - More than half in both cohorts had some limitations of life-supporting medical therapies prior to death
  - Mean ACP elapsed times: 3 days in PCH cohort, 9 days in ECMO cohort
- Quality of End-of-Life Communications (unadjusted, Table 2)
  - Composite scores for both cohorts are "good" (50-54%)
  - Documentation sub-scores consistently better than Goals of Care Discussion sub-scores
- Factors associated with EOL Communications (adjusted, Table 3)
  - ECMO cohort had substantially lower quality of EOL communications
  - Higher quality of EOL communications with higher severity of acute illness

Table 1. Patient and illness characteristics
Values are mean ± SE, or %; *p<0.05

	PCH (N=107)	ECMO (N=103)
Age (years)	67.7 ± 1.4*	46.0 ± 2.2*
Females	48 (44.9%)	44 (42.7%)
Disease category		
Cardiovascular	21 (19.6%)	52 (50.5%)
Infectious	36 (33.6%)	23 (22.3%)
Respiratory	22 (20.6%)	23 (22.3%)
All Others	28 (26.1%)	5 (4.9%)
APACHE II score (points)	25.0 ± 0.5*	28.2 ± 0.8*
APS (points)	12.6 ± 0.5*	18.3 ± 0.6*
APS-neuro score (points)	9.4 ± 0.5*	11.6 ± 0.7*
GCS (points)	11.8 ± 0.3*	8.3 ± 0.5*
ECMO type		
v-aECMO at any point	--	91 (88.3%)
v-vECMO without v-a ECMO		12 (11.7%)
ACP status		
No limitations	31 (29.0%)	42 (40.8%)
Comfort Care	32 (29.9%)	44 (42.7%)
Other limitations	43 (40.2%)	4 (3.9%)
Missing ACP status	1 (0.9%)	13 (12.6%)
Mean elapsed ACP time (days)	3.0 ± 0.7*	9.5 ± 1.8*
Hospital length of stay (days)	22.6 ± 3.6	32.8 ± 3.5
Hospital mortality	40 (37.4%)	50 (48.5%)

Table 2. Quality of end-of-life communication
Values as weighted percent score (%) ± SE; *p<0.05

	PCH	ECMO
Composite weighted percent score	53.7% ± 2.2	49.6% ± 2.6
Goals of Care Discussion subscore	43.1% ± 2.7	45.5% ± 2.9
Documentation category subscore	81.1% ± 1.6*	60.1% ± 2.7*

Table 3. Factors influencing EOL communication, from OLS regression model *p<0.05

Predictor variable	Coefficient (95% CI)
ECMO cohort (PCH cohort reference)	-9.97* (-19.80, -0.13)
Age (year)	0.16 (- 0.02, -0.35)
Female	-3.15 (- 9.70, 3.40)
Year of admission	0.21 (- 1.47, 1.88)
GCS (per point)	1.84* (- 2.84, -0.84)
APS-neuro score (per point)	0.72* (0.06, 1.39)
Disease category	
Cardiovascular	Reference
Infectious	-7.75 (-16.53, 1.03)
Respiratory	-8.19 (-17.24, 0.86)
Other	-5.24 (-15.91, 5.43)

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