

PATIENT-CENTERED OUTCOMES PROGNOSTICATION IN INTENSIVE CARE UNIT PATIENTS (PCOPS)

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AGENDA

- I. Overview
- II. Significance
- III. Aims of the PCOPS Study
- IV. Study Design
- V. My Role
- VI. Qualitative Data Analysis
 - a) Methods
 - b) Preliminary Findings
- VII. Lessons Learned

I. OVERVIEW

- When patients are admitted to the intensive care unit (ICU), they and their families are concerned about the **patient's short and long-term prognosis**.
- A **prognosis** is provided to achieve appropriate expectations and help make decisions for immediate clinical care.

Considerations

- Expected **effectiveness of ICU interventions**.
- **Patient's** previously expressed **wishes**.
- Understanding of likely outcomes

Immediate Clinical Care

- Wish to pursue aggressive therapies

Outcomes

- **Mortality**
- **Functional Morbidity**
 - Patient's quality of life
 - Caregiving needs



II. SIGNIFICANCE

- Currently, the literature includes several **markers of severity of illness** (APACHE, MPM) that are primarily used for benchmarking in research rather than for routine clinical practice and decision-making.
 - Not considered to be accurate enough for individual decision-making.
 - They predict mortality, length of stay or nursing workload, which may not be the most important outcomes of interest.

II. SIGNIFICANCE

- **Families want to know** if patients will survive with significant **functional impairment, increased caregiver requirements** or an inability to return to their original place of **residence**.
- Over the past 20 years, as a result of improvements in survival of ICU syndromes, **research in critical care has evolved with an increased focus on these outcome measures**.
- **BUT research in prognostication has not kept pace** with this shift in ICU survivorship.

II. SIGNIFICANCE

- **The ability of ICU clinicians to predict functional outcomes is unknown.**

III. AIMS

- **Measure clinician's ability to predict 6-month functional outcomes** in patients admitted in the ICU who require some degree of life support.
- **Compare agreement on prognosis of long-term functional outcomes between ICU attending physician and bedside nurse** involved in the care of the same ICU patient.
- **Identify which pieces of information clinicians consider most important** when explaining how they came to conclude their predicted 6-month functional outcomes.

IV. STUDY DESIGN

Prospective cohort study evaluating 6-month functional outcomes of patients from 5 different ICUs in the Penn Med System.

I. Informed Consent & Baseline Data:

- Patient demographics
- Premorbid functional status
- ICU and hospital data



II. Prognostic Assessments:

- Mortality
 - In-hospital
 - 6 months
- Functional Outcomes
 - Return to place of residence
 - Return to work/primary pastime
 - Toileting
 - Ambulation
 - Cognition
 - Quality of life



III. Follow-Up:

- Mortality
- Perceived functional outcomes



V. MY ROLE

- Called patients to obtain **6-month follow up data** on patients' perceived cognitive and functional outcomes.
- **Qualitative data analysis.**
 - **Identifying which pieces of information clinicians consider most important** when explaining how they came to conclude their predicted 6-month functional outcomes.

VI. QUALITATIVE DATA ANALYSIS

Methods

- **Evaluated clinicians' responses** on the information they deemed the most important in devising their prognosis.
- **Created standardized variables** to capture specific concepts in the clinician's answers.
- **Generated free-lists** for each of the clinician's responses using the standardized variables.

VI. QUALITATIVE DATA ANALYSIS

Example

Our study would like to understand how you arrived at your judgments as they relate to survival and function 6 months from now. Using single words or phrases, please list all of the factors you considered to come to these conclusions.

“wheelchair bound, chronic use of alcohol and sedative hypnotics, acute PNA and severe sepsis”

**baseline physical
functional status**

behavioral

**acute clinical
conditions**

VI. QUALITATIVE DATA ANALYSIS

Meta themes, variables and associated key words

- Originally identified 27 different variables, which were ultimately lumped together in 23 unique variables and 7 different meta-themes.

Variable	Explanation	Key Words	Code
A. PRIOR FUNCTION			
1. Baseline Physical Functional Status	Practitioner mentions the patient's physical status before hospitalization.	premorbid physical status, deconditioned, chronic failure to thrive, baseline physical status	basephyfunction
2. Baseline Cognitive Functional Status	Practitioner mentions the patient's cognitive status before hospitalization.	dementia, impaired cognition	basecogfunction
3. Baseline Functional status	Practitioner mentions the patient's overall functional status before hospitalization; not able to tell if it is physical or cognitive.	baseline health, functional status at baseline, living in SNF	basefunction

VI. QUALITATIVE DATA ANALYSIS

Meta themes, variables and associated key words

Variable	Explanation	Key Words	Code
B. HOSPITAL TRAJECTORY, CLINICAL CONDITION AND FORSEEABLE COMPLICATIONS IN CARE			
4. Acute Conditions	Practitioner mentions patient's current clinical conditions.	labs and imaging results, severity of illness, acute injury, vital signs are stable, ICU syndromes, multi-organ failure, fever, intubated, on vasopressors, current mental status	acuteclinical
5. Diagnosis	Practitioner mentions the primary reason for the patient's admission.	underlying disease, primary diagnosis, underlying diagnosis, pathophysiology, non terminal illness, current illness	diagnosis
6. Hospital Course	Practitioner refers to the patient's improvement or deterioration during the hospital stay.	length of stay, trajectory, complications, deconditioning, resilient, wean on ventilator	trajectory
7. Current Functional Status	Practitioner mentions the patient's current functional status and abilities to perform ADLS.	ability to toilet, immobility, current functional status, claudication, strength, mobility	funcstatus
8. Anticipated Potential Complications	Practitioner mentions complications that may arise in the future given the patient's current condition	at risk for, foreseeable complications for, will need rehab/dialysis/tracheostomy	apcomplications

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Meta themes, variables and associated key words

Variable	Explanation	Key Words	Code
C. PAST MEDICAL HISTORY AND HEALTHCARE UTILIZATION			
9. Medical History and Co-morbidities	Practitioner mentions past medical history or specific premorbid conditions.	COPD, chronic critical illness, malnutrition, amputations, arthritis, chronic heart failure, peripheral vascular disease, chronic kidney disease, dialysis dependency, previous transplant, past medical history, obesity, premorbid obesity	medhistory
10. Cancer	Practitioner mentions that the patient has cancer.	cancer, metastatic cancer, AML, malignancy, lymphoma	cancer
11. Readmissions	Practitioner mentions that the patient has been previously admitted to the hospital.	Previous hospital admissions	readmissions

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Variable	Explanation	Key Words	Code
D. SOCIAL, BEHAVIORAL, PSYCHOLOGIC AND DEMOGRAPHIC FACTORS			
12. Social Support	Practitioner mentions patient's social support mechanisms.	social challenges, support system, family, friends	social
13. Behavioral Factors	Practitioner mentions patient's lifestyle and behaviors.	substance abuse, active/inactive lifestyle, diet, compliance with treatment, smoking, engaged with medical care, motivation, self-care	behavioral
14. Psychological Factors	Practitioner mentions psychological factors affecting the patient.	depression, anxiety	psychology
15. Age	Practitioner mentions the patient's age.	young, advanced age, elderly	age

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E. THERAPIES, TREATMENTS AND MEDICAL PROCEDURES			
16. Procedures	Practitioner mentions specific surgical procedures.	invasive procedure, embolization, surgery, debridement, hip replacement, recent transplant	procedure
17. Definitive Treatment	Practitioner mentions undergoing medical treatments necessary for the patient's acute recovery or survival.	experimental medical trial, antibiotic therapy, need for transplant, bone marrow pending, chemotherapy	treatment
18. Medication	Practitioner mentions the medications the patient is currently on.	current medications, IV drips, HIV/BP medications	medications

VI. QUALITATIVE DATA ANALYSIS

Meta themes, variables and associated key words

Variable	Explanation	Key Words	Code
F. CLINICIAN'S EXPERIENCES AND INTERACTIONS WITH PATIENT & OTHER CLINICIANS			
19. Clinician's previous experience	Practitioner mentions his previous experiences with similar patients.	other patients' outcomes, personal experience, expertise, research data, knowledge of literature	experience
20. Clinician's interactions with the patient	Practitioner mentions his previous and current interactions with the patient.	practitioner had conversation with patients, knew patient from before, family's statements	interactions
21. Interdisciplinary interactions between clinicians	Practitioner mentions other doctor's or the nurse's input.	MD input, mention of rounds	doctorinput

VI. QUALITATIVE DATA ANALYSIS

Meta themes, variables and associated key words

Variable	Explanation	Key Words	Code
G. PREFERENCE FOR PALLIATIVE VS. AGGRESSIVE CARE			
22. Palliative approach	Practitioner mentions that patient or family are not inclined to continue aggressive treatment.	deny aggressive treatment, considering palliation	palliative
23. Aggressive Care	Practitioner mentions that patient or family are inclined to continue aggressive treatment.	committed to aggressive care	aggressivecare

VI. QUALITATIVE DATA ANALYSIS

Findings: Frequency of Variables by Type of Clinician

		MD		RN
Rank	Variable		Variable	
1	acuteclinical	24.5%	acuteclinical	22.1%
2	medhistory	12.1%	trajectory	12.3%
3	trajectory	10.5%	medhistory	11.6%
4	diagnosis	6.4%	behavioral	5.9%
5	age	5.8%	age	5.2%
6	basefunction	5.6%	experience	4.3%
7	cancer	5.6%	basephyfunction	4.3%
8	basephyfunction	4.3%	procedure	4.3%
9	procedure	3.9%	social	4.1%
10	treatment	3.9%	cancer	4.1%
11	apcomplications	3.2%	diagnosis	3.8%
12	experience	2.8%	funcstatus	3.5%
13	basecogfunction	2.2%	basefunction	3.5%
14	social	2.2%	apcomplications	2.2%
15	behavioral	2.1%	interactions	1.7%
16	palliative	1.1%	treatment	1.7%
17	readmissions	1.1%	basecogfunction	1.6%
18	funcstatus	0.7%	readmissions	1.4%
19	interactions	0.7%	medications	0.7%
20	psychology	0.6%	psychology	0.7%
21	agressivecare	0.2%	doctorinput	0.4%
22	doctorinput	0.2%	palliative	0.4%
23	medications	0.2%	agressivecare	0.0%

VI. QUALITATIVE DATA ANALYSIS

Findings: Frequency of Meta themes by Type of Clinicians

	DOCTORS	NURSES
Trajectory, current condition and foreseeable complications	45.2%	43.8%
acuteclinical	54.1%	50.5%
trajectory	23.1%	28.1%
diagnosis	14.0%	8.6%
apcomplications	7.0%	5.0%
funcstatus	1.7%	7.9%
Past medical history and healthcare utilization	18.9%	17.1%
medhistory	64.36%	67.80%
cancer	29.70%	23.73%
readmissions	5.94%	8.47%
Prior function	12.1%	9.4%
basefunction	46.2%	36.9%
basephyfunction	35.4%	46.2%
basecogfunction	18.5%	16.9%
Social, behavioral, psychologic and demographic factors	10.7%	15.9%
age	54.4%	32.7%
social	21.1%	25.5%
behavioral	19.3%	37.3%
psychology	5.3%	4.5%
Therapies, treatments and medical procedures	8.0%	6.8%
procedure	48.8%	63.8%
treatment	48.8%	25.5%
medications	2.3%	10.6%
Clinician's experiences and interactions	3.7%	6.5%
experience	75.0%	66.7%
interactions	20.0%	26.7%
doctorinput	5.0%	6.7%
Preference for palliative or aggressive care	1.31%	0.43%
palliative	85.71%	100.00%
agressivecare	14.29%	0.00%

VI. QUALITATIVE DATA ANALYSIS

Next Steps

- Identify what meta-themes and variables are associated with higher accuracy in clinicians' prognosis of survival and functional outcomes.

VII. LESSONS LEARNED

- Limitations of **tools for prognostication** of functional outcomes.
- Exposure to **intensive care medicine**.
- **Team dynamics** in clinical research.
- Exposure to issues in **advance-care planning and decision making** for the end-of-life care.
- Telephone interviewing skills, **data collection** and **qualitative data analysis** methods.

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