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# PICS: Characterizing Patient-Centered Outcomes After Life-Threatening Traumatic Injury

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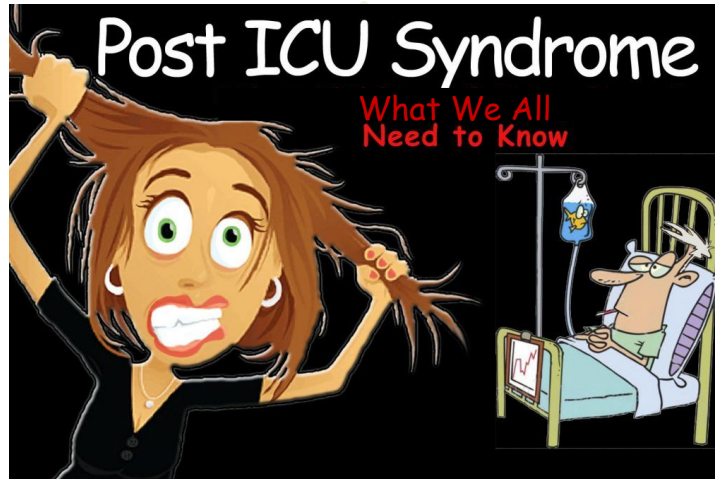
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**LANE-FALLLAB**  
ADVANCING PATIENT-CENTERED QUALITY CARE

# Background and Project Overview



# PICS

An emerging phenomenon  
which manifests itself in ICU  
patients and their families

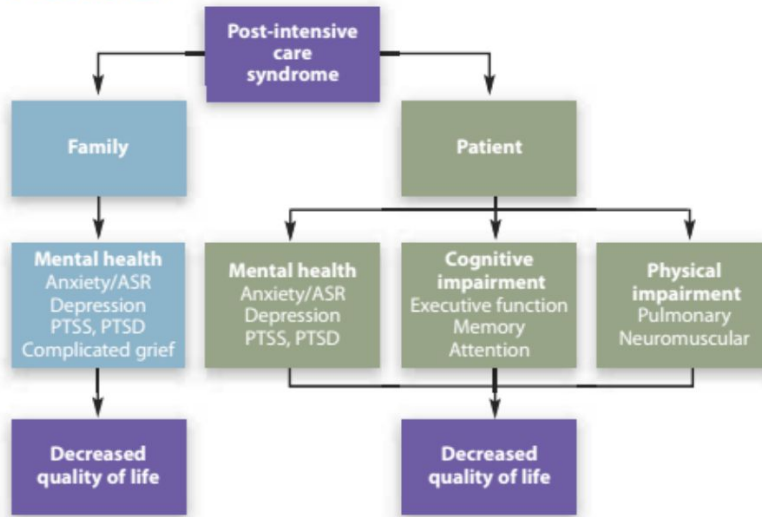
## Characteristics of PICS

Post Intensive Care syndrome:

**New or worsening** impairments in **physical, cognitive, or mental health** status arising after critical illness and **persisting beyond acute care hospitalization**

Source: Needham, D. M., Davidson, J., Cohen, H., Hopkins, R. O., Weinert, C., Wunsch, H., ... & Brady, S. L. (2012). Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference. *Critical care medicine*, 40(2), 502-509.

## PICS model



ASR: Acute Stress Reaction  
PTSS: Post Traumatic Stress Syndrome

Source: <https://www.aftertheicu.org/what-is-pics>

5,000,000

Annual ICU admissions

20%-40%

Require mechanical ventilation

3.8 days

Average length of ICU stay

*Despite increasing age and severity of illness, there was a 35% decrease in mortality for ICU admissions between 1988 and 2012*

Source: <https://www.sccm.org/Communications/Critical-Care-Statistics>



# PICS and Traumatic Injuries

- Trauma patients are a subset of ICU patients
- Traumatic Injuries are a major public health issue and the 4th leading cause of death in the U.S.
- Traumatic Injuries are a leading cause of disability in the U.S.
- PICS is severely under-researched in trauma patients



Source: <http://www.aast.org/trauma-facts>



## Significance of the Study

*Lay the foundation for future studies by shedding light onto the experiences of trauma patients and their families after ICU survival*



## Project Aim

### **Primary Aim**

To elicit themes about patient-centered outcomes related to post-intensive care syndrome (PICS) during recovery from life-threatening injury

## Project Design

This PICS study is a mixed methods longitudinal study which follows 13 trauma injury patients and their families for a year after they have left the critical care unit

## Methods

- Aimed to recruit 48 and retain 12-15 patients from a level 1 trauma recovery center
- Retained 13 dyads



**Inclusion Criteria**

- ▷ Older than 18
- ▷ English fluency
- ▷ Able to speak
- ▷ 48 or more hours of mechanical ventilation

**Exclusion criteria**

- ▷ Discharge into long-term acute care facility
- ▷ Police custody
- ▷ Unable to interview within an hour of Philly
- ▷ Patients of the PI

## Quantitative Analysis

- ▶ Patients underwent neurocognitive testing to identify the objective extent of the patient's Neurocognitive impairments if any
- ▶ Findings were input into RedCap and analyzed

# Qualitative Analysis

## ▶ Interviews (7 over 1 year)

In ICU → At discharge → 1 week → 1 month → 2 months → 6 months → 12 months

## ▶ Interview Structure

- ▶ 1-2 hours
- ▶ At hospital, rehab, and home
- ▶ Three portions
  - ◆ Neurocognitive testing (10 mins)
  - ◆ Patient and family had separate interviews (30 mins - 60 mins)
  - ◆ Patient and family together (10 mins - 15 mins)

## ▶ Transcriptions and coding

## Our Participants

Participant Number	Age at time of injury	Gender	Race/ethnicity	Injury Mechanism	Time in the ICU (Days)	Family Member
1	23	M	Black or African American	Gunshot wound	4.92	Mother
2	28	M	Hispanic/Latino and South Asian	Gunshot wound	61.79	Mother
4	64	M	Black or African American	Motor vehicle collision	18.29	Wife
5	29	M	Black or African American	Gunshot wound	24.5	Mother
7	25	F	Non-Hispanic White	Motor vehicle collision	24.92	Mother
8	20	M	Non-Hispanic White	Fall	7.08	Mother
11	25	F	Non-Hispanic White	Motorcycle collision	15.5	Mother
13	45	M	Black or African American	Penetrating	5.54	Fiancé (F)
14	73	F	Non-Hispanic White	Fall	8.9	Neighbor (F)
15	21	M	Non-Hispanic White	Motor vehicle collision	4.19	Mother
16	51	M	Black or African American	Motorcycle collision	5.54	Wife
17	55	M	Non-Hispanic White	Motorcycle collision	13	Wife
18	38	F	Non-Hispanic White	Motor vehicle collision	11.42	Father



## Excerpts from Interviews

### Physical changes

“Everybody got to feed me. They got to bathe me. There’s so much. I feel like I’m a baby all over again. Really, I feel like I’m a baby all over again. They got to bathe me, feed me, make sure everything all right with me every couple minutes”

~ P005, Interview 5

### Cognitive changes

“I’m noticing that there are times that I don’t remember things people tell me happened just a day or two ago more often. And if I do remember, it’s not like I really remember it. It’s vague. I don’t – and this is very immediate, day before kinda thing. So I notice that. I notice that my memory feels like – I’m not retaining things when they happen. I don’t – people are like you were there. How could you not remember that you were in this building and I’m like I don’t know what you’re talking about. So I’m having problems with memory.”

~ P016, Interview 3

### Emotional changes

“ I’m always aware of my surroundings and stuff like that. But sometime I get like nighttime around the same time where when I did get shot, and I be feeling like the same presence: Like, if I see somebody or see anything moving, I always get like that fear that I had that same day I was there. And it just could be anywhere, but it just like the same time of night, I don’t even try to be outside. If it’s like bed, that’s like my number one warning sign. Every time it start hitting dark, I just come right back inside the house because I just ... I don’t know. I’m just scared to go out there now...”

~P003, Interview 6

## Preliminary Findings/Emerging Themes

- ▶ ICU transitions are often jarring
- ▶ Patients expressed PICS at different timepoints
- ▶ Losing independence is frustrating
- ▶ Positive change can appear in the face of adversity

## Next Steps

- ▶ Wrap up data analysis
- ▶ Summarize findings
- ▶ First draft for manuscript

## My Role

- ▶ Coded interviews using Nvivo
- ▶ Aided in the review of existing literature
- ▶ Aided in the drafting of the manuscript
- ▶ Attended team meetings
- ▶ Shadowed mentor in ICU rounds

## Lessons Learned

- ▶ Qualitative research is not easy
- ▶ Appreciate the people who invest in you
- ▶ Qualitative coding skills
- ▶ Confidence
- ▶ Holding yourself accountable

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