Survivorship: Beyond the Walls of the ICU

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Disclosures

Sarah and Fuchsia are co-investigators on several research studies involving various aspects of ICU survivorship and have funding from the Michael Smith Foundation for Health Research and the Canadian Institute of Health Research

Goals

- The goals of this session are:
  - The meaning of survivorship, including describing the four different groups of ICU survivors
  - Highlight research that has shown to have an impact on survivors
  - Highlight the role critical care nurses' play in the patient journey
  - Discuss resources available to aide clinicians

Survivorship

What is ICU Survivorship?

And what does it mean to you and your practice?

So who survives ICU?

Patients

Families

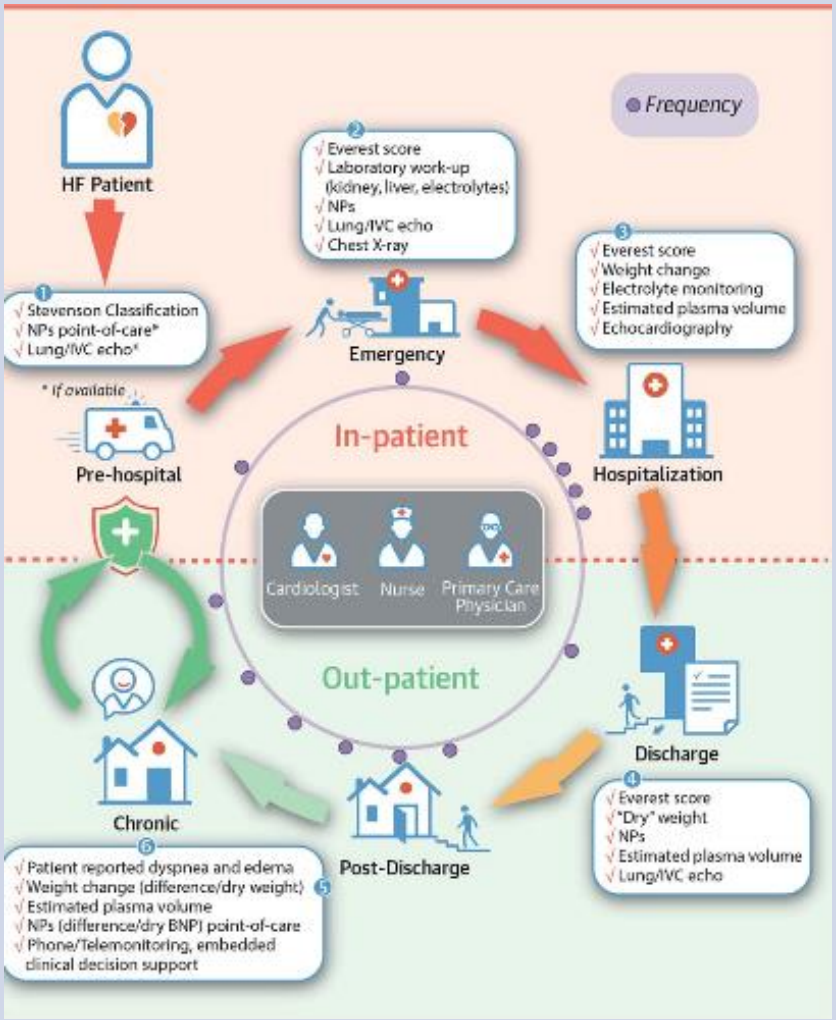
6

Families of Non-Survivors

Critical Care Clinicians and Staff

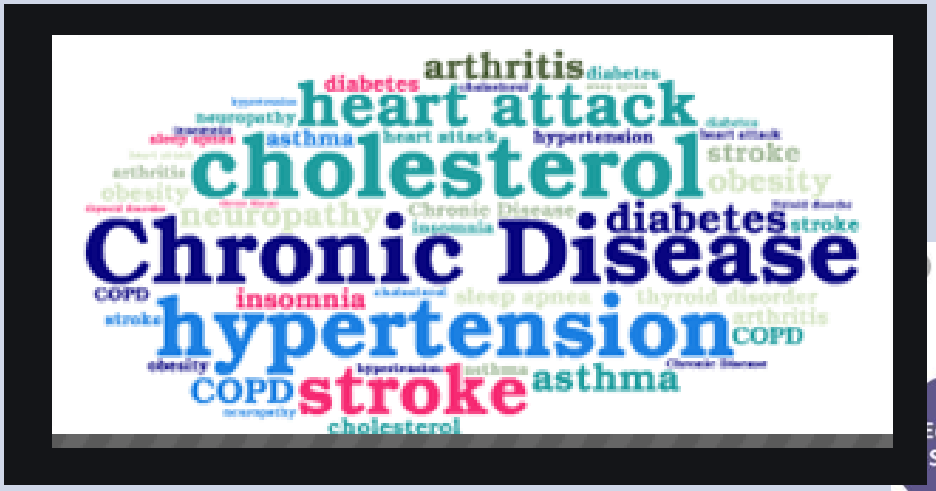
Patient Journey

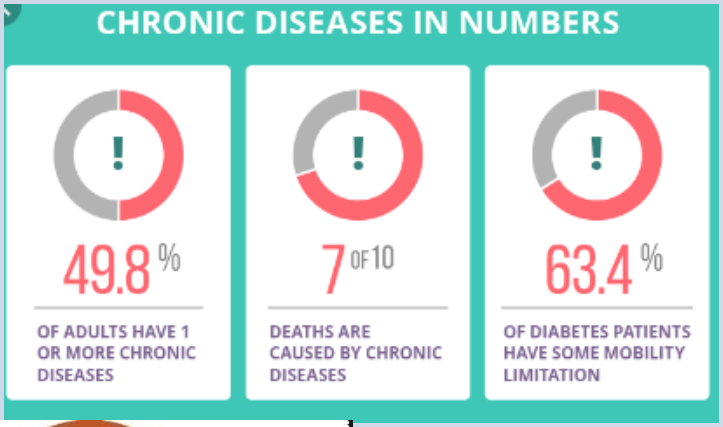
When can we impact an ICU survivors' journey to improve outcomes?



Pre - Hospital Care

- Chronic disease management
- Lifestyle choices
- Social determinants of health





Early Hospitalization

- Appropriate care
- ICU outreach services
- Early recognition and management of deteriorating patients
- Early / appropriate resuscitation

ICU / Critical Care Stay

- Evidence based practices
  - Early resuscitation – sepsis bundles
  - Nosocomial infection prevention
    - VAP prevention
    - CLABSI prevention
    - CAUTI prevention
    - Hand hygiene
  - Delirium prevention – PAD bundle
  - Early mobilization
  - Enhanced communication
  - Goal directed therapies supportive of patient directed goals of care
  - PICS prevention

Post – ICU discharge

- Need for continuation of rehabilitation and ongoing medical care to support return to baseline

- ICU follow – up care

Discharge from Hospital

- What does leaving hospital look like for these patients?
- Ongoing need for community supports and follow up

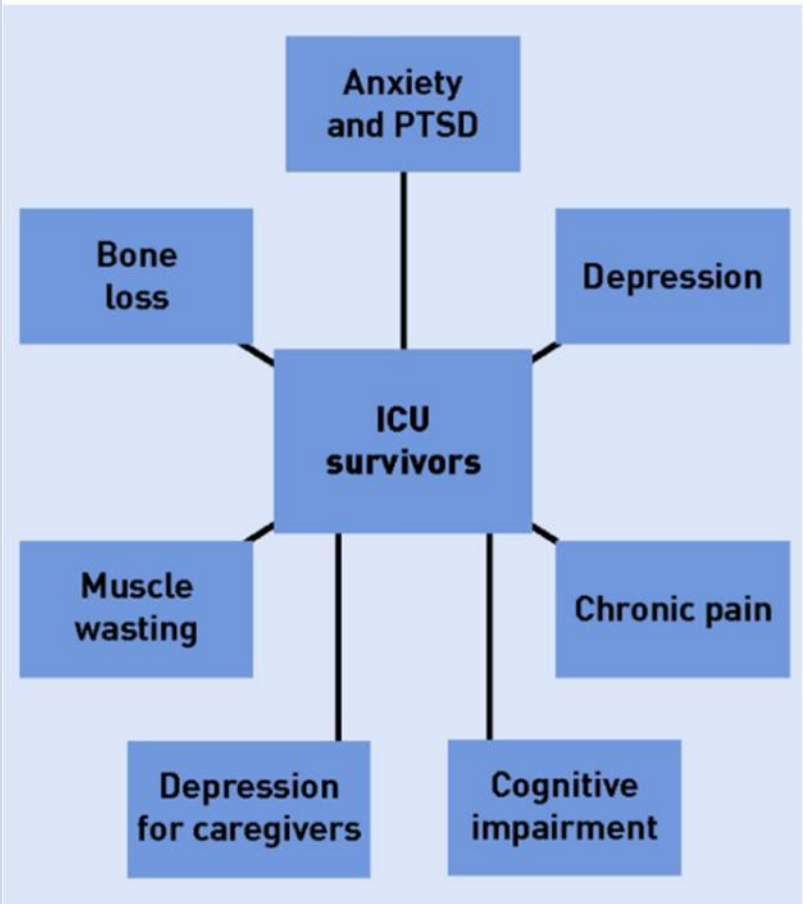
Improving Outcomes

Implementation of evidence based practices for the ICU and post-ICU stay

Post-ICU Care Syndrome (PICS)

- Improving outcomes not only means surviving an ICU stay, but also have quality of life afterwards
- There are many long term complications of ICU, collectively called PICS which include:
  - Hospital / ventilator acquired pneumonia
  - Delirium
  - Muscle wasting
  - Depression / Post-traumatic stress disorder
  - Pressure injuries, falls, and immobility

Post-ICU Care Syndrome (PICS)



- A group of symptoms collectively known as PICS
- Includes any new or worsening impairment in physical, cognitive or mental health status that arises after a critical illness and persists beyond discharge from acute care.

Kiernan, F. (2017). Care of ICU survivors in the community a guide for GPs. *British Journal of General Practice, 67*(663), 477-478.

PICS

Cognitive Impairment Associated with:	Mental Health Impact Associated with:	Physical ICU Acquired Weakness Associated with:
• ICU delirium (immobility, sleep, medications) • Acute brain dysfunction (stroke, ETOH) • Hypoxia (ARDS, Arrest) • Hypotension (sepsis, trauma) • Glucose dysregulation • ARDS; Prolonged ventilation • Severe sepsis • Prior poor cognitive function (older age, preexisting cognitive deficits, premorbid conditions)	• As with cognitive impairment, plus: • Female gender • Lower education level • Preexisting disability • Use of sedatives • Use of analgesia	• Prolonged ventilation • Sepsis • Multi-system organ failure • Deep sedation

Why Does PICS matter to us?

- Our whole goal in ICU is to stabilize patients and return them to their previous functioning baseline.
- Many of our patients experience a variety of cognitive, psychological and physical symptoms post ICU.
- Common reported symptoms include:
  - Generalized weakness
  - Decreased mobility
  - Depressed mood / anxiety
  - Cognitive impairments – poor memory, slow processing, impaired concentration
  - Fatigue
  - Sexual Dysfunction

- These symptoms can last months to YEARS!

Research

- Evidence to date has shown us that we need to focus on:
  - Delirium prevention
  - Early mobilization
  - Nosocomial infection prevention
  - Communication

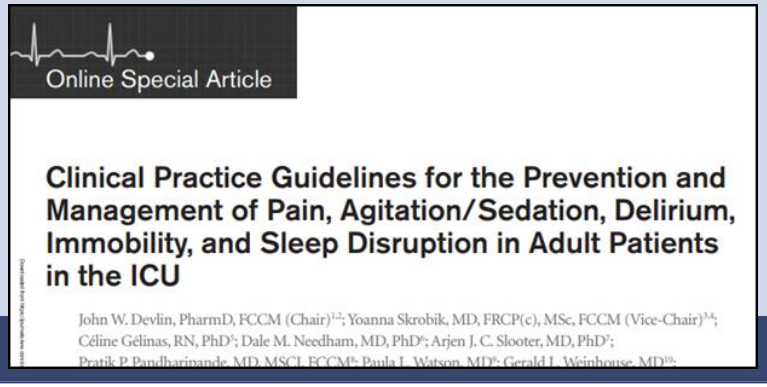
Delirium

- Delirium is estimated to impact 60-80% of ventilated adult ICU patients
- Delirium is associated with many adverse outcomes including increased mortality, falls, functional decline, cognitive impairment decline and significant costs

Evidence – Based Practice

ABCDEF

- ICU Liberation - To counteract PICS, the Society of Critical Care Medicine promote an 'ABCDEF Bundle' approach to care.
- If we can reduce the mental health disturbances, cognitive decline, and physical impairment of critical illness, we can anticipate a post-ICU population with improved morbidity and an improved falls risk profile.
- A 'less is more' approach - less drugs, less ventilation, less sedation, less bedrest.
- Focuses on improved management of pain, agitation, delirium, immobility and sleep (PADIS)



What is the ABCDEF Bundle?

Bundling for Success

A	Assess, prevent and manage pain
B	Both Spontaneous Awake Trials and Spontaneous Breathing Trials Targeted sedation
C	Choice of analgesia and sedation
D	Delirium: assess, prevent and manage
E	Early mobility and exercise
F	Family engagement and empowerment

Vanderbilt University:
http://www.icudelirium.org/index.html
(http://www.iculiberation.org)

Early Mobilization

- One of the few therapies or actions that we can take as critical care nurses to help reduce PICS
- Bedridden patients have an increased risk of death and other complications such as:
  - Delirium
  - Muscle wasting (including heart deconditioning)
  - ICU – acquired muscle weakness and falls
  - Skin breakdown and pressure related injuries
  - Pneumonia
  - Increased insulin resistance
  - Poor quality of life

ICU patient walking in Johns Hopkins Hospital Critical Care Unit

https://idiopathicmedicine.wordpress.com/category/intensive-care/

Early Mobilization

- Using a protocolized approach the majority of critical care patients can be mobilized

Department of Critical Care (QEII 3A & 5.2) Mobility Protocol (*Approved October 31 2017*)

The **Purpose** of this Protocol is to provide the Team with guidance on safe mobilization of ICU patients. It was adapted from Fraser Health (2009; 2016). It is evidence informed and where there is insufficient evidence, expert opinion was sought (additional references available). It has been trialed and evaluated as a safe, effective tool by our Department. It is not intended to replace the clinical judgment and interdisciplinary collaboration.

Definition: *Mobilization is the progression of activities which facilitate movement. It is sequential in nature [illegible] exercises, sitting on edge of bed, to standing and walking.*

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How to Safely Mobilize, Minimize Falls Risk and Progress Using Assessment Data

MOBILITY LEVEL	Level I	Level II	Level III	Level IV
Level of RASS	RASS -5 to -2	RASS -2 to 0	RASS -1 to +1	RASS -1 to +1
Strength Criteria	NA	NA	Able to move arms vs gravity	Able to move arms and legs vs gravity
Requires PT assessment	Burns or new amputation	As per Level I and includes pts with neuro / SCI / trauma/bariatric/prolonged hospitalization	As per Level II and includes pts with poor sitting balance, requiring max assist or not following expected pathway	As per Level III
Turning & Bed Mobility	• Q2H with nighttime sleep strategy as appropriate • Patient to assist as able	• Q2H with nighttime sleep strategy as appropriate Encourage / instruct patient how to participate: • Rolling / turning • Bridging (lifting buttocks up) • Boosting • Scooting laterally in bed	• Q2H with nighttime sleep strategy as appropriate • Gradual withdrawal of assistance • Initiation of training to promote independence. Give patient time to process instructions	• Q2H with nighttime sleep strategy as appropriate • Focus on training to promote independence
Positioning & Devices (as per PT/OT prn)	• HOB greater than 30° • Apply splints and/or other positioning devices	• Same as Level I • Remove obstacles to facilitate movement • Assess seating needs (OT prn)	• Same as Level II	• Same as Level III
Exercise Program	• Passive repositioning / ROM exercises incorporated into patient care e.g. during washing, turns, etc.	• Encourage patient to assist with range of motion during patient care e.g. during washing, turning	• Same as Level II with more active involvement	• Same as Level III
		Consider inclusion of: • Breathing exercises • Stretching exercises • Balance/coordination exercises for head, neck and trunk	Same as Level II with more active involvement. Consider inclusion of : • Arm ergometer • Leg ergometer	Same as Level III with more active involvement. Consider inclusion of: • Weight bearing/weight shifting exercises • Resistive exercises
	Additional exercise as per PT	Additional exercise as per PT	Additional exercise as per PT	Additional exercise as per PT
Mobilization	HOB greater than or equal to 45° x 30-60 minutes BID, support to achieve midline head & trunk position	High fowlers or chair position of bed x 30-60 minutes TID	• Sitting on side of bed. • Sitting balance exercises with PT as appropriate, 5 to 10 minutes to start initially OD, progress to BID as tolerated. • May require mechanical lift to chair. • Chair position of bed x 30-60 min TID	• If sitting & stand at bedside successful, PT assesses ability to weight shift, walking in place, side-steps, ability to transfer to chair. • Initial time in chair 30 minutes, progress as tolerated. Initially OD, progress to BID as tolerated.
		Mobilization may include sitting on side of bed or to chair with mechanical lift. *Use caution if patients at risk of hypotension As per PT assessment may require individualized mobilization prescription	Practice components of sit-to-stand (forward lean, some weight-bearing on arms and / or legs, push off) +/- walker as tolerated. May require individualized PT mobilization prescription	If tolerating transfer to chair, PT assesses ambulation, begins gait training with appropriate aids, increasing distance & frequency as tolerated

What to Assess to Safely Mobilize and Minimize Falls Risk

[illegible]edications, risks factors, previous falls)
[illegible]mobility aids), activity & exercise response
[illegible]b, RBC, plt, blood sugar, ECG, fluid/electrolytes)
[illegible]ctions on mobilization
[illegible]re resources and equipment to safely manage
[illegible]s assessment and interventions

The patient & team
- Multisystem review (e.g. cognition, respiratory, cardiac, musculoskeletal & neuro systems)
- Ability to follow directions and / or physical cueing
- Impact of illness / medical procedures & medications on mobility (e.g. weakness from disuse, incision, trauma, pain, equipment needs, restrictions etc.)
- Coordinate with timing of treatment of medication, availability of equipment, personnel to optimize effectiveness and safety

When to Seek Further Clarification

[illegible]absolute criteria for withholding mobilization but are within the range of benefiting from team discussion. If unable to mobilize as per the Protocol, review with Medical Team

[illegible]50 mmHg
[illegible]eater than 20 mmHg) or below pre-exercise level OR
[illegible]r than 200 mmHg for systolic or greater than 110
[illegible]han 130 bpm requiring temporary pacer
[illegible]gent, use of two or more agents or frequent
[illegible]hypertension, or acute bleeding.
[illegible]to 20
[illegible]New MI, dysrhythmia requiring new medications,
[illegible]intra-aortic balloon pump.
[illegible] MD to determine suitability
[illegible]obilize as tolerated immediately after low molecular
[illegible]s on any other form of anticoagulation (e.g. IV
[illegible]with MD.

Respiratory Status
- SpO₂: below established baseline
- RR: less than 5 or greater than 40
- F_iO_2: greater than 60%
- Ventilator issues: Decreased ventilator support that could precipitate fatigue or increased ventilator support.

Neurological status
- Patient status: Severe agitation, distress or combative
- ICP: increased i.e. greater than 20 mm Hg; ICP needs to be considered in conjunction with cerebral compliance
- Uncleared and/or unstable/non fixated spinal cord injury or head injury; clarify with physician

Other
- During active hemodialysis
- Injury / surgery that mobility could cause concern eg. unstable fracture, ENT surg, open abdomen
- Other contraindications specific to patient/staff safety e.g. inadequate equipment, staffing

What to Monitor During Mobilization

[illegible]eath, fatigue, nausea, pain, assessment tools
[illegible]ynosis, HR, O₂Sat, RR, BP & other relevant factors e.g. cardiac rhythm in those patients when ECG is essential during mobilization.

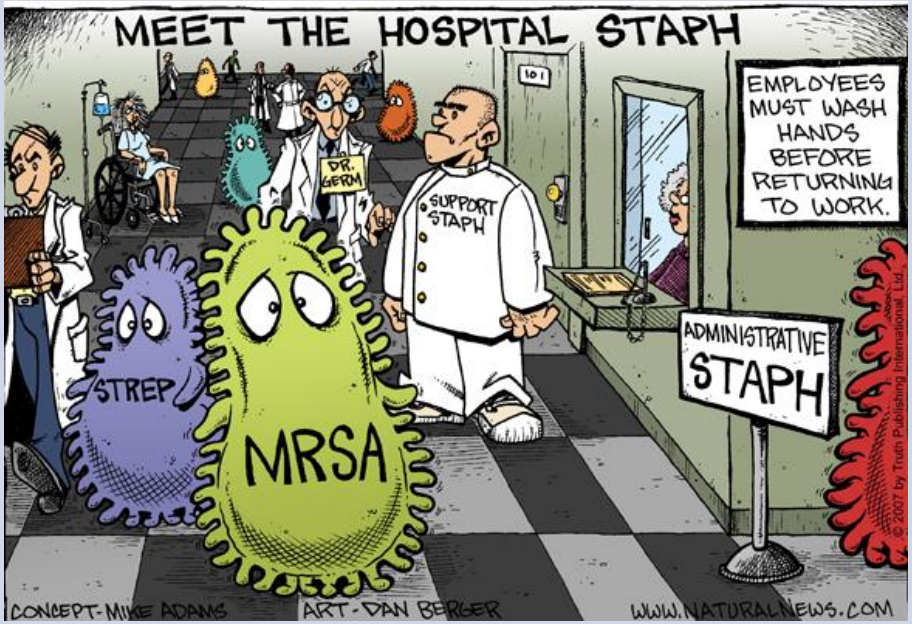
How to Safely Mobilize, Minimize Falls Risk and Progress

[illegible]eigh risk, using above assessment criteria and in discussion with MD as needed.
[illegible]s exist and consider alternative interventions to progress mobility, such as using mobility aids, mechanical lift, chair position and / or bed exercises.
[illegible]d (analgesia, bronchodilators, oxygen). Prepare the physical environment including length of leads, lines and tubings.
[illegible]ve objective end-points such as limits of BP, HR, O_2 Sat & level of exertion pre-determined before mobilization.
[illegible] team
[illegible]. foot & ankle, knee flexion/extension before commencing more demanding mobilization procedures.
[illegible]onitor BP & ask about lightheadedness at each phase of the mobilization i.e. sitting on edge of bed, standing, walking, etc.
[illegible]g transfer & allow gradual change from lying to upright position.
[illegible] ahead
[illegible]f fatigue, pain, diaphoresis & intolerance during activity. Frequently ask how patient feels.
[illegible]n to determine whether to continue or stop. Ensure adequate period for patient to adjust to exercise and position.

[illegible]e mobilization and any undesirable response(s).
[illegible]to monitor progress with respect to ease of transfer, sitting duration, walking distance, HR, RR, O_2 Sat, pain scale
[illegible]t until vital signs have returned to pre-activity level.

Nosocomial Infection Prevention

- VAP reduction
  - Frequent mouth care
  - HOB elevated to at least 30 degrees
- CAUTI reduction
  - Does the patient really need a foley catheter?
  - Good peri-care
- CLABSI reduction
- Hand hygiene

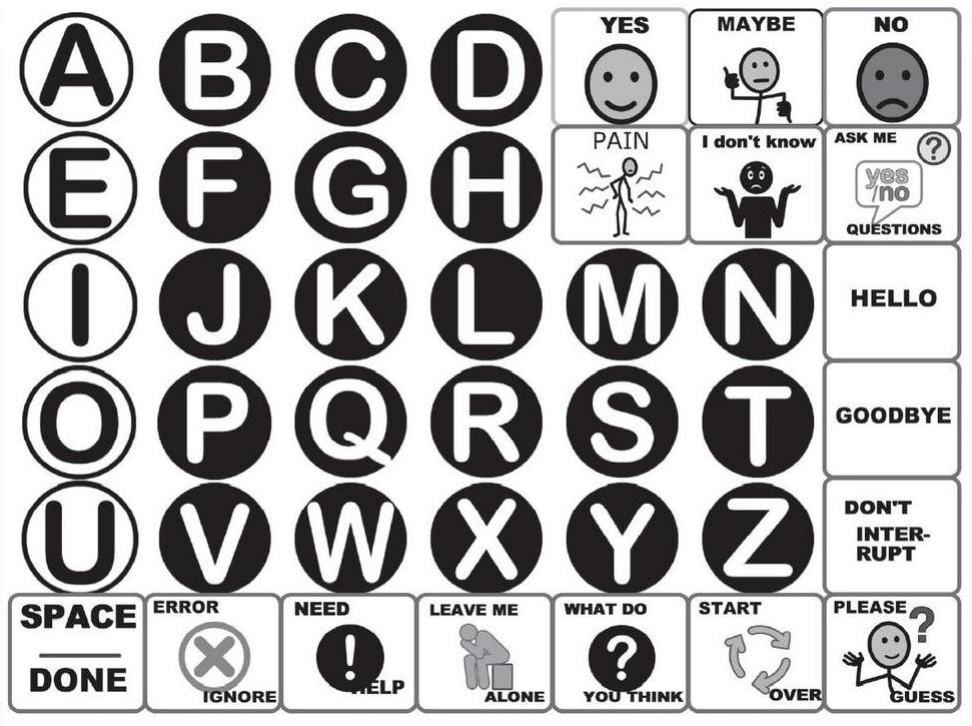


Communication

Patient Concerns	Family Concerns
• Helpless • Inability to communicate • Gaps in memories • Confusion • Fear	• Lack of understanding • Frequent questions • Medical jargon

Communication Strategies

- Sometimes we need to get creative



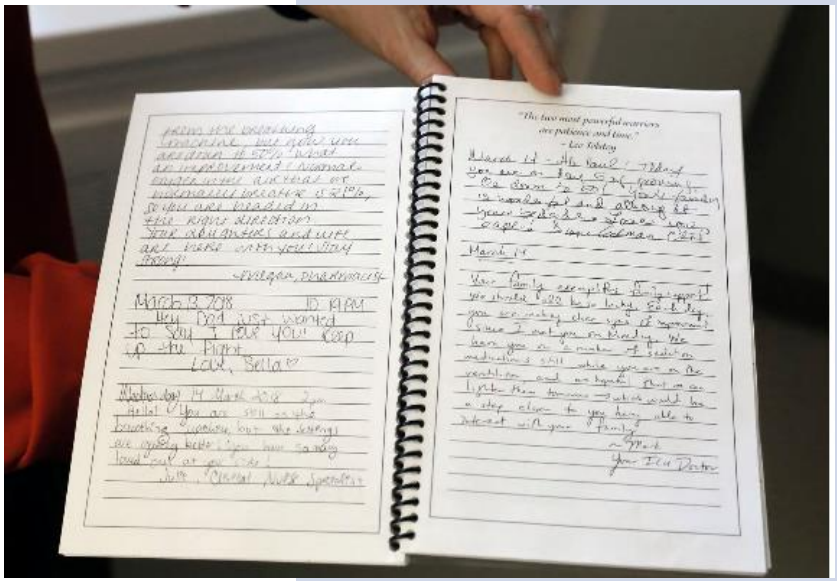
Communication

- And sometimes we need to tell a story….

Words that heal: ICU journals at Penn help patients and staff

by Stacey Burling, Posted: April 20, 2018

COURTESY OF LEISA NAPPI



Post-ICU

What was once important in ICU is just as important on the wards…

- Delirium prevention
- Nosocomial infection prevention
- Mobilization
- Communication

Post-Discharge

- Where do our patients end up?
  - Home?
  - Institutions?
- Who cares for them?
  - Family practitioners
  - Family members

Current State

- Specialized follow up clinics
  - Neurological ICU / Traumatic Brain Injury
  - Respiratory rehabilitation
  - Cardiac rehabilitation
- Generalized ICU follow up clinics
  - Many sites are now offering generalized follow up for ICU survivors but the effectiveness and outcomes are variable

Research

To date research has been evolving to try to determine the best approach to support ICU survivors, but more work needs to be done

What is Known

- ICU follow up care should be provided by ICU clinicians, and a multidisciplinary team approach is probably better

- More education is needed for primary care providers to better understand their patients and families who are ICU survivors

Research Still Needed

- Some of the research to date has looked at the variety of needs and challenges experienced by survivors, but very little has proven to help them cope or improve their outcomes
  - Peer support groups → but has not been able to show effectiveness in supporting survivors
  - Journaling has proven to be beneficial in the emotional and psychological outcomes of survivors
  - Many have concluded that a new way to structure the health care system is needed to improve outcomes, but no one can decide on how

Planning for Follow Up

- We are actively involved in a systematic review of literature to determine the types of services and needs that are required by our patients

- We are looking to open an ICU survivor community follow up clinic in the near future, knowing that it needs to be:
  - Interdisciplinary
  - Address all aspects of PICS

How Are We Going to Address Survivorship

- Split into 4 groups
- Discuss the following:
  - What do you think will help ICU survivors?
  - Biggest barriers you encounter?
  - What could we do differently?
- Report back 1 response to each question

Join Us

- Our purpose is to improve quality ICU survivorship and reduce PICS
- Join us as we build a national community of practice to focus on improving survivorship to ERASE PICS

ERASE PICS Bundle

ERASE PICS Bundle	
E	Early recognition of deterioration
R	Rapid treatment
A	Awake and breathing spontaneously as soon as possible
S	Sleep – uninterrupted
E	Early mobilization
P	Prevent nosocomial infections
I	Interdisciplinary follow up and support
C	Communication with Patients and Families
S	Support and Follow – up in the community

Questions / Comments?

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