

# Developing an ICU Follow-up Service

Cordy Gaubert, Clinical Specialist Physiotherapist

BTHFT













# Background



- "Surviving critical illness is not the happy ending that we imagined for our patients" Herridge (2014)
- Long-term physical, psychological, cognitive and emotional consequences
- Reduced quality of life, sense of well-being and self-purpose; social isolation
- Lack of ICU follow up is associated with higher rates of readmission to hospital





#### Rehabilitation after critical illness in adults

Clinical guideline
Published: 25 March 2009
www.nice.org.uk/guidance/cg83



# GUIDELINES FOR THE PROVISION OF INTENSIVE CARE SERVICES

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POST INTENSIVE CARE SYNDROME FAMILY

(PICS-F)

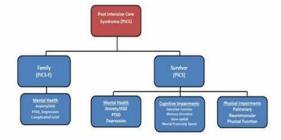
Rehabilitation after critical illness in adults (QS158)

#### Quality statement 4: Follow-up after critical care discharge

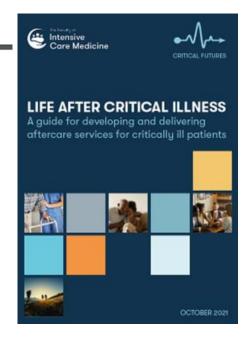
#### Quality statement

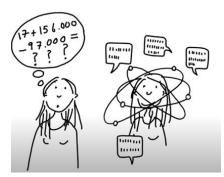
Adults who stayed in critical care for more than 4 days and were at risk of morbidity have a review 2 to 3 months after discharge from critical care.

#### Post-Intensive Care Syndrome



Needham et al., 2012









#### PICS:



Long-term cognitive impairments

- Accelerated long term cognitive decline († risk of dementia)
- · Persistent cognitive dysfunction
- Impairment in daily living activities
- Risk factors: delirium (severity and intensity), sepsis, NSE
- Long-lasting neuroinflammation

Detect brain frailty and prevent delirium during ICU Predict post-ICU cognitive impairments ? (MRI, neuronal biomarkers) Post-ICU follow-up to diagnostic cognitive disorders

#### Immunosuppression and persistent inflammation

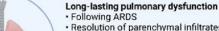
1 mortality and risk of nosocomial infection MDSCs alterations (low HLA DR surface expression) Lymphocytes dysregulation (lymphopenia) Adaptative response defect, immunosenescence Chronic low-grade inflammation



More comprehensive, dynamic and regionalized immune monitoring for futher targeted interventions



ICU survivors with PICS



- Resolution of parenchymal infiltrates (1-y)
- Up to 50% mild radiological abnormabilities
- ↓ DLCO, no or mild spirometry alterations
- Persistent exercice limitation (6-WT)

Better understanding epithelial repair and excessive extracellular matrix remodeling to modulate potentials targets

#### Long-term kidney issues

AKI: high risk of progression to chronic kidney disease and end-stage renal disease Long term cardiovascular consequences Madaptative repair, tubular and vascular damages

Promote mitoprotection ?

Inhibite deleterious effectors : histone deacetylase, TGFβ, endothelin? Administrate renoprotective effectors : VEGF, arginine ?



#### Sustained muscle weakness

- · Up to 80% one year after septic shock
- Following ICU-acquired weakness
- ↓ muscle contractility, 
   ↓ muscle mass, 
   ↓ endurance
- motor neurons alterations
- ↓ physical performances and functioning

Identification and assessment of the weakness Post-ICU exercise-based rehabilitation? Nutrition follow-up?

https://annalsofintensivecare.springeropen.com/articles/10.1186/s13613-022-01038-0

# BTHFT experience



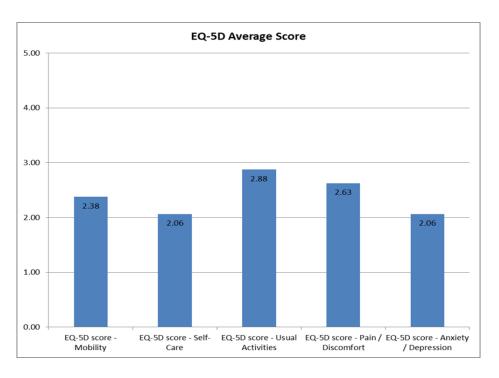
- No planned, coordinated, sustainable ICU follow-up service
- Requirement for ICU follow-up amplified by the COVID-19 pandemic
- 'Ad hoc' follow-up care provided valuable and beneficial to patients and families
- Evidence of a significant need locally post
   Covid clinic and patient questionnaires

#### **BTHFT ICU Covid cohort**



#### Post Covid clinic - common themes:

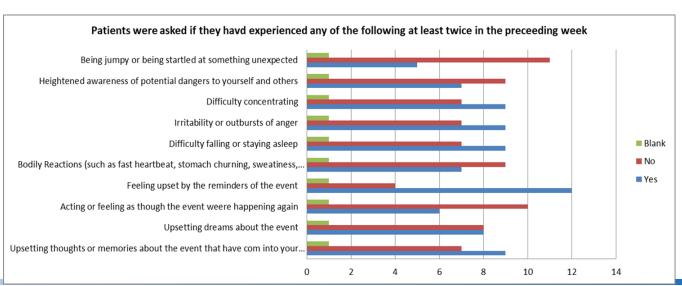
- Psychological trauma flashbacks; nightmares; anxiety; depression
- Cognitive issues memory problems; inability to concentrate; brain fog
- Breathlessness/reduced exercise tolerance
- Breathing pattern disorders
- Fatigue
- General weakness; neuropathies; multi-joint pain
- Hair loss





17 Questionnaire responses - Covid +Trache Mean ICU LOS 48.2 days (17-99) Mean time since d/c 12.9 months (3-21)

# Health Scale Score average: 60% (10-85%)



#### "My concentration is very poor"

"Nurse has suggested PTSD"

"I want to work"

"I have very bad nightmares, sweating and fighting for my breath"

"I'm trying not to remember my dramatic event"

"I'm not who I was"

"I am very weak, the stairs cause me problems"

"I have very bad balance inside and outside"

"After 12 months discharge I have come to terms with everything"

"I still get breathless due to the lung damage, and accept my lungs will never fully recover"

# Setting up an ICU Follow-up clinic!





## Virtual clinics



#### **Benefits**

- Convenient/no costs
- No need for physical location in hospital
- Potential for multiperson platform
- Visual engagement (vs telephone)
- Access to family

#### Limitations

- Technical/connectivity issues
- Correct patient info needed
- Unable to perform direct physical Ax
- Unable to visit ICU and meet members of staff

## **Clinic interventions:**

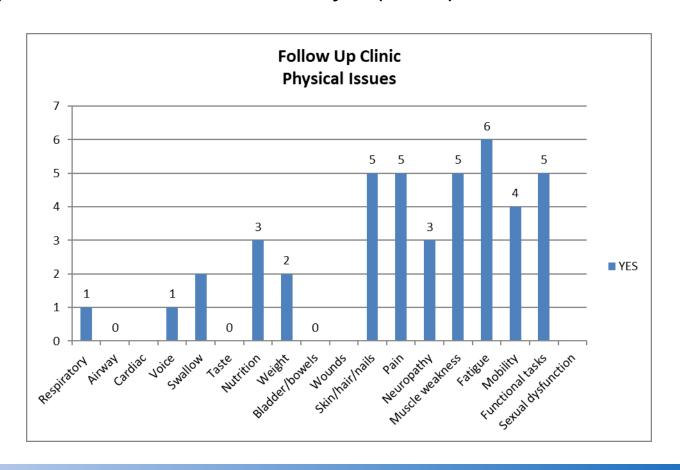


- Normalising emotional responses
- Explanations of false memories/delirium
- Time line of events
- Referrals to support services Community Therapy; MyWellbeingCollege; Psychology
- Information sleep; brain training, relaxation, ICU Steps, "safe place", Critical Care Support Network etc...
- Chasing up other speciality follow-up
- Offering visits to ICU

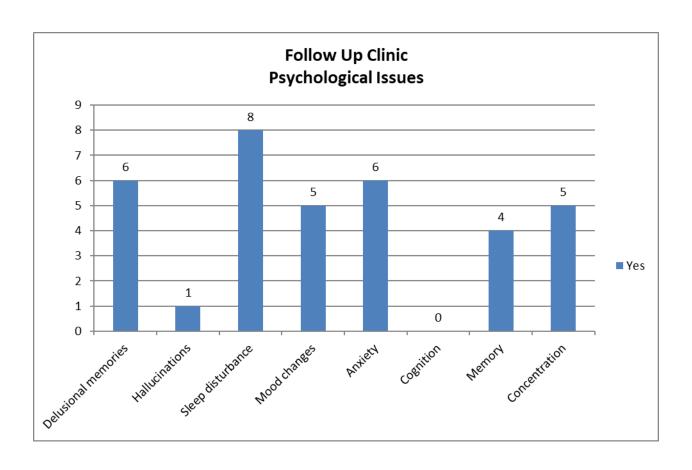
## So far:



x5 clinics run, 9 patients' data – Mean age 46.9 years (19-66); Mean ICU LOS 14 days (4-66);



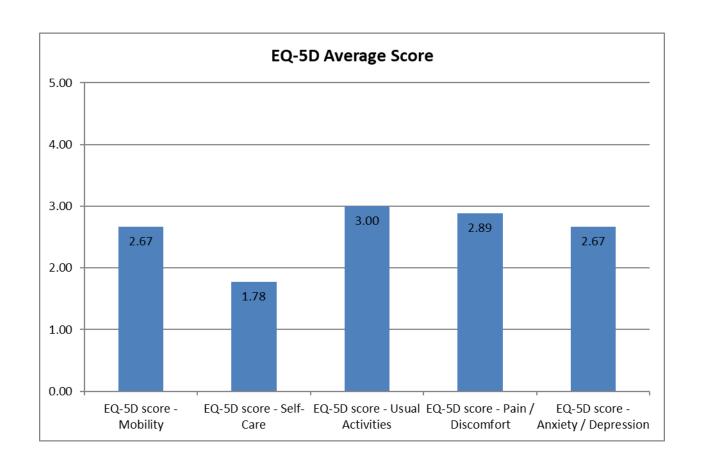






#### Mean Health Scale Score: 50.4%

## **Bradford Teaching Hospitals**NHS Foundation Trust

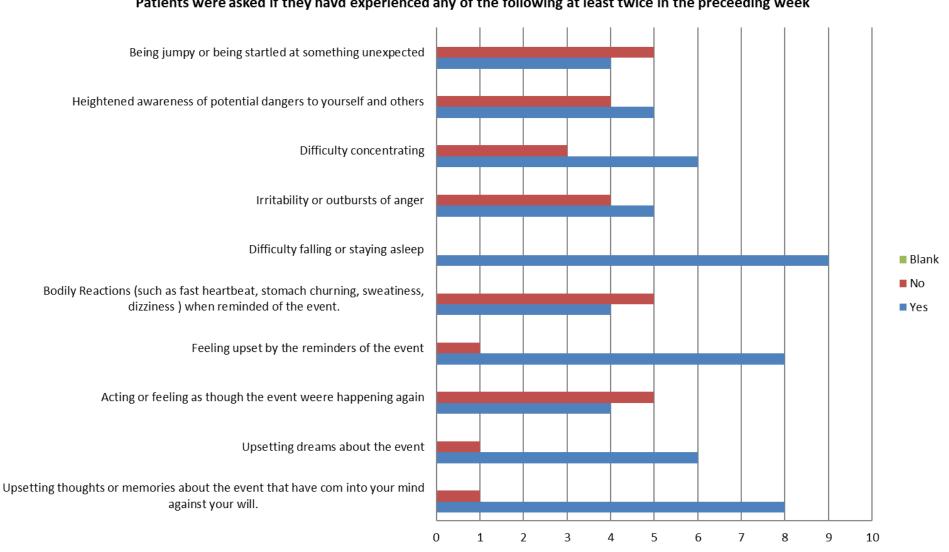


### **Trauma Screening** Questionnaire

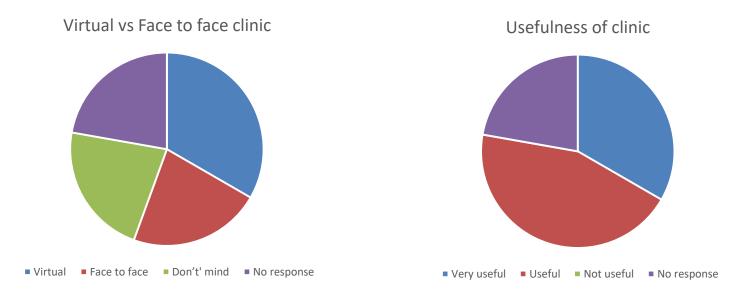


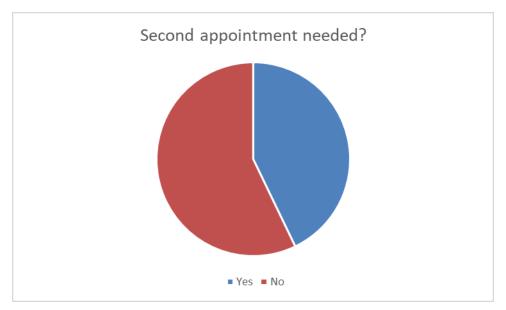
**NHS Foundation Trust** 

Patients were asked if they havd experienced any of the following at least twice in the preceeding week



### Patient feedback





## "we discussed everything and I was happy and relieved at the same time"

"A lot of what happened I don't remember so it was good to hear what went on"

"I was able to voice my issues and once I did that, a big weight was lifted off my shoulders".

"I was missing a week of my life - I needed to piece it all together in my head and to know exactly what happened. My appointment answered all my questions and I now feel it has connected my life again".

"Offered me an opportunity to get some things off my chest and helped me understand why I was in for so long"

"Good to hear what went on that I couldn't remember. It was nice to see the nurse and physio and they seemed happy seeing me."

"ICU are an amazing and fantastic team - they do everything to make you feel at ease in and out of hospital"

## **Next steps**



- Aim high face to face, multi-professional clinic
- Data gathering for business case, including feedback from patients and families
- Further work with QI team and Patient and Public Engagement Officer
- Peer support group
- Virtual Royal Infirmary post ICU patient information project: ongoing work with Bradford University to develop microsite



"Enhancing survivorship or the quality of survival is now central to our management of critically ill patients" GPICS2 2022

"Post ICU recovery services are not an optional add-on, but ESSENTIAL for high quality critical care" FICM 2021









With thanks to:

Sarah Cooper, ICU Consultant Wendy Miner, Deputy Matron ICU Margaret Molloy, ICU Sister Karon Todd, ICU Sister



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