

How can follow-up services support post-ICU recovery?

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This presentation presents independent research funded by the NIHR under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number PB-PG-0215-36149). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health & Social Care.



REFLECT

NHS

*National Institute for
Health Research*



Problems in care and avoidability of death after discharge from intensive care

Multicentre case record review



3 NHS Trusts

Record review of 300 patients who died following ICU discharge

50 / 300 were discharged for end-of-life care



168 / 250 (67%) discharged out of hours



167 / 241 (69%) sub-optimal rehabilitation



17 / 40 (43%) inadequate investigation of new AF



50 / 150 (33%) incomplete sepsis management



76 / 250 (30%) no nutritional plan

Of 250 patients who died following ICU discharge

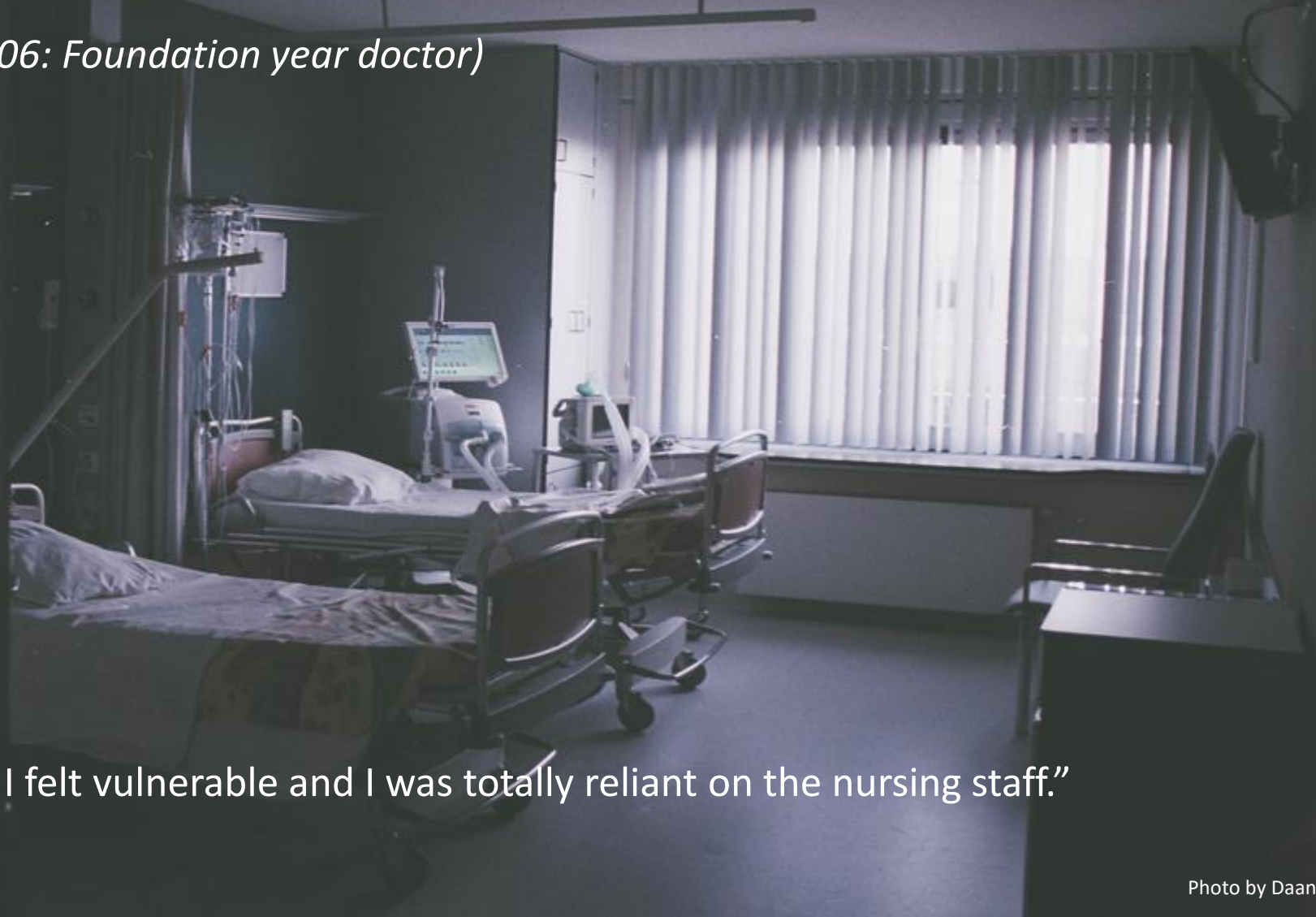
20 deaths probably avoidable

45 further deaths with some degree of avoidability



“...and that was often quite scary because when they come from ICU obviously they are a lot sicker than other people on the ward, umm, and if you like don't know that they've been gradually getting better . . . just the snapshot of when they arrive often. . . looks a bit alarming.”

(Site A, Staff member 06: Foundation year doctor)



“I was just so very weak that I felt vulnerable and I was totally reliant on the nursing staff.”

(Site C, Patient 02)

Summary of findings: areas for change



Night-time discharge



Rehabilitation



Management of ongoing medical problems



Nutrition support



Handover and communication

Functional Resonance Analysis Methods definitions

FRAM Aspect	Definition	Example
Function	Activity in a process	Decision to discharge from ICU
Input	Starts the function	Patient ready for ICU discharge
Precondition	Must be satisfied before the function can start	Patient does not need vaso-active drugs only administered in ICU
Resource	Needed to carry out function	Nurse time to complete documentation
Control	Monitors or controls the function	National guideline on night-time discharge
Time	Any time constraint that affects the function	Timing of bed meeting
Output	The outcome of the function	Bed allocated to patient ready for discharge

Patient harm and institutional avoidability of out-of-hours discharge from intensive care: An analysis using mixed methods

Study methods



300 structured judgement reviews



40 in-depth reviews of care



Interviews with 55 patients, family members and staff



Stakeholder meeting

Discharge-related findings



Premature discharges



High EWS on ward arrival



Delays to escalation of EWS



No medical review on ward arrival



Poor written handover

Staff reports

"The sick patients that I've seen come from ICU that we've had to readmit to ICU have both been from out-of-hours discharges"

Out-of-hours staffing



Lower skill mix

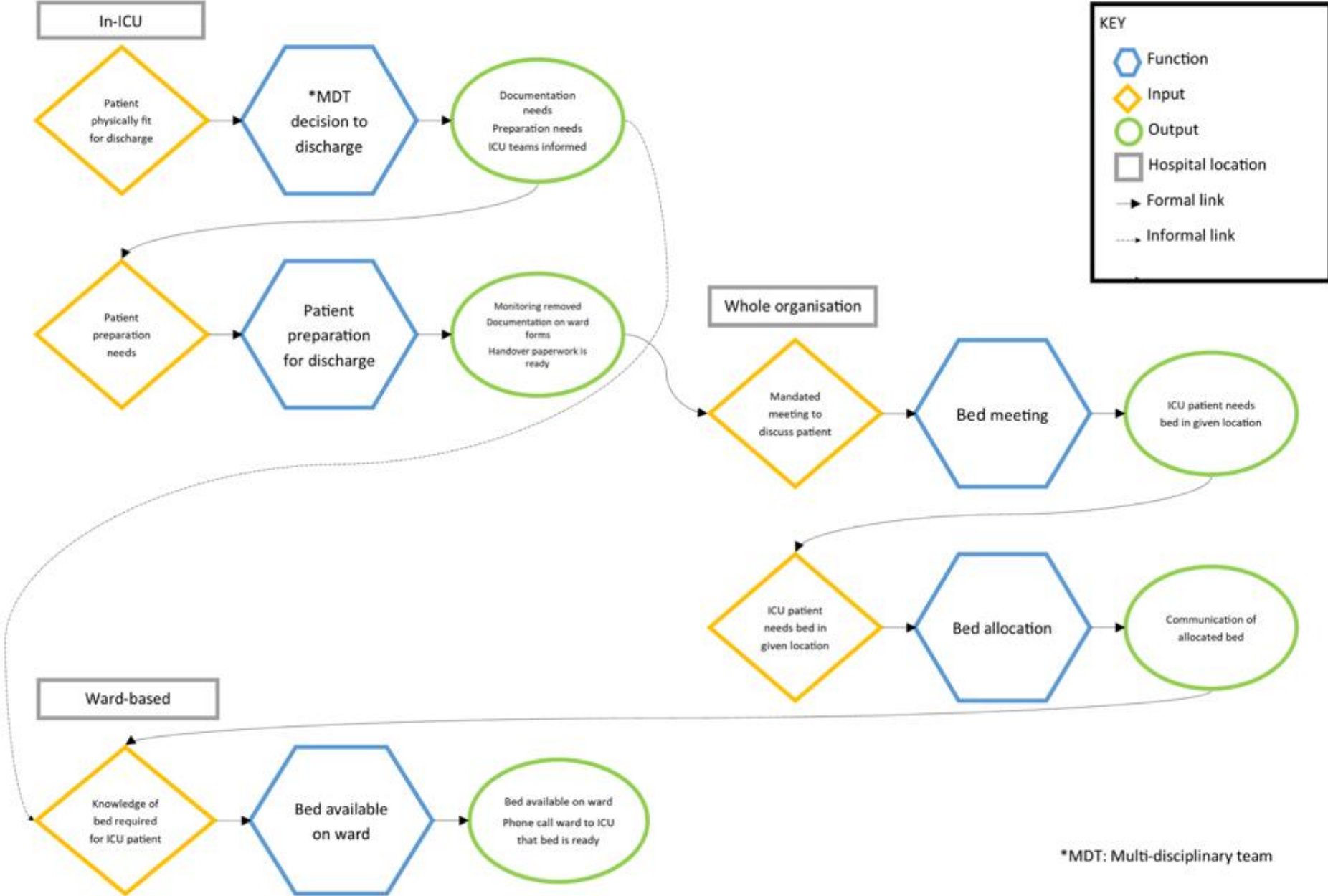
Reduced staff ratios

No access to specialist staff

To ensure patient safety, discharge from ICU should occur before 4pm

Where this isn't possible, wards **MUST** be supported to manage these patients

ICU discharge FRAM



Implications: out-of-hours discharge

Discharge after 4pm should be avoided where possible

Identifying patients who may be ready for discharge the next day starts the process earlier

Requires organisational change

Where discharge after 4pm is unavoidable, wards should be supported to ensure patient safety overnight

CLINICAL INVESTIGATION

OPEN

Patient Harm and Institutional Avoidability of Out-of-Hours Discharge From Intensive Care: An Analysis Using Mixed Methods

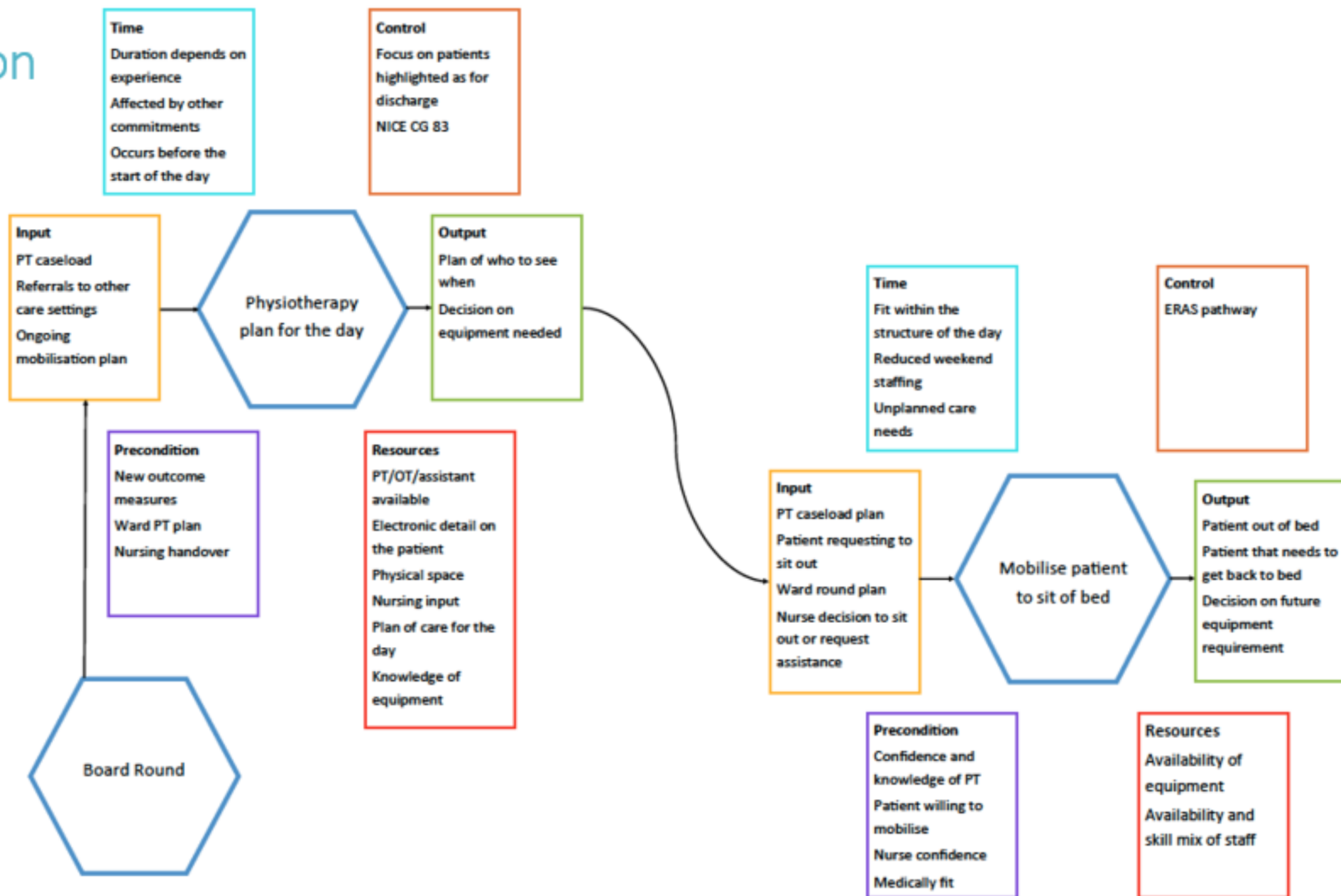
Summary of findings: mobilisation

62% of post-ICU non-survivors were unable to stand and step from bed to chair on ICU discharge

69% of patients were not mobilised out of bed on every day they could have been

Physically dependent patients often remained recumbent for prolonged periods

Mobilisation FRAM



Implications for mobilisation



Physiotherapy 113 (2021) 131–137

Physiotherapy

Expert article

A human factors analysis of missed mobilisation after discharge from intensive care: a competition for care?

O.D. Gustafson^{a,*}, S. Vollam^b, L. Morgan^c, P. Watkinson^b



- Patients discharged from ICU who are unable to stand and step to a chair are particularly susceptible to missing mobilisation interventions due to down-prioritisation and limits of the ward-based system of care
- This results in prolonged periods in bed, and associated harm



Summary of findings: nutrition

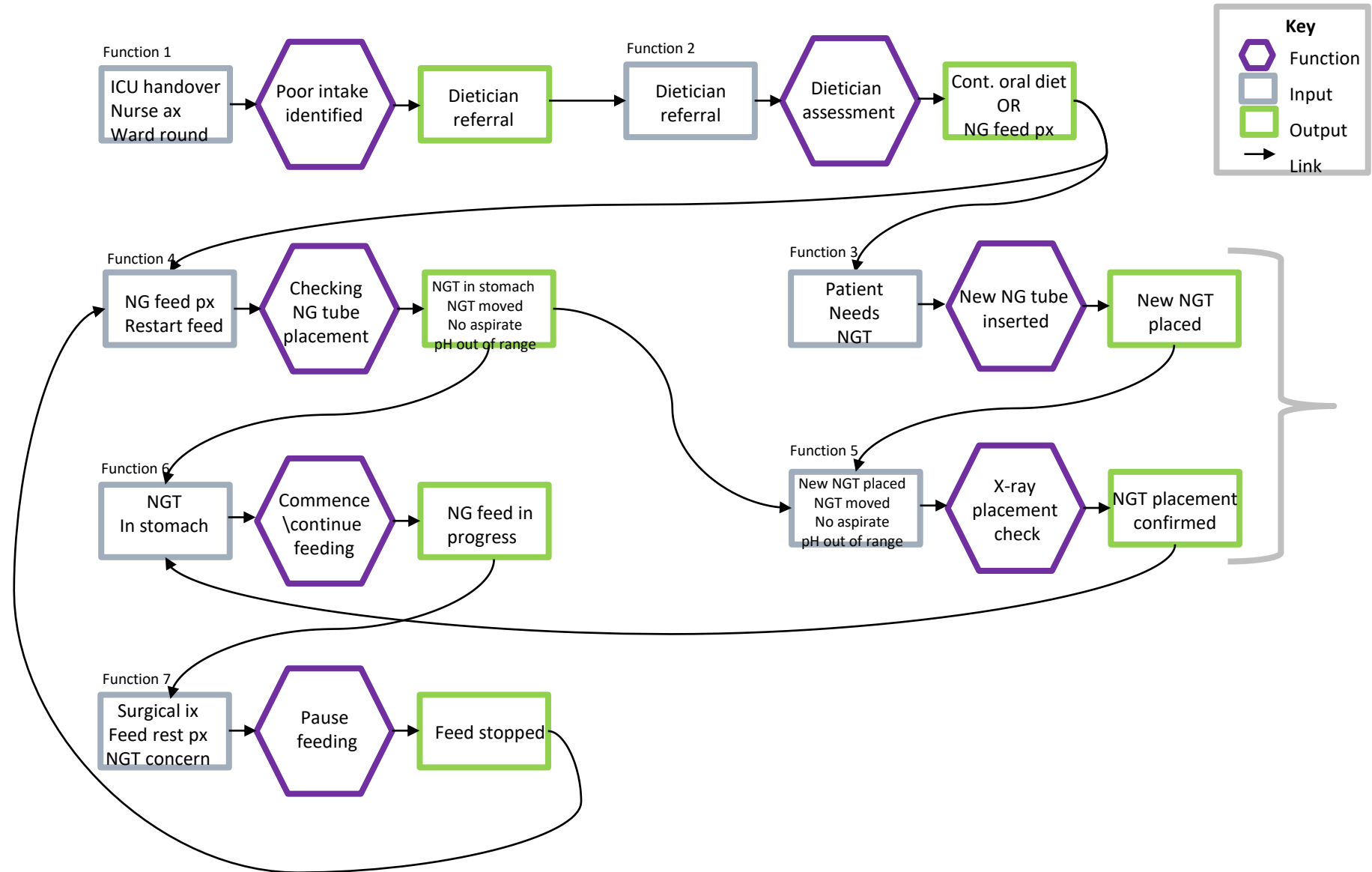
41% of those needing nutritional support at ICU discharge did not have a nutrition plan

Problems with nutrition delivery common in 'probably avoidable deaths':

- *Failure to monitor intake*
- *Delays in referral to specialists (e.g. dieticians/Nutritional Support Teams)*
- *Early NG tube removal (before oral intake established)*

Staff identified workload and high care needs as contributing to these problems

Enteral feeding FRAM



Implications: nutrition

Nutrition management, especially enteral nutrition, relies on MDT collaboration

The FRAM identifies multiple points where delays to restarting feeding can occur

These failures have a cumulative effect, resulting in very poor nutrition delivery

Adequate nutrition delivery is essential for rehabilitation



Summary

Safe discharge, rehabilitation and nutrition delivery are challenging to provide within the current system of ward care

Staff and patients identify workload and high care needs of post-ICU patients as contributing to the problems in care delivery identified

To maximise recovery, we need to ensure adequate mobilisation and nutrition are provided to critical care survivors

Critical Care Outreach Teams/Follow-up services

- Continuity of information
- Education of ward staff
- Support with acute deterioration and specialist skills
- Co-ordination of input from specialist services

Responsive and approachable

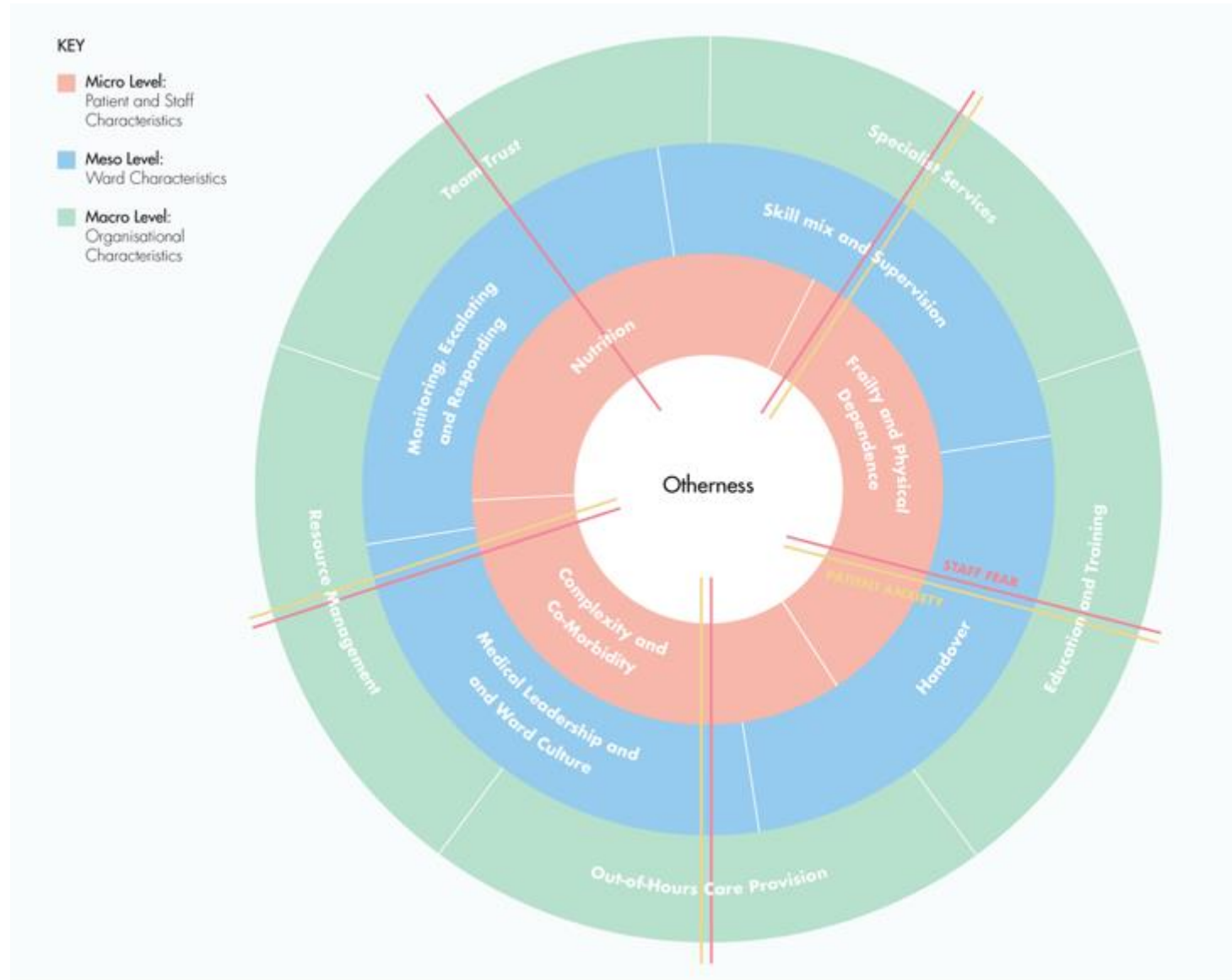
But...

Post-ICU patients usually discharged from CCOT on day 1 or 2 following transfer and not re-referred at deterioration



WHAT
NOW

Model of post-ICU ward care



Meta-matrix of study data

	Literature Review	RCRR	RCRR (in-depth)	Interviews: staff	Interviews: patients/family
	Systematic review, meta-analysis and 3 narrative reviews	300 post-ICU in-hospital deaths	20 probably avoidable deaths and 20 survivors	30 interviews with staff involved in post-ICU care	19 interviews with 26 patients and/or their families
CENTRAL THEMES					
Staff Fear	✓			✓	
Patient Anxiety	✓	✓		✓	✓
PATIENT CHARACTERISTICS (MICRO)					
Frailty and Physical Dependency	✓	✓	✓	✓	✓
Nutritional Support		✓	✓		
Complexity / Presence of Co-Morbidities	✓	✓	✓	✓	✓
WARD LEVEL (MESO)					
Handover	✓	✓	✓	✓	✓
Monitoring, Escalating, and Responding	✓	✓	✓	✓	
Staffing and Workload	✓		✓	✓	✓
Skill Mix and Supervision	✓		✓	✓	✓
Medical Leadership and Ward Culture		✓	✓	✓	
ORGANISATIONAL LEVEL (MACRO)					
Education and Training	✓		✓	✓	
Access to Specialist Services		✓	✓	✓	
Team Work and Trust			✓	✓	✓
Resource Management	✓	✓	✓	✓	✓
Out-of-hours Care Provision	✓	✓	✓	✓	✓