# Improving information-giving to critical care patients to guide post discharge rehabilitation: a QIP

Armin Fardanesh, Stavroula Stavropoulou-Tatla, Oliver Grassby, Sarah Elliott

**Presented by: Armin Fardanesh and Stavroula Stavropoulou-Tatla**

# Introduction

Recent studies have shown:

- One year mortality after ICU discharge is 28% [1]
- Survivors had a reduced health related quality of life [1,2]

# ICU Survivors

- Post ICU syndrome:
  - Cognitive – up to 75% have cognitive impairment in ICU, with a significant long term deterioration in 35% [3]
  - Psychiatric – up to 40% are depressed and 10% have PTSD 3 months post ICU [4]
  - Physical – ICU associated weakness affects up to 50% of patients and increases 1 year mortality risk [5,6]. Each day on ICU can lead to a 4% reduction in muscle mass [7]
- Malnutrition
  - ICU stay associated with an 18% loss in baseline body weight [5]
- Return to daily living
  - Show poor quality of life [8]
  - Reduced independence [9]
  - Less likely to be able to return to employment [10]

# Current practice in Medway ICU

- ICU diaries – based on a previous QIP; patients now receive ICU diaries to refill memory gaps
- Patients invited to attend follow-up clinic 2/3 months post discharge
- Optimise patient recovery post ICU
- NICE Guidelines

# NICE CG83 Guidelines

NICE National Institute for Health and Care Excellence

NICE guideline

## Rehabilitation after critical illness in adults

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

# Section 1.22

- Give patients the **following information** before their discharge to home or community care. Also give the information to their family and/or carer, if the patient agrees:
  - Information about their physical recovery, based on the goals set during ward-based care if applicable.
  - If applicable, information about diet and any other continuing treatments.
  - Information about how to manage activities of daily living including self-care and reengaging with everyday life.
  - If applicable, information about driving, returning to work, housing and benefits. Information about local statutory and non-statutory support services, such as support groups.
  - General guidance, especially for the family and/or carer, on what to expect and how to support the patient at home. This should take into account both the patient's needs and the family's/carer's needs.
  - Give the patient their own copy of the critical care discharge summary.

# Section 1.22

Information regarding:

- Physical recovery
- Diet
- Activities of daily living
- Returning to work & driving
- General guidance about recovery

# NICE Guidelines Section 1.22

- Guidelines could be split into 3 domains:

| Physiotherapy | Nutrition and dietetics | Occupational therapy |
| --- | --- | --- |
| • Physical recovery | • Diet | • ADL and return to everyday life |

- Only 31% of critical care units nationally have been fully compliant with the post-discharge care recommended by NICE [11]

# Aim

To improve the quality and provision of rehabilitation information given to patients discharged from the critical care department.

# Planned changes and predictions

- Development of an information booklet, containing different sections for physiotherapy, dietetics and occupational therapy.

- Delivery of booklet to patients recently discharged from ICU, as well as new discharges.

- Prediction: increased patient and therapist satisfaction regarding rehabilitation information, aiming for 100% satisfaction within 20 weeks.

# Methods – baseline measurements

- Baseline questionnaire for both therapists and patients, developed in accordance with the aforementioned NICE guidelines.

- Telephone interviews with patients.

- Questionnaires handed out to relevant therapists: physiotherapists, dietitians & OTs.

# Patient questionnaires

- To determine if patients were receiving information at baseline

1) Were you given any information leaflets when discharged from hospital following a stay in critical care (ICU)? YES ☐ NO ☐

2) Were you given exercise instructions for your physical recovery? YES ☐ NO ☐

a) If yes, what did you receive? _____

b) Was the information you received tailored for your specific needs? YES ☐ NO ☐

3) Were you given any dietary advice (e.g. what to eat)? YES ☐ NO ☐

a) If yes, what did you receive? _____

b) Was the information you received tailored for your specific needs? YES ☐ NO ☐

4) Were you given any information about managing your personal activities (e.g. bathing, driving, cleaning)? YES ☐ NO ☐

a) If yes, what did you receive? _____

b) Was the information you received tailored for your specific needs? YES ☐ NO ☐

# Patient questionnaires

- To determine how satisfied they were with the information

How useful for your recovery was the information provided before hospital discharge regarding the following:

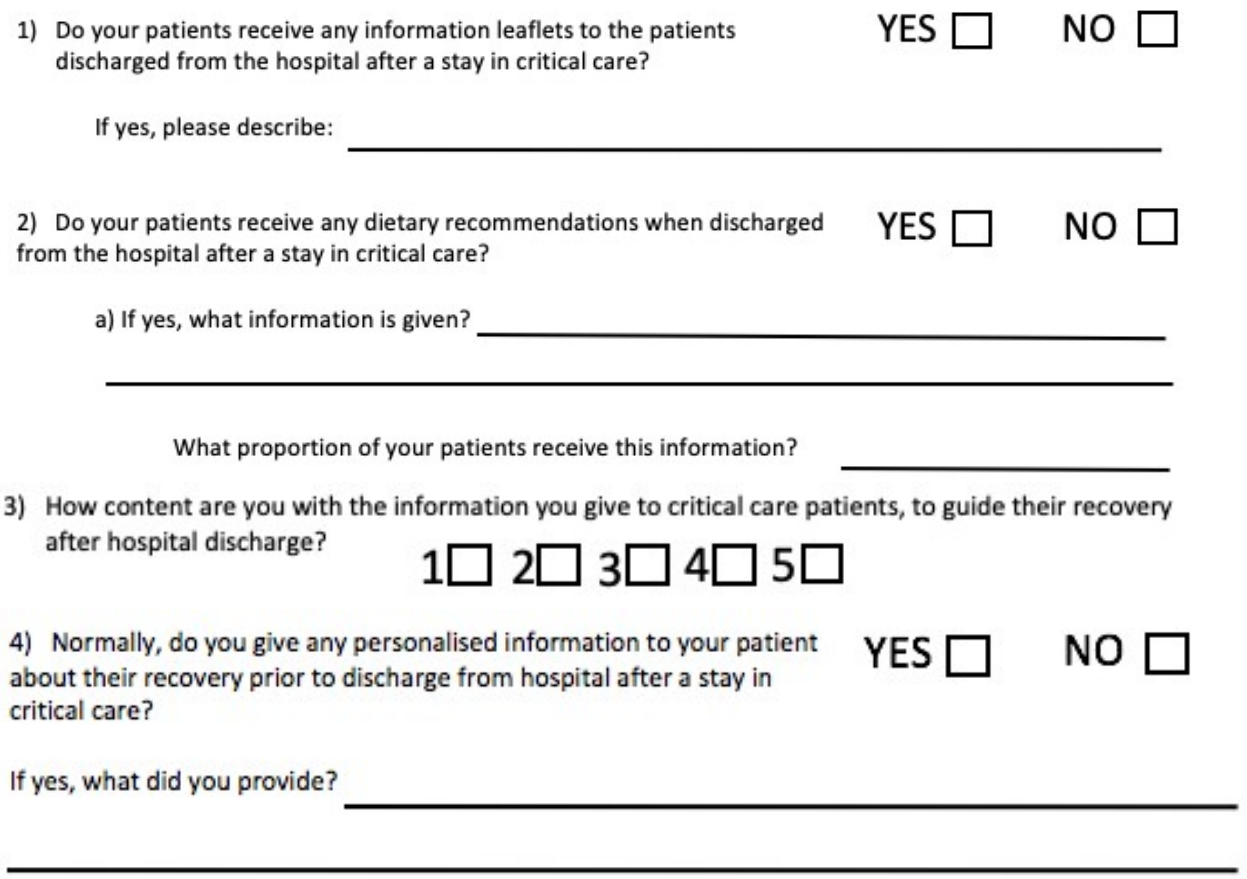
1) Exercise? 1☐ 2☐ 3☐ 4☐ 5☐
2) Diet? 1☐ 2☐ 3☐ 4☐ 5☐
3) Daily activities? 1☐ 2☐ 3☐ 4☐ 5☐
4) Overall? 1☐ 2☐ 3☐ 4☐ 5☐

**Used to determine overall satisfaction**

# Therapist questionnaires

To determine:

- what information therapists were giving out
- their satisfaction with what is provided
- if information given was personalised



1) Do your patients receive any information leaflets to the patients discharged from the hospital after a stay in critical care? YES ☐ NO ☐

If yes, please describe: _____

2) Do your patients receive any dietary recommendations when discharged from the hospital after a stay in critical care? YES ☐ NO ☐

a) If yes, what information is given? _____

_____

What proportion of your patients receive this information? _____

3) How content are you with the information you give to critical care patients, to guide their recovery after hospital discharge?

1☐ 2☐ 3☐ 4☐ 5☐

4) Normally, do you give any personalised information to your patient about their recovery prior to discharge from hospital after a stay in critical care? YES ☐ NO ☐

If yes, what did you provide? _____

_____

# PDSA 1 - Plan

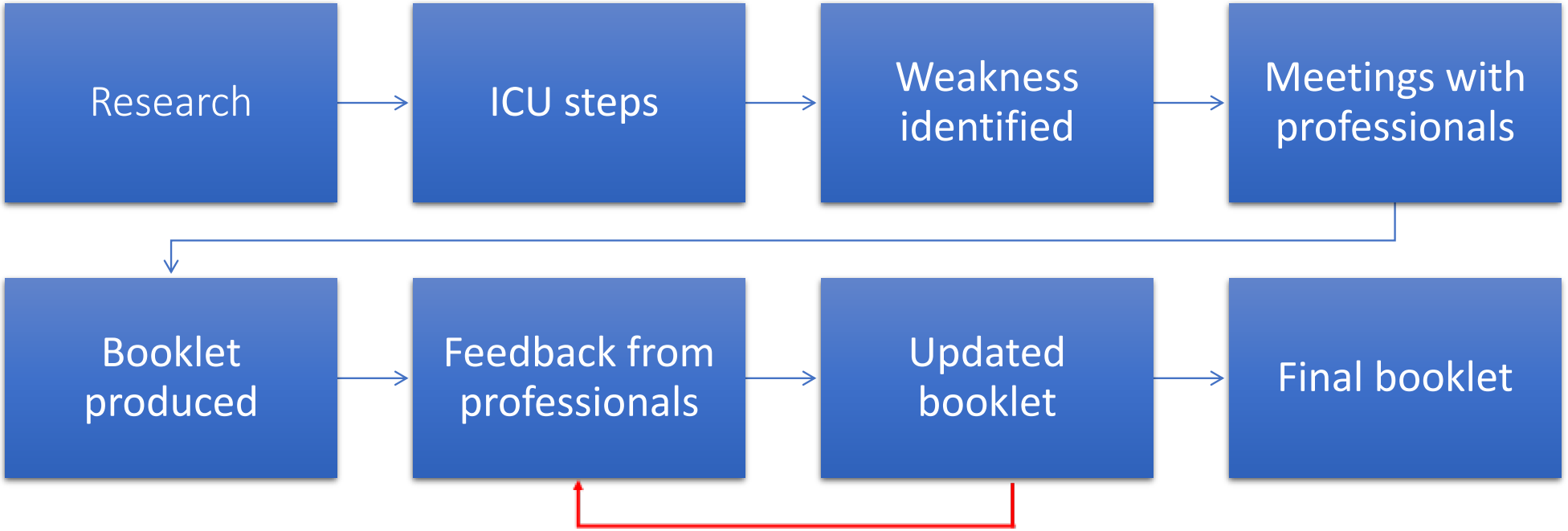
- Creation of an information booklet with exercise, nutritional and daily living recommendations to address NICE CG 83 Guidelines

- Distribution to patients in ICU ventilated for >72hrs

- Telephone interviews with patients and questionnaires handed out to relevant therapists to reassess:

I. Patient satisfaction with information received – primary outcome
II. Therapist satisfaction with information given – secondary outcome
III. Patient percentage receiving information – process measure

# Creating a booklet



# PDSA 1 booklet



NHS Medway NHS Foundation Trust

## Going home after Critical Care


Best of care
Best of people

www.medway.nhs.uk



## Contents

Introduction ..... 3
Physical recovery ..... 4
How can physiotherapy help my recovery from critical care? ..... 4
What can I do to help my recovery from critical care? ..... 4
Exercises ..... 6
Chair exercises ..... 6
Bed exercises ..... 7
Speech and Language Therapy (SLT) ..... 9
Swallowing Difficulties ..... 9
Communication Difficulties ..... 11
Diet and nutrition ..... 12
Occupational therapy ..... 19
Self-care ..... 19
Sleeping ..... 20
Household activities ..... 21
Getting around the home ..... 21
Driving ..... 22
Work ..... 22
Sexual relations ..... 23
Social life and hobbies ..... 24
Changes in mood ..... 24
Critical Care Follow Up Clinic ..... 25
Useful Websites/Resources ..... 27
References ..... 28

# PDSA 1 booklet



**Exercises**

**Chair exercises**

- Foot Tapping
  - Ensure you are sitting upright, with your back supported.
  - Rest your heel on or above the floor.
  - Pull your toes up towards you then point them away.
  - Repeat steps for 30 seconds every hour

Foot tapping (2)

- Leg Extensions
  - Straighten your knee and hold for 5-10 seconds.
  - Slowly lower your leg.
  - Repeat on the other leg.
  - Repeat steps 10 times on each leg

Leg extensions (3)

- Seated Marching
  - Keep your knee bent and lift your knee up.
  - Slowly lower your leg.
  - Repeat on the other leg.
  - Repeat steps 10 times on each leg.

Seated Marching (4)



| Examples of High Protein Foods | Examples of High Energy Foods |
|---|---|
| • All meat (eg. beef, pork, goat, lamb) | • Whole milk (cow or goat) |
| • Fish and shellfish | • Higher fat yogurt (3% milk fat or more) |
| • All poultry (eg. chicken, turkey, duck) | • Full fat cheese |
| • Eggs | • Whipping cream, sour cream, half and half |
| • All dairy products (eg. milk, yogurt, cheese, kefir) | • Butter, margarine |
| • Soy products (eg. soy beans/edamame, tofu, bean curd, soy milk, tempeh, soy cheese, soy yogurt) | • Avocado |
| • Beans/lentils (eg. chickpeas, kidney beans, split peas, baked beans) | • All nuts and nut butters (peanut, almond, cashew, walnuts) |
| • All nuts and nut butters (eg. peanut, almond, cashew, walnuts) | • All seeds and seed butters (eg. sunflower, pumpkin, chia, sesame, hemp hearts) |
| • All seeds and seed butters (eg. sunflower, pumpkin, chia, sesame, hemp hearts) | • Coconut milk |
| • Wheat germ | • All vegetable oils (eg. canola, olive, peanut, coconut) |
| • Brewer's yeast | |
| • Protein powders (eg. whey, soy, rice, pea, hemp) | |
| • Commercial nutritional supplement drinks | |

Table 1: Examples of high protein/energy foods [8]



**Household activities**

You may find it difficult doing household activities during your recovery. It is normal to be fatigued and find household tasks such as cleaning or cooking challenging. Once again, occupational therapy may be able to make a home visit to suggest aids that may be of use to you. These could include kitchen utensil modification, and using kitchen trolleys to make things easier for you. It may be useful for you to plan your day with rest periods alongside your activities rather than doing too much in one go. Reheating microwave meals and making less complicated meals may help conserve energy. However, it is important to ask for help from family and friends if you feel like you need some. Carers are also available to assist you during your recovery at home [15].

**Getting around the home**

It is possible that once you leave intensive care, you may find it hard to get around. Your ability to move around may be affected by muscle weakness, pain, poor balance or a lack of confidence. This could be an issue faced after intensive care and should have been assessed on the ward before discharge. You may need extra help getting around or use walking aids, such as crutches, a Zimmer frame or even a wheelchair. In order to avoid falls, it is crucial that you gain confidence in your mobility, and only undertake activities with help if needed. There are community services available to help you get back to being comfortable on your feet such as community physiotherapists; ask your GP or enquire at the critical care follow up clinic (see page 20).

# PDSA 2

Introduction of a personalised action plan section to be completed by the therapists before discharge - addressing individual needs

# PDSA 2: Personalised Action plan

Each aim has a corresponding action plan

Which professional

Completed with the patient



| Personal recovery plan | First name: Joe<br>Second name: Bloggs<br>Date of Birth: 01/01/1990<br>Hospital number: 00000001<br>NHS number: 000000002 |
|---|---|

| AIM: | ACTION PLAN: |
|---|---|
| - to be able to safely climb stairs | - Squats x 10 repeat x 3 daily<br>- step ups on bottom step x 10 repeat x 3 daily<br>- with weights (tins in oven gloves crossed over ankles) leg extension x 10 repeat x 3 daily<br>- balance exs – holding onto dining room chair – standing on one leg for 5 secs with eyes open/ eyes closed |

Completed by:
Physiotherapist:



| AIM: | ACTION PLAN: |
|---|---|
| - to be able to wash and dress independently | - Pace yourself – have shower then rest on bed before dressing, rest again before drying hair<br>- choose easy to wear clothes / practice bilat upper limb raises to mimic putting arms in jumper<br>- use long shoe horn to put on shoes |

Completed by: Occupational therapist

| AIM: | ACTION PLAN: |
|---|---|
| - to increase mass and muscle strength | - Eat little and often<br>- Choose high calorific drinks such as milk / ensure<br>- If breathless eat soft foods<br>- Choose foods high in protein eg cheese, yoghurt<br>- Suck on flavoured sweets if you have bad taste in the mouth |

Completed by: Dietition

Patient name: Joe Bloggs  Signature:  Date:

# PDSA 3

Addition of mental health and speech & language therapy sections to the booklet

# PDSA 3: Mental health and Speech & language therapy

## Changes in mood

Many patients find that that they develop psychological issues after their stay in critical care which can include depression, anxiety, flashbacks or nightmares. These are not uncommon and we offer a course of counselling to help you find ways of dealing with them.

Counselling provides a safe and confidential environment where you can be open and honest about what you have been experiencing without being judged as well as helping you to understand why you are feeling this way. Counselling can help you come to terms with what has happened in order for you to fully recover emotionally and mentally as well as physically.

Family members and carers may also be effected and can suffer sleep disturbance, stress, anxiety and symptoms of depression which may last from months to years. Counselling may be offered to patients or their families either with the Critical Care Counsellor or a referral to one of the community counselling services.

The critical care counsellor can be contacted at;
heather.jones40@nhs.net and 07568323104

## Speech and Language Therapy (SLT)

Speech and Language Therapists (SLT) work with people who experience speech, language, communication and/or swallowing difficulties.

**Swallowing Difficulties**

During your time in critical care, you may have been dependent on a feeding tube for your nutrition and hydration, due to being too drowsy to take anything by mouth. Rather like the other muscles in your body, your swallow muscles can become weaker and less efficient with prolonged lack of use.

**Common signs of swallowing difficulties:**

- Coughing or choking on food/drink
- Wet sounding voice during and after meals
- Difficulty managing own saliva
- Shortness of breath
- Watery eyes after swallowing
- Difficulty chewing food and controlling it in your mouth
- Not being able to feel the food or drink in or around your mouth
- Food/drink coming out through your nose

A swallowing difficulty, if left untreated, can cause loss of weight, dehydration and can prolong the length of time spent in hospital.

Food and drink can sometimes go the wrong way, into your lungs. This can happen without your knowledge. If this occurs, it increases your risk of developing a chest infection (pneumonia).

An SLT may have completed a swallow assessment with you, if concerns were raised about your swallow safety. This would have involved an SLT checking the strength, coordination and timing of your swallow.

# Results

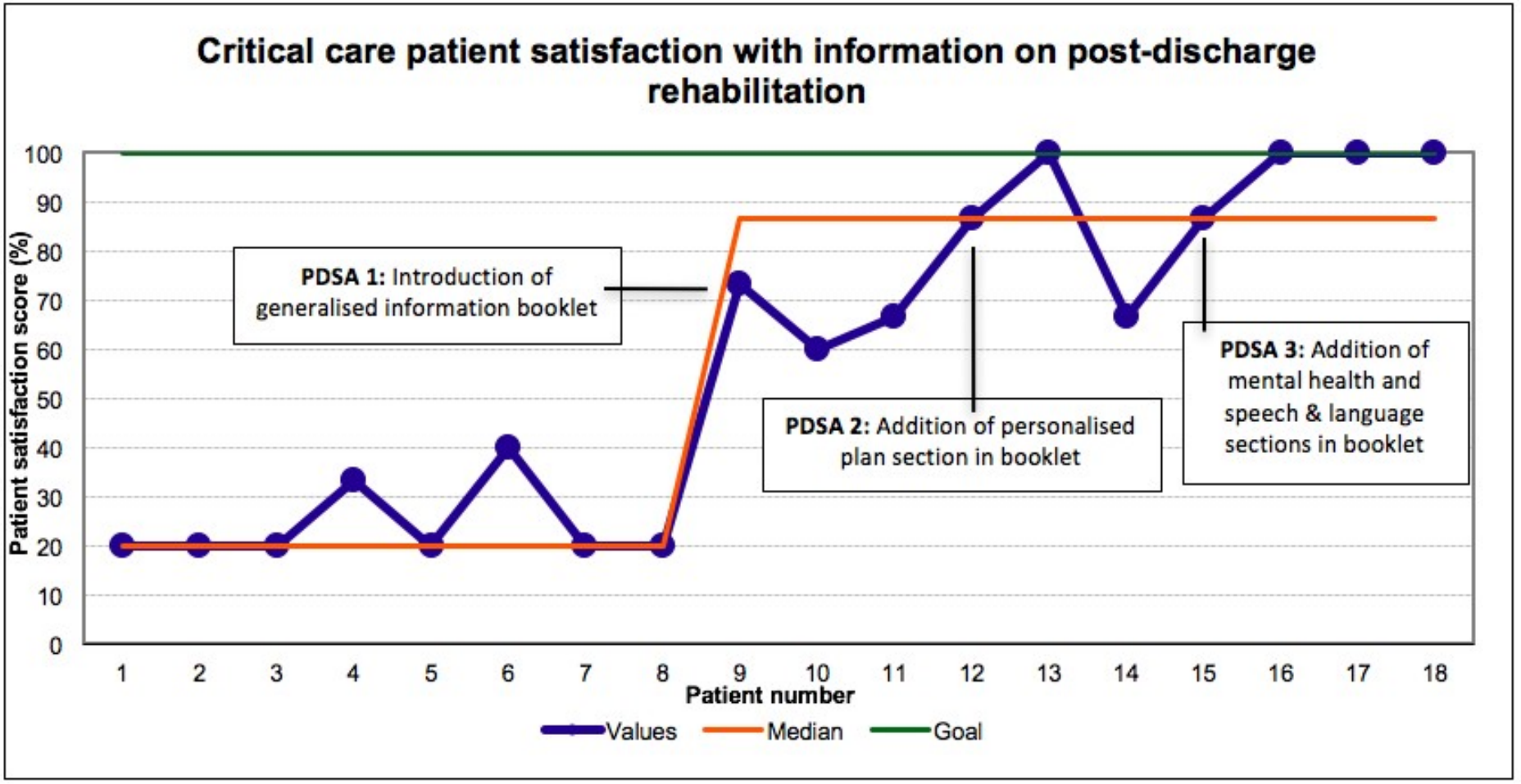



Figure 1: Run chart showing patient satisfaction scores (%) per critical care patient contacted

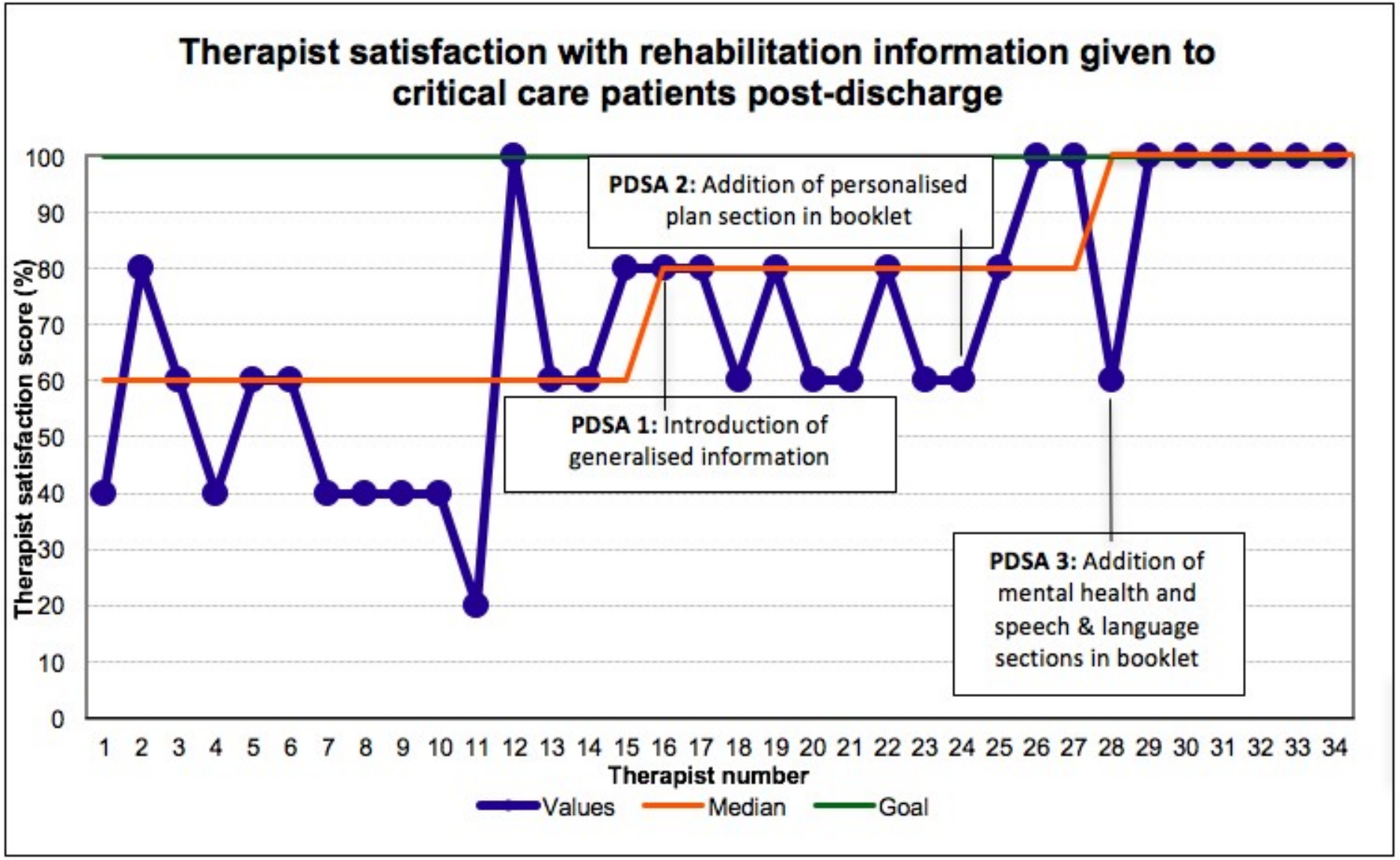



Figure 2: Run chart showing staff satisfaction scores (%) per staff member contacted

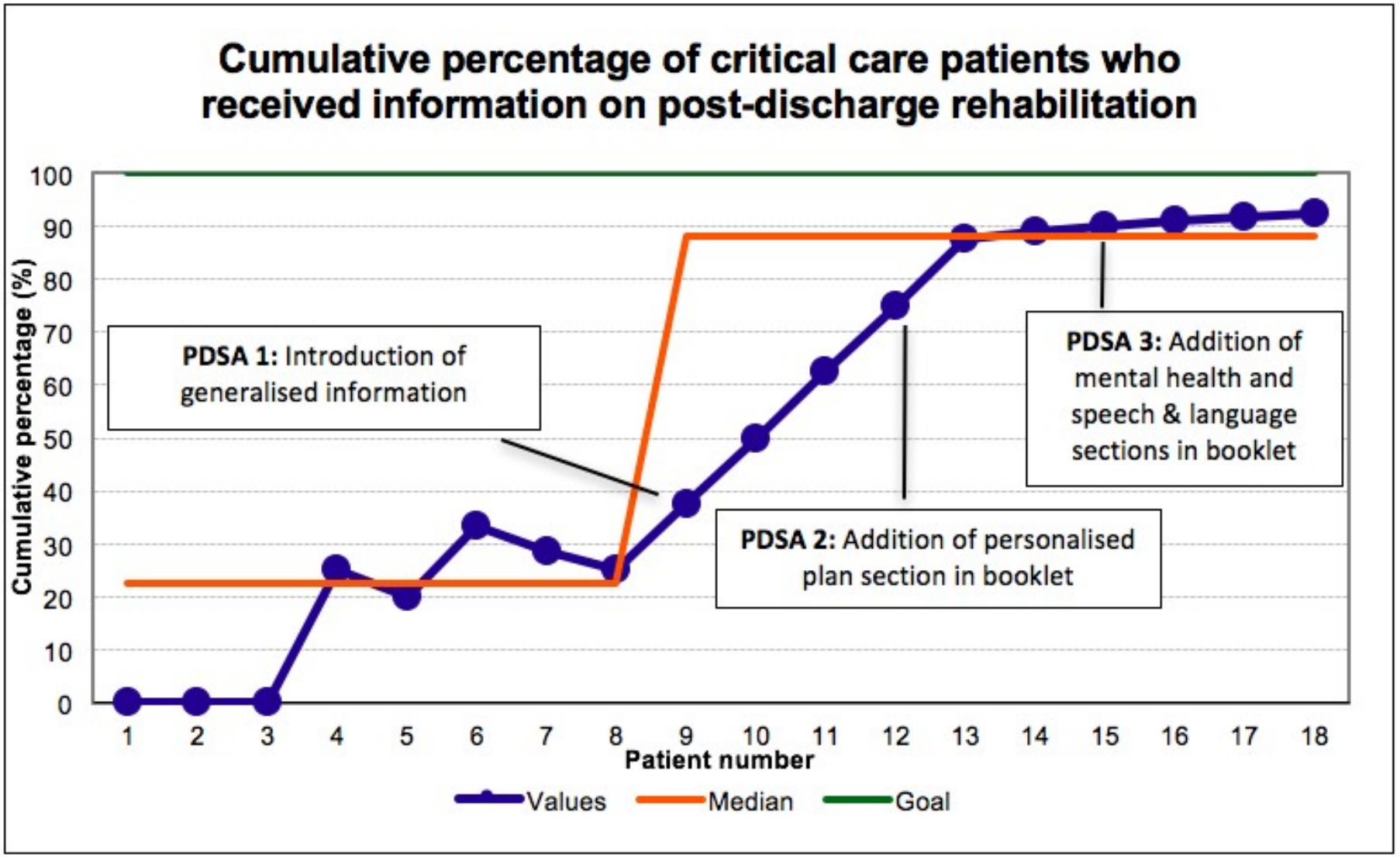
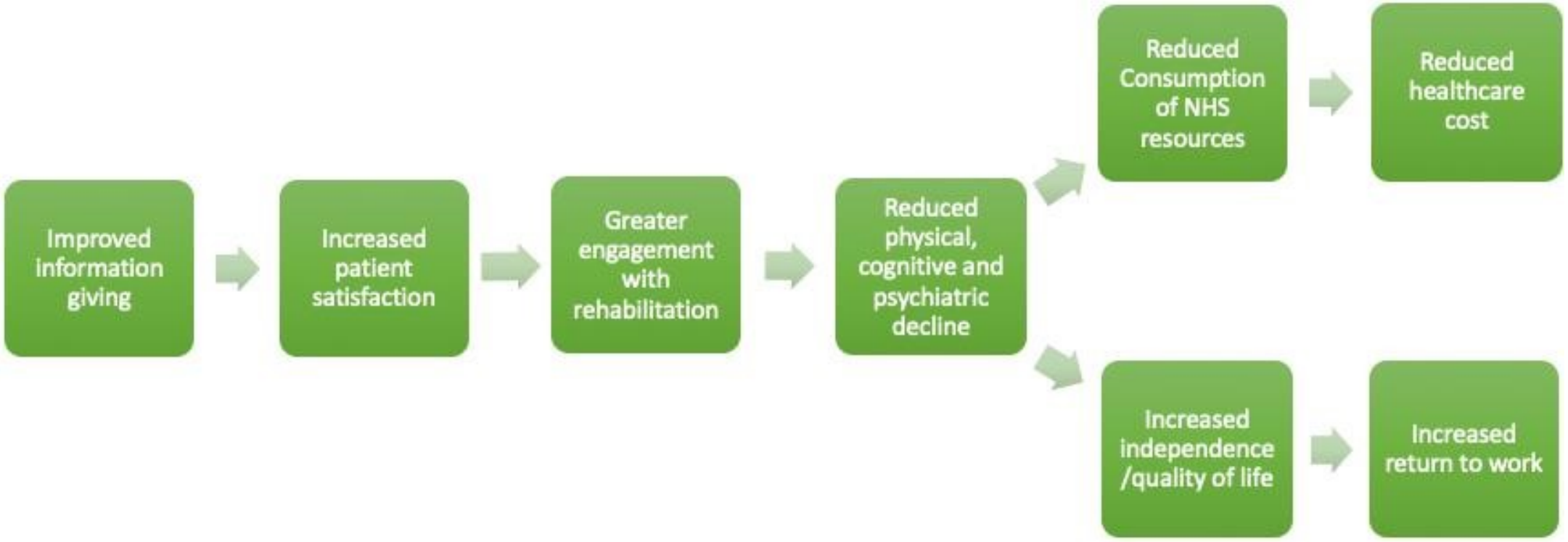



Figure 3: Run chart showing cumulative percentage of patients who received information per patient contacted

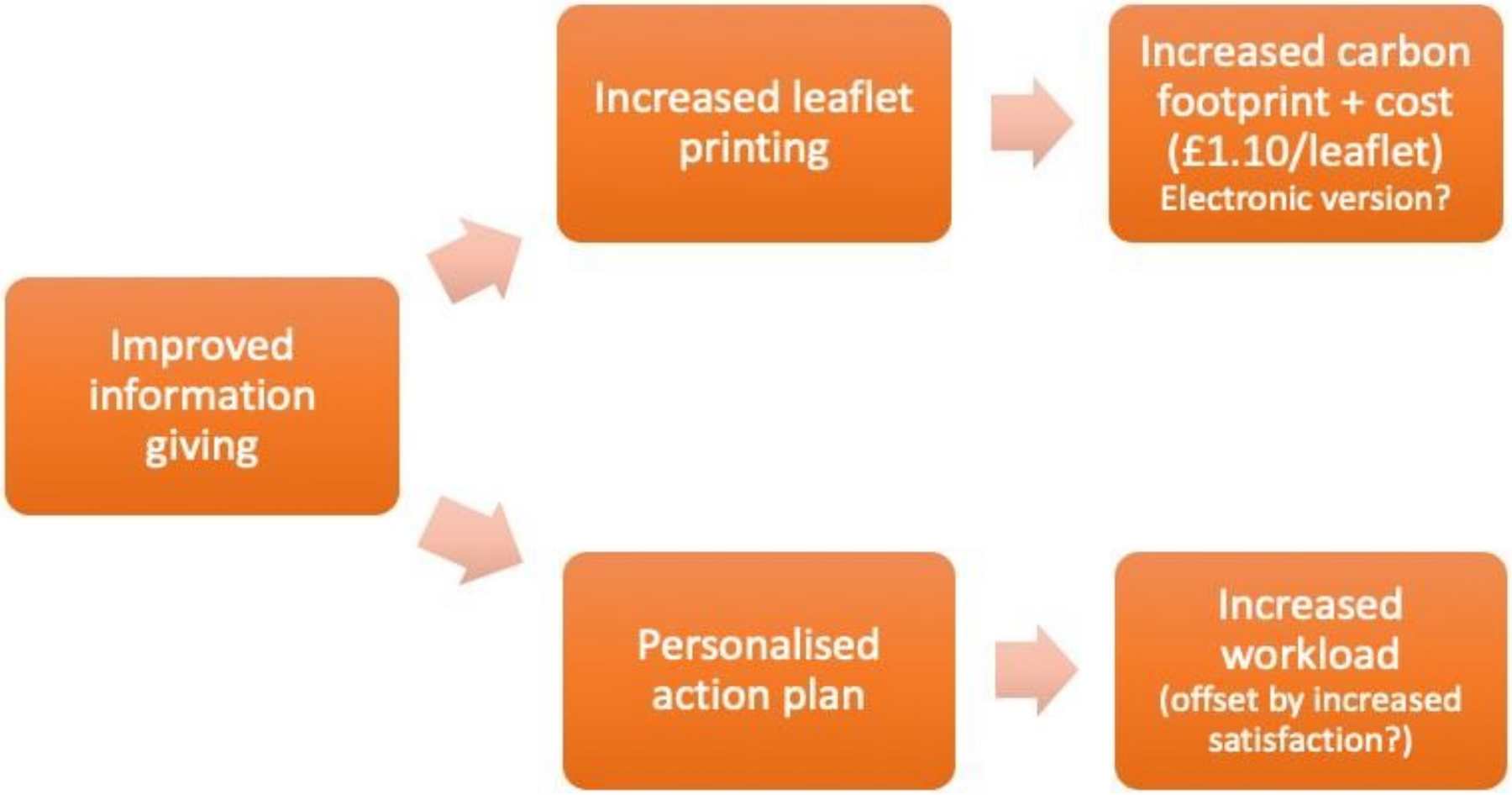
# Summary of Results

- Primary outcome: Significant increase in the median patient satisfaction score from 20 to 87%
- Secondary outcome: Significant increase in the median critical care therapist satisfaction score from 60 to 100%

# Impact on Systems and Sustainability



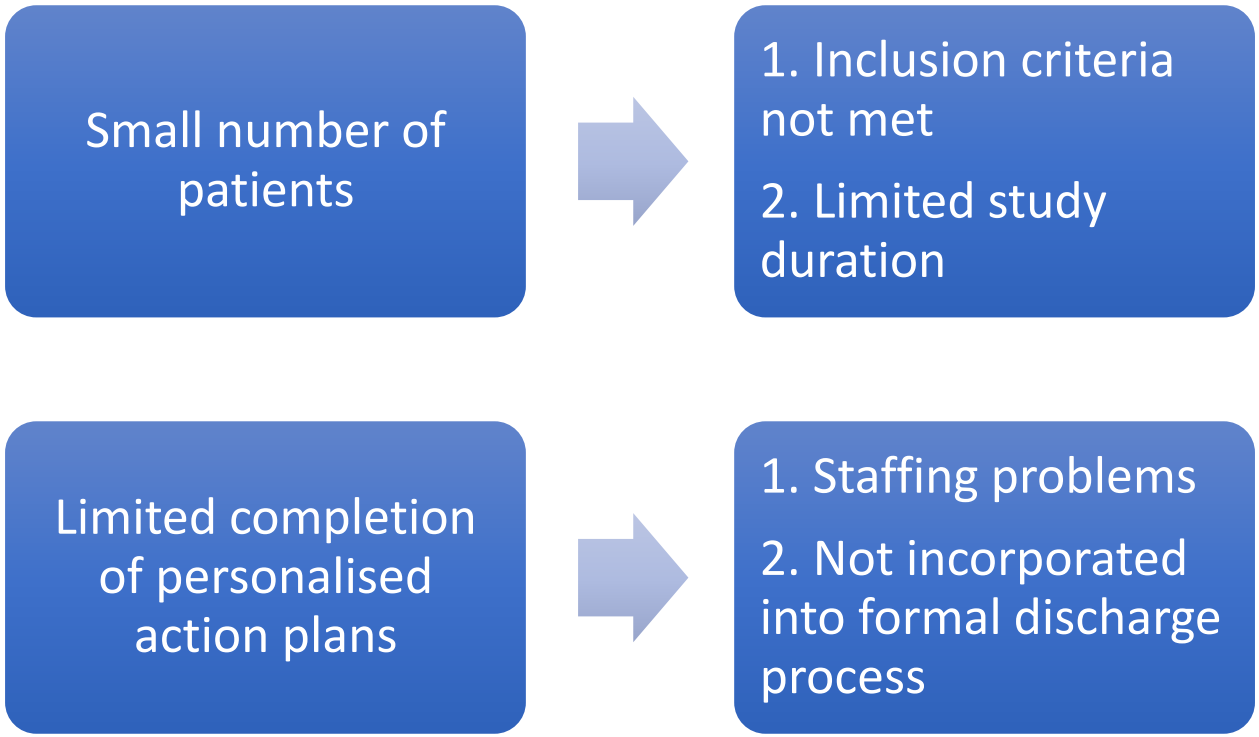
# Impact on Systems and Sustainability



# Aids to success

- Targeted aim with a simple approach
- Booklet produced (rather than ICU steps)
  - covers most of CG83 guidelines
  - addressed what patients want
  - targeted Medway community
- Extremely helpful therapy team
  - helped us design the booklet
  - completed questionnaires
  - completed action plans

# Barriers to success



# Future work

- Improved engagement with intervention:
  - Introduce notification to electronic discharge note "has a completed information booklet been given to patient?"
  - Conduct meetings with the critical care rehabilitation team encourage incorporation of booklet into daily practice

- Implement booklet use at a bigger hospital or across sites

# Conclusion

- Producing a personalised information booklet is an effective way of addressing NICE CG83 guidelines section 1.22
- The booklet introduction increased satisfaction of patients and therapists
- The addition of a personalised action plan, mental health and speech & language therapy sections further increased satisfaction – leading to more complete rehabilitation?
- Completion of personalised action plans pre-discharge was challenging
- Expected to improve with formal incorporation into discharge process

# References


1. Steenbergen S, Rijkenberg S, Adonis T, Kroeze G, van Stijn I, Endeman H. Long-term treated intensive care patients outcomes: the one-year mortality rate, quality of life, health care use and long-term complications as reported by general practitioners. BMC anesthesiology. 2015 Dec;15(1):142.

2. Cuthbertson BH, Roughton S, Jenkinson D, MacLennan G, Vale L. Quality of life in the five years after intensive care: a cohort study. Critical care. 2010 Feb;14(1):R6.

3. Pandharipande PP, Girard TD, Jackson JC, Morandi A, Thompson JL, Pun BT, Brummel NE, Hughes CG, Vasilevskis EE, Shintani AK, Moons KG. Long-term cognitive impairment after critical illness. New England Journal of Medicine. 2013 Oct 3;369(14):1306-16.

4. Jackson JC, Pandharipande PP, Girard TD, Brummel NE, Thompson JL, Hughes CG, Pun BT, Vasilevskis EE, Morandi A, Shintani AK, Hopkins RO. Depression, post-traumatic stress disorder, and functional disability in survivors of critical illness in the BRAIN-ICU study: a longitudinal cohort study. The lancet Respiratory medicine. 2014 May 1;2(5):369-79.

5. Herridge MS, Cheung AM, Tansey CM, Matte-Martyn A, Diaz-Granados N, Al-Saidi F, Cooper AB, Guest CB, Mazer CD, Mehta S, Stewart TE, Barr A, Cook D, Slutsky AS, for the Canadian Critical Care Trials Group 2003 One-Year outcomes in survivors of the Acute Respiratory Distress Syndrome. New England Journal of Medicine 348: 683–693

6. Hermans G, Van den Berghe G. Clinical review: intensive care unit acquired weakness. Critical care. 2015 Dec;19(1):274.

7. Helliwell TR, Wilkinson A, Griffiths RD, McClelland P, Palmer TE, Bone JM. Muscle fibre atrophy in critically ill patients is associated with the loss of myosin filaments and the presence of lysosomal enzymes and ubiquitin. Neuropathology and applied neurobiology. 1998 Dec;24(6):507-17.

8. Cuthbertson BH, Roughton S, Jenkinson D, MacLennan G, Vale L. Quality of life in the five years after intensive care: a cohort study. Critical care. 2010 Feb;14(1):R6

9. Ågård AS, Egerod I, Tønnesen E, Lomborg K. Struggling for independence: A grounded theory study on convalescence of ICU survivors 12 months post ICU discharge. Intensive and Critical Care Nursing. 2012 Apr 1;28(2):105-13.

10. Williams TA, Leslie GD, Brearley L, Dobb GJ. Healthcare utilisation among patients discharged from hospital after intensive care. Anaesthesia and intensive care. 2010 Jul 1;38(4):732.

11. Berry A, Cutler LR, Himsworth A. National survey of rehabilitation after critical illness. Journal of the Intensive Care Society. 2013;14(4):334-9.

Thank you