Measuring the impact of COVID-19 service reconfiguration on the Specialist Rehabilitation Service of Hull University Teaching Hospitals Trust

NHS Hull University Teaching Hospitals NHS Trust

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Introduction

UK National Health Service (NHS) preparations to manage the impact of the COVID-19 pandemic on hospital services focused on expansion of the acute care capacity in managing the anticipated surge in COVID-19 cases.

These changes focused on: alterations to service structure, modification of routine activity, and workforce & facilities reorganization.

One such change implemented at the Hull University Teaching Hospitals NHS Trust (HUTHT), was the relocation of the Complex Rehabilitation Ward. This ward was vacated for the relocation of the Oncology Day Assessment Service to ward 29 while the Complex Specialist Rehabilitation ward was relocated to the Elective Orthopaedic Surgical ward (C9a) within the same hospital.

The Complex Specialist Rehabilitation ward (C29) is a 15 bedded unit served by a suitably equipped therapy gym located adjacent to it, whilst the C9a Surgical ward comprises 12 beds with a gym placed on the adjacent elective surgical unit.

The aim of this piece was to determine the impact of the ward-relocation, and associated facilities, on patient outcomes.

Materials & Methods

A comparative review of the admissions and outcome measures data. Encompassing: admission diagnosis; referral source; Patient categorization Tool, PCAT; Length of Stay, LOS; Bed occupancy; and discharge destinations. Data captured during the 4-month period (March-June 2020) was undertaken and compared to retrospective data from a corresponding 4-month (March-June 2019) period in the previous year.

Patient admissions

- Fewer admissions in 2020 vs the same period in 2019 (Table 1.) (n=28 in 2019; n=18 in 2020).
- It is suspected that COVID impacted presentations to care environments. i.e. fewer patients attending GP/ED, reducing the size of the potential patient pool.
- Ward design may have inhibited free admission of patients due to the design of the ward. Each patient transferred should be isolated for 14 days, requiring a cubicle.

	March – June 2019	March – June 2020
Male	21 [72%]	12 [66%]
Female	8 [28%]	6 [33%]

Table 1. Total admissions, during the study periods, to C29 [2019] & C9a [2020].

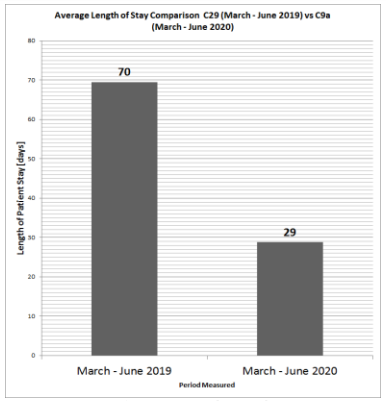


Figure 1. Graph of patient stay [in days].

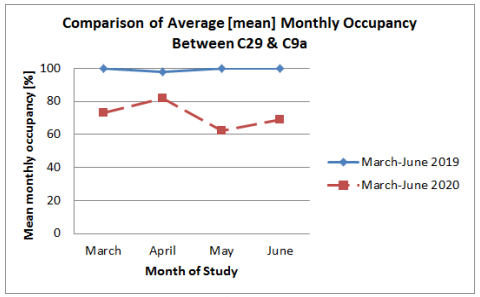


Figure 2. A comparative graph of ward occupancy.

Patient Length of stay

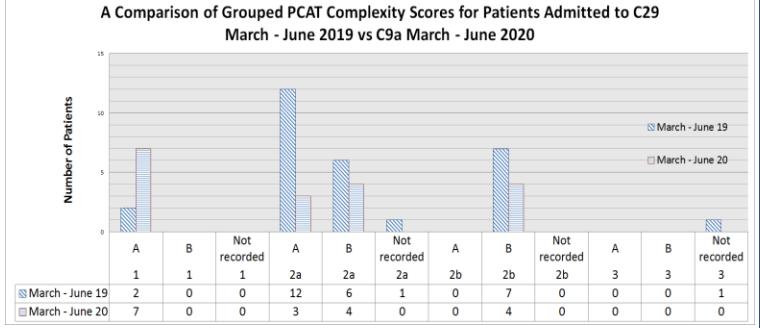
- Patient length of stay is noted to be markedly reduced – 29 days average length of stay in 2020 vs 70 days in the 2019 cohort (Figure 1.).
- The Acute Team offers specialist input to patients on the waiting list for Complex Rehabilitation. This allows for early specialist intervention and optimization that can be argued to reduce length of stay in transfer.
- It has been suggested by Therapies Teams that the lacking equipment quality on C9a may have lowered the ceiling of goals, contributing to early attainment.

Average monthly occupancy

- Average occupancy of 99% in the 2019 cohort, versus 71% in the 2020 cohort (Figure 2.) despite a reduction in bed-base.
- The observed dip in occupancy observed in May 2020 correlates to a period of Nosocomial COVID-19 infection on ward C9a [5 patients affected].
- There was a noted push for patients on long-term steroids to be discharge home with cares to limit the risk of contracting COVID.

Patient complexity

- Grouped PCAT scoring (Figure 3.), as compared between C29 & C9a, demonstrates a greater average acuity [by distribution] on admission in the C9a period than that measured on C29.
- 7 category 1A patients in 2020 versus 2 category 1A patients in 2019.
- 0 level 3 patients admitted in 2020.
- Patient avoidance of healthcare engagement may explain why patients that are admitted are likely to be more complex, owing to deterioration.
- Reduced occupancy affords space to admit patients of a higher acuity earlier in their treatment pathway



	A 1	B 1	Not recorded 1	A 2a	B 2a	Not recorded 2a	A 2b	B 2b	Not recorded 2b	A 3	B 3	Not recorded 3
March - June 19	2	0	0	12	6	1	0	7	0	0	0	1
March - June 20	7	0	0	3	4	0	0	4	0	0	0	0

Figure 3. Patient PCAT Scores measured on admission in grouped comparison between C29 & C9a

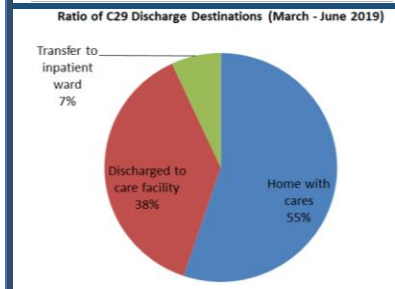


Figure 4. Patient discharge destinations 2019 [C29].

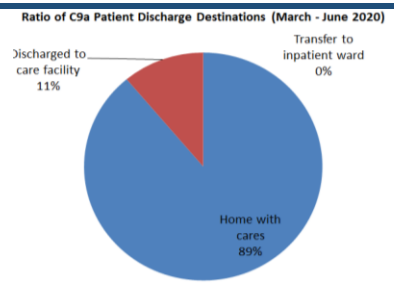


Figure 5. Patient discharge destinations 2020 [C9a].

Patient Discharge destinations (Figure 4. & Figure 5.)

- Discharges home with care calls – 89% [C9a] vs 55% [C29]
  - Patient attitudes are likely to be affected by Media speculation, more patients therefore wish to go home
- Patients discharged to Care Facilities – 11% [C9a] vs 38% [C29]
  - Care homes may also be avoided due to this risk
- Discharges to other wards – 0% [C9a] vs 7% [C29]
  - For safety it is pertinent to discharge patients with comorbid risk factors out of the hospital environment to reduce risk of nosocomial spread

Conclusion

This review demonstrated some of the impact of the measures implemented to combat the 1st wave of the coronavirus pandemic on a specialist inpatient ward in a tertiary hospital setting, and highlights the need for consideration of specialist rehabilitation as part of the acute response planning process in pandemic and mass casualty event

Though equitable or improved outcomes were observed despite increasing patient complexity, this was achieved with a compromise on the rehabilitation process due to the constraints of the new ward environment.

Significant impact of the environment on the quality of the therapy programmes was observed, however the efforts of the multi-disciplinary team cannot be understated in delivering uninterrupted and efficacious rehabilitation.

The longer-term impact of these constraints will need to be monitored.

Recommendations

This discussion has demonstrated that in the event of similar event in future, the needs of patients undergoing rehabilitation should be a key consideration in the plans to relocate such services.

It is recommended to provide adequate patient facilities and amenities such as toilets & showers, ideally in en-suite rooms to reduce the risk of contamination.
Such plans should include the development of individualized treatment plans for post-pandemic patients, with optimization for intense 'short-stint' rehabilitation to maximize potential prior to discharge.

In addition, adequate space for gym equipment and assessment spaces should be available with access to common patient area such as a dedicated day room, for patients to engage with supplementary facilitated activities.

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