Evaluation of Community Assessment and Treatment Units (CATUs) in Cornwall

Health Innovation South West

National Institute for Health and Care Research Applied Research Collaboration South West Peninsula

This project was undertaken by Health Innovation South West and the National Institute for Health and Care Research Applied Research Collaboration South West Peninsula with funding from the Accelerated Access Collaborative at NHS England and NHS Improvement, and support from the National Institute for Health Research.

Final Report, March 2023

NHS England

Accelerated Access Collaborative

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Acknowledgement

The authors would like to thank all of the participants from across the Cornwall Integrated Care System (ICS) who gave their time to offer their views and experience. In particular, we would like to acknowledge staff at the three CATUs who took part in this evaluation for their engagement and for welcoming us into their setting and into their daily working.

Executive Summary

Context

Older people with frailty often present with urgent medical care needs that cannot be managed by primary care or community services and are referred on to an already stretched and underfunded health and social care system.

Evidence suggests that functional limitations, comorbidity and lack of social support increase Emergency Department (ED) and acute medical team use. Older people are admitted to hospital more frequently and have longer admittance times compared to other population groups, and long stays are worsened by insufficient social care capacity in the community. The age of Cornwall's population is expected to increase ahead of the national average in the next decade, suggesting increasing pressure on services in the coming years.

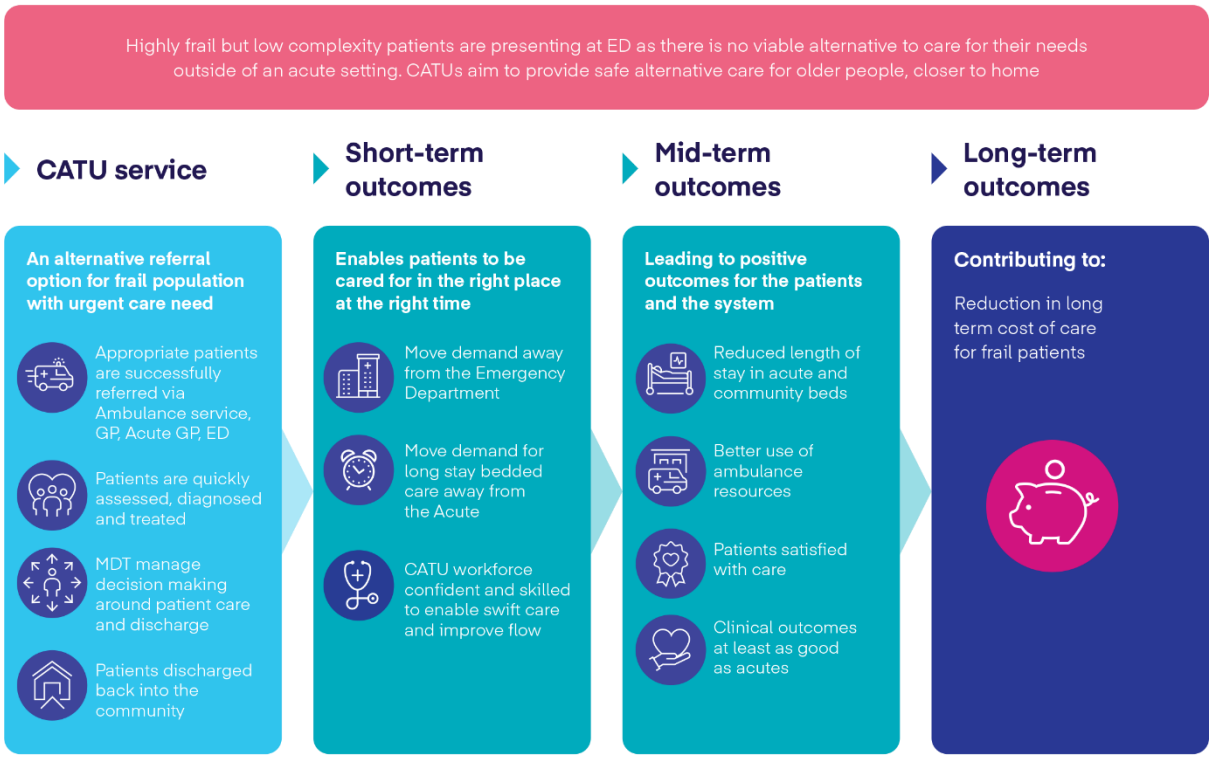
Cornwall has a disproportionately small hospital bed base and a disproportionately large population over the age of 75, compared to regional and national averages. The rurality of Cornwall means that a large proportion of the population live further from services than average across England (17% of the population of Cornwall versus 73% of the population of England live within a 10 km radius of a Type 1 Emergency Department), meaning very long journeys to the ED at Royal Cornwall Hospital (RCH) in Truro for many frail patients with acute care needs, and those wishing to visit.

Community Assessment and Treatment Units (CATUs)

A CATU is a bedded unit, sited within a community or sub-acute hospital that supports frail patients with an urgent medical need who cannot be managed in the community, and would otherwise be presenting at the ED and/or admitted to acute medical wards.

Three CATUs were established as part of the Cornwall and Isles of Scilly (CIoS) COVID-19 response, to divert older patients with frailty from attending hospital, and treat them closer to their homes, protecting them from COVID-19 and other nosocomial harms (i.e. infections originating in a hospital). These were established at Bodmin Community Hospital (BCH), and Camborne Redruth Community Hospital (CRCH) run by the community trust Cornwall Partnership NHS Foundation Trust (CFT), and West Cornwall Hospital in Penzance, run by the acute trust, Royal Cornwall Hospitals Trust (RCHT).

The CATU model provides as short a stay as possible in a single location, supporting people to remain independent for longer. Figure 1 depicts the logic of how key CATU functions should lead to improved outcomes.



Evaluation of the CATUs

The evaluation aimed to better understand the impact of the CATUs on redirecting frail, elderly patients away from Cornwall's acute hospital services, and the factors that contribute to the delivery of a more place-based model of urgent care. The evaluation used a mixed-methods approach, combining quantitative and qualitative methods, along with the establishment of forums for cross-CATU learning and PPIE (Patient and Public Involvement and Engagement) to support service improvements.

Results

CATUs were very quickly established as a safe alternative referral route for the frail population with urgent medical need, taking referrals primarily from South Western Ambulance Service Trust (SWAST) and Royal Cornwall Hospital (RCH, also known as Treliske) ED to avoid acute admission.

System resource

Across the three CATUs, between the evaluation period April 2020 and December 2022, over 3,900 patients were supported, who all required an urgent admission. System data shows that around 8% of CATU patients are referred on to the acute hospital and 92% are discharged to other settings (mostly their usual place of residence). Given that all patients being admitted to CATUs are in need of urgent, bedded care,

Offer alternative referral option for frail population with urgent care need:

3,900 patients have been admitted to CATU from ambulance services, GPs, ED and others.

Move demand for long stay bedded care away from the Acute:

1,200 long stay admissions a year redirected to CATU.

approximately 3,600 hospital admissions have been redirected over the evaluation period (approximately 1,200 avoided hospital admissions per year).

A significant proportion of referral to CATUs come from the community: SWAST, GP, home, community teams and MIU resulting in approximately 1,500 avoided attendances at ED over the evaluation period under review (around 550 per year).

A substantial proportion of patients referred from 'home' and 'community' will have also been transferred by ambulance (by SWAST), bypassing both the wait to be seen and attendance at ED.

On average, SWAST ambulance crews wait for 3 hours and 23 minutes to handover patients at RCH ED. Data suggests that the CATUs have saved over 5,000 hours of ambulance handover waits at RCH. More significantly, the availability of beds in the CATU, acceptance of direct referrals from the community and avoided waits at ED, have increased the availability for SWAST to respond to more people in need of urgent or emergency care.

Better use of ambulatory resource:

Reduced ambulance handover time by over 1,500 hours per year, freeing crews up to support more people with an urgent care need across Cornwall.

Patient experience

Simplify the patient journey:

Patients have a longer stay but in a "more personal" facility slightly closer to home and are slightly less likely to be readmitted following discharge.

The original aim of the CATUs was to assess, treat and discharge patients within 3 days. Data suggests that the actual length of stay within the CATUs is an average (median) of 11 days. Average length of stay is longer than in an acute (median = 6 days), as are delays for discharge (18 days for CATU versus 8 days for acute) suggesting much of the difference is a result of poor patient outflow.

The proportion of patients readmitted within three months following discharge was slightly lower for CATUs (6%) than in a similar sample of patients from the acute setting (8%) suggesting that delivering care at place is not compromising quality.

Overall, patients were largely happy with the care they received. The vast majority of comments about the quality of their care were positive, stating that it was excellent, they feel safe and well looked after and staff were kind and caring. However, some patients stated that they would like to be kept better informed about their care planning or plans for discharge. Many noticed that the unit was not fully staffed.

Of the population of patients admitted to CATU, 42% live within 20km of the CATU to which they were admitted. Of those same patients, 30% live within 20km of the acute hospital, RCH. This shows that a higher proportion of people have been treated closer to home, although more could be done to improve these figures.

Workforce

Staff working in the CATUs report higher levels of job satisfaction compared to the wider system (of Cornwall), with particularly positive responses regarding opportunities to improve knowledge and skills and across a range of team measures.

However, the majority of respondents felt there were not enough staff in their organisation (CFT (Cornwall Partnership NHS Foundation Trust)). Difficulty in recruiting to short-term and substantive

roles has resulted in significant proportion of care being delivered by a temporary and flexible workforce, that is more costly and offers less consistency for patient care and the CATU approach.

Culture

> "We [should not be] expected to improve them to a point that was better in terms of their function than when they came in."

Locating CATUs in community hospitals has created a challenge for ways of working, as staff have had to upskill in order to treat higher acuity patients effectively and safely. This requires a shift in mindset and in some cases a shift in working practices and relationships. Staff described the positive professional impact of treating this patient group in the 'CATU way', with speedy interventions allowing patients to be rapidly assessed, treated and medically optimised for discharge: "I could use my skills. And you could see the results." However, the 'rapid turnaround' model can create tensions within the workforce and leadership around whether to manage 'social' as well as medical problems, what can be raised at MDT (multi-disciplinary team) meetings and what is appropriate care for a CATU patient.

The new CATU culture, which has been championed by many senior staff, centres the importance of working to 'modern' nursing and healthcare principles that take a less paternalistic approach, shifting the nurse-patient relationship by encouraging patients to self-manage and stay physically and mentally active where possible. This contrasts with the tradition of the 'cottage hospital', the precursor to the 'community hospital', both of which were designed primarily for rehabilitation and took a 'slowly does it', 'tending' approach to nursing care. There are varying degrees of buy-in to the approach across the workforce, creating a sense of live debate in and around the CATUs.

MDTs and rapid clinical decision-making are central to the CATU approach, to get people to a point of being medically optimised and discharged as soon as possible thereafter. Building skills and confidence across all staff groups and creating a culture of engagement were seen as essential for the effective implementation of this rapid way of working.

The shifting of clinician responsibility and risk from the acute setting into the community setting requires a shift in mindset from medical staff in the acute, such as consultant geriatricians who would previously have had responsibility for the kind of patients who are now being treated by GPs in CATUs. This requires a level of professional trust from the consultants, that frail elderly patients can be cared for appropriately by GPs and nurses on CATUs.

Skillset

Senior stakeholders in the CATUs feel that the nature of the CATU approach, including treating higher-acuity patients and aiming for rapid turnaround, suggests that the units are most appropriately staffed by experienced staff who are confident to engage in rapid decision-making around clinical matters and discharge, to keep a CATU functioning efficiently. Staff with training or experience in an acute setting can be an asset, but staff who have been operating in community hospitals might need upskilling to deal with the increased acuity of CATU patients, while medical staff will ideally have experience both in hospital and community settings, to support holistic understanding of the patient group and their needs.

> CATU workforce confident and skilled to enable swift care and improve flow:
>
> Nurses from the CATUs describe a strong culture of internal upskilling and nurses becoming more confident in supporting clinician decision-making.

Medical staff and nurses at BCH and CRCH CATUs were positive about working in nurse-led units. The key skills required of medical staff and nurses on the CATUs have some overlaps, most notably around 'advanced examination skills' that allow both staff groups to be involved in rapid clinician decision-making. Cornwall Foundation Trust (CFT) nurses have access to a training module to support this. Medical staff and nurses were positive about the relationship they had with the consultant geriatricians at RCHT, via the Silverline service. Regarding Healthcare Assistants (HCAs), those working on CATUs are required to take bloods and perform ECG monitoring. This is within the usual scope of HCA working, but not within the skillset of all HCAs, suggesting a need for substantive CATU HCA roles, again to allow for efficient CATU working. Allied Health Professionals (AHPs) working on the CATUs describe having to work in a more rapid way as somewhat challenging.

At a system level, staff would ideally be rotated across different types of healthcare services, to develop a workforce that has a deeper understanding of the entire healthcare system, the skills required for each area, and an appreciation of the challenges faced by their colleagues in other services.

Learning and opportunities

Pressure on the acute hospital in Cornwall to improve patient flow and the subsequent appropriateness of referrals to the CATUs has an impact on how the CATUs can operate. The CATUs located in community hospitals run the by CFT have provided a more sustainable model of CATU care than the CATU located in the sub-acute setting (run by the acute provider RCHT), which has less control over criteria to admit.

Barriers to patient flow

Analysis of length of delays also showed significantly longer delays for CATU patients (18 days) versus matched patients in the acute hospital (8 days).

Long delays following patients being medically optimised for discharge in the CATUs appear to be caused by a lack of resource across a system that is under constant pressure to relieve demand for acute beds. This is exacerbated by a diversity of views about the role of CATUs in the system of care for frail elderly patients, resulting in an inconsistency in clinical risk tolerance and decision-making around discharge.

"Workload is increasing, daily workforce is decreasing, we struggle to recruit."

Cornwall is a predominantly rural county that has a lack of affordable housing, poor public transport infrastructure, a relatively small working-age population from which to draw the workforce, uncompetitive pay rates in social care (compared to other local industries) and a lack of sufficient education and training facilities locally. These factors all contribute to the challenge of staffing in health and social care across Cornwall which ultimately constrains patient flow through the CATUs.

CATUs have not been running with fully agreed staffing levels in place. If the units are functioning on too few staff, patient care is prioritised over discharge planning. Short-term and substantive vacancies have been unfilled for long periods of time, leading to a lack of staff and an increased use of the flexible, yet more costly and less consistent, workforce of bank and agency staff.

Opportunities

> "…it allows us to confidently manage increasingly complex people at home. Because if that fails, we've got a community-based backup plan, psychological safety net for developing more and more community intermediate care."

The national drive to keep patients at home for longer creates a situation whereby increasingly higher levels of acuity are held in the community (e.g. through GPs and virtual wards). The CATUs can act as a 'safety net' for primary care and community services to hold higher acuity and therefore greater clinical risk at home, without adding to the demand on Cornwall's only 'front door' (the ED).

Community hospitals and specifically CATUs are treating patients with unprecedented levels of acuity and complexity, in comparison to how they have operated in the past. This is due to the need to support the acute trust, the ageing population, and attempts to keep patients at home or as close to home as possible. This requires 'a steep learning curve' at all levels, from junior staff right up to senior management developing policies and processes that are fit for this (new) purpose. With more consistent, substantive positions filled, flow would improve, and even more patients could avoid acute intervention.

Community healthcare providers, and those working in primary care, believe CATU beds should be made more accessible to those operating in the community, in order for them to manage their patients more effectively and provide greater continuity of care at place.

Conclusion

The evaluation activity has reinforced cross-CATU learning and the adoption of purposeful PPIE and data collection to support service improvements. Cornwall's health and social care system has a strong culture of innovation and embracing change, and engaged positively with the evaluation, in order to help understand how best to configure acute services in a system facing the challenges of workload, stress and financial constraint seen across England.

The evaluation was not able to reach definitive conclusions about whether investment in CATUs should be continued but we found evidence that they are valuable as part of a whole system, and have a clear place in diversifying the urgent care options available to the growing frail and elderly population. They deliver urgent care, safely, away from the acute hospital, and are at the vanguard of modernising clinical care including the reduction of risk averse and disempowering care. For those contemplating development of CATUs elsewhere it is clear that it is important to consider clinical leadership within units and across the system, alongside flexible protocols, staffing roles and data sharing across providers.

Evaluation to enable scale-up of Community Assessment & Treatment Units (CATUs) in Cornwall and the Isles of Scilly's rural and coastal communities

Context

Whilst the majority of urgent care is delivered in primary care, the demographic shift caused by an aging population has resulted in an increase in the numbers of older patients accessing urgent health and social care services[1]. Between 2014 and 2015, a fifth of people admitted to hospital in England were aged 75 or over, and accounted for approximately 40% of total stays in hospital. This shift toward a more elderly population is set to continue, with the number of people aged 85 and over forecast to increase by two-thirds (compared to a 10% growth in the overall population) over the next 20 years. No single component of the health and social care system can manage this increase in isolation, and calls are mounting for a whole system approach to care[2].

Evidence suggests that functional limitations, comorbidity and lack of social support increase both non-urgent and urgent emergency department use. Older people "are admitted to hospital more frequently, have longer stays and occupy more bed days in acute hospitals compared to other patient groups"[1]. Living in an area of higher deprivation has been shown to predict future levels of hospitalisation, time spent in hospital and the number of admissions, independent of socioeconomic status and behavioural factors[3].

There remains a need to change the mode of care and improve the quality, efficiency and outcomes of care provided[1]. Additionally, a hospital stay can instigate a period of intensive health and social care use[4]. The traditional emergency care model appears ill-equipped to treat those living with frailty. Whilst it is designed to diagnose and treat acute complaints, it is not equipped for subtler threats to older people's health. Admission to an acute hospital setting has been shown to contribute to adverse outcomes for those living with frailty; including functional decline, delirium, impaired mobility and falls[5–7]. Moreover, timing of transfer to community hospital is crucial in order to optimise outcomes for those living with frailty; whereby a delay of more than two days has been found to negatively affect independence outcomes[8]. Offering care to people with frailty in a community setting rather than an acute hospital setting appears to be beneficial in terms of maintaining independence[9,10].

Case analyses and narrative data from older people/their carers suggest that a lack of alternative services is behind many of their visits to acute hospital settings[7]. There is therefore a need for alternative modes of care that can provide a safer alternative to hospital admission that are designed to mitigate the risks of traditional admittance[10]. However, there remains a lack of research into the structure, processes and core components of alternative care provision for those living with frailty[11].

Cornwall

The Cornish population

Cornwall has an older and aging population, with the number of residents aged 65+ expected to increase ahead of the national average in the next decade, suggesting increasing pressure on services in the coming years. As of the last census (2021), 25% of the population of Cornwall were over 65 (compared to a national average of 19%).

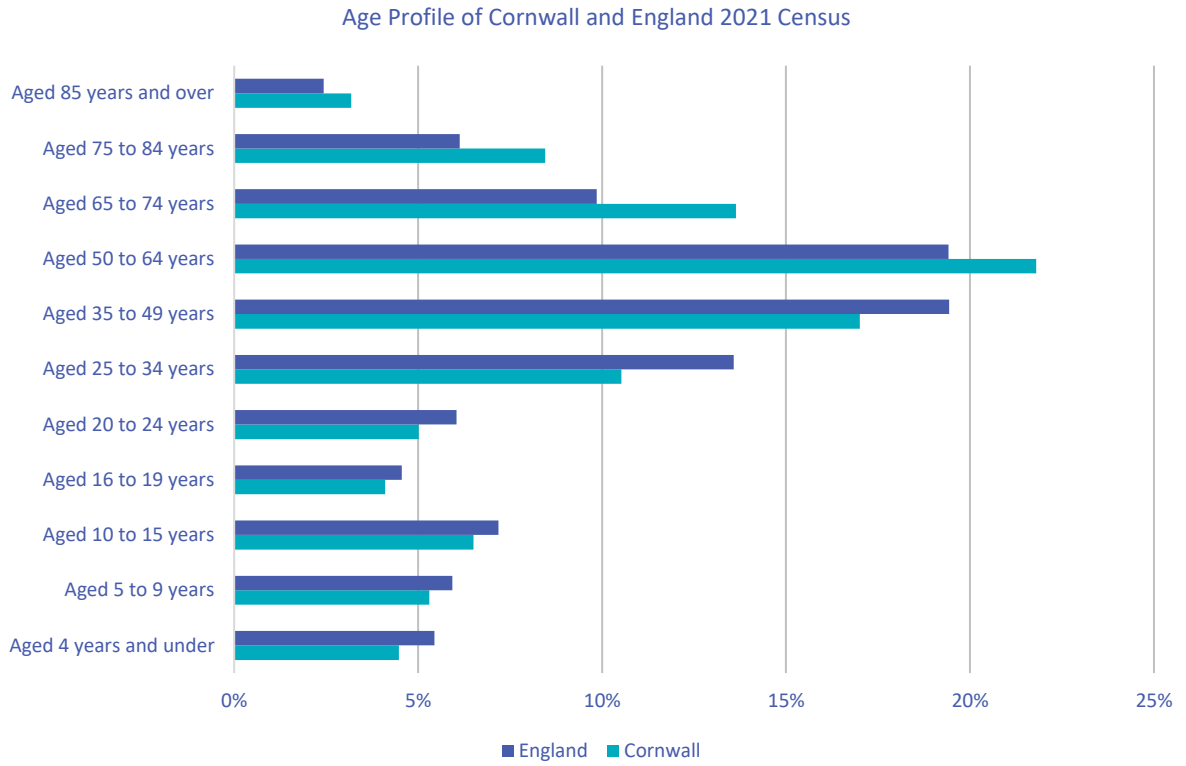


Figure 1. Age profile of Cornwall and England. Source: 2021 Census. [12]

Over 40% of Cornwall and the Isles of Scilly residents live in settlements of fewer than 3,000 people. These isolated communities are spread along a poorly connected peninsula, with affluent areas adjacent to severely deprived communities. Bodmin and Camborne (both hosting Community Assessment and Treatment Units (CATUs)) are conurbations with significant deprivation. The health and care system will need to address rising demand and entrenched inequalities, challenged by limited workforce resources.

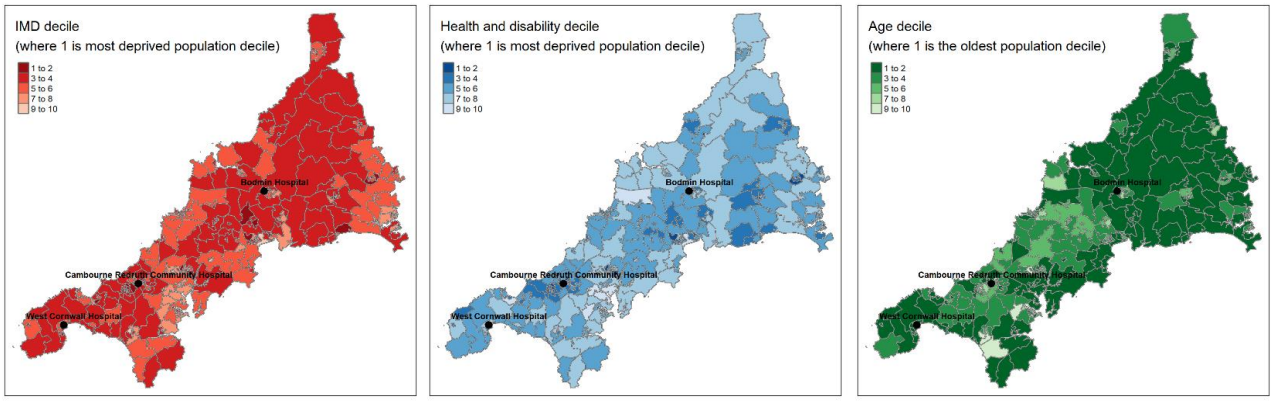


Figure 2. Overall IMD, Health and disability and age deciles across Cornwall. Source: English indices of multiple deprivation, 2019. [13]

The Cornish healthcare system

The healthcare system in Cornwall and the Isles of Scilly (CIoS) is made up of two trusts, Cornwall Partnership NHS Foundation Trust (CFT) and Royal Cornwall Hospitals NHS Trust (RCHT).

CFT is responsible for all community healthcare services in the county, including twelve community hospitals. RCHT is the principal provider of acute care in the country and runs Royal Cornwall Hospital (RCH, commonly known as Treliske) in Truro, and West Cornwall (WCH) hospital in Penzance. Cornwall's recently established Integrated Care System (ICS) is divided into three Integrated Care Areas (ICAs), West, Central and North & East.

Metrics on bed numbers suggest that Cornwall has comparatively fewer beds relative to population size than England as a whole.

Hospital beds per 1,000 population	England	Cornwall and the Isles of Scilly
Total overnight beds	2.3	1.3
General and Acute	1.8	1.2

Table 1. Bed availability in Cornwall and England per 1,000 population. Source KH03 reports. [14]

The rurality of Cornwall means that a large proportion of the population live further from services than average across England (17% of the population of Cornwall versus 73% of the population of England live within a 10 km radius[a] of a Type 1 Emergency Department).

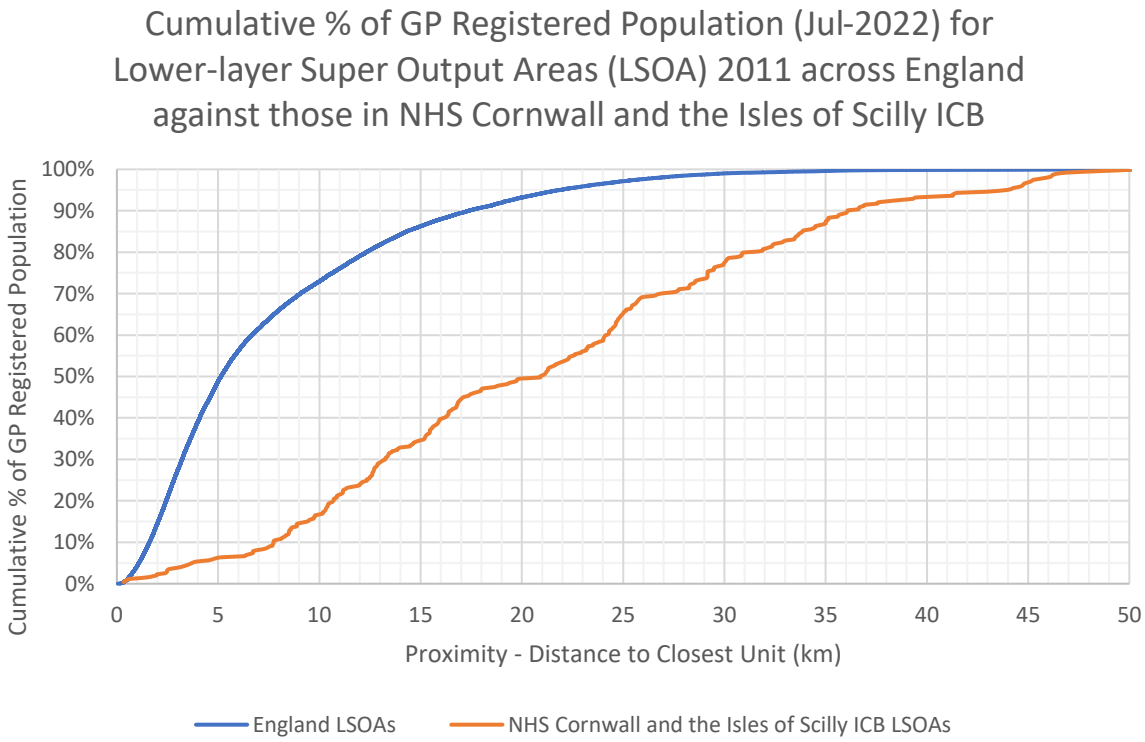


Figure 3. Distance to closest Type 1 emergency unit in Cornwall and England. Sources: ONS Open Geography Portal[15] and DHSC SHAPE Tool. [16]

[a] Radius of the Population Weighted Centroid (PWC) of the Lower-layer Super Output Area (LSOA) of residence

In addition to the distance to services there is also a lack of choice due to the sparseness of services across the county: 51 % of the population do not have a Type 1 Emergency Department within a 20km radius of Population Weighted Centroid (PWC) of Lower-layer Super Output Area (LSOA); compared to around 7% of the population in England. No-one in Cornwall has a choice of more than one Type 1 Emergency Departments in a 20km radius. As a comparison, 49% of the national population have a choice of 3 or more Type 1 Emergency Departments within a 20km radius.

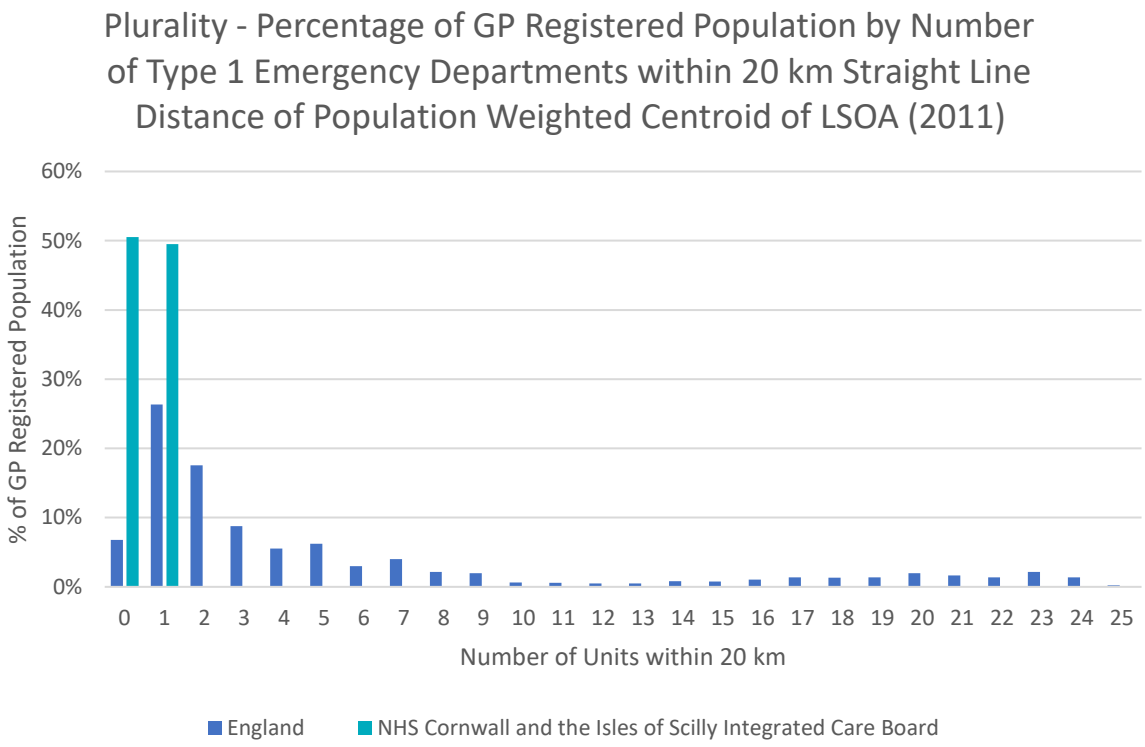


Figure 4. Percentage of population by the number of Type 1 emergency units within 20km in Cornwall and England. [16]

These figures highlight the need for systems, pathways and places to support care in the community and away from acute services.

Community Assessment Treatment Units (CATUs)

CATUs were established as part of the Cornwall and Isles of Scilly (CIoS) COVID-19 response, to divert older patients with frailty from attending Emergency Departments (ED) and treat them closer to their homes, protecting them from COVID-19 and other nosocomial harms, including deconditioning and hospital delirium. The pandemic public health messaging created a situation where older patients with frailty were isolated and confined to their homes for long periods of time.

Diagnostic work undertaken in Cornwall as part of the Embrace Care programme (involving outcome assessments for 265 patients) and identified that those presenting with frailty were more likely to be admitted via an ED, which can be busy and disorientating, with the potential of subsequent ward moves further contributing to confusion. Furthermore, evidence identified that 43% of these patients 'did not achieve their ideal outcome'.

The CATU model of care has responded by seeking to manage care close to home, with as short a stay as possible in a single location, away from the ED and the acute setting. A CATU is a bedded unit, sited

within a community or sub-acute hospital that supports frail patients with an urgent medical need that cannot be managed in the community and would otherwise be presenting at ED.

Four CATUs began operating in April 2020, located at Bodmin Community Hospital (BCH), Camborne Redruth Community Hospital (CRCH), St Austell Community Hospital, run by CFT, and West Cornwall Hospital (WCH) (run by RCHT). The unique situation the pandemic created, gave rise to rapid 'plan-do-study-act' cycles which delivered rapid improvement cycles in the service. These included improved entry pathways, an establishment of a 'frailty phone line' to provide Consultant Geriatrician support, improved communication and relationship with the South Western Ambulance Service (SWAST) and regular team case reviews to foster shared learning and continuous improvement.

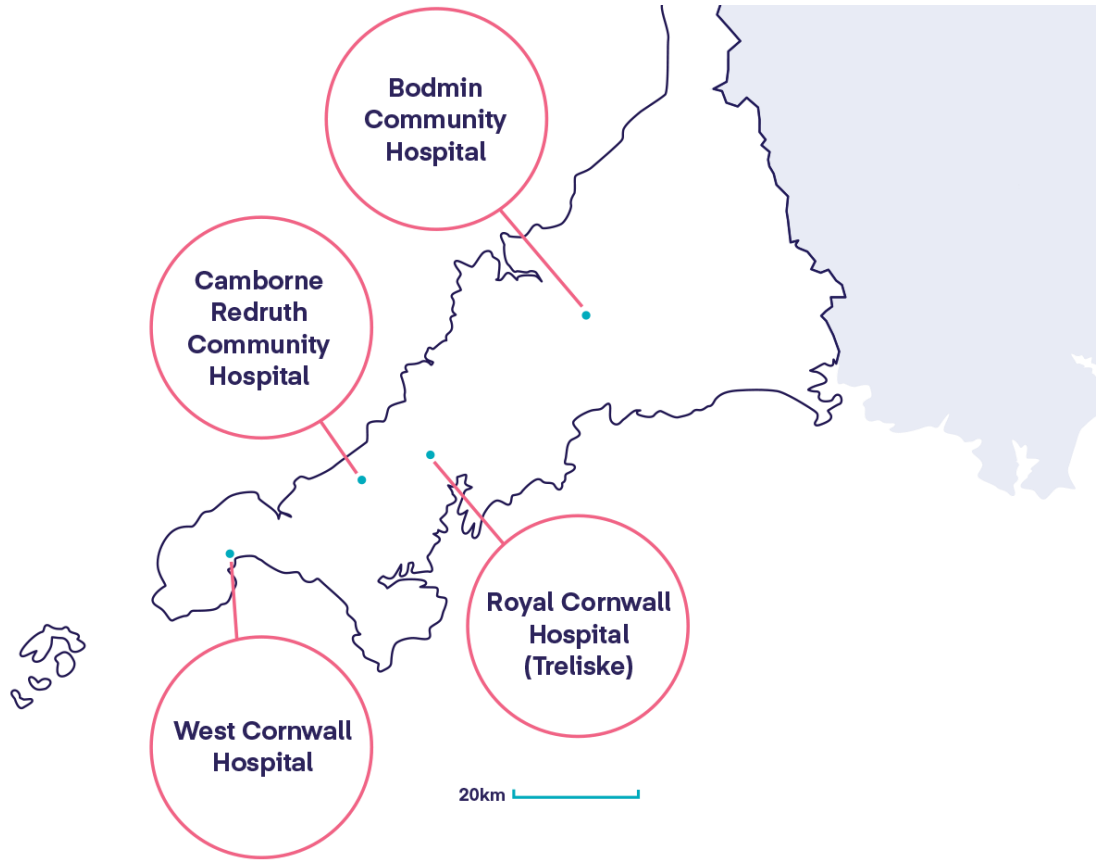


Figure 5. Location of CATUs in Cornwall.

The CATU running from St Austell Community Hospital closed in January 2021 leaving three sites taking CATU patients across Cornwall. The CATU at BCH has 24 beds and the CATU at CRCH has 21 beds, giving a total of 45 beds across the two community hospitals. The third site, the 'sub-acute' WCH, does not currently have permanently assigned CATU beds, but patients can be assigned as 'CATU patients' on one of its wards (Med 1).

The two community-hospital CATUs are 24-hour admitting, nurse-led units, supported by GPs (usually from 8am to 8pm) and with access to a Consultant Geriatrician via the Silverline telephone service. They operate on a 'multidisciplinary team' (MDT) model to draw on diverse clinical and professional knowledge (from the nursing, allied health professional (AHP) and medical teams) to discuss patients and assign tasks to best support treatment and discharge planning.

CATUs sit as part of a wider offer of care for the frail elderly. Figure 6 below offers a sense of the different organisations involved in a patient's journey.

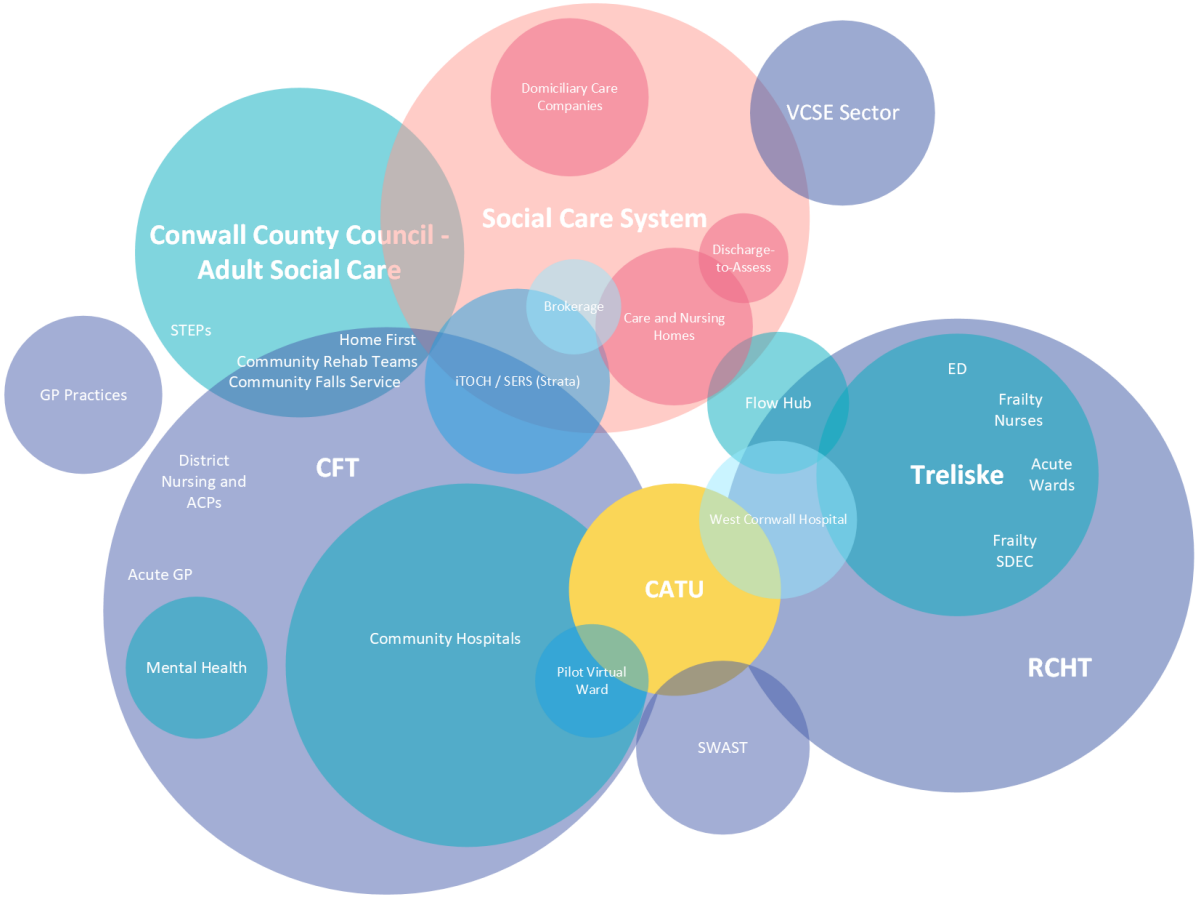


Figure 6. The system in Cornwall for older people with frailty.

The CATU model is designed to offer rapid assessment and treatment for people over the age of 65 with a frailty score of five or more (although lower scores may be considered appropriate). Each CATU has x-ray and point of care testing facilities, such as bloods, expanding the traditional community hospital offer. Admission is theoretically for a maximum of 72 hours.

The guidance on appropriate criteria for CATU admission is as follows:

- Can't be managed at home
- Age 65+
- Frailty syndrome (see Appendix 4 for a full explanation of how clinical frailty is assessed)
- Falls
- Dementia
- Delirium
- Functional decline
- Poor mobility
- Parkinson's disease
- End of life care (in some cases)

CATUs differ from community hospital wards in that they can treat higher acuity patients and take a rapid turnaround approach, as opposed to community wards, which work with medically stable patients using a rehabilitation approach. CATUs differ from acute hospital wards as they are nurse-led and led medically by GPs rather than Consultants. They are also referral-only (i.e. patients cannot just turn up at the door for treatment).

The Evaluation

Health Innovation South West (South West AHSN) and NIHR Applied Research Collaboration South West Peninsula (PenARC) have been working in collaboration with the CATUs and the wider health system in Cornwall to learn how CATUs can best support frail patients with urgent needs within the community and understand the impact that the CATUs have on ED referrals and hospital admissions, to support further development of the model.

The evaluation is funded via the NHS Insights Prioritisation Programme and focusses on answering the following questions:

1. Who is being referred and supported by the CATUs?
2. How are the CATUs being delivered day to day?
3. How can CATUs fit into the infrastructure of care in the community and alongside acutes?
4. What has been the overall impact of implementing CATUs on system use across Cornwall?
5. How best can the CATUs continue to support patients effectively and efficiently?
6. What are the opportunities and key learnings for the Cornwall system?

Method

To address the evaluation questions, a mixed-methods, developmental evaluation design was implemented between April 2022 and March 2023. Data were gathered from the following sources:

- Site visits to each of the three CATUs in Cornwall.
- Three facilitated workshops with CATU staff in January, July 2022 and March 2023.
- Six cross-CATU learning forum sessions with representation from all three Cornwall CATUs and Gloucestershire CATU.
- 21 formal interviews with CATU staff, on site or via MS Teams.
- 24 formal interviews with stakeholders (from CFT, RCHT and the Integrated Care System (ICS), as well as wider system stakeholders including respondents from SWAST, the domiciliary care sector and the voluntary, community and social enterprise (VCSE) sector) on site or via MS Teams.
- Staff surveys (26 responses to a workforce experience survey, 21 responses to a general staff survey).
- Interviews of four CATU patients with the support of student nurses at BCH and CRCH.
- Locally collected CATU aggregate referral data from two CATU sites: BCH May 2022-end December 2022; and Camborne Redruth CATU August 2022-end December 2022.
- Pseudonymised patient-level system data for completed spells for the BCH and CRCH CATUs and matched controls from Royal Cornwall Hospital (16th May 2021 to 31st Jan 2023).
- Admissions data from WCH CATU patients (April 2020 to December 2022).
- Workforce data from CFT for BCH and CRCH CATUs.
- Review of CFT patient experience team reports for 2021.

All quotes used in the report are deliberately anonymous, including referring to all interviewees and respondents as they/their. Both interviewees and staff survey respondents are referred to as 'respondents' for brevity.

Additionally, a programme of Patient and Public Involvement and Engagement (PPIE) was undertaken to support the evaluation and service development, as follows:

- Peninsula Public Engagement Group (PenPEG) PPIE session in October 2022 run by PenARC, supported by Evaluation Researcher
- Two BCH CATU PPIE sessions run by PenARC, supported by Evaluation Researcher (December 2022 and March 2023)

Disclaimer

The findings from the report may relate to the CATU model generally or specific CATUs. Findings are not necessarily generalisable across sites. Where data is used from one site specifically this is highlighted, however the qualitative references may be referring to one or all of the CATUs. We have tried to clarify this where possible but there may be instances where general points are made that do not necessarily apply to all the CATU sites.

1. REACH: Who is being referred and supported by the CATUs and how?

Who is being referred to the CATUs?

1.1.1 Who is being referred and are they appropriate referrals?

Locally collected data from the BCH (May to December 2022) and CRCH (August to December 2022) CATUs show that on average, BCH sees 88 referrals and CRCH CATU sees 43 referrals each month.

	Referrals (average monthly)	Admissions (average monthly)
BCH	88	66
CRCH	43	33
WCH[b]	-	20

Table 2. Referrals and admissions per CATU.

Not all of these referrals were admitted (around 75% for BCH and 77% for CRCH) as many had no criteria to admit. Examination of the proportion of referrals received that met the 'criteria to admit', i.e. that they met the inclusion criteria (Appendix 2) shows just 54% of referrals were deemed to be appropriate. While CATU inclusion criteria are standardised into the Standard Operating Procedure (SOP), there is variance in the inclusion criteria held in different places[17–19].

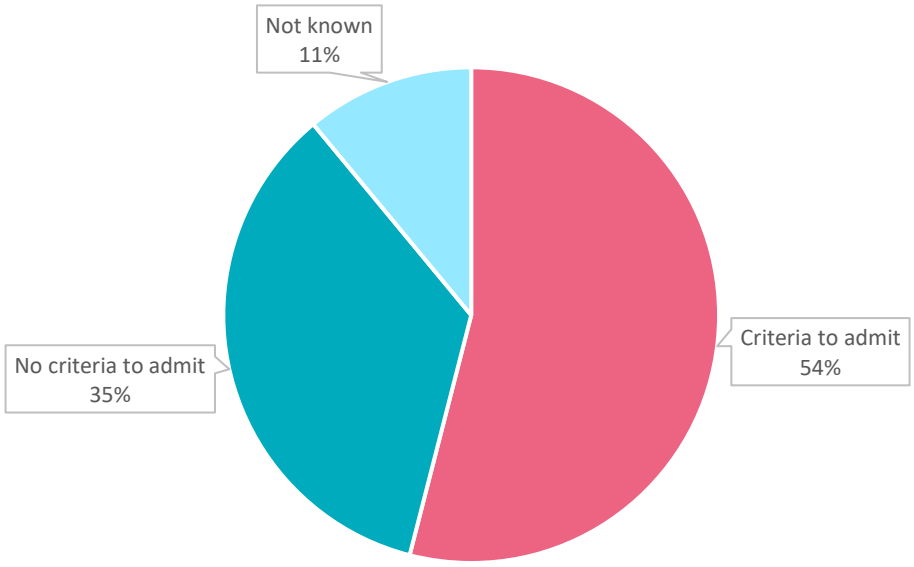


Figure 7. BCH (May to December 2022) and CRCH (August-December 2022) CATU data: criteria to admit.

[b] Data on the number of referrals into WCH was not collected as part of the evaluation.

1.1.2 Increased patient complexity and need

Many respondents (both CATU staff and wider stakeholders) discussed the increased complexity of the CATU-appropriate patient population (frail elderly people) compared to pre-pandemic levels.

One voluntary sector stakeholder stated:

> *"It came as a huge shock when lockdown ended, because when families and informal carers were eventually able to go meet in person, they were shocked at the deterioration [of] their loved one's health…[and now] some people are stagnating or they're deteriorating in their condition, particularly those that are frail. We've seen a huge increase in the prevalence of low level…mental health, anxiety, agoraphobia, reclusive behaviour. Lack of self-confidence, self-esteem, the ability to be able to go out and just trust themselves…"*

The experience of CATU staff mirrors this wider picture. They perceive current CATU patients to be far more 'complex' and deconditioned than they were when CATUs were first opened, in early 2020. As suggested by the quote above, this complexity manifests not only in increased acuity and healthcare needs, but also in increased social need. The perception that CATU admissions might be wholly or partly 'social' in nature was discussed by many CATU staff respondents and perceived in variable ways. Some felt that solely 'social' admissions were not 'CATU-appropriate'; others felt that the CATUs might be a necessary 'place of safety' for frail patients who might not yet be suffering from an acute medical need but would probably soon have medical needs due to their level of social need – in other words, the unpicking of the medical from the social is not straightforward.

Indeed, some staff viewed patient need more 'holistically', e.g.:

> *"It's very rare that you get an elderly person with one medical issue. They usually come with a catalogue…and you alter one thing, and something else sets off, their heart failure flares up, they then become incontinent, they then have mobility issues. There's always something else, it's never just for one simple thing."*

By contrast, the idea that a patient should be viewed 'holistically' was viewed by some as counter to the CATU way of working, and potentially was the source of more delays. One CATU worker suggested that for a CATU to function properly, they would need to see their patients more like ED does where, for example, if a person went in with a broken hip, they would simply treat the injury, whereas in CATU "we tend to explore a lot and then find lots of problems". Sometimes referrals might take place where there has been carer 'burnout', potentially suggesting a more 'social' than 'medical' referral.

These differing views and experiences contribute to the perception of CATU referrals as 'appropriate' or 'inappropriate' and speaks to a wider question of the role of the CATUs at a system level, and who might be reliably deemed the 'right CATU patient', and thus what the most suitable referral criteria might be. This is a source of ongoing debate at both the CATU staff level and more widely in the Cornwall system.

1.1.3 End-of-life care/palliative patients

Senior medical and nursing staff at the CATU regard palliative care as an important aspect of the CATU remit. They feel that CATU staff are good at identifying when patients might be entering their 'end-of-life' phase, and the CATU is a safe and appropriate place for end-of-life patients to have their symptoms managed palliatively. CATU inclusion criteria explicitly state that palliative care is within the CATU remit and CATU staff feel confident to manage end-of-life care. It has been suggested that this

is the reason for CATUs having a higher death than on other community hospital wards: “because of our remit…to not escalate…we hold people that other community hospitals will transfer to the acute”.

1.1.4 Where are patients coming from across the region?

Figures 8 and 9 show the geographical spread of BCH and CRCH CATU patients across the county using data from population weighted centroids from the medium super output areas (MSOA) across Cornwall. Both figures show county wide reach with stronger links around their locality.

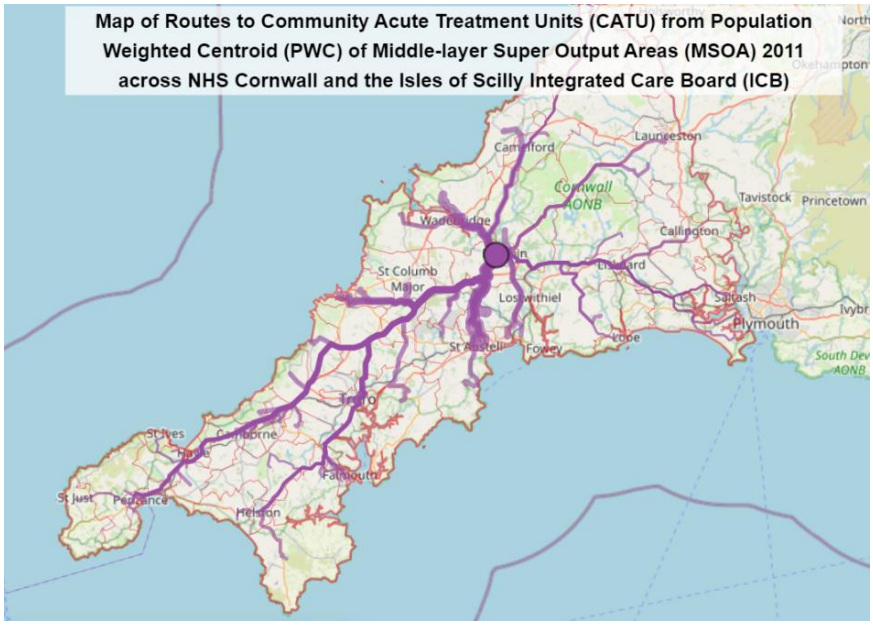


Figure 8. Geographical spread of BCH CATU patients. [c]

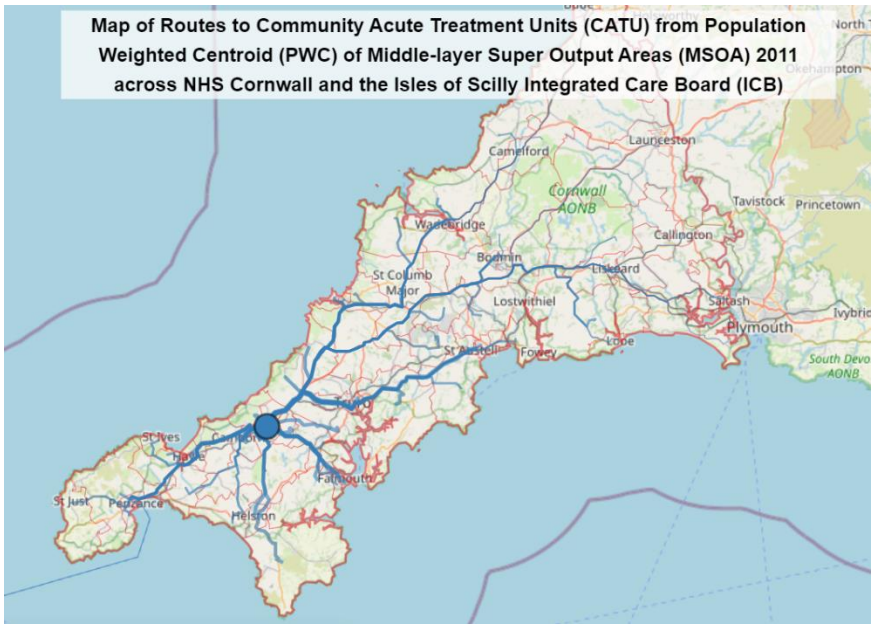


Figure 9. Geographical spread of CRCH CATU patients. [d]

[c] Source: Office for National Statistics licenced under the Open Government Licence v 3.0. Contains OS data © copyright and database right [2023]. Contains Parliamentary information licenced under the Open Parliament Licence v 3.0

[d] Source: Office for National Statistics licenced under the Open Government Licence v 3.0. Contains OS data © copyright and database right [2023]. Contains Parliamentary information licenced under the Open Parliament Licence v 3.0

The wide geographical spread of patients to the CATUs means that on average, the proximity of the CATUs is only slightly closer to home than the acute hospital at Treliske (RCHT).

	Home to CATU (km)	Home to Treliske (km)
BCH CATU patients	27.9	32.6
CRCH CATU patients	17.7	20.8

Table 3. Average distance (KM) from population weighted centroid of MSOA of patients home to CATU and to RCHT.

	Home to CATU (mins)	Home to Treliske (mins)
BCH CATU patients	26.2	34.4
CRCH CATU patients	22.7	22.3

Table 4. Estimated average duration of travel from population weighted centroid of MSOA of patients home to CATU and to RCHT.

However, of the population of patients admitted to CATU, 42% live within 20km of the CATU they were admitted to. Of those same patients, 30% live within 20km of the acute hospital at Treliske (RCHT). This shows that a higher proportion of people have been treated closer to home.

1.2 Who refers to the CATUs and when are referrals taking place?

There are several referral routes into the CATUs, including:

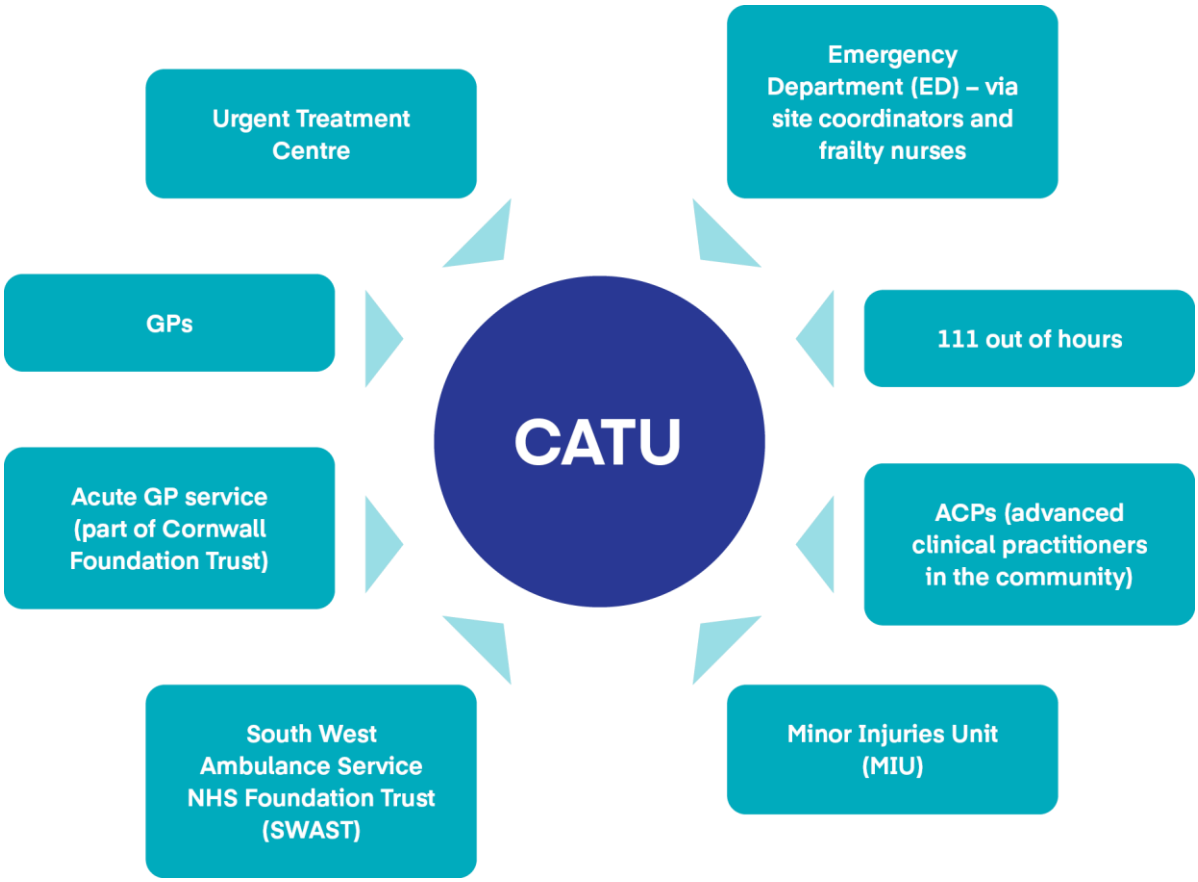


Figure 10. Referral routes into the CATUs.

Data from the BCH and CRCH CATUs show the main routes into the CATU to be via the ambulance service (SWAST) and the Emergency Department (ED), followed by GPs and the Acute GP.

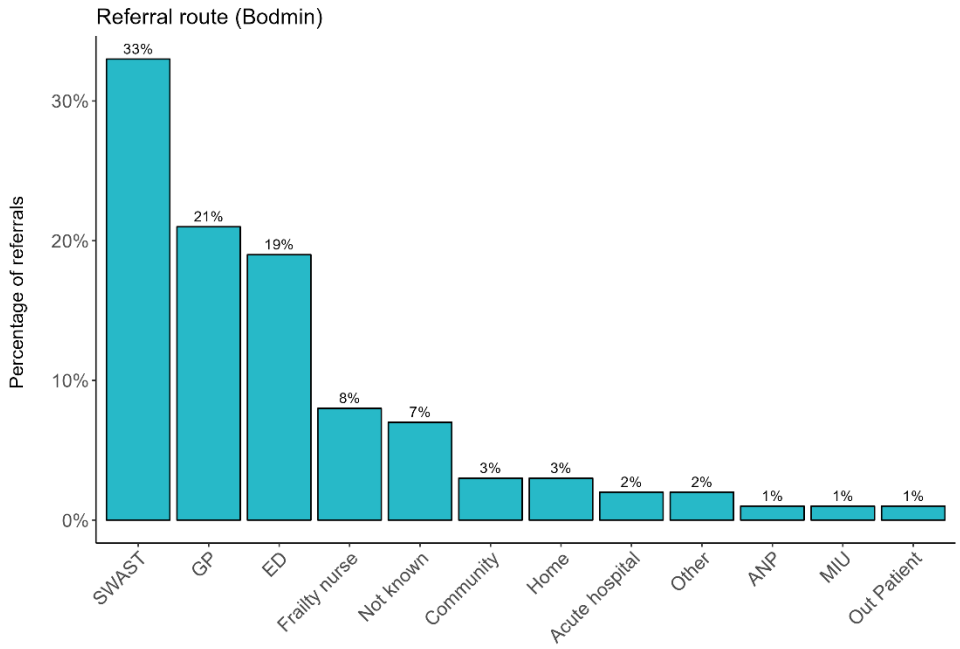


Figure 11. Referral Route into BCH CATU (May to Dec 2022).

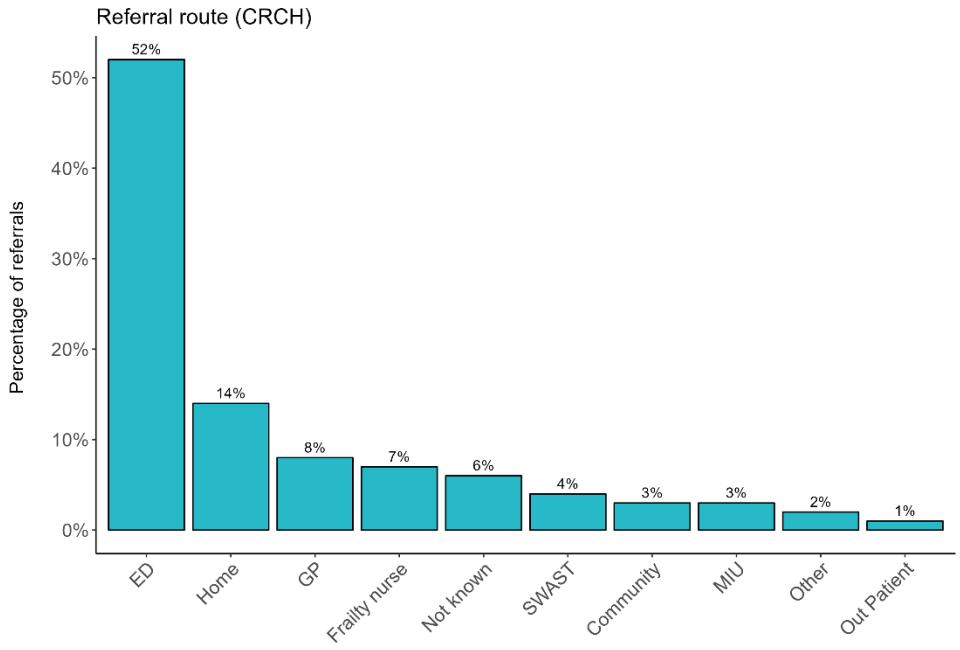


Figure 12. Referral route into CRCH CATU (Aug to Dec 2022).

Interestingly, the primary referral route into the two CATUs is different. This may be a result of different referral requirements for the two CATUs during a large part of the timeline under review. Referrers noted a difference in the number of calls required to make a referral to the different CATUs, noting that BCH only took one, CRCH took two and WCH required three calls. CRCH and WCH have since (in Autumn of 2022) adapted their referral process to just one call to make it easier for referrers.

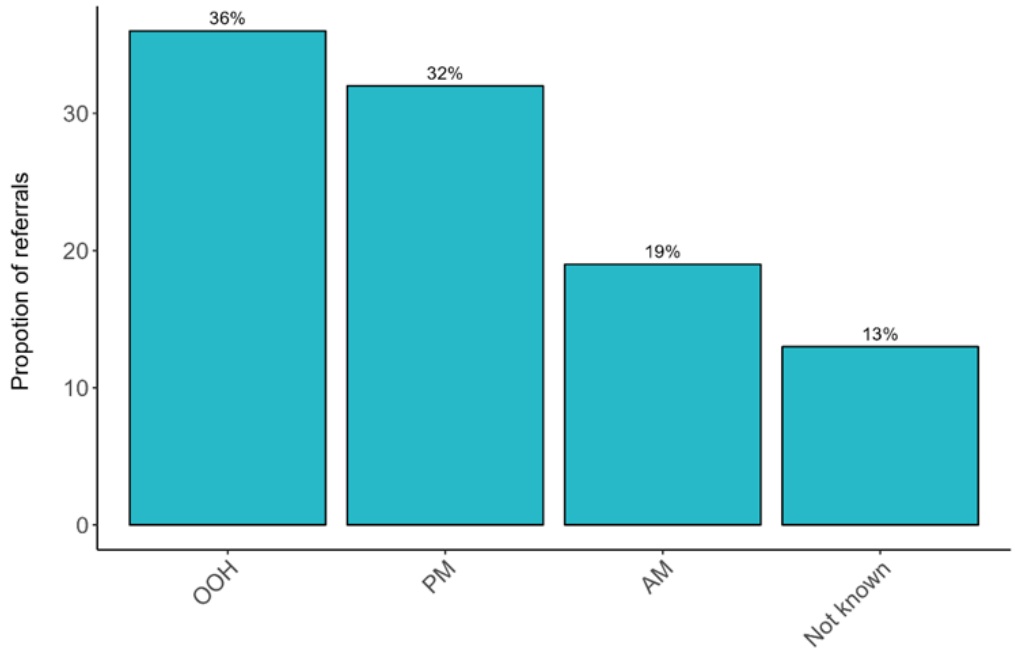


Figure 13. BCH CATU data: time of referral (May to August 2022).

BCH CATU's local data (figure 13) shows that a high proportion of referrals take place out of hours (similar data from CRCH is not available). BCH moved to a 24-hour admitting model fairly quickly, in late May 2020 and CRCH followed in early June 2020, which was viewed as positive by both CATU staff and referrers.

Early on, all CATU referrals were made via the Acute GP service, but this system was seen as cumbersome, and increased the workload of the Acute GPs. Referrals can now be made directly to CATUs by telephone. CATU staff and stakeholders stated that they prefer the direct referral system. Senior staff felt that direct referrals were of "higher quality" than referrals via the Acute GP because the latter had a predominantly medical focus, whilst direct referrals made to a nurse on the CATU allowed for exploration of other aspects of the patient's care needs and behaviours.

1.2.1 Stakeholder experience of referring to CATU

Referrer-stakeholders described variability in responses to referrals. Two stakeholders stated that it was "very person-dependent" whether referrals would be accepted: some felt that "it depends on the person you get on the end of the phone". Senior CATU staff acknowledge that there can be differences in referral outcome at times, but regard this as a result of bed availability, operational pressures and a necessary flexibility in acceptance criteria, rather than inconsistency.

Many referrer-stakeholders described difficulty in accessing CATU beds because they are unavailable, e.g. "It's just frustrating because they're often full, we get met with that a lot"; "they don't really function as they've got no beds". One Acute GP stakeholder stated that they were only able to get a patient admitted to the CATU around once per day but had many more CATU-appropriate patients. Nevertheless, one community referrer described positive referral experiences, stating they had recently referred two patients and both had been accepted, both had had short stays (48 hours and four days respectively), and both had returned home with no additional care needs.

SWAST are one of the main referrers into CATUs. A senior SWAST stakeholder believed that there was variability between individual ambulance crews as to whether they will refer into CATUs: whilst most crews have attempted to refer into CATU at least once, referral rejection has put some crews off

attempting to refer again. One crew member described it as "very hit or miss" whether a referral will be accepted, and they described their referrals as consistently appropriate, although this is not reflected in the data collected locally by BCH CATU, which described over a third of direct SWAST referrals as not having criteria to admit. Lack of bed availability across the CATUs, caused by wider system pressures, is also a reason for rejection of referrals.

However, crews tended to be positive about CATUs, tempered by a wish for increased and more consistent access:

> *"I really, really, really, really think they're important to us…CATUs have to stay, they have to stay because they're so important. They just have to be a little bit more accessible. They need to be a little bit more robust and dynamic. And they need to take patients and they need to be bigger."*

> *"I don't think we could cope here if you took the CATU away."*

Stakeholders from RCHT were also positive about CATUs and felt that there were many patients arriving at ED "who should never have arrived [at ED] in the first place" but should have been conveyed directly to the CATU. One reason given for this was that CATUs have limited receiving hours, causing crews to convey to ED, although BCH CATU has had 24 hour admitting arrangements since May 2020.

Who is being admitted to the CATUs?

Since the CATUs opened in April 2020 up to the end of December 2022 (33 months), they have supported nearly 4,000 patients (BCH CATU have supported 2,189; CRCH CATU have supported 1,037 and WCH have supported approximately 676 patients).

Table 5. Annual admissions for each CATU.

	2020	2021	2022	Total
BCH	525	767	897	2,189
CRCH	419	361	257	1,037
West Cornwall[e]	393	215	68	676
Total CATU admissions	1,337	1,343	1,222	3,902

Monthly admissions data shows fairly consistent variance over time for BCH and CRCH CATUs (excluding the spring/summer of 2022 for CRCH when they closed due to lack of medical cover). However, CATU admissions to WCH have significantly reduced since the first year of operating.

[e] Admission numbers for West Cornwall are calculated using assumptions from referral route into the unit.

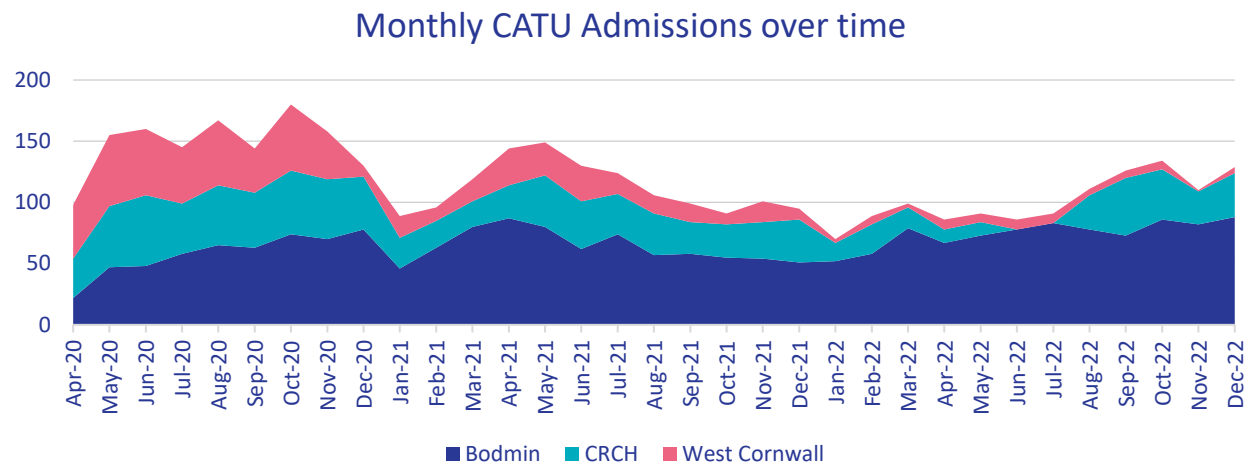


Figure 14. Admissions over time. Rio data (BCH and CRCH) and local data (WCH). April 2020 to January 2023.

System level data shows that CATU patients have an average age of 84, although a substantial proportion of patients are older. Frailty data (where collected) also shows that 23% of patients are severely frail (have a Rockwood clinical frailty score of 7 or more) and 44% are moderately frail (Rockwood score of 6). Assuming the sample of patients with the Rockwood score represent all patients in the CATU, around a third (32%) of the patients supported by the CATU are considered mildly frail, vulnerable or managing well.

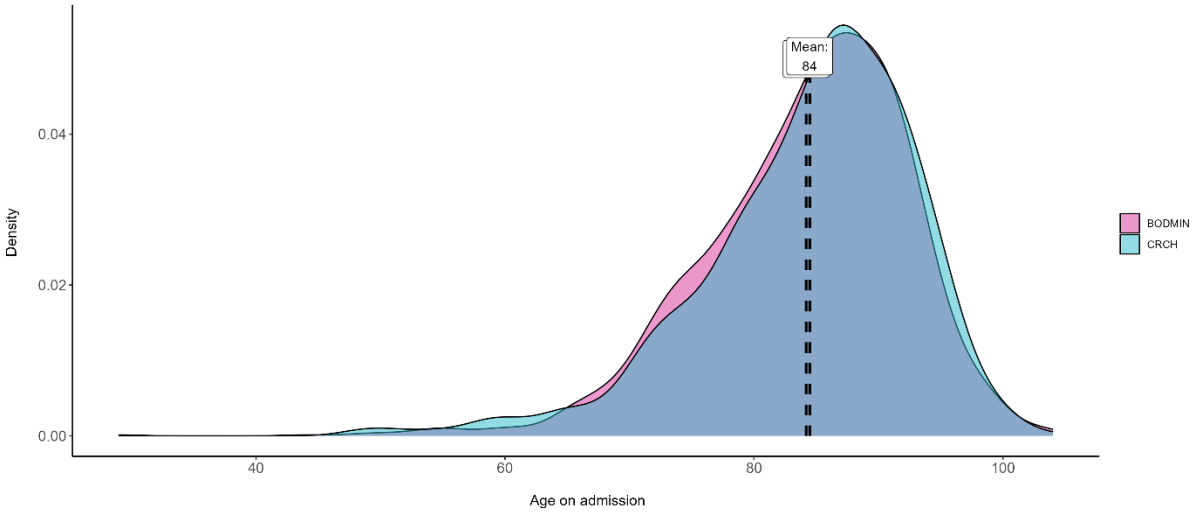


Figure 15. Age range of patients. CATU System data, May 2020 to Jan 2023.

Frailty score	Description of score (see Appendix 3)	% patients
1	Very Fit: people who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.	0%
2	Well: People who have no active disease symptoms but are less fit that category 1. Often they exercise or are very active occasionally, e.g. seasonally.	0.7%
3	Managing well: People whose medical problems are well controlled but are not regularly active beyond routine walking.	2.2%
4	Vulnerable: While not dependent on others for daily help, often symptoms limit activities. A common complaint is being 'slowed up', and/or being tired during the day.	8.9%
5	Mildly frail: These people often have more evident slowing and need a little help in higher order Instrumental Activities of Daily Living (IADLs, for example: finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.	20.6%
6	Moderately frail: People need help with all outside activities and with keeping house. Inside they often have problems with stairs and need help bathing and might need minimal assistance (cuing, standby) with dressing.	44.4%
7	Severely Frail: Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at a high risk of dying (within 6 months).	17.2%
8	Very severely frail: Completely dependent, approaching the end of life. Typically, they could not recover from even a minor illness.	3.1%
9	Terminally ill: Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.	2.9%

Table 6. Description of CATU patients' frailty scores based on the Clinical Frailty Scale. [20]

The figure below shows the diagnosis chapter for the patients admitted to CATUs. This shows the most common reasons for referral to the CATUs are from external causes (e.g. injuries after a fall), abnormal lab findings, and diseases of the genitourinary, respiratory and circulatory systems. Taken with the frailty scores, this demonstrates the urgent medical needs of the population of patients admitted to the CATUs.

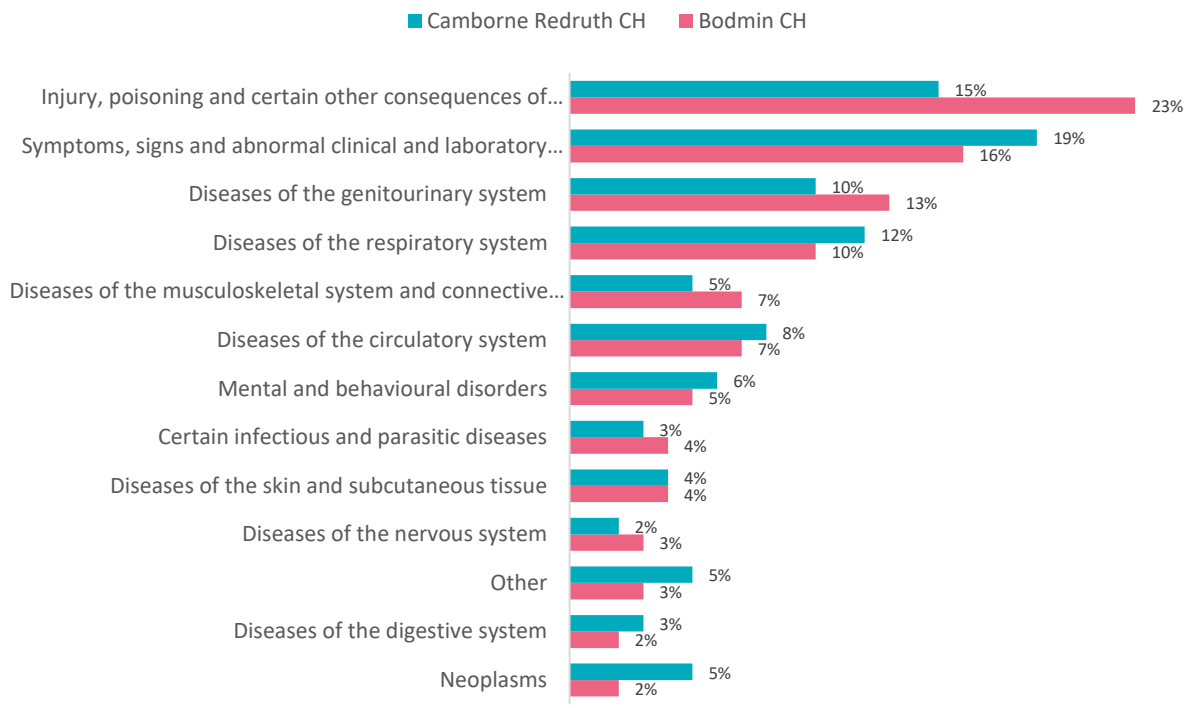


Figure 16. Diagnosis Chapter for Patient Spells. CATU System data, May 2020 to Jan 2023.

1.3.1 Bed-base Availability

Each CATU faces constant challenges around availability of beds within their units, for a range of reasons. Firstly, bed availability can be affected by requests from Treliske to take 'core bed' patients, i.e. non-CATU patents, when operational pressures are high in the acute setting. WCH and CRCH staff in particular feel that the pressure of patient flow out of Treliske impacts on their ability to control their own patient flow. A range of factors affect this, including 'front door' pressures, complexity of discharge, community beds being full, geographical factors (proximity to Truro), acuity of patients they can take, and organisational relationships.

The wider issue of available domiciliary and bedded care (care homes and nursing homes) in the community in Cornwall coupled with the complexity of CATU patients' needs also accounts for difficulties around bed-base availability and patient flow.

Consequently, a high proportion of beds are usually taken up by patients who are 'medically optimised' and awaiting discharge to a care/nursing home, or back to the community with a package of care, or awaiting a community hospital rehab bed. The result is a severely reduced working bed base, limiting the ability of each CATU to operate as intended. All CATUs reported having very few available beds each day to accept new CATU patients.

BCH CATU took part in an audit of bed availability during July 2022. They counted the number of beds available, the number of people awaiting discharge and the total number of admissions and discharges

made at three time points each day. Results showed that between 6 and 17 of the 24 beds at BCH were occupied by patients who were ready for discharge and that very few (on average three) beds were available at any given time point.

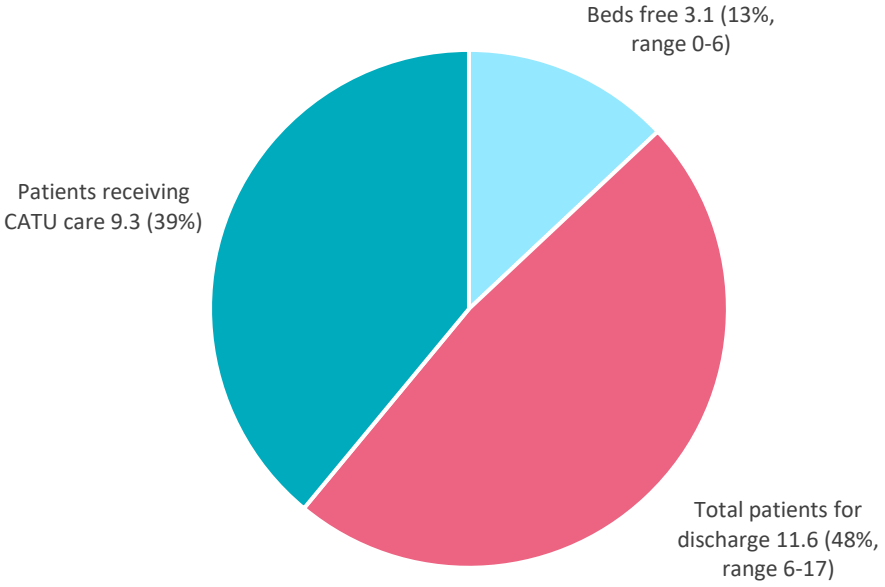


Figure 17. BCH bed availability (average per day, July 2022).

The referral route and availability of side rooms can also play a part in acceptability of patients. Patients are required to be SAMBA II tested (rapid testing for COVID-19) prior to being placed on a ward with other patients. If patients come through ED they will already have been SAMBA II tested so can go straight onto a ward. If they have arrived via another route, they must be first assigned to a side room and SAMBA II tested on the CATU. This can create difficulties in accepting patients as there are often not enough side rooms available.

2. DELIVERY: How are the CATUs being delivered day to day?

2.1 What is the patient journey through the CATUs?

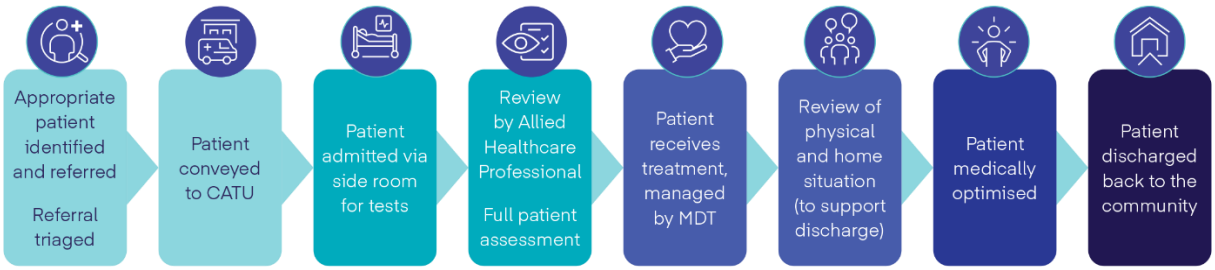


Figure 18. Planned patient flow in and out of the CATU.

2.1.1 Assessment and treatment

Once patients are referred into the CATU, there is an aim to triage, review medications, and create a discharge plan on admission, with a 'guide' target of 72-hour turnaround (rather than a firm rule). Respondents from a range of staff groups challenged the idea of 72-hour turnaround on the basis that social and medical needs have increased and become more complex. Indeed, the national drive to keep patients at home longer[21] creates a situation whereby increasingly higher levels of acuity are held in the community, which can be seen as one of the strongest arguments for the need for CATUs, a point that was raised by both CATU staff and wider stakeholders. One staff member described how hard community services work to care for people at home, but

> *"it's usually when that's all failed, that they then come to [the CATU]. So immediately then thinking, well, actually, they've gone past that point of being a quick-fix turnaround, because they've been trying for the last week to support that person at home."*

In other words, the CATUs can be seen as a 'safety net' that allows community services to keep patients out of hospital as much as possible:

> *"There's a lot of challenge that I hear from a kind of, we should just be managing people at home, and while I absolutely believe in the home-based model, I also know it will fail if it doesn't have a backup plan."*

Nevertheless, this interface with community services poses challenges; another staff member suggested that 'clinical risk' is potentially being held too long in the community, and patients should be referred in earlier if CATU treatment is to be rapid, alluding to pressures and under-resourcing in the community leading to insufficient care at home.

There is also an intention that therapy engagement (physiotherapy and/or occupational therapy) should take place within 24 hours of patients arriving. However, there were clinician differences of opinion of this aspect of the set procedure. For some it was seen as essential, citing avoidance of lost muscle mass and strength. Others stated that patients were very often too unwell to be seen on the

first day, and therapy engagement could be delayed for another for 24 hours to ensure patients were well enough to work with the occupational therapist and/or physiotherapist.

The majority of CATU care is delivered within the CATU, although patients must also be transported to other sites for some tests. BCH and WCH staff expressed a need for additional testing capabilities on site, to reduce the need to transport patients to Treliske. BCH installed a CT scanner on site in February 2023, but access is somewhat restricted as transfer from the CATU to the CT scanner (across the car park) must be done by (non-emergency) ambulance, and occasional lack of staffing restricts access to certain types of investigation.

2.1.1.1 CATU approach to 'ceiling of care'

The CATU approach to ceiling of care – "the highest level of treatment deemed appropriate by a medical team, aligning with patient and family wishes, values and beliefs"[22] – is conservative, based on a central assumption that for certain patients, particularly frail patients, medical interventions can cause more harm than good, and therefore conditions for these patients might be managed in different ways than for the general adult population. Many patients admitted to CATU have a Treatment Escalation Plan (TEP) in place, which specifies the ceiling of care to which the patient wishes to adhere, often specifying limited intervention and a 'DNR' ('do not resuscitate') order. TEPs are reviewed or introduced on admission.

This explanation from a CATU clinician captures the essence of this CATU approach:

> *"…that requires quite a bit of robust understanding of say, for instance, every chest pain, if you're 90 and you've got chest pain, you are unlikely to benefit from any sort of cardiothoracic intervention, and it may well do you harm and so you manage that, what we say is medically or conservatively, so that would be pain relief, medicines to thin your blood, monitoring, but an understanding that actually, you might die of a heart attack. And so you need the skills that are the medical [and] clinical skills, but you also need the skills to be able to manage that…to some people, and it's a valid feeling, that's ageism. So we have had that challenge, I suppose from some people who have worked within the CATUs, and that has got to a point with some of them where they can't work in that model, because they are they are unable to keep older people out of hospital, out of secondary care…*
>
> *"…I think it's really important to make sure that people understand that you are not denying people care, medical intervention, that would make a difference to them. So that's not what it's about. It's not rationing, it is understanding that even if you sent them to [the acute hospital], yes, it might be off of your hands, but actually, nothing materially is going to change for that person. And actually, it may even bring harm…*
>
> *"I think that's a sort of attitude and or buying into the concept. And my evidence for that is that we have had people who don't buy into the concept who feel very strongly that actually the idea of the CATU i.e. frail, elderly people kept out of acute hospitals, they don't, they absolutely disagree with the concept. And so then it becomes very difficult for them to work in that environment…for some people, it can feel very uncomfortable…it can feel like ageism."*

2.1.2 Access to medication

CFT runs its own ward pharmacy service, although medications for the BCH and CRCH CATUs are dispensed by the RCHT pharmacy at Treliske. CFT ward pharmacists work Monday to Friday, so there is no pharmacy cover at the weekends, although both CATUs are covered by comprehensive PGDs[f]. There are also a limited number of courier trips to Treliske per day for medications. For instance, BCH CATU has three courier runs per day (Monday to Friday), with the last courier leaving Bodmin at 3pm, and one run per day at weekends.

The current pharmacy and medications service and model was put in place prior to the CATUs being created, with limited adaptations since then. The model and resource was designed to suit the level of need found on a rehab ward; in other words, for lower acuity and lower turnover of patients. However, the CATU way of working creates increased need for access to medication due to higher patient complexity and rapid turnover. The current model was described by one stakeholder as "woefully inadequate" for the level of need on a CATU. NICE guidelines state that "people who are inpatients in an acute setting" should have medicines reconciliation completed within 24 hours of admission[23]. One member of staff noted that the current level of pharmacy resource assigned to the CATUs means that it would be challenging to meet this standard consistently.

This leaves large periods of time where patients may be referred and potentially have no access to the medications they need, particularly in the evenings and at weekends.

Additionally, CRCH CATU is currently advertising a pharmacy technician post which has been vacant for over a year; additional work like this often falls to nursing staff. One CFT respondent stated that "there is just no support there for nursing staff to get the medicines right. So nurses are having to do a lot of the processes because there's no one to do it."

2.1.3 Patient record systems

The two health trusts in Cornwall, CFT and RCHT, do not share a common electronic patient record (EPR) system, meaning that healthcare staff are unable to access the full history of a patient if they have been treated by both trusts. The EPR system used by CFT is Rio, while RCHT uses several systems, including the Nerve centre EPR and Oceano PAS (Patient Administration System) in the ED. CATU staff expressed frustration with being unable to gain a true picture of a patient's health record, relying on patient or family/carer recall at times. One RCHT Nurse who held a Rio Card described the degree to which it improved their ability to care for patients, because they could access a great deal more of a patient's medical history. One CFT pharmacist said RCHT pharmacists not being able to see the whole patient record is potentially unsafe in terms of medicines review and reconciliation.

2.1.4 Discharge

Once patients are medically fit, they are readied for discharge. The CATUs see an average of 2 discharges a day (range 0 to 9). Bodmin has an average number of 2 (mean 2.4) discharges per day; CRCH has an average of 1 discharge (mean 1.7) per day; WCH has an average of 1 CATU discharge (mean 0.7) per day.

[f] Patient Group Directions – frameworks that allow some registered health professionals to administer certain medications without them being directly prescribed; used when a doctor is unavailable to prescribe. Ward pharmacists are responsible for maintaining appropriate stocks of drugs to allow PGDs to be administered.

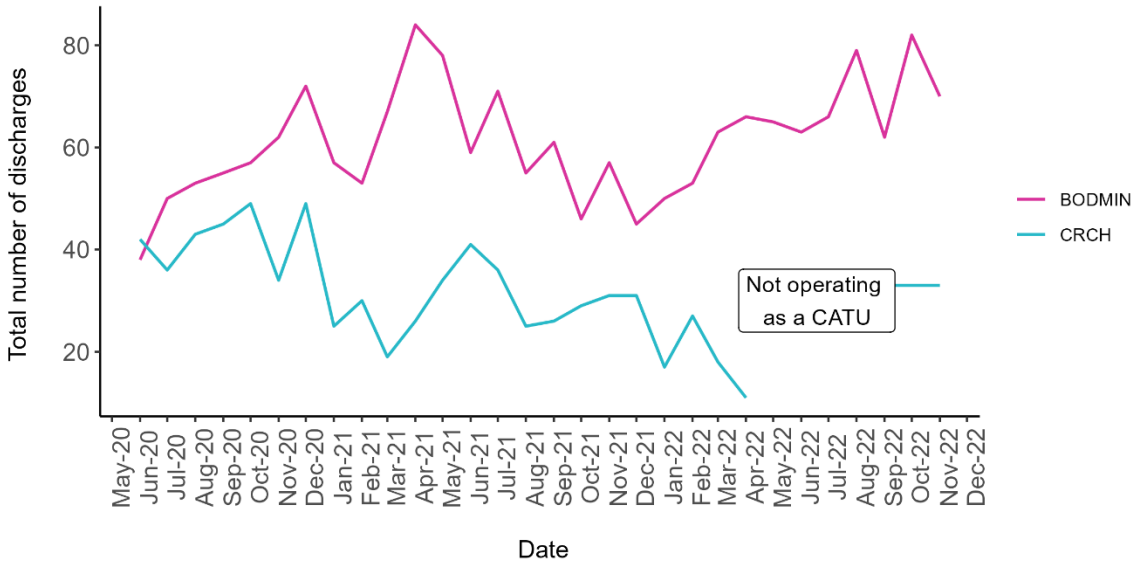


Figure 19. BCH and CRCH CATU discharges over time. [g]

However, discharging patients is presently one of the most challenging aspects of CATU working for staff, due to a plethora of issues in the Cornwall system of health and adult social care, including:

- a shortage of appropriate staff in the CATUs (nurses, HCAs and AHP staff), the wider community health service (e.g. district nurses, community physiotherapists and OTs), and the wider system (e.g. social care workers),
- a shortage of, and high demand on, care and nursing home placements, community rehab beds and social care services, such as the 'intermediate care' service, STEPS (Short Term Enablement and Planning Service)[24]; and,
- difficulties with systems put in place during the pandemic,
- differences of opinion and differing 'risk tolerances' between staff making discharge decisions.

Senior CATU staff highlight that the CATUs do not have the fully recruited agreed staffing levels in place to run as planned. If the units are functioning on too few staff, patient care must be prioritised over discharge planning. Short-term and substantive vacancies have been unfilled for long periods of time leading to a lack of staff and an increased use of the flexible and more costly workforce of bank and agency staff. Senior CATU staff feel strongly that with more consistent, substantive positions filled, flow would improve, and even higher numbers of Acute admissions for elderly and frail patients could be avoided.

These issues also speak to wider systemic challenges in Cornwall, including a lack of affordable housing, rurality, poor public transport infrastructure, a relatively small working-age population from which to draw the workforce, uncompetitive pay rates in social care compared to other local industries and a lack of sufficient education and training facilities locally.

Staff describe how blockages to patient flow caused by the lack of available community care or community hospital beds have led to work being duplicated across the system. For instance, one described how a patient was referred from CATU to a community hospital rehab bed, but because there were no beds available, rehab was commenced and nearly completed while the patient is on the CATU. Then when rehab bed became available the patient was moved. They were reassessed on the new ward and rehab was started again. In another scenario, a patient was referred for a 'discharge

[g] WCH not included in graph as data based on assumed CATU patients within local dataset.

to assess' bed, but the wait became too long so they were reassessed and discharge-planned from the CATU. Additionally, referrals on to community beds and 'discharge to assess' beds can be to anywhere in the county. This can be challenging and upsetting to patients and families according to staff.

2.1.4.1 Working to 'discharge to assess' principles

'Discharge to assess' principles promote getting patients safely home once they have been 'medically' optimised; in other words, once they do not have a medical need that must be met in a (non-rehab) hospital bed. The difficulty of discharging patients in timely manner creates constant challenges and dilemmas for CATU staff, for instance as one nurse explained,

> *"I've got a patient here today, he wants to go home. There's no package of care for him, he doesn't want to be here waiting for a package of care. There's lots of risks about him going home…If I could send him home right now and know that his case coordinator could see him tomorrow, and he would have a package of care by the next day, it wouldn't be a question…[of whether or not it is safe to send him home]."*

Discussion of discharge decisions elicited contrasting and often contradictory views from CATU staff, e.g. "the pressure to discharge is high" vs "the bar is quite high to get people discharged". This suggests divergent viewpoints around the appropriateness of keeping patients on the unit for longer (taking less 'clinical risk', viewing the patient more holistically), or getting people home as early as possible (higher 'clinical risk', focus on medical treatment). Some examples of staff suggesting patients are not kept in a hospital setting long enough include:

> *"From a vulnerability point, I sometimes worry a little bit that the patients are going home, not quite ready to go."*

> *"I do worry sometimes that a patient could be discharged too quickly…they're just not quite ready physically."*

> *"I think there is such a drive to discharge across all of the community hospitals because the pressure is so high, enormous, but I think people are being discharged before we would like them to be. Yeah. And before maybe adequate plans are in place."*

There were concerns that discharge decisions at times of high operational pressure might be made for the wrong reasons, e.g.

> *"That's [discharge decision] a really hard thing to do, because you're making choices about who's least at risk; everyone's at risk, but who's the least one? Or whose family are going to kick off least? It sounds dreadful, but…maybe that's one of the reasons why we make decisions…because we know that that family will accept it."*

Some examples of staff suggesting the opposite view include:

> *"The bar at the moment is still quite high to get people discharged…if we just lowered the bar and changed our risk level, I see that's kind of what patients want…I think we should be aiming to have some readmissions…because of that people will be back in their home a lot quicker."*

"We're looking at how we're putting in the kind of 'discharge to assess' principles to make sure that we are driving that through. So we're trying not to keep patients - how can we get the patient home is a key question every day."

This is clearly a live debate within the CATUs – as it is in the wider hospital sector. However, senior CATU staff tended to align more strongly to being comfortable with a higher clinical risk, a focus in the CATU on medical treatment (over a 'holistic' approach) and getting people home as quickly as possible. One senior clinician emphasised the CATU focus on delivering effective short stays for assessment and treatment,

"…but what [we should not be] expected to do is to sort out their entire lives. We [should not be] expected to improve them to a point that was better in terms of their function than when they came in."

The challenges of delays to discharge are felt by all staff, but for therapy staff this was often a central focus in response/interview. AHP clinicians feel they are often viewed as 'risk averse' by other professions, e.g.

"I think OTs unfortunately get labelled as risk-averse and holding up discharge, when actually, I don't believe we are…we just try to facilitate the best outcome for the patient."

AHP teams at BCH also have a different perspective on discharge to other ward staff, as they are managed as part of the Cornwall Integrated Therapies team, and thus have access to community services information that is not as readily available to ward staff, e.g.

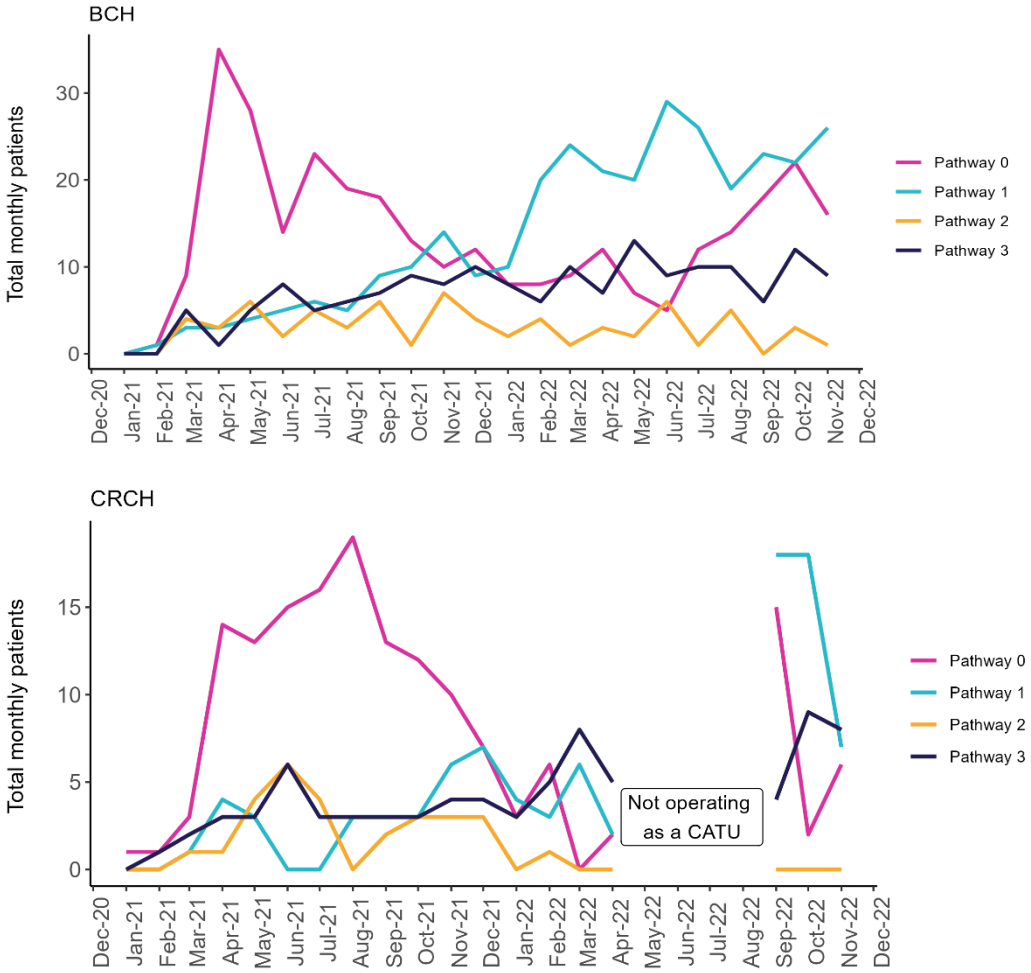
"We are part of an integrated team…so we are managed by ICMs, integrated care managers. They also manage the district nurses and Home First teams.…So I have a much broader view about community services and what's available and what isn't available.…So I've got, I've got that knowledge, and I know the community waiting lists, for example, for physio is enormous, like in the hundreds."

2.1.4.2 Increasing care needs

Adding to the challenge of discharging back into the community (i.e. home) is the growing care need of patients referred into the CATUs, as discussed in section 1.1.2. The significant staffing vacancies in adult social care mean that there is systemic pressure to reduce care need, as outlined by this quote from a CATU staff member:

"It seems at the moment that the ICB seems to expect that if an older frail person comes into hospital, and before they came in, they were requiring three times a day care, that somehow they can go through a hospital system and come out of the end requiring twice daily care. If anything, plugging them into a hospital system and coming out the other side, they will have higher care needs at the end because their frailty would have increased, they will be deconditioned. The ICB don't seem to get that at the moment, as far as I can gather."

The figure below shows the discharge routes for BCH CATU from April 2021 to December 2022. A clear upward trend can be seen in the proportion of patients discharged to pathway 1 (reablement at home) and pathway 3 (long term care facility). The chart also shows fewer discharges overall in the winter months.



Pathway 0: simple discharge home

Pathway 1: Reablement at home

Pathway 2: Rehabilitation bed

Pathway 3: Long term care facility

Figure 20. BCH and CRCH CATU patient discharge pathways over time.

2.1.4.3 'Modernising' working practices and the patient-staff relationship

Many staff members described the importance of working to 'modern' nursing and healthcare principles that take a less paternalistic approach, encouraging patients to self-manage and stay physically and mentally active where possible, and shifting the nurse-patient relationship. This contrasts with the tradition of the 'cottage hospital', the precursor to the 'community hospital', both of which were designed primarily for rehabilitation and took a 'slowly does it', 'tending' approach to nursing care. The 'CATU way' has different expectations of patients:

> *"We are looking after them to get them back on their feet…I don't think that a lot of us have changed from that approach [rehab approach] and were resistant to that new approach [CATU care]. I think some patients and families also feel that they'd like their loved ones to come into a community hospital for 'cottage hospital care'. But actually…does the patient need to be in hospital?"*

Currently, the CATU's Meaningful Activities Programme, meals in the dining hall as much as possible and focus on early mobilisation, are all used to prevent (mental and physical) deconditioning. Other respondents expressed a wish that this approach would go further, feeling that, for this patient group, taking responsibility away can lead to deskilling, for instance "Some [patients] are capable of taking their own medication. So why would we deskill them? Let them carry on taking it in the ward environment." Similarly, an ICS stakeholder hoped that the CATUs would move to increasingly more person-centred care, allowing patient view to lead planning: "We have to start from the premise of: what does the person want? And if they want to go home, how do we get them home?"

2.1.4.4 Preventing deconditioning

As a result of the difficulties outlined above, nearly half of patients within the CATU at any given time are likely to be 'medically optimised for discharge'. Some people experience stays of days, weeks, and even months past the point of being 'medically optimised for discharge' (median 18 days). As a result, BCH and CRCH CATUs have both instigated a 'Meaningful Activities Programme' to "improve the wellbeing of patients and reduce the need for enhanced observations by providing group activities"[25] and "to encourage patient movement and return to routine thereby reducing further deconditioning and helping patient return to their normal abilities as soon as is possible". One Meaningful Activities Coordinator described the job as:

> *"…keep[ing] patients safe, motivated, engaged, social, utilised, and to make their stay less traumatic, and I'm going to say enjoyable, but that's not the right word, but just to try and make them feel safe and valued while they're here…and it's sort of troubleshooting for the patients…today I've got to help a lady who needs to be able to phone her husband to bring in her reading glasses…"*

A pilot evaluation of the programme at BCH found that the activities programme resulted in improvements in mood and behaviour, less 'wandering' and more 'settled' nights for patients[25].

2.1.4.5 Discharge destination

The chart below shows the discharge destination of patients from BCH and CRCH CATUs. This shows that a large proportion of patients are discharged home and that just 8% of BCH CATU patients and 9% of CRCH CATU patients are discharged into an acute setting.

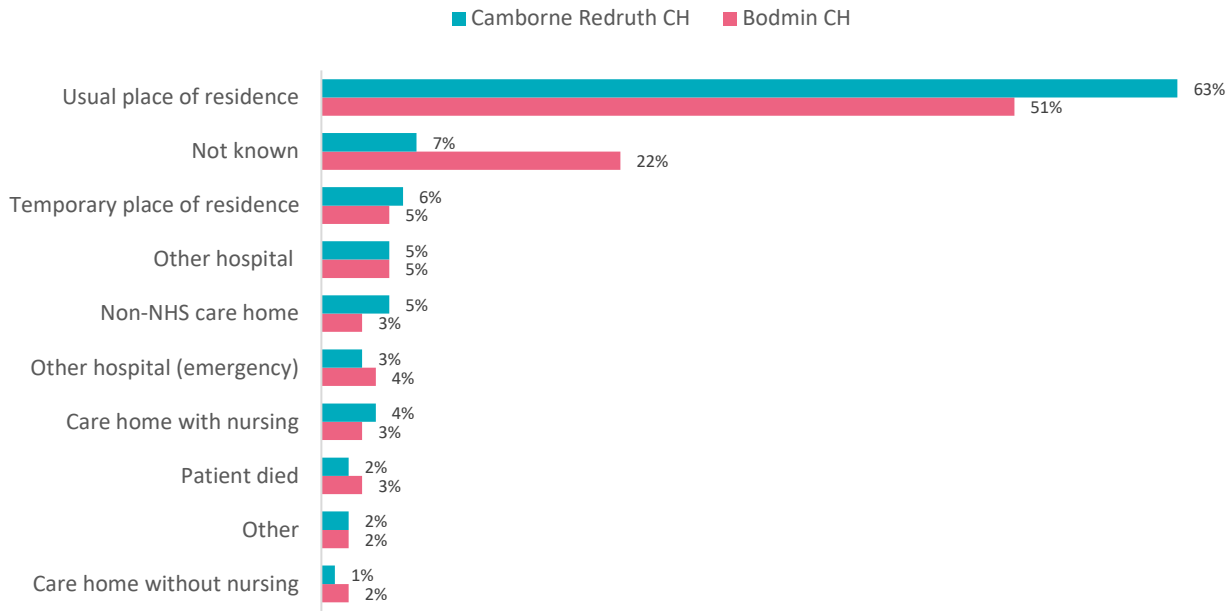


Figure 21. Discharge destination from the CATUs.

2.1.4.6 Discharge co-ordination

Pre-COVID-19, Cornwall Council adult social care teams were located in the hospitals, and social workers would be present on the wards. This practice ceased during the pandemic and has not been reinstated. Staff and stakeholders felt that this has made discharge coordination more time consuming and challenging. CFT staff described their increased involvement in discharge planning,

> *"Things that we're picking up are white goods, ordering deep cleans, making sure the house is fit for purpose, and there's been some quite complex stuff going on regarding to people's property, whereas we never really got involved in that before, it was with adult social care, but it didn't delay their discharge. Normally you would go home to have those things done, whereas now they're being done at pace. We've had really good responses from our voluntary sector to turn those people around to get them home."*

A domiciliary care stakeholder felt that their sector was not engaged sufficiently when it came to discharge planning, despite there being willingness among domiciliary care companies to support discharge. There is also "inreach from the voluntary sector to try and help facilitate discharges", although one VCSE stakeholder felt that fears about privacy and data sharing were inhibiting collaboration between the VCSE sector, social care sector and the trusts: "the Act [GDPR] actually allows for the transfer and sharing of information. So we should be using [GDPR] as an enabler, not an inhibitor…"

Community-based clinicians and social care staff also faced these challenges and felt that re-establishing (or increasing) inreach and outreach with CATU wards would be of benefit to patients, e.g.

> *"We used to be called into discharge planning meetings all the time, and that seems to have gone now really…a really good discharge out to us would just make that a little bit less of a risk for that patient."*

> *"…[my staff] feel that we're not treated as part of the team by the hospitals."*

One voluntary sector stakeholder described their organisation's attempts to shift the way discharge and care need is seen on the wards, encouraging staff to consider whether patients might need a 'package of support' that could partly or wholly be provided by the voluntary sector, rather than a 'package of care' that must be provided by a paid care worker.

2.1.4.7 Single Electronic Referral system

Patients leaving CATU who have a care need must be discharged via a SERF (single electronic referral form)[26,27], through the three Community Coordination Centres (CCCs) (Central, West, North) or the 'Bed Bureau'. Staff across the CATUs find this system challenging and would prefer to see adult social care teams co-located with them once more. The SERF system, designed to be a single referral point to co-ordinate community services in order to avoid admissions, came up time and time again as a source of frustration and difficulty. The principle of having a 'one stop shop' for community services was seen as positive, but the SERF system itself is seen as inadequate and inefficient.

Many staff members (as well as stakeholders) talked about the system's inherent lack of usability; for instance, ward staff are unable to view, edit or add to a SERF once it has been submitted – the form was described as being "in the ether" by three interviewees. Ward staff cannot follow the status of a SERF once it is in the system, and SERFs can be cancelled seemingly without reason, leading to confusion, frustration and duplicated work. Because SERFs are unretrievable, if a patient deteriorates, a new SERF must be put in, and the original one is 'cancelled', even if the reason is something that might just create a short delay, such as a chest infection. This puts the patient to the back of the virtual SERF queue. SERFs have been "cancelled" because a patient has moved between hospitals, once again sending them to the back of the queue and causing therapy staff to have to complete a whole new assessment unnecessarily. Staff cannot tell if a SERF has already been created for a patient, so could create a new form in error, which "knocks" the previous one out of the list, also sending the patient to the back of the queue.

These difficulties were raised by multiple staff and stakeholders as impacting on staff time, ability to do CATU work and discharge efficiently and appropriately, as well as having an effect on inter-organisational working, e.g.

> *"I think the SERF system has taken away that clinician-to-clinician conversation. We used to get phone calls, 'the patient's being discharged tomorrow', you could have that conversation."*

2.1.4.8 Discharging out-of-area patients

The image in figures 8 and 9 shows the breadth of referrals from across the county into each of the CATUs. Discharging patients who live a long distance away was challenging for CATU staff. The graph below shows the proportion of patients being referred to WCH from out-of-area over time. There is a clear increase in these referrals over time, to a point of almost half the referrals for WCH now coming from out-of-area.

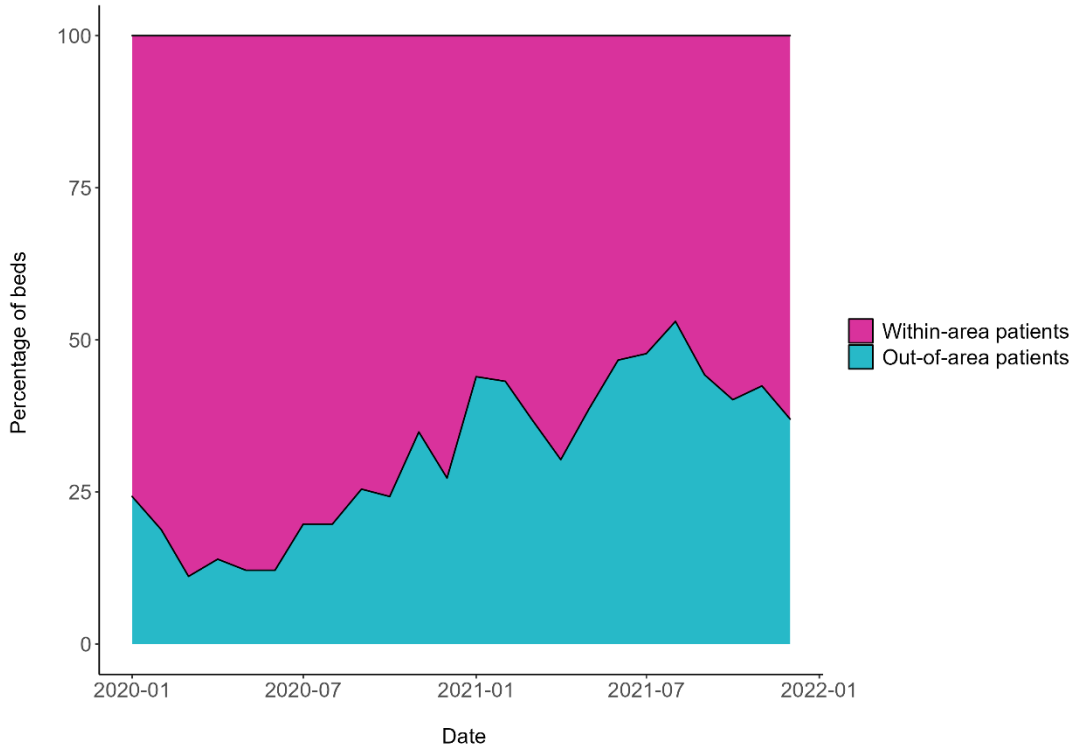


Figure 22. WCH: locally collected data on within- and out-of-area patients.

An increase in patients being supported in the CATUs from outside their locality has also been reported to delay discharge, as it can make discharges more difficult for ward therapy staff, on whom the responsibility for much of the detail of discharge planning falls. One AHP staff member stated that, "If a CATU worked as intended, we could provide a good hospital discharge service to patients in our local area which would be positive for the patient and their families."

2.2 What has been the workforce's experience of delivering CATUs?

Staff working in the CATUs completed a survey in October 2022 about their experience of working in the CATU. A total of 26 people responded to the survey (12 BCH and 14 CRCH), the majority of whom (92%) were substantive staff.

2.2.1 Satisfaction

CATU staff generally had positive views of treating patients in the CATUs, including clinical activities and other activities that take place on the ward. According to survey data, the vast majority of respondents said they look forward to going to work and felt enthusiastic about their job (Figure 23).

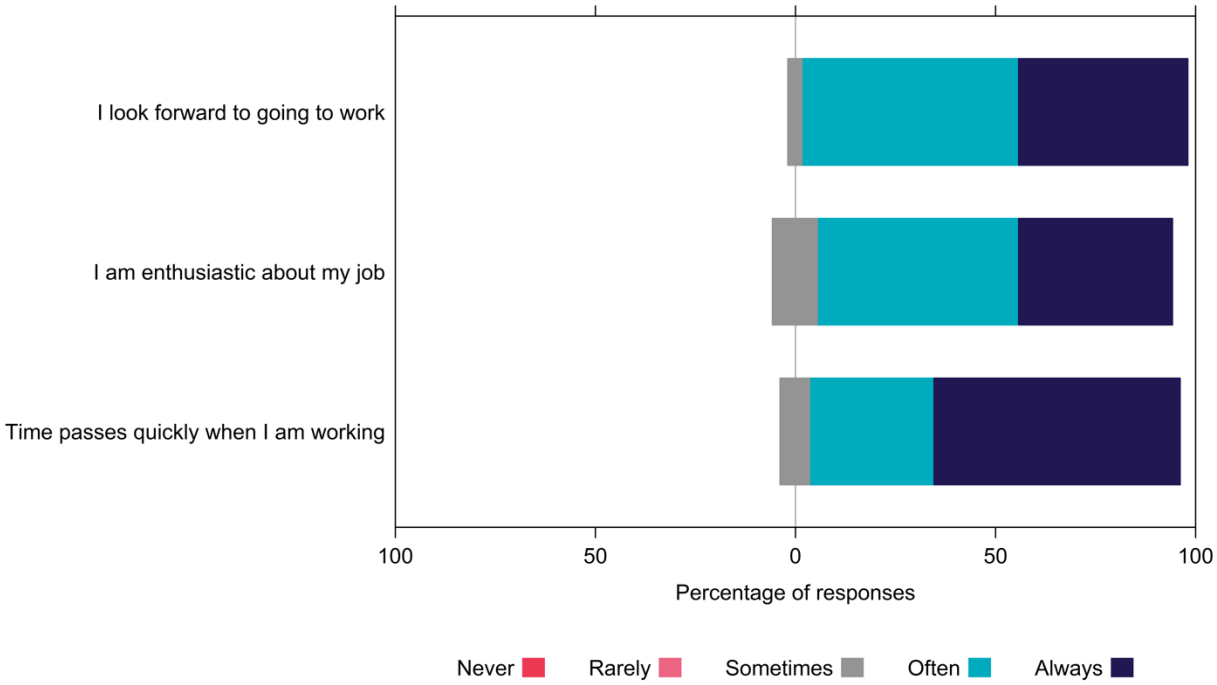


Figure 23. For each of these statements, how often do you feel this way about your job?

However, respondents highlighted the need for increased staffing to support more unwell patients, particularly dementia patients. One staff member suggested that the ward at CRCH, Carn Brea, is not suitable for caring for dementia patients, and all the CATUs have a limited number of 'line of sight' beds, which are particularly needed for patients with dementia or a risk of falls.

Nevertheless, respondents described the positive professional impact of treating this patient group in the 'CATU way', with speedy interventions allowing patients to return home rapidly: "I could use my skills. And you could see the results." Others focused on their belief that keeping patients out of ED prevented them being "'done to', by the system"; in the CATU "there's a real sense that for that…person we have done good for them, that they've received a really good service for them, so they haven't had to sit on a trolley in a queue."

2.2.2 Roles and skills

Most staff felt that the CATUs have the right workforce in place and that they themselves had the skills needed to perform their roles. However, just under half of respondents felt that they were not able to access the right learning and development opportunities (Figure 24). When discussing how nurses might be trained and upskilled, a senior staff member stated: "we don't have the time to send the nurses off to do it…they're all working full time". Staff vacancies also mean that in some cases staff feel unable to advance their practice: "we're always just coping rather than actually being able to do anything worthwhile."

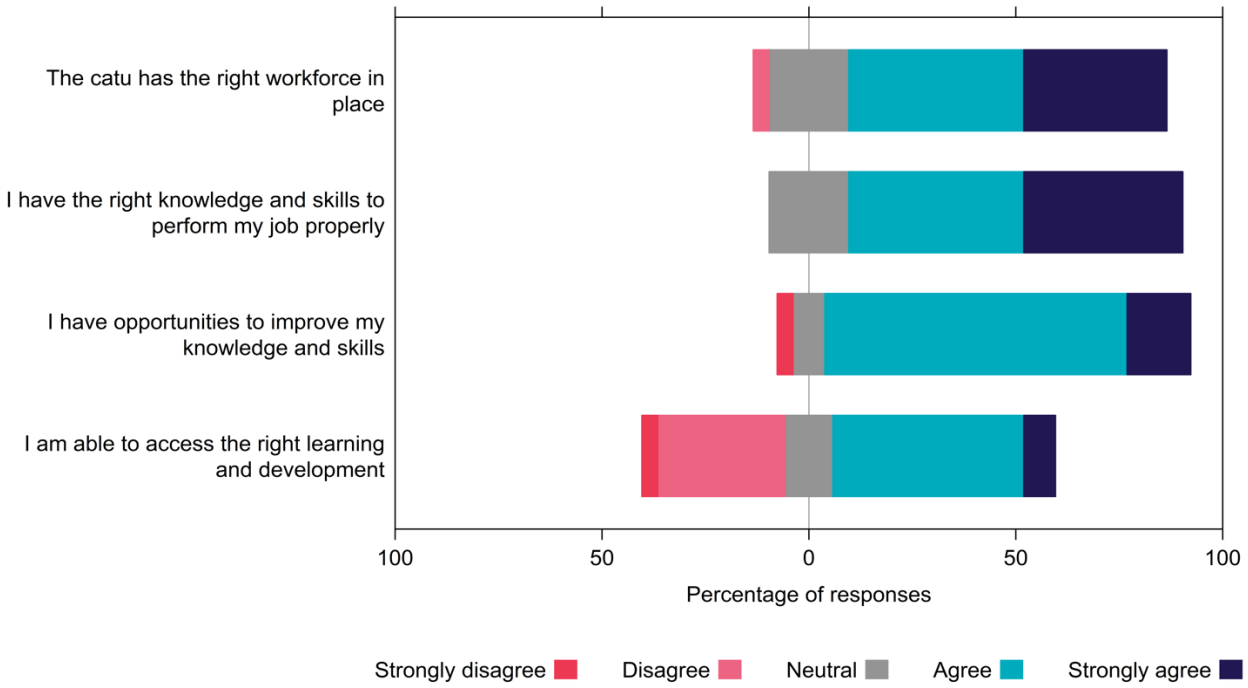


Figure 24. To what extent do you agree with these statements?

Consistently, when asked what the most important factor for their professional learning and development was, over 50% answered "On the job training" (Figure 25). When asked to provide more detail of what training might be useful, one respondent noted that a mixed approach to training, combining on-the-job learning with formal training would be helpful. Another respondent said that training specific to the CATU environment would be helpful, and a further response highlighted the importance of shared learning between staff and between units. In terms of specific skills areas, training in delirium, dementia and venepuncture were listed.

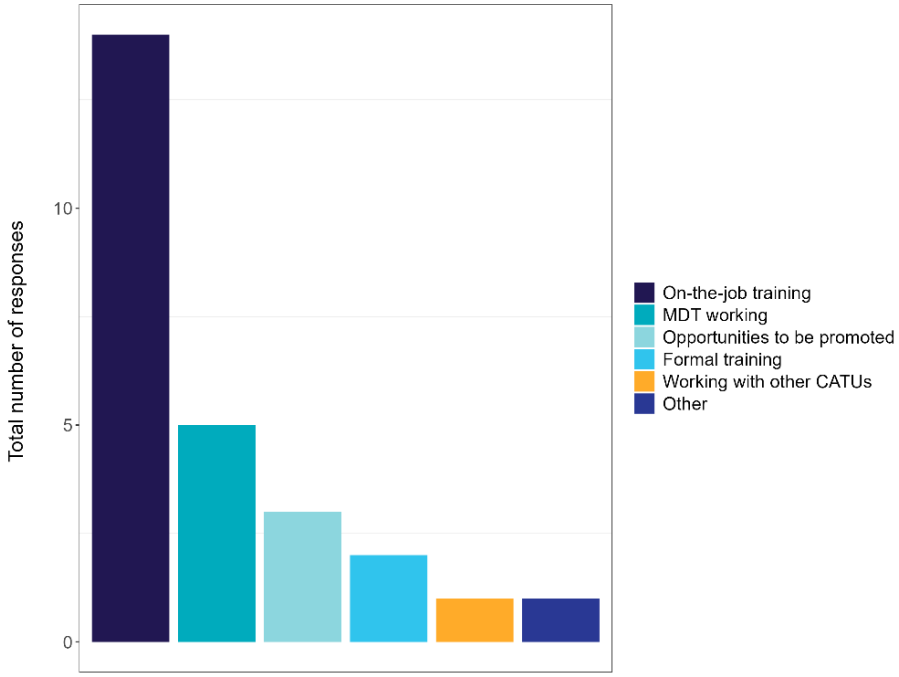


Figure 25. What is the most important factor for your professional learning and development?

Staff generally feel positive about working in multi-disciplinary teams, e.g. “the range of patients we see is very interesting and working amongst a mixed skill team is amazing”. However, this style of working can also present challenges, e.g. “some staff have really struggled [on the CATU] with the turnover [of patients] and the decision-making.”

When asked what they saw as the most significant barriers to doing their job effectively and efficiently, lack of appropriate staffing was a common response. Pressure on social care affecting flow out of the CATU was also listed as an issue by several respondents.

2.2.3 Working effectively and efficiently

In response to the question “What changes could be made that would allow you to do your job more effectively/efficiently?”, again, appropriate and consistent staffing was mentioned by several respondents. Receiving appropriate referrals was also listed as being important.

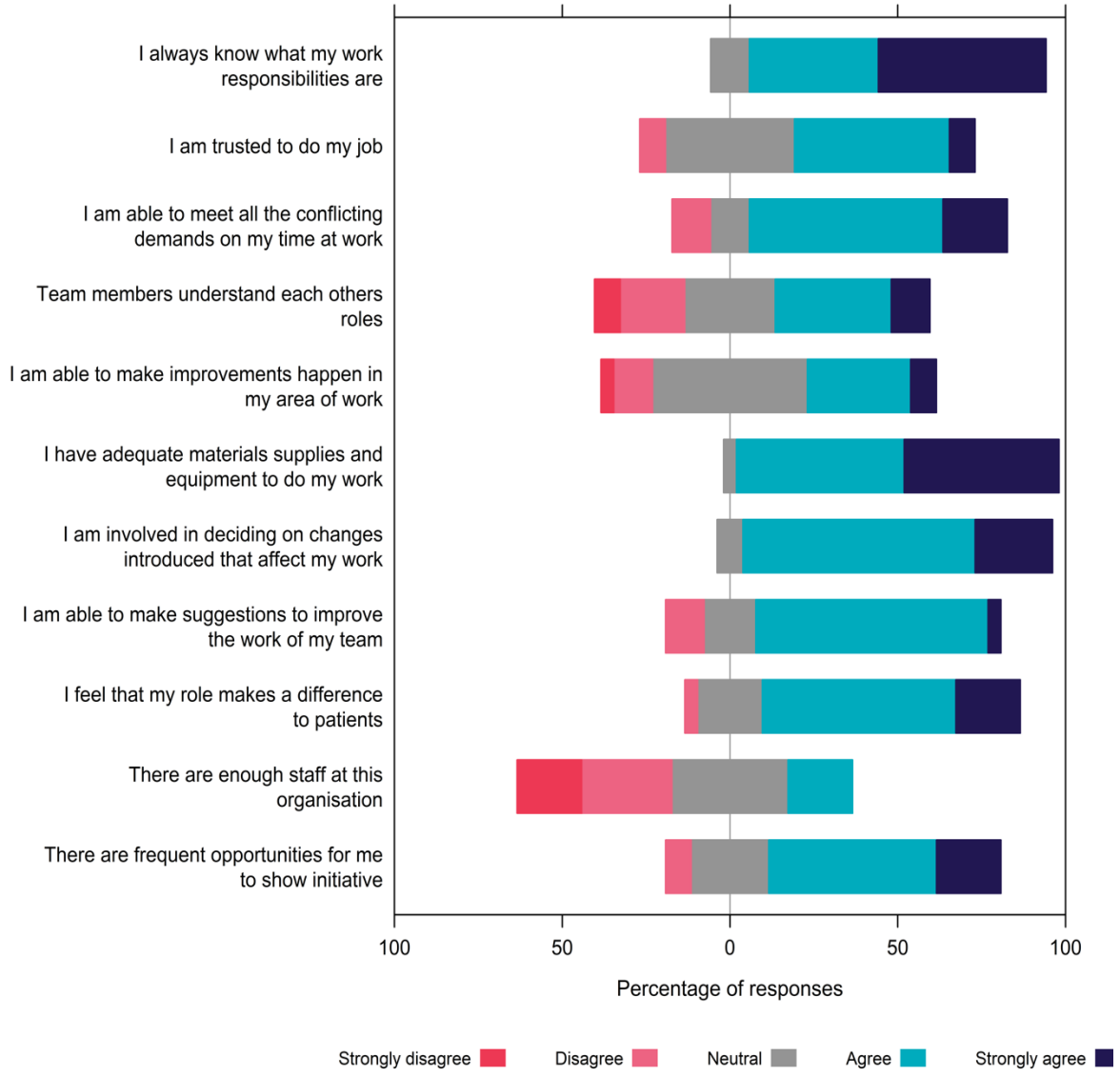


Figure 26. To what extent do you agree with these statements?

CATUs have a high number of discharges compared to community hospital rehabilitation wards (on average 2 per day: BCH CATU has 2.4 and CRCH has 1.7 discharges a day) and this can present challenges in the way they are resourced, as well as staff experience, as they are often facilitating rapid turnaround and multiple discharges per day (range 0-9 discharges per day). One Occupational Therapist stated that:

> *"We tend now to do quite basic assessments…you have a bit more time when you're [on the rehab wards], getting the results and the job satisfaction that comes with that."*

Respondents were largely positive about the level of trust they received in their role, and their ability to influence changes the affect their work. There was some concern that there were not enough staff and that team members don't always understand each other's roles (Figure 26).

Qualitative analysis suggests that different staff groups, who have different roles and have undergone different training, tend to hold differing views of patient needs and priorities. As one Occupational Therapist stated,

> *"Traditionally we assess the whole patient…we would look at the whole situation like, you know, physically, how are they mentally? How are they environmentally?…And so we start our assessments, we do our assessments, we unpick things, we look at the whole life situation and we often find lots of problems. And those problems then become not very easy to fix and don't often fit in 72-hour length of stay framework. But once we've identified them, it's really hard to ignore them after that.*

> *"I think some of our nursing colleagues…see us as the discharge delayers in some ways."*

2.2.4 Current working conditions

Despite generally positive experiences working on CATUs, staff expressed that they were "exhausted" and "worn out" by current working conditions (affecting the entirety of the healthcare system), including under-resourcing and long-term vacancies, e.g.

> *"Staff are exhausted and worn out and disillusioned. You can be a cleaner for 20 pounds an hour. So you know, little or no stress…it's pushed me to re-evaluate my job and looking for other work…"*

> *"Workload is increasing, daily workforce is decreasing, we struggle to recruit".*

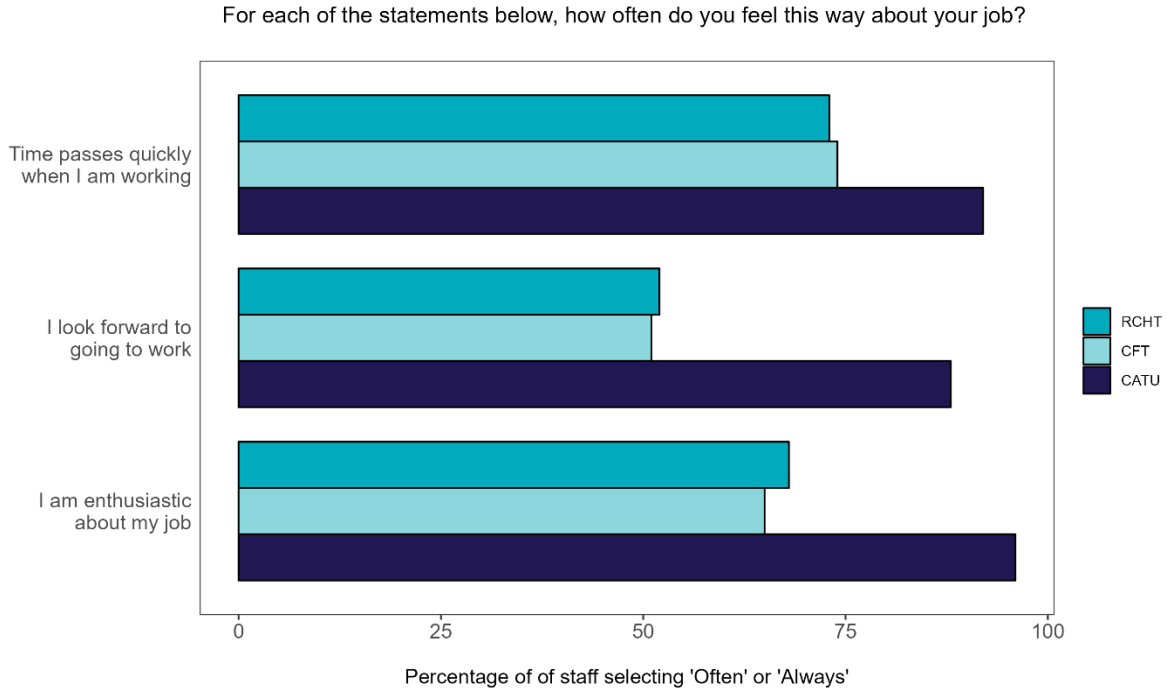
> *"We're either running, running, running and not stopping or we're just, just coping. We don't have time to develop. And that's what that's why I find that sort of disappointing."*

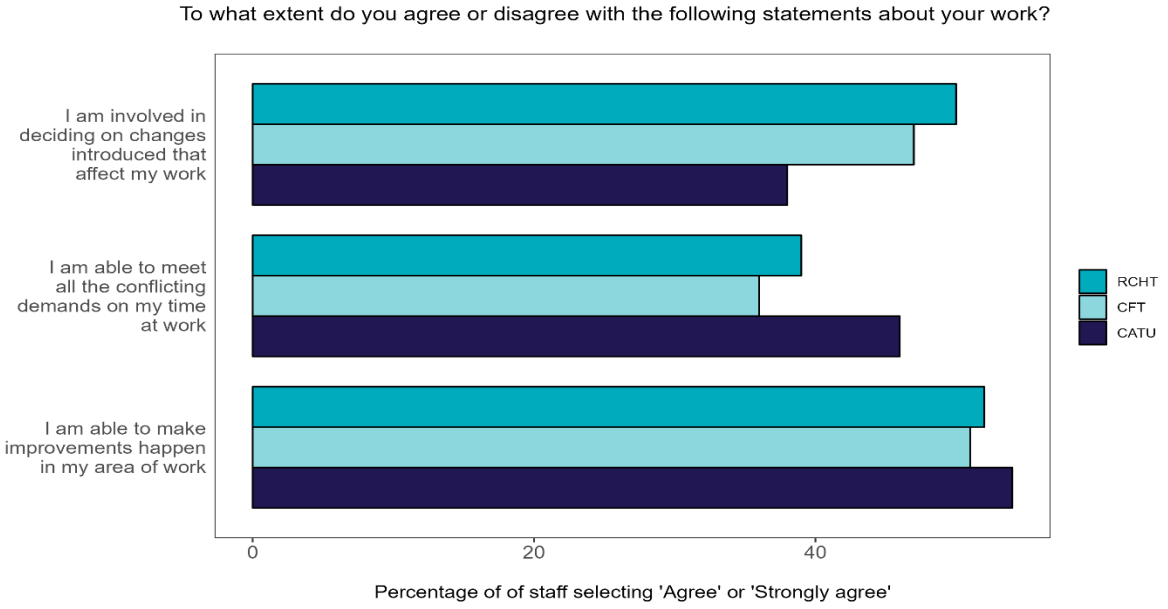
This demonstrates the impact that the system pressures and lack of resource can have on staff morale and wellbeing.

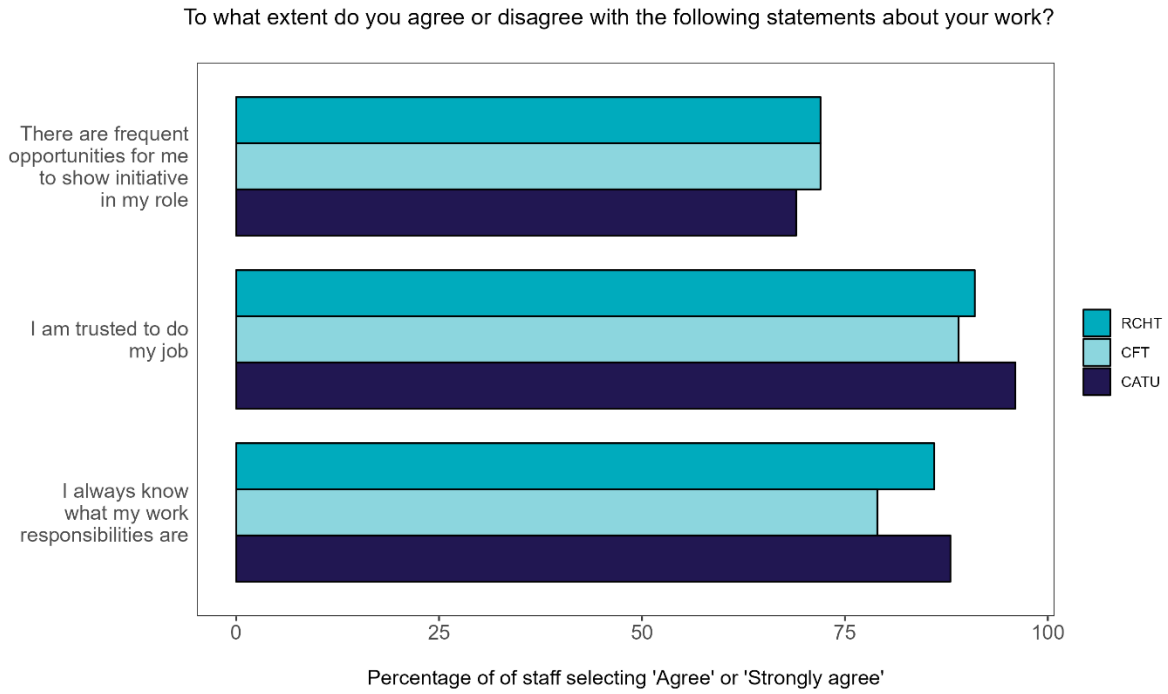
Of note in figure 26 is the high proportion of staff who feel there are not enough staff at their organisation. This aligns with findings discussed in section 2.3, of high vacancy rates within the CATUs and across the region, shifts running with too few staff, and in the suspension of the CRCH CATU due to a lack of medical cover in the summer of 2022.

2.2.5 Comparison with National Staff Survey responses

The staff workforce survey, which had 26 respondents (12 from BCH and 14 from CRCH) was deliberately designed to include questions from the NHS National Staff Survey, which is sent to all NHS staff annually. This allowed us to draw tentative comparisons between the staff experience of CATU working and the overall experience of staff across the two Cornish Trusts (RCHT and CFT). As shown in the following figures, staff working in the CATUs are generally more positive about their work than staff across the Trusts. The only exceptions to this are the level involvement staff feel in making decisions that affect their work, concerns regarding staffing levels and a lack of opportunities to show initiative.







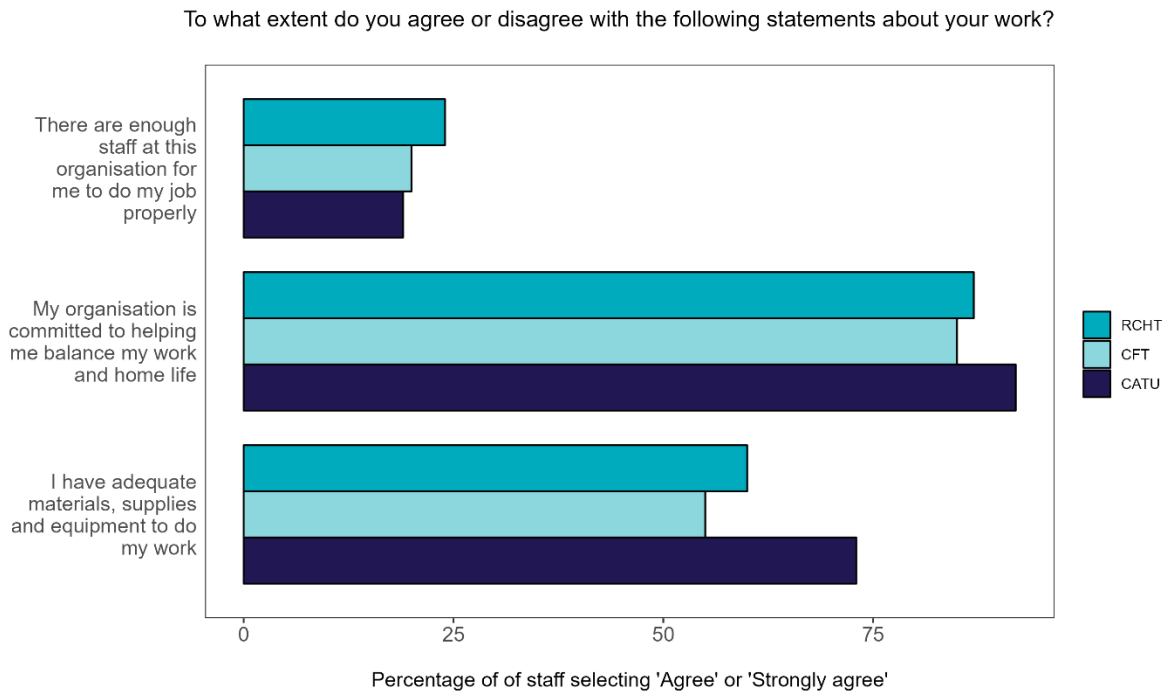


Figure 27. Staff experience: CATUs, CFT and RCHT.

2.3 How are the CATUs resourced across settings?

2.3.1 What are the different roles/skills/functions being used to deliver CATUs and how have they been utilised?

BCH and CRCH CATUs are nurse-led units. Both operate on a 'multidisciplinary team' (MDT) model, holding three MDT meetings per day to draw on diverse clinical and professional knowledge to discuss patients and assign tasks. The CATU model requires input from various teams: nursing (HCAs and RNS), medical (GPs and Junior Doctors) and AHPs (OTs and Physios), with support from pharmacy teams.

The relationship between the nursing/medical staff and the AHP staff was discussed by many respondents. At BCH, patients are referred to AHP staff by nursing staff, so physios and OTs will not see every patient (although they may suggest at an MDT that certain patients should be referred to them, if they see a clinical need). MDT meetings sometimes bring "tensions" to the surface, and some AHP staff expressed the view that sometimes their clinical view is not equally valued by other clinical staff. At CRCH, the system is different, so AHP staff operate on a 'blanket referral' system and will select the patients they think they should see, with input from the MDT.

AHP teams and the ward pharmacy service operate from Monday to Friday. The AHP contract does not specify weekends so while there is the offer to work weekends, there is no contractual obligation to do so presently. There is presently no possibility for weekend pharmacy across CFT.

The level of pharmacy service provided to the CATU was based on the 'rehab ward model', i.e. the expectation that patients would be staying on the ward for a longer spell and there was a lower level of turnover. However, because CATU patients have higher acuity and tend to have a shorter length of stay than 'traditional' community bed rehab patients, pharmacy provision was initially "woefully inadequate". To compensate, pharmacy provision has been pulled from other wards and community hospitals to keep up with the need on the CATUs: "that means that areas that have resourced pharmacy are not necessarily seeing the full amount of resource coming to them, it's having to uplift the CATU". Nevertheless, the CFT pharmacy services has "received no additional resource to support the CATU".

In a similar vein, there are situations where ward staff have been expected to work above their pay grade/banding because substantive levels have not been agreed by the trust. While this might be seen as positive, and a good development experience, by some staff, it also means they are effectively being paid less than the appropriate figure for the role.

2.3.1.1 Increase in use of bank and agency staff

Over time, BCH has seen an increase in use of both bank and agency staff, with the use of bank staff showing the largest increase. CRCH has also increased its use of both categories. According to some anecdotal feedback, the same is true for West Cornwall Hospital.

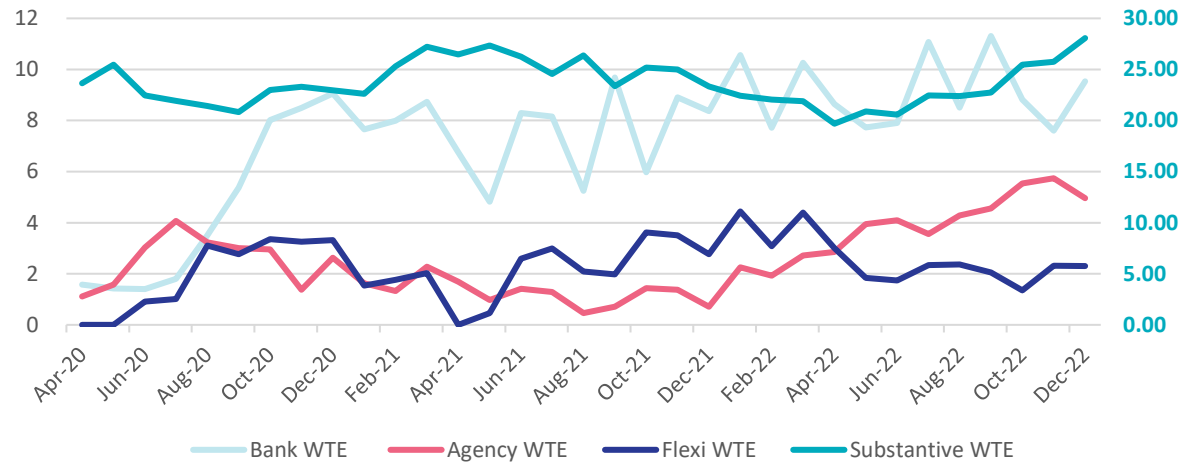


Figure 28. Use of flexible and substantive (secondary axis) workforce in BCH over time.

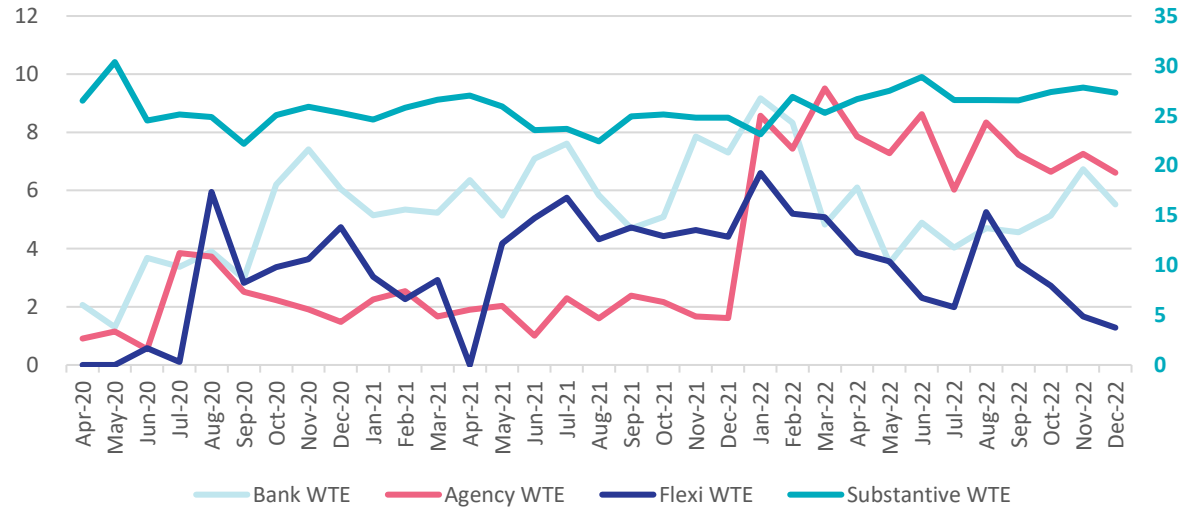


Figure 29. Use of flexible and substantive (secondary axis) workforce in CRCH over time.

Agency and bank staff are vital to the flexible delivery of 24-hour care within the CATUs, however agency staff are significantly more costly to the trust and arguably not a long-term solution to resourcing issues. The cost to pay for a band 5 RN from an agency is double the cost of a substantive band 5 RN and many of the bank staff are offered incentives to take shifts, which can cost thousands of pounds a month.

Table 7. Average WTE by contract type per month BCH.

	2020	2021	2022
Substantive	22.78	25.25	22.87
Agency	2.55	1.27	3.87
Bank	4.52	7.55	9.14
Flexi	1.97	2.11	2.60
Total	31.82	36.18	38.48
% flexible (non substantive)	28%	30%	41%

Table 8. Average WTE by contract type per month CRCH.

	2020	2021	2022
Substantive	25.54	24.94	26.71
Agency	2.03	1.93	7.62
Bank	4.10	6.06	5.63
Flexi	2.35	3.81	3.58
Total	34.03	36.73	43.53
% flexible (non substantive)	25%	32%	39%

The use of agency staff has more than doubled in CRCH since 2021, and is on a similar upward trend in BCH CATU. However, the number of substantive staff has not reduced in that timeframe. Locally collected shift data at BCH also shows between 6% and 8% of hours remain unfilled after flexi, bank and agency staff have been brought in to support the substantive workforce (February to May 2022). This is due to longstanding vacancies and increasing complexity of patients and consequently their nursing needs.

Analysis of the cost of nursing staff shows that in 2022, 48% of staff costs for BCH and 45% of staff costs for CRCH were paid to a flexible workforce (bank, agency and flexi staff), totalling over £1.7m (of which nearly £963k was on agency care). While it is important to be able to access this flexible workforce to safely care for patients, it is recognised that a heavy reliance on agency staff is not an efficient staffing model.

Vacancy rates across the South West for Quarter 2 of 2022/23 stand at 11.5% of the workforce WTE for community services. This figure is on an increasing trend, above the national average vacancy rate (9.7%)[28].

2.3.2 How have CATUs diversified the workforce to make the service more financially viable, has this been successful and what else could be done (e.g. other digital routes), particularly to ensure equitable access and outcomes?

CATU staff have access to an RCHT service called 'Silverline' which allows them telephone contact with a Consultant Geriatrician, 8am-8pm. Staff used this service frequently and were positive about its role in supporting their work on the CATUs. Roles on the CATUs have also been diversified in places, for instance, a role entitled 'Care Buddy' has been utilised across CFT and RCHT, while BCH has recently trialed a 'Patient Enabler' role, which is HCA level and is focused on patient mobilisation and practice of everyday tasks, to prevent deconditioning. Senior CATU staff have also aimed to upskill existing nursing staff, knowing that this approach is cheaper than hiring skilled agency staff, and is preferable for efficient and effective working, including the ability to make rapid clinical decisions.

2.4 How does the delivery model differ across CATUs, and what learning can we take from this?

Of the three CATUs in Cornwall, only one unit, BCH, was consistently used as a CATU throughout the evaluation period (April 2020 to January 2023). During this time period, CRCH CATU experienced periods of time without the appropriate medical cover to run as a CATU, so was used as a regular community hospital rehab ward. CRCH staff found the changes from community ward to CATU and back again challenging, but expressed positivity about CATU working, e.g.

> *"I love working in a CATU, I just wish we could be protected as one."*

Interviews took place whilst CRCH CATU was temporarily suspended, and staff expressed enthusiasm for returning to CATU working, but were fearful that their beds would not be consistently 'protected' as CATU and would instead be used as 'core beds'.

WCH wards are very often reallocated as RCHT 'step-down' beds, so the ward has not consistently been used as a CATU during the evaluation period. BCH and CRCH are also asked to take patients from Treliske at times of high pressure, but for WCH, this has become the standard way of working.

Challenges across all three units include staffing shortages, staff being pulled onto other wards when there are operational pressures, inappropriate admissions out-of-hours, and maintaining CATU working when their beds are being used as 'core beds' due to system pressures.

2.4.1 'Nurse-led' units

BCH and CRCH are currently run as nurse-led, 24-hour admitting units. GP cover is 8am to 8pm, with access in that time to a Consultant Geriatrician via the Silverline service.

Nurses from these CATUs describe a strong culture of internal upskilling (e.g. long-term condition training and developing patient examination skills) and describe nurses becoming more confident in making clinician decisions, allowing for "less reliance on a doctor…[you] understand on your own and when to seek advice".

2.4.2 Estate and ward layout

BCH benefits from having two communal spaces (a central day room and a dining hall) as well as a secure outside space, offering patients and staff a range of options for activities, and places to be away from bedded bays. By contrast, the ward used for CRCH's CATU, Carn Brea, has only one day room, which is currently being used as an additional bedded bay (and no outside space), reducing opportunities for patients to spend time in communal areas. Staff at both units cited a limited number of 'line of sight' beds as a challenge for taking care of falls risk and dementia patients.

2.4.3 West Cornwall Hospital

WCH CATU operates very differently from the other two CATUs, with some specific challenges. WCH operates two wards, Med 1 and Med 2, which are consultant-led. As a 'sub-acute' hospital, WCH has greater testing capabilities than the other CATUs, including ultrasound, X-ray and a CT scanner (but not echocardiograph equipment, which one staff member stated they would like to have).

It was originally intended that WCH would use the entirety of its ground floor ward, Med 1, as a CATU. However, this has not been the case since 2021, predominantly due to operational pressures on the acute hospital, Treliske, meaning WCH is used primarily to "decant" from Treliske wards. An RCHT stakeholder stated that CATU availability is 'made' at WCH for appropriate patients when it is needed, but this does not reflect the experiences of either WCH staff or community healthcare stakeholders who state that "we have no access to West Cornwall hospital at all…", not least for local, CATU-appropriate patients.

There are additional challenges to CATU working at WCH. Based on qualitative data, it does not appear that staff have been fully informed about or trained to take a 'CATU approach' to patient care. For instance, one WCH staff interviewee stated that you can't "have a bed free for a CATU patent just waiting" although having beds open to receive patients is part of the CATU model. There is also the challenge of the name itself – *Community* Assessment and Treatment Unit – as WCH is not a community hospital and does not wish to be seen as one. Nevertheless, the CATU approach of MDT working, rapid clinical decision-making and working to 'discharge-to-assess' principles is not solely applicable to community hospital settings. Staff at WCH expressed enthusiasm about working with the other Cornwall CATUs going forward.

3. PLACE: How do CATUs sit within the infrastructure of care in the community, alongside Acutes?

As previously stated, BCH and CRCH are run by CFT, which also runs community healthcare services in Cornwall, while WCH comes under the umbrella of RCHT, which also runs Cornwall's only acute hospital, Treliske. BCH and CRCH therefore have stronger links to community services, and some staff work both in the community, and in the community hospital. This includes some GPs, whilst others are managed by community-based teams, for example the AHP staff at BCH. Respondents working in community healthcare described active working relationships with staff at BCH CATU:

> *"I can go [to the CATU] and get advice from GPs and all the staff. I can ring them and say look, you know, I've got this patient. I've tried diuretics…still think they're symptomatic. Is there anything else I can try before I send them to you?…They're absolutely brilliant…generally [they] say you've done everything you can…I trust you. They need to be admitted."*

The respondent also stated that they use BCH CATU's on-site testing facilities when needed.

The system in its current form has some additional complexities in terms of service provision. One example is how CFT ward pharmacy is resourced: CFT has a pharmacy team, but not a dispensary, so that service is outsourced to RCHT, and Derriford hospital in Plymouth. RCHT dispenses to the CATUs, whilst Derriford dispenses to community hospitals in east Cornwall.

3.1 Patient flow

Staff at CFT and RCHT who are responsible for 'patient flow' are in regular contact with each other, tackling patient flow at a countywide level (and sometimes further afield, e.g. Barnstable Community Hospital or Derriford). However, Cornwall does not have a 'live' system showing bed availability; instead, availability is communicated manually between staff from CFT, RCHT and SWAST sharing what capacity there is across the system for the day. Nevertheless, the interconnections between CFT and RCHT are not consistent. For example, one stakeholder stated that this system runs well on weekdays but has not been replicated at the weekends:

> *"The systems that we've set up on a Monday to Friday for information sharing and availability of beds isn't quite there yet for the weekends."*

The stakeholder felt that CATU usage depended on which on-call manager was on duty in ED at the weekend. Another CFT stakeholder stated that "actually, the acute trust don't know what we do really well out in the community, and there's still a bit of 'them and us', that actually you need to trust us".

RCHT Flow Hub regularly assesses whether patients in ED are suitable for CATU, and a Flow Hub stakeholder expressed the importance of the CATUs for patient flow. Both CATU senior staff and acute stakeholders agreed that there is a subgroup of patients "who should never have arrived [at ED] in the first place".

Nevertheless, the relationship of CATUs to the acute hospital is clearly a complex issue. Many perspectives on this were expressed by staff and stakeholders. At times of high pressure on Treliske, CATUs (and in fact, both WCH wards) do not feel 'in control' of their admissions, creating challenges for patient intake, the type of patients coming into the CATUs, and patient flow. One staff member expressed the view that site coordinators think only of patient flow for Treliske, not for the whole system: "as long as they [Treliske] can get their patients out…it doesn't matter whether it's appropriate or not."

3.1.1 The relationship of West Cornwall Hospital to Treliske

WCH has specific challenges around its interrelationship with Treliske, as part of the same trust and a sub-acute setting that is not always used as such. There are conflicting data on how these decisions are made. RCHT Flow Hub states that patients are sent from Treliske to WCH for 'discharge planning'; a WCH interviewee stated that patient notes will say 'medically fit for discharge to West Cornwall Hospital for discharge planning or CATU bed…independently mobile'. In other words, these patients are being moved out of Treliske so that discharge planning can take place elsewhere. Patients will either be awaiting discharge or need further rehabilitation and would be most appropriate for a community rehab bed. However, staff at WCH do not see their hospital (particularly the Med 1 ward) as a community ('rehab') hospital, and there is clearly a lot of sensitivity about it being viewed as such:

> *"They [Treliske] see it [WCH] as a community hospital when they want to. They see it as an acute hospital when they want to…we've got no criteria, we'll take anyone".*

At an operational level, there appears to be a clear understanding of how, when and why WCH's bed base is used by Treliske, but this understanding is not always shared by WCH ward staff.

Wider stakeholders in the West Cornwall area also expressed frustration that they are unable to refer local patients in to WCH, preventing them from having access to a CATU-style service which they feel is needed. They see a need for such community bed capacity to be ring-fenced for community services such as GPs, district nurses etc. to be able to access 'step-up' care in the area when needed. Patients being admitted from outside the locality, sometimes the other end of the county, are also seen by WCH staff and stakeholders as having a negative effect on the ability to discharge patients efficiently, patient experience (friends and family support), and overall efficiency of patient flow at a countywide level. One ICS stakeholder stated that "absolutely 100% from community place leaders, community, citizens, they almost feel, and it's a harsh word, but I may as well be blunt about it, quite aggrieved [that they don't have CATU provision in West]."

3.2 How are CATUs 'located' within the ICS in Cornwall and what has been the impact of this?

At an ICS strategic level, there is some debate as to whether the CATUs fit within the 'Patient Flow' or 'Urgent Care' strands of work, which is reflected to some extent in the diversity of views around what the role of CATUs is and should be, at a countywide level.

Some staff expressed concern about how the CATU is perceived (by the Trusts and the public) and what its role is understood to be. The two CFT CATUs – at BCH and CRCH – are located in Harbour and Carn Brea Wards respectively. There was concern that this creates for some the sense that these CATUs are still 'wards' in the conventional sense, when their usage is different as they are 'units' that ideally turn patients around much more quickly than a community hospital ward might. This, alongside these CATUs' location in community hospitals, has been seen to lead to a public perception of CATU admittance being comparable to community hospital admittance, i.e. longer-stay rehab. This was illustrated through the example of a CATU patient's son:

> *"Cancelling the package of care, because [his mother is] in hospital, she's in a safe environment…and that's more about the perception of us being a community hospital, that we do rehab…but you wouldn't cancel your package of care if you went to ED with a broken leg."*

Other stakeholders also suggested that work needs to be done to shift perception of the CATUs' role within the system, and responsibilities towards patients, in order to function more efficiently. A key question here is the degree of risk that can be held at each point in the system; for some, it's questionable whether it's the CATU's job to hold all the risk around the patient.

As CFT has historically worked in community healthcare services, it is in the process of learning (at all levels) how to treat and manage increasingly acute patients, both in the community and within the community hospital setting. A number of CFT and wider system stakeholders expressed the view that putting resource into community hospitals and ensuring community healthcare has access to these beds would take pressure off the acute setting.

The new IToCH (Integrated Transfer of Care Hub) system will act as an integrated point of triage and a replacement for community coordination centres with the aim of holding a 'live view' of bed and service capacity across the system.

3.3 How would CATUs best fit within future infrastructure of care in Cornwall and beyond?

The three CATUs are distributed along the 'spine' of Cornwall, offering care somewhat closer to home for many Cornish residents. For many respondents this place-based model was a key reason for their existence. One ICS representative stated that it is "absolutely our model of care that we can support people as close to home as possible and in the most holistic environment that we can. And that is absolutely our vision. I think the CATUs are a crucial part of that." Many stakeholders wished to see a more efficient use of hospitals in a place-specific way that "makes sense for the community" using a 'step-up' community model. Indeed, this raises the question of how all community hospitals in Cornwall might be used in ways that benefit their local communities as well as contributing to efficient patient flow. One clinician in the West Cornwall area described their wish to have access to beds at WCH or even direct admitting access to provide more continuity of care for patients and allow for easy admission to and discharge from their closest hospital:

"I think the where [CATUs] work best is when there's a really good link between community and, you know, servicing community, as opposed to servicing the front door of Treliske, which is, I think, which is where we get muddled as a system…we spend our whole time looking at the front door to Treliske and saying, 'How can we stop people getting there?' Whereas actually, what we really should be doing is focusing on the other end, where people live, and saying, 'How can we keep people there?'…

"When you spend your whole time focusing on the front door, inevitably, that's where you put the resource. And that's the wrong place to put the resource. You know, you need to put the resource where people live, or in the communities, which is like the CATUs."

3.3.1 Holding higher acuity in the community

Cornwall has been holding increasingly higher levels of acuity in the community. Senior stakeholders view the CATUs as a key facet of this development, i.e. as a 'safety net' for community services. That is, if the system is asking for higher acuity to be held in the community by clinicians including GPs, Community Matrons, District Nurses and virtual wards, then the CATUs are a means for those clinicians to hold higher clinician risk, knowing that if things do not go well – if a patient needs urgent medical or bedded care – then there is a place for them to go that is not the Emergency Department:

"There's a lot of challenge that I hear from a kind of, we should just be managing people at home, and while I absolutely believe in the home-based model, I also know it will fail if it doesn't have a backup plan."

This is viewed as an essential means by which more urgent and high acuity care can be held in a community setting and away from the ED or the acute setting:

"It's about psychological safety…when [clinicians] feel safe in taking that brave step towards Intermediate Care ownership of your people in your place, the fact that you have a bedded care backup plan, I think will allow people to be braver, because you will know that if at three o'clock in the morning, your plan falls apart…, it's all gone horribly wrong…In your plan, you will be saying, we're going to do X and Y, and should there be a problem, the default will be the CATU, the person will be stepped up and admitted here. And it's the same for complex discharges. Actually, if we're taking a really complicated person home, we're going to take them home, it [might] go horribly wrong, but they wanted to do it, and they wanted to try and we have to give them every chance of that success."

One stakeholder described their vision for the future of CATU as:

"To provide a genuine short stay, or one day…medical, nursing, therapy assessment of a frail, usually older person, who is just a bit beyond community and GP ability to manage. So their acuity, complexity, and frailty is just, it's just really out of the ability to do that at home. And we have them for genuinely an assessment, a short period of treatment, and then they go back to their own place of residence. That is, that's the vision so they don't have to go to ED, they don't have to sit in the back of an ambulance. And it may be that in some people, that means they convert to staying for a week for they need intravenous therapy or, or something like that, but…what we're not expected to do is to sort out their entire lives. We are not

expected to improve them to a point that was better in terms of their function than when they came in…

"…it allows us to confidently manage increasingly complex people at home. Because if that fails, we've got a community-based backup plan, [a] psychological safety net for developing more and more community intermediate care."

For this approach to succeed, senior CATU staff feel that the CATUs must be held as an additional 'front door' for this patient group:

"We will not go backwards to CATUs being at the 'back door', we will really hold our own…we've kept it [CATU] as the 'front door' resource [i.e. admission avoidance] and are constantly pressing with SWAST, ED, MRU, 111 to use them. And it's absolutely paid dividends and we've got, I think, a much better flow."

4. IMPACT: What has been the overall impact of implementing CATUs on system use across Cornwall?

4.1 What is the evidence for and against CATUs reducing pressure on ED and Acutes?

4.1.1 Avoided admissions and ED attendances

Across the three CATUs between April 2020 and December 2022, the CATUs supported around 3,900 patients who nearly all required an urgent admission.

Number of admissions per CATU

System data shows that around 8% of CATU patients are referred on to the acute hospital and 92% are discharged to other settings (mostly their usual place of residence). Given that all patients being admitted to CATUs are in need of urgent, bedded care, approximately 3,600 hospital admissions have been avoided over the evaluation period (approximately 1,200 avoided hospital admissions per year).

A significant proportion of referral to CATUs come from the community: SWAST (33% Bodmin and 4% CRCH), GP (21% Bodmin and 8% CRCH), Home (3% Bodmin, 14% CRCH), community teams (3% Bodmin, 3% CRCH) and MIU (1% Bodmin, 3% CRCH) resulting in approximately 1,500 avoided attendances at ED (around 550 per year).

A significant proportion of patients referred from the community will have also resulted in a SWAST ambulance and crew bypassing both the wait and being seen at ED.

On average, SWAST are waiting for 3 hours and 23 minutes to handover at ED at Treliske. Crews report that the CATU referral process is efficient and if the referral is accepted they can take the patient straight in to the CATU. Data were not available on the exact number or proportion of admissions from the community (including referrals from GPs and community teams) that arrive by ambulance, however there is anecdotal evidence that "very few patients were brought in by their families…most would be SWAST". This allows an estimate that the CATUs have saved around 5,000 hours (around 95% of community referrals[h]) of ambulance handover waits at RCHT. More significantly, the availability of beds in the CATU and acceptance of direct referrals from the community and avoided waits at ED has increased the availability for SWAST to respond to more people in need of urgent or emergency care.

[h] "at least 95%, very few people arrive by car or family members"

4.1.2 Length of stay

The original aim of the CATUs was to assess, treat and discharge patients within 3 days. System data were analysed for CATU patients versus matched controls (see Appendix 5 for matching methods and statistics) who did not access a CATU. Analysis showed that the actual length of stay (LOS) within the CATUs is an average (median) of 11 days. LOS is significantly longer in CATU than in an acute (median = 6 days, $p<0.05$),

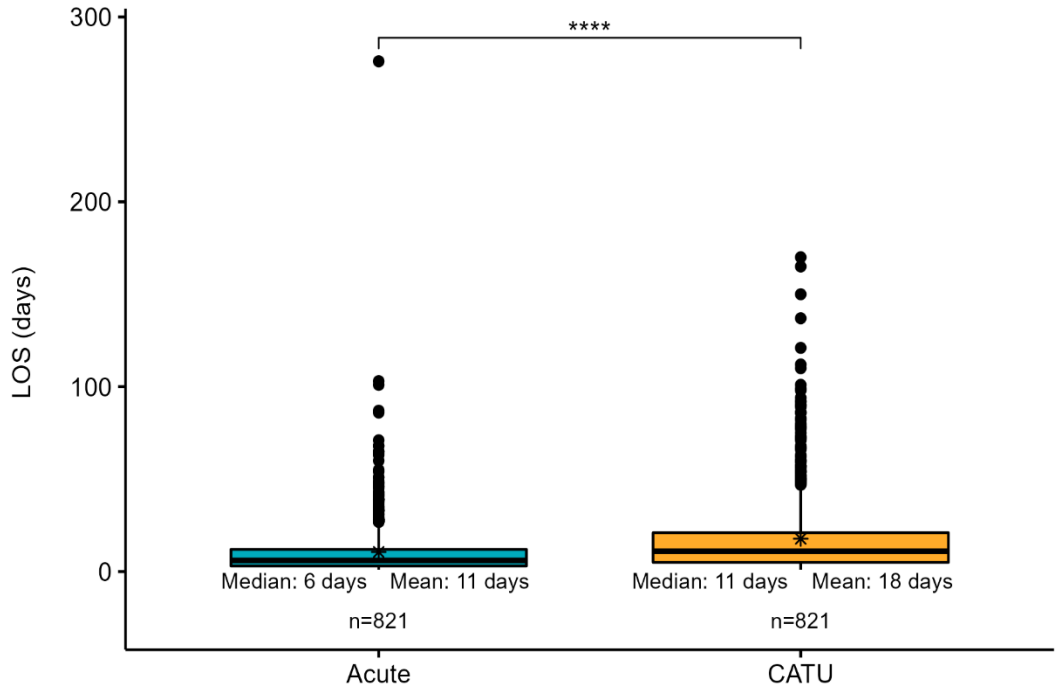


Figure 30. Average length of stay in CATUs and for matched controls in acute hospital.

Analysis of length of delays also showed significantly longer delays (between being medically optimised and being discharged) for CATU patients (18 days) versus matched patients in the acute hospital (8 days), suggesting much of the difference in average length of stay comes down to flow as opposed to length of treatment.

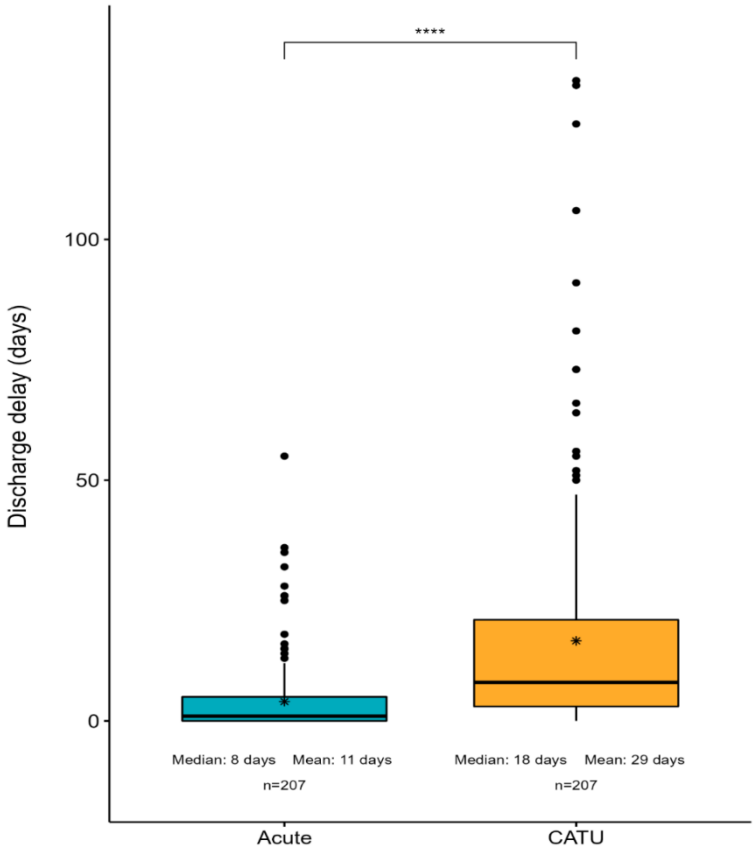


Figure 31. Average delay following being medically optimised for discharge in CATUs and for matched controls in acute hospital.

Analysis of LOS for patients for whom 'medically optimised and ready for discharge' was recorded on a specific date shows that, on average, LOS was 6 days for CATU patients and 5 days for acute hospital patients.

Length of stay analysis does not include same day discharges for either cohort[i]. Roughly 7% (BCH 8% and CRCH 5%) of CATU admissions had a same day discharge.

[i] The dataset containing the matched controls included all spells for frail (Rockwood score of 5+) and elderly (65+) patients. This comprised all admission types, including a high proportion of same day discharges. We therefore removed patients with same day discharges in both the control (acute) and CATU datasets, to ensure a matched sample of short stay (i.e. CATU-type and matched control) patients for subsequent analyses.

4.2 What is the evidence for or against CATUs providing equal quality of care to patents as an acute?

The proportion of patients readmitted within three months following discharge was slightly lower for CATUs (6%) than in a similar sample of patients who attended an acute hospital (8%) suggesting that delivering care at place is not compromising quality.

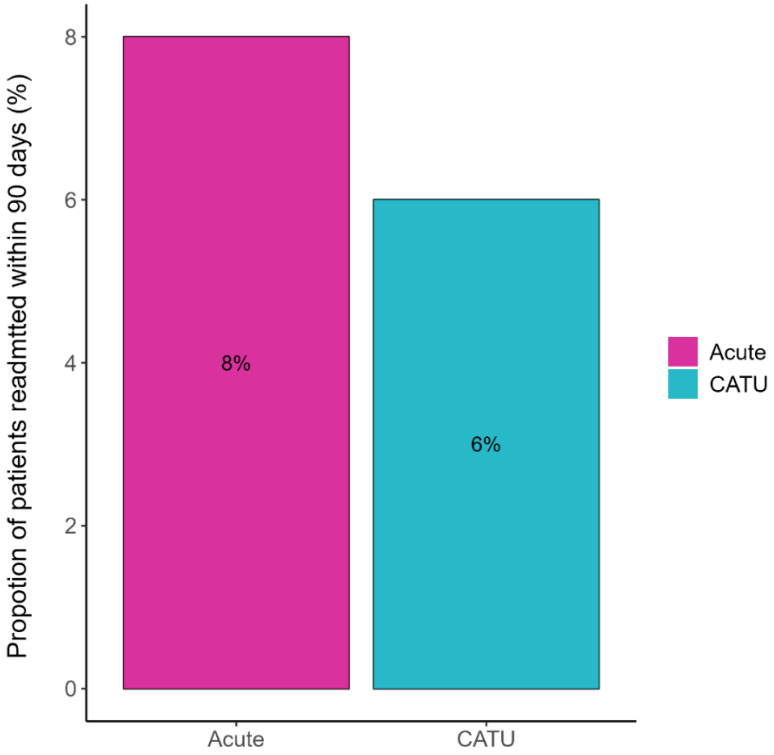


Figure 32. Proportion of readmissions within 3 months following discharge for CATU patients and their matched controls in acute hospital.

4.3 What is the patient experience of being in a CATU?

Based on interviews with CATU patients, feedback from patients on the CATUs during discussions with the CFT patient experience team (CRCH CATU), and two patient involvement and engagement sessions (BCH CATU), a number of themes were highlighted.

4.3.1 Location

All interviewed patients stated it was important to them that the hospital (BCH or CRCH) was close to their home, particularly because being close to home meant more visitors. One patient described being treated at a different hospital, further away from home, as a negative because no one visited her.

4.3.2 Patient care

Overall patients were largely happy with the care they received. The vast majority of comments about their quality of care were positive; stating that it was excellent, they feel safe and well looked after, and staff were kind and caring. Two patients described how staff had made them "feel at ease" on arrival at the CATU, "I was welcomed in…everybody is nice and careful". However, multiple interviewees noted that the units were short-staffed (both BCH and CRCH). Many patients expressed a wish for more mobilisation while on the ward, such as walking practice.

4.3.3 Communication

Communication between staff and patients was generally regarded as positive. One patient stated that she felt she was kept informed about her care "100 percent": "you always know what's going on and what's happening next". However, another patient did not feel so well-informed: she felt she had not been told enough about "what exactly is wrong with me, what exactly happened" to precipitate her needing to go to hospital, and she had not been given an opportunity to go through the changes made to her medication on the CATU. Many comments note how attentive the staff are, however, some mention examples of long waits for the call bell to be answered. There were also some examples of patients feeling like their needs were not being fully met.

4.3.4 Discharge

A number of patients made comments that they would like to know more about their date of discharge or how long they were going to be in the CATU for. When asked about discharge planning, most of the patients interviewed were unclear about what was to happen and when.

4.3.5 Comparison to the acute setting

Some comparisons were made between the CATU and the acute hospital. A few patients noted that the CATU was more peaceful than a hospital ward, and that staff have more time for patients.

However, there were also comments about receiving fewer visits from the doctor than in hospital and that the CATU had limited diagnostic capacity (i.e. certain scans were not available). There seemed to be mixed levels of understanding about what a CATU is with many viewing it as similar to a community hospital ward.

It should also be noted that many referrer stakeholders described their patients expressing strong wishes to avoid Treliske. One stakeholder in West Cornwall stated his patients would rather go to BCH CATU, at the other end of the county, than the acute hospital. SWAST crews had left frail elderly patients at home who had refused to attend the acute. One patient said the CATU was "definitely different from Treliske. Oh, it's so impersonal there, it really is…it's more personal here, the attitude I think is different amongst the staff". Another patient described staff at Treliske as "in a rush…they were very busy".

SWAST crews also described experiences of patients who refused to be conveyed to Treliske but were happy to be conveyed to a CATU, e.g.

> *"…a lot of patients…will plead with you not to take them to Treliske, but they will go to the…local hospital…We left a 93-year-old at home recently because West Cornwall wouldn't accept [and she wouldn't] go to Treliske".*

Case Study 1: ‘Daphne’

Daphne is in her 90s and lives alone in West Cornwall. She has no previous medical history and no previous medications. She is usually mobile and independent. Daphne was admitted from home after having two falls and a ‘long lie’. She arrived at the CATU via SWAST from RCHT.

While on the ward she had blood tests, x-ray, a CT head scan, physiotherapy input and was subject to a ‘tissue viability’ nurse referral. Daphne was previously walking with two sticks but is now walking well with a wheeled Zimmer frame. Daphne was ‘medically optimised for discharge’ 14 days after arriving at the CATU and her care needs had not changed during her stay, so she was discharged in a timely manner.

Daphne felt her initial nurse assessment allowed her to settle in quickly to the ward. Although it had been explained to Daphne why she was on the ward and the plan going forward, she stated that she did not understand exactly what was happening to her regarding her treatment but felt it was well-understood by the medical staff. She expressed a preference for discharge planning, which had not yet taken place, although she expressed a preference to return home.

Daphne stated that what mattered to her about her day-to-day care was that she understood it. To Daphne, this meant being kept informed about her care and planning: “a little effort will produce very good results”. Daphne felt she had been kept informed about her care during her stay at the CATU. Daphne was not aware of any discharge planning despite being ‘medically optimised for discharge’ at the time of the interview.

The CATU’s proximity to her home appeared to be the aspect of CATU-specific care that was most important to this patient:

“It matters a lot that I’m close to home, always… I suppose it’s a feeling of safety”.

Case Study 2: 'Anne'

Anne is in her 80s and lives with her husband, who has dementia, in the Bodmin area. Her daughter lives nearby. Anne has an existing COPD diagnosis and was conveyed by SWAST to BCH from home with increased pain on breathing, and shortness of breath. The previous day she had been conveyed to Treliske with similar symptoms but returned home. On the day of admission, she had had sharp increase in symptoms and called an ambulance. She had expressed a strong preference to the SWAST crew that she wished to be treated at a local hospital and avoid being conveyed to Treliske. The crew secured an admission for her at BCH. On admission Anne received an x-ray, nebuliser, and bloods taken, a canula inserted and received IV antibiotics. Her current medication regimen was also reviewed and adjusted.

Anne's first impression of the CATU was that she was "quite surprised" by its size and "very impressed by the cleanliness" and the "very nice and very helpful" doctor who spoke to her at length on the day after her admission. However, she felt she needed more support around her medication regimen, which had been changed while on the CATU:

> "because my inhalers have been changed I would like to sit down with someone and go through it thoroughly, so I know exactly what is this and that for, because everything has been altered and I'm a little bit bothered about that. Before I came in I know exactly what I was doing. I like to know what's going on and what the medication is for. I've got several things wrong with me, so I like to know what I'm having treatment for.

Anne also felt the lighting was "far too bright especially first thing in the morning". However, Anne was generally satisfied with her care. Compared to Treliske, she felt CATU care was "more personal" and the "attitude" of staff was better, describing the care she had received at Treliske was as "so impersonal".

Anne was seen by a Patient Enabler (PE) on the day of admission. The PE completed observations, lying and standing and weighed the patient but no discussion of home or discharge took place. The patient was next seen by the PE six days later, where discharge planning was discussed. At this meeting Anne describe how she was concerned about returning home as she felt "unable to cope" with a spouse who suffers from dementia. Anne felt the PE was "a bit in a hurry" during this second meeting.

Anne was 'medically optimised for discharge' after six days on the CATU. At this point she had returned to baseline and was sent home with newly prescribed inhalers to help with her already diagnosed COPD. However, her discharge was delayed while waiting for a twice-daily package of care to be put in place.

5. How best can the CATUs continue to support patients effectively and efficiently?

5.1 The roles and skills required to deliver CATU care

5.1.1 Nurse-led units

Medical staff and nurses at BCH and CRCH CATUs were positive about working in nurse-led units. One BCH nurse described the implications of being nurse-led as follows:

> *"Doctors will have a medical focus, quite rightly so, whereas as a nurse we will look more holistically because that is our role with the whole patient, so we'll get a referral and we'll also ask about the home environment, because that can lead us to whether it's appropriate admission or not, and also our staffing levels as well - we can think about all that when we're accepting someone…"*

5.1.2 MDTs and rapid decision-making

The nature of the CATU approach, including treating higher-acuity patients with the aim of a rapid turnaround, suggests to some healthcare professionals that the units are most appropriately staffed by experienced staff who can confidently engage in the type of rapid decision-making at MDTs required to keep a CATU functioning efficiently. This was mentioned by a senior clinician, a senior nurse, a pharmacist, an occupational therapist and a physiotherapist as important for the provision of good quality CATU-style care. The view was expressed that pharmacists who have experience in acute medicine are needed to support a CATU service; similarly, a senior occupational therapist (OT), stated CATU needs OTs at "an advanced practice level" who are able to work autonomously, are able to turn patients "around really quickly and get them back home", as well as having some understanding of medications that have been prescribed, because these can contribute to falls.

MDTs work effectively when staff from across professions are empowered to make decisions together in a culture of learning. Wider stakeholders in the system have also expressed a wish to be included in MDTs and discharge planning. The physical separation caused by the pandemic appears to have been detrimental to the interconnections between teams in Cornwall. However, in order for other services to participate in discharge planning at the pace of the CATU, staff would need to be made available in a flexible and rapid way, which is challenging given the current resourcing issues in the health and social care sectors. Nevertheless, this kind of cross-team, integrated working is a necessary condition for offering patients a seamless discharge experience.

5.1.3 Key skills

The key skills required of medical staff and nurses on the CATUs have some overlaps, most notably around "advanced examination skills" that allow both staff groups to be involved in rapid clinician decision-making (CFT nurses have access to a training module to support this). Some of the key skills needed for CATU working include the following (with the staff group that can perform these skills in brackets, referring to Registered Nurses (RNs) and Healthcare Assistants (HCAs)):

- BP/pulse etc (RN/HCA)
- ECG (Doctor/RN/HCA)
- Bladder scan (RN/HCA)

- Venepuncture (Doctor/RN/HCA)
- Cannulation (Doctor/RN)
- Point of care testing (RN)
- Catheterisation (Doctor/RN)
- ABCDE assessment (RN)
- Triage of referrals (CATU Senior Staff Nurse)
- Mental capacity assessment (RN)

Nurses who have been operating in community hospitals might need upskilling to deal with the increased acuity of CATU patients, while medical staff will ideally have experience both in hospital and community settings to support holistic understanding of the patient group and their needs. One respondent also cited a need for dementia specialists who have "a good understanding" of challenging behaviour. CATU medical staffing is mostly provided by GPs (at BCH and CRCH), and one clinician stated this is how they work best: "GP-led and primary care facing", with "the support of geriatricians who hold a similar view [on ceiling of care]". Both medical staff and nurses were positive about the relationship they had with the consultant geriatricians at RCHT via the Silverline service: one nurse described this as "phone a friend", allowing the nurse-led units to draw on the consultants' geriatric medical experience to support their clinical decision making on the CATUs.

Regarding HCAs, those working on CATUs are required to take bloods and perform ECG monitoring. This is within the usual scope of HCA working, but not within the skill set of all HCAs, suggesting a need for substantive CATU HCA roles, again to allow for efficient CATU working.

Due to high patient turnover, seven-day AHP and pharmacy cover would be supportive of consistent CATU working. One senior pharmacy respondent stated that the Discharge Medicine Service (DMS), introduced in England in February 2021, could be supportive of CATU working: often patients are on the CATU for short stays and medicines reconciliation is not always completed, so the patient can be referred to the DMS for a community pharmacist to review their medications once they are home. Usage of the DMS has been shown to reduce readmission rates[29].

At a system level, ideally staff would be rotated across different types of healthcare services, to develop a workforce that has a deeper understanding of the entire healthcare system, the skills required for each area, and an appreciation of the challenges faced by their colleagues in other services.

5.2 How can community hospitals be used to support patients?

5.2.1 'Intermediate' care approach

The establishment of CATUs in community hospitals means that patients with increasingly high acuity are being treated in the community setting. For some this leads to an imperative to significantly rethink the role and nature of community hospitals, e.g.

> *"[We need to ask] what is the role of our hospitals in the community rather than our community hospitals? Because 'community hospital' has connotations of, you know, 'cottage hospitals', yet actually none of our hospitals are being run like cottage hospitals. They're either 'bootcamp'* [i.e. rehabilitation] *or sub-acute units. And so we need to rebrand, we need an intermediate care strategy that describes what the community settings are for. And that is about bedded reablement pathways or local admission and diagnostic assessment…the moniker of whether you're acute or community has…got to go. Because what happens is people see*

branding West Cornwall as a community hospital as a dumbing down of the acute, whereas actually, we are bringing up to acute level care what all our community services do."

Being part of the extant community provider offers BCH and CRCH CATUs existing links into community services, e.g. the AHP teams at BCH are part of CFT's Integrated Therapies team. Primary care respondents and community care providers strongly expressed a wish for more place-based care, i.e. patients being treated in their local community as much as possible:

"I think where [CATUs] work best is when there's a really good link between community and [CATUs]…so they're servicing the community, as opposed to servicing the front door of Treliske."

"The bigger thing is, it's it needs to be available to primary care, I think, for [a GP] to say, I've got Mrs. Smith at home, she's got carers in the morning, but they can't get her up today, she seems really confused…I've been around to examine her, she's just not right. Something's going on. You know, if I try and get a district nurse to take bloods, and a urine sample and a chest X ray, then that's going to take a week to do but actually, she could come to [the CATU] for 24 hours, [they] could do all of that. And she can go home to her to her care package."

5.2.2 Acuity and clinical risk

Community hospitals, and specifically CATUs, are treating patients with unprecedented levels of acuity and complexity, in comparison to how they have operated in the past. This is in part due to the need to support the acute trust, the ageing population, and attempts to keep patients at home or as close to home as possible. One respondent described CATUs as a necessary "safety net" for a community sector holding increasingly acute patients in their usual place of residence. Acute patients being treated at home are cared for by GPs, community matrons and district nurses; using the '@home' model; and on recently established virtual wards, which have been working on a trial basis with the BCH CATU. They have been operating an inreach/outreach model with BCH, with a "clinical nurse specialist…physically going through people's notes, attending ward rounds, huddles, etc and identifying people that can be discharged earlier [into a virtual ward]" as well as ensuring virtual ward medics are aware of the CATU option in the county.

Holding increasingly high acuity in the community requires "a steep learning curve" at all levels, from junior staff right up to senior management, developing policies and processes that are appropriate for this (new) purpose. CATUs, particularly BCH, are increasing the acuity they can safely hold, through a programme of upskilling and increased testing capability, which poses challenges for CFT itself, where staff have had to implement and interpret policies to support higher acuity patients. CFT stakeholders stated that the level of acuity being held in the Trust was higher than ever before, as a result of implementing CATUs; in the past "we would always have referred them into the acute trust". Managing risk in the CATU is an ongoing conversation among staff. Individual clinicians will have differing tolerances for risk, potentially resulting in differences of opinion, challenge and conflict.

6. What are the opportunities and key learnings for the Cornwall system?

6.1 What are the further opportunities based on Cornwall's current and future plans?

An underlying challenge facing the Cornwall system is its increasingly elderly population. Respondents did not feel that the infrastructure to support this growing elderly and potentially frail population is yet in place in Cornwall, but that the CATUs are well-placed to perform a role in this infrastructure by treating increasingly acute patients in the community, alongside the acutes, in a flexible way: "on any given day, there are ebbs and flows in activity across the two Trusts and in the community. And I think the value of the CATU is being responsive to what is out there." This view was also expressed by a senior ICS stakeholder, who felt that more flexibility is needed across the system, including around the roles and remits of services as well as how the workforce is deployed and used across the system.

One CATU senior staff member raised the possibility of directly accessing the ambulance queue at Treliske to check for CATU-appropriate patients, and either pulling them out of the queue, or going a step further and working with SWAST command to see whether anyone waiting at home for an ambulance might be CATU-appropriate, in other words, starting to think about ED avoidance even prior to an ambulance arriving on scene.

One ICS stakeholder suggested that an expansion of the CATU's admission criteria might be one way of improving the infrastructure to support an increasingly ageing population. For another, their vision of the CATU's future was as a "frailty ED", while a stakeholder working in the community felt that the increasing prevalence of dementia in the population was reason to increase the use of dementia specialists, including in the CATU. At time of writing, a 45-bed dementia care unit was about to open in Cornwall, adding much needed capacity for dementia care in the county.

There is also appetite within the wider system to work more closely with the CATUs. For instance, the frailty 'virtual ward' is currently operating a pilot project with BCH CATU, while stakeholders from the domiciliary care and voluntary sectors both expressed a wish to be more involved in facilitating discharge, and the interface between hospital and home. The voluntary sector is also working collaboratively with the health system on prevention, through the recently established Cornwall Gateway, a dedicated phone line and email address to access a range of voluntary services, in collaboration with the ICB.

It should also be noted that Cornwall's health and social care system more widely has a culture of innovation and embracing change – of which the CATUs are one part. Current innovation projects underway in Cornwall include:

- REACH Cornwall, an ESF business cluster project which is an employer-led initiative, identifying and addressing skill shortages, making training more accessible and developing clearer career pathways for the social care, healthcare and early years sectors, in CIoS[30];
- Immedicare, a 24/7 NHS video-enabled clinical support service for care homes, currently being trialled in CIoS[31];

- Capacity Tracker, a web-based, digital insight tool, built by North of England Commissioning Support Unit (NECS) in partnership with NHS England, that enables care home, in-patient community rehabilitation, substance misuse and hospice providers to easily and quickly share vacancy and other critical information in real time, which allows Government and the NHS to have detailed insight across the sector.[32]

6.2 What are the conditions for success required to set up and deliver CATUs?

6.2.1 Within the CATUs

- Fundamental to the success of CATUs is a workforce that 'buys in' to the concept of the CATU.
    - Where there have been staff, especially medical or nursing staff, who do "not buy into the concept" that you would want to keep frail, elderly people away from the acute setting and manage their conditions conservatively, who "find it very difficult to work in [the CATU] environment", this has led to difficulties.
- Frequent opportunities for collaboration, coaching and "positive challenge" on the ward, including MDTs and a system of 'huddles' alongside rapid clinical decision-making, are central to the CATU approach to get people to a point of being medically optimised and discharged as soon as possible thereafter. Building skills and confidence across all staff groups and creating a culture of engagement were seen as essential for the effective implementation of this rapid way of working.
- Sufficient substantive staffing to adopt the CATU culture and run the CATU day-to-day.
- The Meaningful Activity Coordinator role has reduced deconditioning in delayed-discharge patients.
- Using the CATUs for genuinely short-stay assessment and treatment of frail, elderly patients where "what we're not expected to do is to sort out their entire lives….[and are] not expected to improve them to a point that was better in terms of their function than when they came in."

6.2.2 Interface with the CATUs

- The need for strong and communicative links into community services, with GPs and the ambulance service, was cited as critical to ensuring suitable referrals are made to CATUs.
- Similarly, joint working, MDT working, the removal of interorganisational barriers and "being more open and communicating with each other…getting to know people [more]" was cited as important (including with the social and domiciliary care sector, the local authority and the VCSE sector).
- The recognition of how rurality contributes to the challenges faced by the community health and care sector – e.g. there are things that "are quite difficult to do in a rural environment [such as] lots of blood tests…intravenous therapies…" – contributes to supportive working across organisational and in-hospital/out-of-hospital boundaries.

6.2.3 The wider context

- Delays in discharge are substantially longer at the CATUs than the acute. Reducing this disparity with community services offering parity of discharge across organisations (i.e. the acute trust and CATUs) would represent significant improvements in patient outflow for the CATUs.
- The acceleration and drive provided by COVID-19 pandemic that allowed CATUs to be brought online rapidly.

- The locations chosen for the CATUs (along Cornwall's 'spine').
- Support and buy-in from the acute setting. Staff at ED and those who are responsible for flow recognise importance of CATUs for keeping the frail elderly population away from the ED.
- County-level structures had been put in place prior to the CATUs coming online, such as a "single governance structure across the county for pathology and diagnostics", that is adhered to by both Trusts "so you couldn't argue with each other that it was safer in one bit of the [system] than another".
- The support of the ICS/ICB.
- Systems-level thinking: moving towards fully integrated services that allow for seamless transfer of patients between services, including a system for identifying and sharing responsibility for clinical risk.

6.3 What have been the barriers and how have they been (or how could they be) overcome?

6.3.1 Within the CATUs

6.3.1.1 Staff vacancies

Like the rest of the NHS and social care, CATUs face workforce issues (see section 2.3). CATUs often have long-standing vacancies, which leads to increasing use of bank and agency staff, which makes clinical decision-making and facilitating discharge more challenging on a day-to-day basis. Respondents also report that understaffing contributes to the 'burnout' of the existing workforce:

> *"I think I think we are in a really bad state. I think the [NHS] is just stretched beyond recognition. And everyone is just exhausted, we can't see any light at the end of it. You know, it was always gonna be…COVID was this massive burden. And when that was over, things would get better. But actually, it's 100 times worse."*

The reasons for vacancies are complex, including health issues and relatively low pay, as well as wider social issues like high house prices and rent, as well as Cornwall's relative geographic isolation on the South West peninsula (there is a smaller working-age population to draw from locally).

Some CFT staff groups, including AHPs and ward pharmacy, are currently contracted to work five days a week rather than seven, creating a barrier to rapid turnaround of patients.

6.3.1.2 Operational pressures

At times of higher pressure, CATU capacity is used by RCHT for non-CATU patients, including 'core' patients and 'complex discharge'. Respondents expressed a wish for CATU beds to be 'ring-fenced' as such, i.e. not allowing wider operational pressures to lead to these beds being used for other purposes. They maintain that protecting capacity and flow of sub-acute beds (i.e. CATU) keeps pressure off the ED/the acute setting. Use of CATU beds in these other ways is a barrier to the CATU model working as intended.

Additionally, some CATU staff feel that ICS and Trust expectations of patient outcomes are unrealistic and should be tempered, e.g.

> *"It seems at the moment that the ICB seems to expect that if an older frail person comes into hospital, and before they came in, they were requiring three times a day care that somehow they can go through a hospital system and come out of the*

end requiring twice daily care. If anything, plugging them into a hospital system and coming out the other side, they will have higher care needs at the end because their frailty would have increased, they will be deconditioned."

6.3.1.3 Ways of working

Members of the AHP team described the potential conflicts between the occupational therapy way of working and the CATU way of working: "they're doing their assessments, they're finding things holistically, which doesn't go down very well with the discharge model" – in other words, the 'quick turnaround' model can create, and bring to the surface, tensions around what you should treat (social vs medical issues), what can be raised at MDT meetings, and what is appropriate care for a CATU patient. There is also pressure to discharge, to get flow through the hospitals, which can lead to discharges that won't feel appropriate or 'safe' (i.e. have an acceptable level of clinical risk) for all staff.

The shifting of clinician responsibility and risk from the acute setting into the community setting requires a shift in mindset from medical staff in the acute, such as consultant geriatricians who are now seeing people who would have been their patients treated by GPs on community wards. This requires a level of professional trust from the consultants, that frail elderly patients are going to be cared for appropriately by GPs on CATUs, and could be a barrier to CATUs being accepted by clinicians working in an acute setting.

6.3.2 Interface with the CATUs

Many parties external to the CATUs – including from community health care, the VCSE sector and domiciliary care – felt their inclusion in discharge planning, via MDTs, inreach/outreach, or direct communication, would improve this process, allowing the system to move towards a more seamless discharge process, which would require reduced staff time, and improve the patient experience and outcomes. Poor links with adult social care (under local authority control) were also highlighted a potential barrier.

SWAST respondents said that differences in criteria/referral pathways between CATUs has been off-putting to them. They would like the referral criteria and pathway to be standardised across the CATUs.

6.3.3 The wider context

The Cornwall ICS is split into three 'integrated care areas' (ICAs), West, Central and North & East, and each one works and is structured somewhat differently, leading to differences in working practices between areas. One senior ICS respondent felt that the Cornwall ICS was at "very low maturity", and this was contributing to challenges faced on the ground. They also felt that new services are introduced without system-level planning and thinking, and this creates inefficiencies.

One specific challenge that affects the CATUs directly is a lack of visibility of capacity across the system; for example, visibility of community services waiting lists would be useful in hospitals, to support discharge planning. From a voluntary sector point of view, "the information flows about bed availability are always at least four days out of date". Barriers include a lack of systems thinking, use of different IT systems across the Trusts, and lack of direct personal relationships between services. Respondents also suggested a need for more Population Health Management approaches to inform how CATUs can best support patients and the community, allowing ICAs to better understand the characteristics and needs of their own populations, allowing them to deploy resources more effectively.

7. Conclusion

The frail elderly population of Cornwall did not have access to appropriate urgent care in the right place, causing increased attendances in the Emergency Department, and subsequent long stay admissions.

CATUs were set up to offer an alternative referral route for urgent care needs in the frail elderly and have been accessed by nearly 4,000 patients over the last three years. Practice and procedures have developed and improved in that time, however systemic pressures present continued barriers to efficient and effective use of the services.

The evaluation activity has reinforced cross-CATU learning, and the adoption of purposeful PPIE and data collection to support service improvements. Cornwall's health and social care system has a strong culture of innovation and embracing change, and engaged positively with the evaluation in order to help understand how best to configure acute services in a system facing the challenges of workload, stress and financial constraint seen across the UK.

The evaluation was not able to reach definitive conclusions about whether investment in CATUs should be continued but we found evidence that they are valuable as part of a whole system, and have a clear place in diversifying the urgent care options available to the growing frail and elderly population. They deliver urgent care, safely, away from the acute hospital, and are at the vanguard of modernising clinical care, including the reduction of risk averse and disempowering care. For those contemplating development of CATUs elsewhere, it is clear that it is important to consider clinical leadership within units and across the system, alongside flexible protocols and staffing roles.

Appendix 1: Glossary

A

- ACP: Advanced Clinical Practitioner: "The term ACP does not apply to a specific role, but is a catch-all term for practitioners across the NHS who have progressed to an advanced level. ACPs can be found practising across a range of fields, such as nursing, pharmacy, emergency medical services (paramedics) and adult and children's therapies."[33]
- Acute GP Service: This CFT service assists GPs in Cornwall with the management of patients with acute presentations. It is currently located at Camborne Redruth Community Hospital.
- 'Agency' staff: healthcare staff working for external agencies that re used to fill gaps in staffing (generally more expensive that substantive or bank staff).
- AHPs: Allied Health Professionals: healthcare professionals that aren't medical, nursing or support roles. AHPs on the CATU are primarily physiotherapists and occupational therapists (OTs).

B

- BCH: Bodmin Community Hospital, run by CFT.
- 'Bank' staff: staff employed by a Trust who are assigned to a service depending on gaps that need to be filled that day or week.

C

- CATU: Community Assessment and Treatment Unit
- CCC: Community Coordination Centres: Set up during the COVID-19 pandemic to support place-based triage for community teams and bedded facilities countywide.
- 'Ceiling of care': "a predetermined highest level of treatment deemed appropriate by a medical team, aligning with patient and family wishes, values and beliefs"[22]. In practice, this means some people do not wish to have more aggressive or interventionist care, so would be treated conservatively to deal with symptoms.
- CFT: Cornwall Partnership NHS Foundation Trust.
- CIoS: Cornwall and the Isles of Scilly.
- Cornwall Council: Unitary authority with responsibility for the county of Cornwall, not including the Isles of Scilly.
- CRCH: Camborne Redruth Community Hospital, run by CFT.

D

- Derriford Hospital: The acute hospital in Plymouth, run by University Hospitals Plymouth NHS Trust.
- Discharge to assess: "Where people who are clinically optimised and do not require an acute hospital bed, but may still require care services, are provided with short term, funded support to be discharged to their own home (where appropriate) or another community setting. Assessment for longer-term care and support needs is then undertaken in the most appropriate setting and at the right time for the person. Commonly used terms for this are: 'discharge to assess', 'home first', 'safely home', 'step down'."[34]
- DNR: 'Do not resuscitate'.

E

- ED: Emergency Department, also known as A&E/Accident and Emergency.
- EPR: Electronic Patient Record System.

F

- 'Front door': another name for the ED.

G

H

- HCA: Healthcare Assistant.
- Home First: CFT service that provides short-term reablement to support patients to recover at home safely when people are unwell or leave hospital. The team includes nurses, occupational therapists, physiotherapists and support workers.

I

- ICB: Integrated Care Board: "a statutory organisation bringing the NHS together locally to improve population health and establish shared strategic priorities within the NHS"[35]. ICBs "take on the NHS planning functions previously held by clinical commissioning groups (CCGs) and are likely to absorb some planning roles from NHS England"[36].
- ICS: Integrated Care System: a partnership "of organisations that come together to plan and deliver joined up health and care services, and to improve the lives of people who live and work in their area."[37]
- ITOCH: Integrated Transfer of Care Hub: a triage system to support the transfer of care between different health and social care settings.

J

K

L

- LSOA: Lower Layer Super Output Area: A geographical unit of measurement, used for statistical analysis. Each LSOA has roughly the same number of residents, typically between 1,000 and 1,500[38].

M

- MDT: Multi-disciplinary Team: "A multidisciplinary team (MDT) is a group of health and care staff who are members of different organisations and professions (e.g. GPs, social workers, nurses), that work together to make decisions regarding the treatment of individual patients and service users. MDTs are used in both health and care settings."[39]
- MSOA: Middle Layer Super Output Area: A geographical unit of measurement, used for statistical analysis. Each MSOA has roughly the same number of residents, typically between 5,000 and 7,200[40].

N

- Nervecentre: Electronic Patient Record system used by RCHT.

O

- Oceano: Casualty Information System used by RCHT.

P

- PoC/Package of Care: usually refers to domiciliary care provided to an individual.
- Patient flow: the movement of patients through the hospital system.
- PGDs: Patient Group Directions: frameworks that allow some registered health professionals to administer certain medications without them being directly prescribed.

Q

R

- Rio: An Electronic Patient Record System used by CFT.
- RCHT: Royal Cornwall Hospitals Trust (also sometimes used as shorthand for Treliske Hospital).

S

- SAMBA II testing: The SAMBA II is a small machine that can accurately test for COVID-19 in under 90 minutes. SAMBA II machines are located in all the CATUs.
- SERS/SERF: Single Electronic Referral System/ Single Electronic Referral Form.
- STEPS: Short Term Enablement and Planning Service: offers short-term support for patients at home returning home from hospital who need some extra assistance or enablement, following a health or social care crisis, run by Corserv in partnership with Cornwall Council[24].
- 'Staff groups': the different professions on the ward, including nursing staff, GPs, geriatricians, HCAs and others.
- SWAST: South Western Ambulance Service NHS Foundation Trust.

T

- TEP: Treatment Escalation Plan: "a communication tool which is helpful in hospital when a person with serious illness has the potential for acute deterioration or may be coming towards the end of their life. Sometimes doing everything possible may actually lead to harm – to more suffering and distress rather than less - and without any particular gain. What can be done and what should be done may not necessarily be the same thing. Treatment Escalation Plans should be discussed and made based on personalised realistic goals rather than 'one size fits all' treatment."[41]
- Therapies: Specifically Occupational Therapists and Physiotherapists.
- Treliske: Treliske Hospital in Truro, Cornwall's only acute hospital. Also known as Royal Cornwall Hospital (RCH).

U

V

- VCSE sector: Voluntary, Community and Social Enterprise sector.

W

- WCH: West Cornwall Hospital, run by RCHT.

X

Y

Z

Appendix 2: CATU Inclusion/Exclusion Criteria

The following definitions of the CATU-appropriate patient were found.

2.1 CATU draft SOP definition of CATU Inclusion/Exclusion Criteria[19]:

2.1 Inclusion criteria

Patients should be admitted to the CATU if they meet the following criteria;

- Frailty score of 5+
- NEWS score of less than 4
- Patients aged 18 and over
- Requiring diagnosis and confirm MDT treatment plan e.g. UTI, chest infection, fall, fluctuating confusion
- Patient would benefit from MDT holistic assessment e.g. frailty
- Suspected simple injury requiring conservative management – all non-operable frailty fractures: Clinically Probable Pubic Rami, Greater Trochanter, (may have x-ray in CATU on SWAST rule out NOF pathway); Clavicles, Forearm, Wrists, Metatarsals (or other fractures that the trauma unit decide that surgery is not required)
- Requires end of life symptom control
- Unable to remain at home safely without support

2.2 Exclusion criteria

Patients who meet the following criteria should not be considered for CATU referral;

- Patients under the age of 18 years
- Patients with high acuity medical illness
- Patients requiring emergency medical/surgical treatment
- Patients with head injuries or reduced levels of consciousness, or focal neurological signs
- Patients with fractured bones requiring surgical intervention
- Patients with suspected stroke or heart attack
- Patients with severe psychiatric presentations, including those with profound challenging behaviours associated with dementia will be discussed with the Complex Care and Dementia (CC&D) team to ascertain the most appropriate place for assessment.

2.2 Acute GP definition of a CATU-appropriate patient (as of July 2022)[18]:

Community Assessment & Treatment Units (CATUs)

For patients (*both covid and non-covid*) who:

1) Need urgent escalation of medical care from the community

2) This escalation can't be done in the home (ie DNs/community bloods not appropriate, if they are, complete SERF form - this is the 'Community Coordination Centre' route, or Acute Care at Home not appropriate)

3) Are not appropriate for RCH acute admission (ie poor prognosis or high risk if nosocomial Covid infection, eg Rockwood 5 or more, multiple comorbidities, clear advance directive documented, etc)

4) Who may benefit from some POC diagnostics +/- witnessed response to initial treatment (eg iv fluid)

5a) Are likely to go home after CATU care

---- OR ----

5b) may go to ongoing bedded care (in a community hospital or step down to residential care of some description)

2.3 CFT definition of a CATU-appropriate patient[17]:

The CATU inclusion criteria are as follows:

- Frailty syndrome - Falls, Dementia, Delirium, Functional Decline, Poor Mobility, Care Home Resident, Parkinson's Disease
- Frailty score ≥5 is a guide – older people with frailty syndrome and lower frailty score (2, 3 or 4) may still be considered appropriate for CATU.
- Ceiling of Care would be Community Hospital - completed community TEP desirable but not mandatory for admission
- (CATU care is also appropriate for locality older patients with frailty syndromes or low-risk medical problems (NEWS2 <4) who would be for escalation.)
- Imminent End of Life situations that cannot be cared for at home and are not for escalation.

Appendix 3: Clinical Frailty Scale20

Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

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Appendix 4: Quantitative methods

With the exception of the workforce data and BCH bed audit, all quantitative analysis and data visualization was conducted in R 4.2.2. Length of stay and discharge delay comparisons were calculated with independent samples t-test in the rstatix package (https://cran.r-project.org/web/packages/rstatix/index.html).

Matching

Matching was conducted in the MatchIt package (https://cran.r-project.org/web/packages/MatchIt/vignettes/MatchIt.html). Separate matched cohorts were derived for three sets of analyses:

1. Length of stay comparisons and discharge delays (section 4.1.2)
2. Length of stay to medically optimised for discharge (section 4.1.2; a different matched cohort was needed here due to the amount of missing data in the medically optimised for discharge field)
3. Readmission rate comparisons (section 4.2; a different matched cohort was needed here because cohorts were derived based on the site of their first admission within the data)

In each case, matching was conducted based on: age on admission, frailty score and ICD 10 chapter code, using nearest neighbor matching. Propensity scores were calculated using logistic generalised linear modelling.

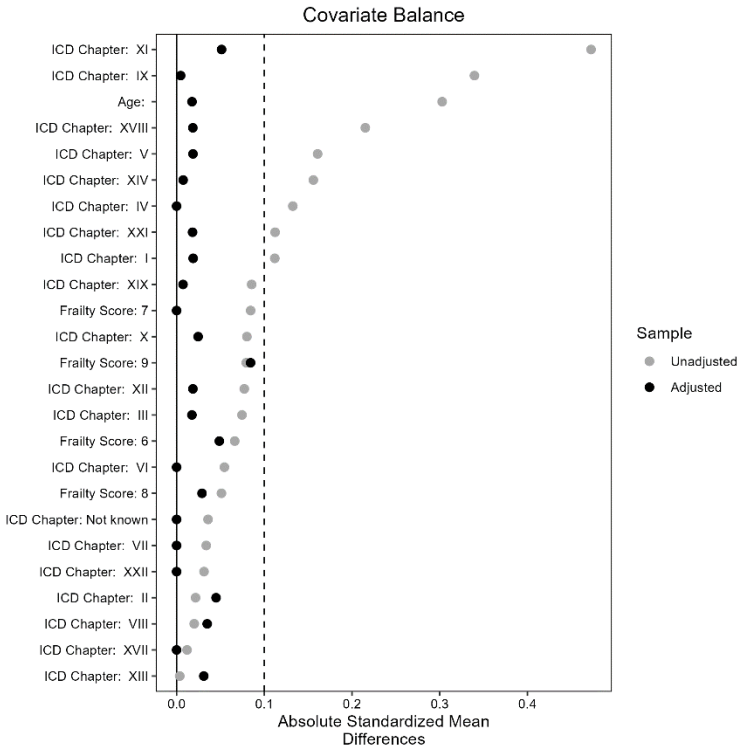
The original sample size and the post matching sample sizes are shown in the table below.

	Cohort	Initial sample size	Matched sample 1	Matched sample 2	Matched sample 3
1	Acute	7750	821	207	595
2	CATU	2765	821	207	595

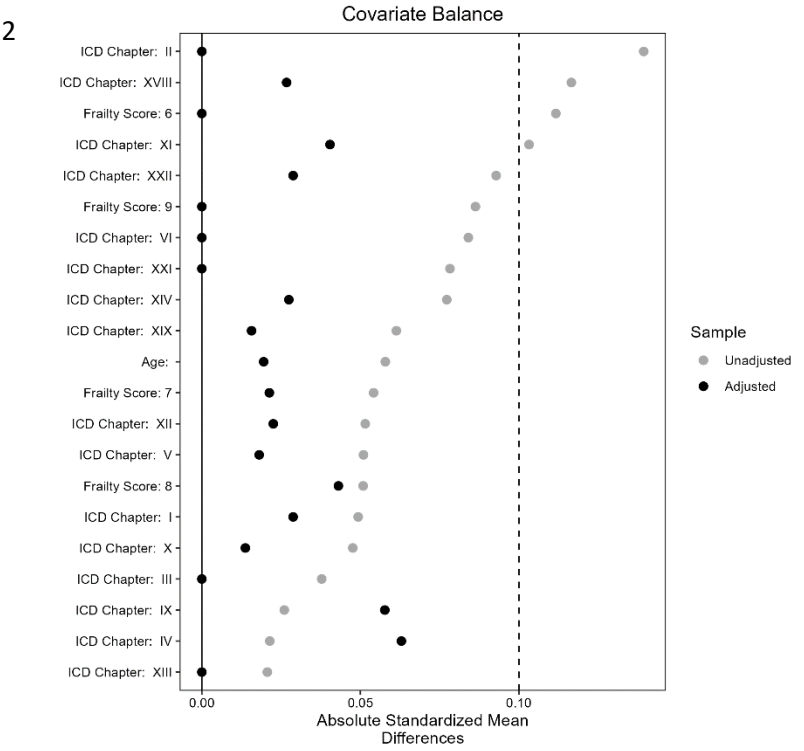
NB Samples 1-3 correspond to the numbered list above

The figures below show the standardised mean differences before (unadjusted) and after matching (adjusted) for each covariate of interest. Again, the numbers refer to the list above.

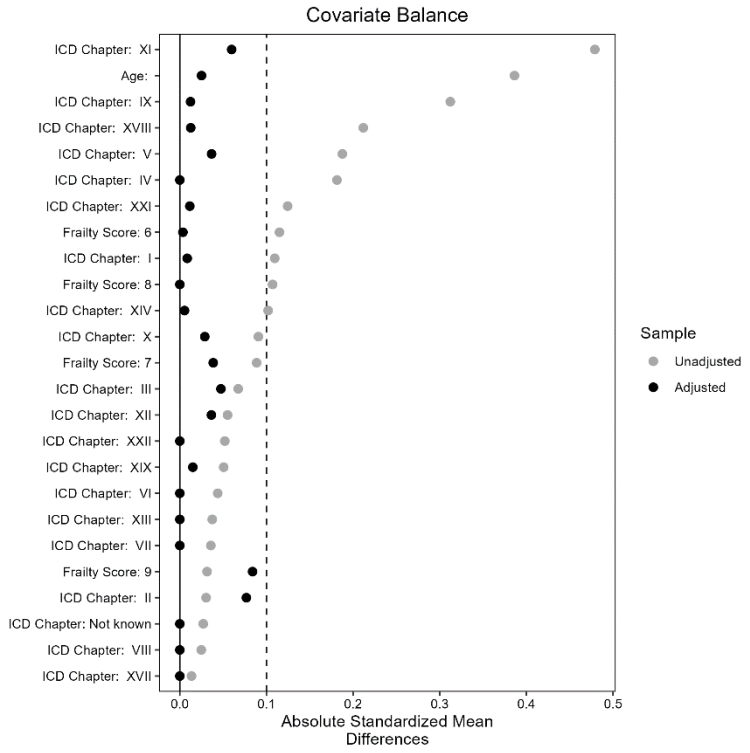
1



2



3


Covariate Balance
ICD Chapter: XI
Age:
ICD Chapter: IX
ICD Chapter: XVIII
ICD Chapter: V
ICD Chapter: IV
ICD Chapter: XXI
Frailty Score: 6
ICD Chapter: I
Frailty Score: 8
ICD Chapter: XIV
ICD Chapter: X
Frailty Score: 7
ICD Chapter: III
ICD Chapter: XII
ICD Chapter: XXII
ICD Chapter: XIX
ICD Chapter: VI
ICD Chapter: XIII
ICD Chapter: VII
Frailty Score: 9
ICD Chapter: II
ICD Chapter: Not known
ICD Chapter: VIII
ICD Chapter: XVII
0.0
0.1
0.2
0.3
0.4
0.5
Absolute Standardized Mean Differences
Sample
Unadjusted
Adjusted

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