Mental Health Network
NHS CONFEDERATION

Centre for Mental Health

Mental Health Economics Collaborative

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Mental health and housing

The feasibility of calculating an investment case

Introduction

Intermediate care for patients leaving acute hospital beds helps them to return to independent community living by offering a bridge between the two. It makes sense that someone who has been receiving mental health care in hospital – perhaps many miles from home – would want to go to a supportive environment before making the transition to independent living. However, whilst some foundation trusts and housing providers have worked together to create innovative examples, the expansion of intermediate care has been unexpectedly limited.

This briefing describes nine months of researching this sector with health and housing providers in order to understand the reasons why this approach should be expanded. We have found innovative models of intermediate care and have worked with providers to examine their existing data and determine if there is an evaluation gap; one which prohibits wider and greater investment.

The briefing offers:

- An evaluation framework which could be adopted by health and housing providers to demonstrate the positive business case for these models
- A worked example of an investment case to convey what could be presented with further data. It is based on the methodologies used in previous Mental Health Economics Collaborative (MHEC) projects, such as the evaluation of New Care Models and the Nottingham Psychological Care in Primary Medicine Team.

It concludes that existing evaluations have only conveyed part of the benefits delivered by these schemes, and that a robust counter-factual is needed to challenge beliefs that there is a lack of long-term solutions for this patient group. This, in turn, would incentivise investment in these alternatives to acute beds, with the ultimate ambition of improving patients' lives and reducing the cost of their care.

There has been a great deal of research to reach this point. Centre for Mental Health is grateful to the housing providers, foundation trusts and umbrella organisations who have worked with us to determine the current evidence base. It is hoped that this briefing clearly outlines the reasons for collecting further data and the results that could be achieved.

Context

In 2018, there were just over 18,000 beds for patients with acute mental illness, a fall of 30% since 2009. However, the British Medical Association found that between 2014 and 2016, out of area placements for adults increased by 40%, from 4,214 to 5,876, with reported annual costs of £159m per year. Consequently, there is an increasing political and financial focus on out of area placements with programmes such as Provider Collaboratives, aiming to improve patient outcomes by increasing local treatment offers. National policy is to eradicate out of area admissions for acute needs and rehabilitation services are being reconfigured to bring down the amount of long stays, far from home.

In response, foundation trusts are initiating treatment pathways with a housing component. Working with housing providers, they are designing ways to offer alternative provision within area which achieve better health outcomes for patients and better value for money.

Examples include:

- Housing provision with a range of treatment and support packages; from the level of acute care, through to supported living. This enables patients to transition between levels of care within the same building
- Home provision of acute bed care – enabling patients to receive acute care in their own homes
- Enhanced community treatment teams.

The approach has a range of advantages:

- Integrating housing, health care and support to improve patient outcomes
- The ability to draw on a wide range of evidence from existing integrated support provided by other public services
- Reducing costs
- Creating a successful pathway that bridges the gap between acute care and semi-independent living for those who would benefit from additional, transitional help.

This new work is also challenging:

- Foundation trusts lack a blueprint for housing, and commissioning housing is a new area of expertise for many
- It requires partnership working with housing providers
- Managing the transition from NHS housing to local authority housing and the accompanying bills for support is complex. The boundary between clinical care and housing support is negotiable, which can lead to budget negotiations with local authorities.

Trusts are at a pivotal point where they are considering these new pathways but with limited experience of how to deliver them. Evidence of what is successful and why will be a key tool. Specifically, evidence around:

- The quantifiable savings which can be realised through alternative provision
- To which part of the system the savings accrue
- The patient outcomes
- The long-term prognosis.

The current absence of this creates an investment barrier.

A proposed evaluation framework

A useful evaluation framework needs the minimum dataset required to capture all the pertinent data. Too many questions, and they go unanswered. Not enough and the picture is incomplete. Here, the key variables are those which are high cost, high frequency or both; predominantly in housing and health care.

For ease, this evaluation framework is described through the example of a fictional person: George. George is 42, from Lewisham in London, and has been in and out of acute mental health care since 1999. He has been discharged from an acute bed to (the fictional) Lewisham Lodge – a fifteen-bed home offering enhanced support to prepare for community living (see page 6).

How do we measure success for George?

1. George's service use

The services George uses are useful indicators of his life, outcomes and wellbeing. The two sectors which are most relevant are housing and health (where George lives and how he's feeling - see diagram below).

Housing: George's long-term goal is a sustained tenancy where he lives as independently as possible. Therefore, the framework measures the use of services that suggests this is happening and use of services that suggest it is not (see table 1).

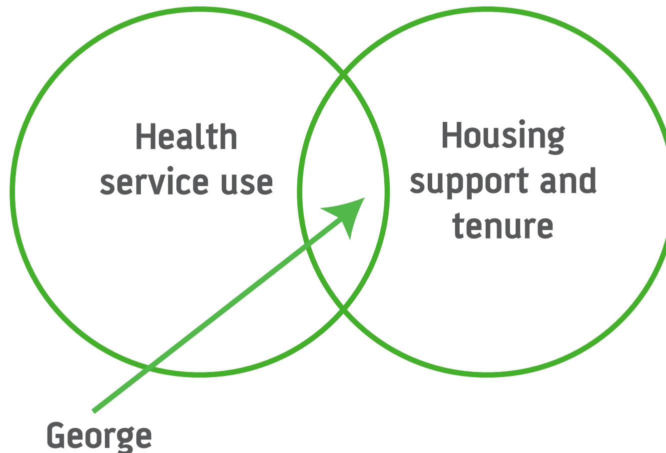

Table 1: Housing services use and its indications

Measure	Who has the data	What it shows
Tenancy	Housing provider	Stable housing
Community support	Local authority	Support required/ assessed need
Residential care	Local authority	Stable housing, but reduced chance of returning to independent living
Crisis housing	Local authority	Emergence of crisis (deterioration in housing and likely health)
Crisis support	Local authority	Emergence of crisis
Eviction and tenancy breakdown	Local authority, housing provider	Deterioration of housing. Likely crisis situation
Prison	Ministry of Justice	Crisis and deterioration of housing, health, employment

Health: George's long-term health goal is similar – to live as independently as possible because he is in good health. Again, there are services which suggest this is happening for George, and those that suggest he is not doing so well (see table 2).

2. Establishing the counter-factual. What would have happened to George otherwise?

Short-term differences

In the absence of Lewisham Lodge, what happens to George and patients like him? This requires accurate data on:

- Length of stay in acute beds compared to the average
- Number of excess days spent in acute beds because of non-medical barriers such as a lack of care package
- Number of days in acute beds due to patients being well enough to be discharged, but not well enough to return to community living.

As described in the worked example, these measures determine if acute bed stays are shorter because of Lewisham Lodge. If there is a difference, this can be costed.

Long-term differences

We are testing whether a new intervention has an impact on George's life through the measurement of service use. In the absence of a randomised controlled trial (where large numbers of people are randomly assigned an intervention and the consequences are measured), a good indicator of whether life has improved is to compare the service use during:

- Two years prior to the intervention
- The period of the intervention
- Two years post-intervention

The past is not a perfect measure of the future, but for those who have entrenched, long-term patterns of illness, crisis and insecure housing, it is a useful baseline.

Table 2: Health services use and its indications

Measure	Who has the data	What it shows
Acute bed days	Foundation trust, NHS Digital	Episode of mental illness
Ambulance, Emergency Dept	Foundation trust, NHS Digital	Crisis
GP	GP practices	Pre-crisis and/or dealing with health problems through the appropriate community service

3. Evidence of cause

Evaluations typically show correlation and not cause (see O'Shea, 2019). Measuring that a group of people had comparatively good outcomes after going through a shared service demonstrates correlation, but only infers cause. This framework is no different. However, we can substantiate cause in three ways using the dataset described above, and in a further way by involving the people in the sample.

- **The more surprising the change, the more plausible that the intervention is the cause:** If George has used a number of services across a trust and all other avenues have been pursued without success, a sustained period of stability and good health for him would point toward causal impact.
- **Consistency of change:** Is the improvement observed across the majority of the sample? If so, how does it compare to the outcomes for those in other settings? This is difficult for accommodation where there are small numbers of patients and why retrospective data on those specific residents is a more reliable measure.
- **Sustained change:** Do the positive outcomes last? As mentioned in Section 2, evidence is needed to counter the narrative that people like George are part of a 'revolving door' group who will have good months and bad, crisis and stability, expensive treatment and cheaper treatment. The assumption is that services do not impact this pattern, and therefore the investment case for alternatives tends to be based not on long-term savings, but being a short-term cheaper substitute.
- **Ask George:** Unsurprisingly, George may have his own view about his recovery and its cause. George may have fallen in love, changed medication, come to terms with past trauma or may simply have no explanation that he wants to share. It is very likely that he will have the best idea of what has helped because only he has the totality of the information about his life.

Using these metrics, it would be possible to infer a link between an intervention and an improvement in health, based on a reduction in the use of certain services.

An investment case: Worked example - 'Lewisham Lodge'

Lewisham Lodge is a fictional 15-bedded home, offering a three-month programme of support and mental health care to people leaving acute hospital beds – particularly those out of area.

Its aims are to reduce:

- Length of stay for patients in acute beds
- Number of excess bed days in acute settings that are due to non-health barriers, such as a lack of suitable accommodation or community care
- Distance from home
- Readmissions, crisis and tenancy breakdown.

The macro-measure of success is an improved flow of patients out of acute care and into successful community living.

It does this through the provision of excellent transitional care where a patient can:

- Be discharged safely from an acute bed – including those out of area
- Work with a range of agencies to design a person-led community care package for independent/supported living within 3 months of arrival at Lewisham Lodge
- Ensure pastoral and practical support (utility bills, furniture) is arranged to enable a smooth transition from Lewisham Lodge to the community
- Long-term support to prevent or minimise future crises and use of acute care.

Findings

Since 2015, the fictional 'Lewisham Lodge' has offered a supportive home to 15 people every three months (approximately 60 people a year). The experiences of the first 120 guests (resident between January 2016 and January 2018) are summarised here:

The cost per day, per resident, of Lewisham Lodge is £122. The total annual cost is £667,950.

Out of area placements:

- Between 2016-18, 75% of patients (90 patients) discharged to Lewisham Lodge were from out of area beds.
- A total 402 people were placed in out of area acute beds by the foundation trust in the same period. Patients leaving for Lewisham Lodge were 22% of that total.
- The number of out of area placements fell from 198 in January 2016 to 134 in January 2018.
- Similarly, the average distance from home of all patients fell from 41 miles to 35 miles.

There are fewer patients in out of area beds and, on average, people are treated closer to home.

Cost comparison

Three months in 'Lewisham Lodge' is cheaper than three months in an acute bed, both NHS provided and independent. We know that 50% of residents came from NHS beds, and 50% came from independent beds. The total cost comparison is shown in table 3.

Table 3: Cost comparison for 'Lewisham Lodge' versus NHS or independent beds

	Cost per day	Cost difference per day to Lewisham Lodge	Cost savings per quarter	Cost saving per quarter for 60 beds
Lewisham Lodge	£122			
NHS acute bed	£395	£273	£24,570	£1,474,200
Independent acute bed	£575	£453	£40,770	£2,446,200
TOTAL				**£3,920,400**

Cost per day is significantly lower in Lewisham Lodge than acute beds. Therefore, if Lewisham Lodge can successfully provide alternative care to acute beds, there is a per-day saving.

100% (120 residents) completed their three-month programme at Lewisham, suggesting that the Lodge is a sound alternative to acute care beds for this group.

This is a basic, 'substitute good' argument. Using Lewisham Lodge for 3 months for 120 people is £3.9m cheaper. This, however, is a cost comparison, not a savings argument.

Realised savings

For 'Lewisham Lodge', the savings can be calculated through the examination of avoidable bed days. These are additional bed days which are due to:

- Barriers such as administration and a lack of support plan, rather than health related barriers, that delay discharge. Clinicians measured the number of excess bed days due to non-medical reasons:
  - In area, the average was 56 days. For those going to Lewisham Lodge, it was 25 days.
  - For those out of area, it was 102 days (mainly because of delays to organising a care package). For those going to Lewisham Lodge, the average excess was 41 days.
- Where patients are not ready to return home to live independently, but are well enough to live in supported, transitional care (in the view of the physician). In the absence of Lewisham Lodge, patients would remain in acute beds until they have recovered further such that they can return home.
  - Clinicians were asked to complete a case-note review of the 120 patients who left acute care to go to Lewisham Lodge. They were asked to estimate this period of time for each patient. This period does not include excess bed days, where someone is ready to leave acute care, but other factors prevent this.
  - For 120 patients, it was estimated that patients were able to leave 12 days earlier than if Lewisham Lodge was not available.

The sum of these two figures is avoidable bed days.

Over two years, bed days avoided are shown in table 4.

Half of residents are from NHS beds, half from Independent beds. By subtracting the cost of Lewisham Lodge from the total cost of provision, this translates into net savings shown in table 5.

Table 4: Bed days avoided through use of 'Lewisham Lodge'

	Excess days saved	Transitional days gained	Total per patient	Number of patients	Total days avoided
In area	31	12	43	30	1,290
Out of area	61	12	73	90	6,570
TOTAL DAYS					7,860

Table 5: Net savings from using 'Lewisham Lodge'

	NHS bed	Independent bed
Patients	60	60
Days saved	3,930	3,930
Net cost per day	£273	£453
TOTAL	£1,072,890	£1,780,290
TOTAL SAVINGS	£2,853,180	

The saving from a reduction in unnecessary bed days, minus the cost of Lewisham Lodge, is £2.85m over two years (£1.4m per year). This is from a fifteen-bed residence and demonstrates the large savings that can be realised by accelerating the flow of people within the system so that they use the right support at the right time. This is a net saving of £23,333 per resident.

Long-term savings and the counter-factual

Residents of 'Lewisham Lodge' return to community living after three months. The health and housing use of each resident was measured in the two years before they stayed at Lewisham Lodge and the two years after. This is to determine whether residents experience better or worse outcomes following their stay, in comparison to the two years before. The counter-factual is the previous two years of service use.

Headlines from the two years prior to going to Lewisham Lodge:

- For 40% of residents, use of health care increased during these two years. 25% were readmitted to an acute bed.
- 50% did not sustain a tenancy and required crisis housing with increased support.
- 5% went to prison.
- There was significant crossover between those with poorer health and housing outcomes. 80% of those whose outcomes worsened experienced both an increase in health and housing spending.
- 45% maintained a tenancy – the majority with an ongoing community package of support. In the two years prior to Lewisham Lodge, 8% had maintained a tenancy for more than one year.
- 60% of people used fewer health services in the two years after their stay at Lewisham Lodge in comparison to the two years prior.

The cost comparison between the two years for this sample of 120 people is shown in table 6.

The calculation here is for 120 patients over two years (730 days) giving a total of 87,600 days. Using a real data set, these figures would be expressed per year or per month for ease of understanding. For example, acute bed days of 32,520 reflect that the average stay in an acute bed was 271 days and that there are 120 people.

The corresponding changes in health care use prior to and post residence at Lewisham Lodge, and the associated costs of this, are listed in Table 7 overleaf.

Table 6: Cost comparison

	Two years prior: days spent in each setting	Two years post: days spent in each setting	Unit cost	Change
Tenancy	21,900	39,420	£20	£350,400
Supported living	21,900	22,200	£86	£25,800
Acute bed	32,520	21,600	£395	-£4,313,400
Prison	940	564	£71	-£26,696
Ex-prisoner supported living	10,340	3,816	£86	-£561,064
TOTAL DAYS	87,600	87,600	**TOTAL**	-£4,524,960

Table 7: Change in health care use for residents before and after 'Lewisham Lodge'

Health Service	Two years prior	Two years post	Unit cost (non-referenced approximations)	Change
Admission cost (assessment)	120	30	£720	-£64,800
Crisis care	165	76	£600	-£53,400
A&E	360	240	£108	-£12,960
TOTAL				-£131,160

For consistency, rather than logic, the cost of acute bed accommodation is listed as a housing cost. It is the greatest cost avoidance at over £4.3 million, demonstrating that the clinical commissioning group benefits most from Lewisham Lodge in the long term.

In total, 120 people cost £4.656m less in the two years after Lewisham Lodge, in comparison to the two years prior. This is an average saving of £19,401 per person per year.

Total savings

The net saving from short-term reductions in acute care bed days is £2.8m. In addition, over the following two years, costs are lower by £4.656m.

The total net saving generated by this fifteen-bed hostel is £7.46m. On average, for every £1 invested in 'Lewisham Lodge', a net saving of £5.62 is realised (7.46m divided by the 2 year cost of Lewisham Lodge).

Even by just taking the short-term savings into account, there is a clear investment case for Lewisham Lodge, predominantly benefitting the foundation trust through a near-term and medium-term fall in bed days.

Conclusion

It makes sense to provide transitional care between acute beds and independent living or residential care. Providing a bridge between two very different levels of support is a rational offer, particularly when it brings someone back into their home area so that community support can be planned during the transitional period.

However, there is a lack of data to prove the outcomes of these services; particularly the long-term impact. This limits the value for money propositions that can be constructed and may influence any forthcoming investment.

There is an opportunity to gather a specific dataset from housing and health providers using the framework described in this briefing. Although this requires both providers working together to offer core data, the framework would enable commissioners to understand if there is a viable investment case for accommodation of this kind.

As the theoretical worked example shows, there are significant potential savings which can be shown through reductions in acute beds and residential care. If projects can demonstrate that they objectively shorten length of hospital stays and secure better than expected, long-term outcomes for their residents, even small numbers of bed provision can create large savings.

Recommendation: Housing and health providers should reflect on the evaluation framework presented in this briefing and the resulting investment case that could be calculated.

About the Mental Health Economics Collaborative

The Mental Health Economics Collaborative (MHEC) is an exciting partnership between the NHS Confederation Mental Health Network, Centre for Mental Health and the London School of Economics Care Policy and Evaluation Centre (formerly the PSSRU). This is one of a series of briefings and reports that will be published as part of the Collaborative's work.

MHEC aims to support the identification and spread of innovative approaches to delivering high quality, efficient mental health services. It highlights the importance of economic measures of success and provides the opportunity to test, prove and celebrate promising service models.

Economic evidence has historically been at the forefront of changes in services and investment. Our ambition is to stimulate change by steering investment to where it can relieve pressure on the system and make a real difference for people with mental health problems.

References

O'Shea, N. (2018) Economic theories relevant to public service provision. London: Centre for Mental Health

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