Designing Community Services for People With Borderline Personality Disorder to Reduce Hospitalizations

Simon Graham, M.B.Ch.B., M.R.C.Psych., Kathryn Gardner, Ph.D., Ivan Sebalo, Ph.D., Valerio Benedetto, Ph.D., Andrew Clegg, Ph.D., Abigail Thornton, Ph.D.

Spring House Psychotherapy and Personality Disorder Service (Graham) and Ashworth Research Centre, Ashworth High Secure Hospital (Sebalo), Mersey Care NHS Foundation Trust, Liverpool, United Kingdom; School of Psychology and Humanities (Gardner, Sebalo, Thornton) and Applied Health Research Hub (Benedetto, Clegg), University of Central Lancashire, Preston, United Kingdom.

Send correspondence to Dr. Graham (simon.graham@merseycare.nhs.uk). Marcela Horvitz-Lennon, M.D., and Kenneth Minkoff, M.D., are editors of this column.

Drs. Benedetto and Clegg are funded by the National Institute for Health and Care Research (NIHR) Applied Research Collaboration North West Coast.

The authors thank the dedicated staff working at Spring House.

These views represent the opinions of the authors and not necessarily those of Mersey Care NHS Foundation Trust, NIHR, or the University of Central Lancashire.

The authors report no financial relationships with commercial interests.

Previous evaluations of interventions for borderline personality disorder have focused on psychotherapies. This study (N=42 patients), conducted in Liverpool, United Kingdom, reviewed the effect on out-of-area treatments (OATs) and hospital admissions of establishing a local case management team and a combined day and crisis service for patients who are too dysregulated to access typical office-based psychotherapy. Data from 12, 24 and 36 months postintervention were compared with baseline data. All patients in OATs were repatriated. No new patients were sent to OATs. Hospital admissions decreased statistically significantly (at 24 months, 64%; at 36 months, 74%), achieving savings. Moderate increases in the use and costs of some other services were observed.

Borderline personality disorder, Case management, Program evaluation, Crisis intervention

HIGHLIGHTS

- Reorganizing services for patients with borderline personality disorder can reduce out-of-area treatment placements and local hospital admissions, and the cost savings may be used to establish more appropriate community-based services.

- People with unstable borderline personality disorder who are not functioning well enough to engage in evidence-based psychotherapy may be able to effectively engage in psychological interventions that promote stabilization.
- Partial cost analysis showed that when startup and ongoing costs are considered alongside the savings achieved by avoiding hospitalizations for patients with borderline personality disorder, reorganization of services appears to reduce overall health costs.

Given the risks and financial costs of providing inpatient care for people with borderline personality disorder, clinicians and services have focused their attention on finding effective ways to provide treatment in less restrictive settings. However, despite acknowledgment within the National Health Service (UK) that a lack of local specialist services results in too many patients with complex needs regularly being sent to locked facilities far away from their families and local services for what are called out-of-area treatments (OATs) (1), no centrally funded initiatives are addressing this problem. In an effort to create a local solution, we lobbied commissioners in Liverpool to use money that would otherwise pay for OATs to instead fund new community services. These services would target patients with borderline personality disorder who initially need psychological interventions that promote stabilization because they are not yet ready to engage in typical office-based psychotherapy.

Developing Clinical Services

Initially, Spring House was a specialist tertiary psychotherapy service, taking referrals from 11 community mental health teams (CMHTs) and offering a range of psychotherapies, including psychodynamic therapy, cognitive analytic therapy, mentalization-based treatment, and dialectical behavior therapy. Many of Spring House's early patients had borderline personality disorder.

However, some patients who did not stabilize under the care of the CMHTs and who were too emotionally dysregulated to engage in psychotherapy were frequently treated at emergency departments or hospitals. To help stabilize this particular subgroup of patients, Spring House began to offer two additional services specifically for people with borderline personality disorder. These additional services provide more intensive, supportive, and structured psychotherapeutic interventions that are better matched to these patients' needs.

The first of these services—a multidisciplinary intensive case management team (operating in a manner similar to that of an assertive community treatment team) comprising a psychiatrist (0.3 full-time equivalent), a manager (0.5 full-time equivalent), and three nurse case managers—was developed in 2016. The service was established to provide stabilization and reduce hospital admissions for patients identified by the Mersey Care NHS Foundation Trust's data systems as using the most resources (i.e., through OATs, local hospital admissions, or emergency department visits). The case managers have a 10-patient caseload and provide a 2-year intervention. They offer themselves as attachment figures, seeing their patients at home weekly and responding to crisis calls. They deliver tailored interventions by adapting more formal psychological approaches; providing psychological formulation; and helping with problem solving, emotional regulation, and trauma stabilization. They also support the wider health care system by

resolving tensions with families, supporting housing and emergency department staff, and facilitating early discharge when hospital admissions occur. Once under case management, patients have psychiatric reviews once every 4 months to help plan the pathways of care and have psychotropic medication prescribed or reduced as needed. In comparison, CMHTs have 35-patient caseloads, provide unstructured contacts, and see patients every 2–4 weeks. The initial priority for the case managers was to repatriate the seven people who had been placed for OAT and then to focus on working with local people who were using the most resources, gradually building up to a full caseload over the first year. We previously reported our 12-month data (2) and are reporting our follow up data in this column.

In 2017, a second service, with 10 staff members supported by two managers (all full-time) and a psychiatrist (0.3 full-time equivalent), was established to support patients in developing social and relational skills and to prevent patients from returning to dependency on hospitalizations. This day service operates as a therapeutic community with a psychosocial ethos rather than with an intensive psychotherapeutic approach, and it is linked to a crisis service. The case management team works to sufficiently stabilize patients so that they may transition to the combined day and crisis service, with a year of overlap during which both services are available to patients. The transition occurs when patients have established some trust in others and are recognizing their personal role in recovery. The day service provides a 4-year pathway, offering group-based social therapy and psychoeducation as well as regular community events (e.g., music and theatrical productions, day trips, camping trips). It runs alongside the crisis service, which provides face-to-face and telephone support. The combined service operates 7 days a week, 9.00 – 21.30, with support from a generic telephone crisis service and the emergency department when our service is closed. Once patients are registered with the day service, the dedicated crisis service then becomes their main support in crisis, helping them to reduce their use of the generic urgent care and inpatient teams. As case management comes to an end, depending on a patient's degree of stability, responsibility for prescribing is passed either to the patient's family practitioner or back to a CMHT psychiatrist while the day and crisis service pathway is completed (i.e., joint care). A safe environment is maintained by a code of conduct, and any unsocial behaviors lead to a reflective meeting with other patients and staff. Regular reviews are held in the day service. Once patients are ready, they are encouraged to engage with the formal psychotherapies offered at Spring House alongside the day service.

Evaluation

Our service evaluation used a before-and-after design to assess, over 3 years, the effect, costs, and savings of establishing these two new services, focusing on health care use and undertaking a partial cost analysis. Mersey Care NHS Foundation Trust's research department approved the study, advising that ethics approval was not required because no participants were involved. This column focuses on data from the first 42 patients, who had completed case management and were being supported by the combined day and crisis service and thus had spent 3 years within the two services. Data were collected in December 2019 for these patients, who were predominantly female, White, and British.

An additional 16 people were using both services but had not yet reached the end of case management, so their data is not reported in this column. The day service takes direct referrals of more stable patients from the CMHTs for joint care, so the day service was, in addition to supporting those under case management (i.e., 42 + 16), also supporting an additional 88 people, and their outcomes are only briefly reported.

We report patients' progression via several measures: the number of patients in OATs, their mean numbers of hospital admissions and inpatient bed days, and their use of other services. Among those other services are urgent care (telephone crisis and assessment services), street triage cars (cars jointly staffed by police and mental health workers that enable urgent responses to crises), Mental Health Act (MHA) section 136 assessments (evaluations conducted when police officers convey individuals who may be experiencing a mental health issue to the emergency department), walk-in centers (small emergency centers staffed by nurses), and CMHTs offering additional crisis support.

We used SPSS, version 27, to compare service use data over four time periods via six negative binomial regressions. The first time period, time 1 (T1), represented the baseline 12 months when patients were under the care of a CMHT. The second time period, time 2 (T2), represented the first 12 months of care delivered by Spring House, when patients were receiving case management only. The next time period was time 3 (T3), which represented the next 12 months, during which patients were under case management and had access to the combined day and crisis service. The final time period, time 4 (T4), represented the final 12 months of the 4-year pathway, when patients were discharged from case management and were engaging with only the day and crisis service. To simplify interpretation, we report only means, percentages of increases and decreases relative to T1, and p values, with odds ratio values and results of the regression available in the online supplement to this column.

All seven patients who had been placed for OAT were repatriated. Statistically significant decreases in hospital admissions and inpatient bed days occurred. Compared with T1, when the mean number of per-patient admissions was 2.95, T3 and T4 admissions declined to a mean of 1.48 (a 50% decrease, $p<0.001$). Similarly, the mean number of inpatient bed days per patient during T1 was 88.74, which declined to 31.69 during T3 (64% decrease, $p<0.001$) and 23.40 during T4 (74% decrease, $p<0.001$).

Urgent care contacts increased from T1 (mean=14.45) to T2 (mean=24.17, an increase of 71%), but the change did not reach statistical significance. The increase was largely due to patients now spending more of their time living in the community. Although urgent care contacts remained higher during T3 (mean=17.29, 21% increase) and T4 (mean=15.00, 7% increase) relative to T1, reductions were evident when compared with T2 urgent care contacts; during T3 and T4, patients were able to engage with the combined day and crisis service. The trends for the number of MHA section 136 assessments and walk-in center contacts followed the same pattern as that of urgent care contacts across the four time points and did not reach statistical significance.

The 88 people under the joint care of the day and crisis service and CMHTs were more stable, illustrated by their mean number of admissions of 0.49 and average of 9.77 inpatient bed days during T1. The CMHTs referred people for additional support and crisis management, allowing the CMHT to reduce their support to the patients. After 2 years of

joint care (i.e., at T3), there were nonsignificant decreases in both the mean number of admissions (to 0.25, 48% decrease) and the average number of inpatient bed days (to 3.64, 63% decrease), but these decreases were still important because each inpatient bed day costs £500.

Cost Analysis

We undertook a partial cost analysis (see the online supplement) from the health care system perspective, estimating only the costs associated with setting up and running the intervention and with changes in specific health care services use (i.e., other health and social care costs were not considered). We calculated differences in total mean costs per patient between pre- and postintervention (T1 vs. T2, T3, and T4).

Among the calculated costs were the following. The one-off cost of initial training was £20,157. The cost of supervision over 3 years was £37,565, the cost of running the case management team over 2 years (T2–T3) was £800,416, and the cost of running the day and crisis service for 2 years (T3–T4) was £1,722,159. The grand total of these calculated costs over 3 years was £2,580,297. These costs relate to supporting not only the 42 people who were using both the new services described in this column but also the 16 patients using both services who had not completed case management and the 88 patients under the care of the combined day and crisis service and CMHTs.

For the analysis of health care services use, we estimated the costs for inpatient bed days, urgent care contacts, MHA section 136 assessments, walk-in center contacts, and OATs (to estimate potential savings after repatriation). Resource use data were obtained from the Mersey Care NHS Foundation Trust's record system, and unit costs were obtained from public sources and the trust's finance department. Unit costs were then multiplied by the mean resource use per patient to calculate total costs, which were converted to 2022 British pounds (3). Consistent savings were found in total mean costs per patient for inpatient bed days, likely because of lower resource use: savings of £19,716 per patient after the first year of case management (T2 vs. T1), £29,543 per patient after a year in both services (T3 vs. T1), and £36,866 per patient after discharge from case management, when patients were under the care of the combined day and crisis service only (T4 vs. T1).

A smaller, opposite trend was found for the number of urgent care contacts relative to T1, which increased and contributed to an increase in total mean costs per patient for urgent care. Although total mean costs per patient increased for the use of MHA section 136 assessments (except during T4, when savings were realized) and for walk-in center contacts, these increases were modest.

The most important way savings were achieved was through the repatriation of the seven patients—who had been residing in locked rehabilitation OATs for several years—to the local community. These savings were estimated to be £1,552,152 per year for all seven OAT patients (or £221,736 per patient per year).

Once established, the case management team created a pathway back to local services for patients, initially visiting patients and then helping them return from OATs to live locally, either in supported housing or with their families. In addition, no new service users were sent to OATs. The cost of an OAT is reported to be £250,000 per patient per year.

Had the case management team not been created, existing OAT patients would have remained hospitalized away from their local community and other patients would likely have been sent away for treatment (at a rate of approximately two per year).

Discussion

Formal psychotherapies for borderline personality disorder are effective, but many patients are not ready to engage in them, instead repeatedly being admitted to the hospital or visiting the emergency department and not receiving structured treatment. Such patients were the target of our psychologically informed services, which were intended to increase community-based stabilization of patients. Patients dependent on inpatient care initially formed an attachment to their case manager and then to the social environment of our combined day and crisis service. Afterward, many of our patients progressed to evidence-based psychotherapies.

Many people with borderline personality disorder improve with time, and such natural recovery could account for some of our findings. Also, other local and national changes might have affected causality. For example, within the United Kingdom, urgent care services have been scaled up to provide additional support for the population. Conducting a randomized trial, as we set up the new services, that prospectively compared them to existing ones would have provided stronger evidence about causality and effectiveness, although it would have been more expensive. A limitation of our study is that our patient information system did not cover emergency department visits.

One limitation to our findings is that we did not consider other health or social care costs (e.g., housing placements) in our partial cost analysis. We also did not conduct any sensitivity analyses with respect to cost and resource use parameters. An economic evaluation that compares the costs and consequences of our services against those of usual care is needed to determine our services' cost-effectiveness.

Conclusions

Establishing specialist borderline personality disorder services to support patients who are not ready for psychotherapy reduces the use of more expensive interventions such as OATs and hospitalizations. The potential for such services to lower the costs of treating patients with borderline personality disorder, which should be cautiously considered given the limitations of our cost analysis, needs a fuller economic evaluation.

References

1. The Five Year Forward View for Mental Health. Redditch, UK, National Health Service England, Mental Health Taskforce, 2016. https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf web

2. Graham S, Sullivan K, Briggs L, et al: A preliminary service evaluation of a personality disorder case management service. Personal Ment Health 2019; 13:65–74 PubMed

3. Shemilt I, James T, Marcello M: A Web-based tool for adjusting costs to a specific target currency and price year. Evid Policy 2010; 6:51–59