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A Social Cost-Benefit Analysis of the Lead Worker Peer Mentor Programme

Birmingham Changing Futures Together

COMMUNITY FUND

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Birmingham Changing Futures Together is a project funded by the National Lottery Community Fund to support adults, living in Birmingham and experiencing any combination of Homelessness, Substance Misuse, Mental Health Difficulties and Risk of Reoffending.

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Executive Summary

Since early 2015, The Lead Worker Peer Mentor (LWPM) service has provided personalised support to individuals facing multiple and complex needs in Birmingham. In this report we undertake a Social Cost-Benefit Analysis (SCBA) of the programme during the period from April 2018 to March 2019.

We find that LWPM creates social value well in excess of its cost, through improvements to the personal wellbeing of service users, reductions in public expenditure on a variety of services, and social and economic benefits to the wider public in Birmingham. We estimate that the LWPM programme created an overall social benefit of £1,114,846 during 2018/19, compared with running costs of £688,782 during the same period. The programme's benefit-cost ratio is estimated at 1.62:1, meaning that every £1 spent on its delivery equates to £1.62 in benefits to its stakeholders.

We also identify changes in the pattern of public service use by LWPM clients as a result of engaging with the programme. Presentations at A&E fell among service users, while the use of hospital outpatient and inpatient services increased. This trend of service users resorting less frequently to using emergency services indicates a more structured approach to accessing physical health treatment. There were also changes in the way the cohort who engaged with LWPM accessed mental health and substance-abuse services. LWPM clients made more frequent use of less costly community-based services (such as Community Mental Health Teams and community and outpatient drug/alcohol services), and reduced their use of more expensive services (such as detoxification, residential rehabilitation and mental health outpatient and inpatient services).

While the average impact of LWPM was positive, it is clear from the data that there is no such thing as an average LWPM service user: the journey varies widely and is specific to each individual. Progress doesn't occur in a straight line and service users can suffer temporary setbacks before returning to a positive trajectory. This posed a challenge when applying the SCBA methodology, in which we calculate the value for money of the LWPM programme based on the average impact per service user.

As with most research in this sector, there were gaps in the data that could not be avoided. For outcomes relating to public service use, we used the data recorded for a sample of 18 to 31 service users (the sample size differed by outcome) to generalise the expected improvement for a total population of 82 service users. The validity of the overall social value figure above is therefore reliant on the assumption that our sample is representative of the population as a whole. For this reason, the headline findings on value for money should be interpreted with caution.

There was uncertainty regarding the path that service users would have taken if LWPM did not exist (the counterfactual), so we made an assumption of zero change in the counterfactual. Recent interviews with service users citing the impact of austerity and

negative trends in homelessness and drug use, suggest that the outcomes analysed in the SCBA model would have deteriorated further if LWPM did not exist. With this in mind, the already significant net impact that we estimate in this report may be an underestimate.

Further research into the programme's impact should explore the variation in service users' experience more closely and also examine methodological challenges relating to the counterfactual, the time-path of the programme's impact, and the financial proxies used to monetise that impact.

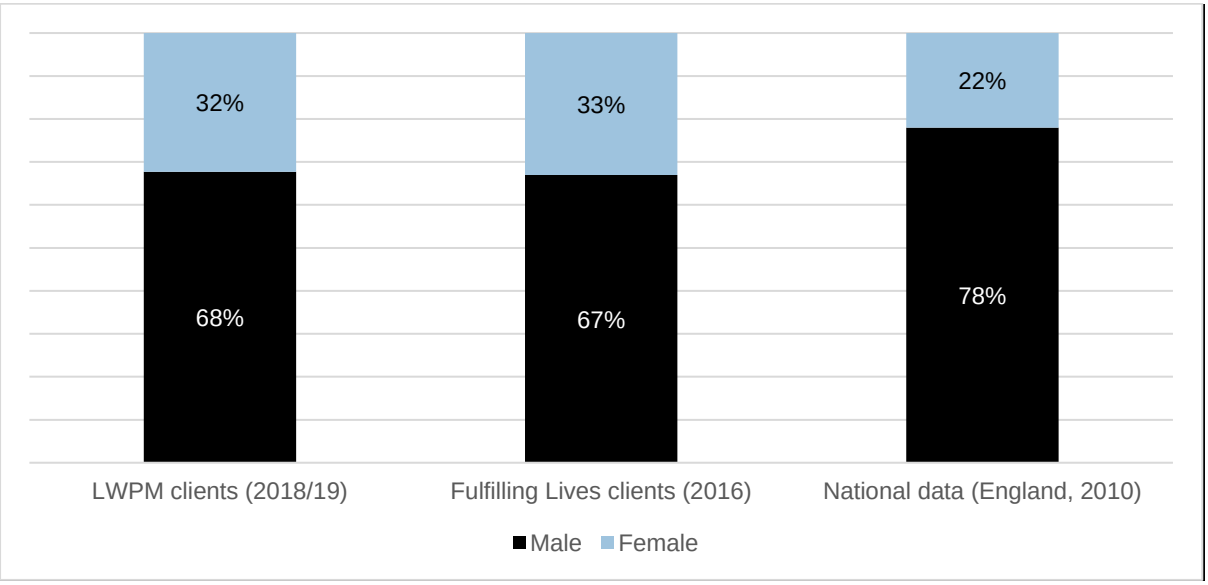
The LWPM service

The Lead Worker Peer Mentor (LWPM) service is funded by the National Lottery Community Fund 'Fulfilling Lives' initiative and is administrated by Birmingham Changing Futures Together (BCFT). The service has provided personalised support to individuals facing multiple and complex needs in Birmingham since early 2015. It does this by assigning each of them a Lead Worker to navigate the landscape of services available to service users, while helping them to manage their needs: related to homelessness, substance misuse, offending behaviours and mental ill-health. Some service users also have access to a Peer Mentor: a person with lived experience of facing similar multiple and complex needs, who can guide them on the path to a more fulfilled life. There is no such thing as an average LWPM service user, with significant variation in how long clients stay with the service, the rate at which they make progress and the setbacks they experience along the way.

Demographic profile of service users

The gender profile of LWPM clients during our evaluation period (2018/19) was very similar to that of the cohort accessing Fulfilling Lives services across England, with approximately one third female and two thirds male among those service users for whom data was available (Figure 1, below). The proportion of female service users of LWPM was higher than the proportion of women among those living with multiple and complex needs across England.

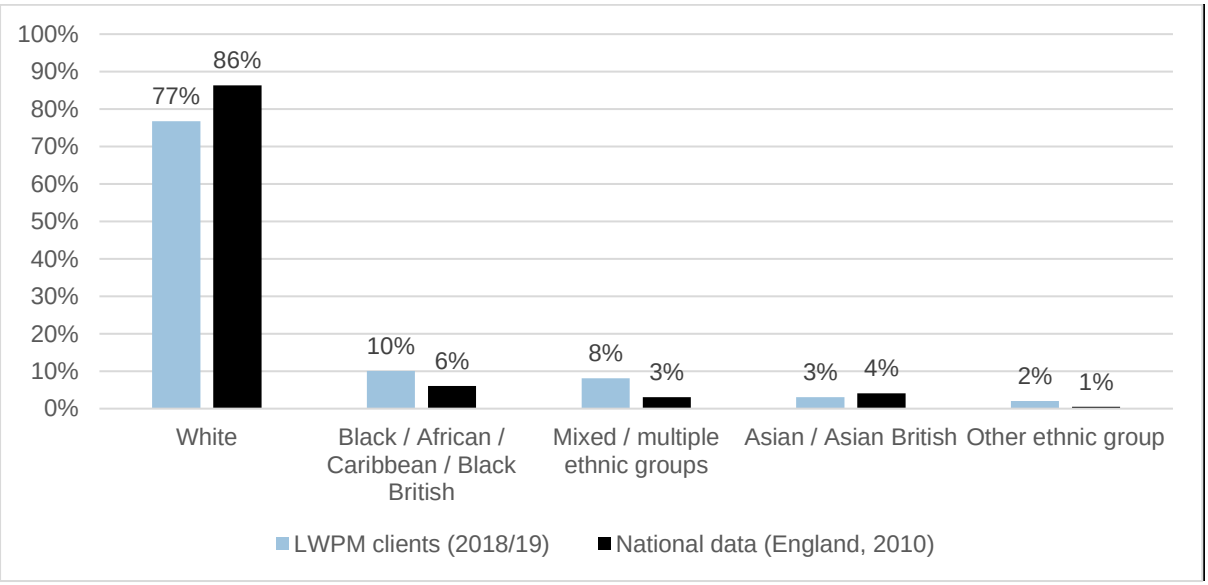
Figure 1: Gender of LWPM clients (for whom data was available), Fulfilling Lives clients and people with three multiple complex needs across England[1]



Service users accessing LWPM during 2018/19 were more ethnically diverse than the population living with multiple and complex needs across England, although the majority of LWPM clients were white (Figure 2). There was a higher proportion of LWPM service users of black or mixed ethnicity relative to the national cohort. The proportion of white British

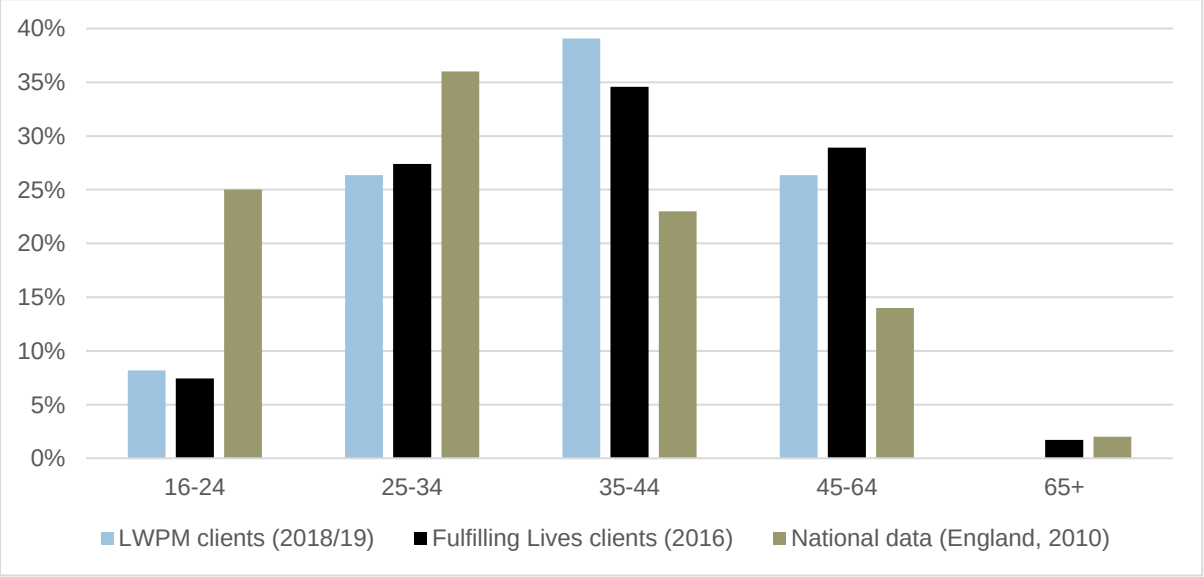
service users of LWPM (71%) was also relatively lower than for Fulfilling Lives as a whole (79%). The second largest group by ethnicity among LWPM service users was 'White: Gypsy or Irish Traveller', accounting for 6% of those for whom information on ethnicity was available.

Figure 2: Ethnicity of LWPM clients (for whom data was available) and people with three multiple complex needs across England[2]



The age profile of LWPM service users was quite similar to that of Fulfilling Lives nationally, with more than three quarters of LWPM clients being in their 30s or 40s. Relative to the ages of those living with multiple and complex needs across England, a higher proportion of the LWPM cohort were middle-aged and a far lower proportion were below the age of 25 (Figure 3).

Figure 3: Age profile of LWPM clients on 1st April 2018 (for whom data was available), Fulfilling Lives clients and people with three multiple complex needs across England[3]



Service user needs, destination and time spent with LWPM

Birmingham Changing Futures Together data shows that there were 130 service users who made use of the LWPM programme at some point during the 12-month period from April 2018 to March 2019 (2018/19). LWPM serves those who are living with at least three out of four domains of severe and multiple disadvantage. As shown in Table 1, more than two thirds of the service users who engaged with LWPM during 2018/19 and who gave consent to share their data[i], were living with all four needs.

Table 1: 2018/19 LWPM service users by type of multiple and complex needs

Domains of severe and multiple disadvantage	Service users	Proportion of respondents
All four domains	85	68.5%
Homelessness, substance misuse, mental health	22	17.7%
Offending, substance misuse, mental health	9	7.3%
Homelessness, offending, substance misuse	7	5.6%
Homelessness, offending, mental health	1	0.8%
Consent to share information not given	6	

Of these 130 Service users, 49 were still using the programme by the end of the period (as of the end of March 2019). 84 service users left the programme at some point during the 12 months. More than half of those who left had disengaged with the project, while approximately one in six exited as they no longer required support (see Table 2).

Table 2: Reasons for leaving among those service users who left LWPM during 2018/19

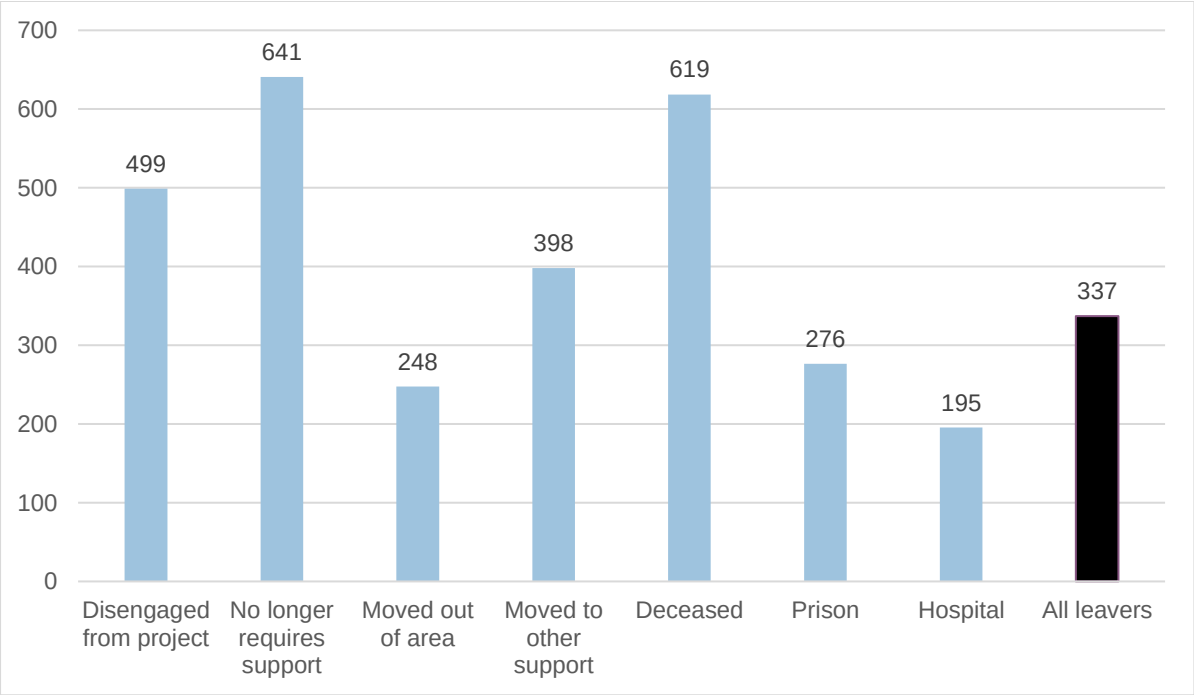
Reason	Number of SUs	Proportion of leavers
Disengaged from project	48	57.1%
No longer requires support	15	17.9%
Moved out of area	10	11.9%
Moved to other support (not funded through this project)	4	4.8%
Deceased	3	3.6%
Prison	2	2.4%
Hospital	2	2.4%
Total	**84**	**100.0%**

[i] Data on service users' needs were collected as part of the referral mechanism for clients engaging with LWPM.

In some cases, engagement with LWPM was sporadic. Four of those service users who left during 2018/19, subsequently returned to the programme during the period, while one of those four left the programme for a second time before the end of the period.

Service users tend to stay with LWPM for a significant amount of time (Figure 4). Those leaving had been with the programme for an average of nearly a year (337 days) when they left. Among those who left, the group of service users who exited because they no longer required support had the longest duration of engagement (641 days), which suggests that it can take months for the full impact of the programme to take effect. On the other hand, longevity was no guarantee of a positive outcome – those who disengaged from LWPM had been with the programme for nearly a year and a half when they did so.

Figure 4: Average number of days service users had spent with the project when they left, by reason for leaving



Social Cost-Benefit Analysis methodology

Population and time period covered

The SCBA model covers the period from the beginning of April 2018 to the end of March 2019 (referred to below as 2018/19). To populate the model we used the large quantity of data on service users that is regularly collected by lead workers in collaboration with the service users themselves. When service users first engage with LWPM, they are asked about their use of a variety of public services during the preceding 12 months (or, on occasion, this data is obtained from existing administrative records). As they continue to engage with the programme, service users provide data on a quarterly basis, capturing their ongoing use of the same categories of public services. They also complete broader wellbeing assessments on a regular basis: the Homelessness Outcomes Star and the New Directions Team assessments.

The LWPM programme is subject to a relatively high service-user turnover, with service users arriving, leaving and staying with the programme for varying lengths of time. Not all of the 130 service users who used LWPM at some point during 2018/19 can be assumed to have derived the benefits estimated by the SCBA model; some of the service users were not with the programme for long enough to be included in the model.

We used a minimum period of engagement of 180 days to filter out service users who had not been with LWPM long enough. This choice of cut-off period was based on the fact that Outcomes Star assessments are taken every six months (suggesting that it will take at least six months to record an improvement in outcomes) and that 180 days represents half of the 12-month period under consideration. 74 service users engaged with LWPM for at least 180 days during 2018/19.

In recognition that LWPM had been running for several years before 2018/19, we also included service users who had spent between 90 and 180 days with LWPM during 2018/19 and whose total time of engagement, including previous years, was at least 180 days. (For example, some service users had signed up during 2017 but left the programme less than 180 days into the 2018/19 period). This added an additional 8 service users, giving us a total population of 82 service users for consideration in the model.

Outcomes and stakeholders

In the SCBA model we attempt to capture the impact of LWPM on different stakeholders across the full range of outcomes that are affected. While the focus of the analysis is on changes in LWPM clients' use of publicly-funded services in health, criminal justice, policing and housing, the model also incorporates changes in clients' personal wellbeing, and the social and economic benefits of reduced crime for the broader public in Birmingham. Each

outcome is measured by one or more indicator, as shown in Table 3, using data that is recorded regularly by LWPM programme staff with their clients.

Table 3: Stakeholders, outcomes and indicators included in the SCBA model

Stakeholder	Outcome	Indicator description
Service users	Improved housing situation	Change in number of evictions
	Reduced offending	Change in number of convictions
	Improved physical health	Change in number of presentations at A&E
		Change in number of outpatient attendances
		Change in number of hospital inpatient episodes
	Reduction in substance misuse	Change in number of face-to-face contacts with drug / alcohol services
		Change in number of days spent in inpatient detoxification
		Change in number of weeks spent in residential rehabilitation
	Improved wellbeing	Increase in proportion of service users with an Outcomes Star Emotional and Mental Health score of 8 or higher
		Increase in proportion of service users with an Outcomes Star Motivation and Taking Responsibility score of 9 or higher
		Increase in proportion of service users with an Outcomes Star Drug and Alcohol Misuse score of 8 or higher
		Change in number of counselling or psychotherapy sessions
		Change in number of face-to-face contacts with Community Mental Health Team
		Change in number of mental health service outpatient attendances
		Change in number of days spent as a mental health service inpatient
Wider public	Reduced offending	Change in number of convictions

Outcome incidence data

For each of the indicators listed above we analysed the outcome incidence; that is, the change observed for each service user during 2018/19. For the indicators relating to public service use, we calculated the difference between the number of times a client used a given service during 2018/19 and the number of times they used the same service in the 12 months prior to their first engaging with LWPM. For the three indicators based on Outcomes Star assessments, we took the difference between the average Outcomes Star score during 2018/19 and the client's first Outcomes Star score upon engaging with LWPM.

Data was not available for all service users who used LWPM during 2018/19, and the number of service users for whom data was available varied by indicator. The broadest coverage came from the Outcomes Star assessments, with 2018/19 data available for 71 service users. In relation to the service use indicators, many LWPM clients did not have four quarters of ongoing service use data during 2018/19. Some of those who did have ongoing service use data had not recorded any data on their service use during the 12 months prior to engagement with the programme. The number of service users who had recorded previous service use and four quarters of ongoing service use (that is, the size of the sample used to calculate outcome incidence) varied by indicator and is shown in Table 4.

Table 4: Number of individuals with data on both previous service use and four quarters of ongoing service use

Service use indicator	Service users with data available
Change in number of evictions	31
Change in number of convictions	29
Change in number of presentations at A&E	22
Change in number of outpatient attendances	18
Change in number of hospital inpatient episodes	20
Change in number of face-to-face contacts with drug / alcohol services	23
Change in number of days spent in inpatient detoxification	30
Change in number of weeks spent in residential rehabilitation	30
Change in number of counselling or psychotherapy sessions	25
Change in number of face-to-face contacts with Community Mental Health Team	19
Change in number of mental health service outpatient attendances	23
Change in number of days spent as a mental health service inpatient	27

We use this sample of service users (referred to hereafter as the **expanded sample**) to calculate the programme's impact in the baseline model. We multiply the average change per person from the expanded sample by the total population of 82 to derive the overall impact of the programme.

In order to assess the relative change in types of public services used by LWPM clients, we also run the model on a smaller sample of those service users who had full data available for all 12 of the indicators listed above. This full data coverage was available only for 10 service users (hereafter referred to as the **reduced sample**). In light of this small sample size, we do not draw any conclusions on the LWPM programme's overall value for money based on the reduced sample. We do however present it alongside the main analysis to offer additional insight into how this subset of 10 service users substituted[ii] between different categories of service use as a result of their engagement with the programme.

As with most research in this sector, there were unavoidable gaps in the coverage of data, in spite of the best efforts of LWPM programme staff to collect data as comprehensively as possible. The validity of the overall social value figure above is reliant on the assumption that our expanded sample is representative of the population as a whole. Given that the population of 82 is quite small, estimates based on this sample are likely to have a large margin of error relative to the true population average. For this reason, the headline findings on value for money should be interpreted with caution.

Net impact: adjusting for the counterfactual

The next step in the modelling process is to estimate the counterfactual change in each of our outcomes: that is, what would have happened anyway if LWPM did not exist. This allows us to get a more accurate picture of how much of the change that occurred is due to the LWPM programme itself, as opposed to other factors (such as other programmes or long-term macroeconomic and social trends).

Our preferred approach to estimating the counterfactual was to use data collected by CFE Research for the same purpose, as part of their ongoing national evaluation of the Fulfilling Lives programme. This dataset contains Outcomes Star scores from organisations serving a similar client base to BCFT, but located in areas that did not receive funding from Fulfilling Lives (namely Bournemouth, Southend, Bolton and Sheffield). However, closer examination of the data revealed that service users in the counterfactual areas were not facing issues as severe as the clients of LWPM in Birmingham. The baseline Outcomes Star scores (from when the service users first arrived at the service) were nearly twice as high on average in the counterfactual area, as in the sample of LWPM service users for whom we had outcomes data (see Table 5). This fact suggested that the two groups were not directly comparable. The average baseline score of 33.6 among LWPM clients means that they were at the early stages

[ii] This substitution may involve increased use of community-based health services instead of emergency admissions, for example.

of accepting help with their issues, while the average score of 59.9 in the counterfactual areas suggests that those service users were already taking action to change their lives.[4] This made it difficult to assess any subsequent change experienced by the counterfactual group and assume that the same relative change would have occurred for LWPM clients had the programme not existed.

Table 5: Overall Outcomes Star scores among the LWPM service users for whom we have outcomes data and among the national counterfactual group

	LWPM sample: baseline	LWPM sample: 2018/19 ongoing	National counterfactual: baseline
Mean	33.6	37.5	59.9
Median	31	32	63
Standard deviation	16.2	19.3	19.1
Sample size	37	78	336

In the absence of reliable quantitative data on the counterfactual, we turned to the findings of recent qualitative research on the programme to inform our assumptions. The research conducted by Revolving Doors Agency for the *Service User Perspective* Peer Research Report (March 2019)[5] offers a detailed picture of the longer-term trends affecting LWPM service users.

The report found that, 'the majority of interviewees [drawn from BCFT service users] had histories of multiple engagement and subsequent dropping out of services'. The majority of those interviewed who had issues with homelessness and substance abuse had tried previously to access services for these issues, but a majority did not feel that these services had adequately responded to their needs in the past. This suggests that the service users covered by the SCBA model would not have received the level of service and support that they did during 2018/19, had LWPM not existed.

The effects of government austerity policies were also evident during 2018/19. Interviewees cited shelters and hostels closing down or operating on reduced hours, and increasing difficulty accessing mental health services. There was a perception among almost all service users that homelessness had increased significantly in Birmingham in recent years. The service users covered by the SCBA model would still have been affected by these broader economic and fiscal trends had LWPM not existed, suggesting that they would not have seen much improvement in the counterfactual scenario.

There was some evidence to suggest that issues with health and substance abuse among service users would have worsened in the counterfactual scenario. Several of those

interviewed in the report suggested that use of crisis services was increasing due to a rise in the use of Mamba (synthetic cannabinoids) among the homeless population.[iii]

In light of these findings, we assume that there would have been no change in any of our outcomes if LWPM did not exist. Although there is some evidence that some outcomes would have deteriorated in the counterfactual, it is not possible to accurately estimate the extent of this change. The assumption of zero change in the counterfactual is conservative, to prevent us from over-claiming the programme's net impact in the SCBA model.

Monetisation of the net impact of LWPM: sources and methodology

For each outcome and indicator included in the model, we have applied a financial proxy to convert the net impact of LWPM into a monetary value. For the outcomes related to service use (housing, offending, substance misuse and physical and mental health), the impact created by LWPM is monetised using public sector unit costs for delivering the respective services. These are drawn primarily from the Greater Manchester Combined Authority Unit Cost Database (April 2019 edition),[6] which in turn makes use of the following sources:

- Analysis of the cost of the loss of a home by Shelter (2012)[7]
- Analysis of the costs of crime by Heeks et al (2018)[8]
- NHS Reference Costs[9]
- PSSRU's Unit Costs of Health and Social Care[10]

For the valuation of the economic and social costs of crime for the wider public in Birmingham, we use the financial proxies estimated in Heeks et al (2018). These incorporate economic costs such as the loss of property and increased insurance premiums arising from crime, as well as the social costs of the direct physical and emotional effects for victims of crime.

For outcomes relating to service users' personal wellbeing (as measured by areas of the Outcomes Star assessment) we have used financial proxies from the HACT Social Value Bank.[11] The creators of this resource used statistical analysis of UK-level survey datasets to estimate the wellbeing benefit for people who have high confidence, or who are free from depression and anxiety, or free from drug and alcohol problems. They then estimate the amount of additional income that the average person would have to receive to derive that same wellbeing benefit. We have matched the UK-level survey questions used to calculate the HACT financial proxies with equivalent Outcomes Star scores as outlined in Table 6.

[iii] This same trend has been the subject of media reports during 2017 and 2018, with two deaths at a central Birmingham hostel linked to the drug. (https://www.birminghammail.co.uk/news/midlands-news/bbc-documentary-reveals-black-mamba-15280572)

Table 6: HACT financial proxies[12] and equivalent Outcomes Star scores

HACT financial proxy	HACT survey question (answers with * receive the financial proxy)	Outcomes Star equivalent
Relief from depression/anxiety (adult)	Do you suffer from depression or anxiety? 1. Yes 2. No* 3. Prefer not to answer	Service users with an Outcomes Star Emotional and Mental Health score of 8 or higher, indicating that they feel positive and can cope with life's ups and downs[iv]
High confidence (adult)	Have you recently been losing confidence in yourself? 1. Not at all* 2. No more than usual 3. Rather more than usual 4. Much more than usual	Service users with an Outcomes Star Motivation and Taking Responsibility score of 9 or higher, indicating that they feel mostly or completely confident and motivated about maintaining a positive way of life[v]
Relief from drug/alcohol problems	Would you say you had a problem with drugs or alcohol? 1. Yes 2. No* 3. Prefer not to answer	Service users with an Outcomes Star Drug and Alcohol Misuse score of 8 or higher, indicating that they are not using drugs or drinking problematically[vi]

Where the source data for financial proxies is from previous years, the figures are adjusted to 2018/19 price levels using the Office for National Statistics' March 2019 GDP deflators. The full list of financial proxies used in the SCBA model is shown in Appendix 1.

Duration and drop-off

In a standard SCBA model we adjust for the programme's impact over time by estimating the duration of the impact (how many years it lasts for) and the rate of drop-off over that period (how quickly the benefits of the programme reduce over that time period).

It is difficult to accurately assess the duration and drop-off of the benefits of LWPM for several reasons. The SCBA model covers the 2018/19 period, so that the lack of time passing

[iv] We considered clients with scores of 7, who still may experience some mental health issues, to be below the threshold required to receive the HACT proxy.

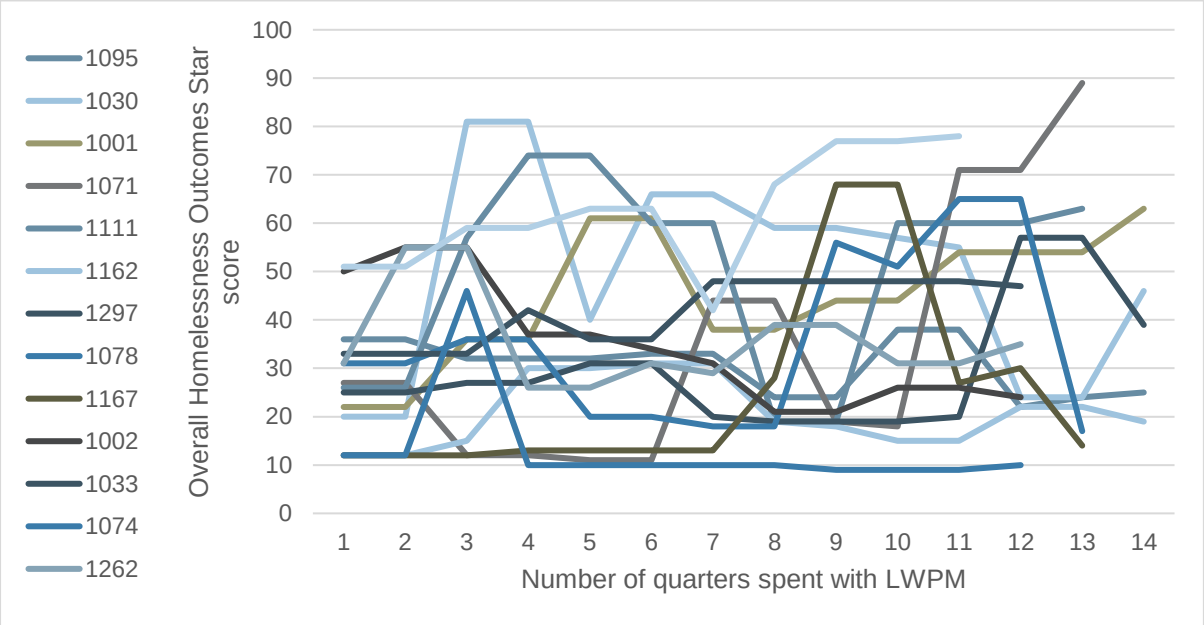
[v] Clients who score 8 still experience setbacks for which they need support. For this reason we did not consider scores of 8 or below to have met the relatively high threshold set by the HACT survey question.

[vi] We selected this threshold because the Outcomes Star documentation indicates that clients scoring 7 or below are still using at least some drugs or alcohol in a problematic way.

since the end of the period makes it impossible to record the rate of drop-off directly. The future time-path of the benefits will have to be projected using assumptions.

In addition, the complex interactions between different outcomes and the variable and chaotic nature of some service users' pathways make it difficult to project a common trend over time. This is evident when we look at a longer time series of Outcomes Star scores among 14 service users for whom 10 or more successive assessment scores are available (Figure 5). Even among these longstanding service users, for whom there has been some improvement in their scores, the gains made are not necessarily sustained during the following quarters.

Figure 5: Homeless Outcomes Star scores by length of engagement for service users with 10 scores or more[vii]



Based on a combination of qualitative evidence and service user destination figures, we can make some assumptions about the time-path of the programme's impact. Recent interviews with BCFT service users[13] suggest that they can become reliant on their lead worker. This may mean that continued engagement with LWPM is required for them to sustain the positive impacts of the programme, which points to a relatively short duration and high rate of drop-off. For this reason, those who remained with the programme beyond the end of 2018/19 are assumed to derive benefits only during that year, as additional expenditure on programme delivery would be required to sustain their improvements beyond that time. Similarly, those service users who leave LWPM to move to other support programmes are assumed to derive benefits from LWPM only during 2018/19 and not after that time.

[vii] For the purpose of clarity in this chart, gaps in the middle of each service user's series of scores have been filled with the preceding quarter's score.

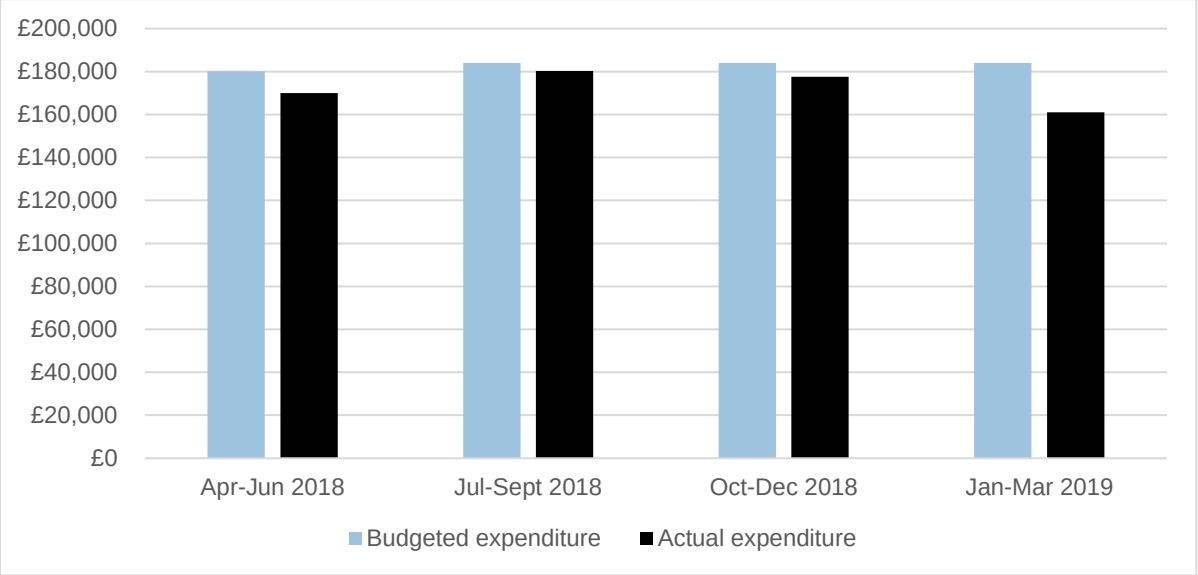
A relatively high proportion of service users disengage from the programme. We assume that this group, as well as those who leave for prison or hospital, move out of the area or who pass away, derive no benefit beyond 2018/19.

14 out of our population of 82 service users (17%) left the LWPM programme in 2018/19 because they no longer required support. We assume that this group derives an additional year of impact from the programme after 2018/19. Beyond this additional year, we assume that the remaining impact of the programme has dropped off completely for this group. This gives the SCBA model a duration of impact of two years and a drop-off rate of 83% in the second year (meaning only the 17% who graduate are assigned any impact in the second year).

LWPM programme costs

Programme costs for LWPM were £688,782 during 2018/19. This was approximately 6% below the budget for the period, which programme staff attributed to the fact that LWPM was nearing the end of its service delivery (by the end of June 2019). This can be seen in the quarterly breakdown of programme costs (Figure 6), with the final quarter of 2018/19 seeing the lowest expenditure.

Figure 6: LWPM programme budget and actual expenditure 2018/19



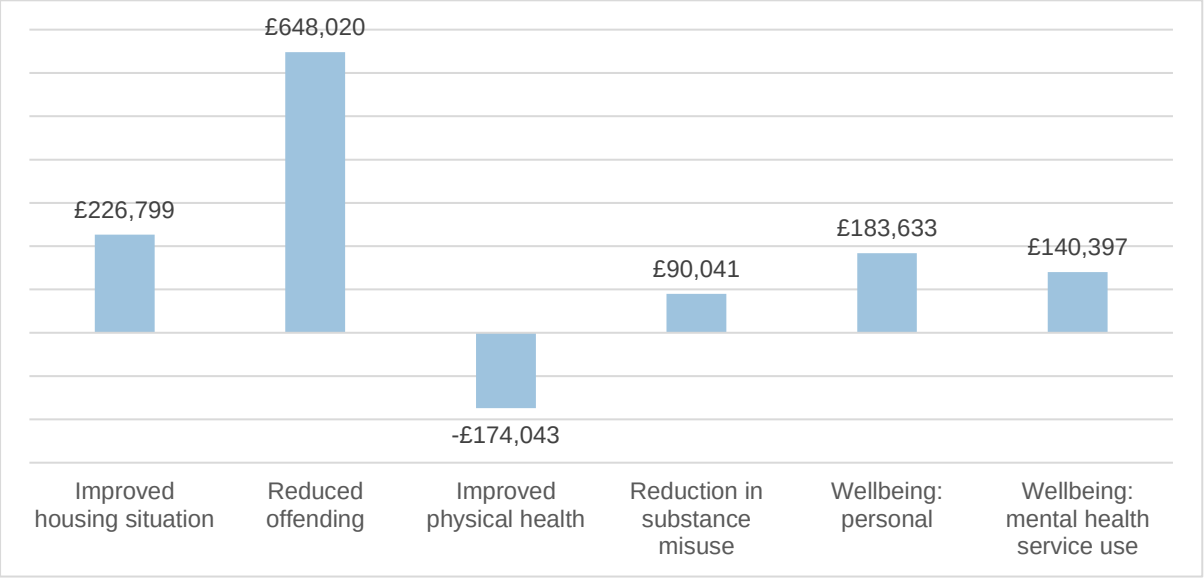
Findings of the Social Cost-Benefit Analysis

Overall net benefit created by LWPM

We estimate that the LWPM programme created a net social benefit of £1,114,846 overall during 2018/19 in the form of savings to public expenditure, improved wellbeing for service users and social and economic benefits to the wider public. The value of these benefits exceeds the £688,782 spent to run the programme. The programme's benefit-cost ratio is estimated at 1.62:1, meaning that every £1 spent on its delivery equated to £1.62 in benefits to its stakeholders. The full SCBA model impact map is shown in Appendix 1.

As indicated in Figure 7, breaking down the components of this overall value shows that the programme created positive benefit in four out of five outcomes[viii]. There was a reduction in the cost to public services in response to housing needs, offending, substance misuse and mental health issues, and there was additional positive social value created through improved wellbeing among service users. The exception to this result was the physical health outcome, where increases in the use of hospital outpatient and inpatient services contributed to an estimated net increase in public expenditure of £174,043 (shown as negative social value in Figure 7).

*Figure 7: Social benefit created by outcome area (**expanded sample**)*



The greatest social value was created under the reduced offending outcome. The number of convictions among the expanded sample fell by an average of 2.0 per person per annum relative to the 12 months prior to their engagement with LWPM.[ix] This corresponded to a reduction in public expenditure estimated at £190,718, while the wider public in

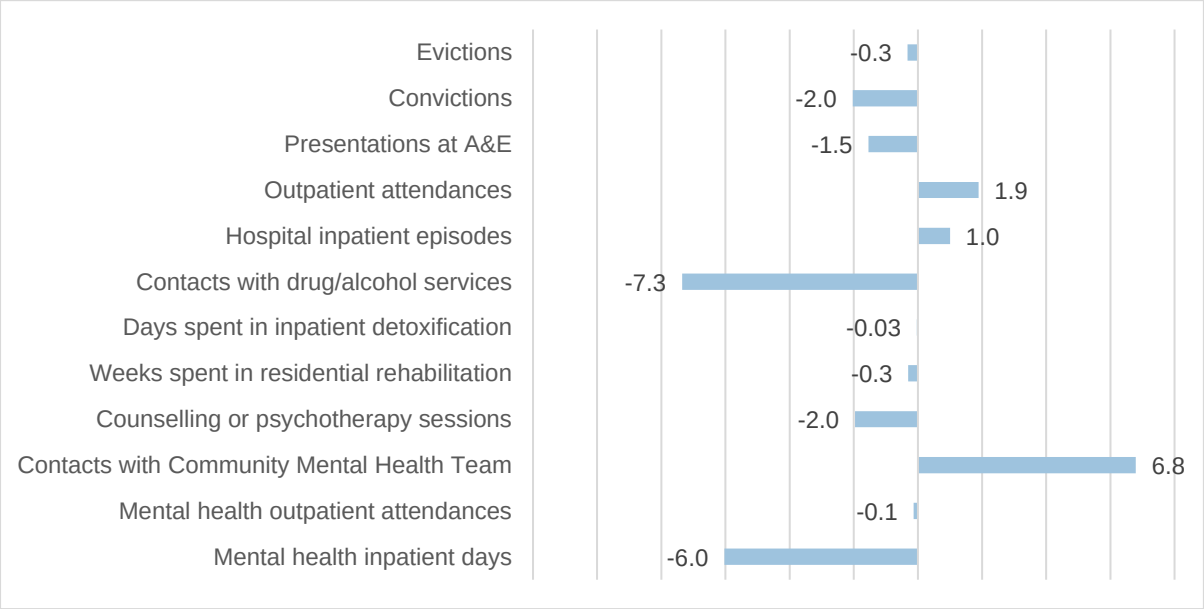
[viii] In Figure 7, the wellbeing outcome is separated into benefits to personal wellbeing for service users and the resulting changes in their use of mental health services.
[ix] The sample size for this indicator was 29 service users.

Birmingham avoided economic and social costs estimated at £457,302 by not falling victim to these criminal offences.

Improvements to the housing situation of LWPM clients – as measured by a reduction in evictions – also accounted for a considerable proportion of the overall benefit of the programme. This indicator carried the highest unit cost (the average fiscal cost of a complex eviction was £7,618) and the 82 service users experienced an estimated 26 fewer evictions[x] during 2018/19 when compared with the 12 months prior to engaging with the programme.

We estimate that there were further reductions in the cost of LWPM clients' use of substance misuse and mental health services. Service users in the expanded sample made less use of many of the more expensive services in these categories (detoxification, rehabilitation and mental health outpatient and inpatient services – Figure 8). The associated cost saving more than offset the cost of their increased use of community mental health services, counselling and community-based drug and alcohol services. On the other hand, for services relating to physical health, the increased cost of hospital outpatient and inpatients service provision outweighed the reduction in A&E presentations among the expanded sample of LWPM clients.

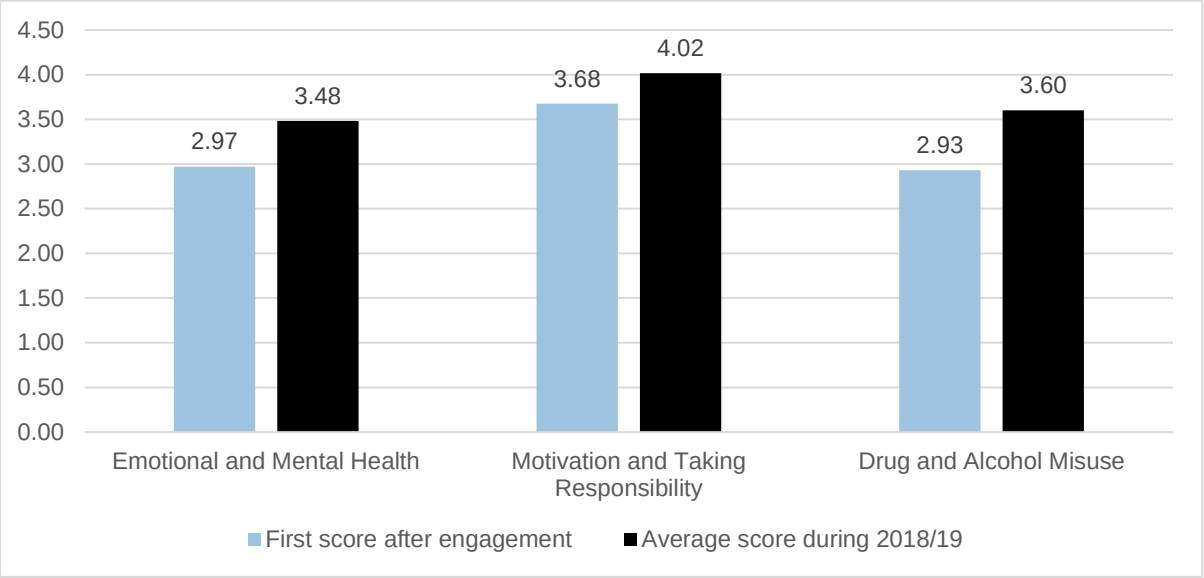
*Figure 8: Average change in outcome incidence by service use indicator (**expanded sample**)*



There were improvements in the average scores of LWPM clients in each of the three Outcomes Star areas included in the model, indicating some increase in wellbeing from engaging with the programme compared with when they arrived (Figure 9). However, the threshold for impact was high, due to the financial proxies we used for personal wellbeing, meaning that very few service users had levels of wellbeing that were sufficiently high to affect the overall social value figure estimated in the model.

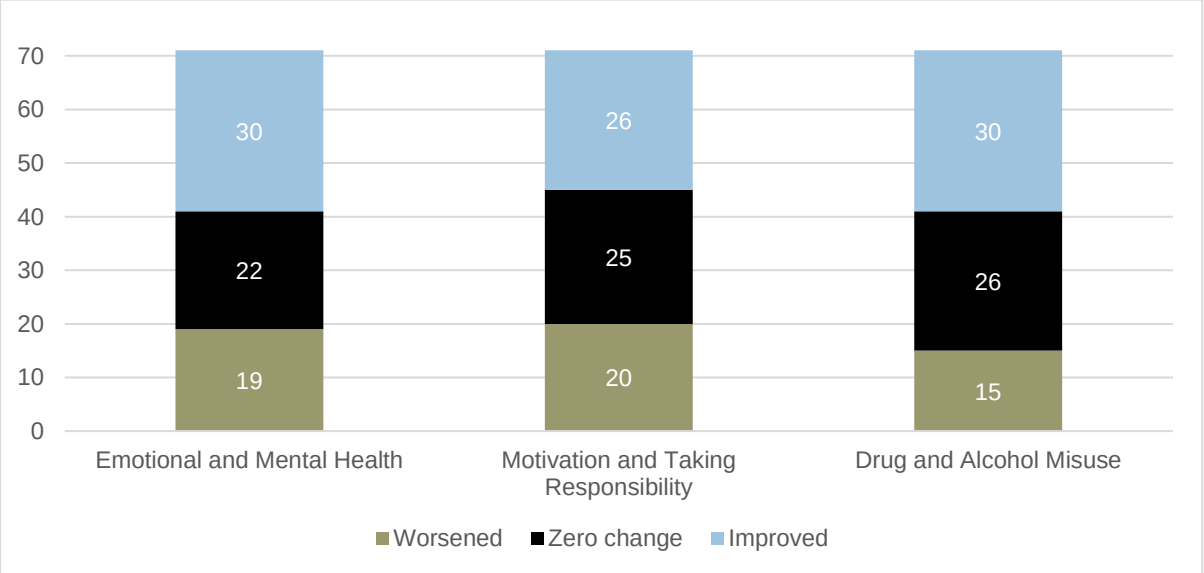
[x] Based on outcome incidence from a sample of 31 service users.

*Figure 9: Change in Outcomes Star scores among LWPM service users (**expanded sample:** n=71)*



The average increase in these scores also concealed significant variability in the pathways of individual LWPM service users. While more than one third of the sample of 71 service users for whom Outcomes Star data was available saw some improvement in their scores in these three areas, a further third recorded no change during 2018/19. The remaining part of the group (between one fifth and one quarter) had declining scores, having encountered setbacks to their progress (Figure 10).

*Figure 10: Direction of change in Outcomes Star scores among LWPM service users (**expanded sample:** n=71)*

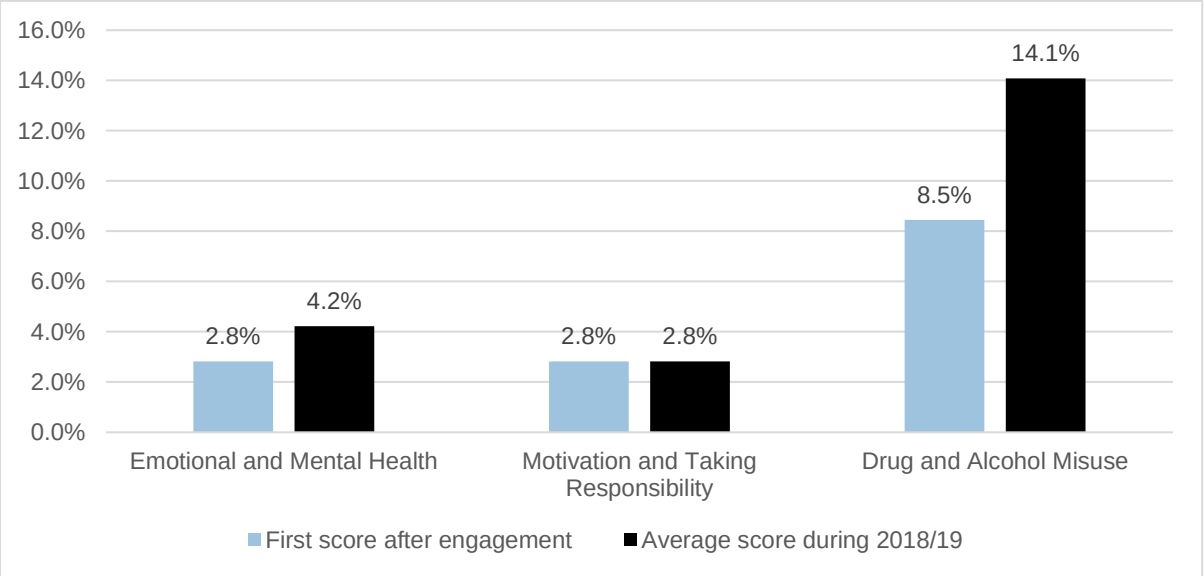


There was no change in the number of service users exceeding the threshold score of 9 in the Motivation and Taking Responsibility area (two service users achieved this at the baseline reading and two averaged a score above the threshold during 2018/19). This suggests that, in spite of the increase in average score in this area, relatively few of the service users

developed the high level of motivation and sufficient support network that would allow them to maintain a positive way of life independent of the programme.

The number of LWPM clients achieving scores of 8 or higher in the Emotional and Mental Health and Drug and Alcohol Misuse areas increased, however, by 1.4% and 5.6% respectively (Figure 11). These improvements in service users' personal wellbeing were estimated to be worth £183,633 across the whole population of 82.

*Figure 11: Percentage of service users scoring above the threshold in three Outcomes Star areas (**expanded sample**)*



Relative changes in types of service used by LWPM clients

Looking within each of the outcome areas included in the model, we can see some patterns in the relative changes in service use by LWPM clients, who shifted away from some public service categories and towards others.

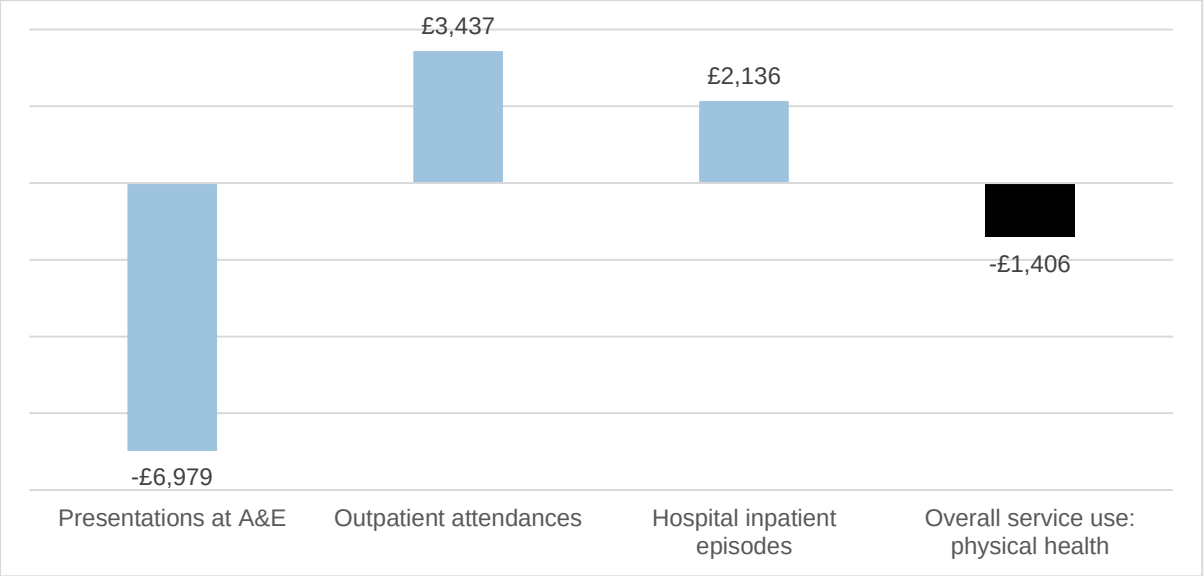
We were not able to use the expanded sample to assess these relative changes, because in the expanded sample the number of LWPM clients for whom data was available was different for different indicators. This means that any shift in relative service use by the expanded sample group (for example, if they reduced their use of A&E but increased their use of inpatient hospital services) may be reflective of an actual change, or may simply be skewed by those who had data recorded for one indicator but not the other.

We can still get some insight into changes in the categories of services used from the reduced sample of 10 LWPM clients who had no gaps in their data across all 12 service use indicators. The figures cited in the following section were calculated for these 10 individuals only (as opposed to applying the same average change to the full population of 82 service users).

Physical health services

Service users in the reduced sample decreased their use of A&E services by 3.8 visits per person per annum, which is equivalent to a saving of approximately £7,000 in public expenditure. At the same time, they recorded an increase in their use of hospital outpatient and inpatient services, creating an estimated additional cost of £5,573 across these two indicators. The net impact of these changes was a reduction in public expenditure estimated at £1,406 (Figure 12).

*Figure 12: Public expenditure implications of changes in use of physical health services by LWPM clients (**reduced sample:** n=10)*



These findings may reflect that service users were accessing physical health services in a less chaotic and more structured way. Many of the BCFT service users interviewed by Revolving Doors Agency in August 2018[14] mentioned that they had been using emergency services less frequently since they first engaged with BCFT.

Of those who engaged with LWPM during 2018/19, 45% had a long-term health problem or disability.[xi] In this context, they were more likely to need some unavoidable hospital services, so that while the increased use of outpatient and inpatient services implies higher costs for the public sector, it may also indicate that service users are accessing healthcare that is more suitable to their needs.

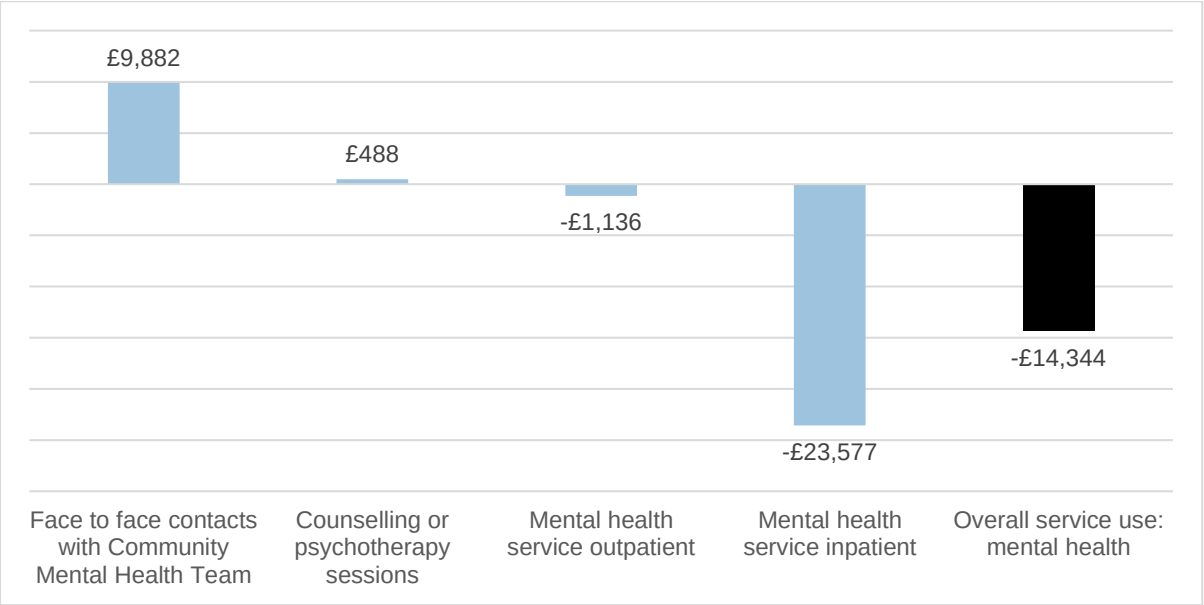
Mental health services

LWPM clients in the reduced sample made greater use of Community Mental Health Team services (5.0 additional contacts per person per annum) and counselling (0.8 additional sessions per person per annum) during 2018/19, compared to the 12 months before they engaged with the programme. However, they made less use of mental health outpatient (0.5

[xi] 69 out of 130 service users during 2018/19 responded to this question, of which 31 stated that they had a disability or long-term illness. From the reduced sample of 10 service users, four had a disability or long term health problem and one had no data on this.

fewer attendances per person per annum) and inpatient services (4.9 days fewer spent as an inpatient per person per annum), resulting in a net reduction in public expenditure estimated at £14,344 across the 10 service users (Figure 13).

*Figure 13: Public expenditure implications of changes in use of mental health services by LWPM clients (**reduced sample:** n=10)*



These findings suggest that both service users and the State are benefitting from early intervention. Counselling and community mental health services are relatively inexpensive (with unit costs of £54 per session and £176 per contact, respectively) when compared with the cost of outpatient and inpatient services (£202 per attendance and £427 per bed day, respectively). The relative changes across all four indicators suggest that better community healthcare and counselling may be driving a reduced demand for more expensive hospital-based mental health services. It may be that the relatively cheaper services are effective in preventing the kind of mental health issues that would otherwise lead to hospitalisation.

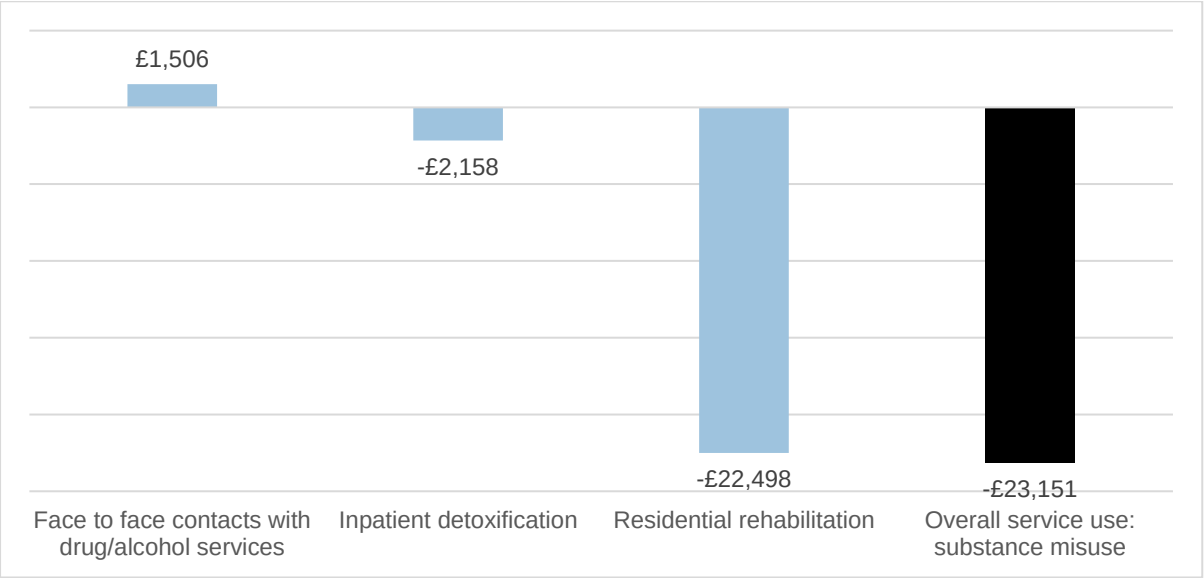
An alternative explanation is that LWPM clients switched towards the relatively cheaper services due to greater awareness of what was available to them. This is supported by the qualitative finding that awareness of the services available was low among BCFT clients more broadly; they had limited knowledge of opening times, the location of offices and the requirements for accessing services.[15]

Substance misuse

We observe a similar pattern for drug and alcohol service use as for mental health. Among the reduced sample, LWPM clients made increased use of community and outpatient drug and alcohol services (1.3 additional contacts per person per annum) but spent 1.2 fewer days in inpatient detoxification and 2.8 fewer weeks in residential rehabilitation (both per person per annum). This may indicate that increased use of community and outpatient services (which are relatively cheap at £103 per attendance) has been effective in reducing the need

for more costly detoxification and rehabilitation (which cost £160 per day and £740 per week, respectively). The net result among these 10 service users has been a reduction in public expenditure estimated at £23,151 (Figure 14).

*Figure 14: Public expenditure implications of changes in use of substance misuse services by LWPM clients (**reduced sample:** n=10)*



Limitations and considerations for future research

There are a number of limitations to the analysis presented in this report. Many of these limitations were inevitable, given the challenges of collecting data from people with multiple complex needs and attempting to constrain their complex pathways into a standard SCBA framework. It is nonetheless important to bear these limitations in mind when interpreting the results in the previous sections.

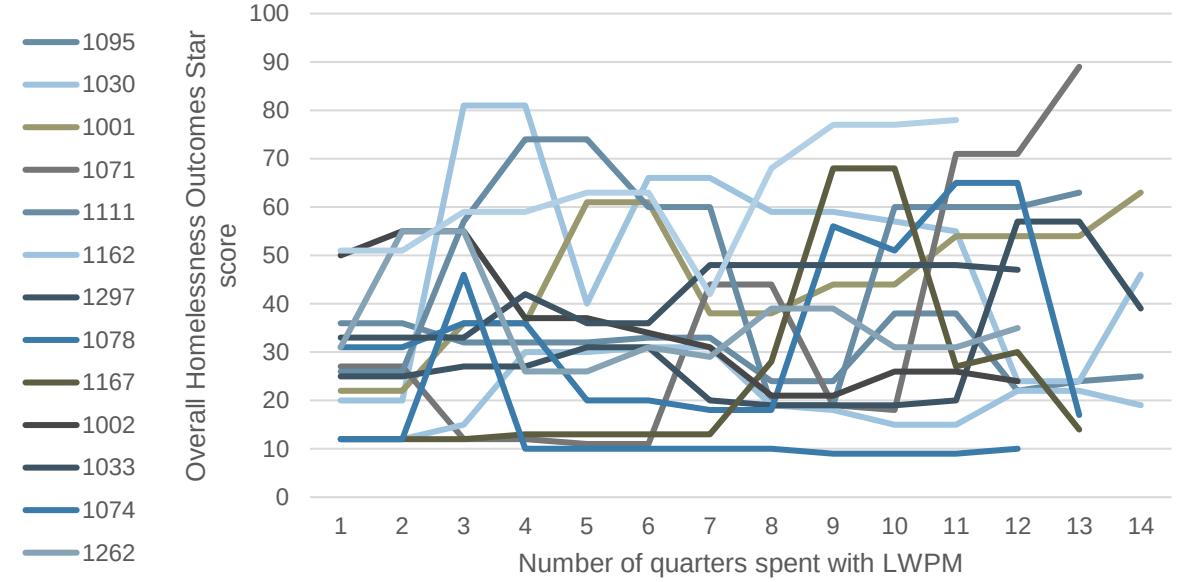
Fitting LWPM into an SCBA framework

SCBA is by its nature an averaging methodology that focuses on the average change in each outcome across the whole population. It is clear from the data (Figure 15) that there is no such thing as an average LWPM service user: the journey varies widely and is specific to each individual. Progress doesn't occur in a straight line and service users can suffer temporary setbacks before returning to a positive trajectory. Calculating the average impact per service user is necessary to assess the value for money offered by LWPM when compared with other similar interventions, but the SCBA findings should be presented in the context of each personal pathway being unique to the individual.

The lack of a standard trajectory among service users may be considered a finding in itself. It raises the question of whether progress for the cohort targeted by LWPM is inherently volatile, or whether other interventions exist that would create a more stable lifestyle for people with multiple complex needs, at an earlier stage, and allow them a foundation on which to make further progress. Future evaluations of LWPM could compare the

programme's impact with other models being used under Fulfilling Lives or elsewhere, to determine whether the volatility in service users' pathways is more pronounced among LWPM clients.

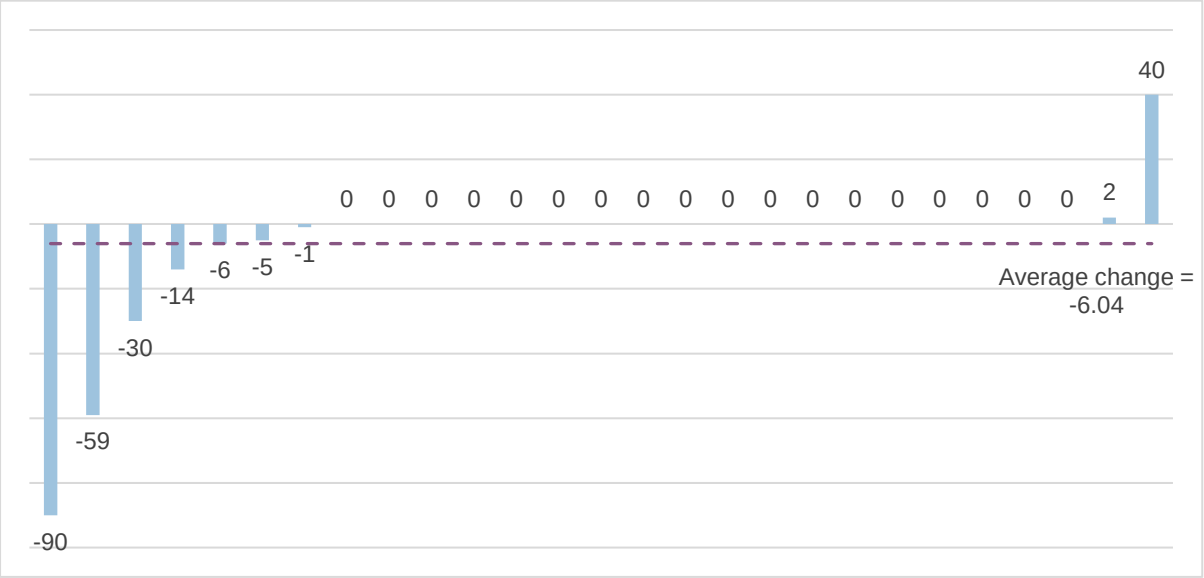
Figure 15: Homeless Outcomes Star scores by length of engagement for service users with 10 scores or more[xii]



The variance in impact across different LWPM service users also means that the average change figures included in the SCBA model are at times heavily influenced by outliers; that is, individuals who saw a very large improvement or worsening in that particular outcome. The indicator for clients' use of mental health inpatient services is one example of this (Figure 16). Although 18 out of 27 service users for whom there was data experienced no change in this indicator, the average reduction in service use was six days, due to a few service users experiencing a sharp reduction in days spent as a mental health inpatient. This high variance in the data means that the standard error of our estimate of outcome incidence is potentially large. It also suggests that further research into the impact of LWPM should try to better understand why a few individuals see sharp improvements in certain service use indicators.

[xii] For the purpose of clarity in this chart, gaps in the middle of each service user's series of scores have been filled with the preceding quarter's score.

Figure 16: Change in number of days spent as a mental health service inpatient by service user (bars) and as an average across all 27 service user records (dotted line)



Across several other indicators of service use there was a high proportion of the expanded sample that experienced no change (Table 7). Changes in use of residential rehabilitation, counselling services and inpatient detoxification were particularly highly concentrated in a few of the sampled individuals.

*Table 7: Percentage of service users in the **expanded sample** experiencing no change by indicator*

Service use indicator	Percentage of service users experiencing zero change
Evictions	48.4%
Convictions	44.8%
Presentations at A&E	27.3%
Outpatient attendances	44.4%
Hospital inpatient episodes	30.0%
Contacts with drug/alcohol services	13.0%
Days spent in inpatient detoxification	75.9%
Weeks spent in residential rehabilitation	89.7%
Counselling or psychotherapy sessions	84.0%
Contacts with Community Mental Health Team	26.3%
Mental health outpatient attendances	69.6%
Mental health inpatient days	66.7%

Data gaps and potential bias

The lack of full data coverage for the service use indicators may have given us a biased estimate of the average impact across the full population of 82 service users. There is likely to be some participation bias in the availability of data for ongoing service use, as those who regularly fill in data may be making better progress than those for whom data is missing. This may mean that the outcome incidence calculated from our expanded sample shows a more positive impact for LWPM relative to the true underlying impact across all service users.

A similar source of bias is the availability of data on service use during the 12 months prior to engagement with LWPM. There may be participation bias (because it is easier to collect previous service use data from those who engage with less severe needs) or recall bias (because those facing more severe issues may have a less accurate idea of their past 12 months of service use).

Difficulty in assessing the counterfactual

As outlined in the previous section on methodology (see *Net impact: adjusting for the counterfactual*, pages 13-15), there is significant uncertainty surrounding the counterfactual, that is: what change in the model outcomes we would have seen if LWPM did not exist. Our assumption of zero change in the counterfactual scenario may be overly optimistic in the face of qualitative findings of a longer-term deterioration in the availability of services in Birmingham. In this way our model estimate of the impact of LWPM may be an underestimate.

There is potential for future research to look at the pathways of service users who disengage and then return, in order to assess their average pathway while not accessing the service. The challenge with this potential approach may be the lack of a typical pathway among individuals with complex needs (as discussed above) as well as the indirect impacts of the presence of LWPM in Birmingham, even for those who are not engaging with the programme (for example, LWPM's presence may reduce demand for other similar services).

Time-path of the programme's impact

In the SCBA model presented above we do not assess whether the impact of LWPM depends on the amount of time spent with the programme. While we do exclude from the sample those who spent less than 180 days engaged with LWPM, we compute outcome incidence based on the 2018/19 figure, minus the 12 months prior to a client's first engagement; this is regardless of whether the client first engaged in 2015 or in 2018. Future modelling should look at a longer time series of data where possible, and should try to understand whether there is a lag in the programme's impact on service use and wellbeing. Similarly, we have made some simplified assumptions around the drop-off of the benefits for those who receive the programme's impact (for example, that those who leave LWPM because they no longer require support, receive just one further year of the benefits). These assumptions could be potentially refined in future, either through primary research with

those who leave LWPM because they no longer require support, or by referring to secondary literature for generalised figures on rates of movement back into homelessness, substance misuse relapse, and so on.

Financial proxies for public service use

The financial proxies we have used to monetise the programme's impact may not be fully representative of the precise public services used by LWPM clients. The data does not account for levels of detail such as the type of offences that led to the convictions recorded or the type of hospital outpatient treatment accessed. For this reason, we apply averaged financial proxies for some indicators. For example, we use the average fiscal cost per criminal conviction across all types of offence. This will remain a limitation of the data in any future research, although consultation with LWPM programme staff and frontline staff providing these public services may shed more light on any trends they have noticed.

The concept of reduced public expenditure as positive social value

The model framework also assumes implicitly that a reduction in public expenditure is always desirable, but this is not necessarily the case. The significant public sector cost-savings created by LWPM offer one justification for its value, but there are some indicators included in the model in which an increase in service use may be desirable in spite of some cost increases. Ensuring that people receive the medical treatment they need, for example, is an end in itself and the financial implications of providing medical treatment provides only one dimension by which to assess the value created.

Appendix 1: Financial proxies used in the SCBA model

Stakeholder	Outcome	Indicator description	Financial proxy description	Proxy
Service users	Improved housing situation	Change in number of evictions	Average fiscal cost of a complex eviction; adjusted to 2018/19 price level	£7,618
	Reduced offending	Change in number of convictions	Average cost per incident of crime, across all types of crime (fiscal); adjusted to 2018/19 price level	£1,016
	Improved physical health	Change in number of presentations at A&E	Average cost per A&E attendance (all scenarios); from NHS reference costs and adjusted to 2018/19 price level	£163
		Change in number of outpatient attendances	Hospital outpatients - average cost per outpatient attendance; from NHS reference costs and adjusted to 2018/19 price level	£127
		Change in number of hospital inpatient episodes	Hospital inpatients - average cost per episode (elective and non-elective admissions); from NHS reference costs and adjusted to 2018/19 price level	£1,898
	Reduction in substance misuse	Change in number of face-to-face contacts with drug / alcohol services	Simple average of unit costs for Drug Services and Alcohol Services, Adult, Community Contacts and Outpatient Attendances; from NHS reference costs and adjusted to 2018/19 price level	£103
		Change in number of days spent in inpatient detoxification	Inpatient detoxification for people who misuse drugs or alcohol; adjusted to 2018/19 price level	£160
		Change in number of weeks spent in residential rehabilitation	Residential rehabilitation for people who misuse drugs or alcohol; adjusted to 2018/19 price level	£714
	Improved wellbeing	Increase in Outcomes Star Emotional and Mental Health score	Value of wellbeing improvement from not suffering from depression or anxiety; 2018 price level	£36,766
		Increase in Outcomes Star Motivation and Taking Responsibility score	Value of wellbeing improvement from having high self-confidence; 2018 price level	£13,080
		Increase in Outcomes Star Drug and Alcohol Misuse score	Value of wellbeing improvement from not having problems with drugs or alcohol; 2018 price level	£26,124
		Change in number of counselling or psychotherapy sessions	Counselling services in primary medical care, cost per hour; adjusted to 2018/19 price level	£54
		Change in number of face-to-face contacts with Community Mental Health Team	Mental health community provision - average cost per contact; adjusted to 2018/19 price level	£176

Stakeholder	Outcome	Indicator description	Financial proxy description	Proxy
		Change in number of mental health service outpatient attendances	A&E Mental Health Liaison Services, Adult and Elderly; from NHS reference costs and adjusted to 2018/19 price level	£202
		Change in number of days spent as a mental health service inpatient	Mental health care clusters, cost per admitted bed day; from NHS reference costs and adjusted to 2018/19 price level	£427
Wider public	Reduced offending	Change in number of convictions	Average cost per incident of crime, across all types of crime (economic and social); adjusted to 2018/19 price level	£2,612

[1] Based on national survey data for people with needs relating to homelessness, substance abuse and offending: Bramley G. and Fitzpatrick, S. (2015). *Hard Edges: Mapping severe and multiple disadvantage.* London: Lankelly Chase Foundation.
[2] *Ibid.*
[3] *Ibid.*
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[12] HACT & Fujiwara, D. (2018).
[13] Revolving Doors Agency (2019).
[14] *Ibid.*
[15] *Ibid.*