Department for Work & Pensions

GOVERNMENT SOCIAL RESEARCH

Social Science in Government

Understanding the Costs and Savings to Public Services of Different Treatment Pathways for Clients Dependent on Opiates

January 2015

DWP ad hoc research report no. 17

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Executive Summary

This paper presents a summary of analysis that considered the costs and savings to public services that might be generated from those receiving treatment for opiate dependence. It considered seven areas: the treatment itself, welfare payments, housing benefit (HB), employment (for potential taxable income), health, drug-related offending and prison.

The analysis used anonymous data shares between the Department for Work and Pensions (DWP), Public Health England (PHE) and the Ministry of Justice (MoJ) to track two cohorts of opiate clients who started a new treatment episode during 2009/10 through to 31st March 2012. The first cohort consisted of clients that went through the five most common treatment pathways where residential treatment was a component part, and the second that went through the five most common community only based treatment pathways. Indicative estimates of both costs and savings accrued in and between treatment, and after exiting treatment until 31st March 2012, are presented alongside annualised costs and savings after exiting treatment.

Indicative analysis suggests opiate clients on pathways with a residential component generally had better outcomes in terms of positive completions than those on community only pathways. For example the rate of positive outcomes for very high complexity clients on treatment pathways with a residential component was around three times that of similar clients on community only pathways (though only around 1.5 times higher for low complexity clients). However, the average cost of treatment on a residential pathway was much higher. The analysis looked at whether wider government services might see bigger savings as a result of putting clients with opiate dependencies down residential pathways as opposed to community only pathways.

This indicative analysis estimated, that for the higher complexity clients, there may be some savings (although many will not be cashable) from HB, drug-related offending, health, and employment, but these did not fully offset the higher cost of residential pathways over the three year period considered. If savings continued, it is estimated that it would take approximately 12 years for savings from residential pathways to offset the additional initial three-year treatment costs, relative to the equivalent for community only pathways.

It is important to note, however, that whilst data in several of the areas discussed in the paper has improved considerably in recent years, partly as a result of data shares, there remain significant gaps. The limitations of this analysis are discussed in more detail later in the report, but a key conclusion is that the data is currently insufficient to draw comparative conclusions about cashable savings between pathways. Results are heavily dependent on assumptions made. However, the value of drug treatment overall and its benefit to individuals, communities and societies, is not in question.

Contents

1. Methodology and Limitations

1. This section provides an overview of the analysis methodology, and a summary of its main caveats. A full description of the methodology used for analysis of each public service is provided in Annex B.

1.1 Methodological Overview

2. Analysis focused on clients who started a new treatment episode for the misuse of opiates during 2009/10. This cohort was chosen to ensure the period of study reflects the focus on recovery that followed the Government's 2010 Drug Strategy, while allowing for the most time possible time to track clients so any differences in outcomes could be observed.

3. The analysis looked at the costs and savings of public services in the two years before treatment begins, and compared this to the costs and savings of the same services from the point that treatment starts up to the 31st March 2012, with the aim of the analysis to compare treatment pathways that have a residential component and those that only occur in the community. The assumption was made that behaviour before treatment would have continued without treatment, and so differences between costs before and after treatment can be attributed to the treatment pathway. Whilst this is obviously a very strong assumption, as the analysis' aim was to compare pathways with a residential component and community only pathways, the reader should focus on the difference between costs or savings for the two pathways rather than the absolute numbers.

4. Given the multitude of treatment pathway options for each client, analysis focused on the five most common treatment pathways (further explained in Chapter 2) consisting of treatment entirely in a community setting (described henceforth as community pathway) and the five most common pathways including a residential component (described henceforth as residential pathway). In total, these 10 pathways account for 88% of all drug treatment journeys. Only a small proportion (2.5%) of clients in our total cohort received residential treatment.

5. Clients on residential pathways tend to present more challenges than those on community pathways, affecting the likelihood of success and future socio-economic outcomes. Analysis controlled for personal characteristics as far as possible by comparing groups displaying similar treatment complexity levels on entering treatment (an explanation of complexity levels can be found in Chapter 2). It should be noted this analysis cannot control for all personal factors (e.g. motivation or prescription, such as receiving a treatment requirement as part of a court order), environmental (e.g. family and other external support) and other factors (for instance age and re-offending history) likely to influence a client's treatment outcome. In much of this report the narrative focuses on very high complexity clients, because it is less common for lower complexity clients to access residential pathways.

6. Analysis followed these clients up to 31st March 2012, capturing their different treatment lengths, positive treatment outcomes (defined in Chapter 2) and relapse rates and what this means for costs and savings to public services, such as: the treatment itself, welfare payments, HB, employment (for potential taxable income), health, drug-related offending and prison.

7. To test the sensitivity of this analysis, additional estimates on those in the cohort with a very high complexity level are presented in Table 6 in Chapter 4. This sensitivity analysis sought to test what could be achieved under a more extreme set of assumptions (outlined in Annex C) and whether this had any impact on our indicative findings **for illustrative purposes only**.

8. This approach does not attempt to provide an *absolute* cost benefit analysis of each drug treatment pathway. This is because there are many costs and savings that have not been included in the analysis. Instead, it makes a relative comparison of cost effectiveness on different treatment pathways, given clients of in many ways similar characteristics, which does not require consideration of what outcomes would have occurred anyway, without treatment.

Presentation

9. The report attempts to directly compare the costs and savings of residential and community pathways, in order to consider whether public services might see bigger savings as a result of putting clients with opiate dependencies down residential pathways as opposed to community pathways. This direct comparison is only possible if the same number of clients on each pathway are compared, and the same complexity combination. Therefore this analysis is presented as if 100 people were going through each pathway at each complexity level, based on per client estimates from the analysis' cohorts.

10. This analysis is summarised in Chapter 4, where indicative average net additional costs and non-cashable savings for these clients are compared:

a) accrued in and between treatment;
b) after exiting treatment until 31st March 2012;
c) annualised after exiting treatment, from 1st April 2012.

11. Throughout Chapter 3 and in Tables 3, 4 and 6 in Chapter 4, indicative estimates are presented of costs and savings accrued from the point the client enters treatment in 2009/10, to 31st March 2012. Estimates are provided for the total treatment spend, and where applicable the total prison costs following the last exit from treatment. Costs and savings are set out for welfare, HB, employment, health, and drug-related offending. The estimates for these five public services are comprised of two separate estimates, both relative to the approximated costs in these public services during the two years before entering treatment:

    - estimated savings accrued whilst in and in-between treatment from 2009/10 to 31st March 2012, and;
    - where applicable, estimated savings accrued after the last treatment exit until 31st March 2012.

12. In Table 5 of Chapter 4, savings after treatment are presented on an annualised basis. These can be used to estimate the number of years it may take to recoup the costs associated with residential pathways relative to the equivalent for community pathways. This approach assumes that costs do not continue beyond 31st March 2012, and that savings can be extrapolated by assuming that they continue at an annualised figure set at the same rate as they did in the time after exiting treatment up to 31st March 2012. These are strong assumptions and should be taken as broad indications only.

1.2 Analytical Limitations

There are a number of significant caveats to this analysis that mean **no comparative conclusions on the relative cost effectiveness of treatment pathways should be made.**

13. **There is a limit to the extent residential and community pathways can be compared.** The treatment pathways clients follow reflect, in part, a clinical judgement about the most appropriate intervention for them, as well as other factors such as available treatment infrastructure and budgets. Clients were not randomly allocated, and this introduces the risk of a considerable sample bias. It

cannot be assumed that the outcomes shown would be replicated on a different or larger cohort. Nor can it be assumed that the needs of the cohort who went through the higher cost residential pathways could have been met more cost effectively by a community treatment pathway.

It is not possible to control for selection bias. Although the analysis seeks to control for clients' complexity when making comparisons, taking account of factors such as number of times previously in treatment, homelessness and injecting status, it was not possible to control for all personal, environmental and institutional factors relevant to their outcomes, including those which may influence risk of offending such as age and previous offending history. Testing outlined in Annex D suggests that whilst these complexity groups perform reasonably well as a control, nonetheless they will still have some limitations.

14. **Some wider costs and savings are not captured.**
This analysis is not able to capture a number of wider costs and potential savings. This includes homelessness, looked after children and other health costs (e.g. presentations at A & E)[1].

This analysis only considers drug-related offending[2]. Since other offences may have been committed by this cohort, for these people costs to the criminal justice system will still occur. Some offenders may also have been sent to prison for other reasons not related to a new offence, for example for breach of a community sentence or a licence condition, and in this case no prison bed is saved.

In addition, no attempt has been made to capture costs and savings outside of government, for example the costs of crime to persons and communities, or the costs to families of an opiate user's behaviour.

15. **There is a limited ability to capture longer term savings.**
It is likely that by only tracking opiate clients who enter treatment during 2009/10 up to 31st March 2012, not all of the savings associated with treatment are counted. This might be because savings are likely to continue to some degree in future years e.g. there are likely to be on-going benefits from reduced treatment re-presentations and cessation of drug use and the associated behaviours. Or it may be that positive drug treatment is a pre-condition to tackling other barriers to genuine life change so the impact is not seen in the short-term. For example, positive treatment may then allow a former addict to address a skills need enabling them to find work; or to then address on-going physical or mental health problems which may render them unfit for work.

In Table 6 of Chapter 4, annualised savings for the time after exiting treatment (from 1st April 2012) are presented. To extrapolate the analysis in this way and produce annual estimates for 2012/13 and beyond, it has been assumed that net savings continue at the rates they have shown during 2009/10 to 31st March 2012, for clients that have exited treatment, and that prison and treatment costs do not continue past 31st March 2012.

16. **Many savings will not be cashable.**
Savings are not always cashable, in particular those related to offending and prison. For instance, the saving of one prison bed does not mean that the costs of that bed can be realised- cashable savings

[1]The Drug Treatment Outcome Research Study (DTORS), a longitudinal study exploring the outcomes of drug treatment in England, presented a 31% reduction in health and social care costs and also presented benefits in relation to Looked After Children (£1,095 average saving) and being housed (less than a third had housing problems at baseline reducing to less than a fifth at the end of the study).

[2] Drug-related offences are not easy to quantify, but are defined here as those offences included as trigger offences in the Drug Interventions Programme (DIP), for which a drug test can be carried out on arrest or charge as specified.

are only achievable by removing large numbers of prison places, which in turn would see reduced staff costs, or closing courts.

17. **There are statistical concerns with the analysis, such as high uncertainty.**
Numbers on residential pathways are small, particularly for higher complexity claimants. Only a small proportion (2.5%) of clients in this cohort received residential treatment. This means small differences observed may reflect simple chance rather than genuine differences in performance.

18. **Additional sensitivity analysis uses extreme assumptions**
Analysis presented in Table 6 of Chapter 4, uses assumptions that maximise savings resulting from residential pathways and minimise those resulting from community pathways. This analysis is presented to test the sensitivity of analysis present only for illustrative purposes and cannot be considered as realistic or attainable.

2. Contextual Background

Treatment Pathways

19. Between 1st April 2009 and 31st March 2012, there were six possible categories for adult treatment interventions available in NDTMS (National Drug Treatment Monitoring System): inpatient detoxification (IP), prescribing (either specialist or GP), structured intensive psychosocial interventions (psychosocial), structured day programmes (SDP), residential rehabilitation and other structured interventions (OSI). For the purpose of this analysis each client was assigned to a treatment pathway based on the combination of interventions received from the start of their earliest new treatment journey in 2009/10 through to 31st March 2012.

20. Grouping into pathways in this way creates 33 possible combinations, 16 of which contain treatment in a residential setting and 17 of which do not. As this would prove unwieldy to analyse, analysis only considered the five most common which include a residential component and the five most common pathways without.

21. Of the original 54,712 opiate users selected for analysis, 88% are in the five most common treatment pathways. Table 1 below presents the breakdown.

Table 1: The 5 most common community and residential pathways used in this analysis

	N	%
5 most common community pathways	**47,021**	**97.5%**
Prescribing, Key Working and Low Level Psychosocial Intervention	28,902	60.0%
Prescribing, Intensive Psychosocial	9,772	20.3%
Prescribing, Structured Day Programme	3,723	7.7%
Other Structured Interventions only	2,568	5.3%
Intensive Psychosocial Intervention Only	2,056	4.3%
5 most common pathways with a residential component	**1,186**	**2.5%**
Residential Rehabilitation, Key Working and low level psychosocial (partly in the community)	348	0.7%
Inpatient Detoxification, Prescribing, Residential Rehabilitation	280	0.6%
Prescribing, Residential Rehabilitation	254	0.5%
Inpatient Detoxification Prescribing, Intensive Psychosocial, Residential Rehabilitation	153	0.3%
Prescribing, Intensive Psychosocial, Residential Rehabilitation	151	0.3%
Total	**48,207**	**100%**

Notes:
- Source: NDTMS, PHE

Measuring a positive treatment outcome[3]

22. A client was considered to have had a positive treatment outcome if they:

    - Were discharged from the treatment system with a code of 'treatment completed free of dependency and not using heroin or crack cocaine'
    - Remained out of treatment and did not come into contact with the criminal justice system for a drug-related offence in the same local area until 31st March 2012
    - Remained out of treatment anywhere in England for the next 12 months following their completion from the treatment system.

    If the person positively completed treatment less than 12 months before 31st March 2012 then they were followed up into the next financial year to ensure they had not re-presented to treatment or the criminal justice system for at least 12 months.

23. Clients were categorised as having an "other exit" if they had left the treatment system by 31st March 2012, but did not fulfil the criteria for a positive treatment outcome above. For instance, those clients who were transferred to custody were classified as having an "other exit".

24. Any clients who remained in the treatment system on 31st March 2012 were classified as "still in treatment".

[3] It should be noted that this means that the positive treatment rates shown in this paper may differ from success rates reported in other analysis. Other rates may differ according to the client group considered (e.g. all drug users or opiate users only), the definition of success, and period in which clients have been tracked. This definition is not the same as the PHOF- nor is it used in routine Public Health England reporting on treatment.

Complexity

25. Clients on residential pathways are likely to be different to those on community pathways, both systematically and in ways that will also affect their treatment and socio-economic outcomes. The analysis sought to control for personal characteristics as much as possible by comparing groups that displayed similar levels of complexity on entering treatment.

26. Clients were assigned to one of five complexity groups based on their presenting characteristics when they first started in the cohort. This process identified the variables collected within NDTMS that have a significant impact on the likelihood of a client achieving a positive treatment outcome or not. A score was assigned to each factor depending on the weighting they have in terms of predicting outcomes, for example if they were injecting daily at the start of treatment this would have a value of 5.

27. As people in the drug treatment field use these weights, whole number scores were assigned to the variables thereby making them user friendly. Variables received a higher score if they made abstinence, employment, or completing treatment more difficult. Variables associated with reducing risk were assigned negative scores that would lower the person's total complexity score. The NDTMS variables and scoring system used to determine a client's complexity are presented in Table 2 below.

28. Complexity assignment was based on an existing methodology developed for use in the Department of Health's Payment by Results pilots. The five groups used are 'very low', 'low', 'medium', 'high' and 'very high'. However, very few opiate users are in the 'very low' group, so this group was excluded in the final analysis. Each client has the same complexity throughout the analysis, assigned on their first entry to treatment during 2009/10, even if they start a new treatment journey at a later point.

Table 2: Client's complexity

Category name	New client
Opiate use - daily	15
Opiate user - non-daily	14
Opiate user (no TOP)	13
Previous unplanned episodes (2 or more)	10
Injector – daily	5
Previous unplanned episode (1)	5
Current injector (no TOP)	4
Hazardous drinker	4
Injector - non-daily	4
Cannabis 20-28 days	3
Crack 1-6 days	3
Crack 7-28 days	3
Housing problem	3
Referral from Criminal Justice	3
Amphetamines 7-28 days	2
Crack user (no TOP)	2
Amphetamines 1-6 days	1
Cannabis 1-19 days	1
Physical health score >=12	-1
Psychological health score >=11	-1
In education 1-28 days	-3
Cocaine 1-3 days	-5
Cocaine 4-28 days	-5
In work 1-28 days	-5
Pregnant	-5

Notes:

- Source: NDTMS, PHE

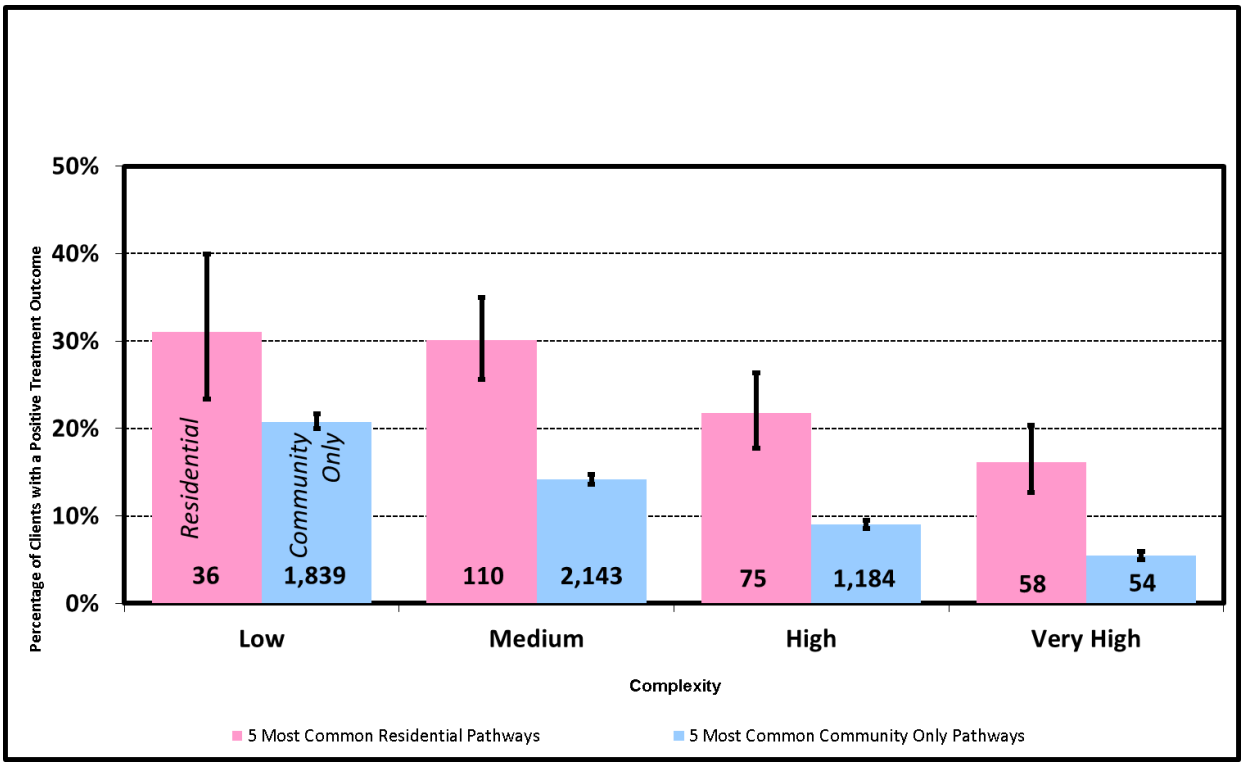
29. Additional testing of the use of complexity levels in this analysis is provided in Annex D. This suggested that by comparing clients of a similar complexity there are minimal measurable differences between those undergoing treatment in a residential rehabilitation setting, and those following community-based treatment pathways. However, some differences may exist in relation to factors that we cannot measure so easily, for example clients' motivation levels, past work histories and educational background.

3. Analysis of Costs and Benefits

3.1 Treatment

30. Indicative estimates shown in Chart 1 suggest that across all complexities, opiate clients on the top five residential pathways had higher rates of positive treatment outcomes. The rate of positive treatment outcomes for very high complexity clients on residential treatment pathways (16%) was just under three times that of similar clients on community pathways (6%). However, for both residential and community pathways greater complexity reduced the likelihood of a positive treatment outcome.

Chart 1: Percentage of clients with a positive treatment outcome by 31st March 2012, by complexity and pathway



Notes:
- Figures rounded to the nearest %.
- Source: NDTMS, PHE
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

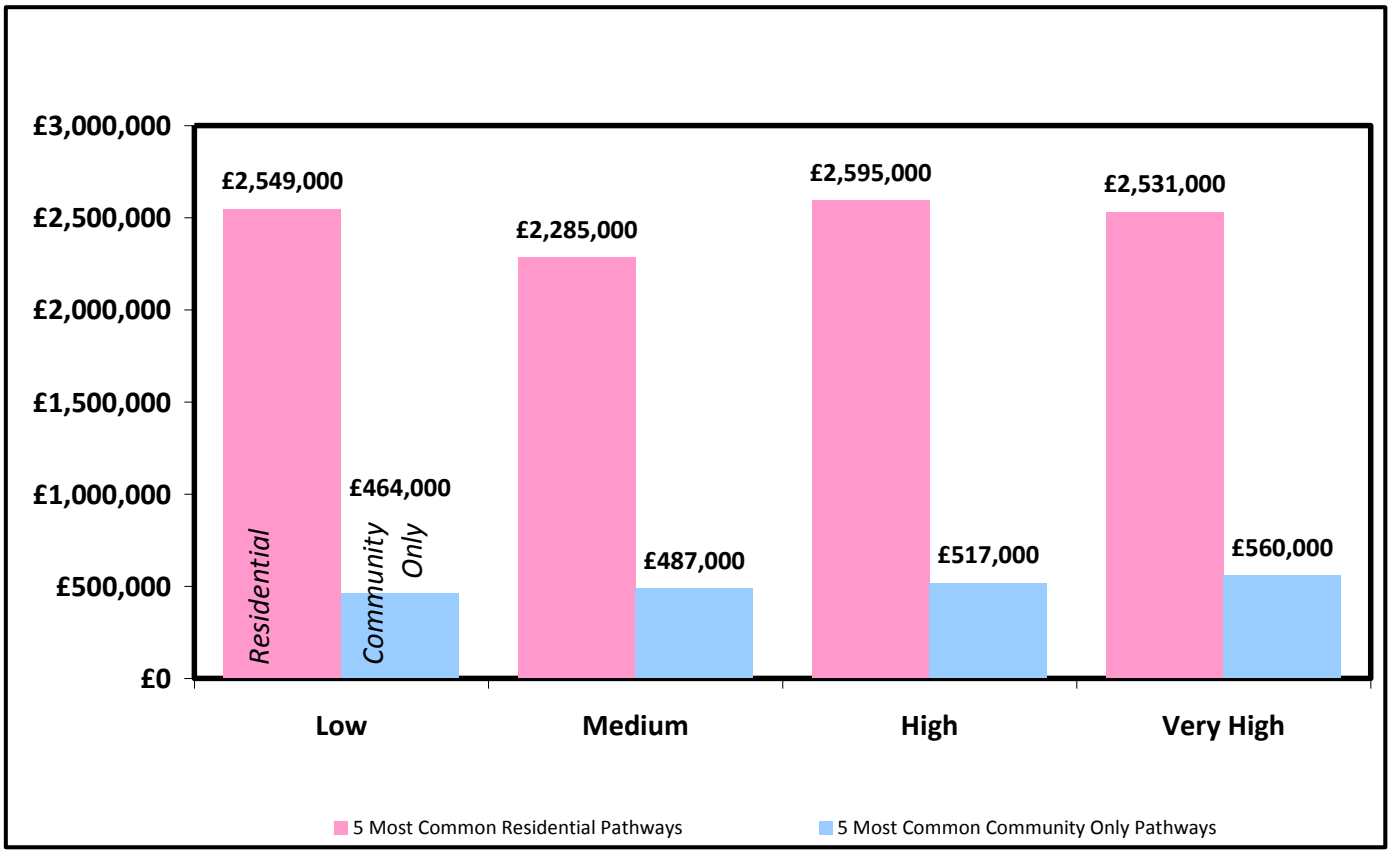
31. Although residential pathways had higher rates of positive outcomes compared to community pathways, these clients are estimated to have marginally lower average lengths of time in treatment. This is a consistent pattern seen across the range of client complexities. For example over the three year period analysed, very high complexity clients on residential pathways spent an average of approximately 1.49 years in treatment, compared to approximately 1.57 years in treatment for those on community pathways. See Annex B, section B.1 for more information on time in treatment.

Treatment Costs

32. In spite of shorter treatment duration, Chart 2 shows that treatment for clients on residential pathways was more expensive than for those on community pathways. For example, the average total cost of

treatment provided to a very high complexity client over the course of the three years on residential pathways stands at approximately £25,000 – about five times the average cost of community pathways, at around £6,000.

Chart 2: Estimates of total treatment costs for 100 clients, by complexity and pathway



Notes:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: NDTMS, PHE

33. The rest of this report considers the costs and savings of six areas of government services that might generate additional savings which could be used to offset treatment costs.

3.2 Welfare

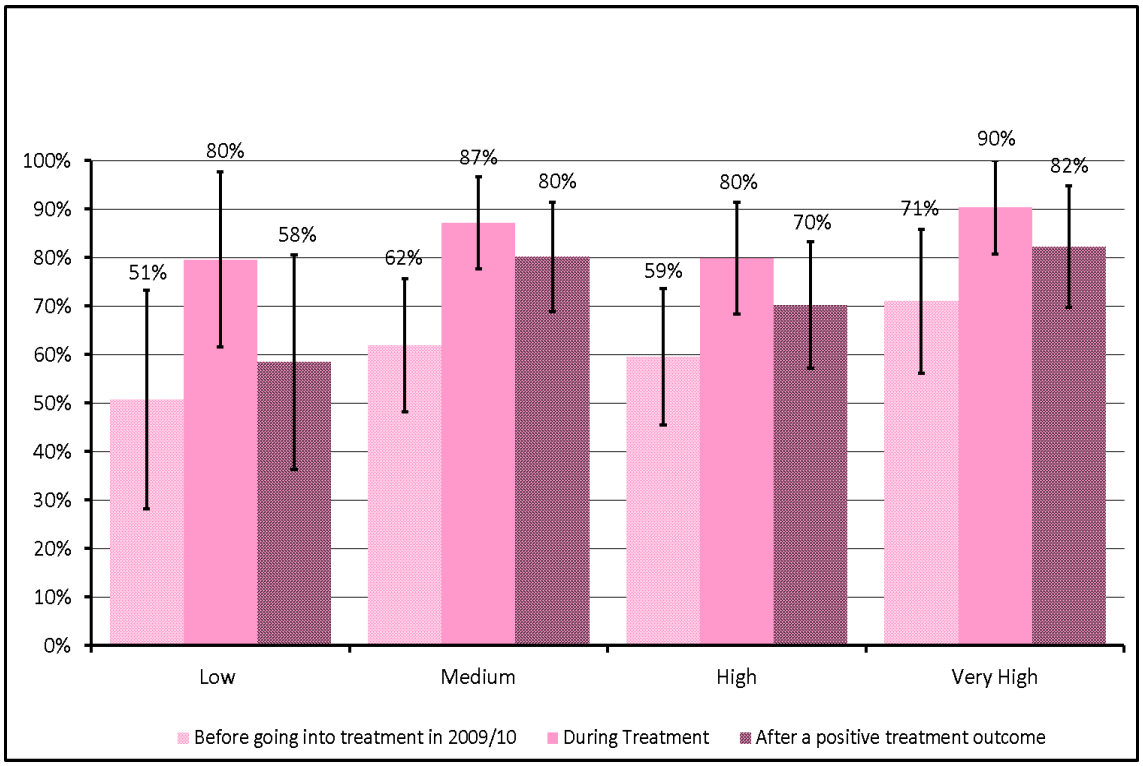
34. Analysis of clients with a positive treatment outcome, on both residential and community pathways, shows that clients of a higher complexity were more likely to spend a greater proportion of time in receipt of one of the main DWP working age benefits[4].

35. The proportion of time that clients with a positive treatment outcome spent in receipt of one of the main DWP working-age benefits tended to increase whilst clients were in treatment, compared with the proportion of time spent in receipt of a benefit before entering treatment. This pattern was seen across all complexities, and for clients following both residential and community pathways. This may be partly due to the improved stability in clients' lives which improves their ability to make – and maintain – a benefit claim.

[4] Job Seeker's Allowance (JSA), Employment Support Allowance (ESA), Incapacity Benefit (IB), Income Support (IS), Disability Living Allowance (DLA)

36. Once a client exited treatment the proportion of time spent in receipt of one of the main DWP working-age benefits reduced compared to in treatment levels – but it tended to reduce to a greater extent for clients on a community based pathway. Charts B2 and B3 in Annex B also estimated that this reduction was- in general- greater for clients who exit but without a positive treatment outcome.

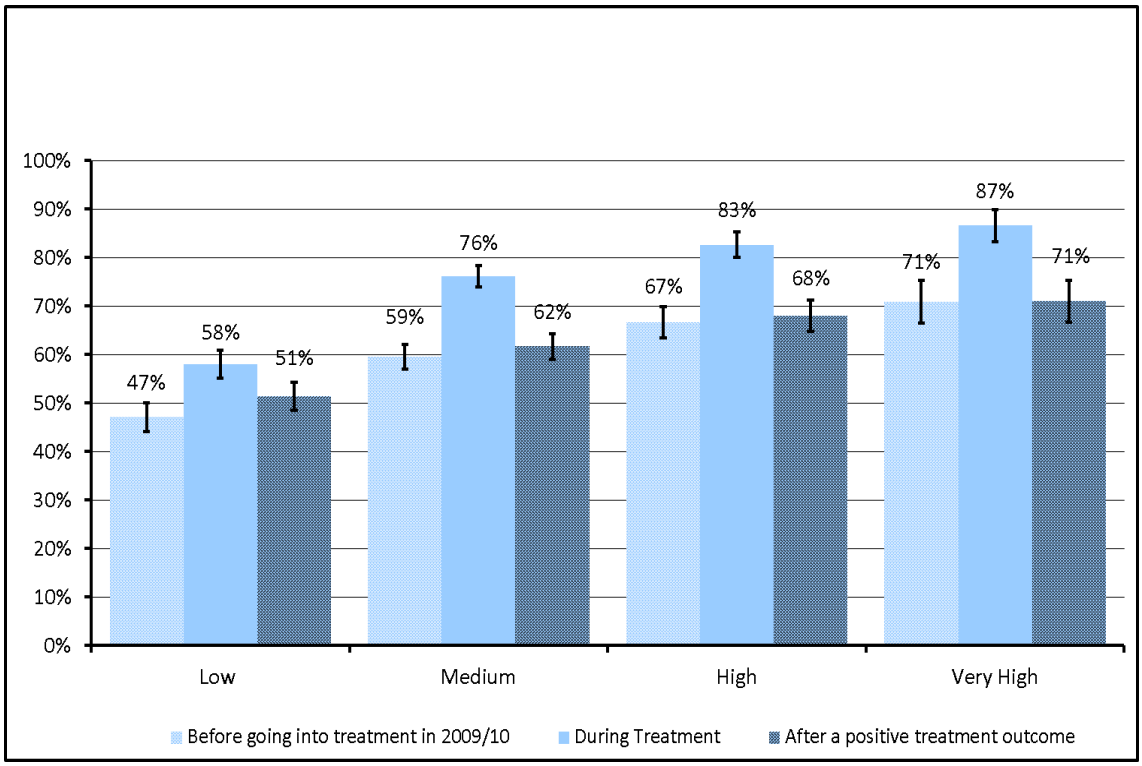
Chart 3: Percentage of time spent on an out-of-work benefit for clients with a positive treatment outcome by 31st March 2012 for the most common 5 residential pathways.



Notes:

- Figures rounded to the nearest %.
- Source: Anonymous data match of DWP National Benefit Database (NBD) and PHE's NDTMS
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

Chart 4: Percentage of time spent on an out-of-work benefit for clients with a positive treatment outcome by 31st March 2012 for the most common 5 community pathways.

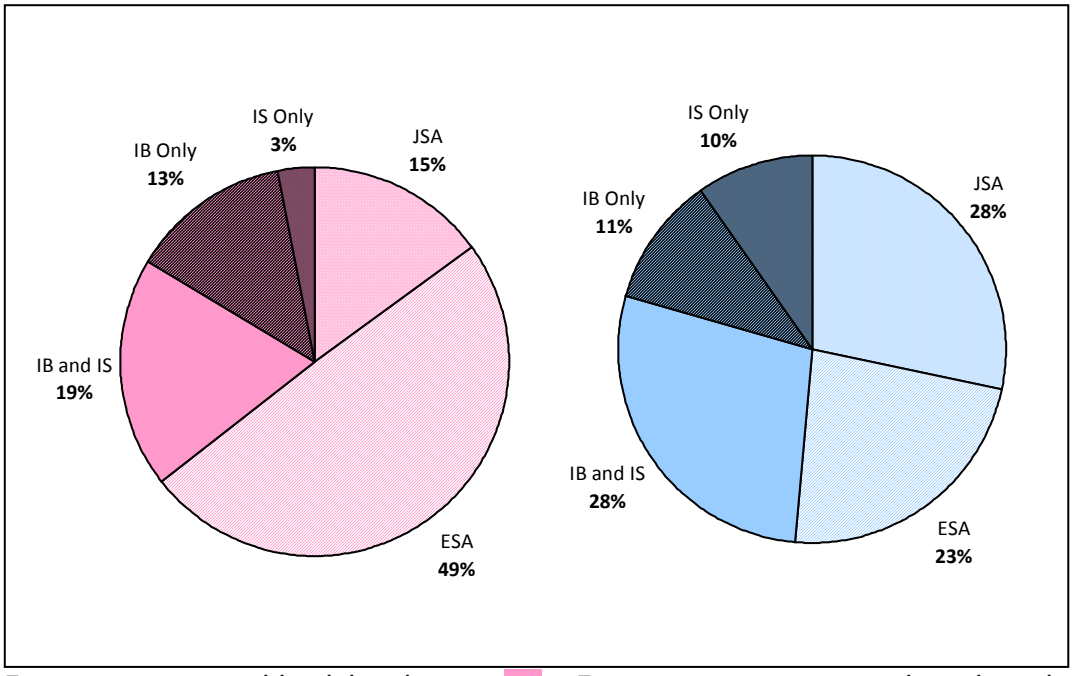


Notes:

- Figures rounded to the nearest %.
- Source: Anonymous data match of DWP's NBD and PHE's NDTMS
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

37. For the very high complexity cohort with a positive treatment outcome, on average they received more in welfare payments during and following treatment than they had in the two years before they entered treatment. Chart 5 below shows that clients' with a positive treatment outcome on residential pathways were also more likely to be in receipt of more expensive incapacity benefits compared to those with a positive treatment outcome from a community pathway. These benefits also have limited conditionality compared to JSA so we would expect clients to stay on benefits for longer.

Chart 5: Breakdown by benefit type of the time spent in receipt of an 'out-of-work' benefit, following a positive treatment outcome, for all complexities

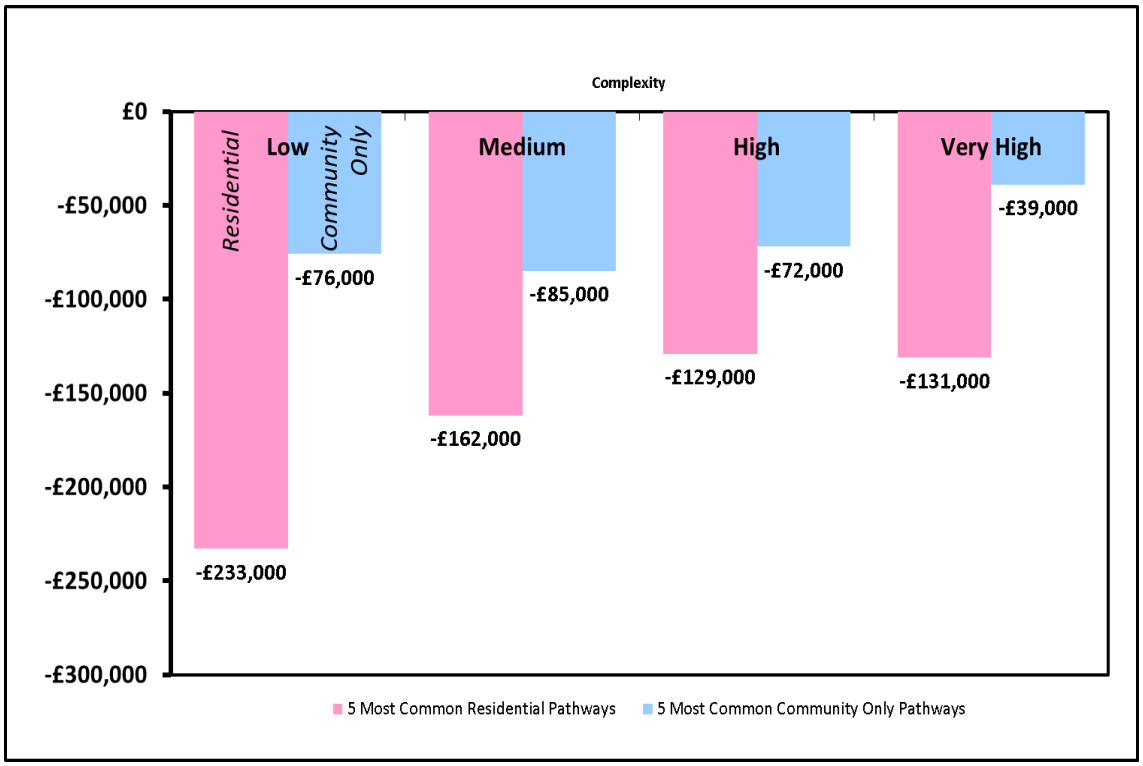


Notes:

- Figures rounded to the nearest %.
- Source: Anonymous data match of DWP's NBD and PHE's NDTMS

38. Chart 6 below summarises analysis of differences in both time spent on benefits, and welfare expenditure, over the three year analysis period, displaying that welfare costs increased over the three years for clients on both residential and community pathways compared to the two years prior to these clients entering treatment. However, this increase in costs was greater for those on residential pathways. This is understandable given that clients on residential pathways were largely estimated to have spent more time on benefits after a positive treatment outcome, and on more expensive benefits.

Chart 6: Net welfare costs up to 31st March 2012 if 100 clients were sent down each pathway compared to the pre-treatment baseline by complexity level



Notes:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: Anonymous data match of DWP's NBD and PHE's NDTMS

3.3 Housing Benefit (HB)

39. Information about HB entitlement for this cohort is not available from the DWP- PHE data share. As a result it has not been possible to produce figures from a single source where all the variables of interest are captured. Instead analysis estimates what HB expenditure *might* be expected to be, based on the limited information which *is* available, and on a number of assumptions. A detailed explanation of the methodology used for this analysis can be found in section B.3 of Annex B.

40. There is no DWP data on the different treatment pathways any clients on HB may be on. However, for those in residential rehabilitation, the amount of HB depends on the nature of their accommodation, and whether the client is still liable to pay rent at their usual address. Some clients may receive:

a. More HB than prior to entering treatment, if where they are living during and after treatment falls into certain categories of supported housing;

b. The same amount of HB if they continue to rent their usual home and meet the conditions associated with temporary absence;

c. No HB if they are no longer renting their previous accommodation, or if they do not meet the conditions for receiving HB whilst temporarily absent from their home.

41. Numbers of clients falling into each of these categories is not known. However, by:

- Using limited DWP data, the proportions of claimants with a treatment marker who were also in receipt of HB before, during and in-between treatment, and after treatment were estimated. These proportions

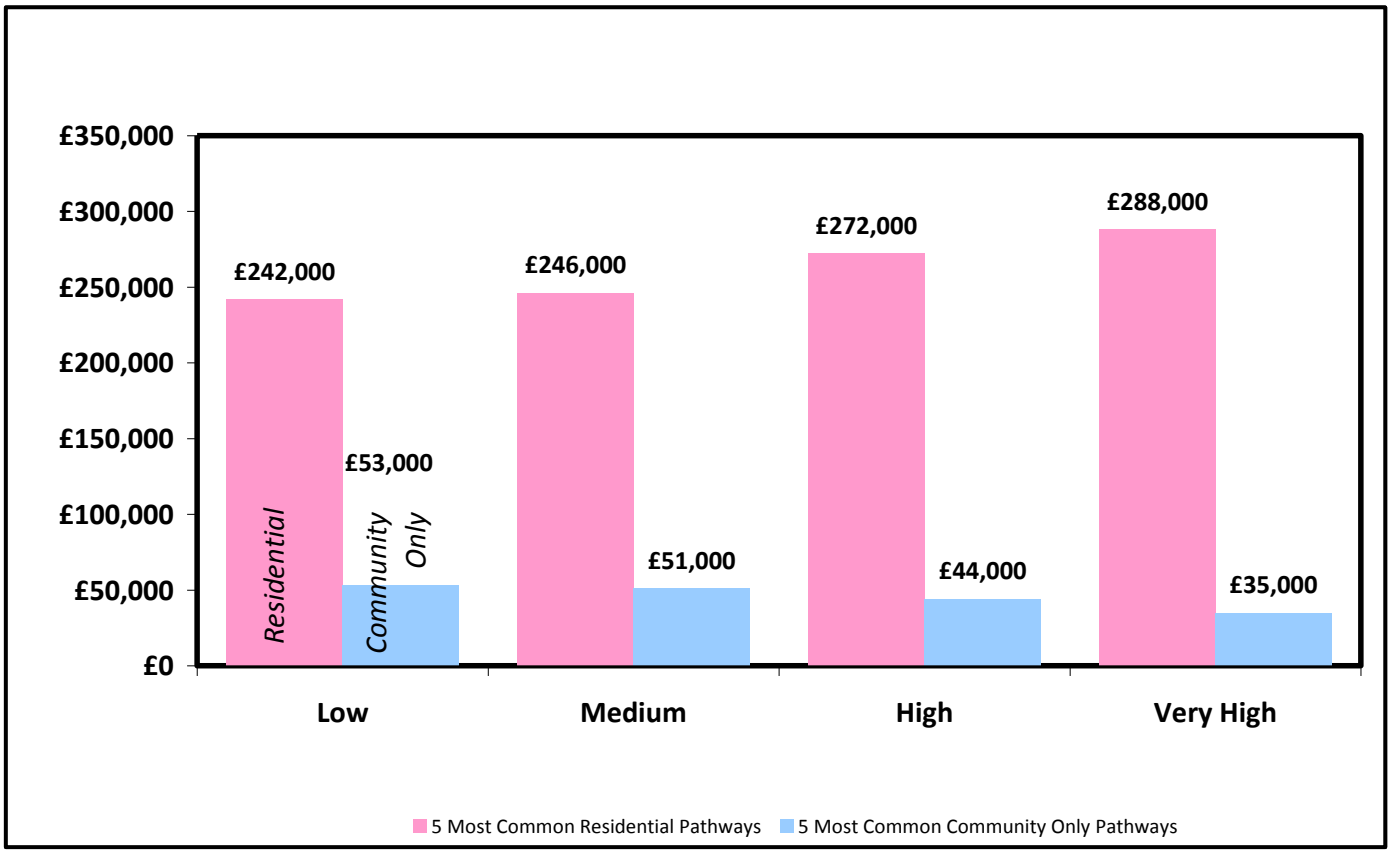
were applied to average weekly HB awards (for all HB claimants) to estimate HB spending on those going through rehabilitation.

- Assuming that those on community pathways continued to receive the same daily HB amount whilst in and in-between treatment as they did before entering treatment.

- Also assuming that those on residential pathways received a lower daily HB amount whilst in treatment as they did before entering treatment, and that 20% of those flagged as in treatment on the DWP data used for matching to HB claims, were on residential pathways.

42. It was estimated, over the three years of analysis, that there were greater HB savings from clients on residential pathways compared to their equivalents on community pathways. Therefore, as Chart 7 demonstrates, indicative estimates suggest HB savings may partly offset the higher treatment costs of residential pathways.

Chart 7: Net HB non-cashable savings up to 31st March 2012 if 100 clients were sent down each pathway compared to the pre-treatment baseline by complexity level

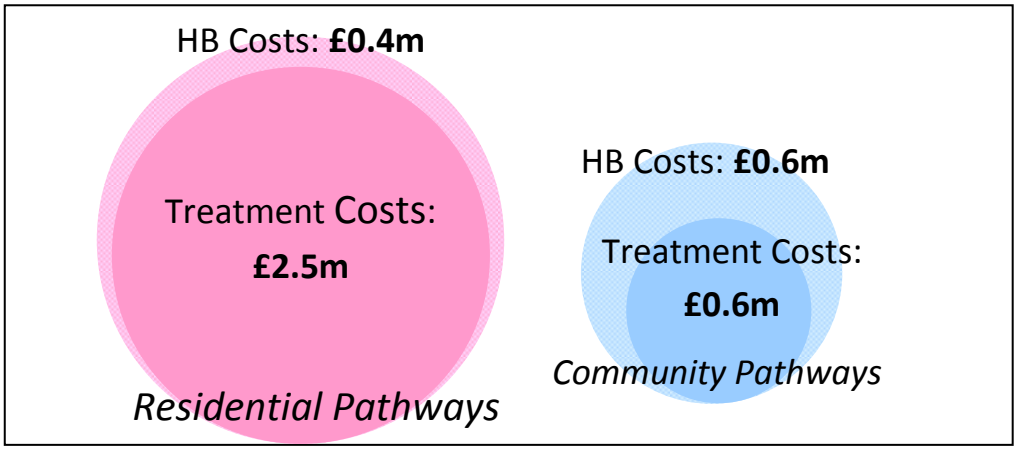


Notes:
- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: Estimated using DWP administrative data.

43. Part of the cost of residential pathways reflects an accommodation cost which will replace some HB spending, depending on the circumstances of the client. Chart 8 below – as far as we can estimate – sought to demonstrate the combined cost of both treatment and HB.

44. It shows that even when focussing on the very high complexity clients, when HB costs were considered in conjunction with treatment costs residential pathways were still 2.4 times more expensive than community pathways.

Chart 8: Combining indicative HB costs with treatment costs for very high complexity clients



Source:

- Figures rounded to the nearest £100,000. Figures may not sum because of this rounding.
- Source: Estimated using DWP administrative data and NDTMS.

3.4 Employment

45. Employment records for this cohort were not available from the DWP- PHE data share, but inferences about employment could be made from benefit receipt. Estimates of the total impact to the exchequer of clients moving into employment were based on the number of days a client was not entitled to an out-of-work benefit and the number of days, according to P45 records (employment above the national insurance contribution – NICs - threshold), that drug and alcohol dependent claimants spent in employment.

46. These estimated savings reflect increased tax or national insurance contribution revenue. Welfare spending savings as people move off benefits has already been accounted for in section 3.2 on Welfare.

47. The best estimate is that the number of clients in employment above the National Insurance Contributions threshold on either pathway was small, and that any savings from moving into employment were likely to be negligible over the period in question (See also Chart B4 in section B.4 of Annex B). This analysis only considered a maximum of three years, and many clients in the cohort would have only recently left treatment. Looking over a longer period of time it is possible that the impact of employment might become more significant.

48. Whilst little is known about employment outcomes for clients leaving treatment, for those in treatment PHE figures suggest that six months into their treatment the percentage of clients in employment only increased by 3 percentage points[5]. However, these figures include a wider spectrum of clients (for example, all clients irrespective of their level of complexity, and their substance of dependence).

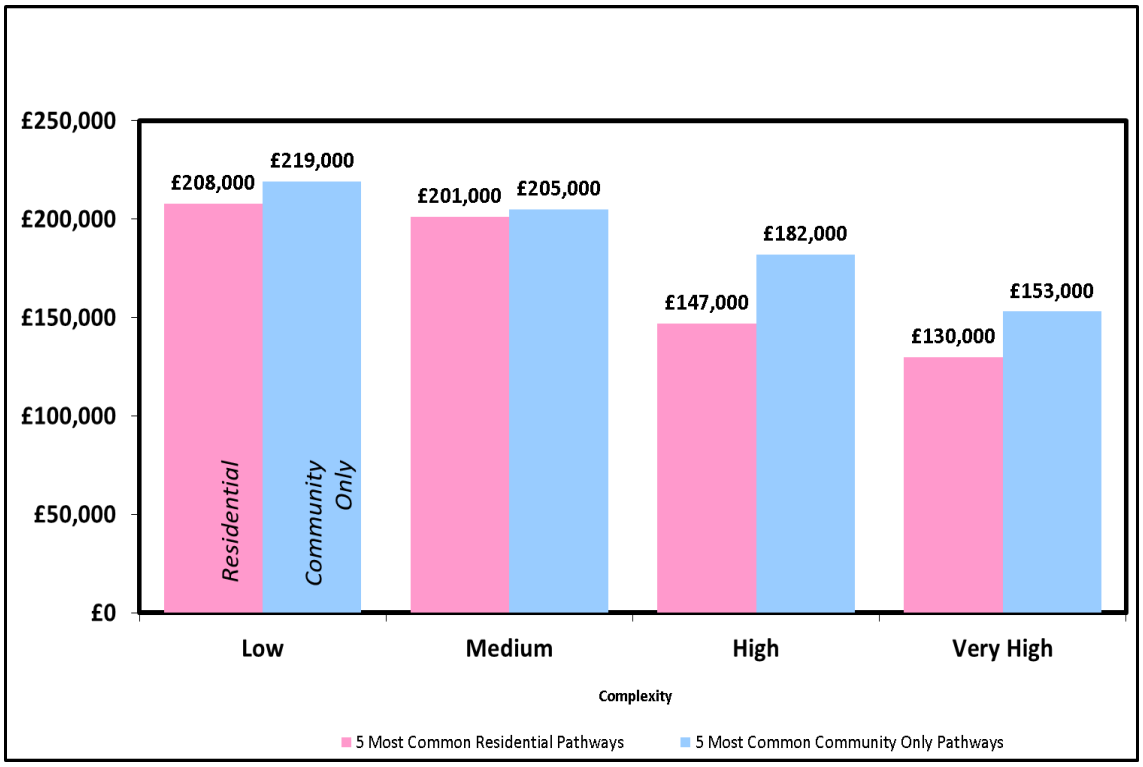
[5] 3 percentage point change is based on TOP data published by PHE in the 2012/13 Drug Treatment Annual Report, where a change from 18% of clients working at the point where they entered treatment, to 21% after six months in treatment was reported. It includes some clients who were reviewed prior to 6 months.

3.5 Health

49. It was not possible to obtain a health dataset to match to the treatment dataset for this cohort. To model health savings, the health and social care improvements observed during DTORS (Drug Treatment Outcomes Research Study) were used, which are several years out of date. DTORS only presented costs for before treatment and during treatment (3-5 months and one year after starting treatment). This means that there are no costs for people who go on to leave treatment with either a positive, or other treatment exit, outcome, which will considerably underestimate the savings to the health system for those in the former group.

50. As displayed in Chart 9, estimated net health and social care savings for 100 very high complexity clients on a community pathway, are approximately £22,000 more than for 100 very high complexity clients on a residential pathway, though by looking only at in treatment benefit this is likely to underestimate the savings of the residential pathway.

Chart 9: Net non-cashable health savings up to 31st March 2012 if 100 clients were sent down each pathway compared to the pre-treatment baseline by complexity level



Source:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: DTORS

51. Another limitation is that the DTORS costs and savings are based on average clients in treatment: it is likely that very high complexity opiate users will have much higher pre-treatment costs and therefore higher overall savings. A more robust analysis would require Hospital Episodes Statistics data to be anonymously matched to the treatment data.

3.6 Drug-Related Offending

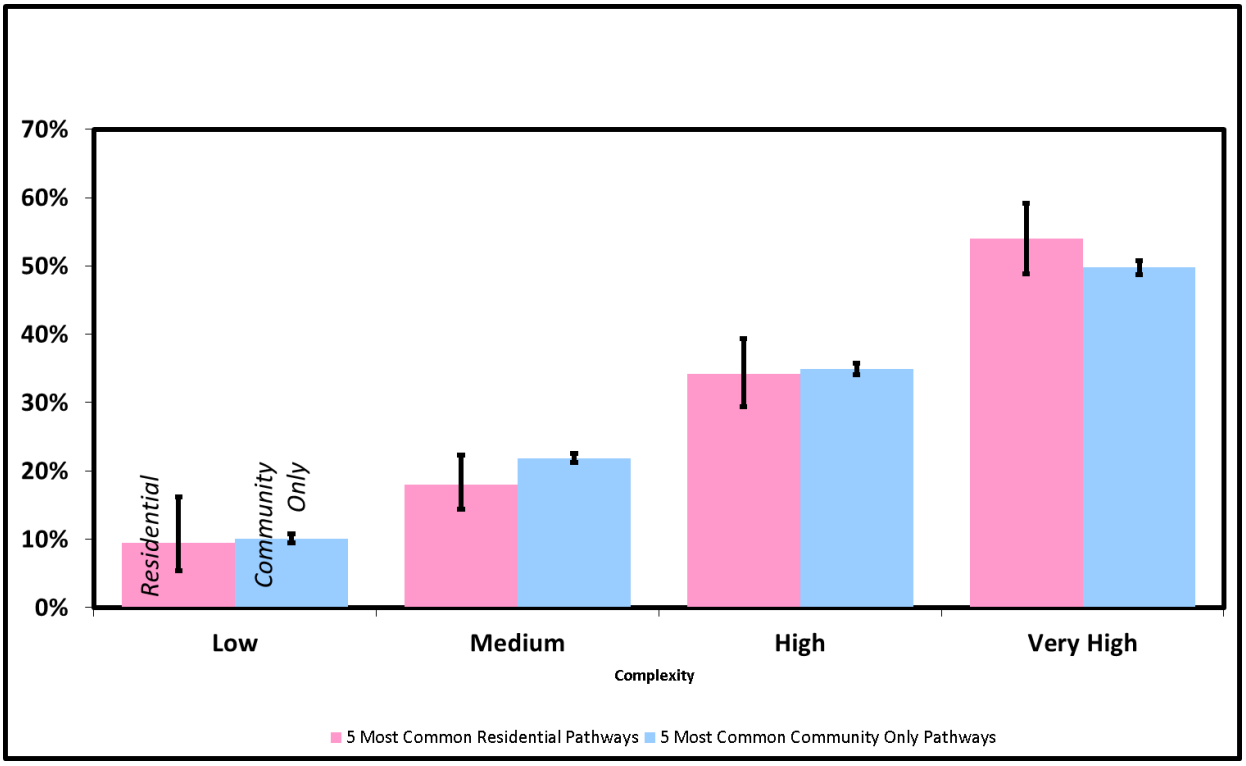
52. Data on the changing drug-related offending behaviour during and after treatment in this indicative analysis has been produced using an anonymous match of information from the NDTMS and the PNC (Police National Computer). While attempts have been made to control for client complexity in respect of treatment outcomes, it has not been possible to include some key factors usually associated with re-offending such as age and previous offending history. It is not known if individuals on the different pathways differed in these key characteristics, which may have influenced their offending behaviour. This will mean that there will be significant limitations in being able to accurately compare outcomes between the two groups.

53. Similarly as it was not possible to provide a counterfactual, i.e. what change in offending levels would have happened anyway for each cohort if the clients had not accessed treatment, we could only compare the levels of offending prior to treatment, to that during and after for those that had treatment.

54. It should be noted that all the savings reported for offending are savings made to the government and are not necessarily cashable. They do not include the wider societal savings to people and communities, which would be significantly larger.

55. As shown in Chart 10 below, there was little difference in the proportion of known offenders (with a drug-related offence) on the two pathways, and as the complexity level increases, as does the proportion of known offenders, with almost 60% of clients in the very high complexity group on residential pathways being recorded as having a drug-related conviction on PNC.

Chart 10: Proportion of known offenders (with drug offences) by complexity and pathway



Notes:

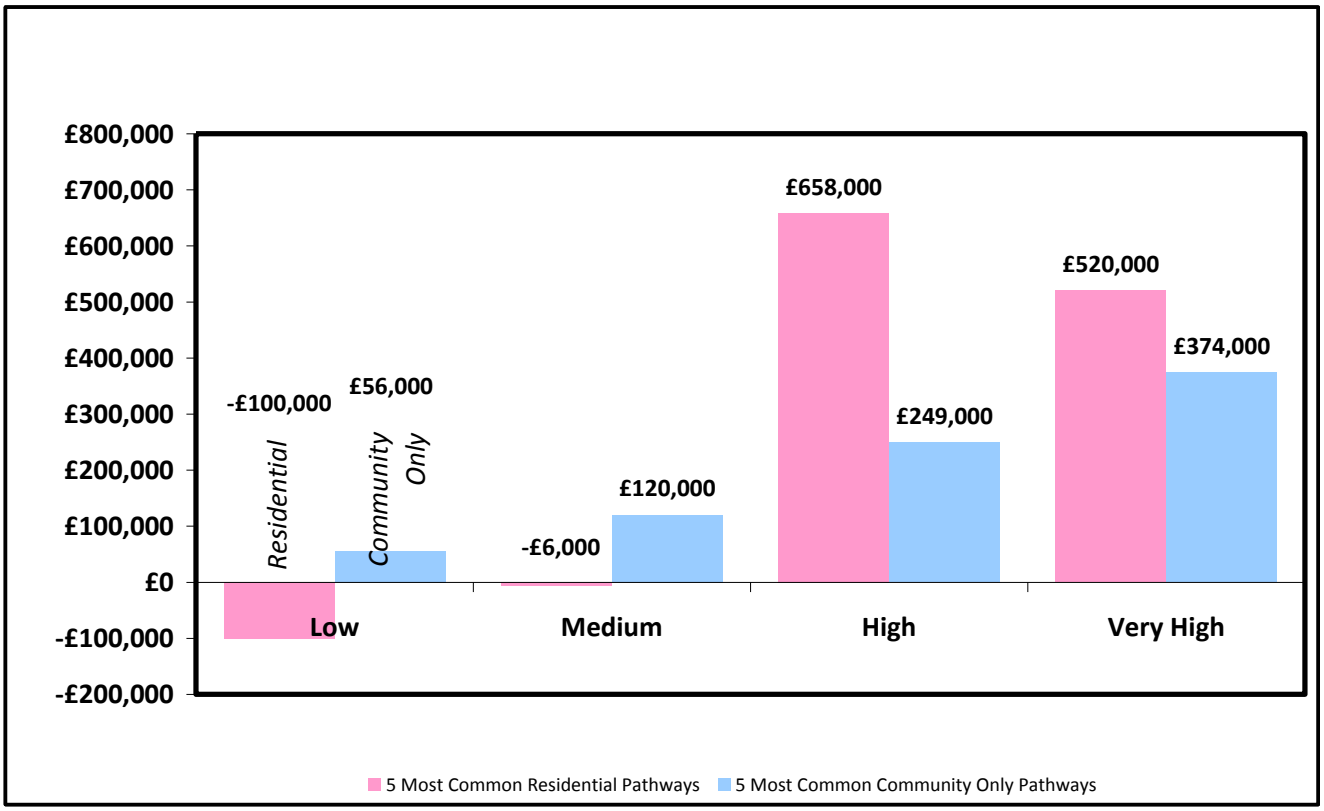
- Figures rounded to the nearest %.
- Source: Anonymous data match of PNC data and PHE's NDTMS
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

56. Clients that had a positive treatment outcome, and those clients still in treatment at the end of the cohort period (31st March 2012), generally saw the largest reductions in drug-related offending as recorded on the data match.

57. On average, drug-related offending savings for clients on residential pathways were nearly twice as high as for their counterparts on community pathways; this may be because during the time in residential treatment (an average of six months) they may have had less opportunity to be able to commit crimes.

58. Overall Chart 11 below shows that larger-drug related offending savings were seen with clients on residential pathways. This may be due to the higher rates of positive treatment outcomes seen in this group.

Chart 11: Net costs and non-cashable savings of offending up to 31st March 2012 if 100 clients were sent down each pathway compared to the pre-treatment baseline by complexity level



Source:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: Anonymous data match of PNC data and PHE's NDTMS

3.7 Prison

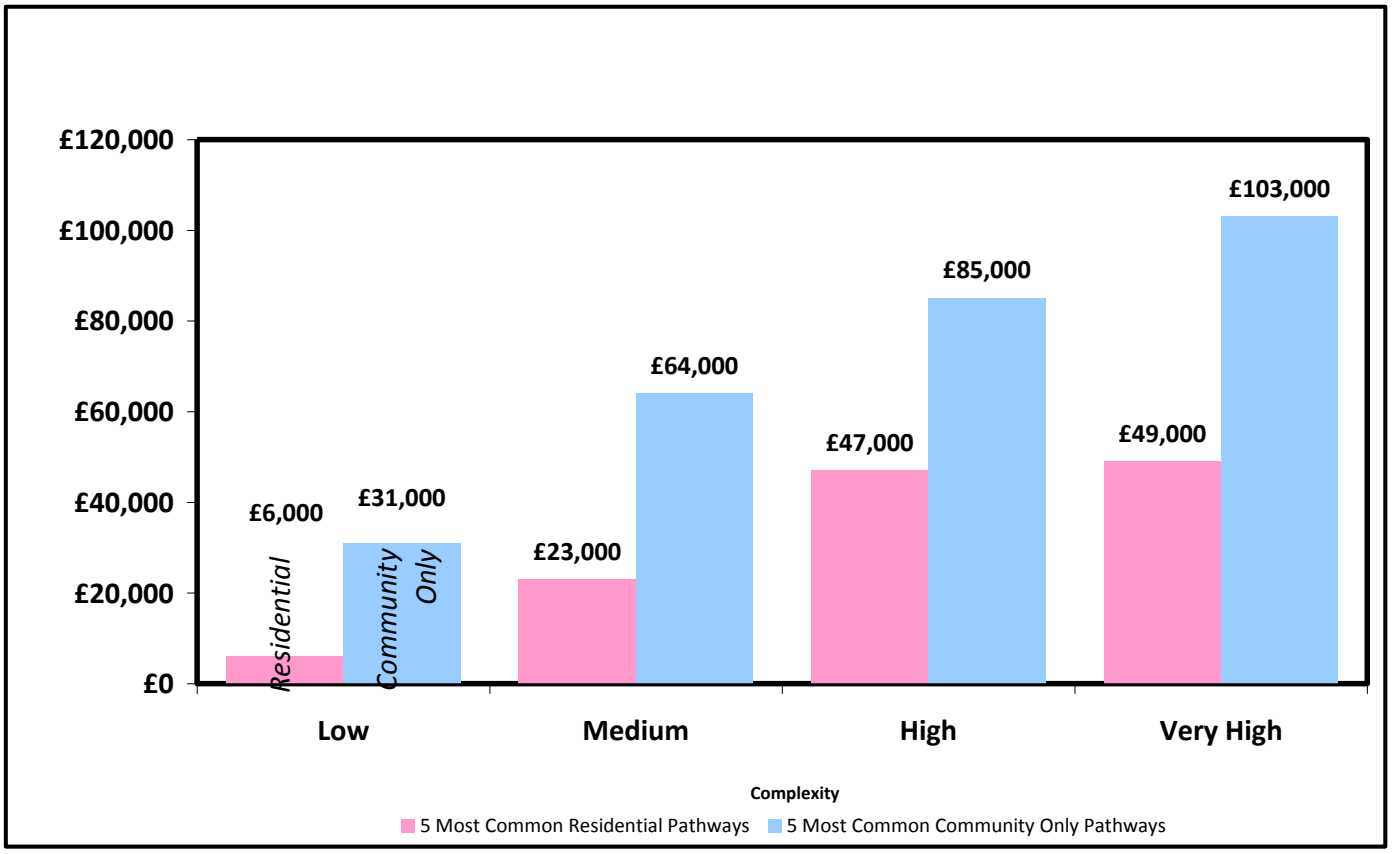
59. While it was not possible to match NDTMS data to prison data to get an accurate indication of the proportion of clients that left treatment due to spending time in custody and the duration of the sentence, NDTMS does record the reasons why individuals have exited the treatment system. One of these discharge reasons records where clients have been sent to prison. Using this to identify the number of people that went to prison, as well as the average time spent in prison for this client group, it was then possible to estimate the prison costs on the two pathways.

60. NDTMS does not give the reasons why people have been sent to prison. Offenders may be sent to prison for reasons not related to a new offence, for example for breach of a community sentence or a licence condition (e.g. not residing where required), and in this case no prison bed is saved as a result of drug treatment.

61. This analysis has assumed that everyone who is sent to prison has received a new custodial sentence, when this is unlikely to be the case for a number of people. On average, people with a custodial sentence spend 71 days in custody and 55 days receiving opioid substitution therapy (OST); therefore daily costs of prison and prescribing are estimated to be £95 and £6 respectively. The average stay in custody for reasons other than a new custodial sentence, or the time spent on OST, is not known and so these costs have not been included.

62. Chart 12 displays that estimated prison costs following the last exit were significantly less for those clients that had a residential component to their treatment pathway. The estimated prison costs of clients in the very high complexity group for those on a residential pathway were £49,000 compared to an estimated £103,000 for those on community pathways.

Chart 12: Prison costs following last exit from treatment for 100 clients, by complexity and pathway

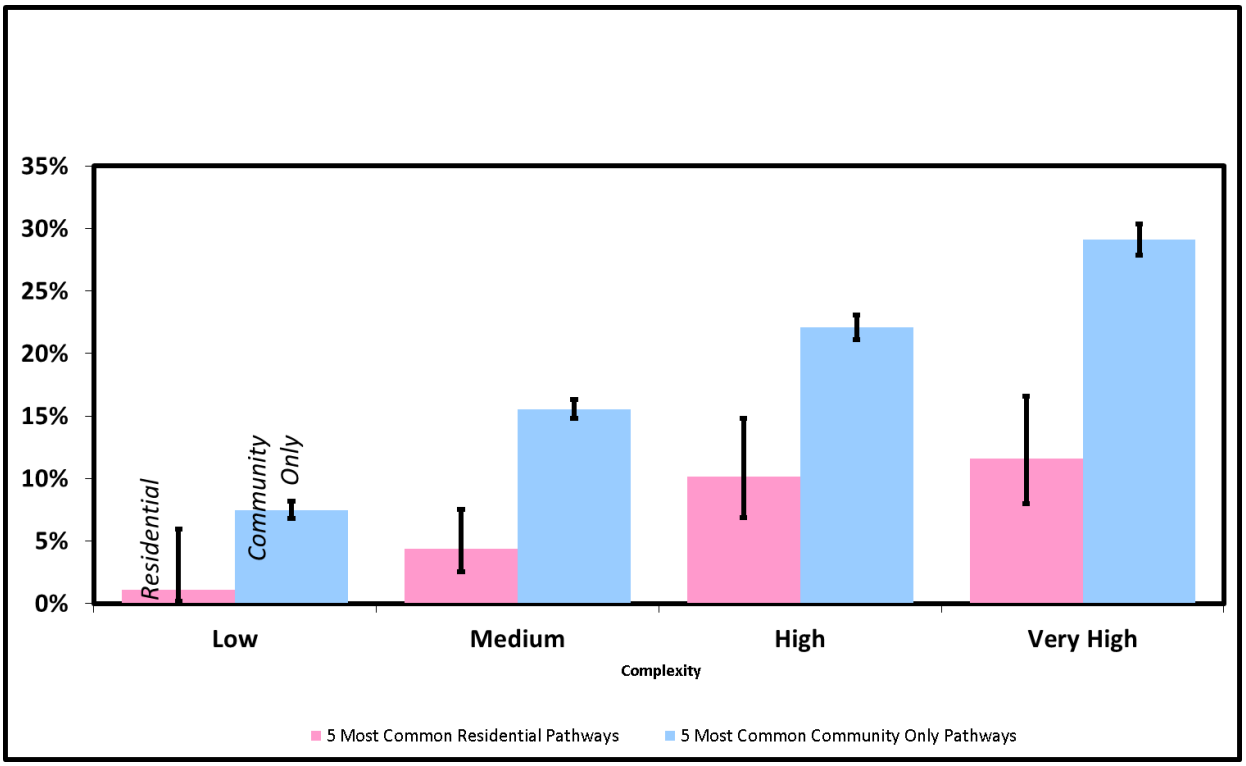


Source:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: Estimated from NDTMS and MoJ administrative data

63. These differences are explained by the differential rates of clients leaving the treatment system into custody as can be seen from Chart 13 below.

Chart 13: Proportion of clients for whom the last exit from the treatment system was recorded as "prison" or "transferred into custody", by complexity and pathway



Notes:

- Figures rounded to the nearest %.
- Source: NDTMS
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

4. Summary of findings

64. This section brings together the costs and savings across all of the areas considered in this paper.

4.1 Three-year net costs and non-cashable savings across all complexities and pathways

65. As outlined in section 3.1 of Chapter 3, for all complexities the rate of positive treatment outcomes was greater for residential compared to community pathways. However, their overall total costs were greater.

66. Table 3 below shows the costs and savings over the three years that the data is available for – based on 100 clients on each pathway. The savings reported are those made to the exchequer (although not cashable), and exclude wider societal savings. For high and very high complexities the total savings for residential pathways were estimated to be greater than those for community pathways (for high complexity around £1.0 million in residential pathways compared to around £0.4 million in community pathways), whereas for low and medium complexities, the total savings for residential pathways were estimated to be lower than those for community pathways. For high and very high complexity levels,

despite overall total savings being estimated as greater for residential pathways, these savings were not large enough to offset the additional costs of residential treatment.

Table 3: Indicative estimates of three-year (2009 to 31st March 2012) costs and non-cashable savings to government if 100 clients were sent down each pathway at each complexity level.

		Three Year Costs			Three Year Estimates of Savings						
Pathway	Complexity	Treatment	Prison	Total Costs	Welfare	Housing Benefit	Employment	Health	Offending	Total Savings	Overall Savings
Residential	Low	-£ 2,549,000	-£ 6,000	-£ 2,555,000	-£ 233,000	£242,000	-£ 9,000	£208,000	-£100,000	£107,000	-£ 2,448,000
	Medium	-£ 2,285,000	-£ 23,000	-£ 2,308,000	-£ 162,000	£246,000	-£ 4,000	£201,000	-£ 6,000	£275,000	-£ 2,033,000
	High	-£ 2,595,000	-£ 47,000	-£ 2,642,000	-£ 129,000	£272,000	-£ 5,000	£147,000	£658,000	£943,000	-£ 1,699,000
	Very High	-£ 2,531,000	-£ 49,000	-£ 2,580,000	-£ 131,000	£288,000	-£ 5,000	£130,000	£520,000	£803,000	-£ 1,778,000
Community	Low	-£ 464,000	-£ 31,000	-£ 495,000	-£ 76,000	£ 53,000	-£ 2,000	£219,000	£ 56,000	£250,000	-£ 245,000
	Medium	-£ 487,000	-£ 64,000	-£ 550,000	-£ 85,000	£ 51,000	-£ 2,000	£205,000	£120,000	£289,000	-£ 262,000
	High	-£ 517,000	-£ 85,000	-£ 602,000	-£ 72,000	£ 44,000	-£ 3,000	£182,000	£249,000	£401,000	-£ 202,000
	Very High	-£ 560,000	-£103,000	-£ 662,700	-£ 39,000	£ 34,000	-£ 2,000	£153,000	£374,000	£520,000	-£ 143,000

Notes:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.

- This does not include any discounting, so does not include a NPV

4.2 Three-year net costs and non-cashable savings for very high complexity clients

67. Based on results in Table 3 above and Table 4 below:

    a. For 100 clients of very high complexity on community pathways, from the point at which a client entered treatment in 2009 to 31st March 2012, total costs (for both treatment and prison) were estimated at £0.7 million, resulting in around 6 positive treatment outcomes. Across all 100 clients approximately £0.5 million of savings were generated (which are not necessarily cashable). This means that overall for 100 clients costs were around £0.1 million higher than the direct savings to the exchequer.

    b. For 100 clients of very high complexity on residential pathways, from the point at which a client entered treatment in 2009 to 31st March 2012, total costs were estimated at £2.6 million, resulting in around 16 positive treatment outcomes. Across all 100 clients approximately £0.8 million of savings were generated (which are not necessarily cashable). This means that overall for 100 clients costs were around £1.8 million higher than the direct savings to the exchequer.

68. Therefore, for 100 very high complexity clients, the net cost to the public sector of putting 100 high complexity clients through residential pathways was around £1.6 million higher than it would be through community pathways over the 3 year period. This suggests that over this short period the savings to government of sending clients down residential pathways do not outweigh the costs, and the analysis would have to potentially look beyond 31st March 2012 before this is the case.

69. Table 4 extends Table 3 to show how, for very high complexity, the estimates above are composed from those clients who had a positive treatment outcome, clients who otherwise exited, and those who at 31st March 2012 were still in treatment.

70. For both pathways, the table indicates that those with positive treatment outcomes contributed much more on average per person in savings than those who exit for other reasons or remain in treatment.

Table 4: Indicative estimates of three-year (2009 to 31st March 2012) costs and savings to government if 100 clients were sent down each pathway, for very high complexity only

Pathway	Complexity	Outcome	Freq	Three Year Costs		Total Costs	Three Year Savings					Total Savings	Overall Savings
				Treatment	Prison		Welfare	Housing Benefit	Employment	Health	Offending		
Residential	Very High	Positive Treatment Outcome	16	-£409,000	-£8,000	-£417,000	-£ 20,000	£ 41,000	-£ 1,000	£ 30,000	£130,000	£180,000	-£ 237,000
		Other Exit	44	-£1,107,000	-£21,000	-£1,128,000	-£ 81,000	£ 114,000	-£ 2,000	£ 57,000	£226,000	£314,000	-£ 814,000
		Still in Treatment	40	-£1,015,000	-£20,000	-£1,035,000	-£ 30,000	£ 133,000	-£ 2,000	£ 43,000	£164,000	£308,000	-£ 727,000
		Total	**100**	**-£2,531,000**	**-£49,000**	**-£2,580,000**	**-£ 131,000**	**£ 288,000**	**-£ 5,000**	**£ 130,000**	**£520,000**	**£803,000**	**-£ 1,778,000**
Community	Very High	Positive Treatment Outcome	6	-£34,000	-£6,000	-£40,000	-£ 5,000	£ 4,000	£ -	£ 11,000	£ 38,000	£ 49,000	£ 9,000
		Other Exit	44	-£246,000	-£45,000	-£292,000	£ 9,000	£ 30,000	£ -	£ 71,000	£ 33,000	£144,000	-£ 147,000
		Still in Treatment	50	-£280,000	-£51,000	-£331,000	-£ 44,000	£ -	-£ 2,000	£ 70,000	£303,000	£327,000	-£ 4,000
		Total	**100**	**-£560,000**	**-£103,000**	**-£663,000**	**-£ 39,000**	**£ 34,000**	**-£ 2,000**	**£ 153,000**	**£374,000**	**£520,000**	**-£ 143,000**
Residential Overall Savings - Community Overall Savings													-£ 1,635,000

Notes:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- '-' indicates between -£500 and +£500.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.
- This does not include any discounting, so does not include a NPV

4.3 Annualised net costs and non-cashable savings for very high complexity clients

71. In order to look at potential savings beyond the three years (from entering treatment in 2009/10 to 31st March 2012), annualised estimates of net costs and non-cashable savings were produced. Focussing just on the very high complexity clients, where Tables 3 and 4 have shown that there are greater savings estimated for residential pathways than for community pathways, Table 5 below demonstrates that when assuming:

    a. *Savings continue at the same rate each year after a client has left treatment (which is in reality unlikely);*

    b. *That there are no additional costs of treatment or prison after 31st March 2012* (*which is in reality unlikely)*;

    c. *Annual savings are estimated (again relative to the two years before entering treatment) for each of the five outcome domains.*

- For 100 very high complexity clients on a community pathway, non-cashable savings of around £0.5m per year would be generated from 1st April 2012.
- For 100 very high complexity clients on a residential pathway, non-cashable savings of around £0.7m per year would be generated from 1st April 2012.

- Therefore, it is indicatively estimated that 100 clients on residential pathways would generate about £0.2m more in non-cashable savings than 100 clients on a community pathways per year from 1st April 2012.

72. Hence, considering Table 4, the difference in overall savings between residential and community pathways across the first three years (until 31st March 2012) is estimated at -£1.6m for 100 very high complexity clients - under the assumptions above it would take approximately just under 9 years from 31st March 2012 to recoup the additional costs of residential based pathways.

73. This means that overall the analysis suggests that it would take 12 years from the point the clients enter treatment for 100 very high complexity clients on residential pathways to be cost effective relative to 100 very high complexity clients on community pathways. Over a 12 year period it is very unlikely that a client would not relapse or commit a further offence, thereby making the indicated savings unrealistic.

Table 5: Indicative estimates of annualised net costs and non-cashable savings to government in the year after the end of the cohort period i.e. April 1st 2012 to March 31st 2013.

		Annualised Estimates of Savings					
Pathway	Complexity	Welfare Payments	Housing Benefit	Employment	Health	Offending	Total
Residential	Very High	-£ 39,000	£ 36,000	-£ 1,000	£ 90,000	£ 621,000	£ 707,000
Community	Very High	£ 23,000	£ 30,000	£ 1,000	£ 78,000	£ 392,000	£ 524,000
Residential Total - Community Only Total							£ 184,000

Notes:
- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.
- This does not include any discounting, so does not include a NPV

4.4 Net costs and non-cashable savings for very high complexity clients under bold assumptions

74. The analysis so far contains a range of assumptions and limited data which has meant that it is not possible to capture all costs and savings. To test the sensitivity of the analysis and for illustrative purposes only, the analysis presented in Table 6 below uses bold assumptions, e.g. no clients who were in residential treatment received HB whilst they were resident, which maximise savings resulting from residential pathways and minimise those resulting from community pathways (for a detailed description see Annex C). This cannot be considered as something that is necessarily attainable.

75. As shown in Table 6, this sensitivity analysis estimates that:

a. Community pathways cost approximately £0.7 million and generate approximately £0.5 million in savings, meaning that overall for 100 very high complexity clients on community pathways, under these bold assumptions, costs were around £0.1 million greater than savings.

b. Residential pathways cost approximately £2.6 million and generate approximately £1.3 million in savings, meaning that overall for 100 very high complexity clients on residential pathways, under these bold assumptions, costs were around £1.3 million greater than savings.

76. Therefore, for 100 very high complexity clients under these bold assumptions, the net cost to the public sector of putting 100 high complexity clients through residential pathways was around £1.2 million higher than it would be through community pathways over the 3 year period. This suggests that even considering this extreme scenario, over this short period the benefits to government of sending clients down residential pathways do not outweigh the costs.

Table 6: Indicative estimates of three-year (2009 to 31st March 2012) savings to government if 100 clients were sent down each complexity level and pathway- bold scenario and very high complexity.

		Three Year Costs			Three Year Savings						
Pathway	Complexity	Treatment	Prison	Total Costs	Welfare	Housing Benefit	Employment	Health	Offending	Total Savings	Overall Savings
Residential	Very High	-£ 2,526,000	-£ 49,000	-£ 2,575,000	-£ 137,000	£637,000	£ 91,000	£ 138,000	£ 559,000	£1,288,000	-£ 1,286,000
Community	Very High	-£ 560,000	-£ 102,000	-£ 663,000	-£ 41,000	£ -	£ 28,000	£ 155,000	£ 386,000	£ 529,000	-£ 134,000
Residential Overall Savings - Community Overall Savings											-£ 1,153,000

Notes:
- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- '-' indicates between -£500 and +£500.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.
- This does not include any discounting, so does not include a NPV

77. Annualised estimates have also been calculated for this bold scenario (see Annex A, Table A3 for details). They estimate that from 1st April 2012, assuming that savings after exiting treatment continue at the same rates, and that costs do not continue, the annual saving from 100 very high complexity clients on community pathways, is around £0.3 million, and the annual saving for 100 very high complexity clients on residential pathways is around £0.9 million, resulting in a difference of £0.6 million in savings per year. Therefore under these bold assumptions it would take approximately 2 years from 31st March 2012 to recoup the additional costs of residential pathways, suggesting that it would take approximately 5 years from the point the clients enter treatment for 100 very high complexity clients on residential pathways to be cost effective relative to 100 very high complexity clients on community pathways. Even over a 5 year period it is still very unlikely that a client would not relapse or commit a further offence, thereby making the indicated savings unrealistic.

5. Conclusion

78. Whilst indicative analysis of clients on residential pathways showed higher rates of positive treatment outcomes (for example the rate of positive outcomes for very high complexity clients on residential treatment pathways were around three times that of similar clients on community pathways, though only 1.5 times greater for low complexity clients), on average the cost of residential pathways was five times that of community pathways irrespective of the complexity level of clients.

79. Data is currently insufficient to draw any conclusions about savings between pathways and many of these savings would not be cashable.

80. However, indicative findings from this relative analysis of costs and savings suggests it is highly unlikely that the higher cost of residential pathways would be offset by greater welfare, HB, employment, health, drug-related offending or prison savings to the exchequer, relative to those savings generated by equivalent clients following community pathways.

81. The value of drug treatment overall, the need for a mixed economy of provision that is commissioned against the evidence base and the duty care clinicians have to refer to the treatment most clinically appropriate for an individual, bearing in mind their preference and availability of services, is not in question.

Understanding the Savings to Public Services of Different Treatment Pathways for Clients Dependent on Opiates: Annexes A-E

Annex A: Further detailed tables

Annex B: Methodology notes

Annex C: Methodology of extreme sensitivity analysis

Annex D: Comparability of clients on community and residential treatment pathways

Annex E: Glossary

Annex A: Further detailed tables

Table A1: Indicative estimates of three-year (1st April 2009 to 31st March 2012) savings to government if 100 clients were sent down each complexity level and pathway.

This table is a more detailed version of table 3 in Chapter 4 of the main report.

				Three Year Costs			Three Year Savings											
							Welfare		Housing Benefit		Employment		Health		Drug Related Offending			
Pathway	Complexity	Outcome	Freq	Treatment	Prison	Total Costs	Accrued in treatment and inbetween	Accrued after the last treatment journey	Accrued in treatment and inbetween	Accrued after the last treatment journey	Accrued in treatment and inbetween	Accrued after the last treatment journey	Accrued in treatment and inbetween	Accrued after the last treatment journey	Accrued in treatment and inbetween	Accrued after the last treatment journey	Total savings	Overall Savings
Residential	Low	Positive Treatment Outcome	31	-£ 791,000	-£ 2,000	-£ 793,000	-£ 33,000	-£ 23,000	£39,000		-£ 1,000	£ -	£ 38,000	£ 35,000	-£ 23,000	£ 27,000	£ 87,000	-£ 706,000
		Other exit	47	-£ 1,209,000	-£ 3,000	-£ 1,212,000	-£ 45,000	-£ 82,000	£56,000	£ 29,000	-£ 1,000	-£ 4,000	£ 61,000	£ 49,000	-£180,000	£ 37,000	-£ 64,000	-£ 1,275,000
		Still in treatment	22	-£ 549,000	-£ 1,000	-£ 551,000	-£ 50,000	£ -	£72,000	£ -	-£ 2,000	£ -	£ 24,000	£ -	£ 39,000	£ -	£ 83,000	-£ 467,000
		Total	100	-£ 2,549,000	-£ 6,000	-£ 2,555,000	-£ 129,000	-£ 105,000	£167,000	£ 75,000	-£ 4,000	-£ 4,000	£ 123,000	£ 84,000	-£164,000	£ 64,000	£ 107,000	-£ 2,448,000
	Medium	Positive Treatment Outcome	30	-£ 687,000	-£ 7,000	-£ 694,000	-£ 26,000	-£ 36,000	£40,000		-£ 1,000	-£ 1,000	£ 34,000	£ 34,000	£ 15,000	£ 43,000	£ 129,000	-£ 565,000
		Other exit	45	-£ 1,018,000	-£ 10,000	-£ 1,028,000	-£ 35,000	-£ 3,000	£48,000	£ 27,000	-£ 1,000	£ 1,000	£ 64,000	£ 43,000	-£ 97,000	£ 106,000	£ 172,000	-£ 856,000
		Still in treatment	25	-£ 581,000	-£ 6,000	-£ 586,000	-£ 61,000	£ -	£84,000	£ -	-£ 2,000	£ -	£ 26,000	£ -	-£ 73,000	£ -	-£ 26,000	-£ 612,000
		Total	100	-£ 2,285,000	-£ 23,000	-£ 2,308,000	-£ 123,000	-£ 39,000	£172,000	£ 74,000	-£ 3,000	£ -	£ 124,000	£ 77,000	-£155,000	£ 149,000	£ 275,000	-£ 2,033,000
	High	Positive Treatment Outcome	22	-£ 564,000	-£ 10,000	-£ 574,000	-£ 16,000	-£ 10,000	£38,000		-£ 1,000	£ -	£ 16,000	£ 24,000	£ 16,000	£ 115,000	£ 198,000	-£ 376,000
		Other exit	44	-£ 1,136,000	-£ 21,000	-£ 1,156,000	-£ 27,000	£ 4,000	£74,000	£ 16,000	-£ 1,000	£ -	£ 27,000	£ 39,000	£109,000	£ 254,000	£ 510,000	-£ 646,000
		Still in treatment	34	-£ 895,000	-£ 16,000	-£ 911,000	-£ 80,000	£ -	£111,000	£ -	-£ 2,000	£ -	£ 43,000	£ -	£164,000	£ -	£ 235,000	-£ 677,000
		Total	100	-£ 2,595,000	-£ 47,000	-£ 2,642,000	-£ 123,000	-£ 6,000	£223,000	£ 50,000	-£ 5,000	-£ 1,000	£ 85,000	£ 62,000	£289,000	£ 369,000	£ 943,000	-£ 1,699,000
	Very High	Positive Treatment Outcome	16	-£ 409,000	-£ 8,000	-£ 417,000	-£ 10,000	-£ 10,000	£32,000		-£ 1,000	£ -	£ 10,000	£ 20,000	£ 50,000	£ 81,000	£ 180,000	-£ 237,000
		Other exit	44	-£ 1,107,000	-£ 21,000	-£ 1,128,000	-£ 51,000	-£ 30,000	£87,000	£ 10,000	-£ 1,000	-£ 1,000	£ 19,000	£ 38,000	-£ 92,000	£ 318,000	£ 314,000	-£ 814,000
		Still in treatment	40	-£ 1,015,000	-£ 20,000	-£ 1,035,000	-£ 30,000	£ -	£133,000	£ -	-£ 2,000	£ -	£ 43,000	£ -	£164,000	£ -	£ 308,000	-£ 727,000
		Total	100	-£ 2,531,000	-£ 49,000	-£ 2,580,000	-£ 91,000	-£ 40,000	£251,000	£ 37,000	-£ 4,000	-£ 1,000	£ 72,000	£ 58,000	£122,000	£ 399,000	£ 803,000	-£ 1,778,000
Community	Low	Positive Treatment Outcome	21	-£ 96,000	-£ 6,000	-£ 103,000	-£ 10,000	-£ 8,000	£ -		£ -	£ -	£ 23,000	£ 24,000	-£ 1,000	£ 6,000	£ 53,000	-£ 49,000
		Other exit	37	-£ 174,000	-£ 11,000	-£ 185,000	-£ 15,000	-£ 3,000	£ -	£ 19,000	£ -	£ -	£ 51,000	£ 41,000	-£ 28,000	£ 46,000	£ 127,000	-£ 59,000
		Still in treatment	42	-£ 194,000	-£ 13,000	-£ 206,000	-£ 40,000	£ -	£ -	£ -	-£ 1,000	£ -	£ 79,000	£ -	£ 32,000	£ -	£ 70,000	-£ 137,000
		Total	100	-£ 464,000	-£ 31,000	-£ 495,000	-£ 65,000	-£ 11,000	£ -	£ 53,000	-£ 2,000	£ -	£ 154,000	£ 65,000	£ 3,000	£ 52,000	£ 250,000	-£ 245,000
	Medium	Positive Treatment Outcome	14	-£ 69,000	-£ 9,000	-£ 78,000	-£ 11,000	-£ 1,000	£ -		£ -	£ -	£ 14,000	£ 16,000	£ 3,000	£ 15,000	£ 47,000	-£ 31,000
		Other exit	44	-£ 213,000	-£ 28,000	-£ 241,000	-£ 27,000	£ 7,000	£ -	£ 12,000	-£ 1,000	£ -	£ 53,000	£ 48,000	-£ 77,000	£ 85,000	£ 130,000	-£ 111,000
		Still in treatment	42	-£ 204,000	-£ 27,000	-£ 231,000	-£ 53,000	£ -	£ -		-£ 2,000	£ -	£ 74,000	£ -	£ 93,000	£ -	£ 112,000	-£ 119,000
		Total	100	-£ 487,000	-£ 64,000	-£ 550,000	-£ 91,000	£ 6,000	£ -	£ 51,000	-£ 3,000	£ -	£ 141,000	£ 64,000	£ 19,000	£ 101,000	£ 289,000	-£ 262,000
	High	Positive Treatment Outcome	9	-£ 47,000	-£ 8,000	-£ 54,000	-£ 6,000	-£ 1,000	£ -		£ -	£ -	£ 8,000	£ 10,000	£ 13,000	£ 25,000	£ 55,000	£ 1,000
		Other exit	46	-£ 236,000	-£ 39,000	-£ 275,000	-£ 24,000	£ 17,000	£ -	£ 7,000	-£ 1,000	£ 1,000	£ 43,000	£ 49,000	-£136,000	£ 187,000	£ 172,000	-£ 103,000
		Still in treatment	45	-£ 234,000	-£ 39,000	-£ 273,000	-£ 57,000	£ -	£ -	£ -	-£ 2,000	£ -	£ 72,000	£ -	£161,000	£ -	£ 174,000	-£ 99,000
		Total	100	-£ 517,000	-£ 85,000	-£ 602,000	-£ 87,000	£ 16,000	£ -	£ 44,000	-£ 3,000	£ 1,000	£ 123,000	£ 59,000	£ 37,000	£ 212,000	£ 401,000	-£ 202,000
	Very High	Positive Treatment Outcome	6	-£ 34,000	-£ 6,000	-£ 40,000	-£ 4,000	£ -	£ -		£ -	£ -	£ 4,000	£ 7,000	£ 13,000	£ 25,000	£ 49,000	£ 9,000
		Other exit	44	-£ 246,000	-£ 45,000	-£ 292,000	-£ 17,000	£ 27,000	£ -	£ 4,000	-£ 1,000	£ 1,000	£ 29,000	£ 42,000	-£189,000	£ 223,000	£ 144,000	-£ 147,000
		Still in treatment	50	-£ 280,000	-£ 51,000	-£ 331,000	-£ 44,000	£ -	£ -	£ -	-£ 2,000	£ -	£ 70,000	£ -	£303,000	£ -	£ 327,000	-£ 4,000
		Total	100	-£ 560,000	-£ 103,000	-£ 663,000	-£ 65,000	£ 26,000	£ -	£ 34,000	-£ 3,000	£ 1,000	£ 103,000	£ 49,000	£126,000	£ 248,000	£ 520,000	-£ 143,000

Notes

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- '-' indicates between -£500 and +£500.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.
- This does not include any discounting, so does not include a NPV

Table A2: Indicative estimates of annualised (from April 1st 2012) savings to government if 100 clients were sent down each complexity level and pathway.

This table is a more detailed version of table 5 in Chapter 4 of the main report.

Pathway	Complexity	Outcome	Freq	Annualised Estimates of Savings					
				Welfare Payments	Housing Benefit	Employment	Health	Drug Related Offending	Total
Residential	Low	Positive Treatment Outcome	31	-£ 15,000	£ 18,000	£ -	£ 27,000	£ 20,000	£ 62,000
		Other exit	47	-£ 50,000	£ 28,000	-£ 2,000	£ 40,000	£ 31,000	£ 34,000
		Still in treatment	22	£ -	£ -	£ -			£ -
		Total	100	-£ 65,000	£ 46,000	-£ 3,000	£ 67,000	£ 51,000	£ 97,000
	Medium	Positive Treatment Outcome	30	-£ 24,000	£ 18,000	-£ 1,000	£ 25,000	£ 48,000	£ 84,000
		Other exit	45	-£ 2,000	£ 27,000	£ -	£ 37,000	£ 72,000	£ 117,000
		Still in treatment	25	£ -	£ -	£ -			£ -
		Total	100	-£ 26,000	£ 45,000	£ -	£ 62,000	£ 120,000	£ 200,000
	High	Positive Treatment Outcome	22	-£ 8,000	£ 13,000		£ 25,000	£ 146,000	£ 261,000
		Other exit	44	£ 3,000	£ 26,000	£ -	£ 49,000	£ 292,000	£ 285,000
		Still in treatment	34	£ -	£ -	£ -			£ -
		Total	100	-£ 5,000	£ 39,000	-£ 1,000	£ 74,000	£ 438,000	£ 546,000
	Very High	Positive Treatment Outcome	16	-£ 10,000	£ 10,000	£ -	£ 24,000	£ 166,000	£ 355,000
		Other exit	44	-£ 29,000	£ 26,000	-£ 1,000	£ 66,000	£ 455,000	£ 352,000
		Still in treatment	40	£ -	£ -	£ -			£ -
		Total	100	-£ 39,000	£ 36,000	-£ 1,000	£ 90,000	£ 621,000	£ 707,000
Community	Low	Positive Treatment Outcome	21	-£ 5,000	£ 13,000	£ -	£ 26,000	£ 21,000	£ 71,000
		Other exit	37	-£ 2,000	£ 22,000	£ -	£ 45,000	£ 36,000	£ 84,000
		Still in treatment	42	£ -	£ -	£ -			£ -
		Total	100	-£ 7,000	£ 35,000	£ -	£ 71,000	£ 57,000	£ 156,000
	Medium	Positive Treatment Outcome	14	-£ 1,000	£ 8,000	£ -	£ 18,000	£ 28,000	£ 101,000
		Other exit	44	£ 5,000	£ 26,000	£ -	£ 55,000	£ 86,000	£ 125,000
		Still in treatment	42	£ -	£ -	£ -			£ -
		Total	100	£ 4,000	£ 35,000	£ -	£ 73,000	£ 114,000	£ 226,000
	High	Positive Treatment Outcome	9	-£ 1,000	£ 5,000	£ -	£ 13,000	£ 45,000	£ 180,000
		Other exit	46	£ 13,000	£ 27,000	£ 1,000	£ 64,000	£ 229,000	£ 216,000
		Still in treatment	45	£ -	£ -	£ -			£ -
		Total	100	£ 12,000	£ 33,000	£ 1,000	£ 77,000	£ 274,000	£ 395,000
	Very High	Positive Treatment Outcome	6	£ -	£ 4,000	£ -	£ 9,000	£ 47,000	£ 239,000
		Other exit	44	£ 23,000	£ 26,000	£ 1,000	£ 69,000	£ 345,000	£ 285,000
		Still in treatment	50	£ -	£ -	£ -			£ -
		Total	100	£ 23,000	£ 30,000	£ 1,000	£ 78,000	£ 392,000	£ 524,000

Notes

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- '-' indicates between -£500 and +£500.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.
- This does not include any discounting, so does not include a NPV
- Savings for 'Health' and 'Drug Related Offending' are shown in the table to be proportional to the frequencies with each outcome. No real account has been taken of the different outcome groups.

Table A3: Indicative estimates of annualised (from April 1st 2012) savings to government if 100 clients were sent down each pathway, for very high complexity clients under bold assumptions

This table supplements table 6 of Chapter 4 in the main report, providing the annualised estimates that are used to calculate that from 1st April 2012, assuming that savings after exiting treatment continue at the same rates and that costs do not continue, the annual saving from 100 very high complexity clients on community pathways, is around £0.3m, and the annual saving for 100 very high complexity clients on residential pathways is around £0.9m, resulting in a difference of £0.6m savings per year. Therefore this suggests it would take approximately 5 years for residential pathways to offset the additional treatment costs (over three years), relative to the equivalent for community pathways..

				Annualised Estimates of Savings					
Pathway	Complexity	Outcome	Freq	Welfare Payments	Housing Benefit	Employment	Health	Drug Related Offending	Total
Residential	Very High	Positive Treatment Outcome	26	-£ 16,000	£ 136,000	£ 17,000	£ 32,000	£ 128,000	£ 296,000
		Other exit	44	-£ 29,000	£ 230,000	£ 45,000	£ 35,000	£ 293,000	£ 574,000
		Still in treatment	30	£ -	£ -	£ -	£ -	£ -	£ -
		Total	100	-£ 45,000	£ 365,000	£ 62,000	£ 67,000	£ 420,000	£ 869,000
Community	Very High	Positive Treatment Outcome	11	-£ 1,000	£ -	£ -	£ 11,000	£ 40,000	£ 51,000
		Other exit	42	£ 22,000	£ -	£ -	£ 32,000	£ 167,000	£ 221,000
		Still in treatment	47	£ -	£ -	£ -	£ -	£ -	£ -
		Total	100	£ 21,000	£ -	£ -	£ 43,000	£ 207,000	£ 272,000
Residential Total - Community Total									£ 598,000

Notes

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- '-' indicates between -£500 and +£500.
- 'Overall Savings' are total costs and total savings combined
- Includes savings to the exchequer (although not cashable) and excludes wider societal savings.
- This does not include any discounting, so does not include a NPV

Annex B: Methodology notes

B.1 Treatment

Cohort

1. Using the September 2013 data from NDTMS (National Drug Treatment Monitoring System), analysis follows a cohort of individuals who met the following criteria:

    - They started at least one new treatment journey in structured drug treatment between 1st April 2009 and 31st March 2010;
    - At the start of the earliest new treatment journey in 2009/10, they were aged 18 or over;
    - During their earliest new treatment journey in 2009/10, they indicated an opiate as one of their problem substances.

2. This returns a cohort of 54,712 clients. Each client was then followed up until 31st March 2012. Complexity groupings were assigned to these clients based on their status at the beginning of their treatment journey. The small number of clients whose complexity was classed as 'very low' were excluded from the analysis.

3. A person was considered to have a positive treatment outcome if they:
    - were discharged from the treatment system with a code of 'treatment completed free of dependency and not using heroin or crack cocaine';
    - remained out of treatment and did not come into contact with the criminal justice system for a drug-related offence in the same local area until 31st March 2012;
    - remained out of treatment anywhere in England for the next 12 months following their completion from the treatment system;
    - if the person positively completed treatment less than 12 months before 31st March 2012 then they were followed up into the next financial year to ensure they had not re-presented to treatment or the criminal justice system for at least 12 months.

The definition here of a positive treatment outcome was specifically constructed for the purposes of this analysis.

Pathways

4. During this time period, there were six possible categories for adult treatment interventions available in NDTMS: inpatient detoxification (IP), prescribing (either specialist or GP), structured intensive psychosocial interventions (psychosocial), structured day programmes (SDP), residential rehabilitation and other structured interventions (OSI). Each person was assigned to a treatment pathway in this analysis based on the combination of interventions received from the start of their earliest new treatment journey in 2009/10 through to 31st March 2012.

5. Grouping into pathways in this way creates 33 possible combinations, 16 of which contain residential rehabilitation and 17 of which do not. As this would prove unwieldy

to analyse, this analysis only considers the five most common pathways overall and the five most common which include residential rehabilitation.

6. Of the original 54,712 opiate users selected for analysis, 88% are in the five most common treatment pathways. Table B1 below presents the breakdown.

Table B1: 5 most common community and residential pathways

	N	%
5 most common community pathways	**47,021**	**97.5%**
Prescribing, Key Working and Low Level Psychosocial Intervention	28,902	60.0%
Prescribing, Intensive Psychosocial	9,772	20.3%
Prescribing, Structured Day Programme	3,723	7.7%
Other Structured Interventions only	2,568	5.3%
Intensive Psychosocial Intervention Only	2,056	4.3%
5 most common pathways with a residential component	**1,186**	**2.5%**
Residential Rehab, Key Working and low level psychosocial (partly in the community)	348	0.7%
Inpatient Detoxification, Prescribing, Residential Rehab	280	0.6%
Prescribing, Residential Rehab	254	0.5%
Inpatient Detoxification Prescribing, Intensive Psychosocial, Residential Rehab	153	0.3%
Prescribing, Intensive Psychosocial, Residential Rehab	151	0.3%
Total	**48,207**	**100%**

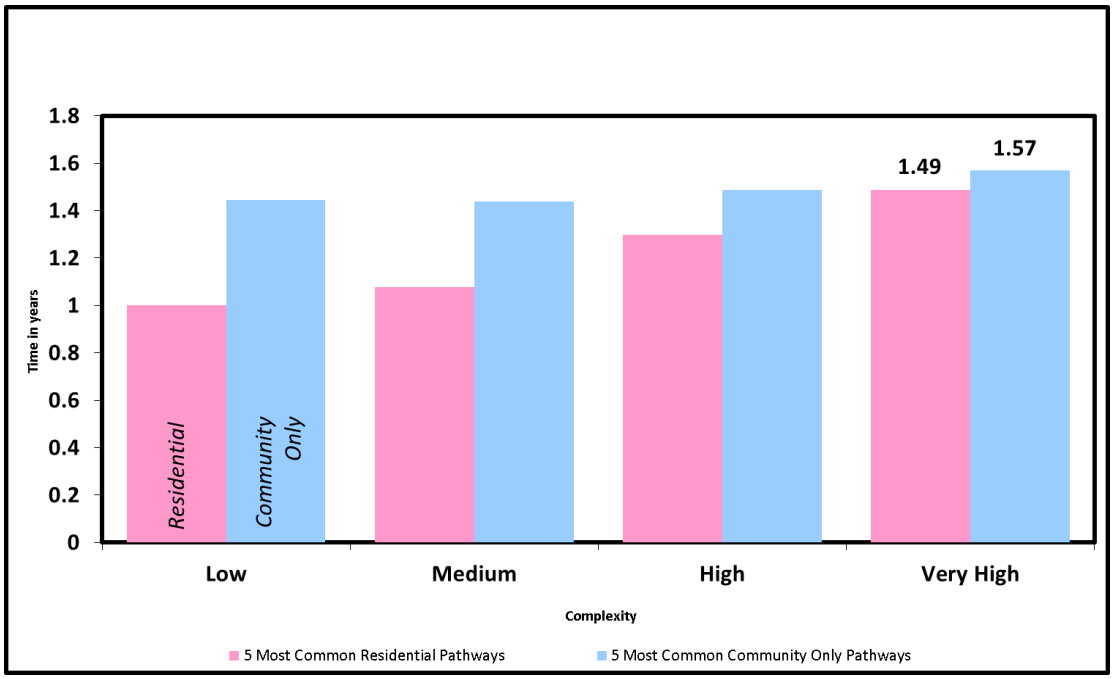
Notes:

- Source: NDTMS, PHE

Time in treatment

7. Clients on residential pathways have marginally lower average lengths of time in treatment than those on community pathways. This is for all time in treatment, not just the length of time spent in a residential setting, and is a consistent pattern seen across the range of client complexities. For example over the three year period analysed, very high complexity clients on residential pathways spent an average of approximately 1.49 years in treatment, compared to approximately 1.57 years in treatment for those on community pathways, as shown in Chart B1 below.

Chart B1: Average length of time in treatment per client per complexity level and pathway, in years



Notes:

- Source: NDTMS, PHE

Costing of treatment activity

8. The cost of treatment was determined by applying national average costs per day[6] for each intervention type. Using this data, we were able to calculate the unit costs[7] for each intervention in each area: Spend / (no. of people * no. of days in each intervention type).

9. Below are the unit costs used in the analysis. Unit costs vary significantly, ranging from £6 for specialist prescribing to £413 for inpatient detoxification (see Table B2 below).

Table B2: Treatment unit costs (per person per day)

Intervention	Unit cost (2011-12 prices)
Prescribing, Key Working and Low Level Psychosocial Intervention	£5.92
Structured Day Programmes	£27.88
Intensive Psychosocial Intervention	£13.85
Other Structured Interventions	£18.14
Inpatient Detoxification	£413.06

[6]In 2012, PHE collected funding and expenditure data from 87% of partnerships (local drug commissioning partnerships usually comprising of PCTs, Local Authorities, Police and Probation) across the country. Expenditure data was broken down by the six treatment interventions recorded on NDTMS (the same six that have been used to generate the different treatment pathways) and other pertinent information, such as spend on the Drug Interventions Programme (DIP).

[7]National unit costs for each intervention were derived from the median of the partnerships costs per day, to remove the effect of any anomalies/ outliers in the data.

Residential Rehabilitation	£162.37

Notes:

- Source: NDTMS, PHE

10. Expenditure included *all* spend for each intervention, such as those paid on behalf of the partnership, e.g. prescription charges, accommodation costs and administrative costs such as providing community care assessments prior to entry into residential services. As the spend is fairly high for rehabilitation[8]/ inpatient[9] care, with few people receiving the interventions for a relatively short amount of time, the unit costs are higher than community based treatment interventions.

Caveats around the treatment analysis

11. Numbers in the five most common residential pathways were significantly lower than the number of clients in the five most common community pathways.

12. Clinicians will make assessments and judgments on the most appropriate pathway for each client. If guidelines are followed, clients will be placed in the most appropriate and effective pathway to meet their need. All clients entering residential rehabilitation will have undergone clinical and community care assessments and in many areas a funding panel will have made the final decision on whether to place in individual in residential treatment. In no small part, these processes will take into account whether an individual is likely to succeed in residential treatment.

13. Therefore, it should be taken into account in this analysis that clients were not randomly allocated, and this introduces the risk of a considerable sample bias. It cannot be assumed that the outcomes shown would be replicated on a different or a larger cohort. Nor can it be assumed that the needs of the cohort who went to the higher cost residential pathways could have been met more cost effectively by a community treatment pathway.

14. Analysis covers new treatment journeys during 2009/10, thereby excluding anyone in treatment during that time who had started their journey prior to 1 April 2009. Clients who were still in treatment at the end of the period being analysed would continue to accumulate costs beyond 2011/12, but these have not been included in this analysis.

15. The performance of drug treatment interventions vary at a local level, as does the performance of different residential providers. These have not been accounted for as the model is based on national level data.

[8] Residential rehabilitation was defined as: residential services with programmes to suit the needs of different service users, e.g. therapeutic communities, 12-Step programmes and faith-based programmes; drug and alcohol crisis intervention services; inpatient detoxification directly attached to residential rehabilitation programmes; residential treatment programmes for specific client groups (e.g. for drug-using pregnant women, drug users with liver problems, drugs users with severe and enduring mental illness). Interventions may require joint initiatives between specialised drug services and other specialist inpatient units; some drug-specific therapeutic communities and 12-Step programmes in prisons; 'Second stage' rehabilitation in drug-free supported accommodation where a client often moves after completing an episode of care in a residential rehabilitation unit, and where they continue to have a care plan, and receive key work and support; other supported accommodation, with the rehabilitation interventions (therapeutic drug-related and non-drug-related interventions) provided at a different nearby site(s). Partnerships had to include all spend on residential care as defined above.

[9] Inpatient treatment was defined as follows: an Inpatient Unit (IPU) provides care to service users with substance-related problems (medical, psychological or social) that are so severe that they require medical, psychiatric and/or psychological care. The key feature of an IPU is the provision of these services with 24-hour cover, 7 days per week from a multidisciplinary clinical team who had specialist training in managing addictive behaviours. Partnerships had to include all spend on inpatient care as defined above.

16. Re-presentation occurs if an individual reappears on the NDTMS or shows up on the PNC for a drug-related offence within 12 months of leaving treatment, or is recorded in the Drugs Intervention Programme (DIP). An individual not re-presenting indicates a likelihood of recovery from dependency. However, some of those clients identified as sustaining their recovery may have had another drug-related event, such as an admission to a hospital or other contact with the criminal justice system not captured in the analysis.

17. After completing any treatment, clients are placed in after-care treatment which is an important part of the recovery process for opiate clients, but this is not currently recorded and therefore cannot be taken into consideration when calculating the cost to certain treatment pathways.

18. 'Other Structured Intervention' (OSI) is a wide umbrella term for a variety of other treatments given to opiate clients. Consequently, it is a more difficult intervention to cost consistently as part of the unit cost exercise.

19. National unit costs are based on 87% of partnership submissions. While this represents the overwhelming majority, it should be noted that figures could be slightly different if we had expenditure information for all local authorities.

20. In the case of the higher unit cost of residential pathways, it also cannot be assumed that the needs of the cohort who went to residential rehabilitation could have been met more cost effectively by community treatment pathways. This is because the assessments of need and likelihood of success may mean that the most appropriate and therefore cost effective pathway for that particular cohort was residential treatment, and for them a community pathway would have been less appropriate and therefore less cost effective.

21. It is also a clear expectation of local authority commissioners that a system of aftercare or recovery support is in place for people when they exit all forms of structured treatment. Although aftercare services contribute towards recovery outcomes and some have an associated cost, they are not included in this analysis, as the numbers accessing these services are not recorded[10].

22. We have assumed that all partnerships have segmented their expenditure in the same way and that all submissions were accurate (NB: we exclude outliers from the national averages) and that all previous year costs are the same as those collected in real terms.

23. The use of complexity in this analysis is based on the likelihood of client achieving outcomes and not clinical complexity. For example, pregnancy is a positive factor in the complexity scoring, whereas clinically it will add significant complications. Also, the unit cost for people of different complexity is the same, despite the fact that, for example, potentially treating a client of very high complexity might be more intensive and so more expensive than treating a client of lower complexity.

[10] The National Drug Treatment Monitoring System data base changed in November 2012 to record a fuller picture of recovery support, so some of this information will be available in the future.

B.2 Welfare

24. DWP information about claimants, and the benefits that they are in receipt of, was matched to client records held by PHE in November 2013. This match was based on the claimant's initials, date of birth, gender and the local authority in which they lived.

25. It was not possible to match all records. For example, some claimants may have moved between local authorities, and remained unmatched as a consequence. In other cases, multiple matches were identified. This occurred when a single client in drug treatment matched with more than one DWP claimant. To avoid multiple counting or mis-representation of these cases, these matches have been excluded[11].

26. As a result only a proportion of PHE clients have been matched with DWP records. Throughout the analysis the underlying assumption is that clients who remain unmatched on each pathway have similar characteristics to those who have been matched. However, it is possible that their characteristics and claiming patterns could differ.

27. For PHE clients who match DWP client records, average periods in-and-out of treatment, and on-and-off of different benefits have been calculated. This has been carried out for each treatment pathway (residential or community) and for each complexity (low, medium, high, very high). It is assumed that these averages would also be typical of unmatched cases if they had been able to be matched.

28. On average, approximately two-thirds of PHE clients could be matched to DWP records. However, a higher proportion of clients on residential pathways were unmatched than clients on community pathways. Therefore additional caution should be taken when interpreting these figures.

29. Details of the five most common residential pathways, and the five most common community pathways, were mapped onto this existing DWP/PHE data match.

30. In analysing the matched data, the period 1 April 2009 – 31 March 2012 was considered. We then split this into three separate periods:

    - The period of time in which the client was in treatment – both the initial treatment pathway, and for those that left and returned, any subsequent time in treatment; and:
    - The period of time in between treatment. This would include situations where a client has finished one treatment journey - but then re-presents and re-enters treatment.
    - The period of time following the client's last treatment journey, up until 31 March 2012.

31. We also captured whether, or not, each client had positively exited treatment, allowing us to look at the different claiming patterns of clients who positively exited treatment before 31 March 2012.

[11] This is because it cannot be determined which of the many potential matches might be the correct one.

32. In order to understand the claiming patterns of these clients prior to entering treatment as part of the 2009/10 cohort, we looked at the benefits that clients had been entitled to in the two years immediately preceding their entry into treatment.

33. For each period of time we considered whether the client was in receipt of one of the main DWP working-age benefits, or not. These working-age benefits included:

    - Jobseeker's Allowance (JSA);
    - Employment & Support Allowance (ESA);
    - Incapacity Benefit (IB), including Severe Disablement Allowance (SDA);
    - Income Support (IS); and
    - Disability Living Allowance (DLA).

34. Other benefits, such as Carer's Allowance (CA) were not included in the analysis of benefits. Benefits administered by local authorities (for example, Housing Benefit) were not included here, as details of periods of entitlement had not been included in the data match between DWP and PHE. The impact of the different treatment pathways on HB expenditure has been separately estimated.

35. In the analysis, JSA, ESA, IB, SDA and IS have been treated as the main out-of-work benefits. In a small number of cases, claimants could be working for a few hours per week, and still remain entitled to one or more of these benefits. DLA has been treated separately throughout the analysis, as it can be paid both in and out of work.

36. Some claimants could be entitled to more that one of these benefits at the same time, (for example, entitled to both IB and IS). The extent to which some benefits overlap has been taken into account in the analysis, and has been costed accordingly.

37. The entitlement information included on the PHE/DWP data match does not include details of the amount of benefit in payment.

38. In order to estimate the amount of benefit which the claimant would be likely to receive whilst entitled to one or more of the above benefits, DWP administrative data was used[12].

39. DWP systems include a 'disadvantage marker', which should be set when a claimant is known to have a drug dependency. The marker is known to significantly underestimate the number of claimants who are likely to have dependency problems. However, in the case of this analysis the 'disadvantage marker' was used to estimate the average amount of benefit to which a claimant with drug problems is entitled, rather than the overall numbers of claimants with drug problems.

40. The drug dependency 'disadvantage marker' has been matched to DWP datasets previously used to produce published National Statistics on average benefit awards. Based on this marker, average awards for each benefit have been produced for each quarter during 2009/10, 2010/11 and 2011/12.

41. These average entitlements have been estimated by applying the individual weights used to control for disclosure in the production of the National Statistics. When the

[12] July 2013 National Benefit Dataset (NBD)

average entitlement across the twelve quarterly snapshots was calculated, the adjusted caseload figures for each quarter were used to weight the figures.

42. All calculations of employment savings and welfare costs are presented on a 2011/12 basis. For consistency of approach with both treatment and offending analysis presented, benefit rates for 2009/10 and 2010/11 have been expressed in 2011/12 terms using the GDP deflator published by HM Treasury[13].

Table B3: Average Awards of DWP Benefit Claimants with a drug dependency 'disadvantage marker' over 2009/10 – 2011/12

Benefit	Estimated Average Weekly entitlement	Estimated Average Daily entitlement
JSA	£67.09	£9.58
ESA	£75.77	£10.82
IB (inc SDA)	£24.48	£3.50
IS	£93.35	£13.34
DLA	£53.52	£7.65

Notes:

- Source: DWP administrative data

43. ESA claimants undergo a Work Capability Assessment (WCA) in order to determine whether they are entitled to ESA, or not. If they are entitled to ESA, the WCA will help to determine whether they should be placed in the Support Group (SG) or the Work Related Activity Group (WRAG).

44. The dataset underlying the ESA National Statistics records the rate of ESA in payment, and each claimant's benefit entitlement, at a particular point in time. However, neither the underlying dataset nor published statistics are retrospectively adjusted once the ESA group into which a claimant is placed has been determined following the WCA. Once a claimant had been placed in the SG or WRAG they would then be entitled to a higher amount of benefit. This would usually apply from the start of their claim, rather than from the point at which a decision on the WCA had been made.

45. This means that some claimants are shown as being in receipt of a lower amount of ESA than would have actually been the case once a decision has been made about their ESA claim.

46. Steps have been taken to attempt to correct for this retrospective increase in ESA entitlement, which does not appear in the published statistics: where a claimant had an increase in their ESA entitlement between one quarter and the next, the earlier entitlement amount was increased by:

    - the amount equivalent to the ESA WRAG component for the relevant year, if the quarter-on-quarter increase in entitlement was equal to or more than £25.50 per week (the amount of the ESA WRAG component in 2009/10) and less than £30.85 per week (the amount of the ESA SG component in 2009/10)

[13]Published GDP deflator, June 2014. https://www.gov.uk/government/publications/gdp-deflators-at-market-prices-and-money-gdp-june-2014-quarterly-national-accounts

- the amount equivalent to the ESA SG component for the relevant year, if the quarter-on-quarter increase in entitlement was equal to or more than £30.85 per week (the amount of the ESA SG component in 2009/10) and less than £36.65 per week (the difference between the personal allowance for a single person and a couple in 2009/10).

47. Ranges were used, rather than specific values, to account for quarter-on-quarter changes which spanned financial years. In some cases these quarter-on-quarter changes could be exaggerated as a result of benefit up-rating. This would result in changes which might be larger than the standard WRAG or SG components. Despite this, it is likely that the approach still misses some instances where ESA entitlements *should* be revised, and changes the entitlement for others that should not have been changed (for example, where a claimant was working but then stops). Overall, the effect of this adjustment increased the average ESA entitlement used in the analysis, by less than £2 per week.

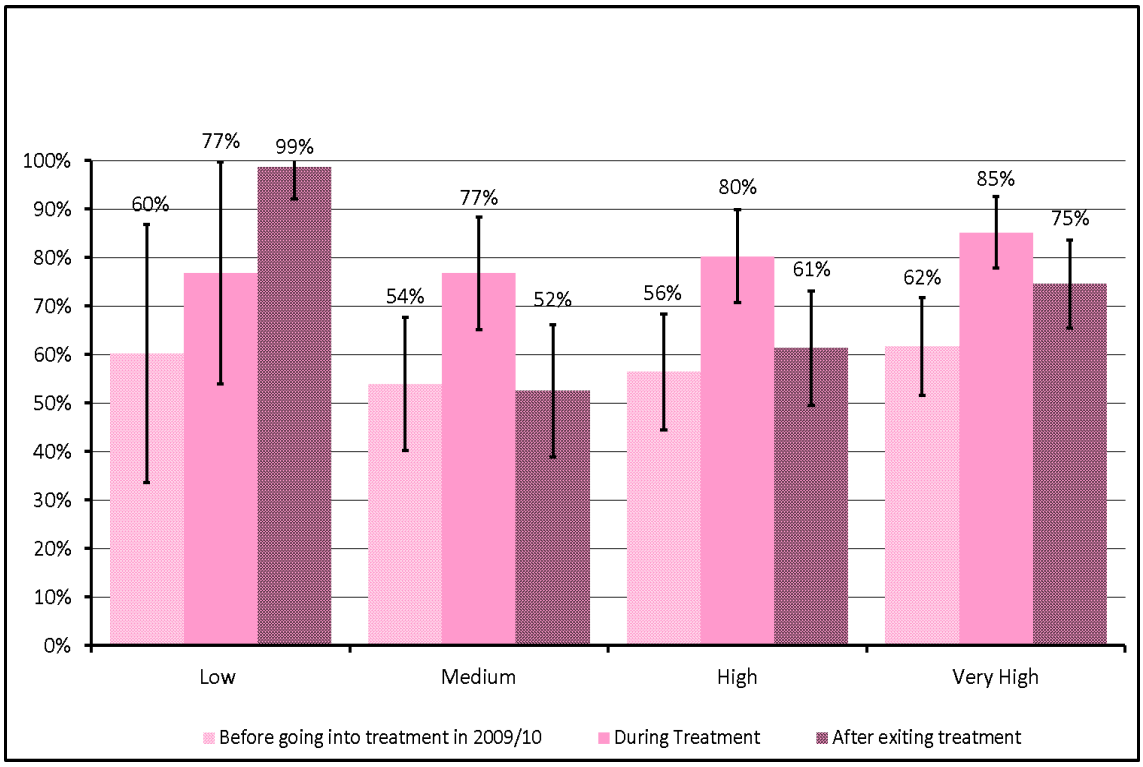
48. The estimates of average weekly benefit entitlement have been used to calculate the benefit spend on this cohort of clients entering treatment in 2009/10 throughout the three year period that the analysis covers, (before, during and inbetween, and after treatment). This calculation is based on the average number of days clients spend in receipt of each benefit.

49. Estimates of costs and savings are based on estimates of daily costs per client, multiplied by the appropriate number of clients and appropriate number of days (before, during and inbetween, and after treatment- for each complexity, and exit type). An adjustment has been made in the calculation of the average duration after treatment for those with an “other exit”, for both pathways, to remove the number of days a client is dead, or in custody (taken to be on average 71 days), from the estimate.

50. Because the analysis used to derive estimates of benefit entitlement is based on a proxy measure for those in treatment (the DWP drug dependency “disadvantage marker”, as explained above), the figures used to estimate welfare spend are subject to uncertainty. As a result care should be taken with interpretation.

51. Charts 3 and 4 in Chapter 3 of the publication paper show the percentage of time spent on an out of work benefit for clients with a positive treatment outcome. Charts B2 and B3 below show this for clients with an “other exit” outcome.

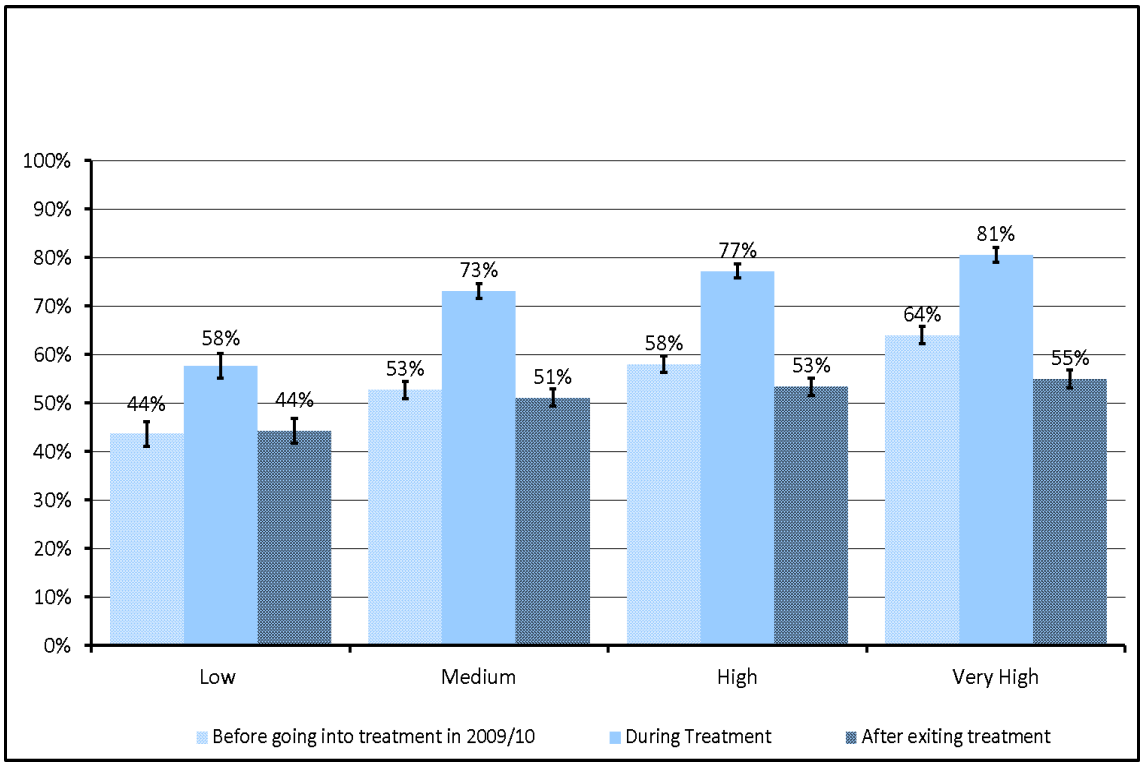
Chart B2: Percentage of time spent on an out-of-work benefit for clients with an "other exit" outcome by 31st March 2012 for the most common 5 residential pathways



Notes:

- Figures rounded to the nearest %.
- Source: Anonymous data match of DWP National Benefit Database (NBD) and PHE's NDTMS
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

Chart B3: Percentage of time spent on an out-of-work benefit for clients with an "other exit" outcome by 31st March 2012 for the most common 5 community pathways.



Notes:

- Figures rounded to the nearest %.
- Source: Anonymous data match of DWP National Benefit Database (NBD) and PHE's NDTMS
- While findings are based on a hypothetical 100 people on each complexity, the confidence intervals presented relate to observed numbers to more accurately capture the differences in outcomes for people on a community vs. residential pathway.

B.3 Housing Benefit (HB)

52. The current datashare with Public Health England (PHE) does not include information about HB. HB information is collected by local authorities, but local authorities do not collect details about the dependencies of their HB claimants, the treatment that they may or may not be receiving, or the positive outcome of that treatment.

53. As a result it has not been possible to produce figures from a single source where all the variables of interest are captured. Instead analysis estimates what HB expenditure *might* be expected to be, based on the limited information which *is* available, and on a number of assumptions. Different assumptions would result in different figures in respect of HB expenditure – but not so different so as to change the overall conclusions of the analysis.

Approach

54. DWP captures some *limited* information about claimants with a dependency, and whether or not those claimants are in treatment for that dependency. Although there is a distinction between those dependent on drugs and alcohol, there is no further detail about the *type* of drug on which the client is (or was) dependent, or the complexity of their dependency. There is also no information about the nature of the treatment that

they are receiving: This treatment may, or may not, meet the definition of 'structured treatment' used by PHE and other organisations in the sector.

55. It is widely accepted that the completeness of the information collected by DWP on dependency is poor, and significantly under-reports the issue amongst DWP claimants. Despite it under-reporting the **overall** numbers with a dependency, using the DWP markers for drug dependency to gain an insight into a 'typical' or 'average' claimant with a dependency (or in treatment for that dependency), should be less affected by under-reporting than the estimate of overall numbers.

56. The DWP treatment marker on the 'PDU' (Problem Drug User) dataset captures information about claimants whose treatment has been verified, and those whose treatment has not. Both of these have been used to determine which claimants were in treatment.

57. The 'PDU' dataset also includes a record of the date that the 'PDU' status was updated. Records only go back to late 2011 (so do not cover all the period that our 2009/10 may have been in treatment).

58. In order to estimate the **proportion** of those with a treatment marker who were also in receipt of HB, analysis considered treatment status as at 13 February 2014. This date was selected as it aligns with the 'snapshot' date for the latest published HB caseload estimates.

59. In total, there were 10,924 unique individuals who had had a spell in treatment recorded on the 'PDU' dataset (based on the May 2014 release of the 'PDU' dataset). All of these individuals had a record in which the treatment variable had been recorded as either a '3' (in treatment but not verified) or a '4' (verified treatment) at some stage since 2011 when the PDU dataset was first introduced. For simplicity, analysis considered *all* clients, rather than only those living in England.

60. Based upon the dates captured on the dataset, these clients were separated into four distinct groups:

- *Before Treatment:* These were clients who had not yet entered treatment on 13 February 2014, but who subsequently did. [578 clients];
- *During Treatment:* These were clients who were recorded as being in treatment on 13 February 2014. [8,582 clients];
- *In-between Treatment:* These were clients who were not in treatment on 13 February 2014, but who had been both prior *and* subsequent to this date. [90 clients];
- *Following Treatment:* These were clients who had left treatment prior to 13 February and who had not subsequently returned. [1,674 clients].

61. There are likely to be pros and cons associated with the selection of either 13 February 2014, or a different date, for determining an individual's treatment status. Given the limited data available there is no 'right date' – although the longer analysis continues to track any client who has left treatment, the greater the chance that they may relapse at some stage. Analysis is based on the latest available datasets – but different datasets or the use of different dates would inevitably produce different results.

62. In order to fit with the different time periods being used for the analysis, analysis combined claimants who are in treatment with those who are in-between treatment.

Matching with HB records

63. HB records have been taken from the February 2014 'frozen' dataset, which contains the underlying data for the published HB statistics. This provides an estimate of the number of HB claimants as of the second Thursday of the month. For February 2014, this was the 13th.

64. HB records were matched to the 'PDU' dataset using the unique identifier used by the Department (ORCID) and the claimant's encrypted NINO (the CCNINO variable)[14].

65. Having matched records, the mean HB award was estimated for all the matched cases within each of the three different categories ('before treatment'; 'during and inbetween treatment'; and 'following treatment').

66. The results of the match are shown below:

Table B4: Matching PDU records with HB records

	Before Treatment	**During & In-between Treatment**	**Following Treatment**
Number of unique PDU records	578	8,661	1,670
Number of matches with HB records	337	4,549	754
% that match with HB records	58.3%	52.5%	45.1%
Average weekly HB entitlement for those that match	£92	£92	£95

Notes:
- Source: DWP administrative data

67. Whilst the results showed a reduction in the *percentage* of clients who were also in receipt of HB, comparing those before treatment, during treatment and following treatment, there was little change in the average HB entitlement.

68. For all HB claimants, the average weekly HB award across GB was just over £90 as of February 2014 – close to the figures seen in the above table. The £90 figure was taken forward in the analysis.

69. Analysis covered the three years from 1st April 2009 until 31st March 2012, over which time the mean HB award (weighted for monthly caseloads and adjusting to 2011/12

[14]This analysis omits some claimants who are only in receipt of HB.

prices using the GDP deflator published by HM Treasury[15]) was £86.60 per week. This figure of £86.60 per week has been used in the subsequent analysis and is assumed to be the same before treatment, during treatment, inbetween treatment and following treatment.

70. The following estimates for this paper on the costs and savings associated with treatment were then derived from the analysis:

Table B5: Estimated HB Costs and Savings Before, In & In-between, and Following Treatment

	Before Treatment	**During & In-between Treatment**	**Following Treatment**
% that match with HB records	58.3%	52.5%	45.1%
Average weekly HB entitlement for those that match	£86.60	£86.60	£86.60
Average weekly award across all clients (including those with no match)	£50.49	£45.47	£39.06
Divided by 7 to get a daily rate	£7.21	£6.50	£5.58
Daily savings per client per day, relative to 'Before Treatment' baseline	**not applicable**	**£0.71**	**£1.63**

Notes:
- Source: DWP administrative data

71. This suggests that there *may* be HB savings whilst a client is in treatment, or following their treatment.

72. However, what the analysis does not tell us is how these savings might break down across the residential and community pathways. As previously outlined, the data on which the analysis is based does not contain that level of detail.

73. However, if we assumed that:

[15]Published GDP deflator, June 2014. https://www.gov.uk/government/publications/gdp-deflators-at-market-prices-and-money-gdp-june-2014-quarterly-national-accounts

- **Those on a community pathway continued to receive an average of £7.21 per day (there might be less expectation that they would move, and continue as before); and**

- **20% of those clients identified as in treatment were on a residential pathway.**

then,

Table B6: Estimated HB Costs and Savings Before, During & In-between, and Following Treatment- for Residential Pathways and Community Pathways

	Before Treatment	**During & In-between Treatment**	**Following Treatment**
For community only pathways: daily cost per client	£7.21	£7.21	£5.58
For residential pathways: daily cost per client	£7.21	(£6.50 – (0.8x £7.21))/0.2 = £3.66	£5.58
For community only pathways: daily saving per client[16]	**not applicable**	**Nil**	**£1.63**
For residential pathways: daily savings per client	**not applicable**	**£3.55**	**£1.63**

74. These estimates for daily savings have then been multiplied by the number of clients on each pathway, and the number of days spent in treatment, in-between or after treatment to estimate HB savings over the 3 year period covered by this analysis.

75. Testing has also considered the sensitivity of the overall savings to some of the assumptions made here. The savings generated from HB may be higher or lower, but in the context of other savings estimates would be highly unlikely to change the overall conclusions from the analysis.

B.4 Employment

76. The data match between DWP and PHE information does not include information about whether, or for how long, a client is in employment. As a result, a proxy measure for this has been developed.

[16] Daily saving per client is relative to the before treatment baseline.

77. For each treatment pathway, and for each complexity, the average number of days that clients on that pathway are *not* entitled to an out-of-work benefit has been calculated.

78. There could be many different reasons why clients would not be in receipt of an out-of-work benefit: Being in employment is just one of the potential reasons.

79. In order to estimate the *proportion* of time not in receipt of an out-of-work benefit that might be attributable to employment, DWP administrative data was used: For each client flagged with a 'disadvantage marker' for drug dependency at some point during 2009/10 who had been in receipt of an out-of-work benefit during 2009/10, quarterly snapshots from May 2010 until February 2012 were generated. For each snapshot, benefit records were checked to see whether the claimant was still in receipt of an out-of-work benefit. If they weren't, then P45 records were checked to see whether there was a coinciding record of P45 employment. The results were averaged out over the eight quarters to produce an estimate that around 5% of the time off an out-of-work benefit was spent in P45 employment.

80. P45 records are maintained by Her Majesty's Revenue & Customs (HMRC). They do not cover all employment (for example, they do not include all part-time jobs or self-employment). In some cases, the exact date when a person started or finished in employment is unknown. HMRC will often estimate these dates, or include the start date or end date of the relevant tax year.

81. The P45 records used in this analysis have been cleansed to remove records which do not relate to employment and dubious records where the start or end dates have been estimated. This cleansing prevents some clients from being wrongly identified as being in work when they are not. However, it also means that some clients who were genuinely in employment are not identified as such because P45 records are incomplete.

82. For each of the different treatment pathways, it was estimated that around 5% of the time spent off an out-of-work benefit, was spent in P45 employment. Analysis assumes that similar patterns of employment would apply to all clients and not just those who had been in receipt of an out-of-work benefit back in 2009/10.

83. In estimating the average costs or savings of moving into employment, standard DWP modeling assumptions have been used. As the majority of clients in treatment and on benefit are in receipt of an incapacity benefit, the estimated average costs or savings of moving into work have been based on a person receiving the Work Related Activity Group (WRAG) component of ESA. The financial advantages to the exchequer of working are estimated as approximately £3,050 per person per year based on 2014/15 prices- this is based on an internal DWP calculation. This figure has been deflated to 2011/12 prices, using the GDP deflator published by HM Treasury[17]. On this basis the financial advantages to the exchequer are approximately £2,900 per person per year. This figure takes into account additional tax receipts and National Insurance Contributions, as well reductions in other benefits not considered as part of this analysis (such as Carer's Allowance). The figure does not take into account the reduction in the main out-of-work benefits that the claimant receives (these have already been factored in

[17]Published GDP deflator, June 2014. https://www.gov.uk/government/publications/gdp-deflators-at-market-prices-and-money-gdp-june-2014-quarterly-national-accounts

when looking at average welfare costs) or a reduction in HB, but does take into account the fact that the client may see an increase in their tax credit entitlement.

84. The overall benefits of employment have been estimated for each treatment pathway and for each complexity, based on:

    - the average number of days when a client is not in receipt of an out-of-work benefit;
    - the proportion of time likely to be spent in P45 employment; and
    - the annual financial advantages to the exchequer likely to be associated with employment.

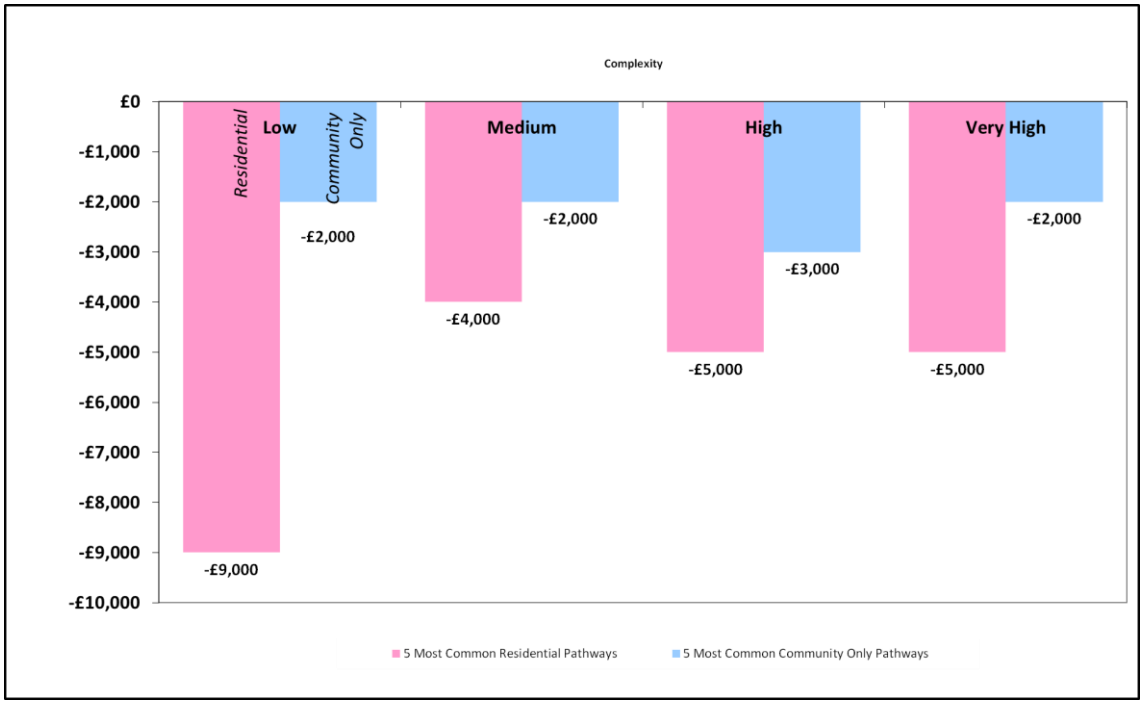
85. Whilst for many of the treatment pathways there are large numbers of clients included in the analysis, for many of the residential pathways the number is much smaller.

86. On average, around two-thirds of clients have been matched to DWP records. This further reduces the number of clients who form part of the analysis.

87. The 'average' time spent in treatment or on benefits is likely to be heavily influenced by the individual clients on each pathway. As a consequence, caution should be exercised interpreting the results. Analysing a different cohort of clients, or changing aspects of the matching methodology for the data match, could have an impact on the results of the analysis.

88. Overall, the estimated savings to the exchequer as a consequence of a client moving into employment are small, illustrated in chart B4 below.

Chart B4: Net Employment costs up to 31st March 2012 if 100 clients were sent down each pathway compared to the pre-treatment baseline by complexity level



Notes:

- Figures rounded to the nearest £1,000. Figures may not sum because of this rounding.
- Source: Anonymous data match of DWP's NBD and PHE's NDTMS

B.5 Health

89. It was not possible to obtain a health or social care dataset to match to the treatment dataset for this cohort. Instead, the health and social care improvements observed during Drug Treatment Outcomes Research Study (DTORS) were used.

90. The study presented 2006/07 four-week costs. The costs were uplifted to 2011/12 prices and the values were converted into daily costs for people dependent on when they were in or out of treatment.

Table B7: DTORS health and social care costs dependent on treatment status

Treatment Status	Cost	
	4-week (2006/7)	Daily (2011/12)
Pre Tx	£373	£15.11
< 1 Year	£305	£12.35
> 1 Year	£209	£8.46

91. It should be noted that the use of this data presents a very crude estimate of the health and social care benefits of treatment. There are several limitations to using DTORS data which include:

a. the study being several years out of date and reflective of a system that pre-dates the latest Drug Strategy and the its focus on recovery-orientated treatment systems
b. the authors only presented costs for before treatment and during treatment (3-5 months and one year after starting treatment). This means there are no costs for people who go on to leave treatment
c. the DTORS costs and savings are based on average clients in treatment: it is likely that very high complexity opiate users will have much higher pre-treatment costs and therefore higher overall savings.

92. A more robust analysis would require Hospital Episodes Statistics data to be anonymously matched to the treatment data.

B.6 Drug-Related Offending

93. While criminal justice referral is one of the indicators used to group clients into a complexity group, the complexity scoring does not take into account all the know factors that increase or decrease an individual's propensity to re-offend. For example these would include age, and previous offending history. This means there are significant limitations in being able to accurately compare outcomes between residential and community pathways.

94. In lieu of any available data that can fully control for recidivism determinants, the complexity scores used in this analysis seem to generally be in line with what we would expect in terms of drug-related offending behaviour. Although offending is not taken into account for complexity scoring, complexity and likelihood of drug-related offending strongly correlate, suggesting that our complexity methodology provides a limited but valid way to segment offending populations. Table B8 below shows the breakdown of complexity and offenders.

Table B8: Proportion of offenders (those committing drug offences) relative to the number in each complexity group

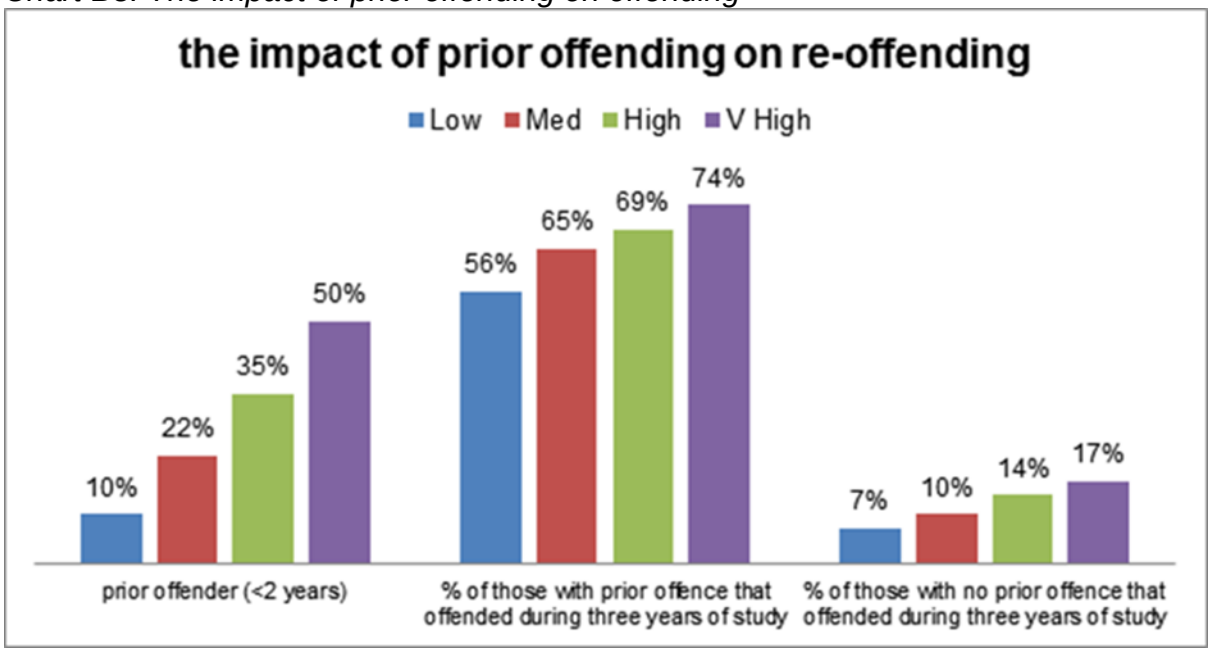
Complexity	**Residential**			**Community**		
	No on Pathway	No. of offenders	Proportion of offenders	No on Pathway	No. of offenders	Proportion of offenders
Low	116	11	**9%**	8852	896	**10%**
Medium	366	66	**18%**	15130	3305	**22%**
High	345	118	**34%**	13139	4588	**35%**
Very High	359	194	**54%**	9900	4926	**50%**

Notes:

- Source: Anonymous data match of PNC data and PHE's NDTMS

95. Chart B5 presents the proportion of clients in each complexity group that have recorded prior drug-related offending in the preceding two years; as can be seen, this increases significantly with complexity. It also includes the drug-related offending during the three years of the study for those with a prior conviction in the preceding two years, and those without. Those with a prior conviction are much more likely to commit a drug-related offence during the study, with this likelihood again increasing with complexity. For example only 10% of the low complexity group had prior drug-related offending with 56% of those then going on to offend again in the study period, whereas 50% of the very high complexity group had previous convictions and 74% of this group then re-offended.

Chart B5: The impact of prior offending on offending



96. This analysis shows a correlation with complexity and relative similarity between the two pathways in terms of characteristics and levels of drug-related offending. This supports the idea that the two pathways can be compared fairly if broken down by complexity. However, this does not rule out possible differences exist among factors that we cannot currently measure, e.g. clients' motivation levels, past work histories, education.

Police National Computer (PNC) and NDTMS Data matching

97. An anonymous match of PNC / NDTMS data was used as the basis of the offending outcome analysis. Clients were then broken down by complexity and pathway as before. Of the 48,207 opiate users in one of the five most common community/ residential pathways, 14,104 (29%) were identified on the PNC as having committed a drug-related offence.

98. Analysis only includes crimes that have been previously identified as being drug-related and that were included as trigger offences in the Drug Interventions Programme (DIP) to denote the requirement of drug testing on arrest. While there may be other offences linked to drug use, these are not easy to quantify. This is particularly likely to be an issue for people classified as in recovery where there will be a good chance that other residual offending may continue once their drug use has ceased and where it was not necessarily the domain of drug treatment to address this offending.

99. Analysis looked for any trigger offences committed two years before treatment, during and in-between treatment and up to 31 March 2012.

Table B9: NDTMS and PNC individual matches

	Treatment (n)	Treatment / PNC match (n)	Treatment / PNC match (%)
5 most common community pathways	**47,021**	**13,715**	**29%**
Prescribing, Key Working and Low Level Psychosocial Intervention	28,902	7,877	**27%**
Prescribing, Intensive Psychosocial	9,772	3,221	**33%**
Prescribing, Structured Day Programme	3,723	1,748	**47%**
Other Structured Interventions only	2,568	529	**21%**
Intensive Psychosocial Intervention Only	2,056	340	**17%**
5 most common residential pathways	**1,186**	**389**	**33%**
Residential Rehab, Key Working and low level psychosocial (partly in the community)	348	58	**17%**
Inpatient Detoxification, Prescribing, Residential Rehab	280	109	**39%**
Prescribing, Residential Rehab	254	110	**43%**
Inpatient Detoxification Prescribing, Intensive Psychosocial, Residential Rehab	153	49	**32%**
Prescribing, Intensive Psychosocial, Residential Rehab	151	63	**42%**
Total	**48,207**	**14,104**	**29%**

Notes:

- Source: Anonymous data match of PNC data and PHE's NDTMS

During or inbetween, and outside of/ after drug related offences

100. The following steps were taken to determine whether a drug related offence was classed as having been committed before, during or inbetween, or after treatment:

- The date of an offence was defined as the offence start date
- An offence was classed as 'during or inbetween' treatment if they had an open treatment journey at that time
- An offence was classed as occurring outside of/after treatment if the client did not have an open treatment journey at that time, and the offence was committed on or before 31st March 2012.
- An offence was classed as 'before treatment' if it took place prior to their earliest treatment journey in 2009/10 and within two years of the start of that treatment journey; these offences can be further divided between 'during' and 'in-between/after' treatment

101. As the 'before treatment' crimes were based on the two years before the sample started treatment in 2009/10, and the timeframe for the rest of the analysis is between two and three years from the start of their earliest treatment journey in 2009/10 to 31st March 2012, analysis adjusted for during and in-between, and after offences to two years' worth of drug related offending so that it compared like-with-like.

102. Former drug users sustaining long-term recovery cease to commit drug-related crime by definition. However, people who positively completed treatment committed notably fewer crimes prior to entering treatment than people who did not. So, instead of assuming that every opiate user committed the same number of drug related crimes prior to treatment, which would overestimate the savings, analysis broke down the before, during and in-between, and after drug related offences by whether people positively completed treatment or not.

Multiplying from convictions to estimated actual offences

103. There is a high attrition rate between actual offending and convictions, particularly for certain types of offences such as shoplifting. To account for this, analysis uses a multiplier in conjunction with analysts at the Home Office (HO) and Ministry of Justice (MoJ).

104. For multipliers, the latest available official statistics from the Crime Survey for England and Wales (CSEW) and the MoJ convictions tables were used to calculate an actual to convictions ratio for comparable crimes.

Table B10: Crime Multipliers

OFFENCES	Convictions to Actual Multiplier
Shoplifting	156.8
Theft of a vehicle	11.4
Theft from a vehicle	27.3
House burglary	27.3
Business burglary	18.5
Violent theft (robbery)	18.0
Bag snatch	50.6
Cheque or credit card fraud	7.2
Begging*	1.0
Buying and selling stolen goods*	1.0
Drug dealing	2.3
Prostitution*	1.0
Other stealing	9.7

Notes:

- *We were not able to calculate a multiplier for these offences
- Source: June 2013 official statistics from the Crime Survey for England and Wales and convictions tables from MoJ

105. It should be noted that both MoJ and HO crime data are general and so not limited to drug-related crimes: multipliers for the general population may not accurately reflect those for drug-related offenders. There is an implicit assumption in using the general multipliers that a non drug-related crime is as likely as a drug-related crime to be recorded, and the offender to be convicted.

106. Also, drug-related crime is heavily skewed towards a small group of offenders whose offending often fluctuates dramatically between periods of dependency. Using average offending levels and multipliers to evaluate the effectiveness of drug interventions could therefore lead to spurious results indicating that the number of drug offenders or drug-related offences has fallen – when in fact this is more to do with the fluctuations mentioned above. However, as our cost-effectiveness analysis compares offending levels before, during, in-between and after treatment, adjusted so that timeframes are similar, the effect of fluctuations should not be as much of a concern as they would be otherwise.

Monetising offending activity

107. The HO has estimated the economic and social costs of crime against individuals and households[18]. However, they have not estimated all drug-related crimes[19], meaning analysis will underestimate the costs of offending.

[18] All costs are in 2011-12 prices and are taken from: Duborg, R. and Hamed, J. (2005). *Estimates of the Economic and Social Costs of Crime in England and Wales: Costs of crime against individuals and households,*

Table B11: Unit costs of offending

Crime type	Unit Cost (2011-12)	Fiscal Unit Cost (2011-12)
Bag snatch	**£781**	**£203**
Begging	**£0**	**£0**
Business burglary	**£4,715**	**£1,641**
Buying and selling stolen goods	**£0**	**£0**
Cheque or credit card fraud	**£781**	**£203**
Drug dealing	**£0**	**£0**
House burglary	**£4,016**	**£1,398**
Other stealing	**£0**	**£0**
Prostitution	**£0**	**£0**
Shoplifting	**£127**	**£27**
Theft from a vehicle	**£1,058**	**£62**
Theft of a vehicle	**£5,086**	**£243**
Violent theft (robbery)	**£9,212**	**£3,843**

Notes:
- *"Theft- not vehicle" was used as a proxy cost as previously advised by HO economists
- Source: See footnote 13

108. The above unit costs were multiplied by the number of relevant offences.

B.7 Prison

109. The link between opiate use and criminal activity suggests that in between treatment spells, some opiate users will be dropping out of treatment in the community to serve a custodial sentence. For opiate users, time in prison incurs costs for both accommodating prisoners and for treating dependency, which would need to be accounted for in any analysis.

110. Recovery from opioid dependency is a long-term process and is typically associated with multiple treatment journeys occurring mostly in the community, but also on occasion in prison. Using the NDTMS discharge codes it was possible to identify where an individual's

2003/04. HO online report 30/05, with the exception of 'shoplifting' which is taken from: Brand and Price (2000). *The Economic and Social Costs of Crime.* HO Research Study 217.

[19] Excluded offences are: 'begging', 'buying and selling goods', 'drug dealing', 'prostitution' and 'other stealing'.

reason for leaving treatment was that they were being reported as being in custody. However it was not possible to identify the reason for the incarceration or the length of time that they were sentenced for.

111. To estimate the average time opiate users spent in prison. People were counted as being transferred from community treatment only if their latest recorded exit date in the community NDTMS was within 21 days before the client's prison spell or 7 days after. We included the '7 days after' parameter to account for community providers discharging their clients after they had entered custody.

112. On average, people spent 71 days in custody and 55 days receiving opioid substitution therapy (OST); daily costs of prison and prescribing are £95 and £6 respectively. The costs of OST in a prison setting are not known, so analysis assumed the same cost per day as community prescribing. OST cases were those where a modality of 'opioid maintenance' or 'opioid reduction' were used.

113. A potential issue with this analysis is that a spell in custody can be spread over several prisons, and for those clients that transfer but then do not engage in treatment at the next prison, we do not know their final release date from custody. To get around this analysis considered only those who have complete spells in the data and used these as our proxy estimates. As such, there is a probability that we are underestimating time in treatment and therefore costs.

Annex C: Methodology of extreme sensitivity analysis

C.1 Introduction

114. To test the sensitivity of the analysis carried out across the complexities, additional analysis on those in the cohort with a very high complexity level is presented in Table 6 in Chapter 4, *"Summary of Findings"*.

115. Given that original analysis was already based on a number of assumptions (as detailed in Annex B), this sensitivity analysis seeks to test the limits of what could be achieved under a more extreme set of assumptions and considers the impact on the indicative findings. The bold assumptions used are raw and not well-researched or evidence-based; they help to illustrate the sort of scenario that might lead to greater savings being realised from clients on a pathway with a residential component (relative to community only pathways), than indicated by original analysis.

116. The estimates are still based on the overall picture of very high complexity clients- focussed on in the narrative of the main paper, due to it being less common that lower complexity clients get sent down residential pathways- but this time only the best performing providers on each of the different pathways are considered.

117. An overview of the different or additional assumptions used in this sensitivity analysis is given below.

C.2 Treatment

118. The costs of treatment remain the same in the extreme sensitivity analysis.

119. However, instead of using the average performance for those in the two very high complexity pathways to calculate these costs, the best performing Local Authorities and Residential Providers (performances 50% above the national averages) with very high complexity clients were used instead.

120. The actual rates of positive treatment outcomes in these best performing areas / providers were then used in this sensitivity analysis.

C.3 Welfare

121. Figures for welfare savings have not been further adjusted, given that they are largely based on the results of the DWP/PHE data match.

C.4 Housing Benefit (HB)

122. The average length of treatment time that a client on a pathway with a residential component spends in a residential setting is estimated to be approximately 13 weeks[20]. The sensitivity analysis assumes that for these very high complexity clients this would be doubled to 26 weeks. The remaining amount of time that they spend in treatment would be spent in community based treatment.

123. For those on residential pathways, the assumption has been made that whilst in this residential setting clients would be in receipt of no HB.

124. For very high complexity clients on both pathways, the assumed average weekly HB entitlement is £100 per week (approximately £14 per day), slightly greater than the average HB award estimated for the original analysis.

125. The scenario assumes that prior to entering treatment, there was 100% take-up of HB, and that this continues whilst in community based treatment (whereas residential clients would be in receipt of no HB).

126. Finally, the assumption is that after leaving treatment, those on a community only pathway continue to see a 100% take-up of HB, whereas no-one leaving a residential pathway will do so unless they have died or been transferred into custody.

C.5 Employment

127. For these very high complexity clients, the annual savings to the exchequer of an individual moving into employment are assumed to be £5,000.

128. For this bold scenario, the assumption is that 5% of clients are employed prior to entering treatment, and that this increases by 3 percentage points to 8% whilst in treatment, for clients on either of the pathways. The 3 percentage point change is based on TOP data published by PHE in the 2012/13 Drug Treatment Annual Report. This reported a change from 18% of clients working at the point where they entered treatment, to 21% after six months in treatment. These figures are based on whether the client was working at any point in a four week period, and is based on all clients, irrespective of the nature of their dependency and complexity. As a result the lower figure of 5% moving to 8% is used – which in turn has the effect of increasing the size of the savings in this scenario.

129. Following treatment, the assumption is that all clients on a residential pathway who are not dead; on an out-of-work benefit; or in prison, move into employment when they exit treatment, irrespective of whether the exit is positive. For those who exit because they have been taken into custody, the assumption is that they too move into work, after 71 days (the average duration in custody).

130. For clients who exit treatment on a community based pathway, the assumption is that the proportion of clients who are in work falls back to the pre-treatment level of 5%.

[20] http://www.nta.nhs.uk/uploads/roleofresi-rehab.pdf

C.6 Health

131. Health savings were generated using the time in treatment, and positive treatment outcome, rates for the best performing areas/ providers.

C.7 Drug Related Offending and Prison

132. The rates of those exiting to prison from these best performing areas/ places were used to calculate prison costs.

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Annex D: Comparability of clients on community and residential treatment pathways

133. Clients on residential pathways are likely to be different to those on community pathways, both systematically and in ways that will also affect their treatment and socio-economic outcomes. Therefore, analysis sought to control for personal characteristics by comparing groups that displayed similar levels of complexity on entering treatment.

Explanation of the complexity groups

134. Clients were assigned to one of five complexity groups based on their presenting information[21] at their earliest new treatment journey in 2009/10. It utilises all the variables collected within NDTMS and identifies those that have a significant impact on the likelihood of a client achieving an outcome or not, with a score assigned to each depending on the weighting they have in terms of predicting outcomes.

135. As people in the drug treatment field use these weights, we assigned integer scores to the variables thereby making them user friendly. Integers were assigned according to their ranking position, with the more severe variables receiving a higher score if they seemed to make abstinence, employment, completing treatment more difficult. Variables associated with reducing risk were assigned scores that would lower the persons total complexity score. As such, these were negative in value (i.e. less than zero), and the greater the risk reduction, the more negative the value. The NDTMS variables and scoring system used to determine a client's complexity are presented in D1 below.

136. Complexity assignment is based on an existing methodology developed for use in the Department of Health PbR pilots. The five groups used are 'very low', 'low', 'medium', 'high' and 'very high'. However, very few opiate users are in the 'very low' group, so this group was excluded in the final analysis. Each individual has the same complexity throughout the analysis, even if they start a new treatment journey.

[21] 'Presenting information' includes information collected at triage, and where available, a TOP form completed at the start of treatment.

Table D1: Client's complexity

Category name	New client
Opiate use - daily	15
Opiate user - non-daily	14
Opiate user (no TOP)	13
Previous unplanned episodes (2 or more)	10
Injector - daily	5
Previous unplanned episode (1)	5
Current injector (no TOP)	4
Hazardous drinker	4
Injector - non-daily	4
Cannabis 20-28 days	3
Crack 1-6 days	3
Crack 7-28 days	3
Housing problem	3
Referral from Criminal Justice	3
Amphetamines 7-28 days	2
Crack user (no TOP)	2
Amphetamines 1-6 days	1
Cannabis 1-19 days	1
Physical health score >=12	-1
Psychological health score >=11	-1
In education 1-28 days	-3
Cocaine 1-3 days	-5
Cocaine 4-28 days	-5
In work 1-28 days	-5
Pregnant	-5

Notes:

- Source: NDTMS, PHE

Is analysis comparing like for like?

137. Table D2 shows the most pertinent categories above, used to determine an individual's complexity and the proportion of clients on the pathways that make up these categories. Generally there is consistency between the two different pathways and across each of the complexity groups, with the exception of those in the very high complexity residential group having more previous episodes of treatment that ended with a negative treatment outcome.

Table D2: Proportion of opiate users in each variable by complexity

Pathway	Complexity	No. in treatment	Previous unplanned exits (1)	Previous unplanned exits (2 or more)	CJS referral	Hazardous drinker	Pregnant	Crack user*	Injecting drug user*	Housing problem*	Any time spent in education in the last 28 days*	Any paid employment in the last 28 days*	Relatively 'good' Psychological health* ^	Relatively 'good' Physical health* ^
Community	Low	8852	4%	0%	9%	2%	4%	15%	3%	5%	4%	34%	54%	57%
	Medium	15130	18%	2%	30%	7%	1%	39%	16%	23%	1%	9%	36%	41%
	High	13139	34%	25%	43%	14%	1%	51%	32%	37%	1%	4%	35%	40%
	Very high	9900	20%	71%	56%	23%	0%	64%	54%	52%	0%	1%	30%	34%
Residential rehab	Low	116	3%	0%	8%	2%	9%	34%	5%	5%	7%	24%	41%	49%
	Medium	366	13%	0%	25%	11%	1%	61%	11%	37%	1%	7%	26%	31%
	High	345	35%	27%	37%	15%	1%	66%	30%	49%	2%	5%	31%	34%
	Very high	359	12%	81%	56%	26%	1%	77%	44%	57%	1%	1%	25%	31%

Notes:

- Source: NDTMS
- *Taken from the Treatment Outcomes Profile (TOP)
- ^Subjective rating of psychological/physical health above the drug-using population median

138. Table D3 below presents the breakdown of client complexity and shows that a higher proportion of opiate users on residential pathways tend to be in the very high complexity group.

Table D3: Proportion of clients in each complexity grouping

Complexity	Community		Residential	
	n	%	n	%
Low	8,852	19%	116	10%
Medium	15,130	32%	366	31%
High	13,139	28%	345	29%
Very High	9,900	21%	359	30%

Notes:

- Source: NDTMS, PHE

139. While criminal justice referral is one of the indicators used to group someone into a complexity group, the complexity scoring does not take into account the propensity to re-offend. However, having examined the proportion of drug-related offenders on each complexity group (out of the total treatment population) analysis finds that of the entire 'very high' complexity group, 58% are offenders; with the proportion reducing significantly as the complexity levels reduce. In lieu of any available data that can fully control for recidivism determinants, the complexity scores used in the analysis are in line with what would be expect in terms of offending behaviour. There is also consistency between the proportion of offenders in each of the complexity groups and across the two pathways indicating the complexity groups used in this analysis also hold for other behaviour outside of those variables collected on NDTMS.

140. Table D4 below shows the breakdown of complexity and offenders.

Table D4: Proportion of offenders relative to the number in each complexity group

Complexity	Residential			Community		
	No on Pathway	No. of offenders	Proportion of offenders	No on Pathway	No. of offenders	Proportion of offenders
Low	116	21	**18%**	8852	1504	**17%**
Medium	366	98	**27%**	15130	4562	**30%**
High	345	138	**40%**	13139	5868	**45%**
Very High	359	223	**62%**	9900	5805	**59%**

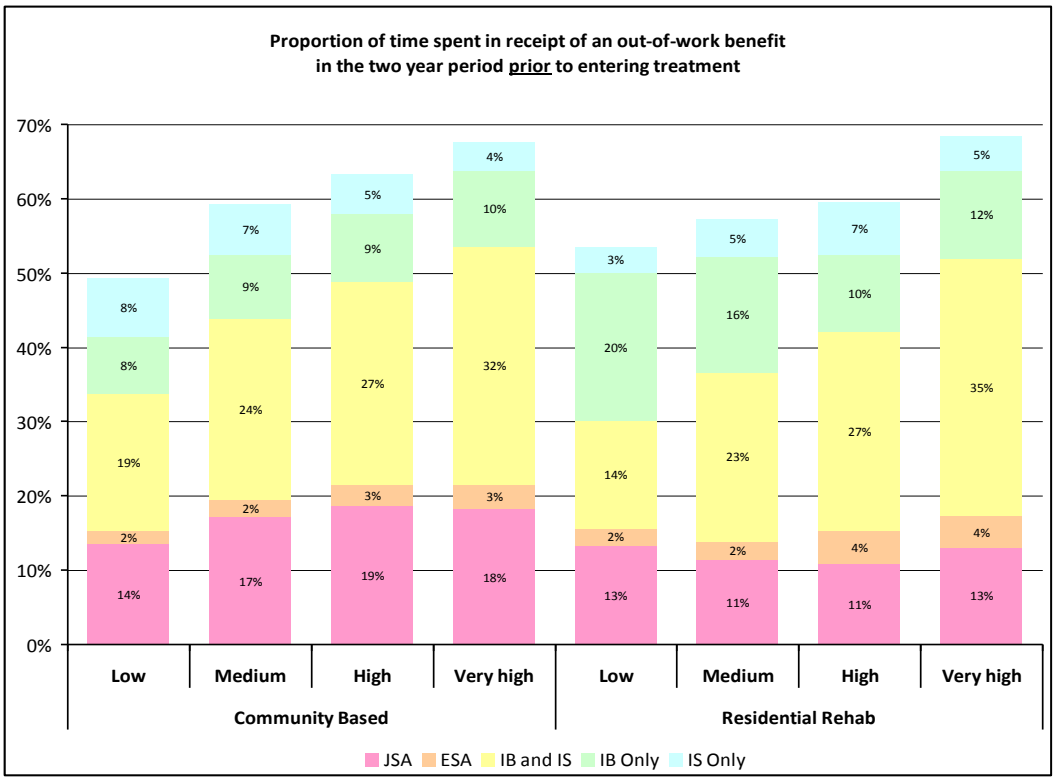
Notes:

- Source: NDTMS, PHE

141. DWP has also checked whether clients on residential pathways have significantly more complex benefit claiming histories, compared to clients on community pathways. This would be demonstrated via longer benefit claims or a greater preponderance of benefit claims of disability benefits.

142. Table D5 shows that clients on community pathways, across all complexities, appear to be more likely to claim JSA compared to those on residential pathways. Yet, clients on residential pathways are slightly more likely to claim IB compared to those on community based pathways. However, due to the small sample sizes among those receiving residential based treatments the differences between the two groups' benefit claiming histories cannot be considered statistically significant.

Table D5: Proportion of time spent in receipt of an out-of-work benefit in the two years prior to entering treatment



Notes:

- Source: Anonymous data match of DWP's NBD and PHE's NDTMS

143. In summary, this analysis suggests that by comparing clients of a similar complexity there are minimal measurable differences between those undergoing treatment in a residential rehabilitation setting, and those following community-based treatment pathways. However, some differences may exist in relation to factors that cannot be measured so easily, for example clients' motivation levels, past work histories and educational background.

Annex E: Glossary

NDTMS -the National Drug Treatment Monitoring System, a record of structured drug treatment in England.

Treatment journey- A set of concurrent or serial treatment episodes linked together to describe a period of treatment based on the clients' attributors and primary care trust of residence. This can be within one provider or across a number of different treatment providers.

Residential Component - A structured drug and alcohol treatment pathways where residence is a condition of receiving the treatment intervention. A residential programme may also deliver an assisted withdrawal programme.

JSA- Jobseeker's Allowance, a DWP working age benefit.

ESA- Employment Support Allowance, a DWP working age benefit

ESA SG- Employment Support Allowance Support Group, a category of ESA claims where the claimant does not have regular interviews with an advisor.

ESA WRAG- Employment Support Allowance: Work Related Activity Group. A category of ESA claims where the claimant has regular interviews with an advisor.

WCA- Work Capability Assessment. Those applying for ESA must go through a WCA whilst their ESA claim is being assessed, to see to what extent their illness or disability affects their ability to work, and to categorise them into ESA SG, or ESA WRAG.

IB- Incapacity Benefit, a DWP working age benefit.

IS- Income Support, a DWP working age benefit.

SDA- Severe Disablement Allowance, a DWP working age benefit.

DLA- Disability Living Allowance, a DWP working age benefit.

Structured treatment -Structured treatment follows assessment and is delivered according to a care plan, with clear goals, which are regularly reviewed with the client. It may comprise a number of concurrent or sequential treatment interventions.

DTORS- Drug Treatment Outcomes Research Study, a series of reports published by the Home Office.

PNC- Police National Computer, this is the administrative data system used by all police forces in England and Wales.

Hospital Episode Statistics (HES) - A data warehouse containing details of all admissions, outpatient appointments and A&E attendances at NHS hospitals in England.

PDU- Problem Drug User

MoJ- Ministry of Justice

HO- Home Office

DWP- Department for Work and Pensions

PHE- Public Health England

Drug Related Offence – A crime that has been previously identified as being drug-related and that was included as trigger offences in the Drug Interventions Programme (DIP) to denote the requirement of drug testing on arrest.

Residential Pathway- A treatment journey containing at least one residential component

Community Pathway- A treatment journey containing no residential components.

DIP- Drug Interventions Programme, a government strategy to engage drug-misusing offenders in formal treatment for dependency.

CSEW- Crime Survey for England and Wales, a survey carried out on behalf of the Home Office to measure the amount of crime in England and Wales.

Positive Treatment Outcome- A person was considered to have a positive treatment outcome if they:

- were discharged from the treatment system with a code of 'treatment completed free of dependency and not using heroin or crack cocaine';
- remained out of treatment and the criminal justice system in the same local area until 31 March 2012;
- remained out of treatment anywhere in England for the next 12 months following their completion from the treatment system;
- if the person positively completed treatment within a year of 31 March 2012 they were followed up into the next financial year to ensure they had not re-presented to treatment or the criminal justice system for at least 12 months.