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Understanding the costs and savings to public services of different treatment pathways for clients dependent on opiates.

[UK] Department for Work and Pensions.
[UK] Department for Work and Pensions, 2015.

Though set up to determine whether the public purse would gain by sending more opiate-dependent clients to residential rehabilitation, this UK government report declared itself unable to conclude one way or the other, but did judge it "highly unlikely" that these treatments' extra expense would be offset by extra savings.

SUMMARY This paper summarises an analysis which aimed to assess whether public services in England might accrue more savings by allocating opiate-dependent clients to treatment pathways which include residential rehabilitation as opposed to pathways which do not feature these services.

The analysis used anonymised data links between the Department for Work and Pensions, Public Health England and the Ministry of Justice to track through to 31 March 2012 two sets of clients who started a new treatment journey (not necessarily their first ever) for their opiate use problems during 2009/10, two to three years earlier. The dates were chosen so their treatment and long-term outcomes had a chance to have been influenced by the 2010 national drug strategy for England. The residential set went through the five most common treatment pathways which included a phase of residential rehabilitation, the non-residential set, through the five most common non-residential (ie no phase of residential rehabilitation) treatment pathways, dominated by pathways including a prescribing element. These ten pathways accounted for 88% of all drug treatment journeys, but the residential pathways accounted for very few (just 2.5%) of the clients in the sample.

For each patient, estimates of costs accrued after entering treatment and up to the end of March 2012 were compared to those incurred in the two years before treatment. Costs and savings or potential savings included were welfare benefits, housing benefit, revenue to the exchequer due to employment, health and social care costs, and costs incurred by public services due to presumably drug-related crime. The calculations assumed that without treatment patients would have behaved (and incurred costs) just as they did in the two years before starting it. While this might incorrectly estimate *absolute* costs/savings attributable to treatment, the analysts felt it should still reflect the degree to which one type of treatment pathway was associated with *more* costs/savings than the other.

Key points

Based on the 2009/10 treatment intake, the study aimed to assess whether public services in England might save by allocating opiate-dependent clients to treatment pathways which include residential rehabilitation.

Due partly to inadequate data, it was unable to conclude one way or the other, but did say it was "highly unlikely" that the extra expense of these pathways would be offset by the extra public sector savings associated with them.

Though it did not aim to assess treatment as such, the analysis also found that within the three years it covered, in general treatment (plus the lesser costs of imprisonment) cost more than it saved the public sector.

Given the variables it was able to measure, residential rehabilitation cannot be said to have clearly and consistently been targeted at patients most likely to need intensive support.

But neither can it be said that patients allocated to residential rehabilitation would have done as well without it. It remained possible that for these patients, in the longer term and once all costs had been accounted for, residential treatment would have saved more public money than non-residential.

In an attempt to even out differences in the types of patients who receive residential versus entirely non-residential care, the analysis adjusted for characteristics (as recorded on entering treatment) linked to the chance of successful treatment and to future costs and savings, amalgamating these in to a 'complexity' score. Then it compared patients with similar complexity scores who did or did not experience residential rehabilitation during their treatment journeys. Because residential pathways tend to be accessed only by very high complexity clients, the report focuses on these.

Positive treatment outcomes were indicated by a patient leaving treatment (not just the current episode, but all treatment) after having been recorded by their last service as completing their programme free of dependence and not using heroin or crack cocaine, and then showing no recorded signs of relapse for at least a year.

Main findings

As defined by the study (entailing planned treatment exit and non-return), at each level of complexity, patients on pathways which included residential rehabilitation were more likely to register positive treatment completions than those on entirely non-residential pathways. For example, 16% of very high complexity clients left residential pathways successfully with no later records indicative of relapse compared to just 6% whose treatment had not included residential rehabilitation. At the other end of the scale, for low complexity clients the corresponding figures were 31% and 21%. Also at each complexity level, non-residential clients were more likely to be in (or back in) treatment at the end of March 2012 two to three years after starting treatment in 2009/10 – ranging from 42% to 50% compared to 22% to 40% who had been in residential rehabilitation. Nevertheless, over the three years

of the study patients treated in the non-residential pathways were in treatment only marginally longer than those in the residential pathways, and the gap was narrowest for the highest complexity clients.

For low and medium complexity clients, non-residential and residential treatment were associated with about the same savings in public sector costs compared to costs before treatment. In contrast, for the two highest complexity levels, cost-savings were greater when treatment had included residential rehabilitation: £803,000 versus £520,000 per 100 highest complexity clients, £943,000 versus £401,000 for the next level down.

For high and very high complexity clients, savings to the public sector due to reduced crime dominated the cost-savings. At every complexity level, health and social care costs too substantially diminished after entering treatment. So too for residential clients did housing benefit costs, though these could only be estimated by making a number of unproven assumptions.

Relatively robust estimates could be made of welfare benefits. At each complexity level and for each type of treatment pathway, these payments were estimated to increase after entering treatment, creating losses to the public sector relative to pre-treatment payment levels. Presumed to be due to their stabilisation and the advice and help they received to claim their entitlements, losses were particularly steep in respect of clients on residential pathways. These peaked among clients who despite their low complexity scores were nevertheless allocated to residential care, each of whom was paid on average £2,330 more in welfare benefits after entering treatment than before.

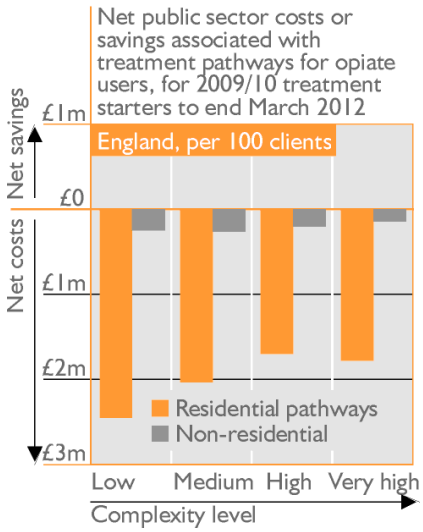
The period after leaving treatment was considered in the analysis to be a harbinger of the longer term status of former patients. The proportion of time the patients spent on welfare benefits increased during treatment and then fell on leaving, but remained at or slightly above pre-treatment levels. Only among high or very high complexity clients who nevertheless did not access residential pathways were welfare payments below pre-treatment levels after leaving treatment. Narrowing in on the apparently successful treatment leavers, former patients in all but one (for whom payments remained the same) of the complexity/pathway categories received more in welfare benefits after leaving than before they had started their treatment journeys, particularly those who had been in residential rehabilitation.

Increased or non-diminished welfare payments can be linked to a marginal if any increase in employment during and after treatment. At each complexity level and for each treatment pathway, the contribution made in taxes and national insurance payments arising from employment were estimated to slightly fall after patients entered treatment. These periods included treatment itself when employment might be expected to be on hold, but even after leaving – and even for patients who left after apparently overcoming their drug problems – employment-related contributions to the public purse remained static compared to pre-treatment levels.

Net costs and savings

The key question was whether relative to non-residential treatment pathways, the extra costs of pathways which included residential rehabilitation were compensated for by extra savings for the public sector. The answer was negative. Over the three years of the study, estimated savings were heavily outweighed by the costs of treatment and (a minor component) imprisonment, and more so for the residential than the non-residential pathways.

At each complexity level, average costs of treatment pathways including residential rehabilitation were around five times those of non-residential pathways – typically around £25,000 per client versus £5000. The result was that at each complexity level, net costs (there were no net savings) taking in to account the costs of treatment were much greater for residential pathway clients ▸ chart. Among the high and very high complexity clients for whom residential care is normally considered suitable, net losses to the public sector per 100 clients traversing residential pathways were estimated at around £1.7 million, compared to just £202,000 and £143,000 respectively for patients not receiving residential rehabilitation. This was also the case among the apparently successful, very high complexity, residential pathway clients, losses associated with whom totalled nearly £1.8 million compared to £143,000 for similar clients who successfully left non-residential treatment pathways.



Longer view

Though not recouping its extra costs over the three years of the study, the possibility remained that over a longer period, extra savings after residential pathways would cumulate to the degree that the overall savings-costs difference would equal that for non-residential pathways and then become more favourable. For very high complexity clients, the featured analysis calculated that on this yardstick, from the point when patients first entered treatment in 2009/10 it would take about 12 years for residential pathways to match non-residential.

In reaching this estimate it was assumed that after patients had left treatment there would be no further treatment or prison episodes, and that the post-treatment cost-savings estimated during 2009 to 2012 would continue at the same level. Given these assumptions, the extra £184,000 savings per year associated with residential pathways (due largely to extra crime-related savings) would need to be sustained for another nine years for the extra savings to equal the extra costs of residential pathways. In reality, says the report, for these very high complexity clients, "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."

The authors' conclusions

The analysts said the limitations of their analysis made it impossible to draw comparative conclusions about the degree to which savings varied between the types of treatment pathways. Results were heavily dependent on assumptions made and many of the 'savings' were on paper only, and could not immediately be converted to lower public sector costs. It was stressed that their findings do not call in

to question the value of drug treatment overall and its benefit to individuals, communities and societies, the need for a mixed economy of evidence-based provision, and the duty clinicians have to refer patients to the most clinically appropriate treatment available.

They did however think it highly unlikely that, relative to equivalent clients following community pathways, the higher cost of residential pathways would be offset by savings to the exchequer due to lower welfare, housing benefit, health, drug-related offending and prison costs, plus contributions from the employment of patients. This was largely because whilst (especially high complexity) clients on residential pathways were more likely to register positive treatment outcomes, on average these pathways cost five times more than non-residential pathways, irrespective of the complexity level of clients.

FINDINGS COMMENTARY The study aimed to assess "whether public services might see bigger savings as a result of putting clients with opiate dependencies down residential pathways as opposed to community pathways". Though hampered by imperfect data and questionable assumptions, it strongly suggested the reverse, and that treatment as a whole was not a public sector cost-saver. The implications for residential rehabilitation may have particularly disappointed the prime minister, his government and the minister in charge of the department which produced the report, all of whom have backed (1 2) the 'full recovery', drug-free rehabilitation options exemplified by residential rehabilitation, and criticised reliance on opiate substitute prescribing, the mainstay of the non-residential pathways. Speaking in Portsmouth on 17 February, prime minister David Cameron remained "committed to funding residential, abstinence-based rehabilitation, difficult though it may be in the current climate. Rather than maintaining people on substitutes like methadone, we have to help more people get off drugs and into work." At least in the short term, the featured report from his administration's work and pensions department suggests residential rehabilitation results in more welfare payments, not more work.

If anything, the featured report suggests non-residential, prescribing-dominated options are a better deal for society in its attempts to contain public sector costs, when these costs include the costs of treatment itself. The qualifier "if anything" is needed because – despite designing a study intended to test the relative cost savings of residential and non-residential treatment pathways – the analysts did not conclude in favour of non-residential pathways, but declared that they could not answer the question they had been posed. Their explanation was that no conclusions were possible given (among other difficulties) inadequate data, the need to make sometimes unrealistic assumptions, and the probability that the few opiate users selected for residential rehabilitation differed from the rest in ways which could not be taken in to account by the study. However, given what they *could* estimate, they judged it highly unlikely that residential treatment pathways were in fact better for the public purse. More detailed analysis below.

No short-term cost offset from treatment

Notwithstanding the disclaimer that the analysis was not suited to estimating savings from treatment (only whether these were greater for one type of pathway than another), the study is in some respects an advance on previous estimates of the cost-benefits of treatment for drug problems, and the first to assess these from the perspective of the UK public sector.

What the analysts found was that over the three years of the study, estimated savings were outweighed by the costs of treatment and (a minor component) imprisonment, leaving the public purse predicted to be more depleted than if no treatment had been provided. In contrast, other economic analyses have calculated positive cost-benefit ratios, but were heavily dependent on costs imposed on people and businesses at the receiving end of the drug-related crimes committed by dependent problem drug (mainly heroin and crack) users – substantial figures which also fall substantially on entering treatment. Strip these out on the basis that money and goods stolen or defrauded from victims are not lost to society as whole, but transferred within society, and you also strip out a large proportion of the estimated cost-savings from treatment. The result can be to convert what looks like a cost-beneficial intervention in to an economic loss-maker.

With its focus on costs to the public sector, the featured analysis did strip out victim costs. Without these, other changes in public sector costs and savings were generally insufficient to tip the balance in favour of treatment over the three years of the study. The sole exception was an average and very minor £90 per person net saving among successfully completing, very high complexity, non-residential pathway patients. All 31 other estimates were in the 'wrong' direction – treatment plus prison costing more than associated public sector financial gains.

For a government and a department determined to contain welfare spending, it must have been a special concern that this element of the assessed costs uniformly moved in the 'wrong' direction after entering treatment. Even the apparently successful treatment leavers whose numbers current policy seeks to maximise received more in welfare payments after than before treatment. If the indicators used by the study really did signify that they had lastingly overcome their substance use problems, within the three years of the study this was not accompanied by increased employment and diminished welfare reliance after treatment. Another UK study which sampled and interviewed patients starting treatment three years earlier had also found that improvements in drug use and social stability did not result in fewer people receiving welfare benefits; the number of benefits each beneficiary received actually increased after starting treatment.

These results were recorded despite treatment benefiting from the probably unrealistic assumption (shared with prior UK estimates) that without it patients would have continued to generate the same costs as before treatment, and that all the cost changes could be credited to treatment. One reason why these assumptions were unrealistic is that in the year focused on by the report, around 30% of all patients starting treatment were directed there by criminal justice or other potentially coercive referrers. Among the opiate users in the featured study, the proportion was at least the 35% known to have been referred by criminal justice authorities. For these patients treatment was just one of the potentially powerful influences on their behaviour. Treatment entrants are also likely to have been at a peak in their drug-related criminal careers and at a crisis in their lives, which might have been followed by a turning away from crime and drug use, even without treatment.

On the other side of the equation, savings due to treatment might in actuality have been greater due to longer term behaviour change and to savings which could not be estimated by the study. More importantly (as the report stressed), there is also the argument that medical and allied treatments,

including the treatment of addiction, are not primarily undertaken to save money for the public sector, but to use that money to relieve illness and distress.

Residential pathways did not pay their way

The report estimated that for very high complexity clients it would take 12 years for residential pathways to match the until then lower net costs of non-residential pathways. On the same basis, it can be calculated that for the next highest complexity category it would take 13 years. These two categories accounted for nearly 60% of all patients starting residential pathways in 2009/10, and are the patients for whom the expense of these pathways is considered most justifiable. It means that in cost-savings terms, residential pathways seemed if anything only a long-term winner – a prospect so beset with uncertainties and unrealistic assumptions that it was effectively dismissed by the report. Instead the report says it is "highly unlikely" that the higher cost of residential pathways would be offset by greater public sector savings compared to non-residential pathways.

In their economic defence, residential rehabilitation units might point out that of the one and a half years residential pathway patients spent in treatment, generally perhaps only a third would have been behind their doors. While none of the non-residential pathways included a residential phase (either rehabilitation or inpatient detoxification), few clients experienced only residential treatment. About 58% of the residential pathways included a prescribing phase, and inpatient detoxification would have accounted for a large part of the costs of the 37% of patients who underwent these procedures. All these costs are amalgamated with the cost of residential rehabilitation to reach the total cost of the residential pathways. Had residential rehabilitation been accessed sooner in their drug use careers rather than other treatments being tried first, perhaps more of these patients might have made a cleaner break from drug use at lower overall cost. Whether this would have been the case, and whether wider resort to residential rehabilitation early in addiction careers is realistic, is unclear.

However, as the report points out, the most cogent justification for the expense of residential rehabilitation is not economic at all, but the argument that given their vulnerabilities and the embededness of their substance use, patients sent to these centres would not have been able to do well without 24-hour, intensive and communal support, insulated from the settings in which they were dependent on opiates. If this was the case, there should be clear differences between residential and non-residential patients. But on the variables assessed by the featured report, while residential pathways did tend to be reserved for higher complexity clients, this was not so clear cut as might have been expected. The 59% of high or very high complexity clients allocated to residential pathways was just 10% above the 49% allocated to non-residential pathways. On none of the individual criteria which constituted the complexity score were there major differences between the types of patients allocated to residential versus non-residential pathways. For example, one criterion on which they might have clearly differed is the extent of housing problems. These were noted for 43% of residential clients versus 30% of non-residential – a difference in the expected direction, but not a huge one. In line with recommendations from Britain's National Institute for Health and Clinical Excellence (NICE), a clear difference in the patients' records of previous treatment failures might also have been expected, records thought to justify eventually trying residential care. Signified by unplanned exits from treatment, at least two such failed attempts were noted for 32% of residential clients versus 23% of non-residential – again, a difference in the expected direction, but not a huge one.

It could be that characteristics not assessed by the featured study or some combinations of characteristics led the few patients who did enter residential rehabilitation to do so, but on the basis of the variables the report did assess – developed to assess patient-difficulty in payment-by-results schemes – residential rehabilitation cannot be said to have been clearly and consistently targeted at the most needy patients.

One gap in the study was its limited data on the psychological differences between residential and non-residential pathway clients which might have affected their chances of recovery, regardless of the treatment option. Drawing its data from a national study of patients starting drug treatment in England in 2006–2007, an analysis examined this issue for opiate users, the same type of patients included in the featured study. It found that compared to those prescribed substitute drugs such as methadone, opiate users whose treatment had included residential rehabilitation were from the start more ambitious for their future and more motivated and ready to recover through treatment. The differences were not huge, but enough for the researchers to suggest that "higher treatment motivation in [residential rehabilitation] participants may account for the effectiveness of [residential rehabilitation] compared with other treatment modalities," and that sending more patients to residential rehabilitation without ensuring adequate levels of motivation to change is "unlikely to lead to an expansion of successful treatment outcomes."

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