



Drug Misuse

A Needs Assessment

Bromley

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DRUG MISUSE: A NEEDS ASSESSMENT

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EXECUTIVE SUMMARY

Introduction

About 4 million people in the UK use illicit drugs each year. The most commonly used drugs in the UK, in order, are cannabis, cocaine and crack, and opioids. Opioids are used by about 50,000 people in the UK, and are responsible for the greatest damage to individuals and society. Abuse of legal drugs, 'legal highs', are on the increase, but there is currently little data. Injecting of steroids, to enhance appearance and performance, is rapidly increasing among younger people. Again, data is scant.

Causes and patterns of use

Problem drug use is viewed as a medical condition in the UK, and there is neurobiological evidence to suggest that this is the case. There are both genetic and social risk factors for drug misuse, which are most potent in combination.

Most people start taking illicit drugs in their teens and early twenties, with most reducing or stopping use as they move into adulthood. Dependency on opioids tends to start a few years after first use.

Dependency causes long-lasting changes in the brain, which cause tolerance, craving and withdrawal. As a result it is a chronic condition, characterised by periods of remission and relapse.

Epidemiology of drug misuse

Because of the illicit nature of drug misuse, direct prevalence data is not available. Instead we have to rely on indirect data from national surveys, crime data, and data on people in treatment, hospital admissions and drug-related deaths.

The crime survey for England and Wales suggests that approximately 15,000 residents took illicit drugs in Bromley in 2012/13. The estimated prevalence of opiates and/or crack use was 1,117 in Bromley in 2012, at a rate of 5.5 per thousand adult population. About a quarter of these people use both drugs, and nearly half of those in treatment.

Drug use is more common in males, single adults, white ethnic groups and those on low incomes. There is a relationship, however, between affluence and early

use of cannabis. Nearly three quarters of drugs users in treatment in Bromley are male, and this proportion has risen significantly in recent years.

People in treatment in Bromley tend to be a little older than in other parts of the country, and are more likely to be taking both opiates and crack.

IMPACT ON HEALTH

Mortality rates related to drug use have been increasing since 1993, with heroin and morphine the most commonly implicated drugs.

There were 80 drug-related deaths in Bromley between 2006 and 2013. The average age at death was 48, more than thirty years lower than average life expectancy for the borough. Deaths were most frequent in deprived wards.

Injecting drug users are at great risk of blood-borne infections, accounting for 90% of cases of Hepatitis C diagnosed in the UK. Rates of infection in drug users with Hepatitis B and HIV have declined as a result of needle and syringe programmes, vaccination and opportunistic testing and treatment.

There is a strong association between drug use and mental health problems, with drug use occurring both as a result of mental illness, and as a cause.

There were 518 drug-related hospital admissions in Bromley in 2-13/14. Admission rates have been steadily increasing since 2009, the numbers greatest in the 25-44 age group.

SOCIOECONOMIC IMPACT

Drug use carries a substantial economic burden, associated as it is with high healthcare and social costs as a result of ill health, crime, homelessness and family breakup. It was estimated in 2002 that problematic drug use costs society £35,000 per user per year. Based on average annual inflation at 3%, this amounts to around £50,000 per user per year. These estimates do not include benefits for those unemployed, or the cost of taking care of their children.

The National Treatment Outcomes Research Study (NTORS) found that 61% of a sample of people entering treatment had committed crimes other than drug possession in the three months prior to starting treatment, the most common being shoplifting. The main sources of illegal income required to fund an illicit drug habit were theft and fraud.

THE TREATMENT AND MANAGEMENT OF DRUG MISUSE

The main aims of treatment are:

1. Harm reduction – preventing or reducing negative health and social consequences of drug use, including infections and overdose.
2. Maintenance oriented treatments – reducing an individual’s level of drug use, mainly by substitute prescribing.
3. Abstinence-oriented treatments – reducing drug use with the ultimate aim of abstinence, using a range of interventions including detoxification, psychosocial interventions and residential rehabilitation.

Effectiveness of treatment

Reviewing effectiveness is complex as there are many interventions, used in a variety of combinations, in order to treat people who are taking many different drugs in a variety of combinations. Few treatments are given in isolation, and indeed tend to be less effective if they are.

It is important, also, when assessing effectiveness, to understand the nature of drug misuse and dependency, and in particular that dependency is a chronic illness for which there is no cure.

The evidence for the effectiveness of individual interventions for individual drugs is presented in this report, sometimes in combination with one or more of other approaches.

A. Needle and syringe programmes (NSPs)

These provide drug users with clean injecting equipment, and other services including blood testing, education and brief psychological interventions. They have been shown to be effective in reducing injection risk behaviours, reducing blood borne infections, and decreasing attendance at accident departments. Evidence also suggests they increase the rate at which users enter treatment.

Delivered in combination with opiate substitution therapy, they have been found to reduce risky injecting, and reduce the incidence of hepatitis C and HIV. NICE has deemed these programmes effective and recommends their use.

B. Opioid substitution therapy (OST)

Opioid substitution therapy is the process of replacing an illegal opioid with a longer acting but less euphoric opioid, usually methadone or buprenorphine, taken under medical supervision. This treatment is recommended as an option for treating opioid dependency under a NICE technology appraisal (TA114), which means that

‘if a patient has opioid dependence and the doctor responsible for their care thinks that methadone and buprenorphine are the right treatments, they should be available for use, in line with NICE's recommendations’ (NICE)

On average, 40-65% of patients maintain complete abstinence from illegal opioids while receiving OST, and 70-95% are able to reduce their use substantially. Users also reduce risk-taking in injecting, experience improved mental health and relationships, and are less likely to be arrested. OST has also been associated with lower transmission of blood borne viruses.

Treatment is usually long term and a report commissioned by the Home Secretary in 2013, to advise on whether a cap on duration of treatment should be imposed, showed that enforced termination of treatment increases rates of relapse, acquisitive crime and drug dealing, blood borne infection and overdose deaths. It is also considered likely to result in increased medico-legal challenges. As a result, treatment caps are not recommended.

C Opioid detoxification.

Detoxification is the process by which opioid drugs are eliminated from dependent users in a safe and effective manner, either with OST or gradual reduction in the illicit drug, such that withdrawal symptoms are minimised. It takes place either in community or residential settings. The evidence for the effectiveness of detoxification concerns its ability to achieve sustained abstinence in the user, and is based on detoxification plus psychological support. For example, detoxification together with contingency management has been shown to be cost-effective, with an estimated additional 1% of users being drug free at four months for every £12 spent on treatment.

D. Psychosocial interventions.

Brief interventions (one or two 45 minute sessions) have been shown to be effective, especially for those using cannabis or stimulants who are not in formal treatment. Two sessions with a self-help leaflet were shown to be nearly four times more effective in achieving abstinence at four month follow up than a self-help leaflet alone (19.2% v 5.5%). NICE recommends brief interventions lasting 10-45 minutes should be offered opportunistically to drug users.

Longer psychological interventions include a range of approaches that are rarely used in isolation. There is strong evidence that *contingency management* (CM) is cost effective in increasing abstinence and treatment retention in cocaine and heroin users, and has been found to be of benefit in users who are on OST. CM is an approach whereby incentives (in the form of vouchers or privileges) are given for clients to achieve abstinence. A cost effectiveness model showed that CM was consistently more effective than standard care alone, achieving over four times the abstinence rates at 12 months. CM is recommended by NICE.

Cognitive Behavioural Therapy (CBT) and other psychotherapies have been shown to be effective as an adjunct to other approaches. CBT is not recommended routinely, but for clients with co-morbid mental health problems. Couples therapy for users with non-using partners has been found to be more cost effective than individual-based care.

12-step programmes clearly help many users but coercive attendance does not appear to be of benefit, so randomised controlled trials are difficult to conduct in this area. NICE recommends that clients be given information about these groups, and supported to attend.

E. Residential programmes.

It is difficult to assess these programmes objectively because the people who receive residential care are not a typical group, tending to have more social, physical and mental health problems. However, what is known about these programmes is that completion rates are very high (75-80%), programmes of three months duration or longer work better than shorter programmes, and long-term outcomes are better if there is structured aftercare. NICE recommends that

residential programmes be available as an option for clients who have significant physical, mental or social problems.

Treatment in Bromley

Bromley Drug and Alcohol Service provides

- brief interventions, both at BDAS and community settings
- 6-8 week psychological interventions for non-opiate users
- longer psychological interventions for opiate users
- residential care for opiate users who have significant physical, mental and social problems

While the numbers of people presenting at drug treatment services in Bromley has been falling in recent years, from 555 in 2011-12 to 520 in 2012-13, the proportion of these going on to be in effective treatment (in treatment for three months) has been rising, from 66% in 2006 to 89% in 2013. The numbers of clients who successfully complete treatment (complete programme and are now drug free, or occasional non-opioid/non-crack use) have also been rising, from 5% in 2006, to 19% in 2013). These data indicate that services have become more effective, both in engaging the clients who present, and treating them successfully. While the proportion in effective treatment in Bromley is a little lower than for England, successful completion rates are higher, suggesting that Bromley services are working effectively at the triage stage.

To continue to improve the number of individuals who complete treatment successfully the services are working to:

- identify why users are leaving treatment,
- managing users' anxiety about stopping substitute prescribing,
- further improving the treatment pathway and care coordination,
- increasing the number of satellite provision sessions,
- providing opportunities for non-opiate users to receive treatment separately from opiate users
- increasing the numbers accessing the service by producing information on services targeted to various locations such as A&E and GP surgeries

INTRODUCTION

An estimated 4 million people in the UK use illicit drugs each year, cannabis being the most widely used substance, followed by cocaine and crack. While the numbers of people using opioids are much lower, around 50,000 adults in the UK, the damage to the individual and society is much greater than for other drugs¹.

Under the Misuse of Drugs Act 1971, illegal drugs are placed into one of three classes – A, B or C. This is broadly based on the harms they cause when they are misused, either to the user or society.

Class A drugs have the potential to cause the most serious harm, and include opioids – opium, which comes from the poppy plant, plus a number of synthetic forms, including heroin; metamphetamine, a potent stimulant of the amphetamine group; and cocaine, a stimulant derived from the leaves of the coca plant;. Crack cocaine is the freebase form of cocaine that can be smoked and produces a short but very intense euphoria to those who take it.

Class B drugs comprise primarily of cannabis and its various forms, plus less potent forms of amphetamine.

Class C drugs include Ecstasy and MDMA.

In recent years, ‘legal highs’ have become more commonly used. These are drugs that can be obtained legally on prescription, or over the counter, and which can have a variety of stimulant and euphoric effects. The most commonly used of these drugs are opioid analgesics. While illegal opioids have traditionally been the main drug which is injected, the UK has recently been seeing a rapid increase in steroid injection, used to enhance appearance and performance.

¹ Roe, S. & Man, L. (2006) Drug Misuse Declared: Findings from the British Crime Survey 2005/06 – England and Wales. London: Home Office.

Drug usage is consistently higher in young people, who usually go on to moderate or completely stop using illegal drugs by their mid to late 20s when they 'settle down' and take on adult responsibilities. A small, but significant number of people continue to use illegal drugs, and particularly cannabis, into their 30s. A much smaller number of people continue to use heroin and crack cocaine, two of the drugs that cause the most harm to individuals and communities.

Surveys on a national and local level have found that illegal drug use is only an occasional activity for most people, and that most illegal drug use is experimental and recreational. Most people who use drugs, whether legal or illegal, do not come to serious harm, and statistics from the Crime Survey for England and Wales² suggest that among people aged 16-59, use of most drugs has been decreasing for several years. However, those who go on to have problems with drug use suffer a great deal of adverse effects, as do the communities in which they live.

1. CAUSES AND PATTERNS OF DRUG MISUSE

Since the Rolleston report in 1926, drug misuse has been viewed as a medical disorder in the UK, unlike in the US where there has traditionally been a more punitive approach. Advances in our understanding of the neurobiology of dependence suggests that it is indeed a medical condition³, although it is clear that the cause of drug dependency is multifactorial, with peer drug use, family problems and childhood abuse and/or neglect being well-established risk factors, as well as genetic predisposition⁴. Risk factors for dependent drug use are much more significant when they occur together rather than individually.

Typically people start taking drugs as a recreational choice, aimed at feeling better, but over time their control over its use diminishes, despite the negative consequences⁵. The effects of most illicit drugs are mediated via the reward system in the brain, and a range of substances, including opioids, stimulants and cannabis, as well as alcohol and nicotine, all appear to produce euphoric effects

² Crime Survey for England and Wales. ONS. Year ending June 2014.

³ Volkow, N. & Li, T. K. (2005) The neuroscience of addiction. *Nature Neuroscience*, 8, 1429–1430.

⁴ Frischer, M., Crome, I., MacLeod, J., et al. (2005) Substance misuse and psychiatric illness: a prospective observational study using the general practice research database. *Journal of Epidemiology and Community Health*, 59, 847–850.

⁵ Dackis, C. & O'Brien, C. (2005) Neurobiology of addiction: treatment and public policy ramifications. *Nature Neuroscience*, 8, 1431–1436.

by increasing levels of dopamine (a neurotransmitter) in the nucleus accumbens. As a result of the euphoria resulting from use, the person is motivated to repeat the experience. Over time, drug use can produce long-lasting changes in the brain, including reductions in dopamine receptor levels, which leads chronic drug users to go on to experience the well-known characteristics of drug dependence - craving, tolerance and withdrawal. As a result of these changes in the brain, drug dependence is generally a chronic condition, interspersed with periods of relapse and remission⁶. The consequences of repeated brushes with the law, unemployment, breakdown in relationships and increasing social isolation all serve further to entrench drug misuse.

While people who misuse drugs typically start in their late teens or early twenties, there are some differences between drugs. Cannabis use typically begins in adolescence, with heaviest use in the 15–24 age group. Use tends to decline steadily from the mid 20s to the early 30s. Cocaine use typically occurs first around the age of 20, with the risk of cocaine dependence occurring early (and with great intensity) after first use, and persisting for an average of 10 years. Opioid use tends to start around the same age, but dependence usually begins several years later, and continues over the next 10–30 years. In a long-term outcome study (up to 33 years) of 581 male opioid users in the US, 30% had positive (or refused) urine tests for opioids, 14% were in prison and 49% were dead⁷.

2. EPIDEMIOLOGY OF DRUG MISUSE

Prevalence of illicit drug use

Because of the illicit nature of drug misuse, direct prevalence data on how many people are currently taking illicit drugs are not available. Instead we need to look at less direct methods of assessing prevalence – from:

- crime data

⁶ Marsden, J., Strang, J., Lavoie, D., et al. (2004) Drug misuse. In *Health Care Needs Assessment: The Epidemiologically Based Needs Assessment Reviews* (eds. A. Stevens, J. Raftery, J. Mant, et al.), pp. 367–450. Abingdon: Radcliffe Medical Press.

⁷ Drug Misuse: opioid detoxification. The NICE guideline (no 52). 2008

- national prevalence surveys
- data on people in treatment.

By combining these different sources we can start to paint a picture of drug use in England and Bromley.

The Crime Survey for England and Wales (CSEW) measures the extent of crime in England and Wales by asking people whether they have experienced any crime in the past year. Because it includes crimes that have not been reported to the police, it provides a valuable addition to police recorded crime figures. In 2013/14 around 50,000 households across England and Wales were invited to participate in the survey, of whom three quarters responded.

The crime survey of 2012/13⁸ reported that 8.2% or 2.7 million adults had taken an illicit drug (excluding mephedrone) in the last year. Applied to Bromley this would represent approximately 15,000 adult residents reporting illicit use of drugs over the same time period.

The annual Glasgow Prevalence Estimation seeks to estimate prevalence by combining all available data on drug use and then estimating the hidden population to provide a prevalence estimate for each area. The data sources include treatment data, police and criminal justice data, hospital admissions and mortality data, and applies only to opiate, crack and injecting drug users⁹.

Table 1 shows the estimated numbers and rates of illicit drug use in Bromley as compared with London and England.

⁸ Home Office. Drug Misuse: Findings from the 2012/13 Crime Survey for England and Wales. 2013

⁹ Hay G et al Estimates of the Prevalence of Opiate Use and/or Crack Cocaine Use, 2010/11.

Table 1

	Number of Drug Users (Rate per 1000 Adult Population)			
	Opiate & Crack User	Opiate User	Crack User	Injecting
Bromley	1,117 (5.55)	814 (4.05)	750 (3.73)	119 (0.59)
London	54,925 (9.55)	48,918 (7.63)	40,680 (6.55)	11,331 (1.97)
England	293,879 (8.4)	256,163 (7.32)	166,640 (4.76)	87,302 (2.49)

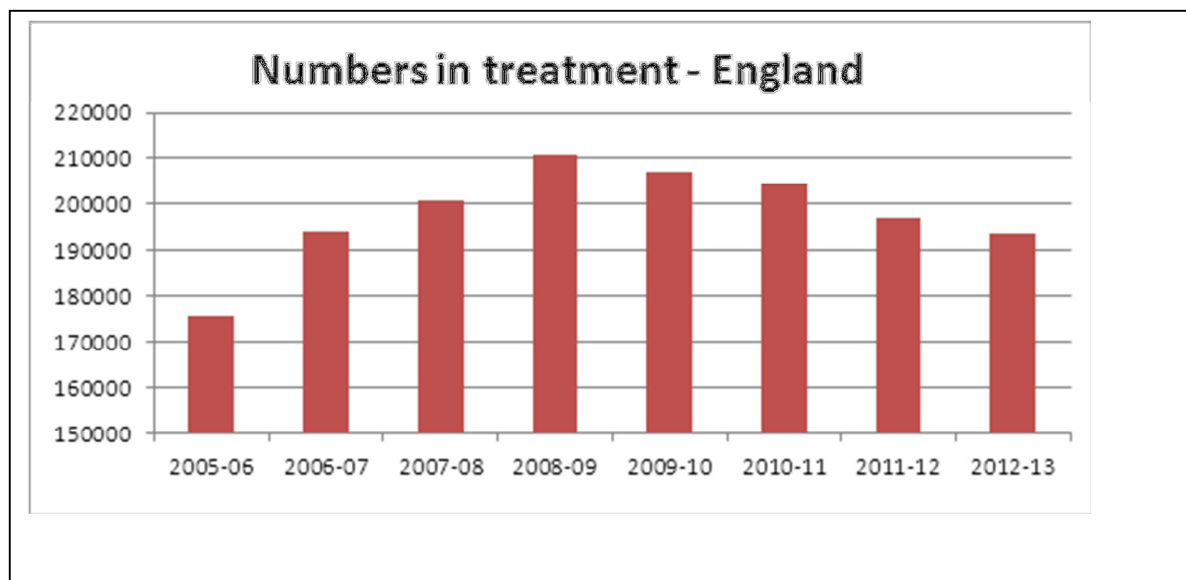
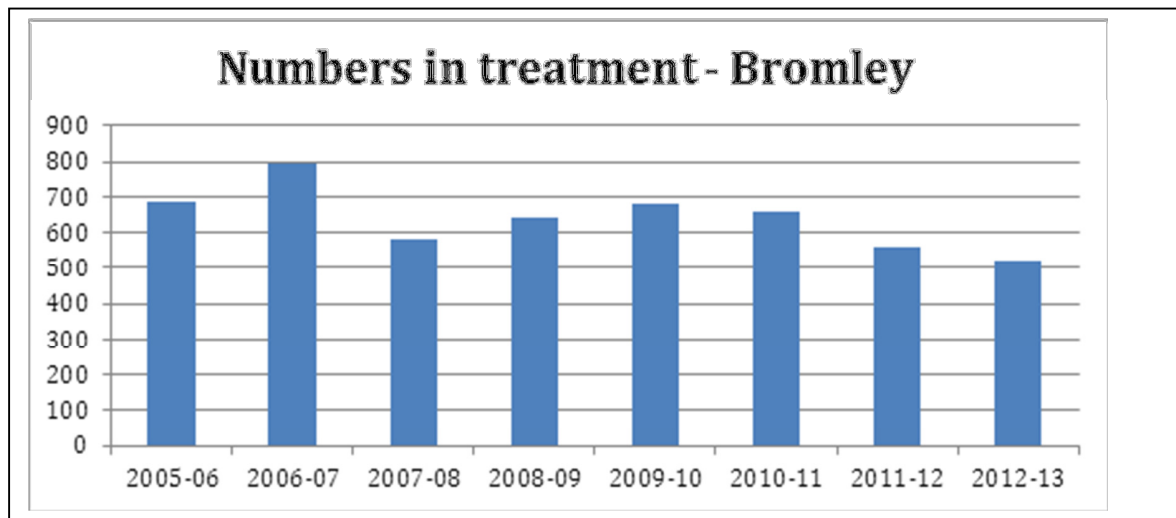
Source: Glasgow Prevalence Estimates (2011/12)

Bromley has lower rates of drug use than London and England in all categories. While the number of people using opiate and crack have increased over the last two years (as in London as a whole), numbers in other categories have fallen. Although we know that the number of steroid injecting users is rising rapidly, we do not yet have data on this.

Data on people in treatment. The most accurate data we have on drug users comes from the National Drug Treatment and Monitoring Service (NDTMS), as this is data collected diligently from those who attend drug treatment services. They provide an incomplete picture of drug use in the community, inevitably, as many drug users never access services, and the ones who do tend to have more serious problems and to be taking opioids and/or crack. However, they do give indications of drug use in the wider community, with trends over time, and they also provide valuable information about who uses treatment services, and how effective that treatment is.

The numbers of people in treatment have been falling gradually over the last decade, both in Bromley and England. During 2012-13, 520 people were in contact with drug treatment services in Bromley, as compared with 800 in 2006-07 (see Figs 1a and 1b).

Figures 1a and 1b



Source: NDTMS

Prevalence of over the counter and prescription only medicines.

Addiction to prescription-only medicines (POMs) and over the counter medicines (OTC) has become an increasing problem in recent years. OTC/POM drugs come under four main groups:

- Benzodiazepines and z-drugs, prescribed mainly for anxiety (benzodiazepines only) and insomnia

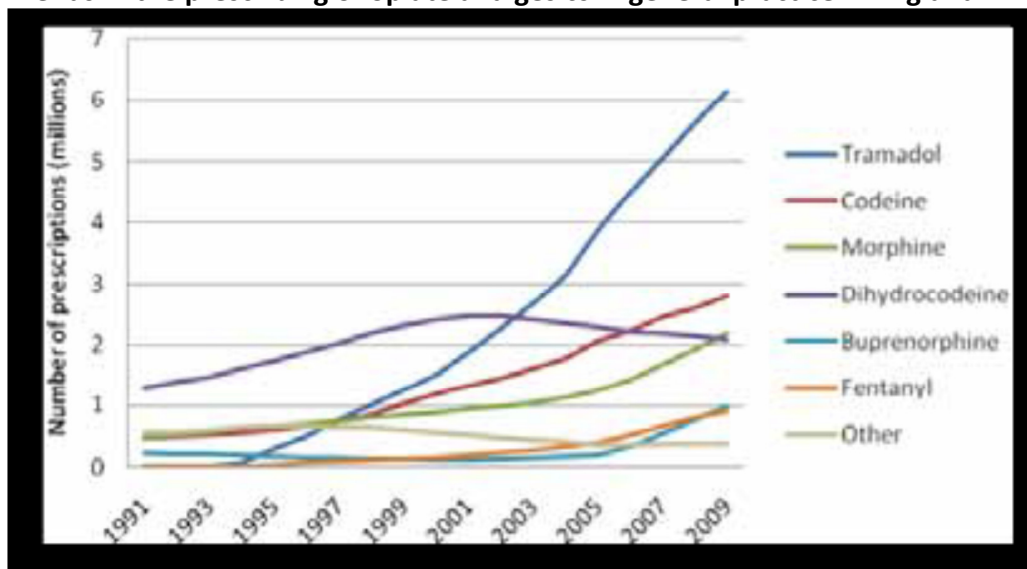
- Opioid and some other pain medicines, both prescribed and bought over-the-counter
- Stimulants, prescribed for ADHD or slimming
- Some OTC cough and cold medicines, and anti-histamines and stimulants.

There are distinct but overlapping populations using these medicines:

- Those who use prescription and OTC medicines as a supplement or alternative to illicit drugs, or as a commodity to sell
- Those who overuse prescription or OTC medicines to cope with genuine or perceived physical or psychological symptoms
- Those for whom the prescribed use of a medicine inadvertently led to dependence, sometimes called involuntary or iatrogenic addiction.

Opioid analgesics are the most commonly used drug in OTC/POM treatment populations, and national GP prescribing data show that the numbers of prescriptions for prescription-only opiates has been going up since the late 1990s. The most commonly prescribed opiate is Tramadol, the prescription of which has increased ten-fold since 1991.

Trends in the prescribing of opiate analgesics in general practice in England



(Source: National Prescribing Data DH, 2011).

12.5% of all people presenting to drug treatment services have a problem with prescription only, or over the counter medicines (POM/OTC). Of these, over four fifths (10.4% of total treatment population) are also taking illegal substances. In addition, 2% of people presenting to alcohol services also report problems with OTC/POM (*Source: NTA 2009-10*). Among drug users in treatment, the most common prescribed drug used by those also using illegal drugs are benzodiazepines. Among those who are not using illegal drugs, the most commonly used drugs are prescribed opiates.

35- 40% of those presenting with OTC/POM problems to specialist drug treatment centres are self-referred, whether they also use illegal drugs or not, and performance data suggests these clients stay in drug treatment for a significant period of time (ten months plus), engage well in treatment services and achieve better success rates than other drug users.

Demographic characteristics of people who misuse drugs

The best data that we have on demography is from the Health and Social Care Information Centre, which compiles data from an extensive range of surveys and statistics, including data on hospital admissions, crime, psychiatric morbidity, mortality and drug treatment. The most recent report, November 2013¹⁰, describes the characteristics of drug users in England:

- Since 1996 levels of any illicit drug and any Class A drug use during the last year were higher among men than women, at a ratio of around 70:30.
- Single adults were more likely to have taken any drugs or any Class A drug in the last year than any other marital status.
- Adults from a White ethnic group generally had higher levels of any drug use (9.5%) than those from non-White background (5.4%).
- Adults living in a household in the lowest income group (£10,000 or less) had the highest levels of drug use in the last year (11.9%) and Class A drug use in the last year (3.6%) compared with all other income groups. For example 6.8% and 2.8% respectively of adults living in a household with an income of £50,000 or more took drugs and Class A drugs in the last year respectively).

¹⁰ HSCIC Statistics on Drug Misuse: England 2013

- Since 2001, there has been an overall decline in the prevalence of drug use among pupils. The proportion of pupils who reported ever having taken drugs decreased from 29% in 2001 to 17% in 2012.
- Some young people have shown to be vulnerable to problematic drug use. These include those who truant or have been excluded from school.

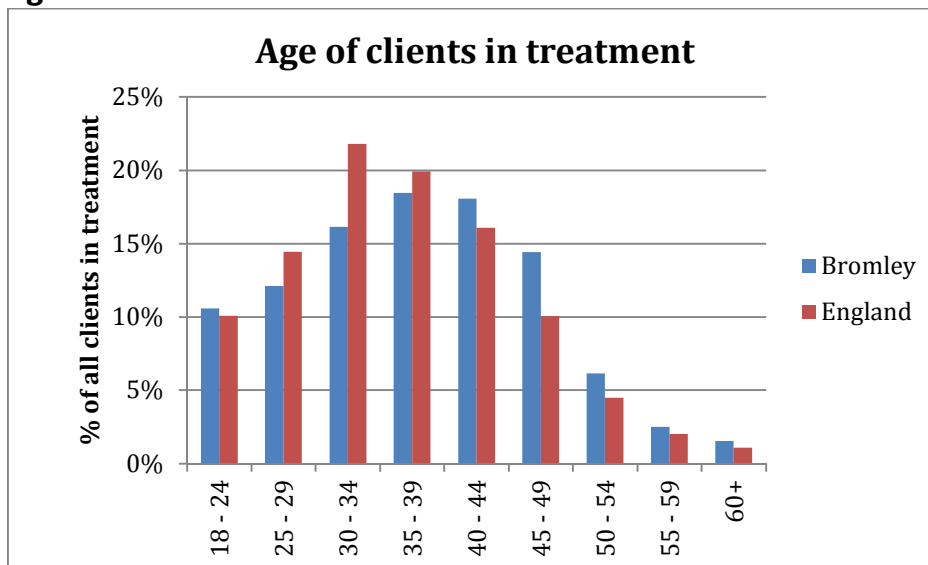
Drug users in Bromley

The best source of data on drug users in Bromley is the treatment data from NDTMS, which is the source of all data in this section.

Age

Fig 2 shows that the age distribution is similar in Bromley to England, but that clients in treatment tend to be older in Bromley. For example, peak age for drug misuse in England is 30-34, whereas it is 35-39 in Bromley.

Figure 2



In addition, while the proportion of clients in the 25-29 age group is lower in Bromley, and has been falling (Fig 3), it is noticeably higher in the 55-59 age group, which has been climbing (Fig 4).

Figure 3

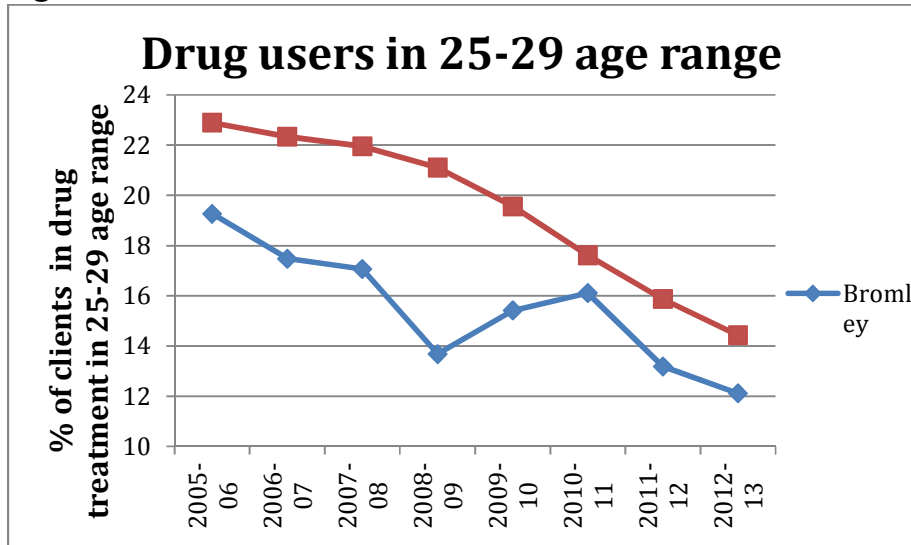
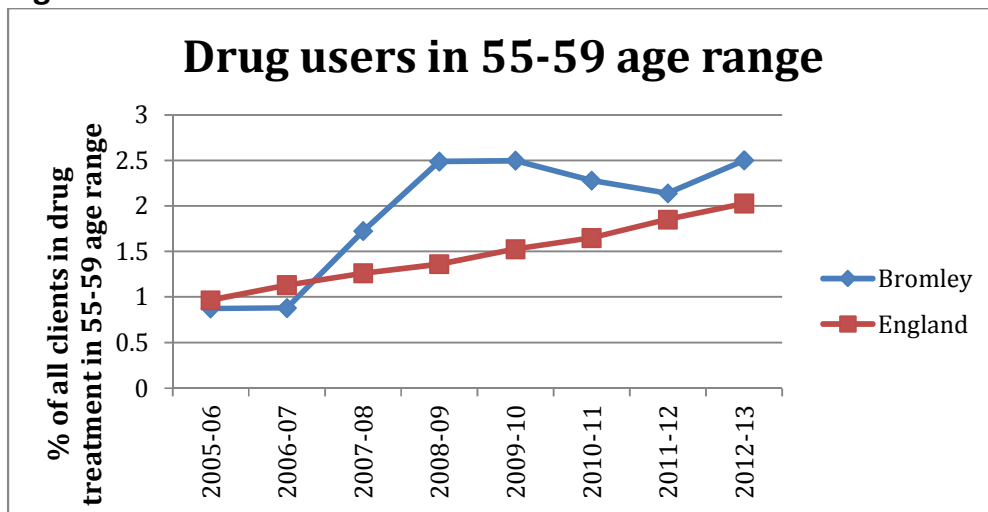
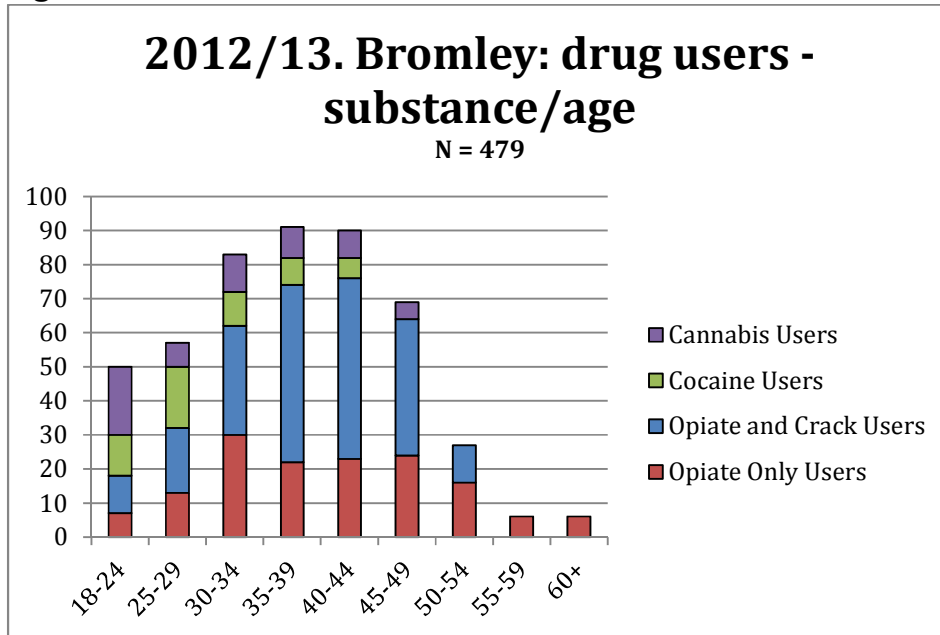


Figure 4



In terms of which drugs are used by which age groups, Figure 5 shows that cocaine and cannabis use falls off with age, with the over fifties not using these drugs at all.

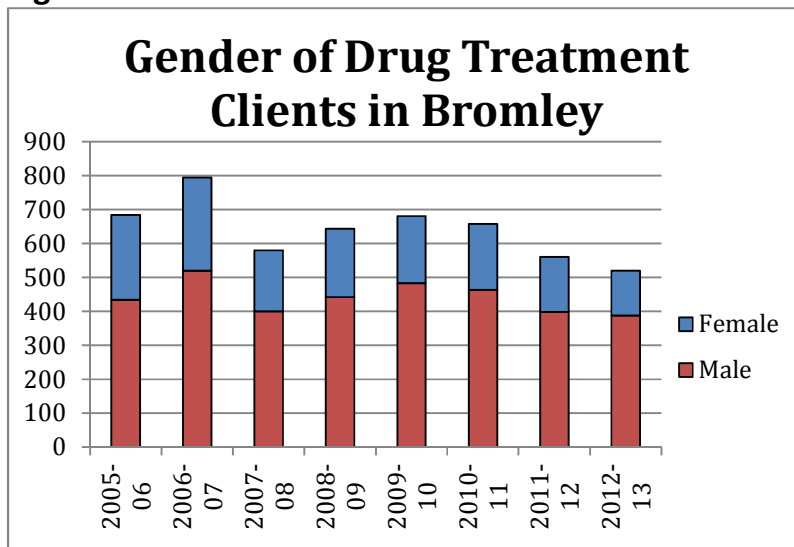
Figure 5



Gender

There is a roughly 80/20 male to female gender split among Bromley clients, compared to 70/30 in England (Figure 6). This has been changing in recent years – in 2005/06, the gender split in Bromley was 63/37. Although the proportion of males has been rising steadily in England, the change has been relatively small, while in Bromley it has been substantial.

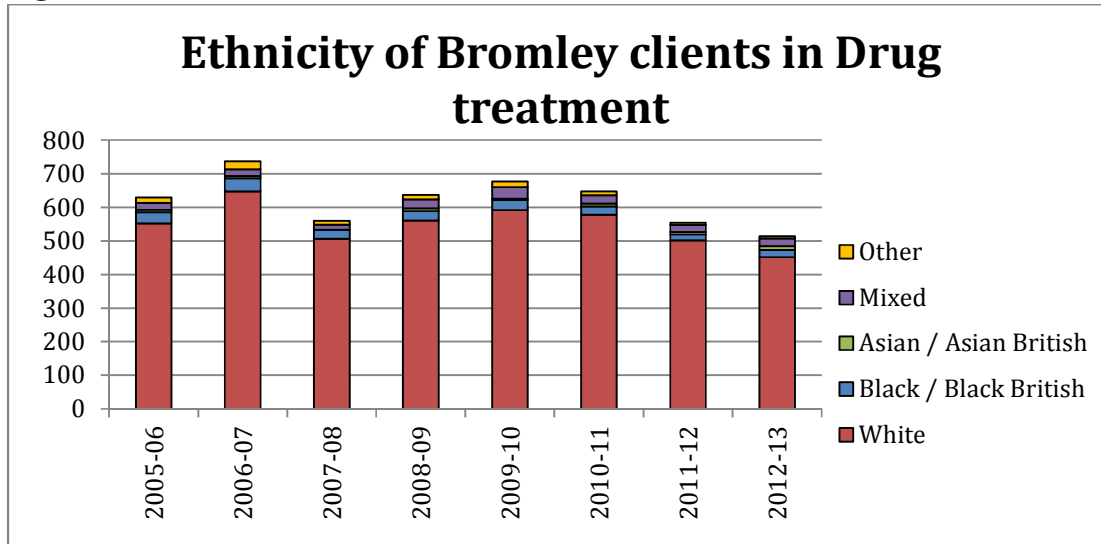
Figure 6



Ethnic group

Fig 7 shows the proportion of drug users in treatment in different ethnic groups, which is similar to the general population of Bromley, predominantly white.

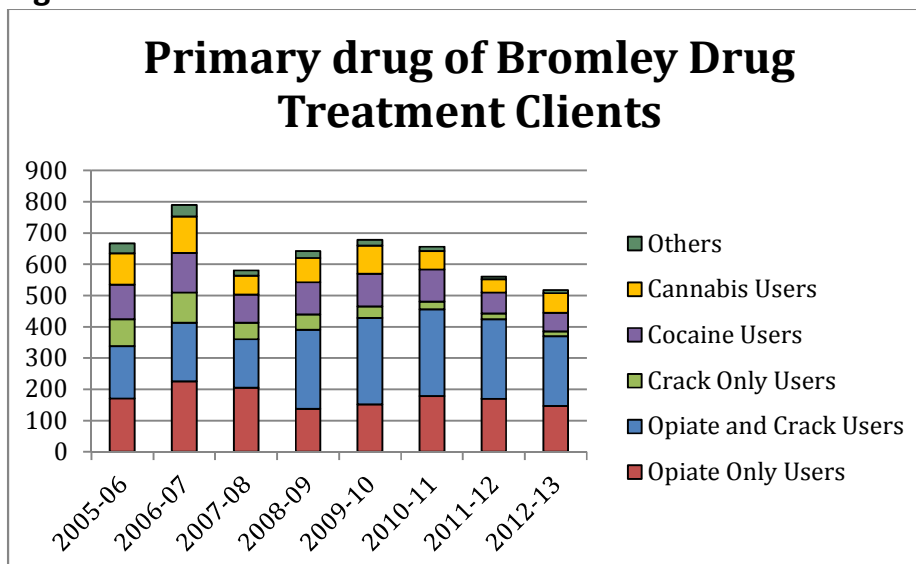
Figure 7



Types of drugs used by clients in Bromley

Most clients in treatment are using opiates and/or crack (Fig 8).

Figure 8



While use of opiates alone has remained fairly steady in Bromley in recent years, and the use of crack alone has gradually reduced, the number using both opiates and crack has gone up. The fall in crack-only use, and the rise in crack and opiate use is much more marked in Bromley than in England as a whole (Figs 9a-c).

Figure 9a

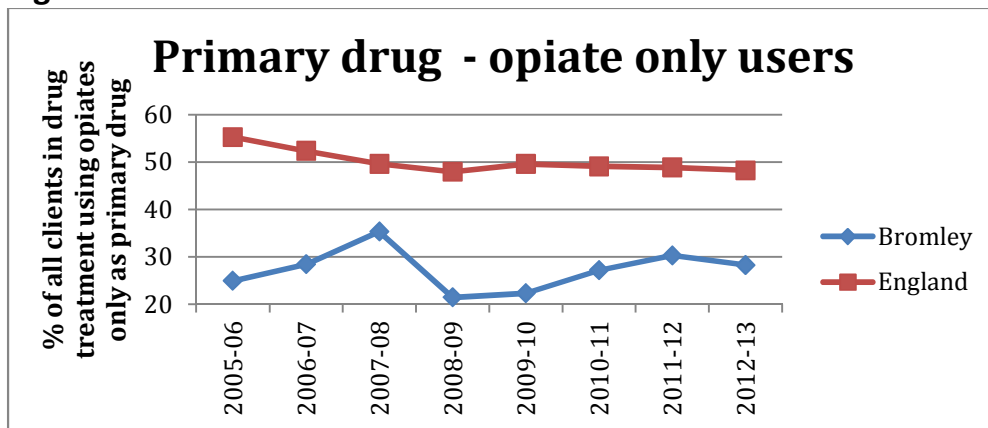


Figure 9b

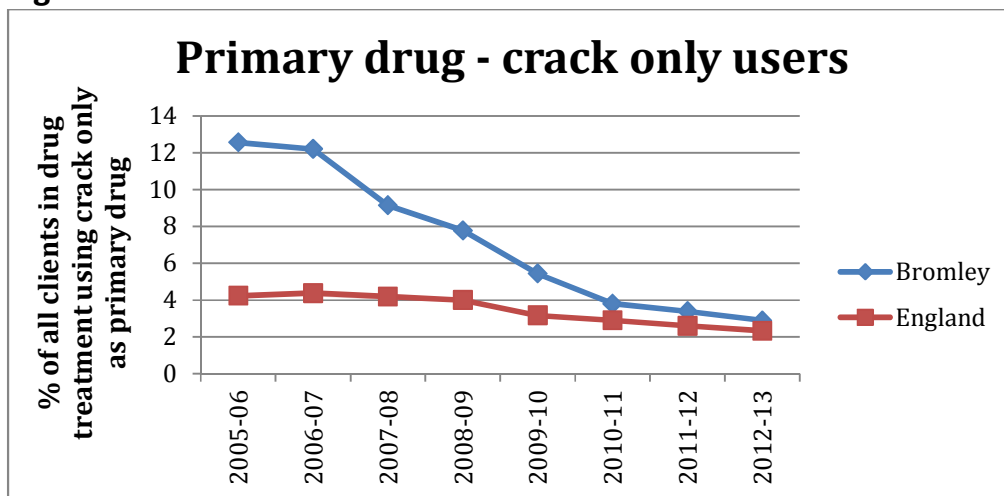
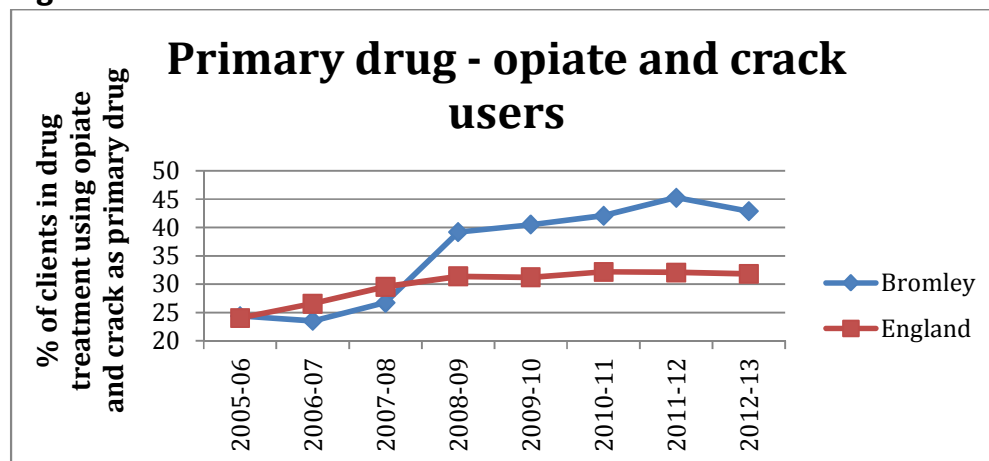


Figure 9c



3. IMPACT ON HEALTH AND WELL-BEING

While health problems and death are seen in users of all classes of drugs, the most harmful effects of drug misuse are seen among opioid users. These include increased risk of death from overdose, increased risk of infection with blood-borne viruses (HIV, hepatitis B and hepatitis C), high levels of depression and anxiety disorders, social problems such as disrupted parenting, unemployment and homelessness, and increased participation in the crime required to fund the habit.

Death

Drug use and drug dependence are known causes of premature mortality, with drug poisoning accounting for nearly one in seven deaths amongst people in their 20s and 30s in 2013¹¹.

Mortality data are currently presented for two distinct groups, those where the underlying cause is

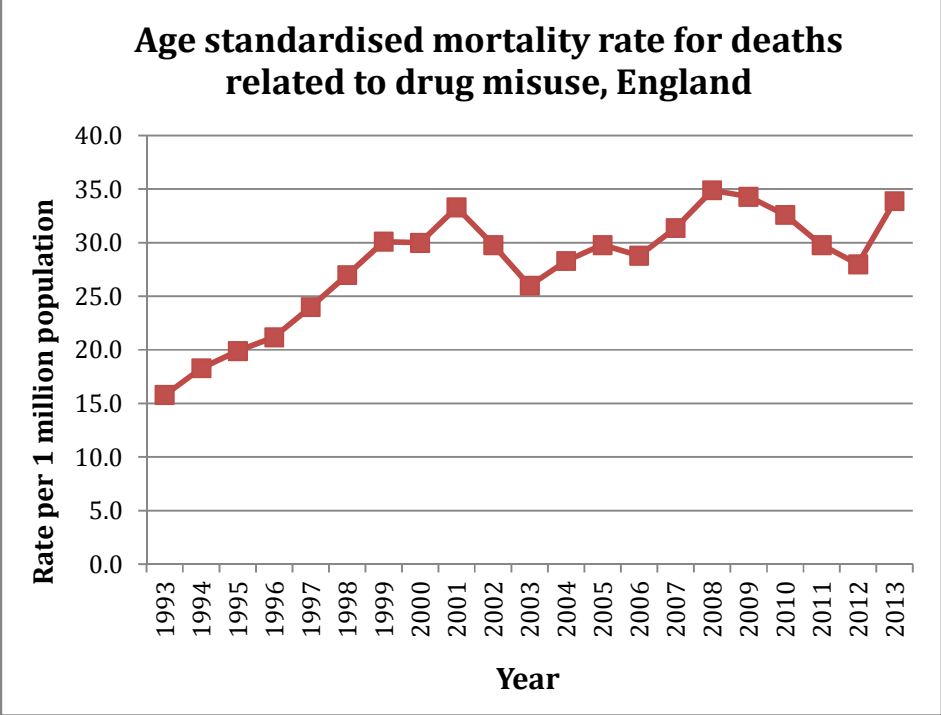
- drug abuse/dependence on an illegal drug, and
- drug poisoning involving a controlled drug (legal or illegal).

¹¹ Office for National Statistics. Deaths related to drug poisoning in England and Wales, 2013.

Deaths from opioids may be counted in either group, depending on whether death was due to a drug-related condition or whether it was due to overdose or poisoning. The second category includes many other drugs, including those that are prescribed, such as Tramadol and anti-depressants.

Age-standardised death rates for drug misuse (as opposed to poisoning), have increased since 1993, with peaks in 2001 and 2008, and another increase in 2013 (Fig 10).

Figure 10



Deaths due to drug poisoning have showed a similar trend, with a peak in 2009, a fall until 2012, and then a 19% increase in 2013. Of the 2,955 drug poisoning deaths (involving both legal and illegal drugs) registered in 2013 in England and Wales, over two thirds were in males, an increase of 23% from 2012. Female drug misuse deaths have increased steadily from 2009, and by 12%, from 459 in 2012

to 513 in 2013. In 2013, males aged 30 to 39 had the highest mortality rate from drug misuse, followed by males aged 40 to 49 years of age.

Heroin and morphine remain the substances most commonly involved in drug poisoning deaths. 765 deaths involved heroin or morphine in 2013; a sharp rise of 32% from 579 deaths in 2012. Deaths involving tramadol have continued to rise, with 220 deaths in 2013. This is almost 2.5 times the number seen in 2009 (87 deaths).

Deaths in Bromley

Between 2006 and 2013 there were 80 drug related deaths (43 male, and 37 female) in Bromley, 29 of which were due to accidental poisoning. The average age at the time of death was 48 years, ranging from 15 to 94 years old, and was 32 to 36 years less than the average life expectancy for men and women born in Bromley. As with the national picture, the number of deaths peaked between 2007 and 2009 where there were between 13 – 16 deaths for each of those years. The number of deaths has been lower in subsequent years; 6 in 2010, 9 in 2011, 8 in 2012 and 8 in 2013¹².

The highest number of drug related deaths between 2006 and 2013 have occurred in people residing in the following wards; Penge and Cator – 10, Bromley Town – 8, Cray Valley West – 8, Crystal Palace – 7, and Cray Valley – 6. All the other wards have had five or less deaths, and Darwin and Shortlands have not had any drug related deaths.

Local numbers are too small to analyse for trends in deaths from individual drugs.

In early 2014 the medical records of ten out of twelve patients who had died from drug related causes in the previous 12 months were examined¹³. It was found that half these patients had one or more significant medical conditions – asthma,

¹² Drug-related deaths. ONS. 2013.

¹³ Dr Janice Lo. Drug and Alcohol related deaths 2014.

Chronic Obstructive Pulmonary Disease, ischaemic heart disease and alcohol-related problems, five had a history of depression, and only three had been in contact with services for their drug use.

Blood borne Infections

Injecting drug users are at great risk of blood borne infections, due to poor and non-sterile injecting techniques. The National Drug Treatment and Monitoring Service (NDTMS) recently reported that:

- **90% of cases of Hepatitis C diagnosed in the UK occurs as a result of injecting drugs.** Around 2 out of every five people who inject psychoactive drugs, such as heroin and mephedrone are living with hepatitis C; half of these infections are undiagnosed. About one in 30 of those who inject image and performance enhancing drugs, such as anabolic steroids, are living with hepatitis C.
- **Hepatitis B is now rare and vaccine uptake has improved.** Hepatitis B infection among people who inject psychoactive drugs has declined in recent years, probably reflecting the marked increase in the uptake of the hepatitis B vaccine. However, vaccine uptake levels have been stable in recent years, even though they could be increased further. Vaccine uptake is much lower among people who inject image and performance enhancing drugs.
- **HIV levels remain low and the uptake of care is good.** Around one in every 100 people who inject drugs is living with HIV. The level of HIV infection among those injecting image and performance enhancing drugs is similar to that among those injecting psychoactive drugs, and the uptake of HIV related care, including anti-retroviral therapy, is high.
- **Injecting risk behaviours have declined but remain a problem.** Reported needle and syringe sharing has halved over the last 10 years, but around one in seven people injecting psychoactive drugs share needles and syringes and almost one in three had injected with a used needle that they had attempted to clean.

- **Bacterial infections remain a major problem.** A quarter of people who inject psychoactive drugs report a recent symptom of an injecting site bacterial infection. One in six of those injecting image and performance enhancing drugs report having had a symptom of an injecting site bacterial infection.
- **Changing patterns of psychoactive drug injection are a cause for concern.** There has been a recent increase in the injection of amphetamines and amphetamine-type drugs, such as mephedrone. The injection of these drugs has been associated with higher levels of infection risk. Although the injection of these drugs is much less common than the injection of opiates, crack-cocaine, or image and performance enhancing drugs, this increase is a concern.
- **Provision of effective interventions needs to be maintained.** The provision of effective interventions, such as needle and syringe programmes, opioid substitution treatment and other drug treatment, which act to reduce risk and prevent infections, needs to be maintained. These interventions need to be responsive to any changes in patterns of drug use. Vaccinations and diagnostic tests for infections should continue to be routinely offered to people who inject drugs and treatment made available to those testing positive¹⁴.

Due to this risk of blood borne infection, injecting drug users accessing treatment for substance misuse are tested for Hepatitis B and C and, if appropriate, vaccinated.

In 2012/13, 34% of eligible new presenters to drug services in Bromley accepted Hepatitis B vaccinations, compared with the national average of 47%. During the same period, 91% of previously or currently injecting clients in treatment in Bromley received a Hepatitis C test, as compared with the national average of 72.5%.

¹⁴ Shooting up: Infections among people who inject drugs in the United Kingdom 2013. An update; November 2014. Public Health England.

Mental health problems

Psychiatric comorbidity is common in drug misuse populations, with anxiety and depression generally common, and antisocial and other personality disorders more prevalent than in the non-user population¹⁵. Psychiatric problems may both be caused by drug misuse, and be a risk factor for it. The national US Epidemiological Catchment Area study of the prevalence of mental health disorders reported a lifetime prevalence rate of substance misuse (drugs and alcohol) among people with schizophrenia and bipolar disorder of 47% and 60% respectively, compared with 16% in the general population. Around one in five of the people in the same sample had previously received treatment for a psychiatric health problem other than substance misuse. Drug misuse disorders complicated by other comorbid mental disorders have been recognised as having a poorer prognosis and being more difficult to treat than those without comorbid disorders¹⁶.

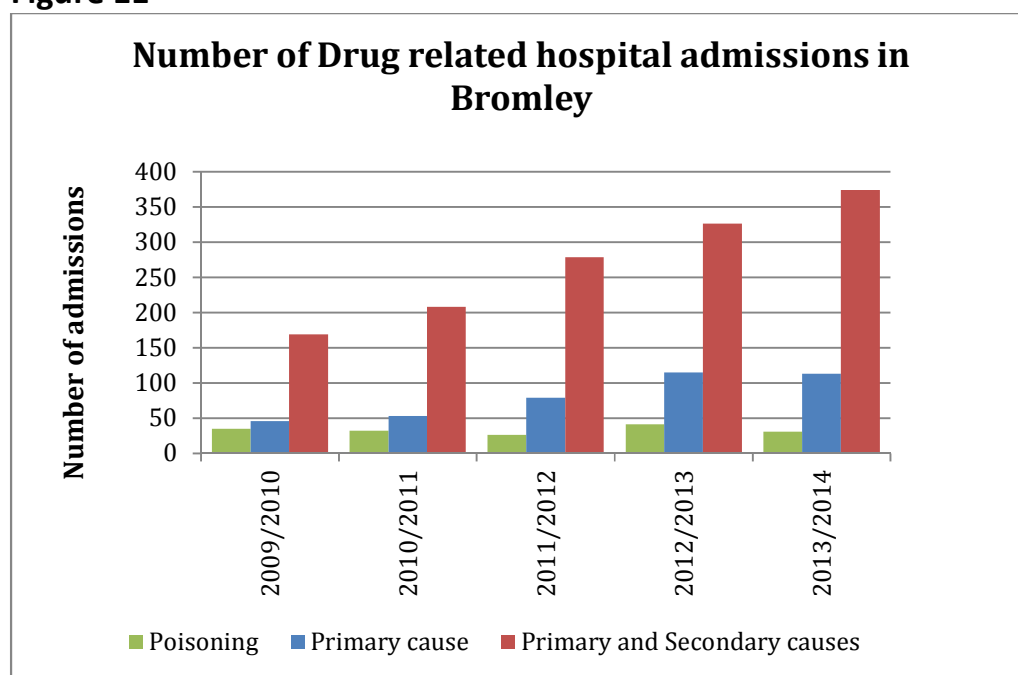
Hospital admissions

In 2013/14 there were 518 drug-related admissions in Bromley. These include admissions where drug use was the primary or secondary cause of admission, as well as where admission was due to drug poisoning. While the numbers of admissions due to poisoning have remained fairly constant, and relatively low, over the last five years (Fig 11), the numbers of drug-related admissions where drug use is the primary or secondary cause have steadily increased. For example, there were 169 admissions where drug use was the primary or secondary cause in 2009, and 374 admissions for the same reasons in 2013, more than double.

¹⁵ Crome I. B. (2006) An epidemiological perspective of psychiatric comorbidity and substance misuse: The UK experience/example, in Baldacchino, A. and Corkery, J. (Eds.) Comorbidity: Perspectives Across Europe (ECCAS Monograph No. 4) pp.45–60.

¹⁶ Marsden, J., Gossop, M., Stewart, D., et al. (2000) Psychiatric symptoms among clients seeking treatment for drug dependence. Intake data from the National Treatment Outcome Research Study. *British Journal of Psychiatry*, 176, 285–289.

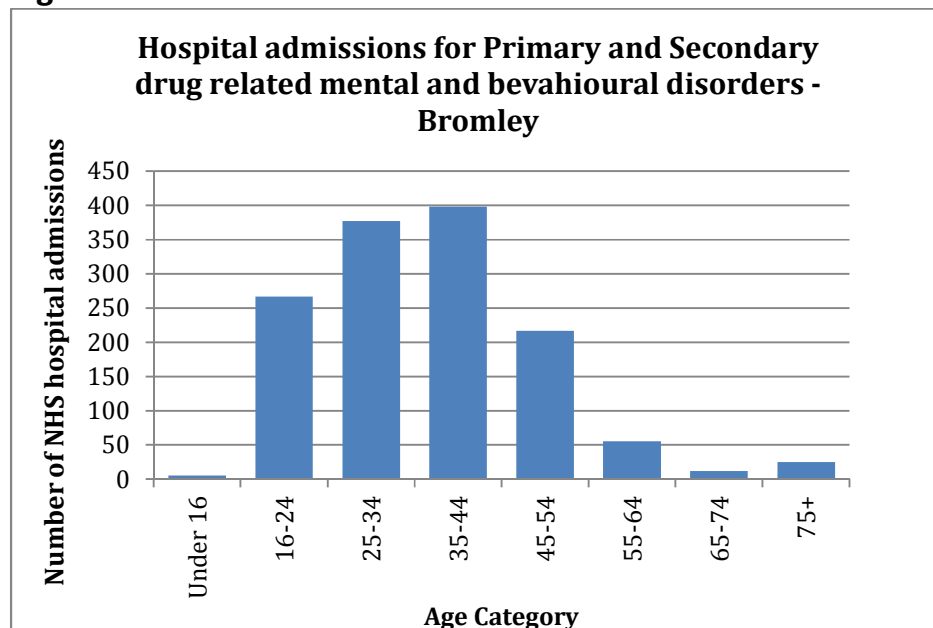
Figure 11



The age distribution of those admitted where drug use was a primary or secondary cause are shown in Fig 12. The majority are aged between 16-44 years old, with the peak in the 25-44 age group. Where drug use is the primary cause of admission, or where poisoning is the cause, the age distribution moves towards the younger age groups¹⁷. Where poisoning is the cause of admission, there are also greater numbers in the 65+ age groups, probably reflecting the increase in suicide attempts in older people.

¹⁷ The Health and Social Care Information Centre, Lifestyle Statistics 2013

Figure 12



4. SOCIO-ECONOMIC IMPACT

Drug misuse carries a substantial economic burden. It is associated with high healthcare and social costs, mainly as a result of transmission of infectious disease, crime and violence¹⁸. It has been estimated that problematic drug use accounts for annual social costs in England and Wales of approximately £11,961 million, or £35,455 per user, per year¹⁹. By 2014 these costs could expect to have at least doubled. Chronic health problems comprise a significant element of the health and social care costs of drug misuse. It has been estimated that the prevalence of HIV among new injecting drug users in London is 4.2%²⁰. These estimates yielded median annual costs to the NHS for the treatment for HIV infected drug users (asymptomatic, symptomatic and AIDS) of £12.5 million, £25 million and £24 million, respectively, totalling over £60 million.

¹⁸ Petry, N. M., Tedford, J., Austin, M., et al. (2004) Prize reinforcement contingency management for treating cocaine users: how low can we go, and with whom? *Addiction*, 99, 349–360.

¹⁹ Godfrey, C., Eaton, G., McDougall, C., et al. (2002) *The Economic and Social Costs of Class A Drug Use in England and Wales*. Home Office Research Study 249. London: Home Office.

²⁰ Drug misuse. The NICE guideline. No. 52. 2008.

Health services

Including primary care, emergency departments, inpatient care, community mental health, and inpatient mental healthcare, problem drug users are estimated to cost the health service between £283 million and £509 million per year. This estimate was in addition to psychosocial interventions, which at present cost £1,000 per user, per year²¹.

Social services, housing and benefits

Lost productivity and unemployment increase with the severity and duration of drug misuse, and personal relationships are placed under considerable strain by dependent drug use. Problems with accommodation are also common in such groups. For example, prior to intake in the NTORS, 7% of the study group were homeless and living on the street, 5% were living in squats and 8% were living in temporary hostel accommodation.

Children and families

Drug misuse may also have a negative impact on children and families. In the UK it is estimated that 2–3% of all children under the age of 16 years have parents with drug problems. While use of opioids does not necessarily impact on parenting capacity, registration on UK child protection registers for neglect has been correlated strongly with parental heroin use, and parental problem drug use has been shown to be one of the commonest reasons for children being received into the care system (NICE guideline No.52).

Crime

It is well known that drug dependence is associated with a high incidence of criminal activity and it has been estimated that 40% of all acquisitive crime is drug-related. Godfrey and colleagues (2002) estimated that the criminal justice system and crime victim costs were £2,366 million and £10,556 million respectively. Criminal justice costs include costs associated with drug arrests for acquisitive crimes, stays in police custody, appearances in court, and stays in prison; crime victim costs refer to material or physical damage, crime victims' loss and expenditures taken in anticipation of crime.

²¹ Godfrey, C., Eaton, G., McDougall, C., et al. (2002) The Economic and Social Costs of Class A Drug Use in England and Wales. Home Office Research Study 249. London: Home Office.

Among users in treatment, more than 17,000 offences were reported by an NTORS cohort of 753 participants in a 90-day period before entering treatment²², with 10% of participants accounting for 76% of the crimes. Illicit drug use is also much more common among known offenders in the UK than among cohorts of comparable age drawn from the general population. In a sample of 1,435 arrestees drug-tested and interviewed, 24% tested positive for opioids. The average weekly expenditure on drugs (heroin and crack/cocaine) was £290, and the main sources of illegal income were theft, burglary, robbery, handling stolen goods and fraud. The NTORS also found 61% of a drug misuse treatment sample reported committing crimes other than drug possession in the 3 months prior to starting treatment, with the most commonly reported offence being shoplifting. In addition, there is a high prevalence of drug misuse among the prison population: in a 1997 survey between 41 and 54% of remand and sentenced prisoners were reported to be opioid, stimulant and/or cannabis dependent in the year prior to incarceration²³.

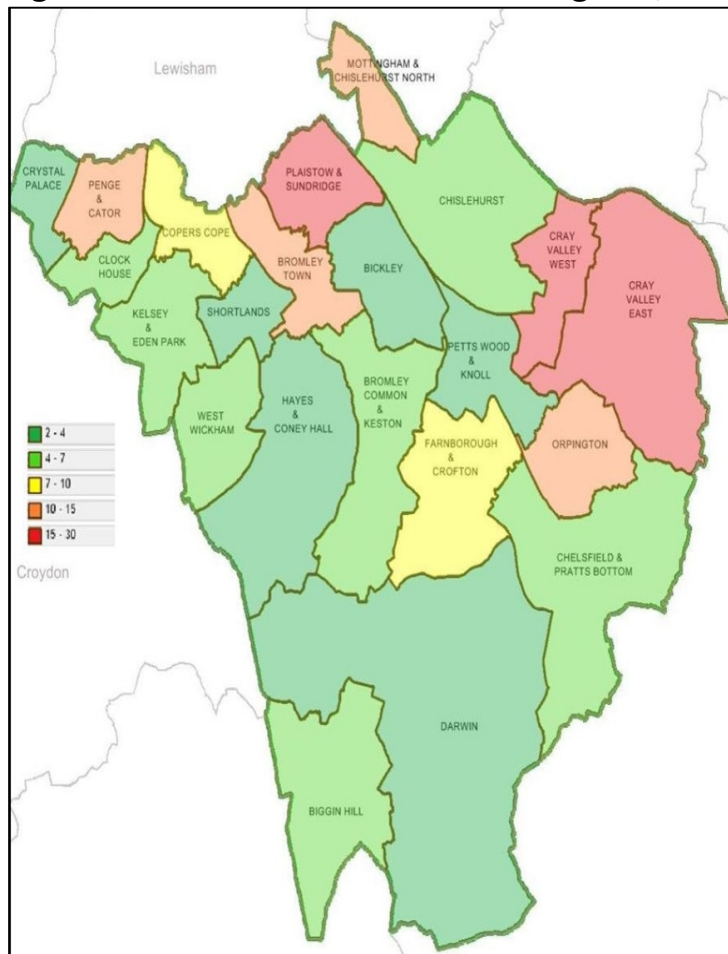
The above estimates did not consider the impact of current drug use on future healthcare demands, the lost output of the victim or perpetrator of crime, nor the intangible effects on the community at large, such as security expenditure, property depreciation or increased reliance on private transportation. It also does not include the cost of benefits to unemployed drug users, or the protection or care of their children. It is therefore evident that drug misuse places a considerable economic burden to the health service, local authorities and society as a whole.

In order to combat drug-related crime, by increasing opportunities for diverting drug misusing offenders out of crime and into treatment and reducing associated criminality, from January 2013, the Metropolitan Police Service extended drug testing across all 32 boroughs in London, including Bromley. Figure 13 shows the distribution of positive tests across Bromley in 2013-14.

²² Gossop, M. & Strang J. (2000) Price, cost and value of opiate detoxification treatments-Reanalysis of data from two randomized trials. *British Journal of Psychiatry*, 177, 262-266.

²³ Drug Use: Opioid detoxification. NICE guideline No. 52. 2008

Figure 13: Distribution of Positive Drug Test, 2013/14



Source: Metropolitan Police Drug Intervention Program

A person testing positive for drugs on arrest is obliged to attend a drug assessment, regardless of whether convicted of the offence. Failure to attend is an offence which may result in arrest. These assessments can result in individuals being persuaded into drug treatment. Between January and June 2013 approximately 39% of people who tested positive were referred into treatment. The Police work closely with Arrest Referral workers, who are part of the Bromley drug and alcohol service.

5. THE TREATMENT AND MANAGEMENT OF DRUG MISUSE

The general principles of treatment are that no single treatment is appropriate for all individuals, treatments should be accessible and begin when and where the service user presents, and there should be the capacity to address multiple needs. It is also accepted that treatments will change over time. Research suggests that treatment does not need to be voluntary to be successful²⁴, and is ethical when given as an alternative to other penal sanctions.

The aims of treatment

The treatment of drug misuse aims to prevent or reduce harm resulting from the use of drugs and may be categorised into three broad approaches:

1. **Harm reduction** aims to prevent or reduce negative health or other consequences associated with drug misuse, whether to the drug-using individual or, more widely, to society. For example, needle and syringe exchange services aim to reduce transmission of blood-borne viruses through the promotion of safer drug injecting behavior.
2. **Maintenance-oriented treatments** aim to reduce an individual's level of drug use. In the UK this primarily consists of the prescription of opioid substitutes (methadone or buprenorphine) and aims to reduce or end illicit drug use, and so reduce the harms to self, transmission of viruses, criminal behaviour and other costs to society.
3. **Abstinence-oriented treatments** aim to reduce drug use, with the ultimate goal of abstinence. They may include a range of psychosocial interventions, detoxification and residential rehabilitation. Detoxification refers to the process by which the effects of opioid drugs are eliminated from dependent opioid users in a safe and effective manner, such that withdrawal symptoms are minimised (WHO, 2006). With opioids, this process may be carried out by using the same drug or another opioid in decreasing doses, and can be assisted by the prescription of adjunct medications to reduce withdrawal symptoms

²⁴ Belenko (n 2).; GAO (n 2).; Schaub, *et al* 2010 (n 2).; Marianne van Ooyen-Houben, 'Quasi-compulsory treatment in the Netherlands: promising theory, problems in practice' in Alex Stevens (ed), *Crossing Frontiers: International Developments in the Treatment of Drug Dependence*, Pavilion Publishing, 2008.

Much of the current publicly funded treatment of drug misuse focuses on the treatment of opioid misuse. Although opioid use is less common than use of cannabis, cocaine and ecstasy, it causes greater harm to the individual and to society. It is also perceived as more problematic by users, who are therefore more likely to present themselves to services. Only a minority of users entering treatment initially chooses abstinence and enforced abstinence appears ineffective. However, approximately one third entering treatment services generally are abstinent 5 years later (at least for a period of time) (Gossop *et al.*, 1998).

Most drug treatment is initiated as a result of drug users themselves seeking treatment. However, there has recently been an increase in forms of legally coerced treatment, whereby the user is coerced into treatment as an alternative or adjunct to criminal sanctions (Wild *et al.*, 2002). This may be legally ordered by the court or through referral away from the judicial process, usually following arrest and charge for drug-related and other offences.

Effectiveness of treatment

Reviewing the effectiveness of treatment is a complex task, as:

- There are a number of different treatment approaches in general use, all of which have been evaluated with different kinds of users and different kinds of drugs. The effectiveness of an approach with one type of drug user cannot be assumed to be effective with another kind.
- There are an ever-increasing and ever-changing number of drugs that are being misused, meaning that treatment approaches have to be adapted and re-evaluated on a regular basis. For example, needle and syringe schemes have almost entirely been evaluated among opioid injectors, whereas now there is a rapidly increasing population of users who inject steroids.
- Few treatments are given in isolation. Needle exchange programmes, for example, tend to provide psycho-social interventions, education and testing for viruses, as well as clean injecting equipment. Substitute prescribing is rarely, if ever, provided without other kinds of support, and is not as effective if it is given in isolation. There are therefore a large number of

possible combinations of treatment, all of which should ideally be evaluated for effectiveness.

- Follow up periods in studies vary, which makes it difficult to compare interventions and difficult to predict long term outcomes.
- Although there are many thousands of research papers, as a result of all the different permutations, nearly all of these studies have been conducted in countries other than the UK, most of these in the US. Any conclusions therefore have to be evaluated as to whether they are applicable to the UK, and UK cost-effectiveness analyses are necessarily based on modeling from findings in other countries

For the purposes of this report, therefore, a summary of the main sources of evidence is given for the effectiveness of the most commonly used single or combination treatment modalities on single groups of drugs, with an emphasis on opioids. Because there are so many individual papers, conducted in a variety of settings, most of the sources used are in the form of high quality literature reviews. More in-depth analysis of individual papers and combinations of treatments are available on request.

Points to consider when evaluating the evidence.

When evaluating the effectiveness of interventions to reduce harm, reduce intake or achieve abstinence among drug users, it is important to understand the nature of drug using and addiction. In particular it is important to realize that there are several distinct groups of drug users, and that users may or may not progress from one group to another.

Firstly there is the group of people that uses drugs but who never come into contact with services; as a result we know little about them, their patterns of use or the drugs they take. There are another group of users who do come into contact with services, who take drugs but are not dependent. They are more likely to be using cannabis, amphetamines and other stimulants than they are to be using opioids. These users tend to be easier to treat, and abstinence is a reasonable, and often-achieved, goal of treatment. Finally there are the dependent users. These are usually opioid users, and are both physically and psychologically dependent on drugs. They are more likely to inject the drugs they

use, and are therefore more exposed to injecting-related health problems; they are less likely to be able to hold down a job and therefore more likely to turn to crime and prostitution in order to fund their habit; and they are more likely to have problems in their close relationships and in child-rearing. It is this last group that are the hardest to treat, but in whom successful treatment will pay the greatest dividends, both to themselves, their families and society.

Drug dependency is a relapsing, life-long illness, characterized by periods of reduced intake or abstinence, relapses, progression, side effects and health co-morbidities. As such it may be compared with chronic illnesses such as Diabetes or Multiple Sclerosis, and in terms of mental illness it may be compared with chronic depression. As in other chronic conditions, anxiety and depression are common mental health co-morbidities among dependent drug users, making treatment more complex and difficult. Because of the chronic, relapsing nature of drug dependency, the effectiveness of treatment should be viewed in terms of its ability to reduce drug use and its associated harms, rather than cure. There is no cure for drug dependency.

Effectiveness of individual treatments

In trying to establish effectiveness of interventions, NICE used the PICO (patient, intervention, comparison and outcome) framework, see below. This structured approach divides each question into four components: the patients (the population under study), the interventions (what is being done), the comparisons (other main treatment options) and the outcomes (the measures of how effective the interventions have been).

Features of a well-formulated question on effectiveness of an intervention – the PICO guide

Patients/population Which patients or population of patients are we interested in? How can they be best described? Are there subgroups that need to be considered?

Intervention Which intervention, treatment or approach should be used?

Comparison Which intervention, treatment or approach should be used?

Outcome What is really important for the patient? Which outcomes should be considered: intermediate or short-term measures; mortality; morbidity and treatment complications; rates of relapse; late morbidity and readmission; return to work, physical and social functioning and other measures such as quality of life; general health status; costs.

In this review of the evidence, the following interventions are considered:

- A. Needle and syringe programmes (NSPs)
- B. Opioid substitution therapy (OST)
- C. Pharmacological detoxification
- D. Psycho-social interventions (brief and longer term)
- E. Residential programmes

A. Needle and syringe programmes (NSPs)²⁵.

NSPs provide injecting drug users with clean injecting equipment, with the aim of reducing risky injecting practices and therefore infection with blood borne viruses – Hepatitis B, Hepatitis C and HIV. In addition, they usually provide brief psychological interventions, education and testing. As it is estimated that around 1/5 of all new HIV infections and the vast majority of Hepatitis C infections are the result of injecting drug use, needle exchange programmes are an important plank in harm reduction, not just for individual drug-users, but for the communities they live in.

NSPs have been deemed cost-effective by NICE, who recently updated their guidance to allow the service to be extended to under 18s, as a result of a rapid increase in the injection of steroids among young people. (Needle and Syringe Programmes. PH 52 NICE. 2014). The in-depth review of the evidence that was conducted by NICE in the course of producing this guidance found that there is evidence to suggest from:

- one good quality and five moderate quality systematic reviews and meta-analyses that participation in NSPs reduces injection risk behaviours among

²⁵ Needle and Syringe Programmes. NICE guidance PH52. 2009. Updated March 2014. References given in brackets in this section may be found in this document.

injecting drug users (IDUs), in particular self-reported sharing of needle and syringes, and frequency of injection (Tilson et al 2006; Gibson et al 2001; Cross et al 1998; Ksobiech 2003; Ksobiech 2006; Ritter & Cameron 2006).

- two good-quality systematic reviews (Wodak & Cooney 2004; Gibson et al 2001) to support the effectiveness of NSPs in reducing HIV infection among IDUs.

However, findings from two other systematic reviews (Tilson et al 2006; Kall et al 2007), including one good quality review, suggest that the evidence may be less convincing.

- two good quality systematic reviews that access to sterile needles and syringes via pharmacies provides specific benefits in addition to those available through specialist NSPs (Wodak & Cooney 2004; Tilson et al 2006).

- one lower quality RCT to suggest that NSPs increase the likelihood that users will enter treatment.

- one moderate quality cohort study to suggest that the provision of NSP services may decrease attendance at emergency departments.

- one moderate quality cohort study and one poor quality cross-sectional study to suggest that IDUs who exclusively obtain their needles from NSPs are less likely to engage in high risk injection behaviours than those who obtain them via secondary distribution, eg via pharmacies. However, there is evidence from two poor quality cross-sectional studies to suggest that IDUs who obtain needles via secondary distribution engage in high risk injection behaviours less than IDU who do not obtain any needles, directly or indirectly, from NSPs.

- two studies that examined needle and syringe distribution delivered in parallel to, or alongside opioid substitution therapy. The first found that the combination of approaches resulted in a significant reduction in risky injecting behaviours, and the second found that it contributed substantially to the reduction of incidence of HIV and Hepatitis C.

- In terms of cost-effectiveness, two high quality reviews estimated that every HIV infection prevented through a needle exchange program saves over £200,000 (Wodak & Cooney 2004; Tilson et al 2006)

B. Opioid substitution therapy (OST)²⁶

Opioid substitution therapy is the process of replacing an illegal opioid, such as heroin, with a longer acting but less euphoric opioid, typically methadone or buprenorphine, taken under medical supervision. The principle behind OST is that it allows the user to achieve psycho-social and economic stability in their lives, while reducing the withdrawal symptoms and cravings that make it so difficult for them to maintain abstinence. Users do not experience a strong euphoric effect as a result of the treatment, so psychological need for the drug decreases. On average, 40-65% of patients maintain complete abstinence from illegal opioids while receiving OST, and 70-95% are able to reduce their use significantly. At the same time users reduced risk-taking (improper diluents, non-sterile injecting equipment), experienced improved mental health and relationships, and were less likely to be arrested or imprisoned for theft, dealing etc. It has also been shown that OST is associated with reduced transmission of blood borne viruses. A study found that approximately one third of those entering treatment services were abstinent 5 years later²⁷.

NICE recommends the use of OST in the treatment of opioid misuse, supervised for at least the first three months, alongside psychosocial support (NICE TA 114).

Treatment with OST tends to be long term, the average length of time under treatment being 4 years. The Home Secretary requested, in 2013, an analysis of the evidence regarding length of treatment, with a view to imposing a limit on length of treatment. This resulted in a report in June 2014, which advised against a blanket limit²⁸ (ACMD 2014). The reviewers found that continued OST resulted in long term stability in many drug users, maintaining abstinence from illicit drugs and reduction in morbidity and mortality. On the other hand they found strong

²⁶ Methadone and buprenorphine for the management of opioid dependence. Technology appraisal. Evidence review. NICE TA114. References given in brackets in this section may be found in this document.

²⁷ Gossop, M., Marsden, J., Stewart, D., et al. (2003) The National Treatment Outcome Research Study (NTORS): 4-5 year follow-up results. *Addiction*, 98, 291–303.

²⁸ Advisory Council on the Misuse of Drugs. Time limiting opioid substitution therapy. June 2014.

evidence to suggest that enforced detoxification from heroin or time limiting OST would lead to²⁹:

- increased rates of relapse. While illicit drug use reduces significantly during OST, it doubles on cessation, and less than 3% maintain abstinence at 12 months. This is the case even if the user wishes to reach abstinence.
- Increased acquisitive crime, drug dealing, and user contact with the criminal justice system. Two recent analyses found that the rise in heroin use accounted for 40% of the rise in acquisitive crime in England and Wales from 1991 to its peak. Similarly, the provision of OST is thought to be associated with 25-33% of the fall in some types of acquisitive crime.
- Increased spread of blood-borne viruses. There is strong evidence that OST can prevent the spread of HIV infection and hepatitis.
- Increased rate of overdose deaths. There is strong research evidence that OST is protective against heroin overdose and that while the risk of heroin overdose death is reduced greatly during OST, it doubles following the conclusion of OST detoxification programmes.
- Increase in medico-legal challenges, arising from avoidable deaths and other unintended consequences of stopping treatment.
- Increased rate of other addictions. In the patients that do achieve lasting (longer than six months) abstinence from opioids, over 40% become addicted to alcohol and/or benzodiazepines, and a small percentage become addicted to other drugs.

C. Opioid detoxification³⁰

Detoxification refers to the process by which the effects of opioid drugs are eliminated from dependent opioid users in a safe and effective manner, such that withdrawal symptoms are minimised. It is usually carried out using a substitute

²⁹ Mattick et al.: National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD): Report of Results and Recommendation. Cochrane collaboration. Republished 2014. References given in brackets in this section may be found in this document.

³⁰ Opioid detoxification. NICE guideline CG52. 2007. The evidence base is detailed in the methods section of the guideline.

drug, such as methadone, but may also involve simply reducing the dose of the illicit drug over time, often together with the prescription of adjunct medications to reduce withdrawal symptoms. Opioid detoxification takes place in a variety of settings, including the community, inpatient units, residential units and prisons, and may take from one to six months. There are rapid methods of detoxification available (over 7-21 days), using a drug called Naltrexone, but there is controversy over the safety of this method and it is not used routinely in the UK.

Around 30,000 detoxifications are currently carried out each year in the UK, and the majority are in the community.

Most heroin users presenting for treatment (up to 81% according to the NTA Annual User Satisfaction Survey) wish to become drug free³¹, so they frequently ask for detoxification. Abstinence, however, is often unrealistic due to factors that make abstinence unlikely to be possible for the individual at that time. These would include poly-substance use and social risk factors such as homelessness. The process of treatment planning is therefore often one of negotiation and education.

Most service users only start formal detoxification following a period of stabilisation on a substitute opioid (either methadone or buprenorphine). The stabilisation results in the cessation of illicit drug use, with the individual feeling comfortable on the dose of substitute opioids he or she is taking. This process can take months or even years to achieve and for many only happens after years of maintenance treatment.

The process of detoxification alone is not perceived as a solution for long-term abstinence, so should always be accompanied by psychosocial interventions, otherwise early relapse is likely. The research evidence for detoxification is therefore based around chemical detoxification in combination with one or more of these treatments.

³¹ Best, D., Day, E. & Morgan, B. (2006b) *Addiction Careers and the Natural History of Change*. London: NTA.

Hartz and colleagues³² examined the cost effectiveness of contingency management (CM) in a 180-day methadone detoxification study conducted in the US. People dependent on opioids (N=102) received either detoxification enhanced with contingency management or the same treatment without contingency management. All participants were stabilised to a daily dose of 80 mg of methadone for the first 4 months, followed by a 2-month taper. When methadone doses were fully stabilised, and before initiation of methadone tapering, those in the enhanced treatment were more likely to be drug-free than those in the control group. The incremental cost-effectiveness ratio (ICER) indicated that an additional 1% of participants were continuously substance-free during month 4 for every \$17.27 treatment expenditure increase. There was also evidence that the enhanced treatment group used fewer health services than the control group.

Most studies were of the effectiveness of CM in combination with detoxification, but one looked at family/couples therapy³³, and another at social networks interventions³⁴. Both studies found that participants who had the interventions were more likely to be abstinent than controls.

There have been some studies comparing inpatient or residential detoxification with community detoxification. However, these studies are often based on small sample sizes, have considerable methodological problems and have produced inconsistent results. Inpatient or residential detoxification requires significantly more resources than community detoxification, so it is important to assess whether treatment in such settings is more clinically and cost effective. If so, it is also important to understand if there are particular subgroups that are more likely to benefit from treatment in these settings

³² Hartz, D., Meek, P., Piotrowski, N. A., et al. (1999) A cost-effectiveness and cost-benefit analysis of contingency contracting-enhanced methadone detoxification treatment. *American Journal of Drug and Alcohol Abuse*, 25, 207–218.

³³ Yandoli, D., Eisler, I., Robbins, C., et al. (2002) A comparative study of family therapy in the treatment of opiate users in a London drug clinic. *Journal of Family Therapy*, 24, 402–422.

³⁴ Galanter, M., Dermatis, H., Glickman, L., et al. (2004) Network therapy: decreased secondary opioid use during buprenorphine maintenance. *Journal of Substance Abuse Treatment*, 26, 313–318.

D. Psychosocial interventions³⁵

Psychosocial interventions range from brief interventions and self-help, through community-based psychosocial programmes, to residential detoxification and rehabilitation.

Brief interventions typically consist of one or two 45 minute sessions. The approach is usually empathic and non-judgmental and can be done opportunistically with users who are not in formal drug treatment, as well as those who are. The main aim of the intervention is to enhance the possibility of change in terms of abstinence or the reduction of harmful behaviours associated with drug misuse. The principles of brief interventions include expressing empathy with the service user, not opposing resistance, and offering feedback with a focus on reducing ambivalence about drug misuse and possible treatment. A number of brief interventions are based on principles drawn from motivational interviewing.

A review of the literature on the benefit of brief interventions revealed that they work best for users who are not in formal treatment, particularly those using cannabis or stimulants, and to some extent those using opioids.

NICE conducted an extensive cost effectiveness review into brief interventions for cannabis use and found that brief interventions were more effective than self help leaflets alone, and that the more intensive the intervention, ie two sessions v one session, the more cost effective they were (Table 2). Results were similar for stimulant users. NICE guidance recommends that brief interventions, lasting 10-45 minutes, should be offered opportunistically to drug misusers, at needle exchange programmes, police stations, social services and so on.

Table 2 Effectiveness data utilised in the economic model for cannabis users

Data derived from the guideline meta-analysis		
A. Percentage of users abstinent at 3-month follow-up		
<i>Intervention</i>	<i>Mean</i>	<i>95% CI</i>

³⁵ Drug Misuse – psychosocial interventions. NICE guideline. CG51. 2007.

One-off brief intervention	16.67%	10.28% to 25.63%
Self-help booklet	5.43%	2.02% to 12.80%
RR	3.07	1.18 to 7.98 (fixed-effects model)
B. Percentage of users abstinent at 4-month follow-up		
<i>Intervention</i>	<i>Mean</i>	<i>95% CI</i>
Two sessions of brief intervention	19.21%	14.17% to 25.45%
Self-help booklet	5.56%	3.04% to 9.75%
RR	3.44	1.87 to 6.33 (fixed-effects model)

Source: NICE guideline CG52. Evidence base.

The incremental cost-effectiveness ratio (ICER) of a two-session brief intervention versus a one-off brief intervention was £4,365 per QALY gained. The ICER of a one-off brief intervention versus the provision of the self-help booklet was £3,059 per QALY gained. Both types of brief intervention were significantly more cost effective than the self-help booklet, and the two-session intervention was more cost effective than the one-off intervention, falling below the cost-effectiveness threshold of £20,000 per QALY as set by NICE.

Longer Psychosocial programmes in funded drug services are usually based on more than one model and may include cognitive-behavioural (for example, motivational interviewing and relapse prevention), humanistic and 12-step approaches.

The evidence base for the effectiveness of psychological interventions is extremely complex, as it encompasses several different treatments, in many different combinations, and for several different drugs. What is presented here is a sample of research evidence for the most common interventions for the most commonly used drugs used by those attending for treatment in Bromley.

The primary outcomes that are assessed in the review of evidence conducted by the expert panel at NICE were levels of drug use and abstinence. Both point abstinence (ie whether a user is abstinence at a particular point in time) and duration of abstinence were examined. Frequency of illicit drug use is also an

important measure because, although abstinence is the ideal goal, reducing drug misuse is often a more realistic way of reducing drug-related harm.

The main psychological interventions used to help drug users are:

Contingency management (CM), whereby users are given vouchers or clinic incentives (such as being allowed to take methadone home) for abstinence, as measured, usually, by drug testing.

A systematic review of 19 studies³⁶ with a total of 1,664 cocaine users, showed that contingency management (CM) - in combination with standard cognitive behavioral or other psychological interventions:

- increases cocaine abstinence
- improves treatment retention during and after group-based or individual psychological treatment
- is of benefit in trials of OST
- may act synergistically with OST.

In another review, seven RCTs were evaluated for the effectiveness of contingency management in achieving continuous abstinence in cocaine and heroin users over 3,6,9 and 12 weeks, and found that the average likelihood of abstinence at 12 weeks for those in contingency management was five times that in controls. The quality of evidence was good, and the strength high.

Olmstead and colleagues evaluated the cost effectiveness of a prize-based intervention (contingency management) as an addition to usual care for people who misuse cocaine. Participants randomised to the incentive group earned the chance to draw for prizes on submitting substance-negative samples; the number of draws earned increased with continued abstinence. The time frame of the study was 12 weeks. Participants assigned to prize-based contingency management (n = 209) had significantly better outcomes than participants assigned to usual care alone (n = 206), achieved significantly longer durations of continuous stimulant and alcohol abstinence (4.3 weeks versus 2.6) and submitted significantly more stimulant-negative urine samples.

³⁶ Efficacy of contingency management for cocaine dependence treatment: a review of the evidence. [Schierenberg A¹](#), [van Amsterdam J](#), [van den Brink W](#), [Goudriaan AE](#))

Sindelar and colleagues (2007) assessed the cost effectiveness of lower- versus higher-cost prize-based contingency management treatment for people who misuse cocaine, and found that the higher cost prize produced outcomes at a lower cost per unit compared with the lower cost prize.

The cost-effectiveness of contingency management in the UK was calculated by taking data from RCTs, which compared CM with standard care in cocaine users, and putting these into an economical model, based on the NHS. Following users at 3,6,9 and 12 weeks, and also 12 months, CM was found to be consistently more effective than standard care, achieving over four times the abstinence rates at 12 weeks, (23% v 5% respectively), and 50% higher abstinence rates at 12 months (50% v 35%).

NICE guidance recommends the use of contingency management for problem drug users.

Cognitive Behavioural therapy (CBT)³⁷

CBT for drug use is based on supporting users to reduce or abstain from use via a cognitive model of drug misuse. CBT is also used to treat co-morbid mental health issues, such as anxiety and depression. In comparisons of brief interventions with longer interventions for people who misuse cannabis or amphetamines who were seeking drug treatment, individual relapse-prevention CBT, lasting between four and nine sessions, was associated with greater levels of abstinence and reductions in drug use for people who misuse cannabis, but no additional benefit for amphetamine misuse. Further research is required to assess the efficacy of brief interventions in comparison with individual and group relapse-prevention CBT, other interventions, and with people who misuse drugs other than cannabis.

NICE recommends the use of CBT for co-morbid depression and anxiety, and selectively for other clients.

Psychodynamic therapy

This kind of therapy was ineffective during treatment and at follow-up in significantly reducing cocaine use.

³⁷ Drug Misuse – psychosocial interventions. NICE guideline. CG51. 2007.

NICE does not recommend routine use of this kind of therapy, but that it should be considered as an option for certain clients.

Couples and family-based interventions

In these interventions, relationships are supported, and partners and family members are supported to support the user. Cost effectiveness of behavioural couples therapy was assessed in comparison with individual-based treatment in a US study (Fals-Stewart *et al.*, 1997). Males who misused substances were randomly assigned to one of the two treatments. Behavioural couples therapy was more cost effective than individual-based treatment; for each US\$100 spent, behavioural couples therapy produced greater improvements on several indicators of treatment outcome (for example, days of abstinence and legal problems). Also, the groups differed significantly at follow-up in costs related to hospitalisation, criminal justice and total social costs, always in favour of behavioural couples therapy. Total cost savings were nearly US\$5,000 per person receiving behavioural couples therapy compared with those receiving individual treatment.

Individuals with cocaine and/or opioid dependence and who are in close contact with a non-drug-misusing partner benefit from behavioural couples therapy both during treatment and at follow-up. NICE recommends that these users and their partners should be offered this kind of support.

12-step programmes

In addition to formal, structured treatment, there is a long tradition in North America and Europe of community-based, peer-led self-help groups for people with substance misuse problems. The most well-established of these deliver the principles of 12-steps, which has its origins in Alcoholics Anonymous (AA). Organisations especially relevant to people who misuse drugs are Narcotics Anonymous (NA) and Cocaine Anonymous (CA). AA was founded in the US in 1935 and in the UK in 1947. NA was founded in the US in 1953, and the first UK meeting was held in 1980. While it is clear that many people benefit from these programmes, if they attend voluntarily, coercive attendance does not appear to be effective.

NICE recommends that clients should be given information on Self help groups, and supported to attend.

E. Residential programmes³⁸

Residential rehabilitation programmes usually include detoxification and have abstinence as their goal. They respond to the complex problems related to drug misuse by offering respite and highly structured and intensive programmes of support for residents to make fundamental changes to their lifestyles. Treatments can last from anything between 2–12 months.

Because residential treatment is so much more expensive than treatment in the community, it is legitimate to question its cost-effectiveness. There have been some studies comparing residential treatment with community-based treatment, but these studies are often based on small sample sizes, are of poor methodological quality and have produced inconsistent results.

There are several reasons why it has been difficult to evaluate residential services³⁹:

1. The aims and duration of residential and community treatments for drug misuse are different. While the ultimate aim of both residential and community drug services is the same, sustained abstinence, many community programmes start by stabilising an individual's drug use, usually through methadone maintenance prescribing and basic education about harm reduction.

2. The interventions provided by community and residential programmes are different. Residential programmes provide a highly structured programme of intensive psychosocial support over a clearly defined period of time. Community services provide different types of interventions, at different intensities and for different durations.

3. The characteristics of clients entering community services are often quite different than those entering residential services. NTORS found that clients

³⁸ Drug Misuse – psychosocial interventions. NICE guideline. CG51. 2007.

³⁹ Residential detoxification and rehabilitation services for drug users: A review. Effective interventions unit. Scotland. 2004. <http://www.scotland.gov.uk/Publications/2004/11/20231/46404>

entering residential services in England were older, had a longer history of drug use, were more likely to take stimulants and be heavy drinkers, and were more likely to be involved in crime.

In order to truly compare the effectiveness of community and residential services, individuals would need to be randomly allocated to both treatment modalities. It is questionable whether such a random allocation would be possible, or ethical.

What is known about residential programmes is:

- Completion rates are very high - around 75-80% - considerably higher than those for community detoxification programmes (20-53%).
- Detoxification programmes result in better long-term outcomes if they are followed up by some form of structured aftercare.
- The four main factors that impact on and influence the effectiveness of residential rehabilitation programmes are: time in treatment, retention, client characteristics and provision of aftercare.
- Residential rehabilitation programmes of at least three months duration are more effective than shorter programmes. Longer programmes may be appropriate for those with more severe problems.
- Residential rehabilitation programmes have high drop-out rates. Studies commonly show that about one-quarter of clients will leave within two weeks of entry.

NICE recommends that clients with significant social, mental or physical problems should be considered for residential rehabilitation.

Overall cost effectiveness of treatment.

Needle and syringe programmes, opioid substitution therapy, contingency management and psychological support have all been shown to be cost-effective (see relevant sections). Some of these have involved building economic models in which data from trials, or groups of trials, are applied in order to estimate costs and gains of treatment. For example, a cost-effectiveness analysis of treating Class A drug users in England and Wales⁴⁰ showed costs to the criminal justice system, depending on whether users are in treatment or not:

⁴⁰ Gossop, M., Marsden, J., Stewart, D., et al. (2000b) Reductions in acquisitive crime and drug use after treatment of addiction problems: 1-year follow up outcomes. *Drug and Alcohol Dependence*, 58, 165–172.

A. Drug users not in treatment

Criminal justice system cost£7,037 (£5,864–£10,556)

Victim costs of crime£30,827 (£25,691–£46,242)

TOTAL£37,864 (£31,555–£56,798)

B. Drug users in treatment for less than a year

Criminal justice system cost£8,397 (£6,997–£12,582)

Victim costs of crime £8,893 (£7,417–£13,357)

Total£17,290 (£14,414–£25,939)

(costs in brackets refer to lowest and highest estimates)

Implementing the evidence

The National Treatment Agency's treatment effectiveness strategy was launched in June 2005⁴¹. It incorporates mechanisms and initiatives to improve the effectiveness of drug treatment, in line with the Government's drug strategy objectives. The strategy identifies treatment engagement and delivery as areas where the quality of interventions could be improved.

ITEP (International Treatment Effectiveness Project) is proposed as one mechanism by which treatment quality may be both improved and measured. The project is a collaboration between the NTA, The Institute of Behavioural Research at the Texas Christian University (IBR at TCU) and a series of service providers in north-west England. ITEP builds on an internationally evaluated model of service improvement and adapts the model for use in England.

Drug service staff are trained to use ITEP, which is a mapping tool consisting of a number of elements – assessment of the client, selection and delivery of interventions, and evaluation of outcome.

Treatment services in Bromley

Treatment services are delivered mainly by the Bromley Drug and Alcohol Service (BDAS), augmented by shared care with GPs and a service level agreement with

⁴¹ NTA. Routes to recovery Part 2. The ITEP manual, delivering psychosocial interventions.

14 pharmacies who provide sterile injecting equipment and education.

Brief interventions

The first contact that drug users have with the service in Bromley consists of the elements of brief interventions that have been described in the literature. A triage assessment at BDAS is around 45 minutes, and consists of an assessment of drug usage, education and, if appropriate, blood testing. For some clients this is enough. Clients seen at the police station or in mental health services receive similar input. In addition, all clients attending the needle exchange service at BDAS have brief interventions, including the offer of Hep B and C testing, Hep B vaccination and HIV testing.

Longer psychological interventions

BDAS use a service model based on Foundations of Recovery (FoR), which has a 3 stepped approach, Change (eight sessions) (FoC), Growth 16 sessions (FoG) and Life 16 sessions (FoL). These are based on an integrative model but largely founded on CBT and motivational interviewing.

At triage, a comprehensive assessment is completed, using clinical tools such as Audit C, Clinical opiate withdrawal scales, urine screens, and ITEP-type mapping tools. Clients leave with a recovery plan and also an appointment to commence treatment within 3 working days.

BDAS provide both non-opiate and opiate pathways, health and wellbeing clinics, over the counter/prescribed medication and family and carer support services

Other, non-BDAS support, is available on the premises, such as SMART Recovery and a range of 12-step groups.

Who attends drug treatment services in Bromley?

While the numbers of people presenting at drug treatment services in Bromley has been falling in recent years, the proportion of these going on to be in effective treatment (in treatment for three months) has been rising, from 66% in 2006 to 89% in 2013 (Fig 14). The numbers of clients who successfully complete treatment (complete programme and are now drug free, or occasional non-opioid/non-crack

use) have also been rising, from 5% in 2006, to 19% in 2013 Fig 15). These data indicate that services have become more effective, both in engaging the clients who present, and treating them successfully. While the proportion in effective treatment in Bromley is a little lower than for England, successful completion rates are higher, suggesting that Bromley services are working effectively at the triage stage.

Figure 14

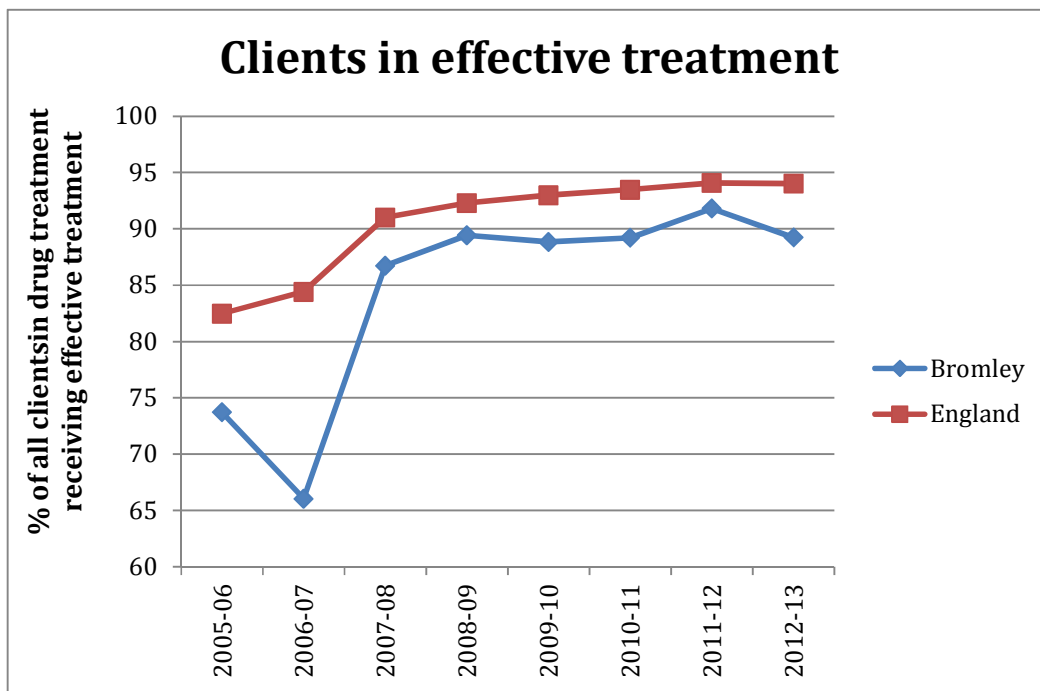


Figure 15



Fig 16, below, shows that relatively more young people successfully complete treatment than in the older age groups.

Figure 16

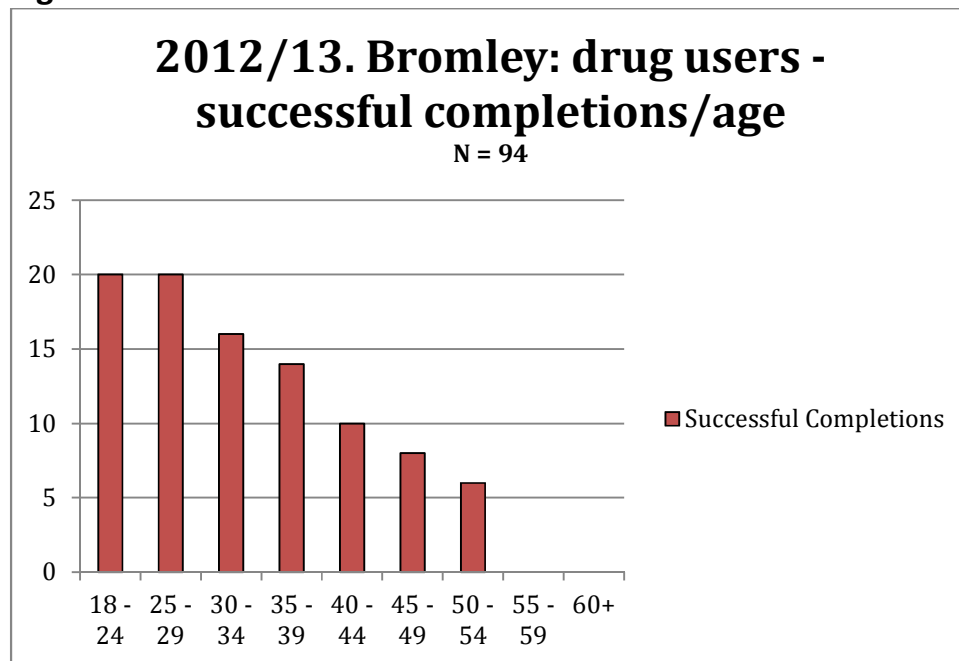
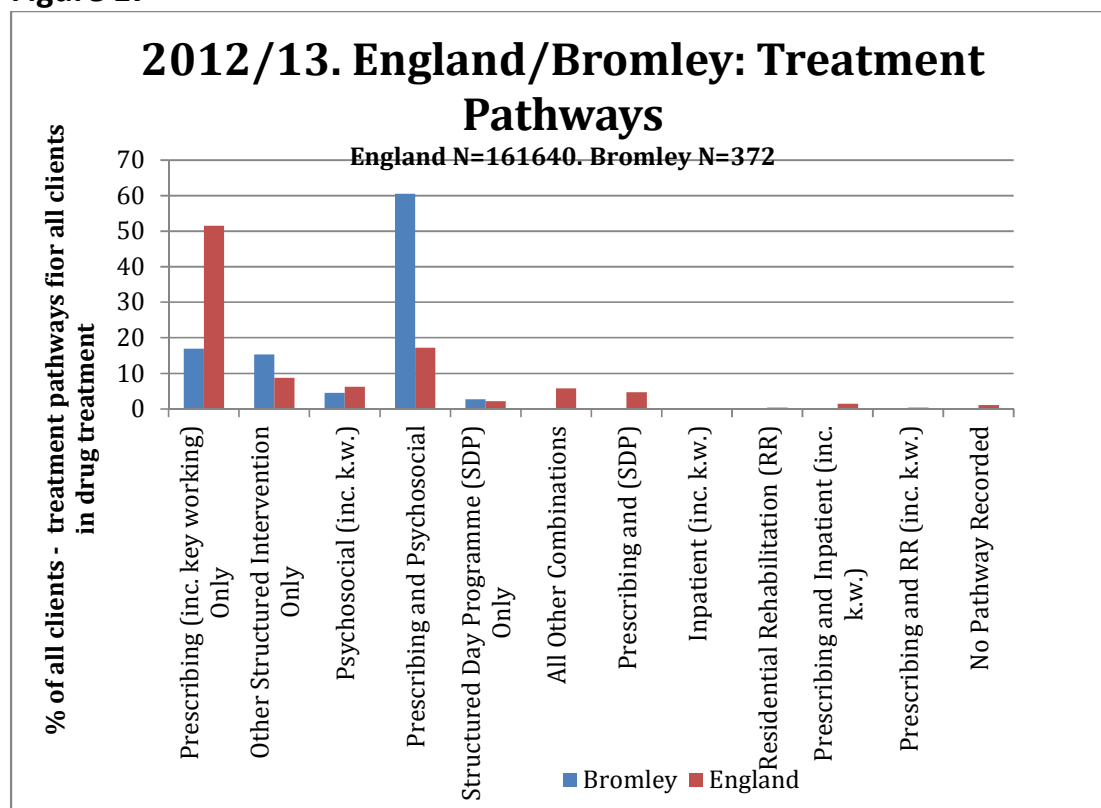


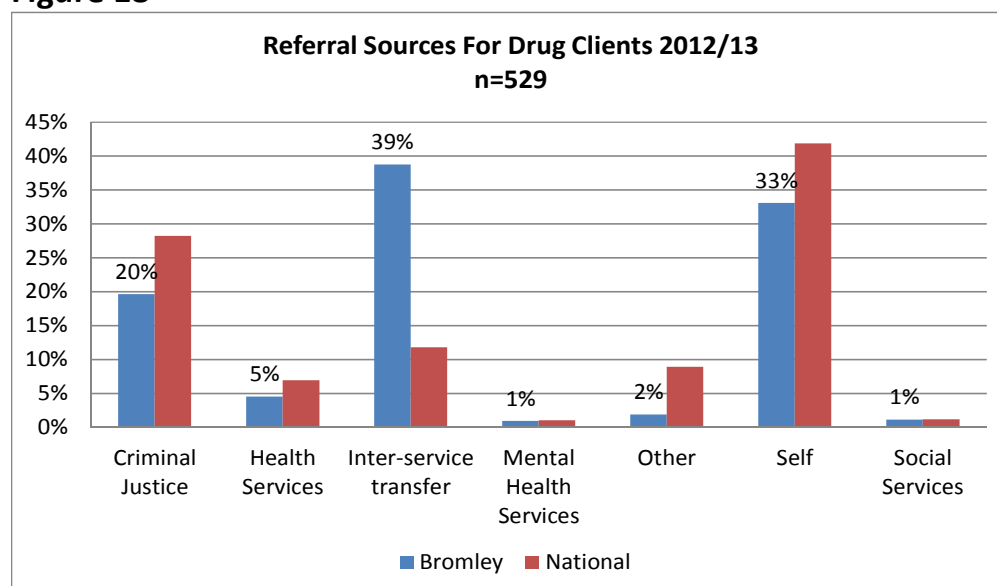
Fig 17 shows the numbers of people in Bromley and England receiving treatment via different available pathways. What is notable is that clients are more likely to receive psychological interventions in conjunction with substitute prescribing than in England as a whole. Bromley practice is in line with what is known about effectiveness, in that prescribing-only is much less effective in achieving sustained abstinence than when combined with psychological support.

Figure 17



In 2012-13, there were 529 treatment episodes in Bromley. The number of treatment episodes is usually slightly higher than the number of people receiving treatment, as a few people may have a break in treatment, or complete and then relapse, generating a second treatment episode. Substance misuse services treat users from a variety of referral sources, including the criminal justice system, GPs, A&E, schools and self-referrals. Referrals in Bromley from the criminal justice system (police, prison, probation) and self-referrals form a lower proportion of the total referrals than nationally (Fig 18). The demographic characteristics of people in treatment are covered earlier in the report.

Figure 18



Source: National Drug Treatment and Monitoring Service (NDTMS)

In recent years there has been a small reduction in the number of people in treatment, a fall from 555 people in treatment in 2011-12, to 520 in 2012-13. This reflects the national downward trend. There has been an overall increase in the proportion of opiate users successfully completing treatment (the definition of this is free of drug(s) of dependence who do not then re-present to treatment again within 6 months). See Table 3.

Table 3: Substance Misuse Related PHOF Indicators: proportion of users successfully completing treatment 2010-12

Indicator	Sex	Age	Time Period	Bromley	London	England
Successful completion of drug treatment - opiate users	Persons	18-75 yrs	2010	5.90	8.27	6.64
Successful completion of drug treatment - opiate users	Persons	18-75 yrs	2011	7.04	9.91	8.62
Successful completion of drug treatment - opiate users	Persons	18-75 yrs	2012	9.55	9.57	8.24
Successful completion of drug treatment - non-opiate users	Persons	18-75 yrs	2010	43.72	34.48	37.50
Successful completion of drug treatment - non-opiate users	Persons	18-75 yrs	2011	50.67	36.15	39.50
Successful completion of drug treatment - non-opiate users	Persons	18-75 yrs	2012	35.83	34.72	40.20

Source: Public Health Outcomes Framework <http://www.phoutcomes.info/>

However, there has been a reduction in the number of non-opiate users successfully completing treatment. Of the individuals completing their drug treatment 93% of individuals have no housing issues and 38% are in employment.

To continue to improve the number of individuals who complete treatment successfully the services are working to:

- identify why users are leaving treatment,
- managing users' anxiety about stopping substitute prescribing,
- further improving the treatment pathway and care coordination,
- increasing the number of satellite provision sessions,
- providing opportunities for non-opiate users to receive treatment separately from opiate users
- increasing the numbers accessing the service by producing information on services targeted to various locations such as A&E and GP surgeries.

APPENDIX 1: DEFINITIONS

Numbers in treatment (all clients): The client receives treatment in the relevant year and the client is over 18 by the age definition used throughout (see 'age').

Numbers in treatment (new presentations): The client has a new treatment journey starting in the relevant year and they are over 18 at the time of presentation to treatment. (Note that this does not always mean that the client is presenting to treatment for the first time *ever*, merely that they have commenced a new journey.)

Successful completions: The client exited the treatment system in a planned way at the end of their latest treatment journey in the relevant year and they were over 18 by the age definition used throughout (see 'age'). A successful completion is identified by the presence of the codes 'treatment completed drug free' and 'treatment completed – occasional user (not heroin or crack)' at this point.

Effective treatment: A client is deemed to be in effective treatment if they have been retained in treatment for 12 weeks and/or they successfully completed treatment within their latest treatment journey in the relevant year. The client must be over 18 by the age definition used throughout (see 'age').

Waiting times: A wait is defined as the time between the date the client was referred to receive a specified modality and the date of the first appointment they were offered to commence treatment. In each year, waiting times are reported only for the first modality received by the client in their latest treatment journey, where the modality commences in the year and the client was over 18 at the time of presentation.

Pathways: A pathway represents the combination of adult modalities received by a client as part of their latest treatment journey in the relevant year. A modality is counted towards a pathway if a modality start date is present. All modalities received by the person in the whole duration of the journey are included in the pathway, which may include modalities received outside of the stated year. If the modality is reported as 'other structured intervention' then this is labelled as keyworking, unless it is the only modality. Modalities specified as relating to alcohol and interventions for young people are not counted as part of pathways. The client must be over 18 by the age definition used throughout (see 'age').

Time in treatment: This is defined as the time from the earliest triage to the latest discharge in the client's latest treatment journey in the relevant year. If the client is still in treatment at the end of the relevant year, time in treatment is calculated from the earliest triage to the last date of that year. The client must be over 18 by the age definition used throughout (see 'age'). The data is reported in whole years, e.g. '1-2 years' means the client has been in treatment 'at least one year and less than two years'.

Age: A client's age is defined as their age at their first point of contact with treatment in the year within their latest treatment journey. This means that for new presentations (see 'Numbers in treatment – new presentations' for definition) age at the time of presentation is used, and for clients carried over from the previous year age at the beginning of the financial year is used. This age definition is used throughout the data on ViewIt.

Ethnicity: Ethnicity as defined by the client at their initial presentation to treatment is used. If there is contradictory information regarding ethnicity when the client presents to treatment then the client is reported under 'missing/unknown'. Standard level 1 classifications from the Office for National Statistics are used (see here).

Substances: Clients are initially grouped by substance on whether they cite problematic use of opiates and/or crack cocaine at any point in their latest treatment journey in the relevant year. If they cite both substances they are assigned to the 'opiates & crack' category and if they cite one of these they are classified accordingly ('opiates only' or 'crack only'). For clients who do not use opiates or crack cocaine, the primary drug at the start of the client's latest treatment journey in the year is used, and these cases are grouped into primary powder cocaine users, cannabis users and other users. Where the client's primary substance could not be established (either due to inconsistency of reporting or reporting as 'misuse free') the drug group is reported as 'unknown'.

Quality-adjusted life year (QALYS)

A measure of the state of health of a person or group in which the benefits, in terms of length of life, are adjusted to reflect the quality of life. One QALY is equal to 1 year of life in perfect health. QALYs are calculated by estimating the years of life remaining for a patient following a particular treatment or intervention and weighting each year with a quality of life score (on a zero to 1 scale). It is often measured in terms of the person's ability to perform the activities of daily life, freedom from pain and mental disturbance.)