Addiction careers and the natural history of change

David Best, Ed Day and Bill Morgan

July 2006 > > Research briefing: 20
Addiction careers and the natural history of change

Introduction

A fundamental challenge to drug treatment systems is to offer enduring and sustainable resolutions to addictive problems. These should offer the hope – to clients, families and communities – that drug dependence does not inevitably lead to people dying as drug addicts. The presumption that drug dependence is irreversible has grown in the addictions field and is the natural conclusion of characterising drug dependence as a chronic relapsing condition (O’Brien & McLellan, 1996). This position is best summed up by Robert DuPont, the former director of the US National Institute of Drug Abuse, in his assertion that, “Addiction is not self-curing. Left alone, addiction only gets worse, leading to total degradation, to prison, and ultimately to death.” (DuPont, 1993, xi-xii).

This briefing discusses the evidence supporting the theory that most drug misusers will “mature out” of their drug use – albeit after many years in some cases – while recognising there will be a number of problem users who, from choice or circumstance, will never come to the end of their “addiction careers”, which we define as the period in which substance use causes problems for the user, or those they are in contact with. In other words, an addiction career is the phase (or phases) of a substance using career in which problems accrue. This covers the full range of users, from those who have no problems to those who have problems throughout the time they use drugs (primarily heroin or cocaine). We will suggest possible approaches to estimating what proportion of those who do become problem drug misusers will emerge from this state, under what conditions and after what time period. It is important to recognise that these estimates are often built on a limited knowledge base.

Another key issue is what drug treatment systems can do to ensure that the completion of an addiction career is made as safe and effective as possible across the treatment journey (Audit Commission, 2004). The aim is for treatment systems to be targeting the maintenance and abstinence needs of problem users, and to ensure that treatments are available for the stages of each user’s addiction career. While the NTA reported that 164,000 problem drug users had contact with treatment services in 2003/04, only around 10,000 accessed residential rehabilitation and inpatient detoxification services in England annually (Best et al, 2005). Many drug misusers detoxify without involving drug treatment services and an interesting question is whether services can do anything to sustain the durability of these endeavours? Or are drug users’ attempts to become drug-free without professional support at best misguided, and at worst, dangerous and self-defeating?

Early research assessments of recovery from drug addiction were more optimistic than current viewpoints. Charles Winick (1962) advanced a “maturing out” hypothesis, suggesting that addiction might be a form of self-limiting phenomenon with most addicts ending problematic use by the time they reached their thirties. Other authors have disputed this idea, suggesting that controlled use, imprisonment and death may account for the absence of these individuals from official records (Maddux and Desmond, 1981). However, more recent work (Cunningham, 1999) argues that recovery from heroin use is the norm, with only ten per cent of those who had ever tried heroin using it in the last year.

One hit and you’re hooked?

National survey evidence

Anthony, Warner and Kessler (1994) conducted a general US population survey of 8,098 individuals aged 15–54, to find rates of lifetime use and lifetime dependence on five substances (Table 1).

They found no substances with a “risk rate” of more than one in three, with at least two-thirds of all substance users not progressing to dependence and less than 25 per cent of heroin users becoming dependent, with tobacco having the highest transition rate from lifetime use to lifetime dependence. This is important because tobacco is also the drug for which there is the best evidence for natural recovery (stopping without treatment).

A number of studies (Marlatt, Curry & Gordon, 1988; Fiore et al, 1990; Hughes et al, 1996) have found that natural recovery is the most common method for stopping smoking.

Evidence from household surveys paints a similar picture. The 1999 US National Household Survey of Drug Abuse found that of the three million individuals who had ever used heroin, only 206,000 had used it in the last month, suggesting that 93 per

<table>
<thead>
<tr>
<th>Substance</th>
<th>Lifetime use</th>
<th>Lifetime dependence</th>
<th>Capture rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>75.6%</td>
<td>24.1%</td>
<td>31.9%</td>
</tr>
<tr>
<td>Heroin</td>
<td>1.5%</td>
<td>0.4%</td>
<td>23.9%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>16.2%</td>
<td>2.7%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>91.5%</td>
<td>14.1%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Cannabis</td>
<td>48.3%</td>
<td>4.2%</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

Table 1: Rates of uptake and subsequent dependence (Anthony, Warner & Kessler, 1994)

1 “Capture rate” is the proportion of those who have ever used who have gone on to become dependent

1 In this briefing, we define maintenance as prescribing treatment consisting of opioid substitution, for example methadone or buprenorphine
cent of “ever-users” had become abstinent or were only using occasionally. Similarly, Kaya et al (2004), looking at data from the 1998 Australian National Drug Strategy Household Survey, found that 60 per cent of those who had ever used heroin started and stopped in the same year, with many only trying it once and only one in four having a career length of three years or more. Therefore, we can be confident that most of those who ever use opiates will not become addicted, so the question shifts to those who do pass that initial dependence threshold.

Hooked for life?
The more challenging assertion is that drug addiction is a lifelong illness and that, once this threshold has been reached, there is no turning back. It has been argued that drug addiction can be compared to adult-onset diabetes, hypertension, and asthma, with O’Brien & McLellan (1996) arguing that “the only realistic expectation for the treatment of addiction is patient improvement rather than cure” (O’Brien & McLellan, 1996, p237). The authors go on to argue that in abstinence studies, only 30–50 per cent of patients are able to remain completely abstinent throughout the first year after treatment, although an additional 15–30 per cent have not resumed compulsive use (Gerstein et al, 1979, 1990; Miller & Hester, 1985; Armor, Polich & Stambul, 1976). In the sections below, we challenge this model by citing studies of natural recovery, then examine the treatment literature for evidence of prolonged abstinence that occurs among dependent populations who access formal drug treatment.

Natural recovery
Stall & Biernacki (1986) challenged the view of dependence as a permanent state, arguing instead that it should be viewed as a “temporary phase in the life course” (1986, p19). They further argued that if support for the disease model of addiction were eroded, the numbers who recovered without treatment would increase, as individuals would be encouraged to maintain belief in their own ability to overcome addiction. In a prospective study of relapse to drinking, Miller et al (1996) found that disease beliefs about alcoholism were consistently associated with a higher risk of relapse at all follow-up points. Miller (1998) also argued that change can occur without treatment and that the stages and processes in this unaided or “natural” recovery seem to be similar to those in the change that takes place with professional treatment (Prochaska et al, 1992).

Granfield and Cloud (1996) provided further evidence of natural recovery in their study of 46 “middle-class” former alcohol and substance misusers, all of whom reported effective drug cessation without access to treatment. It is hard to estimate the size of such a natural recovery population, but the authors claimed it may well be larger than the population in treatment. Similarly, McIntosh & McKeganey (2000), in their study of recovering addicts recruited in Scotland, argued that the stereotype of drug addiction as “a one-way road leading inevitably to destitution and ultimately to death” (p1501) is very wide of the mark and that many addicts do indeed recover. Granfield & Cloud (1996) found that central to their participants’ ability to recover from dependence was their refusal to adopt an addict identity. They went on to discuss the role of personal and social resources in insulating individuals from the addict subculture, protecting them from immersion in it and allowing them to retain their pre-addict identities and relationships. Therefore, individuals who have skills and abilities – as well as those who can rely on social networks – have greater likelihoods of achieving, and then of sustaining abstinence, than individuals with limited personal and social skills, or those with no family or friendship support networks to fall back on.

For those who stop misusing drugs successfully, ordinary physical maturation processes, combined with reduced pleasure from the drug, shift the cost-benefit payoff away from drug using and its associated lifestyle (McIntosh & McKeganey, 2001). A similar phenomenon of maturing out is observed with criminal behaviour and Shover (1987) attempted to explain this in terms of a dynamic mechanism, in which a rational decision-making process underpins the shift in behaviour associated with ageing. Here, individuals change their social networks and their beliefs about the benefits of drug use and also the potential costs of prison, injecting and health consequences. As a result, the hedonistic motives to use are reduced over time, coupled with a reduction in capacity to sustain drug-using lifestyles and increased concerns about physical wellbeing and safety.

In their review of the literature on natural recovery, Sobell, Ellingstad & Sobell (2000) discussed two forms of natural recovery. The first relates to young people who mature out of substance use, generally as a consequence of the onset of adult and family responsibilities, and do so without recourse to any formal interventions. The second is “late-life recovery”, where those with a later onset of substance use may be more likely to have less severe problems, which are more likely to be resolved through the medium of natural recovery. In other words, they identified two mechanisms both relating to growing older, with one resulting from an interaction between age and severity effects.

Treatment evidence
The argument for recovery in treatment is based upon the large scale US and UK drug treatment outcome studies, although it is important to acknowledge that abstinence at any outcome measurement point is not definitive proof of a drug career having ended. In the US DATOS study, using strict criteria for recovery (no use of opioids or cocaine and no criminality), 28 per cent of

Addiction careers and the natural history of change
Addiction careers and the natural history of change

the intake sample were defined as “recovered” five years after the start of the index treatment. This is broadly consistent with the NTORS community sample in which 25.7 per cent of methadone patients had been abstinent from all target drugs for at least 90 days at the five-year follow-up interview. Comparatively, the figures after one and two years had been 14.1 per cent and 24.3 per cent respectively.

The abstinence rates among residential patients were higher in NTORS, with 38 per cent abstinent from all drugs at five years, compared to 33.1 per cent at one year and 35.9 per cent at two years. In the DARP study (the forerunner to DATOS), just under two-thirds of patients were not using opioids at all 12 years after the start of the study, and only one-quarter were described as “actively addicted”, with roughly the same rates of complete abstinence at 12 years reported by each of the other treatment modalities examined (therapeutic communities, detoxification services and drug-free treatments). Intriguingly, 64 per cent of the group who had attended only for intake but had never engaged with services were also drug-free at the 12-year outcome study. It is also important to note that, while much of the evidence reported here is based on studies of heroin users, most of the clients in the outcome studies were polydrug users and more than half of those in the US outcome studies were primarily cocaine users.

In other words, by combining UK and US evidence it may be reasonable to expect a career effect in which 10–15 per cent of treatment seekers achieve abstinence at one year, more than one-quarter by five years and around two-thirds by twelve years after initiating treatment. However, this does not tell us how long individuals typically use for before achieving abstinence. The point of treatment entry is not the start of a heroin using career – in NTORS, the methadone maintenance sample had been using for an average of 9.2 years before the index treatment (Gossop et al., 1997) and in DATOS, across all treatments, there was a gap of around 11 years between initiation and treatment entry for the studied treatment episode (Anglin, Hser and Grella, 1997). Therefore, we can infer that 66 per cent of treatment seekers will be abstinent approximately 20 years after starting using heroin.

Therefore, with both the US and UK treatment samples reporting an average onset age for heroin of around 20 years of age, around three-quarters of those whose heroin problems become sufficiently severe to access treatment will have completed their heroin using careers by around the age of 40. Further evidence from the US Drug Abuse Reduction Program (DARP) study (Joe, Chastain and Simpson, 1990) would indicate that, within this overall career, there is an intensive phase of 9.9 years, representing the time from first to last daily opioid use.

A key underlying assumption is that someone who never enters treatment is likely to have a lower severity of problem than someone who does. This is an argument that Robins (1993) has advanced in relation to the Vietnam heroin-using cohort – US service veterans who reported dependence while in Vietnam, but reported no problematic use on returning to the US (indeed some reported that they were able to use occasionally without problems). He added that those who are still using many years after the initiation of treatment are least likely to ever achieve abstinence. Indeed, Robins has argued that “heroin addicts are not doomed for life, and should be helped to remain in or re-enter conventional society”, and that, “drug users who appear for treatment have special problems that will not be solved just by getting them off drugs” (Robins, 1993, p1051).

In terms of the length of non-treatment careers, we have two sources of evidence. Waldorf & Biernacki (1979) estimated the career length of a non-treatment seeking group of heroin addicts to be 5.7 years, while Robins estimated a career length of around nine years. There are two possible interpretations here:

1. The most likely conclusion is that lengths of careers are linked to both the severity of problems and alternative personal and social resources. Drug users with the longest careers are those with the most severe problems and the lowest levels of support or alternatives. Therefore, longer addiction careers in treated populations reflect the levels of disability among those who access drug treatment services.

2. Alternatively, entering treatment may in itself elongate the addiction career. However, this may happen because those with the most severe problems need longer periods of time in treatment as a safety mechanism against acute drug-related harms, such as overdose and viral infections.

These studies also occurred in the US, where access to treatment is much more restricted than in the UK, and treatment much more polarised between maintenance and abstinence. In the UK, a far more pluralistic approach to treatment exists, with greater recognition that maintenance will be of variable lengths, according to individual client needs, and that this is not incompatible with a switch to an abstinence focus when an individual is motivated and prepared.

Nonetheless, maintenance treatment may elongate an individual’s drug career and may reduce the likelihood of natural recovery – particularly if substitute medication is prescribed without the allied psychosocial interventions necessary to promote client change.

There is little evidence, because of the complexity of the causal questions involved and because of the need for longitudinal data, on whether treatment reduces the length of addiction careers. While there is very good evidence that entering treatment is associated with positive treatment gains, from the studies cited above and from a range of other outcome studies, it is not possible to conclude that “treatment as normal” has a significant impact on the longevity of addiction. Indeed, Hser et al (2001) has argued that after 20 years of stable maintenance, complete abstinence did not occur and heroin use only stops when the
person dies. The argument here is that there may be a window of opportunity for change and that indefinite maintenance may remove the chance of finding that window.

**Implications for treatment and conclusions**

The evidence presented from major outcome studies of drug treatment services in the UK and US do not support the assumption that the norm is for drug dependence, particularly heroin dependence, to be irreversible. The majority of drug users will overcome their dependence eventually and, even among those with problems severe enough to enter treatment services, around two-thirds are likely to achieve stable and enduring abstinence by around twenty years after initiation. For the vast majority of heroin users whose use does not lead to treatment seeking, their careers are likely to be markedly shorter.

For treatment services, the first implication is that those who voluntarily enter services are also those who have the most severe and entrenched problems, not only in relation to their heroin use, but also, as Robins (1993) and Carnwath and Smith (2002) have argued, in relation to a far wider array of life problems. Yet there will also be variability within the treatment seeking group and, as Simpson and colleagues (Simpson et al., 1990) have reported, the strongest client-focused predictors of treatment success are problem severity and motivation. Therefore, while the average length of the opiate-using career may be around 20 years, for those with lower severity and higher motivation, much shorter drug using careers are likely.

Some of these decisions may have the quality of a cost-benefit decision for clients and treatment staff – attempting abstinence is risky in that, if timed incorrectly, it may precipitate dropout, relapse, and a return to a range of drug-using problems. In contrast, if maintenance is never challenged there may be no acute risks to the client, but there may also be an unsatisfactory bind and compromise that users may feel prevents them from getting on with their lives.

However, this relates to a range of factors that go beyond the quantity and frequency of drug use. Co-morbidities (including co-dependence on alcohol and a range of mental health problems), crime involvement, housing and family context, employment history and the underlying skills, as well as social supports that are not focused around substance use, will all be key predictors of the likely career length.

In the same way that services have learned that low-dose, short-term reduction programmes and one-off residential detoxification treatments do not work in isolation, so we now have another treatment lesson to learn. Addiction careers are not irreversible – they are slow and unpredictable in their reversibility, but the vast majority of those who become dependent will ultimately overcome that dependence and services must be configured in such a way that completing the treatment journey (Audit Commission, 2004) is the long-term objective.

There are lessons here for policymakers. The first is preventative – if individuals do reach the point of accessing treatment, the road will be longer and rockier, with a far greater burden for society and the community. Similarly, there are lessons from the natural recovery evidence. Stall & Biernacki (1986) argued that treatment efficacy could be improved by focusing on some of the processes that have underpinned natural recovery successes, such as losing the addict identity and ensuring that the addict identity does not become an “indelible part of the users’ personal identities” (p19) and can instead be a “temporary phase in the life course” (p19). This in turn can result in increased “pulls” towards conventional life. McIntosh & McKeeganey (2001) have argued for the centrality of (re-)entry into the job market and have also emphasised the need for workers to have training around identity formation and for social policies that increase the user’s stake in conventional society.

So what can we conclude from this assessment of addiction careers? The first conclusion is that we need better tracking of routes out of addiction and some indication of what types of treatment (and in what order) can facilitate this process. However, the ultimate conclusion is that workers, clients and families must re-learn to conceptualise addiction as a time-limited phenomenon with real hope of lasting recovery for all but a minority of the most entrenched and problematic individuals, whose problems often go beyond our normal understanding of substance use. Services must aim to have appropriate exit routes from treatment, but exit routes that are geared around sensitive and systematic mapping of career stages and personal resources of the client’s drug career, treatment career and needs.
Addiction careers and the natural history of change

References


Addiction careers and the natural history of change


Addiction careers and the natural history of change

Reader information

Document purpose
This briefing discusses the evidence supporting the theory that most drug misusers will grow out of their drug use. It suggests possible approaches to estimating what proportion of those who become problem drug misusers will emerge from this state, under what conditions and after what time period.

Title
Addiction careers and the natural history of change

Lead author
David Best, National Treatment Agency

Publication date
July 2006

Target audience
Primarily providers and commissioners of drug treatment services in England.

Circulation list
Managers and commissioners of treatment services
Co-ordinators and chairs of local partnerships (e.g. drug action teams and crime and disorder reduction partnerships),
Service user and carer groups.
Commissioners of pharmaceutical enhanced services local pharmaceutical committees.
Regional government department leads on drugs.
Central government department leads on drugs.

Description
The study reviews the evidence that addiction is a “chronic, relapsing condition” and concludes that there are grounds for assuming that addiction is, for many addicts, a time-limited “career”, and that recovery can be achieved both with and without the assistance of treatment services. This supports the notion of a linked treatment journey and the Treatment Effectiveness agenda.

Timing
Ongoing

Contact details
8th floor, Hercules House, Hercules Road, London SE1 7DU.
Tel 020 7261 8573
Fax 020 7261 8883
Email nta.enquiries@nta-nhs.org.uk
www.nta.nhs.uk

Gateway/ROCR approval
The NTA is a self-regulating agency in relation to Department of Health Gateway


The text in this document may be reproduced free of charge in any format or media without requiring specific permission. This is subject to the material not being used in a derogatory manner or in a misleading context. The source of the material must be acknowledged as the National Treatment Agency. The title of the document must be included when being reproduced as part of another publication or service.

Publications
All NTA publications can be downloaded from www.nta.nhs.uk. To order additional copies of this report, complete the online order form at www.nta.nhs.uk. Alternatively, email nta@prolog.uk.com or telephone 08701 555 455 and quote product code RB20

If you require this publication in an accessible format, please email nta.enquiries@nta-nhs.org.uk

National Treatment Agency for Substance Misuse
8th floor, Hercules House, Hercules Road, London SE1 7DU
Tel 020 7261 8573. Fax 020 7261 8883
Email: nta.enquiries@nta-nhs.org.uk Website: www.nta.nhs.uk