DRUG & ALCOHOL FINDINGS Matrix cell

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Drug Treatment Matrix cell E1: Local and national systems; Reducing harm

S Wake up call to tackle "sleeping giant" of hepatitis C (1993). It was in the early '90s when Roger Holmes and Dr Tom Waller alerted Britain to the (until 1989) invisible hepatitis C epidemic: "It may be wise to let sleeping dogs lie, but not sleeping giants," warned the authors. Though not letting the virus lie, Britain has yet to mount an offensive commensurate with the epidemic. For related discussion click here and scroll down to highlighted heading.

S Methadone clinic staff influenced to adopt a more pro-maintenance stance (1998). In Australia an official campaign and educational efforts shifted staff preferences from withdrawal and abstinence towards long-term treatment aimed at reducing harm. The campaign helped de-link disapproval of drug use from an abstinence-only orientation.

K Controlling hepatitis C requires methadone and needle exchange plus treatment of infection (2012). Simulation model highlights the need to increase the proportion of injectors concurrently engaged in adequate needle exchange and methadone services, and also to extend effective treatment of hepatitis C infection. UK predictions based on a synthesis of six studies which calculated that injectors who had consistently been in methadone maintenance treatment and had adequate access to fresh injecting equipment were only a fifth as likely to become infected as injectors whose service use fell short of these benchmarks. Similar message below from Scotland and the Netherlands. For discussions click here and/or here and scroll down to highlighted headings.

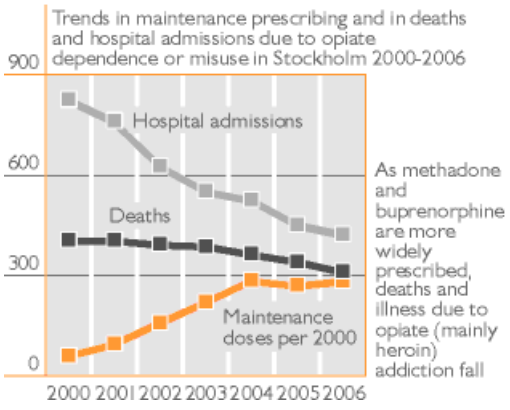
K New hepatitis C infections in Scotland halved as exchanges and methadone meet needs of higher proportions of injectors (2014). A combination of needle exchange, methadone maintenance and a shift away from injecting meant that between 2008 and 2012, 1000 fewer Scottish injectors had to face chronic infection with hepatitis C. Similar message above from the UK as a whole and below from the Netherlands. For related discussions click here and/or here and scroll down to highlighted headings.

K Combined high impact treatment/exchange reduces infection risk in Amsterdam (2007). Only injectors who benefited *both* from adequate dose methadone maintenance and high coverage needle exchange were less likely to become infected with HIV or hepatitis C. Similar message above from the UK as a whole and from Scotland. For related discussions click here and/or here and scroll down to highlighted headings.

K Build your mortality-reduction system on long-term opioid substitute prescribing (2015). Estimates that across the entire population of problem opiate users in England, between 2008 and 2011 addiction treatment (mainly substitute prescribing) reduced opioid-related overdose deaths from what would have been 6372 to 3731. From other UK (1 2 3) and international studies (cell C1) we know that prescribing needs to be long-term to maximally save lives.

K Low threshold methadone extends life expectancy in Barcelona (2005). Mainly due to fewer overdoses, on average 21 years were added to the lives of heroin users entering treatment when across the city methadone maintenance was made easier to enter and stay in, raising the issue of whether to extend access to programmes oriented to harm-reduction or reach fewer patients with more recovery-oriented services. For discussion click here and scroll down to highlighted heading.

K De-restricting opioid substitute prescribing in Sweden led to reductions in opiate-related deaths and illness (2010). Expanded access, advent of buprenorphine, and a stronger focus on retention, were among the changes followed by a reduction in opiate-related deaths, suggesting that the previously highly restricted access and more disciplinary approach to illegal drug use had cost lives ▶chart. For related discussion click here and scroll down to highlighted heading.



K Outlet diversification helped cut HIV risk in Vancouver (2010). Among the policy changes which seem to have led to a step down in risk behaviour and HIV incidence were decentralising and diversifying needle and syringe provision to more exchange sites and generic and peer-led services, and separating equipment supply from collection of used equipment. More in an Effectiveness Bank case study of Vancouver (turn to p. 3 of the PDF file, numbered p. 26) and a review of research on HIV and needle exchange in the city.

K Finland's national programme reverses HIV escalation (Finnish National Public Health Institute and Department of Infectious Disease Epidemiology and Control, 2008). Steeply rising HIV incidence in injectors reversed in Finland shortly after it launched a national health counselling and needle exchange programme. Emerging challenge was how to retain a harm-reduction focus and user-friendly ethos while extending access by integrating exchange into mainstream health services.

R Diversify injecting equipment outlets and combine with treatment and health care (2013). Extensive UK review updated in 2013 which underpinned the NICE guidance below. To control infection supports a combination of injecting equipment provision from outlets including mobile services and vending machines to attract different user groups, methadone maintenance, integrated health care, and promotion of treatment entry.

R Combine high-coverage needle exchange with opioid substitute prescribing to prevent spread of hepatitis C (2017). Amalgamated results from studies of injectors indicate that spread of hepatitis C has been prevented by programmes like methadone maintenance and (in Europe) high-coverage needle exchange. Used together by the same injector these services are yet more strongly associated with fewer infections. Based on analysis (2017) conducted for the Cochrane collaboration. Similar earlier analysis (2011) also found no evidence that other types of treatments, or programmes to encourage disinfection of used needles and syringes, had the same effects. For related discussions click here and/or here and scroll down to highlighted headings.

R WHO review finds needle and syringes needed but not enough to prevent HIV spread (World Health Organization, 2004). WHO-commissioned experts conclude needle and syringe provision is *necessary* but not *sufficient* to control HIV. Also needed are education, substitute prescribing and community development. Findings also in two journal articles (1 2).

G NICE says good quality addiction treatment incorporates harm reduction ([UK] National Institute for Health and Clinical

Excellence, 2012). According to the UK's official health intervention assessor, the markers of a good quality drug treatment service include offering testing and referral for treatment for hepatitis B, hepatitis C and HIV infections, vaccination against hepatitis B, advice about harm-reduction options, and continued treatment or support for at least six months after patients have become abstinent.

G UK harm reduction systems should deliver more equipment than injectors need ([UK] National Institute for Health and Clinical Excellence, 2014). UK's official health intervention assessor recommends that commissioners assess coverage and aim for every injector to have even more sterile injecting equipment than they need for every injection. Based on review above. NICE-endorsed checklist (2015) can be used to audit compliance with the guidance.

G Commissioning to prevent and treat blood-borne infections (Public Health England, 2015). Information and checklist of action-prompts for substance use service commissioners. Reflects the chapter on addressing health harms in overall commissioning advice (Public Health England, 2017).

G UN guide on planning, coordinating and managing HIV and hepatitis C programmes for injectors (United Nations Office on Drugs and Crime, 2017). Shows what a comprehensive national or regional programme would look like, from community empowerment, law reform and destigmatisation to specific services including needle exchange, substitute prescribing, treatment of infection, naloxone distribution, risk-reduction education, and addressing sexual transmission. For discussion click here and scroll down to highlighted heading.

G Seven key components of anti-disease strategy for injectors (European Centre for Disease Prevention and Control and European Monitoring Centre for Drugs and Drug Addiction, 2011). Identifies seven key intervention components which when combined generate maximal synergistic impact, including needle exchange, treatment of both addiction and infections, testing for infection, vaccination, and health promotion. For discussion click here and scroll down to highlighted heading.

G WHO "strongly recommends" needle exchange and maintenance prescribing to prevent HIV transmission (World Health Organization, 2014). Consolidates WHO guidance on HIV prevention, diagnosis, treatment and care for key populations including prisoners and people who inject drugs. Strongly advocates universal access of injectors to needle exchange and of dependent opioid users to indefinite, high-dose methadone and buprenorphine maintenance.

G Scottish guidance on running and commissioning needle exchanges (Scottish Government, 2010). Includes needs assessment, locations, opening hours, staff training, policies on providing injecting equipment, and integration with other services.

G UK government's advisers outline strategy to reduce opioid-related deaths ([UK] Advisory Council on the Misuse of Drugs, 2016). UK's official drugs policy advisory body stresses the need to maintain investment in harm-reduction oriented substitute prescribing and to assertively reach out to heroin users to engage them in treatment, but also to provide naloxone, heroin-assisted treatment, drug consumption clinics, and treatment for alcohol problems, and to improve access to medical, mental health and welfare services which could reduce vulnerability to drug-related death.

G Local area systems to curb drug-related deaths (Public Health England, 2014). Checklist for service commissioners/planners offering ideas for reducing deaths by (among other things) promoting consistent attention to the issue across local services and ensuring they collaborate to safely see patients through transitions between service types and treatment phases.

G Opioid overdose deaths – intervention menu and social determinants (European Harm Reduction Network [etc], 2014). EU-funded guidelines from European experts in drug-related deaths. Provides a menu of specific interventions but also analyses risk-inducing environmental factors such as poverty, lack of education, discriminatory drug laws, insufficient or prohibited services, and marginalising attitudes producing stigma and fear. For related discussion click here and scroll down to highlighted heading.

G Responding to public injecting in a British city ([Scotland] NHS Greater Glasgow and Clyde, 2016). Report which led to preparations for a centre in Glasgow where injectors can more safely inject. Recommendations offer a template for a coordinated response in cities affected by public injecting.

MORE This search retrieves all relevant analyses.
For subtopics go to the subject search page and this Effectiveness Bank hot topics on controlling the spread of hepatitis C, safer injecting centres, and the need for counselling in substitute prescribing programmes.

Close Matrix Bite

Links to other documents. Hover over for notes. Click to highlight passage referred to. Unfold extra text

What is this cell about? Described more fully in cell A1's bite, this entire row is about reducing the harms experienced by the user as a result of their drug use, without necessarily reducing use or seeking to overcome dependence. Common interventions include needle exchanges, overdose prevention programmes, and substituting a legally prescribed drug of the same type for the original (and usually illegally obtained) substance, also considered as a treatment for addiction in row 3 of the matrix.

This cell is, however, not about individual service modalities (for which see cell A1), but about how to create local and national systems which mix different modalities to maximally reduce drug-related harm – the domain of local and national commissioners and planners. Issues include what priority to give different types of services, whether each helps or hinders the others, the needs and characteristics of the local at-risk population, and the public/political acceptability of proposed service provision.

Where should I start? European Union agencies concerned with addiction and infectious disease joined forces to issue guidance on the control of infectious diseases among injectors. Grounded in "the most robust evidence available, expert opinion, and best practice within the EU/EEA", the Lisbon-based European Monitoring Centre for Drugs and Drug Addiction and the Stockholm-based European Centre for Disease Prevention and Control identified seven key intervention components which "should be applied and, if possible, combined to achieve the maximum prevention effect through synergy". The product is an evidence-based blueprint for planners and commissioners on what to include in disease-prevention systems – one which sticks tightly to addressing the harms caused by infections, refusing to be drawn into territory more to do with reducing drug use than reducing resultant harm, and bases its recommendations on client-centred ethical principles formulated in the UK.

System planners will appreciate the importance of the "synergy" the guidance refers to. Adequate opioid substitute prescribing and other effective treatments of addiction cut the number of injections, and therefore the number of opportunities for disease to be transmitted by sharing injecting equipment. In turn this makes it easier for needle and syringe programmes to supply enough equipment for a fresh set to be used for each remaining injection, while successful treatment of infection renders infected injectors non-infectious. Effective prevention via needle exchange and substitute prescribing also makes it more possible to engage the reduced

number of infected injectors in treatment for their infection. Each link in this service network can act as a recruiting agent for the others. Needle exchange reaches injectors not in treatment either for their addiction or for any infections, and can refer them to both types of services. Treatment services which know a patient is still injecting can refer to needle exchanges. Addiction treatment can also act as a gateway to treatment of infection, helping to stabilise patients and retain them in contact with health services sufficiently for them complete therapy and avoid re-infection.

Corresponding UN guidance also coordinates the views of several agencies. Given a worldwide remit, understandably, it focuses more on human rights, law reform and stigma, contextual factors which obstruct adequate (sometimes, any) service provision. An extract from the introduction offers a flavour of this aspect of the guidance: "It is recognized that 'criminalization of drug use, restrictive drug policies and aggressive law-enforcement practices are key drivers of HIV and hepatitis C epidemics among people who inject drugs,' a view that is shared by several United Nations agencies. These factors, together with discrimination, marginalization, stigmatization and violence, drive people who inject drugs underground and exclude them from proper access to the harm reduction and health services they need to prevent overdose and protect themselves from HIV and hepatitis C." Such obstacles reach their heights in non-EU nations, but remain relevant within the European Union.

Highlighted study For the UK it has to be a simulation of what it would take to substantially reduce hepatitis C infection among injectors – though the Dutch might spotlight similar results not from a simulation study, but from what actually happened to injectors depending on whether they fully participated in both adequately dosed methadone treatment and high-coverage needle exchange.

Take a look at the UK results analysed for the Effectiveness Bank. Though extrapolated from a 'what if' exercise, the assumptions on which this was based came from six 'real world' UK studies. Each related hepatitis C infection among injectors to their participation in opioid substitution therapy and/or needle and syringe programmes. The analysts translated this data into infection estimates dependent on whether patients had spent most of their time in treatment and had been supplied NICE's ideal of at least enough injecting equipment to use a fresh set each time.

They calculated that investment in methadone maintenance and needle exchange had already saved tens of thousands of injectors from infection, but also predicted that further substantial progress will require comprehensive systems integrating harm reduction and diagnosis and treatment of infection, entailing a major commitment from both injectors and healthcare funders. For example, cutting prevalence from 40% to 30% over 10 years would require not just half, but at least 80% of injectors to be engaged in methadone maintenance and needle exchange. Achieving this coverage means recruiting more injectors to these programmes and/or retaining those who do use them for longer. If retention averages eight months, to get 8 in 10 injectors into these programmes requires over half those not yet attending to join each month. If average retention doubles to 16 months, then just under 30% need to join each month.

The results imply that needle exchange on its own will not sufficiently control infection. We need the same injectors to be welcomed into methadone programmes, even though they still sometimes inject, and to be treated for any infections they already have, plus the other elements identified by our starting point report.

How convincing is this extrapolation from the six studies? Bear in mind it depends on an *association* between infection rates and needle exchange and substitute prescribing, not a proven causal connection – an association which could have been due to other factors. Conceivably, for example, injectors concerned and stable enough to stay in treatment and make regular use of exchanges would have found other ways to avoid infection, even if exchanges and treatment were unavailable. That the distinction between association and causality is no nicety is indicated by the results of the Dutch study. It found needle exchange use associated with a *higher* risk of infection – almost certainly an instance of the magnet effect, which sees higher risk injectors using needle exchanges more often, mistakenly giving the impression that exchange use causes infection. That kind of uncertainty dogs studies which underpin some of the most important policy and practice implications in this sector. Where these are freely and widely available, it is impractical and unethical to deny injectors needle exchange and methadone to see how many later become infected with life-threatening diseases, yet this is the most reliable way to prove their benefits.

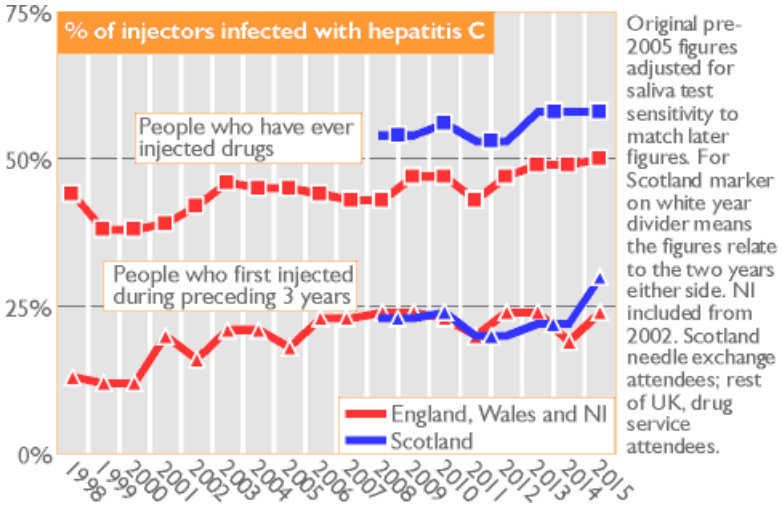
Issues to consider and discuss

▸ **In principle we can prevent hepatitis C spreading, but will we?** In cell A1 we saw that interventions like methadone prescribing and needle exchange sufficient to substantially retard the spread of HIV may have no discernible impact on the much more transmissible hepatitis C virus. Now we ask whether rapid and widespread transmission of the virus can be prevented at all. In principle, the answer is, "Of course! All injectors have to do is avoid using potentially contaminated equipment by always using a sterile set or one previously used only by them; they don't even have to stop injecting."

The real issue though is whether in practice we can or will ever do enough to ensure this. In 1993 the UK was warned to pull out the financial stops to reverse an epidemic which had already infected most injectors: "not to do so will lead to a longer term cost that is considerably greater, both in terms of finance and human suffering." More *was* done, and thousands of lives saved, but it was nowhere near enough.

Though they have curtailed the epidemic, services have not been sufficiently abundant, with the result that by

2015 hepatitis C was spreading more rapidly than in the early 2000s, within three years infecting a quarter of new injectors ▸ chart.



Since 1998 the hepatitis C virus has continued to infect a large proportion of UK injectors

In this the UK is not alone. Around the turn of the millennium Spain's anti-infection effort in the form of needle exchange and opioid substitute prescribing was judged by the World Health Organization to reach medium or high proportions of injectors. Nevertheless, in the early 2000s young injectors were becoming infected with hepatitis C at a rate equivalent to 40 out of 100 injectors every year. Among those who continued to inject during the follow-up period the rate was 53 – over half infected within a year. The more often the study's subjects injected, the more likely they were to get infected.

To gauge the dimensions of the challenge for the UK, take another look at the highlighted study. It warned that further substantial reductions in the prevalence of hepatitis C are unlikely unless both effective opiate substitute prescribing programmes and high-coverage needle exchange can be scaled-up to reach over 80% of injectors for at least 20 years – an expansion difficult to achieve and "unlikely to be sustained or funded by policy makers". Since 2011, the needle/syringe provision of just fewer than half the injectors *already* in contact with drug services in England has reached the 100% coverage mark; include those not in contact, and lift the bar to well over 100%, and the fraction will be considerably smaller.

The main potential saving grace is the development of new oral drug treatments ('direct-acting antivirals') which clear hepatitis C infection. According to clinical trials reviewed in 2015, these promised to be more effective, more easily tolerated and more acceptable to patients than existing treatment options, though also more expensive. Britain's National Institute for Health and Care Excellence (NICE) has directed several of these treatments to made available by the National Health Service as value-for-money lifesavers/improvers, though sometimes only if a discounted price is negotiated.

> *The main potential saving grace is the development of new treatments which clear hepatitis C infection*

Elevating the currently small proportion of injectors being treated for their infection could intercept the virus's spread sufficiently to substantially reduce its prevalence. One study has mapped the prevalence of chronic hepatitis C across seven sites in the UK, and projected what the prevalence would be over the ten years from 2014 if we continued with the current versus a 'scaled-up' treatment programme. Maintaining the status quo would not generate substantial reductions in hepatitis C, but there would be a 15% reduction after 10 years if treatment was extended to an annual 26 per 1000 people who inject drugs (upper limit of what may already have been achieved at two of the sites) and new medications became available and used for all variants of the virus. The 15% figure is an absolute reduction from baseline rates of just over 50% or lower; in different areas this would amount to a 12% to 86% relative reduction in these proportions after 10 years, with the largest reductions in areas where prevalence starts relatively low.

Writing in May 2017, for a leading London-based liver specialist these medications promised not just to revolutionise treatment of infection, but also its prevention. Previous treatments involved "a prolonged course of therapy with relatively ineffective, toxic drugs" which most patients refused, remaining infectious and leading to further spread of the virus. In contrast, "The new treatments require a short course of tablets … and are almost side effect free. The cure rates are in excess of 95% … treating those who are actively using drugs will dramatically reduce onward transmission of hepatitis C."

Another potential way forward is the highlighted study's finding that decreasing the length of injecting careers – which in itself would reduce the number of infections – also augments the impact of the interventions.

Rather than a silver-bullet solution, for the moment multiple preventive modalities acting in concert seem the answer, each making their tasks easier for the others – the "synergy" identified by a European Union report.

The journey from it seeming that nothing worked, to today's optimism that hepatitis C can be controlled, has been further detailed in an Effectiveness Bank hot topic. Until that optimism is justified by reduced infection rates, it can only be considered to refer to what might happen, not necessarily what will. To a degree it rests on research which without randomised trials cannot be definitive, and yet more shakily, on the hope that the greatly magnified effort needed to tame the "sleeping giant" of 1993 will materialise in straitened times.

▸ **Spread methadone programmes thin and wide?** The question alludes to a long-standing tension in understandings of methadone maintenance and allied approaches, seen both as treatments for opiate addiction, and as public health programmes aimed at harm reduction while dependence is maintained by a

legally prescribed drug. As an 'ideal type', the former entails an individualised therapeutic programme which addresses the physical, psychological and social factors underlying addiction with a view to enabling sustainable opioid-free (including methadone itself) living. Patients will be challenged and supported to dramatically change their habits and their lives. Many will not be attracted to this regimen, and many others who attempt it will fail. In contrast, by not making challenging demands on patients to change, a public health programme oriented to harm-reduction would attract the highest possible proportion of dependent opiate users and retain them for as long as it can. The aim will be to reduce injecting, crime, and health risks by prescribing a substitute drug, rather than offering an intensive therapeutic programme aimed at sustainable abstinence. Such programmes can be relatively inexpensive, enabling the widespread implementation required to make health gains across the opiate-using population. Western Europe (unfold supplementary text) offers examples of both types of approaches.

> *Spread methadone thin and wide, or deepen with recovery-oriented interventions for the fewer patients who want these and will benefit?*

Enabling methadone-type programmes to be spread wide by thinning out psychosocial therapy has strong support from a harm-reduction point of view. From the *Highlighted study* discussion, we know that engaging a high proportion of injectors in methadone treatment is an important strand in anti-infection strategies; Barcelona provides strong evidence that it can also dramatically cut overdose deaths. From 1994 the city adopted a low threshold, "palliative" care model for methadone treatment which today in Britain might be seen as lacking recovery ambitions. This low-cost model meant treatment could engage a high proportion of opiate addicts and save them from the early deaths characteristic of an overdose-prone population. The authors posed the resulting dilemma: "We cannot deny that [methadone treatment] effectiveness improves when used as part of more complex programmes including other interventions; however, these … substantially increase the cost of treatment, and … may compete with the idea of a generalization of low-threshold [methadone treatment]."

In the face of the HIV threat, in the 1980s the UK's methadone services also trended towards harm reduction, but not in such an organised way as the Netherlands or Barcelona, mixing treatment and harm reduction aims and inputs to different degrees at different services. Now at a rhetorical level at least, the pendulum is swinging back, and in the recovery era UK government thinking and expert opinion is leaning towards the treatment end. Without abandoning harm reduction, the latest attempt to reconcile these objectives complained that "the protective benefits [ie, harm reduction] have too often become an end in themselves rather than providing a safe platform from which users might progress towards further recovery", even if this furthering "will sometimes lead to people following a potentially more hazardous path".

This dilemma would be substantially defused if the extra inputs needed to transform a harm reduction programme into recovery-oriented treatment were actually found to add little to the effects of providing the medication. If they do not, programmes oriented to harm reduction would lose little in rehabilitative impact, and could more justifiably lay claim to being the mainstream model. The implications have vividly been portrayed by Shaun Shelly of the University of Cape Town, who established South Africa's first non-abstinence focused community drug programme: "If addiction can be treated by a series of 15-minute general practitioner office-based interventions a lot of people will be out of a job, the rehab industry would shut down and there would be little need of 12-step fellowships. On the other hand, the insurance companies would save millions while the pharmaceutical companies would make billions."

His approachable blog entry on the issue quotes US clinician and researcher Dr Mark Willenbring. Of buprenorphine maintenance, he said, "it's not medication-assisted treatment, the medication is the treatment … the relapse rate is over 90% when people go off of it, or methadone, even after being on one of them for months (or years) and being given counseling of a quality far superior to anything available in the community." While he contends that for many the medication is all they need, patients also suffering from mental health problems do he says need additional psychotherapy and other services.

Acknowledging research which seems to justify dispensing with counselling, Shaun Shelly nevertheless points out that effective psychosocial inputs might be expected to affect recovery indicators like quality of life perhaps more than substance use, to help sustain recovery more than to make a short-term impact, and to particularly help more troubled patients. It could be too, he suggests, that the typical offer of more drug counselling or cognitive-behavioural therapy misses the mark by not addressing the "character healing" or "capacity building" and "self-renewal" needed to solidify recovery. On all these counts, research is lacking and not sufficient to warrant wholesale stripping back to medication-only programmes. Read his blog entry and see if you agree.

Though limited in the ways his blog identified, such evidence as we have suggests (▸ cell C3) that methadone programmes consisting of little more than prescribing and enough oversight to maintain safety can cut substance use as effectively as standard programmes. For patients who previously had to offend several times a day to sustain the roller-coaster of repeated daily heroin injections, a legal supply of a more normalising, smoother and longer acting drug like oral methadone, is in itself typically a quick-acting and powerful intervention. Inevitably there are exceptions, but on average adding a specific programme of counselling or psychological therapy seems less important than the basics identified in UK guidelines: a structured treatment with clear objectives, involving an adequate dose of methadone, long-term treatment with no hurry to withdraw, and an accepting, non-judgmental therapeutic alliance.

Where do you stand on this issue? Where do you think today the UK should stand? Spread methadone thin and wide, or deepen it with recovery-oriented interventions for the fewer patients who want and will benefit from these – and who we can afford to treat? Is research indicating no further substance use reductions attributable to psychosocial therapy convincing enough to dispense with these as routine elements, or are there other and longer term benefits not yet assessed? If extra therapy helps psychologically disturbed patients, isn't that going to mean that a large proportion of the UK heroin-addicted treatment caseload could benefit? But if this means "thick" rather than thin programmes as the norm, restricted access due to inadequate funding could (as in Sweden) see yet more deaths among heroin users, already at an unprecedented level.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