Chapter 1
Harm reduction and the mainstream

Tim Rhodes and Dagmar Hedrich

Abstract

Harm reduction encompasses interventions, programmes and policies that seek to reduce the health, social and economic harms of drug use to individuals, communities and societies. We envisage harm reduction as a '*combination intervention*', made up of a package of interventions tailored to local setting and need, which give primary emphasis to reducing the harms of drug use. We note the enhanced impact potential derived from delivering multiple harm reduction interventions in combination, and at sufficient scale, especially needle and syringe distribution in combination with opioid substitution treatment programmes. We note that harm reduction is a manifestation of mainstream public health approaches endorsed globally by the United Nations, and in the EU drugs strategy and action plans, and features as an integral element of drug policy in most of the European region. However, we note evidence that links drug harms to policies that emphasise strict law enforcement against drug users; an unintended consequence of international drug control conventions. The continuum of 'combination interventions' available to harm reduction thus extends from drug treatment through to policy or legal reform and the removal of structural barriers to protecting the rights of all to health. We end by introducing this monograph, which seeks to reflect upon two decades of scientific evidence concerning harm reduction approaches in Europe and beyond.

Introduction

Harm reduction encompasses interventions, programmes and policies that seek to reduce the health, social and economic harms of drug use to individuals, communities and societies. A core principle of harm reduction is the development of pragmatic responses to dealing with drug use through a hierarchy of intervention goals that place primary emphasis on reducing the health-related harms of continued drug use (Des Jarlais, 1995; Lenton and Single, 2004). Harm reduction approaches neither exclude nor presume a treatment goal of abstinence, and this means that abstinence-oriented interventions can also fall within the hierarchy of harm reduction goals. We therefore envisage harm reduction as a '*combination intervention*', made up of a package of interventions tailored to local setting and need that give primary emphasis to reducing the harms of drug use. In relation to reducing the harms of injecting drug use, for example, this combination of interventions may draw upon needle and syringe programmes (NSPs), opioid substitution treatment (OST), counselling services, the provision of drug consumption rooms (DCRs), peer education and outreach, and the promotion of public policies conducive to protecting the health of populations at risk (WHO, 2009).

Harm reduction as mainstream public health

Harm reduction in the drugs field has a long history, variably traced back to the prescription of heroin and morphine to people dependent on opioids in the United Kingdom in the 1920s (Spear, 1994), the articulation of public health concerns of legal drugs, alcohol and tobacco, and the introduction of methadone maintenance in the United States in the 1960s (Bellis, 1981; Erickson, 1999). By the 1970s, the World Health Organization (WHO) recommended policies of harm reduction to 'prevent or reduce the severity of problems associated with the non-medical use of dependence-producing drugs', noting that this goal is at once 'broader, more specific' as well as 'more realistic' than the prevention of non-medical use per se in many countries (WHO, 1974; Ball, 2007).

The concepts of risk and harm reduction are closely aligned to that of health promotion and public health more generally. Yet in relation to illicit drugs, debates about developing public health approaches to reducing drug-related harms are often clouded by harm reduction positioned as a symbol of radical liberalisation or attack upon traditional drug control. Public health has at its core the idea of protecting individual and population health through the surveillance, identification and management of risk to health (Ashton and Seymour, 1988; Peterson and Lupton, 1996). It is essentially a model of risk and harm reduction. The new public health movement of the mid-1980s coincided with the emergence of human immunodeficiency virus (HIV) epidemics in many countries. This new vision of public health was heralded as a shift beyond narrowly defined biomedical understandings towards one that envisaged health and harm as also products of the social and policy environment, and which gave greater emphasis to community-based and 'low-threshold' interventions (WHO, 1986). Contemporary public health thus characterises risk and health decision-making as a responsibility of health conscious individuals whilst also emphasising the significance of the social environment in producing harm and in shaping the capacity of individuals and communities to avoid risk (Peterson and Lupton, 1996; Rhodes, 2002). Consequently, mainstream public health approaches recognise the need to create 'enabling environments' for risk reduction and behaviour change, including through the strengthening of community actions and the creation of public policies supportive of health (WHO, 1986). Harm reduction is an exemplar of mainstream public health intervention.

Harm reduction as mainstream drug policy in Europe

European intergovernmental collaboration and information exchange in the drugs field dates back to the early 1970s. While drug policy in the European Union (EU) remains primarily the responsibility of the Member States, cooperation in matters of drug policy between EU countries increased over the 1990s, resulting in the adoption of a joint EU drugs strategy as well as the elaboration of detailed action plans (MacGregor and Whiting, 2010).

The EU drugs strategy aims at making 'a contribution to the attainment of a high level of health protection, well-being and social cohesion by complementing the Member States' action in preventing and reducing drug use, dependence and drug-related harm to health and society' and at 'ensuring a high level of security for the general public' (Council of the European Union, 2004, p. 5). For over a decade, EU drug action plans have given priority to preventing the

transmission of infectious disease and reducing drug-related deaths among drug using populations. In a Recommendation adopted by the European Council of 18 June 2003 on the 'prevention and reduction of health-related harm associated with drug dependence' (Council of the European Union, 2003), a framework for action is outlined to assist Member States to develop strategies to reduce and prevent drug-related harm through the implementation of harm reduction services for problem drug users. The Recommendation seeks to reduce the number of drug-related deaths and extent of health damage, including that related to HIV, hepatitis B (HBV), hepatitis C (HCV) and tuberculosis (TB). These aims are reiterated in the priorities of the current EU drugs strategy 2005–12 related to demand reduction, aiming at the 'measurable reduction' of drug use, dependence and drug-related health and social risk through a package of interventions combining harm reduction, treatment and rehabilitation, and which emphasise the need to enhance both the 'quality' and 'effectiveness' of services.

Under the responsibility of the EU Commission, progress reviews of the implementation of the EU drugs action plans are carried out with the Member States and additional studies are commissioned to assess broader policy aspects. Such studies suggest a growing emphasis placed upon demand and harm reduction in national drug policies in the EU (van der Gouwe et al., 2006; European Commission, 2002, 2006, 2008, 2009). The reduction of drug harms thus features as a public health objective of all EU Member States (van der Gouwe et al., 2006; Cook et al., 2010; MacGregor and Whiting, 2010), with a trend in Europe towards the 'growth and consolidation of harm reduction measures' (EMCDDA, 2009a, p. 31). The European Commission has noted 'a process of convergence' in the drug policy adopted by Member States and, as a consequence, increased evidence of 'policy consistency' across the region (European Commission, 2008, p. 67). This convergence towards harm reduction in drug policy in Europe has been described as the 'common position' (Hedrich et al., 2008, p. 513).

The 'mainstreaming' of harm reduction is also evidenced by its transference across substances, including those causing the greatest burden of global health harm at a population level, such as alcohol and tobacco (Rehm et al., 2009; Mathers and Loncar, 2006; Rehm and Fischer, 2010; Room, 2010). While the adoption of harm reduction measures in relation to tobacco is relatively developmental (Sweanor et al., 2007; Gartner et al., 2010), alcohol harm reduction has a long tradition and is a core feature of alcohol policy in many countries (Robson and Marlatt, 2006; Herring et al., 2010). Harm reduction may also feature as a stratagem of public health intervention in relation to cannabis, recreational and stimulant drug use (Hall and Fischer, 2010; Fletcher et al., 2010; Grund et al., 2010).

Global drug control and harm reduction

A recent EU Commission study on global illicit drug markets found no evidence that the global drug problem had been reduced in the past decade, but judged that the enforcement of drug prohibition had caused substantial unintended harms (European Commission, 2009). This latter finding was shared by the United Nations Office on Drugs and Crime (UNODC) in an evaluation of a century of international drug control efforts 1909–2009 (UNODC, 2009). The report clarifies that public health was the driving concern behind drug control, the

fundamental objective of the international drug control conventions being to limit the licit trade in narcotic drugs to medical requirements. It states: 'Public health, the first principle of drug control, has receded from that position, over-shadowed by the concern with public security', and that 'looking back over the last century, one can see that the control system and its applications have had several unintended consequences' (UNODC, 2009, pp. 92–3), among them the emergence or growth of illicit drug markets, and a 'policy displacement' to investing in law enforcement responses, with a corresponding lack of investment in tackling the public health harms of drug use. International drug control is framed by three major UN drug treaties (of 1961, 1971 and 1988), which encourage UN Member States to develop national policies based on strict law enforcement (Bewley-Taylor, 2004; Wood et al., 2009). There is an increased momentum, contextualised by a 'preponderance of evidence', in support of recognising that the current international drug control framework is associated with multiple health and social harms, and that these iatrogenic effects can include the exacerbation of HIV epidemics among injecting drug users (IDUs) (Wood et al., 2009, p. 990).

Agencies within the UN system have recently re-focused their attention on the primacy of public health, embracing harm reduction interventions as part of a balanced approach with complementarity to prevention and treatment interventions. In December 2005, the United Nations (UN) General Assembly adopted a resolution encouraging global actions towards 'scaling-up HIV prevention, treatment, care and support with the aim of coming as close as possible to the goal of universal access to treatment by 2010 for all those who need it' (United Nations General Assembly, 2006). This led to the development of the WHO, UNODC and United Nations Joint Programme on HIV/AIDS (UNAIDS) joint technical guide for countries on target setting for universal access to HIV prevention, treatment and care for injecting drug users, and focused advocacy efforts on the need for greater coverage towards 'universal access' (Donoghoe et al., 2008; WHO et al., 2009; ECOSOC, 2009). Scaling-up access to, and achieving adequate coverage of, a 'comprehensive package' of harm reduction for problem drug users is a major driver of current global drug policy initiatives (WHO, 2009; Ball, 2010; Atun and Kazatchkine, 2010).

Harm reduction as a 'combination intervention'

As a 'combination intervention', harm reduction comprises a package of interventions tailored to local setting and need, including access to drug treatment. In reducing the harms of drug injecting, for example, a harm reduction package may combine OST, NSPs, DCRs and counselling services with peer interventions as well as actions to lobby for policy change.

Envisaging harm reduction as a combination intervention is not merely pragmatic and borne out of need, but is also evidence-based. Evidence points towards the enhanced impact of harm reduction services when they work in combination. Cohort and modelling studies have shown that the impact of NSP and OST on reduced incidence of infectious disease among IDUs can be minimal if delivered as 'stand-alone' interventions but are markedly more effective when delivered in combination, with sufficient engagement among participants to both (Van Den Berg et al., 2007). This may be especially the case in reducing the incidence of HCV among IDUs (Hickman, 2010). While epidemiological studies associate NSP and OST

with reduced HIV risk and transmission (Gibson et al., 2001; Wodak and Cooney, 2005; Farrell et al., 2005; Institute of Medicine, 2007; Palmateer et al., 2010; Kimber et al., 2010), the evidence for these interventions impacting on HCV risk and transmission is more modest (Muga et al., 2006; Wright and Tompkins, 2006; Hallinan et al., 2004; Goldberg et al., 2001; Palmateer et al., 2010; Kimber et al., 2010). To date, there is only one European study showing that 'full participation' across combined harm reduction interventions (NSP and OST) can reduce HIV incidence (by 57 %) *and* HCV incidence (by 64 %) (van den Berg et al., 2007). A recent cohort study in the United Kingdom also links OST with statistically significant reductions in the incidence of HCV (Craine et al., 2009). Findings noting the enhanced effect of OST in combination with NSP on reduced HIV and HCV incidence among IDUs have particular relevance for countries experiencing explosive outbreaks of infectious disease.

Just as the effectiveness of NSP and OST services may be enhanced when combined, there is an 'enhanced impact' relationship between participation in OST and adherence to HIV treatment and care among IDUs (Malta et al., 2008; Palepu et al., 2006; Lert and Kazatchkine, 2007). There is a potential HIV prevention effect derived from maximising access to HIV treatment (Ball, 2010; Montaner et al., 2006). Similarly, low-threshold access to HIV testing is an important combinative component of harm reduction. In the EU, there is a considerable level of homogeneity in policy priorities regarding measures to limit the spread of infectious diseases among drug users, with NSP being offered either in combination with voluntary testing and counselling for infectious disease, or in combination with the dissemination of information, education and communication materials (EMCDDA, 2009a, p. 83; EMCDDA, 2009c). Evidence also suggests an enhanced impact relationship between hepatitis C treatment and access to drug treatment and social support services (Grebely et al., 2007; Birkhead et al., 2007). Additionally, the integration of HIV treatment services with TB treatment and prevention services is a critical feature in determining health outcomes in people living with HIV (Sylla et al., 2007), especially in transitional Europe, which is 'especially severely affected' by TB drug resistance among drug using populations (WHO et al., 2008). Moreover, in HIV prevention there may be combined intervention effects resulting from sexual risk reduction being delivered alongside harm reduction (Lindenburg et al., 2006; Copenhaver et al., 2006). Harm reduction integrates with treatment and care in a combined intervention approach (Ball, 2010).

Harm reduction and 'enabling environments' for health

A fundamental tenet of public health intervention is to create environments conducive to individual and community risk avoidance, including through the creation and maintenance of public policies supportive of health (WHO, 1986). The continuum of 'combination interventions' available to harm reduction extends from drug prevention and treatment through to policy reform and the removal of structural barriers to protecting the rights of all to health. WHO makes specific recommendation for 'laws that do not compromise access to HIV services for drug users through criminalisation and marginalisation' (Ball, 2007). If public policies or laws generate harm then these too fall within the scope of the combination of interventions that make up harm reduction. Structural interventions for public health seek to remove contextual or environmental barriers to risk and harm reduction while enabling social

and environmental conditions that protect against risk and vulnerability (Blankenship et al., 2006). The delineation of the 'risk environment' surrounding the production of drug harms in different settings has led to the identification of structural interventions with the potential for encouraging community-level change (Rhodes, 2002, 2009).

Of critical concern — as evidenced by multiple studies in multiple settings — is how the legal environment can constrain risk avoidance and promote harm among problem drug users, especially among people who inject drugs (Small et al., 2006; Rhodes, 2009; Kerr et al., 2005). In some settings, intense street-level police surveillance and contact can be associated with reluctance among IDUs to carry sterile needles and syringes for fear of arrest, caution, fine or detention (Rhodes et al., 2003; Cooper et al., 2005; Miller et al., 2008). Evidence associates elevated odds of syringe sharing with increased police contact (Rhodes et al., 2004), confiscation of injecting equipment (Werb et al., 2008), and rates of arrest (Pollini et al., 2008), yet rates of arrest can show no deterrent effect on levels of injecting (Friedman et al., 2010). High-visibility policing, and police 'crackdowns', have been linked to the interruption of safer injecting routines, leading to safety 'short-cuts' or hasty injections, exacerbating the risk of viral and bacterial infections as well as overdose (Blakenship and Koester, 2002; Bluthenthal et al., 1999; Small et al., 2006). Such policing practices may displace drug users geographically, disrupt social networks of support, contribute to the stigmatisation of drug use, and limit the feasibility, coverage and impact of public health responses (Burris et al., 2004; Davis et al., 2005; Friedman et al., 2006; Broadhead et al., 1999). In turn, prison and incarceration are linked to elevated odds of HIV transmission among people who use drugs (Dolan et al., 2007; Jürgens et al., 2009; Stevens et al., 2010).

Harm reduction may therefore include interventions that seek to reduce the harms generated by drug and other public policies, including through policy reform and legal change. For instance, as Room (2010, p. 110) notes: 'If the harm arises from heavy use per se, reducing or eliminating use or changing the mode of use are the logical first choices for reducing the harm. But if the harm results from the criminalisation per se, decriminalising is a logical way of reducing the harm.' WHO also notes that 'the alignment of drug control measures with public health goals [is] a priority' (Ball, 2007, p. 687). It is therefore important to note the potential public health gains of engaging policing and criminal justice agencies as part of local public health partnerships, including in the delivery of harm reduction interventions in community and closed settings (see Stevens et al., 2010).

Coverage and scale-up

2010 is the year for achieving the UN General Assembly target of 'near universal access' to HIV prevention, treatment and care for populations affected by HIV. In Europe, considerable progress has been made towards achieving greater coverage of harm reduction services for IDUs (see Cook et al., 2010). Every EU Member State has one or more needle and syringe programmes (EMCDDA, 2009a). Pharmacy-based NSPs operate in at least 12 Member States. All Member States provide opioid substitution treatment for those with opioid dependence (EMCDDA, 2009a). An estimated 650,000 people were receiving OST in Europe in 2007, though large national variations in coverage exist (EMCDDA, 2009a).

Evidence suggests coverage is an important determinant of drug-related risk and harm. In a recent comparison of the incidence of diagnosed HIV among IDUs and the coverage of OST and NSP in the EU and five other middle- and high-income countries, those countries with greatest provision of both OST and NSP in 2000 to 2004 had lower HIV incidence in 2005 and 2006 (Wiessing et al., 2009). In this study, the availability and coverage of harm reduction measures was considerably lower in Russia and Ukraine where the incidence of HIV was considerably higher when compared to Western European countries. Whereas HIV transmission rates are stabilising or decreasing in most of Western and Central Europe, they are increasing in the Eastern part of the continent, outside the EU, where harm reduction services are 'insufficient and need to be reinforced' (Wiessing et al., 2008).

Coverage of harm reduction interventions is variable within the EU. While recent estimates of the total number of OST clients represent around 40 % of the estimated total number of problem opiate users in the EU, the level of provision is far from uniform across the region. Estimates of coverage from 10 countries where such data are available range from below 5 % to over 50 % of opioid users covered by OST (EMCDDA, 2009e).

European trends in the provision of NSP between 2003 and 2007 show a 33 % increase in the number of syringes distributed through specialised programmes, with steady increases in most countries, except several countries in northern and central Europe (EMCDDA, 2009d). Although country-specific coverage estimates of NSP are scarce, the number of syringes distributed by specialist NSPs per estimated IDU per year seems to vary widely between countries (EMCDDA, 2010). European-level estimates suggest that on average some 50 syringes are distributed per estimated IDU per year across the EU (Wiessing et al., 2009). Overall availability of sterile syringes is also dependent upon pharmacy provision, in turn influenced by legislation, regulations, and pricing, as well as by the attitudes of pharmacists.

In its evaluation of the EU drug action plan, the European Commission emphasised that the 'availability and accessibility of [harm reduction] programmes are still variable among the Member States' and that 'further improvements are still needed in [the] accessibility, availability and coverage' of services (European Commission, 2008, p. 66). In the European region more generally, scaling up comprehensive service provision is a priority, with strengthening health systems, engaging civil society, and securing political commitment for harm reduction considered key determinants to effective scale-up (Atun and Kazatchkine, 2010). There is then considerable variability in how harm reduction is enacted in policy and even more so in practice, as well as resistance to the mainstreaming of harm reduction in some settings. Understanding the failure to implement evidence-based programmes and policies has been identified as a major topic for future research (Des Jarlais and Semaan, 2009). In countries where heroin epidemics are recent and rates of HIV infection among drug users low, implementation of harm reduction measures such as NSP or OST may be perceived by some as difficult to justify. This may be especially so in the context of finite and retracting economic resources in the health sector. Evidence, however, indicates the cost-effectiveness of the introduction and scale-up of harm reduction (Zaric et al., 2000; National Centre in HIV Epidemiology and Clinical Research UNSW, 2009).

Voices of resistance to the mainstreaming of harm reduction in drug policy can be found within the EU (see MacGregor and Whiting, 2010), but are most vociferous within the broader European region, and especially Russia, which today has one of the largest epidemics of HIV associated with drug injecting in the world, has a policy that places strong emphasis on law enforcement, prohibits the introduction of OST and limits the development of NSP and other harm reduction interventions to adequate scale (Sarang et al., 2007; Human Rights Watch, 2007; Elovich and Drucker, 2008).

Evidence, impacts and challenges

An effective harm reduction policy, programme or intervention is one that 'can be demonstrated, to a reasonable and informed audience, by direct measurement or otherwise, that on balance of probabilities has, or is likely to result in, a net reduction in drug-related harm' (Lenton and Single, 2004, p. 217). This monograph aims to reflect upon over two decades of harm reduction research, evidence and impact in Europe and beyond.

There are now multiple systematic and other reviews of the scientific evidence in support of different harm reduction interventions, especially in the context of HIV, hepatitis C and injecting drug use (Wodak and Cooney, 2005; Farrell et al., 2005; Institute of Medicine, 2007; Palmateer et al., 2010). Chapters in this monograph take stock of such evidence in European perspective, including regarding the effectiveness of interventions to prevent HIV and HCV among injecting drug users (Chapter 5 — Kimber et al., 2010), the role of DCRs (Chapter 11 — Hedrich et al., 2010), the effect of epidemiological setting on intervention impact (Chapter 6 — Vickerman and Hickman, 2010) and the implications that variations in drug use patterns have on harm reduction interventions (Chapter 15 — Hartnoll et al., 2010). While diffusing throughout Europe primarily in response to health harms linked to injecting drug use (Chapter 2 — Cook et al., 2010; Chapter 3 — MacGregor and Whiting, 2010), harm reduction approaches have mainstream applicability. Chapters consider the specific challenges of harm reduction interventions and policies regarding alcohol (Chapter 10 — Herring et al., 2010), tobacco (Chapter 9 — Gartner et al., 2010), cannabis (Chapter 8 — Hall and Fischer, 2010), recreational drug use among young people (Chapter 13 — Fletcher et al., 2010), and stimulants (Chapter 7 — Grund et al., 2010). The potential role — often unrealised — of drug user engagement and criminal justice interventions are also discussed (Chapter 12 — Hunt et al., 2010; Chapter 14 — Stevens et al., 2010). Taken together, this monograph seeks to synthesise, as well as critically appraise, evidence of the impacts and challenges of harm reduction interventions and policies in Europe and beyond.

Harm reduction, like any public policy, is inevitably linked to political debate, and it is naive to assume otherwise, but it is precisely because of this that it is imperative that interventions are also developed upon evidence-based argument and critique. Europe is experiencing significant political change, which in 2004 enabled the most extensive wave of European Union enlargement ever seen. Following the ratification of the Lisbon Treaty by all 27 Member States in 2009, the importance of the Union as a major political player in the region will grow. Among the new challenges to be faced is maintaining a strong public health position in controlling and preventing HIV and HCV epidemics linked to drug use. This may

be in a context of harsher economic conditions as well as increased migration, including from countries with large HIV epidemics driven by drug injecting and where evidence-based harm reduction measures are not always met with political commitment. The relative success of harm reduction strategies adopted in many European countries over the past two decades, and the evidence gathered in their support, provides a framework for the development, expansion and evaluation of harm reduction across multiple forms of substance use.

References

Note: publications with three or more authors are listed chronologically, to facilitate the location of 'et al.' references.

Ashton, J. and Seymour, H. (1988), *The new public health*, Open University Press, Milton Keynes.

Atun, R. and Kazathckine, M. (2010), 'Translating evidence into action: challenges to scaling up harm reduction in Europe and Central Asia', in Chapter 4, 'Perspectives on harm reduction: what experts have to say', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Ball, A. (2007), 'HIV, injecting drug use and harm reduction: a public health response', *Addiction* 102, pp. 684–90.

Ball, A. (2010), 'Broadening the scope and impact of harm reduction for HIV prevention, treatment and care among injecting drug users', in Chapter 4, 'Perspectives on harm reduction: what experts have to say', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Bellis, D. J. (1981), *Heroin and politicians: the failure of public policy to control addiction in America*, Greenwood Press, Westport, CT.

Bewley-Taylor, D. (2004), 'Harm reduction and the global drug control regime: contemporary problems and future prospects', *Drug and Alcohol Review* 23, pp. 483–9.

Birkhead, G. S., Klein, S. J., Candelas, A. R., et al. (2007), 'Integrating multiple programme and policy approaches to hepatitis C prevention and care for injection drug users: a comprehensive approach', *International Journal of Drug Policy* 18, pp. 417–25.

Blankenship, K. M. and Koester, S. (2002), 'Criminal law, policing policy, and HIV risk in female street sex workers and injection drug users', *Journal of Law and Medical Ethics* 30, pp. 548–59.

Blankenship, K. M., Friedman, S. R., Dworkin, S. and Mantell, J. E. (2006), 'Structural interventions: concepts, challenges and opportunities for research', *Journal of Urban Health* 83, pp. 59–72.

Bluthenthal, R. N., Lorvick J., Kral A. H., Erringer, E. A. and Kahn, J. G. (1999), 'Collateral damage in the war on drugs: HIV risk behaviors among injection drug users', *International Journal of Drug Policy* 10, pp. 25–38.

Broadhead, R. S., Van Hulst, Y. and Heckathorn, D. D. (1999), 'Termination of an established syringe-exchange: a study of claims and their impact', *Social Problems* 46, pp. 48–66.

Burris, S., Donoghoe, M., Blankenship, K., et al. (2004), 'Addressing the "risk environment" for injection drug users: the mysterious case of the missing cop', *Milbank Quarterly* 82, pp. 125–56.

Cooper, H., Moore, L., Gruskin, S. and Krieger, N. (2005), 'The impact of a police drug crackdown on drug injectors' ability to practice harm reduction', *Social Science and Medicine* 61, pp. 673–84.

Cook, C., Bridge, J. and Stimson, G. V. (2010), 'The diffusion of harm reduction in Europe and beyond', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Copenhaver, M., Johnson, B., Lee, I-C., et al. (2006), 'Behavioral HIV risk reduction among people who inject drugs: meta-analytic evidence of efficacy', *Journal of Substance Abuse Treatment* 31, pp. 163–71.

Council of the European Union (2003), 'Council Recommendation of 18 June 2003 on the prevention and reduction of health-related harm associated with drug dependence (2003/488/EC)'. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003H0488:EN:HTML.

Council of the European Union (2004), *EU drugs strategy (2005–2012)*, CORDROGUE 77, 22 November 2004. Available at http://ec.europa.eu/justice_home/doc_centre/drugs/strategy/doc_drugs_strategy_en.htm.

Craine, N., Hickman, M., Parry, J. V., et al. (2009), 'Incidence of hepatitis C in drug injectors: the role of homelessness, opiate substitution treatment, equipment sharing, and community size', *Epidemiology and Infection* 137, pp. 1255–65.

Davis, C., Burris, S., Metzger, D., Becjer, J. and Lunch, K. (2005), 'Effects of an intensive street-level police intervention on syringe exchange program utilization', *American Journal of Public Health* 95, pp. 223–36.

Des Jarlais, D. C. (1995), 'Harm reduction: a framework for incorporating science into drug policy', *American Journal of Public Health* 85, pp. 10–12.

Des Jarlais, D. C. and Semaan, S. (2009), 'HIV prevention and psychoactive drug use: a research agenda', *Journal of Epidemiology and Community Health* 63, pp. 191–6.

Des Jarlais, D. C., Perlis, T., Arasteh, K., et al. (2005), 'Reductions in hepatitis C virus and HIV infections among injecting drug users in New York City', *AIDS* 19 (Supplement 3), pp. S20–5.

Dolan, K., Kite, B., Aceijas, C., and Stimson, G. V. (2007), 'HIV in prison in low income and middle income countries', *Lancet Infectious Diseases 7*, pp. 32–43.

Donoghoe, M., Verster, A., Pervilhac, C. and Williams, P. (2008), 'Setting targets for universal access to HIV prevention, treatment and care for injecting drug users (IDUs): towards consensus and improved guidance', *International Journal of Drug Policy* 19 (Supplement 1), pp. S5–14.

ECOSOC (UN Economic and Social Council) (2009), 'Economic and Social Council resolution E/2009/L.23 adopted by the Council on 24 July 2009: Joint United Nations Programme on Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (UNAIDS)'. Available at http://www.un.org/Docs/journal/asp/ws.asp?m=E/2009/L.23.

Elovich, R. and Drucker, E. (2008), 'On drug treatment and social control: Russian narcology's great leap backwards', *Harm Reduction Journal 5*, p. 23. DOI: 10.1186/1477-7517-5-23.

EMCDDA (2009a), *Annual report 2009: the state of the drugs problem in Europe*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon.

EMCDDA (2009b), *Drug offences: sentencing and other outcomes*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon.

EMCDDA (2009c), Statistical bulletin, Table HSR-6, European Monitoring Centre for Drugs and Drug Addiction, Lisbon. Available at http://www.emcdda.europa.eu/stats09/hsrtab6.

EMCDDA (2009d), Statistical bulletin, Table HSR-5, European Monitoring Centre for Drugs and Drug Addiction, Lisbon. Available at http://www.emcdda.europa.eu/stats09/hsrtab5.

EMCDDA (2009e), Statistical bulletin, Figure HSR-1, European Monitoring Centre for Drugs and Drug Addiction, Lisbon. Available at http://www.emcdda.europa.eu/stats09/hsrfig1.

EMCDDA (2010), *Injecting drug use in Europe*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon.

Erickson, P. (1999), 'Introduction: the three phases of harm reduction. An examination of emerging concepts, methodologies, and critiques', *Substance Use and Misuse* 34 (1), pp. 1–7.

European Commission (2002), *Implementation of EU-action plan on drugs 2000–2004: progress review for the Member States*. Available at http://ec.europa.eu/justice_home/doc_centre/drugs/studies/doc/review_actplan_02_04_en.pdf.

European Commission (2006), *2006 progress review on the implementation of the EU drugs action plan (2005–2008)*, Commission Staff Working Document SEC (2006) 1803. Available at http://ec.europa.eu/justice_home/doc_centre/drugs/strategy/doc/sec_2006_1803_en.pdf.

European Commission (2008), *The report of the final evaluation of the EU drugs action plan 2005–2008*, Commission Staff Working Document (accompanying document to the Communication from the Commission to the Council and the European Parliament on an EU drugs action plan 2009–2012) COM (2008) 567, SEC(2008) 2456. Available at http://ec.europa.eu/health/ph_determinants/life_style/drug/documents/COM2008_0567_a1_en.pdf.

European Commission (2009), *Report on global illicit drug markets, 2009*. Available at http://ec.europa.eu/justice_home/doc_centre/drugs/studies/doc_drugs_studies_en.htm.

Farrell, M., Gowing, L., Marsden, J., Ling, W. and Ali, R. (2005), 'Effectiveness of drug dependence treatment in HIV prevention', *International Journal of Drug Policy* 16 (Supplement 1), pp. S67–75.

Fletcher, A., Calafat, A., Pirona, A. and Olszewski, D. (2010), 'Young people, recreational drug use and harm reduction', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Friedman, S. R., Cooper, H. L. F., Tempalski, B., et al. (2006), 'Relationships between deterrence and law enforcement and drug-related harm among drug injectors in U.S. metropolitan cities', *AIDS* 20, pp. 93–9.

Friedman, S. R., Pouget, E. R., Chatterjee, S., et al. (2010), 'Do drug arrests deter injection drug use?' (in press).

Gartner, C., Hall, W. and NcNeill, A. (2010), 'Harm reduction policies for tobacco', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Gibson, D. R., Flynn, N. and Perales, D. (2001), 'Effectiveness of syringe exchange programs in reducing HIV risk behavior and HIV seroconversion among injecting drug users', *AIDS* 15, pp. 1329–41.

Goldberg, D., Burns, S., Taylor, A., et al. (2001), 'Trends in HCV prevalence among injecting drug users in Glasgow and Edinburgh during the era of needle/syringe exchange', *Scandinavian Journal of Infectious Diseases* 33, pp. 457–61.

Grebely, J., Genoway, K., Khara, M., et al. (2007), 'Treatment uptake and outcomes among current and former injection drug users receiving directly observed therapy within a multidisciplinary group model for the treatment of hepatitis C virus infection', *International Journal of Drug Policy* 18: 437–43.

Grund, J-P., Coffin, P., Jauffret-Roustide, M., et al. (2010), 'The fast and furious: cocaine, amphetamines and harm reduction', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Hall, W. and Fischer, B. (2010), 'Harm reduction policies for cannabis', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Hallinan, R., Byrne, A., Amin, J. and Dore, G. J. (2004), 'Hepatitis C virus incidence among injecting drug users on opioid replacement therapy', *Australian and New Zealand Journal of Public Health* 28, pp. 576–8.

Hartnoll, R., Gyarmarthy, A. and Zabransky, T. (2010), 'Variations in problem drug use patterns and their implications for harm reduction', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Hedrich, D., Pirona, A. and Wiessing, L. (2008), 'From margins to mainstream: the evolution of harm reduction responses to problem drug use in Europe', *Drugs: education, prevention and policy* 15, pp. 503–17.

Hedrich, D., Kerr, T. and Dubois-Arber, F. (2010), 'Drug consumption facilities in Europe and beyond', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Herring, R., Thom, B., Beccaria, F., Kolind, T. and Moskalewicz, J. (2010), 'Alcohol harm reduction in Europe', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Hickman, M. (2010), 'HCV prevention: a challenge for evidence-based harm reduction', in Chapter 4, 'Perspectives on harm reduction: what experts have to say', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Human Rights Watch (2007), *Rehabilitation required: Russia's human rights obligation to provide evidence-based drug dependence treatment*, Human Rights Watch, New York.

Hunt, N., Albert, E. and Montañés Sánchez, V. (2010), 'User involvement and user organising in harm reduction', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Institute of Medicine (2007), *Preventing HIV infection among injecting drug users in high-risk countries: an assessment of the evidence*, National Academy of Sciences, Washington, DC.

International Drug Policy Consortium (2009), *The 2009 Commission on Narcotic Drugs and its high level segment: report of proceedings*, Briefing Paper, IDPC, London.

Jürgens, R., Ball, A. and Verster, A. (2009), 'Interventions to reduce HIV transmission related to injecting drug use in prison', *Lancet Infectious Diseases* 9, pp. 57–66.

Kerr, T., Small, W. and Wood, E. (2005), 'The public health and social impacts of drug market enforcement: a review of the evidence', *International Journal of Drug Policy* 16, pp. 210–20.

Kimber, J., Palmateer, N., Hutchinson, S., et al. (2010), 'Harm reduction among injecting drug users: evidence of effectiveness', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Lancet (2009), 'The future of harm reduction programmes in Russia', *Lancet* 374, p. 1213.

Lenton, S. and Single, E. (2004), 'The definition of harm reduction', *Drug and Alcohol Review* 17, pp. 213–20.

Lert, F. And Kazatchkine, M. (2007), 'Antiretroviral HIV treatment and care for injecting drug users: an evidence-based overview', *International Journal of Drug Policy* 18, 255–61.

Lindenburg, C. E. A., Krol, A., Smit, C., et al. (2006), 'Decline in HIV incidence and injecting, but not in sexual risk behaviour, seen in drug users in Amsterdam', *AIDS* 20, pp. 1771–5.

MacGregor, S. and Whiting, M. (2010), 'The development of European drug policy and the place of harm reduction within this', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Malta, M., Strathdee, S., Magnanini, M., et al. (2008), 'Adherence to antiretroviral therapy for HIV among drug users: a systematic review', *Addiction* 103, pp. 1242–57.

Mathers, C. D. and Loncar, D. (2006), 'Projections of global mortality and burden of disease from 2002 to 2030', *PLoS Medicine* 3, pp. 2011–30.

Miller, C., Firestone, M., Ramos, R., et al. (2008), 'Injecting drug users' experiences of policing practices in two Mexican–U.S. border cities', *International Journal of Drug Policy* 19, pp. 324–31.

Montaner, J. S., Hogg, R., Wood, E., et al. (2006), 'The case for expanding access to highly active antiretroviral therapy to curb the growth of the HIV epidemic', *Lancet* 368, 531–6.

Muga, R., Sanvisens, A., Bolao, F., et al. (2006), 'Significant reductions of HIV prevalence but not of hepatitis C virus infections in injection drug users from metropolitan Barcelona: 1987–2001', *Drug and Alcohol Dependence* 82, Supplement 1, pp. S29–33.

National Centre in HIV Epidemiology and Clinical Research UNSW (2009), *Return on investment 2: evaluating the cost-effectiveness of needle and syringe programs in Australia 2009*, Australian Government Department for Health and Ageing. Available at http://www.health.gov.au/internet/main/publishing.nsf/Content/needle-return-2.

Palepu, A., Tyndall, M. W., Joy, R., et al. (2006), 'Antiretroviral adherence and HIV treatment outcomes among HIV/HCV co-infected injection drug users: the role of methadone maintenance therapy', *Drug and Alcohol Dependence* 84, pp. 188–94.

Palmateer, N., Kimber, J., Hickman, M., et al. (2010), 'Preventing hepatitis C and HIV transmission among injecting drug users: a review of reviews', *Addiction*, in press.

Peterson, A. and Lupton, D. (1996), *The new public health: health and self in the age of risk*, Sage Publications, Newbury Park, CA.

Pollini, R. A., Brouwer, K. C., Lozada, R. M., et al. (2008), 'Syringe possession arrests are associated with receptive syringe sharing in two Mexico–U.S. border cities', *Addiction* 103, pp. 101–08.

Rehm, J., Mathers, C., Popova, S., et al. (2009), 'Global burden of disease and injury and economic cost attributable to alcohol and alcohol-use disorders', *Lancet* 373, pp. 2223–32.

Rehm, J., Fischer, B., Hickman, M., et al. (2010), 'Perspectives on harm reduction: what experts have to say', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Rhodes, T. (2002), 'The "risk environment": a framework for understanding and reducing drug-related harm', *International Journal of Drug Policy* 13, pp. 85–94.

Rhodes, T. (2009), 'Risk environments and drug harms: a social science for harm reduction approach', *International Journal of Drug Policy* 20, pp. 193–201.

Rhodes, T., Mikhailova, L., Sarang, A., et al. (2003), 'Situational factors influencing drug injecting, risk reduction and syringe exchange in Togliatti City, Russian Federation: a qualitative study of micro risk environment', *Social Science and Medicine 57*, pp. 39–54.

Rhodes, T., Judd, A., Mikhailova, L., et al. (2004), 'Injecting equipment sharing among injecting drug users in Togliatti City, Russian Federation: maximising the protective effects of syringe distribution', *Journal of Acquired Immune Deficiency Syndromes* 35, pp. 293–300.

Robson, G. and Marlatt, G. (2006), 'Harm reduction and alcohol policy', *International Journal of Drug Policy* 17, pp. 255–7.

Room, R. (2010), 'The ambiguity of harm reduction: goal or means, and what constitutes harm?', in Chapter 4, 'Perspectives on harm reduction: what experts have to say', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Sarang, A., Rhodes, T., Platt, L., et al. (2006), 'Drug injecting and syringe use in the HIV risk environment of Russian penitentiary institutions', *Addiction* 101, pp. 1787–96.

Sarang, A., Stuikyte, R. and Bykov, R. (2007), 'Implementation of harm reduction in Central and Eastern Europe and Central Asia', *International Journal of Drug Policy* 18, pp. 129–35.

Sarang, A., Rhodes, T. and Platt, L. (2008), 'Access to syringes in three Russian cities: implications for syringe distribution and coverage', *International Journal of Drug Policy* 19, pp. S25–S36.

Small, W., Kerr, T., Charette, J., Schechter, M. T. and Spittal, P. M. (2006), 'Impacts of intensified police activity on injection drug users: evidence from an ethnographic investigation', *International Journal of Drug Policy* 17, pp. 85–95.

Spear, B. (1994), 'The early years of the "British System" in practice', in Strang, J. and Gossop, M. (eds) *Heroin addiction and drug policy*, Oxford University Press, Oxford, pp. 3–28.

Stevens, A., Stöver, H. and Brentari, C. (2010), 'Criminal justice approaches to harm reduction in Europe', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Sweanor, D., Alcabes, P. and Drucker, E. (2007), 'Tobacco harm reduction: how rational public policy could transform a pandemic', *International Journal of Drug Policy*, 18, pp. 70–4.

Sylla, L., Douglas Bruce, R., Kamarulzaman, A. and Altice, F. L. (2007), 'Integration and co-location of HIV/AIDS, tuberculosis and drug treatment services', *International Journal of Drug Policy* 18, pp. 306–12.

United Nations Development Program (2008), *Living with HIV in Eastern Europe and the CIS*, UNDP, Bratislava.

United Nations General Assembly Sixtieth Special Session (2006), *Political declaration on HIV/AIDS*. Resolution 60/262 adopted by the United Nations General Assembly, United Nations, New York.

UNODC (United Nations Office on Drugs and Crime) (2009), *A century of international drug control*, UNODC, Vienna. Available at http://www.unodc.org/documents/data-and-analysis/Studies/100_Years_of_Drug_Control.pdf.

van den Berg, C., Smit, C., Van Brussel, G., Coutinho, R. A. and Prins, M. (2007), 'Full participation in harm reduction programmes is associated with decreased risk for human immunodeficiency virus and hepatitis C virus: evidence from the Amsterdam cohort studies among drug users', *Addiction* 102, pp. 1454–62.

van der Gouwe, D., Gallà, M., Van Gageldonk, A., Croes, E., Engelhardt, J., Van Laar, M. and Buster, M. (2006), *Prevention and reduction of health-related harm associated with drug dependence: an inventory of policies, evidence and practices in the EU relevant to the implementation of the Council Recommendation of 18 June 2003. Synthesis report. Contract nr. SI2.397049*, Trimbos Instituut, Utrecht. Available at http://ec.europa.eu/health/ph_determinants/life_style/drug/documents/drug_report_en.pdf.

Vickerman, P. and Hickman, M. (2010), 'The effect of epidemiological setting on the impact of harm reduction targeting injecting drug users', in European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Harm reduction: evidence, impacts and challenges*, Rhodes, T. and Hedrich, D. (eds), Scientific Monograph Series No. 10, Publications Office of the European Union, Luxembourg.

Werb, D., Wood, E., Small, W., et al. (2008), 'Effects of police confiscation of illicit drugs and syringes among injection drug users in Vancouver', *International Journal of Drug Policy* 19, pp. 332–8.

WHO (World Health Organization) (1974), *Expert committee on drug dependence: twentieth report*, Technical Report Series 551, WHO, Geneva.

WHO (1986), *Ottawa Charter for Health Promotion,* WHO, Geneva, WHO/HPR/HEP/95.1.

WHO (2009), *HIV/AIDS: comprehensive harm reduction package*, WHO, Geneva. Available at http://www.who.int/hiv/topics/idu/harm_reduction/en/index.html.

WHO, UNODC and UNAIDS (Joint United Nations Programme on HIV/AIDS) (2008), *Policy guidelines for collaborative HIV and TB services for injecting and other drug users*, WHO, Geneva. Available at http://www.who.int/tb/publications/2008/en/index.html.

WHO, UNODC and UNAIDS (2009), 'Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users. Available at http://www.who.int/hiv/pub/idu/targetsetting/en/index.html.

Wiessing, L., Van de Laar, M.J., Donoghoe, M.C., et al. (2008), 'HIV among injecting drug users in Europe: increasing trends in the East', *Eurosurveillance* 3 (50). Available at http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19067.

Wiessing, L., Likatavičius, G., Klempová, D., et al. (2009), 'Associations between availability and coverage of HIV-prevention measures and subsequent incidence of diagnosed HIV infection among injection drug users', *American Journal of Public Health* 99 (6), pp. 1049–52.

Wodak, A. and Cooney, A. (2005), 'Effectiveness of sterile needle and syringe programmes', *International Journal of Drug Policy* 16, Supplement 1, pp. S31–44.

Wolfe, D. and Malinowska-Sempruch, K. (2004), *Illicit drug policies and the global HIV epidemic*, Open Society Institute, New York.

Wood, E., Spittal, P. M., Li, K., et al. (2004), 'Inability to access addiction treatment and risk of HIV-infection among injection drug users', *Journal of Acquired Immune Deficiency Syndromes* 36, pp. 750–4.

Wood, E., Werb, D., Marshall, B., Montaner, J. S. G. and Kerr, T. (2009), 'The war on drugs: a devastating public-policy disaster', *Lancet* 373, pp. 989–90.

Wright, N. M. and Tompkins, C. N. (2006), 'A review of the evidence for the effectiveness of primary prevention interventions for hepatitis C among injecting drug users', *Harm Reduction Journal* 6 (3), p. 27.

Zaric, G. S., Barnett, P. G. and Brandeau, M. L. (2000), 'HIV transmission and the cost-effectiveness of methadone maintenance', *American Journal of Public Health* 90 (7), pp.1100–11.