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Commentary

People who inject drugs in prison: HIV prevalence, transmission and prevention

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ABSTRACT

In 2011, over 10.1 million people were held in prisons around the world. HIV prevalence is elevated in prison and this is due to the over representation of people who inject drugs (PWID). Yet HIV prevention programs for PWID are scarce in the prison setting. With a high proportion of drug users and few prevention programs, HIV transmission occurs and sometimes at an alarming rate.

This commentary focuses primarily on drug users in prison; their risk behaviours and levels of infection. It also comments on the transmission of HIV including outbreaks and the efforts to prevent transmission within the prison setting.

The spread of HIV in prison has substantial public health implications as virtually all prisoners return to the community. HIV prevention and treatment strategies known to be effective in community settings, such as methadone maintenance treatment, needle and syringe programs, condoms and antiretroviral therapy should be provided to prisoners as a matter of urgency.

Introduction

Globally, in 2011 over 10 million people were held in prison (Walmsley, 2013) and of these 2.5–3 million were held in pre-trial detention (Walmsley, 2014). However, the turnover in prison populations is estimated to be at least three times that with some 30 million individuals being detained and released into the community each year. Female prisoners receive even less attention than their male counterparts. Women are a minority within the population of prisoners. Typically, they make up about 5–10% of prison populations in most countries (Walmsley, 2013). Yet the prevalence of drug use among them is much higher than their male counterparts and drug treatment options are usually more limited for female prisoners than for males.

People who inject drugs within prison populations

Drug users are vastly over represented in prison populations. Internationally, 10–48% of male and 30–60% of female inmates have used illicit drugs in the month before entering prison (Fazel, Bains, & Doll, 2006). In the US, between 24% and 36% of all heroin addicts pass through the corrections system each year, representing more than 200,000 individuals (Boutwell, Nijhawan, Zaller, & Rich, 2007). Over 60% of PWIDs in a 12-city study reported a history of imprisonment (Ball et al., 1994) and in one Australian study, PWID reported an average of five imprisonments (Dolan, Wodak, & Hall, 1999).

The frequent and repetitive imprisonment of drug users is the key reason for continuous growth in the size of prison populations. From 1996 to 2006, the US population rose by 13% and the incarcerated population rose by 33% yet the proportion of prisoners with a drug problem rose by 43%. Furthermore, the prison population has increased in all five continents. Over the last 15 years the world imprisonment rate has risen from 136 per 100,000 to the current rate of 146 per 100,000 (Walmsley, 2014).

Rates of re-incarceration are especially high for inmates with a drug problem. Drug dependent offenders are much more likely to return to prison than other offenders. In the US, over 50% of drug dependent inmates have a previous incarceration compared with 31% of other inmates. In Australia, 84% of heroin dependent inmates were re-incarcerated within two years of release compared to 44% of all prisoners (Steering Committee for the Review of Government

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Service Provision, 2010). These high rates show that drug offenders are not being treated for their drug dependence while in prison.

Risk behaviours in prison

Many drug users stop using and injecting drugs when imprisoned. For other prisoners though, some will commence drug use or switch the route of drug administration if their preferred drug is unavailable (Fazel et al., 2006). A study in Belgium found that 30% of drug-using prisoners began using an additional drug and heroin was the drug most frequently mentioned (EMCDDA, 2012). According to research across 15 European countries, between 2 and 56% of prisoners report drug use while incarcerated and among nine countries the prevalence ranged from 20 to 40% (EMCDDA, 2012).

A history of injecting drug use is substantially higher among prisoners than among the general population. Reports from Europe suggest that between 2 and 38% of prisoners have injected drugs at some time. This is in sharp contrast to the proportion of the community who inject drugs (0.3%; EMCDDA, 2012). These figures highlight the need for good coverage of a range of HIV prevention programs for prison inmates.

Studies of prisoners find a high level of injecting and an extremely high level of syringe sharing in prison. Two studies of general prisoners in Greece (Koulierakis et al., 2000; Malliori et al., 1998) found 24% and 20% injected in prison and 92% and 83% shared syringes, respectively. In a large Russian study, 10% of 1000 inmates injected with 66% sharing syringes (Frost & Tchertkov, 2002). In Thailand, Thaisri reported that 25% of 689 inmates injected of whom 78% shared syringes (Thaisri et al., 2003).

Studies of prisoners with a history of injecting find even higher rates of injecting in prison. Two Scottish surveys reported that 37% and 58% of injectors had injected in prison in the previous month (Bird et al., 1997). HIV positive inmates in the UK were significantly more likely to inject (46% vs. 18%) and share syringes (42% vs. 12%) than those who were HIV negative or unsure of their status (Dolan et al., 1990). Among Australian PWID, some 30–74% reported injecting in prison and 70–90% of those reported syringe sharing (Rutter et al., 1996).

Reports from developing countries also indicate high levels of injecting and sharing of equipment. In Pakistan, 80% of PWID had been to jail where reports of injecting ranged from 22% to 70% and syringe sharing was 56% (Nai Zindagi, 2009). Nepal has reported that 19% of inmates in five prisons had a history of injecting drugs (Dolan & Larney, 2009).

Needles and syringes are scarce in the prison setting. With few needles and syringes circulating among many drug injecting inmates, sharing is inevitable. Up to 15 or 20 individuals may inject with the same equipment. A study of 69 syringes confiscated from prison revealed most were cut to just a few centimetres in length, some contained visible traces of blood and the hepatitis C virus was detected (Dolan, Larney, Jacka, & Rawlinson, 2009). Some inmates make their own syringes with needle substitutes fashioned out of hardened plastic and ball-point pens, often causing damage to veins and scarring (EMCDDA, 2012). All of these improvisations hamper any efforts to decontaminate the equipment.

HIV prevalence

Given the preponderance of PWID in prison, it is unsurprising that the levels of HIV infection are elevated. However some figures are extraordinarily high. For example, 28% of general prisoners in Vietnam were HIV positive in 2000 (Anonymous, 2000). In Estonia, up to 90% of inmates were HIV positive in 2004 (Tsereteli, 2004).

Other countries have managed to control HIV infection among their prison populations. In Australia, HIV prevalence is almost zero, even though PWID account for approximately 50% of prison populations (Butler, 2011).

HIV transmission in prison

HIV transmission in prison is difficult to document owing to uncertainties regarding precise date of infection, the rapid turnover of inmates, low levels of HIV testing and inmates' reluctance to report risk behaviours to prison authorities (Dolan, 1997). Nevertheless, reports of transmission have been made (Brewer et al., 1988; CDC, 1986; Horsburgh, Jarvis, & McArthur, 1990; Mutter & Grimes, 1994).

The first epidemic outbreak of HIV in Thailand started among PWID in a Bangkok prison in 1988. HIV infection among PWID in the community rose from 2 to 43% from 1987 to 1988. The increase was detected after hundreds of prisoners were released in an amnesty on the King's birthday. Further investigation found two risk factors were independently associated with HIV infection: having shared needles with two or more individuals in the previous six months and having been in prison. PWID with a history of imprisonment were twice as likely to be HIV positive as those who had never been imprisoned. HIV incidence in Thai prisons was very high at 35 per 100 person years (Choopanya et al., 1991, 2002).

Lithuania and Russia both suffered major outbreaks of HIV in particular prisons. In Lithuania, the outbreak in Alytus prison resulted in at least 284 inmates being infected within a six month period. These new infections doubled the total number of HIV cases in the country (Caplinskiene, Caplinskas, & Griskevicius, 2003; Dolan et al., 2007). Meanwhile the outbreak in a Russian prison in Nizhnekamsk resulted in over 400 inmates in a population of 1824 acquiring HIV, again in a brief period (Nikolayev, 2014).

Although the numbers infected have not been reported, both Ukraine and Iran experienced HIV outbreaks among their inmate populations. In Ukraine, an HIV outbreak was registered in a minimum security prison colony and attributed to unprotected sexual activity and drug injection in prison (Gunchenko & Kozhan, 1999). Iran reported two large outbreaks of HIV in prisons with hundreds infected (Farnia, Ebrahimi, Shams, & Zamani, 2010). These outbreaks in Iranian prisons were the impetus for the development of policies to allow for the introduction of needle and syringe and methadone programs into prison.

HIV outbreaks have also occurred in prison populations even where HIV prevalence was very low. Both Scotland (Taylor, Goldberg, & Emslie, 1995) and Australia (Dolan and Wodak, 1999) experienced outbreaks where between 4 and 12 inmates were infected within a few months.

Prevention

Internationally, HIV prevention efforts in prisons have been poor in comparison to those in the surrounding communities (Dolan et al., 2014). HIV education is the most widely used HIV prevention intervention in prisons, but is insufficient unless prevention programs are also provided. In 2012, methadone treatment was available in prison in 41 countries even though it was available in the community in 77 countries (HRI, 2012). Needle and syringe programs were available in prison in just 13 countries but operated in the community in 86 countries (HRI, 2012). Meanwhile condoms were provided to prisoners in 28 countries but available in the community settings in virtually all countries. This inequality of health care provision between the community and the prison setting contravenes international law as well as in international rules, guidelines, declarations and covenants (UNODC et al., 2013).

Each and every type of these programs; methadone maintenance treatment, needle and syringe programs and condoms, has been evaluated favourably in the prison setting (Jurgens, Ball, &

Verster, 2009) but the implementation of these programs has not improved.

Conclusion

Despite the size of the world prison population, prisoners have been largely forgotten in the HIV response (Dolan et al., 2014). Some of the reasons for the lack of research and action in this area are the obstructive nature of prison authorities, the lack of interest in the area by funders and the overcautious approach of ethics committees. Prison authorities have been known to delay approval, limit the scope of research questions and veto publication of results (Thomson, Reid, & Dolan, 2009). Although two thirds of the 2.3 million inmates in the U.S. meet the DSM-IV medical criteria for addiction only 11% received treatment with less than 1% of prison budgets spent on treatment (CASA, 2010).

Tens of million people are imprisoned every year and an estimated 30 million pass through a correction centre each year. This population is at least twice the size of the estimated population of PWID (HRI, 2012).

PWID is the main group in prison in terms of HIV risk behaviour. Even though they make up about one third to one half of prison populations, they are usually detained without access to treatment for drug dependence or HIV infection. Many continue to inject while detained and some commence injecting when imprisoned. Without interventions, their levels of syringe sharing remain extraordinarily high, as is their re-incarceration rate. Reports from many countries in the developed and developing world show a similar pattern in terms of the overrepresentation of PWID, their engagement in risk behaviour, high levels of HIV infection and transmission.

Occasionally outbreaks of HIV among prison populations have been the impetus for the development of policies to allow for the introduction of needle and syringe and methadone programs. However, the level of implementation of HIV prevention programs is woeful across the world; less than 50 countries provide MMT, NSP or condoms to prisoners. This is despite there being ample evidence that these programs are effective in the prison setting.

Therefore a new approach is needed to reorientate the focus of prison policy to increase the implementation of these programs in order to protect inmates' health. International leadership could come from funders such as the World Bank or the Gates Foundation.

Recommendations

There is sufficient evidence to address the most frequent mode of HIV transmission among inmates: injecting drug use. Sizeable numbers of prisoners inject drugs while incarcerated and usually with shared injecting equipment. Therefore, the primary goal has to be the reduction of drug injecting in prison. One way to achieve this is to reduce the number of drug injectors who are sent to prison. There is abundant evidence that community-based methadone treatment reduces injecting, crime and the subsequent incarceration of drug users.

Another way is to target pre-trial detainees; these account for over a third of all individuals in prisons worldwide. Prisoners are frequently held in overcrowded, substandard conditions without medical treatment or any measures for infection control. International standards clearly state that pre-trial detention should be an exceptional measure used sparingly. Therefore, programmes providing safe alternatives to pre-trial detention for persons accused of low-level crimes should be implemented (Csete, 2010).

A third way to reduce the level of drug injecting in prison is to provide methadone maintenance treatment during incarceration. MMT reduces injecting and sharing in prison populations (Dolan, Shearer, White, Zhou, & Wodak, 2005; Larney, Toson, Burns, & Dolan, 2012). Releasing inmates on methadone treatment reduces their chance of being re-incarcerated, and this was demonstrated as early as 1969, in one of the first studies of MMT (Dole et al., 1969). Yet prison authorities struggle with accommodating more prison entrants, rather than provide evidence based drug treatment. Another advantage of releasing inmates on methadone treatment is their risk of experiencing a fatal overdose in the period immediately after release (Farrell & Marsden, 2008) is greatly reduced (Dolan et al., 2005).

Drug injecting in prison is also likely to be reduced if prisoners receive lesser punishment for the use of non-injectable drugs compared with injectable drugs. Yet prisoners usually receive the same penalty whether they test positive on urinalysis for cannabis or for heroin. Research in the UK found that inmates moved from smoking cannabis (detectable in urine for weeks) to injecting heroin (detectable in urine for only a day or two) after mandatory drug testing was introduced (Boys et al., 2002). Differential sanctions for drug use within prison should be explored as a way to reduce the level of injecting.

The overreliance on the use of supply reduction measures within prisons warrant investigation. Many prison authorities conduct urinalysis at the expense of effective demand and harm reduction strategies. An examination of supply reduction measures in Australian prisons found despite an extensive use of drug searches and urinalysis, the detection of drugs was modest. The most commonly used drug was cannabis with the detection of drugs such as amphetamines and heroin being very low (Dolan & Rodas, 2014).

Without doubt, the most controversial strategy has been prison based needle and syringe exchange programs. These programs have been implemented in 70 different prisons in over one dozen countries. In countries where needle and syringe programs are provided outside prison, consideration should also be given to providing it inside prison. The introduction of needle exchange programmes should be carefully prepared, including providing information and training for prison staff (UNODC, 2014).

Prisoners should have access to medical treatment and preventive measures without discrimination on the grounds of their legal situation. Health in prison is a right guaranteed in international law, as well as in international rules, guidelines, declarations and covenants (UNODC et al., 2013). The right to health includes the right to medical treatment and to preventive measures as well as to standards of health care at least equivalent to those available in the community (Jürgens & Betteridge, 2005).

Numerous polices, handbook and manuals have been developed to assist prison authorities to address HIV in prison. The Comprehensive package on HIV prevention, treatment and care in prisons and other closed settings provides a good overview of which interventions to implement (UNODC et al., 2013).

The contents and conclusions of the paper reflect a broad consensus among social and clinical scientists participating in a UNODC Scientific Consultation on HIV/AIDS (UNODC, Scientific Statement, March 11, 2014).

Conclusion statements

- The world prison population is growing. Of the 10 million prisoners, 3 million are on remand. About 30 million individuals are detained and released into the community each year.
- Drug users make up one and two thirds of inmates. In the US, 200,000 heroin addicts are jailed each year. Rates of re-incarceration are especially high for inmates with a drug problem, yet very few receive drug treatment.

- Some inmates stop drug use in prison. Others continue or initiate drug use inside and among the PWID, almost all share syringes and with a multitude of partners.
- HIV prevalence is elevated among prisoners and transmission in prison occurs sometimes at epidemic rates. HIV prevention efforts in prisons are rarely implemented and almost never to scale.
- Minor drug offenders need treatment not incarceration. Imprisoned drug offenders need treatment to reduce their risk of relapse and re-incarceration.
- Advocacy is required to reorientate the focus of prison policies to implement drug treatment and harm reduction programs in order to protect the health of inmates and the general public.

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Conflict of interest statement

We the authors declare that we have no conflict of interest with regard to this study.

References

Anonymous. (2000). Vietnam: increasing number of HIV cases in prison. *HEPP Report*, *3*, 8.

Ball, A., Des Jarlais, D. C., et al. (1994). *Multi-city study on drug injecting and risk of HIV infection*. Geneva: World Health Organization.

Bird, A. G., Gore, S. M., Hutchinson, S. J., Lewis, S. C., Cameron, S., & Burns, S. (1997). Harm reduction measures and injecting inside prison versus mandatory drugs testing. *BMJ*, *315*, 21.

Boutwell, A. E., Nijhawan, A., Zaller, N., & Rich, J. D. (2007). Arrested on heroin: A national opportunity. *Journal of Opioid Management*, *3*, 328–332.

Boys, A., Farrell, M., Bebbington, P., Brugha, T., Coid, J., Jenkins, R., et al. (2002). Drug use and initiation in prison: results from a national prison survey in England and Wales. *Addiction*, *97*(12), 1551–1560.

Butler, T., Lim, D., & Callander, D. J. (2011). *National prison entrants' bloodborne virus & risk behaviour survey 2004, 2007 and 2010, Sydney, NSW, Reports*.

Brewer, T. F., Vlahov, D., Taylor, E., Hall, D., Munoz, A., & Polk, B. F. (1988). Transmission of HIV-1 within a statewide prison system. *AIDS*, *2*(5), 363–367.

Caplinskiene, I., Caplinskas, S., & Griskevicius, A. (2003). Narcotic abuse and HIV infection in prisons. *Medicina (Lithuania)*, *39*, 797–803 (in Lithuanian).

CASA. (2010). *The national center on addiction and substance abuse at Columbia University. Behind Bars II: Substance abuse and america's prison population*. New York: CASA.

CDC. (1986). AIDS in correctional facilities: a report of the National Institute of Justice and the American Correctional Association. *MMWR*, *35*(12), 195–199.

Choopanya, K., Vanichseni, S., Des Jarlais, D. C., Plangsringarm, K., Sonchai, W., Carballo, M., et al. (1991). Risk factors and HIV seropositivity among injecting drug users in Bangkok. *AIDS*, *5*, 1509–1513.

Choopanya, K., Des Jalais, D. C., Vanichseni, S., Kitayaporn, D., Mock, P. A., Raktham, S., et al. (2002). Incarceration and risk for HIV infection among injecting drug users in Bangkok. *J AIDS*, *29*(1), 86–94.

Csete, J. (2010). Consequences of injustice: pre-trial detention and health. *International Journal of Prisoner Health*, *6*(2), 47–58.

Dolan, Moazen, B., Noori, A., Rahimzadeh, S., Farzadfar, F., & Hariga, F. (2014). *HIV in prison: a global systematic review of prevalence, incidence, AIDS related mortality and HIV programs*. Melbourne, July: Presented at 20th International Conference on AIDS. Abstract number THSY0202.

Dolan, K., Kite, B., Black, E., Aceijas, C., & Stimson, G. V. (2007). HIV in prison in low-income and middle income countries. *Lancet Infectious Diseases*, *7*(1), 32–41.

Dolan, K., & Larney, S. (2009). A review of HIV in prisons in Nepal. *Kathmandu University Medical Journal*, *7*, 351–354.

Dolan, K., Larney, S., Jacka, B., & Rawlinson, W. (2009). Presence of hepatitis C virus in syringes confiscated in prisons in Australia. *Journal of Gastroenterology and Hepatology*, *24*(10), 1655–1657.

Dolan, K. (1997). In O'Brien (Ed.), *Why is there conflicting evidence of HIV transmission in prison? Report 3rd European Conference HIV in prison* (pp. 19–21). London: Cranstoun Drug Service.

Dolan, K., & Rodas, A. (2014). Detection of drugs in Australian prisons: supply reduction strategies. *International Journal of Prisoner Health*, *10*(2), 111–117.

Dolan, K. A., Shearer, J., White, B., Zhou, J., & Wodak, A. (2005). Four-year follow-up of imprisoned male heroin users and methadone treatment: mortality, re-incarceration and hepatitis C infection. *Addiction*, *100*(6), 820–828.

Dolan, K., Wodak, A., & Hall, W. (1999). HIV risk behaviour and prevention in prison: A bleach programme for inmates in NSW. *Drug and Alcohol Review*, *18*(2), 139–143.

Dolan, K. A., Donoghoe, M. C., & Stimson, G. V. (1990). Drug injecting and syringe sharing in custody and the community. *Howard Journal of Criminal Justice*, *29*(3), 177–186.

Dole, V. P., Robinson, W., Orraca, J., Towns, E., Searcy, P., & Caine, E. (1969). Methadone treatment of randomly selected criminal addicts. *New England Journal of Medicine*, *280*(25), 1372–1375.

EMCDDA. (2012). *Prisons and drugs in Europe. Problems and Responses*. Luxembourg: Publications Office of the European Union.

Farnia, M., Ebrahimi, B., Shams, A., & Zamani, S. (2010). Scaling up methadone maintenance treatment for opioid-dependent prisoners in Iran. *International Journal of Drug Policy*, *21*(5), 422–424.

Farrell, M., & Marsden, J. (2008). Acute risk of drug-related death among newly released prisoners in England and Wales. *Addiction*, *103*(2), 251–255.

Fazel, S., Bains, P., & Doll, H. (2006). Substance abuse and dependence in prisoners: a systematic review. *Addiction*, *101*, 181–191.

Frost, L., & Tchertkov, V. (2002). Prisoner risk taking in the Russian Federation. *AIDS Education and Prevention*, *14*(B), 7–23.

Gunchenko, A., & Kozhan, N. (1999). HIV infection in the penitentiaries of Ukraine. *Zh Mikrobiol Epidemiol Immunobiol*, *1*, 31–33 (in Russian).

Harm Reduction International. (2012). *The Global State of Harm Reduction 2012. Towards an integrated response*. London: Harm Reduction International.

Horsburgh, C. R., Jarvis, J. Q., McArthur, T., Ignacio, T., & Stock, P. (1990). Seroconversion to HIV in prison inmates. *American Journal of Public Health*, *80*(2), 209–210.

Jurgens, R., Ball, A., & Verster, A. (2009). Interventions to reduce HIV transmission related to injecting drug use in prison. *Lancet Infectious Diseases*, *9*(1), 57–66.

Jürgens, R., & Betteridge, B. (2005). Prisoners who inject drugs: public health and human rights imperatives. *Health and Human Rights*, *8*(2), 47–74.

Koulierakis, G., Gnardellis, C., Agrafiotis, D., & Power, K. G. (2000). HIV risk behaviour correlates among injecting drug users in Greek prisons. *Addiction*, *95*(80), 1207–1217.

Larney, S., Toson, B., Burns, L., & Dolan, K. (2012). Effect of prison-based opioid substitution treatment and post-release retention in treatment on risk of re-incarceration. *Addiction*, *107*(2), 372–380.

Malliori, M., Sypsa, V., Psichogiou, M., Touloumi, G., Skoutelis, A., & Tassopoulos, N. (1998). A survey of bloodborne viruses and associated risk behaviours in Greek prisons. *Addiction*, *93*(2), 243–251.

Mutter, R., & Grimes, D. (1994). Labarthe evidence of intraprison spread of HIV infection. *Archives of Internal Medicine*, *154*(7), 793–795.

Nai Zindagi. (2009). *Rapid situation assessments of HIV prevalence and risk factors among people injecting drugs in four cities of the Punjab*. Islamabad.

Nikolayev, Y. (2014). *HIV on plank prison beds*. http://www.ahrn.net/index.php?option=content&task=view&id=1308&Itemid=2

Rutter, S., Dolan, K., & Wodak, A. (1996). *Sex, drugs and viruses in sin City Sydney. Report on ASHIDU. NDARC Report No. 37*. Sydney: UNSW.

SCRGSP (Steering Committee for the Review of Government Service Provision). (2010). *Report on Government Services 2010*. Canberra: Productivity Commission.

Taylor, A., Goldberg, D., Emslie, J., et al. (1995). Outbreak of HIV infection in a Scottish prison. *British Medical Journal*, *310*(6975), 289–292.

Thaisri, H., et al. (2003). HIV infection and risk factors among Bangkok prisoners, Thailand: a prospective cohort study. *BMC Infectious Diseases*, *3*, 25. http://dx.doi.org/10.1186/1471-2334-3-25

Thomson, N., Reid, G., & Dolan, K. (2009). Examining HIV, drug use and risk behaviours: A case study in the custodial settings of Thailand and Indonesia. *International Journal of Prisoner Health*, *5*(4), 180–191.

Tsereteli, Z. (2004). *Situation with HIV in Estonian prison system*. Baltic Health. http://web.archive.org/web/20041019071822/www.baltichealth.org/cparticle77892-7717a.html

UNODC. (2014). *A handbook for starting and managing needle and syringe programmes in prisons and other closed settings*. Vienna: UNODC.

UNODC, ILO, UNDP, WHO, & UNAIDS. (2013). *HIV prevention, treatment and care in prisons and other closed settings: a comprehensive package of interventions*. Vienna: UNODC.

Walmsley, R. (2013). *World Prison population list (tenth edition)*. London: International Centre for Prison Studies.

Walmsley, R. (2014). *World pre-trial/remand imprisonment list (second edition)*. London: International Centre for Prison Studies.