

Hepatitis B vaccination in prisons: a much-needed targeted universal intervention

The challenge of tackling blood-borne viruses in injecting drug users has been an important part of prison policy and strategy consideration for the past two decades because of the high prevalence of chronic hepatitis B and C and drug dependence in prisons [1,2]. One particular issue is that there is an effective vaccine against hepatitis B and therefore preventing (including cirrhosis and hepatocellular carcinoma) the long-term complications of hepatitis B infection. Indeed, this is so effective that any approach to injecting drug users needs to build upon the provision of such vaccination as a key outcome of contact with injecting drug users [2,3]. In addition, despite public health prevention strategies, sporadic outbreaks of hepatitis B prison epidemics have been reported over the past decade [4].

The literature is clear that countries with endemic hepatitis B will control it most effectively by universal vaccination [5]. Many European countries have such universal programmes in place now. However, as well as universal programmes there is a need for targeted programmes for individuals at high risk, such as injecting drug users. The importance of such provision has been noted over the past two decades. In general, however, specialist services such as sexual health and drug services have a moderately poor record for both uptake and more so for completion of three-course vaccination procedures [6–8].

Globally, there are more than 10 million people in prison at any one time [1], and a significant proportion of these are at risk of acquiring or transmitting hepatitis B infection. Prisons are a special environment where there are very high concentrations of injecting drug users, some of whom continue to inject and share within the prison setting. When such prisoners do continue to inject, they are more likely to engage in riskier practices and hence are at particular risk of blood-borne virus transmission. There are numerous reports indicating that prisons are an independent risk factor for human immunodeficiency virus (HIV) and hepatitis B and C infection [4]. There is a need for prisons globally to have a policy for the prevention of transmission of hepatitis B, hepatitis C and HIV. There are a range of options, from the provision of materials to reducing risk of injecting and sexual transmission to the provision of available effective accelerated vaccination programmes for hepatitis B [4].

There is now a strong realization that prisons provide an excellent opportunity for the delivery of hepatitis B vaccination, and a number of reports from England,

France, Spain and the United States report both large- and small-scale projects delivering accelerated vaccination programmes [9–13].

While compliance in community settings for full vaccination is disappointing, the prison setting enables completion of vaccination over a short period of time to a substantial proportion of the injecting drug-using population, because a significant proportion move through prison at some point during their drug-using career [4]. However, other work indicates that vaccination is required early, ideally in adolescence, to achieve the greatest effect [15].

Hepatitis B vaccination will, importantly, prevent the development of long-term chronic liver disease in those who receive the full course. It will also prevent a substantial number of liver cancers in the long term and can be delivered effectively for a modest investment. The hepatitis B vaccine is efficacious, safe and cost-effective [16], but has been under-utilized consistently in high-risk adults despite long-standing recommendations [15]. Instituting routine hepatitis B vaccination for high-risk adults in settings such as prisons and jails could prevent up to 800 cases of hepatitis and 10 deaths from hepatitis per 10 000 vaccinations, with overall cost savings [14,15]. Prison health is a matter of public health, so public health will benefit from any health-care measure taken in custodial settings.

Some harm reduction interventions are controversial [4], and in some settings there are obstacles to implementation. However, there is a broad (but not universal) consensus on hepatitis vaccination and a process of care within prisons that enables ready implementation. The problem for some, if not many, prisons is that the health-care budgets are already stretched. This is a situation where public health authorities and public funding of programmes in prisons can facilitate the implementation and make substantial long-term public health gains and public cost savings. The issue of treatment for hepatitis in injecting drug users is a critical challenge that requires consideration of the potentially important role that prisons could play in the future.

One recently published study on models of delivery of vaccination in prisons indicates that the steady delivery of vaccinations on an ongoing basis is preferable to monthly or quarterly census-type vaccination programmes [17], which are already being employed in some countries. In England and Scotland the prison authorities have been effective in increasing the amount of vaccination and have provided an important new channel for accessing

and providing public health interventions for the hidden injecting drug-using population [18].

Clinical and public policy calls for hepatitis B vaccination in prison have been made for at least the last 20 years. Two decades on there can be no justification for not delivering comprehensive hepatitis B vaccination services for all prisoners. This is not a trivial matter – intervention inertia leads to chronic illness, early death and unnecessary suffering for individuals, families and society. It should be a priority for the World Health Organization [1] and related international organizations (e.g. United Nations Office on Drugs and Crime) to promote and assist remaining countries to offer such programmes proactively. Health authorities both in the community and in custodial settings should be well aware of the benefit of continuous vaccination of prisoners. As prison staff are also a group at risk of acquiring hepatitis B (e.g. needle-stick injuries during cell revisions), they should also be offered vaccination.

Declaration of interest

None.

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References

- World Health Organization (WHO) Europe. Strategic objectives for WHO health in prisons project. 2007. Available at: http://euro.who.int/prisons/20060508_1 (accessed 8 December 2009).
- World Health Organization (WHO). Hepatitis B. Fact-sheet no. 204. 2009. Available at: <http://www.who.int/mediacentre/factsheets/fs204/en/> (accessed 8th December 2009).
- Hutchinson S., Wadd S., Taylor A. *et al.* Sudden rise in uptake of hepatitis B vaccination among injecting drug users associated with a universal vaccine programme in prisons. *Vaccine* 2004; **23**: 210–4.
- Jurgens R., Ball A., Verster A. Interventions to reduce HIV transmission related to injecting drug use in prison. *Lancet Infect Dis* 2009; **9**: 57–66.
- Gilbert R. L., Costella A., Piper M., Gill O. N. Increasing hepatitis B vaccine coverage in prisons in England and Wales. *Commun Dis Public Health* 2004; **7**: 306–11.
- Mangtani P., Hall A. J., Normand C. E. Hepatitis B vaccination: the cost effectiveness of alternative strategies in England and Wales. *J Epidemiol Community Health* 1995; **49**: 238–44.
- Farrell M., Battersby M., Strang J. Screening for hepatitis B and vaccination of injecting drug users in NHS drug treatment services. *Br J Addict* 1990; **1990**: 1657–9.
- Winstock A., Sheridan J., Lovell S., Farrell M., Strang J. National survey of hepatitis testing and vaccination services provided by drug services in England and Wales. *Eur J Clin Microbiol Infect Dis* 2000; **19**: 823–8.
- Bayas J., Bruguera M., Martin V. *et al.* Hepatitis B vaccination in prisons: the Catalanian experience. *Vaccine* 1993; **11**: 1441–4.
- Rich J. D., Ching C. G., Lally M. A., Gaitanis M. M., Schwartzapfel B., Charuvastra A. *et al.* A review of the case for hepatitis B vaccination of high-risk adults. *Am J Med* 2003; **114**: 316–8.
- Christensen P. B., Fisker N., Krarup H. B. *et al.* Hepatitis B vaccination in prison with a 3-week schedule is more efficient than the standard 6-month schedule. *Vaccine* 2004; **22**: 3897–901.
- Hope V. D., Ncube F., Hickman M., Judd A., Parry V. Hepatitis B vaccine uptake among injecting drug users in England 1998 to 2004: is the prison vaccination programme driving recent improvements? *J Viral Hepatol* 2007; **14**: 653–60.
- Gilbert R., Costella A., Piper M. *et al.* Increasing hepatitis B vaccine coverage in prisons in England and Wales. *Commun Dis Public Health* 2004; **7**: 306–11.
- Sharfstein J., Wise P. H. Inadequate hepatitis B vaccination of adolescents and adults at an urban community health center. *J Natl Med Assoc* 1997; **1997**: 86–92.
- Rich J. D., Ching C. D., Lally M. A. *et al.* A review of the case for hepatitis B vaccination of high-risk adults. *Am J Med* 2003; **114**: 316–8.
- Pisu M., Meltzer M. I., Lyerla R. Cost-effectiveness of hepatitis B vaccination of prison inmates. *Vaccine* 2002; **21**: 312–21.
- Sutton A. J., Gay N. J., Edmunds W. J. *et al.* Modelling the hepatitis B vaccination programme in prisons. *Epidemiol Infect* 2006; **134**: 231.
- Health Protection Agency. Prison hepatitis B vaccination programme monitoring, 2003–2006. Monthly reports. 2009. Available at: http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1237889544922 (accessed April 2009).