

Are there missed opportunities for vaccinating against hepatitis B among people who inject drugs (PWID) in the United Kingdom (UK)?

J Njoroge¹, VD Hope^{1,2}, C O'Halloran¹, C Tanner¹, R Glass¹, JV Parry^{1,2}, F Ncube¹.

¹ National Infection Service, Public Health England, London, UK

² Centre for Research on Drugs & Health Behavior, London School of Hygiene & Tropical Medicine, UK

INTRODUCTION

A vaccine against hepatitis B has been available since 1982. The vaccine is 95% effective in preventing hepatitis B infection. Despite this hepatitis B remains a major global health problem[1].

Like in many other western European countries the prevalence of Hepatitis B in the general population in UK remains low (less than 1%). The UK has therefore had a targeted hepatitis B vaccination programme since 1988.

People Who Inject Drugs (PWID) are among the population groups most at risk. The prevalence of ever infection with hepatitis B among PWID in U.K remains high at 14%. Although the uptake of Hepatitis B vaccine among PWID in the UK is high at 72%, this is currently not increasing[2].

A substantial proportion of PWID remains unvaccinated, transmission is on going. Vaccinating all PWID is therefore important to reduce transmission and also for reducing hepatitis B related morbidity.

We examine sources of hepatitis B vaccine among PWID reporting uptake, and explore health service use among those who have not taken up the vaccine to identify missed opportunities for vaccination. Factors associated with uptake of vaccine are also explored.

METHODS

PWID have been recruited into a voluntary unlinked-anonymous monitoring system in the UK (except Scotland) since 1990 [3,4]. Participants in this multi-site survey currently provide dried-blood spot samples and self-complete a short behavioural questionnaire. From 2013 additional data on health service use has been collected, and for those reporting hepatitis B vaccine uptake the sources of their vaccine doses.

2013 and 2014 data from the survey is used. Participants in 2014 who reported taking part in the survey in 2013 were excluded. We examine hepatitis B negative participants who reported injecting drugs during the preceding year.

For those not reporting vaccine uptake, we examine recent (in the previous year) contact with health services where they would have been offered a vaccine dose to identify potential missed opportunities for vaccination.

Bivariate association ($p < 0.05$) between hepatitis B vaccine uptake and covariates (demographics, injecting practices, drugs injected, sexual practice and use of health services) were examined and where possible associations were found ($p < 0.05$) these were further examined via logistic regression. Analyses is done using SPSS 23

RESULTS

In 2013 and 2014 a total of 4,014 participants reported injecting drugs during the preceding year (25% female, mean age 35 years). Of these, 578 (14%) had antibodies to the HBV core antigen (anti-HBc), 23 (4%) of whom were hepatitis B surface antigen positive.

• Among the 3,436 anti-HBc negative participants, 3,392 (99%) reported their vaccination status (44 had vaccination status missing). Of the 3,392 (23.8% female, mean age 34.9), 2,614 (77%) reported receiving at least a single dose of hepatitis B vaccine [Figure 3].

• Of the 2,614 reporting vaccine uptake, 2,368 (89%) reported the services providing their vaccines doses (Figure 1); the main sources were: drug treatment service 1,006 (42.5%), needle exchange programmes 452 (20%), prisons 908 (38%) and general practice or family doctor 276 (11%) .

• 778 (23%) reported that they had not taken up the vaccine against hepatitis B. Among those not vaccinated for hepatitis B, 495 (64%) reported being sexually active the previous year, and 115 (15%) reported sharing needles and syringes in the last year. Most 654 (84%) had injected heroin in the last year with 378 (49%) reporting they had injected other drugs

For the 778 who had not taken up the vaccine against hepatitis B (25.3% female, mean age 35.4), data on contact with health services [Figure.2] in the previous year was examined to identify any missed vaccination opportunities.

593 (74%) had used needle and syringe programme, 474 (61%) had been to a GP or family doctor, 358 (46%) to an accident and emergency (A&E) or casualty department, and 51 (6.6%) a sexual or STI clinic, in the preceding year. In addition, 419 (54%) had ever been to prison, and 398 (48%) were currently in addiction treatment.

The factors associated with vaccine uptake

• Results from the multivariable analysis are shown in Table 1. Hepatitis B vaccine uptake was associated with being prescribed treatment for drug use, imprisonment, using a GUM or STI clinic the previous year, using a needle exchange programmes, having sex the previous year, injecting crack in the previous year and being ever homeless.

• Vaccine uptake was not associated with using a GP or family planning clinic nor with injecting heroin or having engaged in transactional sex.

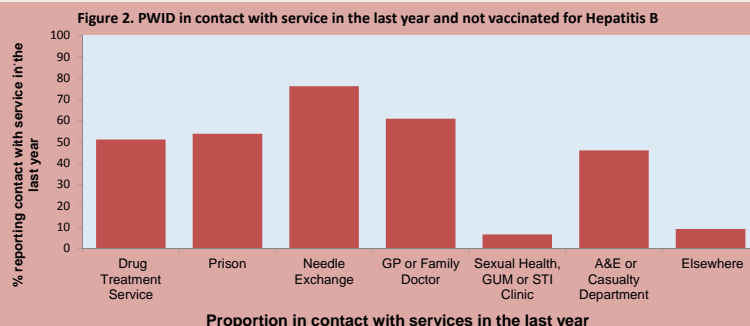
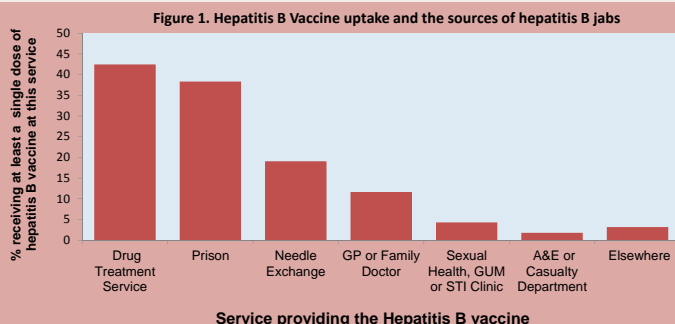


Figure 3. Number of Hepatitis B jabs received

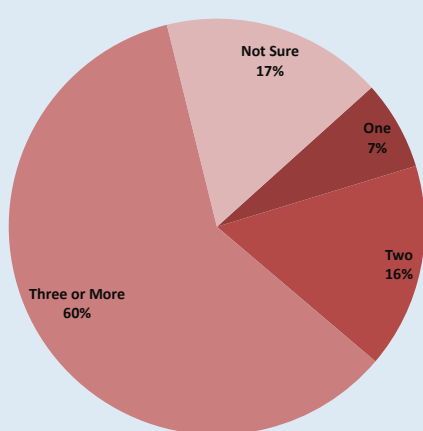


Table 1. Factors associated with vaccine uptake

Factors remaining in multivariate analysis		Vaccinated for Hep B		Adjusted odds ratio, with 95% Confidence Interval		
		Yes	Total			
Ever homeless	No	70%	551	791	1.00	
	Yes, not last year	80%	1575	1960	1.25	1.02 1.54
	Yes, last year	76%	488	641	1.00	0.77 1.29
Sex last year	No	72%	728	1011	1.00	
	Yes	79%	1886	2381	1.34	1.11 1.61
Ever been in prison	No	66%	699	1058	1.00	
	Yes	82%	1915	2334	2.06	1.72 2.47
Injected Crack in the last year	No	76%	1856	2455	1.00	
	Yes	81%	758	937	1.23	1.01 1.50
used a sexual health, GUM or STI Clinic	No	76%	2305	3032	1.00	
	Yes	86%	309	360	2.11	1.52 2.93
Used a need exchange service	No	58%	122	211	1.00	
	Yes, not last year	75%	283	379	1.66	1.14 2.43
	Yes, last year	79%	2209	2802	1.90	1.40 2.59
Prescribed treatment for drug use	never prescribed	58%	337	581	1.00	
	Previously prescribed	75%	402	538	1.77	1.36 2.31
	Currently prescribed	82%	1875	2273	2.84	2.31 3.49

LIMITATIONS

- The uptake of hepatitis B vaccine in PWID not in contact with specialist services for people using drugs may be different.
- It is assumed that those not vaccinated against hepatitis B were not offered the vaccine, however some may have declined the offer.
- The data used is based on self-reports, the accuracy of which may be subject to recall bias.

CONCLUSIONS

The uptake of hepatitis B vaccine among PWID is not improving. A significant proportion of PWID not vaccinated reported sharing needles and syringes and are sexually active, and therefore remain at risk of acquiring infection.

These findings indicate that despite contact with services many PWID remain unvaccinated. Maximizing uptake at all services could improve vaccination levels and help reduce ongoing transmission.

The greater use of contingency management approaches to improve hepatitis B vaccination should be considered.

ACKNOWLEDGEMENTS

We are grateful to all of the people who took part in the survey and to the various services that assisted with their recruitment. This work was core funded by Public Health England. No pharmaceutical or other grants were received in the development or implementation of this study.

REFERENCES

1. World Health Organization. Hepatitis B factsheet N° 204 - (updated July 2016). <http://www.who.int/mediacentre/factsheets/fs204/en/>
2. Public Health England, Health Protection Scotland, Public Health Wales, and Public Health Agency Northern Ireland. Shooting Up: Infections among people who inject drugs in the United Kingdom 2015. London: Public Health England, November 2015
3. Hope VD, *et al.* Two decades of successes and failures in controlling the transmission of HIV through injecting drug use in England and Wales, 1990 to 2011. *Eurosurveillance* 2014;19(14): pii: 20762.
4. Sweeting MJ, Hope VD, Hickman M, *et al.* Hepatitis C infection among injecting drug users in England and Wales (1992-2006): there and back again? *Am J Epidemiol.* 2009 Aug 1;170(3):352-60.