HIV PEP – Needlestick exposure from a discarded needle in the community and Shared injecting paraphernalia recommendations – Evidence to decision

Recommendations are numbered 1-3 based on the sequence in which they appear in sections 4.4 and 4.5 of the EMI guidelines.

Recommendation 1

NOT recommended	GRADE: 2D[1]
HIV PEP is **NOT recommended** following a needlestick exposure from a discarded needle in the community [1, 15, 52, 53, 56].	

[1] Weak recommendation against, very low certainty evidence

Benefits and harms

The risk of HIV transmission is negligible and HIV PEP should not be given because the potential toxicity and inconvenience of HIV PEP is likely to outweigh the benefit.

Certainty of the Evidence Very low

Although community needlestick exposures are a common source of anxiety for the public and for the health care providers who treat them, transmission of BBVs in a non-clinical setting is exceedingly rare [52]. CANSI due to deliberate assault with a blood-filled syringe represents a higher risk than average [53]. HIV is a relatively fragile virus and is susceptible to drying. However, survival of HIV for up to 42 days in syringes inoculated with the virus has been demonstrated, with duration of survival dependent on ambient temperature. One study found no traces of HIV proviral DNA in syringes discarded by intravenous drug users, while another study found HIV DNA in visibly contaminated needles and syringes from shooting galleries [15]. However, the presence of viral DNA is not a direct demonstration of viable virus.

The risk of acquiring HIV following a community needle stick injury is extremely low [56] and it is usually not possible to determine whether the needle has been used and for what purpose, the HIV status of the index case and the interval between the needle use and the exposure [1]. Whilst there have been a handful of HBV and HCV as a result of a community needle stick injury, no cases of HIV have been reported [1].

In Ireland, of 366 children who presented to three Dublin paediatric Emergency Departments with community acquired needlestick injuries between 2002-2021, 287 (78%) were followed until 6 months post injury and

none tested positive for a blood borne virus (Hepatitis B, C or HIV) (Personal communication Prof P Gavin, Our Lady's Childrens Hospital, Crumlin).

Values and preferences

The evidence supports that the risk of HIV transmission from a community acquired needlestick injury is extremely low. Healthcare providers should discuss the evidence with patients as well as consider their values and preferences. Where a decision is made by a health professional to not prescribe HIV PEP, it is likely that most people in this situation would want the suggested course of action but many would not.

Recommendation 2

Recommended	GRADE: 1C[2]
HIV PEP is **recommended** for people who inject drugs (PWID) (including gbMSM who inject ("slam") "Chems"[1]) after sharing needles/equipment if their index injecting partner is living with HIV AND has NOT been on ART for at least 6 months with an undetectable plasma HIV viral load (at the time of last measurement and within the last 6 months) AND with good reported adherence [14, 60-65].	

[2] Strong recommendation, low certainty evidence

Evidence to decision

Benefits and harms

The benefit of prescribing HIV PEP outweighs the harms associated with the potential toxicity and inconvenience of HIV PEP. Effective treatment confers significant individual benefit and reduces the risk of onward transmission. Where there is a significant risk identified, the benefits of prescribing HIV PEP outweigh the harms.

Certainty of the Evidence Low

HIV and other blood-borne viruses, including Hepatitis B and C, can be transmitted between PWID through the sharing of needles and other injecting equipment contaminated with infected blood [14, 60, 61]. According to the systematic review conducted by Baggaley *et al.,* [14], the infectivity estimates for injecting drug users ranged from 0.63% to 2.4% (median = 0.8%). Given the heterogeneity of estimates between studies and subtypes, it was inappropriate to combine results in this systematic review.

A report published by HPSC in 2019 highlighted that transmission due to injecting drug use remained low in Ireland, accounting for 3% of those diagnosed with HIV in 2018 (total diagnosed 523 cases) [62].

For further information, please see Table 8 *Risk of HIV transmission per exposure where source is known to be living with HIV and not on ART* and Table 9 *Estimated risk of HIV transmission by type of exposure where source HIV status is unknown.*

[1] Gay, bisexual and other men who have sex with men (gbMSM) should be specifically asked about chemsex and injecting drug use.

In a 2018 UK survey of 836 gbMSM attending sexual health clinics, 17% reported sexualised drug use in the last 6 months and 10% reported injecting ("slamming") chemsex drugs in the last 6 months [63]. Qualitative and observational evidence suggests sex parties involving group sex and use of club drugs has contributed to the high rate of new HIV and hepatitis C infections, including in a subset of chemsex users, transmissions through intravenous use of crystal methamphetamine or mephedrone ('slamming') by inexperienced users or through deliberate sharing of blood injecting equipment [64]. This can lead to the potential exposure of HIV and other BBVs, therefore individuals who report drug use in a sexual context should be asked about injecting and sharing equipment [65].

Values and preferences

Where a decision is made by a health professional to prescribe HIV PEP, it is likely that most people in this situation would want the recommended course of action and only a small proportion would not.

Recommendation 3

Generally NOT recommended	GRADE: GPP[3]
HIV PEP is **generally NOT recommended** in PWID after sharing needles/equipment with an injecting partner of unknown HIV status from a group with higher HIV prevalence than the general population, but HIV PEP can be considered on a case-by-case basis.	

[3] Good practice point or statement.

Evidence to decision

Not applicable.

Good practice statements represent the guideline panel's view of optimal practice but are not graded. Panels should use good practice statements when high quality indirect evidence is available, but it would not be a good use of the panel's limited resources to conduct formal evidence summaries. Good practice statements, if used appropriately, are consistent with official GRADE guidance.