

SBAR: Nosocomial Blood Borne Virus (BBV) Transmission

Situation	Transmission of blood-borne viruses (BBVs) continues to occur in the healthcare setting. This necessitates a review of the evidence to determine under what circumstances such transmissions occur, and whether current infection control guidelines, if properly implemented, are adequate to prevent transmission.
Background	A large number of cases and outbreaks of BBV transmission in healthcare settings are reported in the literature. The majority of reports concern nosocomial transmission of hepatitis B virus (HBV) and/or hepatitis C virus (HCV). Outbreaks and cases of transmission of BBV are most commonly reported among haemodialysis patients ¹⁻³³ and in haematology/oncology units ³⁴⁻⁴⁷ , but have occurred in a variety of other healthcare settings and patient populations, including: an electroencephalogram clinic ⁴⁸ ; endoscopy patients ⁴⁹⁻⁵⁵ ; an accident and emergency unit ⁵⁶ ; assisted living facilities/nursing homes ⁵⁷⁻⁶¹ ; a pain remediation clinic ⁶² ; diabetic patients ^{63;64} ; operating theatres ⁶⁵⁻⁷⁰ ; cardiology wards ⁷¹⁻⁷³ ; assisted reproductive technology patients ⁷⁴ ; an orthopaedic ward ⁷⁵ ; clinical research study participants ⁷⁶ ; an alternative medicine clinic ⁷⁷ ; and a psychiatric facility. ⁷⁸
Assessment	It is often not possible to definitively determine the route of BBV transmission in healthcare settings. Indeed in many reports in the literature the route of transmission was not determined. However, transmission has frequently been attributed to known or suspected breaches in standard precautions.

	<p>Specifically, unsafe injection practices were identified as the probable route by which transmission occurred in many of the cases/outbreaks reported in the literature. These include: contamination of multi-dose vials or re-use of single dose vials^{9;18;21;33;39;40;47;50;51;53;56;68;71;72;79-87}, contamination of shared saline bags^{36;40}; re-use of needles^{50;62;79;80;82;84;88}; failure to change lancet on non-disposable capillary blood sampling devices between patients and/or failure to adequately decontaminate such devices between patients^{42;58-61;63;89}, and re-use of cotton wool to stop bleeding after routine phlebotomy⁹⁰.</p> <p>Inadequate decontamination of re-usable equipment such as endoscopes and anaesthetic respiratory equipment between patients has been implicated as a route of transmission in a small number of cases.^{52;54;67} Practices leading to blood contamination of haemodialysis equipment parts that cannot be or are not routinely adequately decontaminated are suspected to be responsible for some cases/outbreaks of BBV among haemodialysis patients.^{7;22;28;29}</p> <p>In addition, lapses in standard infection control precautions have been implicated in outbreaks/cases reported in the literature, including specifically: failure to change gloves between patients²⁵; lack of environmental decontamination^{1;11;91}; and inadequate hand hygiene.^{11;40}</p> <p>Because in many cases the route of transmission has not been determined, it is not possible to state with certainty that current standard infection control precautions are adequate to prevent BBV transmission in healthcare settings. However, given that transmission has been frequently attributed to lapses in standard precautions and unsafe injection practices, the evidence indicates that improving adherence to standard precautions and ensuring safe injection practices would help to prevent transmission.</p>
Recommendation	<p>Eliminating the use of multi-dose vials as well as eliminating the reuse of single-dose vials in healthcare settings is vital to prevent BBV transmission. Efforts should be made to improve adherence to standard</p>

	infection control precautions, and to ensure safe injection practices are followed.
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References

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