Safety Alert
Risk of Cross-Contamination with Insulin Pens

Issue:
Insulin pens (both disposable prefilled pens and reusable pens) and insulin cartridges are for Single Patient Use only. During injection, blood and biological matter can regurgitate into the insulin cartridge. Using a cartridge or pen already used for another patient exposes the second patient to any blood-borne pathogens the initial patient may be infected with, e.g. hepatitis B virus (HBV), hepatitis C virus (HCV), and/or the human immunodeficiency virus (HIV).1, 2

Evidence of Harm:
A study detected squamous and/or epithelial cells in needles and cartridges following an injection from an insulin pen in almost two-thirds of cases.3 Another study detected regurgitated blood in 4.1% of cartridges.4 There were similar findings in a further analysis of 125 pens where 5.6% tested positive for a variety of cell types or haemoglobin.5 The risk associated with using such contaminated pens and cartridges on more than one patient is potentially very serious. According to the WHO there exists a ‘silent epidemic’ in relation to unsafe injection practice generally and it estimates that such unsafe practices account for a large proportion of new viral infections occurring worldwide annually (42% of HCV infections, 33% of HBV infections and 2% of HIV infections).6

How to Reduce the Risks:

Safe Administration
- Insulin pens should never be used for more than one person, even when the needle is changed.7 Changing only the needle and reusing the cartridge of an insulin pen is a form of syringe re-use.8 Furthermore, changing the cartridge does not make the devices safe for multi-patient use.3
- Attach a new needle to the insulin pen before each new injection.7
- Eject the disposable needle from the insulin pen into a sharps bin immediately after use to reduce the risk of biological material entering the pen9 and reduce the risk of exposure of patients or staff to the patient’s blood.
- Keep a stock of needles designed for use with insulin pens on all areas where they may be required.
- Educate staff on the use of different pen types to reduce the risk that they may resort to withdrawing insulin from the cartridge using a needle and syringe. This practice can result in large air bubbles left behind in the cartridge and in dosing errors or subcutaneous injection of air if the pen is used to deliver a subsequent dose.9

Supply, Storage and Labelling Issues
- Supply insulin pens, on a named patient basis where possible, directly from the pharmacy department. Restrict stock supplies outside the pharmacy to a limited number of ward areas.
- Where possible supply all pens flag-labelled with space for patient name and unique patient identifier(s) prominently stating ‘For single patient use only’.
- Flag-label the body of the pen rather than the cap as caps can be separated from the pen body.10
- On ward areas, store in-use insulin pens at room temperature, ideally in a secure repository at the patient bedside or, if unavailable, in a patient-specific location on the drug trolley. Backup supplies should be refrigerated before first use,
- If pen re-use is identified, promptly notify those exposed and offer follow-up including blood-borne pathogen testing.7

Governance
- Ensure awareness/education of clinical staff in relation to the correct use and cross-contamination risks with insulin pens and similar pen devices.11
- Ensure staff have access to technical information about how to administer insulin pens and pen devices.
- Ensure a policy/procedure/guideline is in place regarding the correct use of insulin pens.11 This should cover the following points: labelling, supply, storage, transfer, disposal of pens; supply, use, disposal of needles; management of patients’ own pens and pens for patients in isolation; processes for audit and feedback regarding the practices involving insulin pens; and management of a possible or suspected cross-contamination event.

References
8. CDC – FAQs regarding Assisted Blood Glucose Monitoring and Insulin Administration http://www.webcitation.org/BLJxeEOTJ

Prepared by: Eileen Relihan, St. James’s Hospital; Clara Kirke, Tallaght Hospital; Maria Creed, Mater Misericordiae Hospital, on behalf of the IMSN.

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