

Safe Use of Sharps in Research

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Why sharps?

- Of 315 total accidents reported in 2020-2021, 88 were 'biological'
- Of these, 72 involved an injury (plus 1 infection)
- 29% of these involved glass/sharps, 35% involved contact with a sharp object
- Of injury types, 18% were attributed to needles, 42% to cuts/lacerations and 11% puncture to skin
- One incident (infection) investigated by HSE – advice issued
- Actual harm, anxiety and time, effort and stress in follow ups

What sharps?

- Sharps taken to mean medical sharps – ‘...object or instrument necessary for the exercise of specific healthcare activities which is able to cut, prick or cause injury’
- Typically needles and blades
- Other items to consider, notably glass (shards)
- Laboratory setting (also animal procedure, medical, veterinary arenas)

Categories of exposure

- Deliberate – person employs the sharp for intended purpose e.g. injecting an animal, dissecting tissue
- Casual – person chooses the sharp for other uses e.g. straightening gel wells, resuspending cell pellets, general cutting. (Re-use)
- Incidental – person encounters sharp which they had nothing to do with e.g. glass shards in MSC, needles/blades in drawers, lab coat pockets or under equipment

Consequences

- Physical injury – can be quite nasty from e.g. microtome blades
- Risk of infection – from any biological agent in use/in sample, from own skin microflora or environmental microbiota on unsterile sharps and while wound is unhealed

e.g. cellulitis (redness, swelling, abscess)

fasciitis

sepsis (123k UK cases pa, 30% fatal)



- Anxiety – e.g. cleaner gets needle stick from needle in waste bag.
- Time and trouble in follow ups – HSE?

Contributing factors

- Policies – are local rules (CL2/3), risk assessment, SOPs and training robust?
- Culture/awareness – personal responsibility from choice to disposal?
- Availability? – if they are generally available, people will generally use
- Inappropriate use – designed to be single use, then the sharps bin
- Inappropriate disposal – resheathing, waste containers (incorrect type not at the point of use)

Actions

- Departmental sharps policy – develop/review. General approach + CL2/3
- Risk assessment, SOP, training. Justified use – remove, reduce, replace
- Emphasise personal responsibility and control – USE IT? → BIN IT (risks to others)
- Reduce availability and discourage casual use; supply to order?
- Availability of suitable safer alternatives e.g. blunt needles, also PPE (e.g. cut resistant gloves)
- Ensure approved sharps bins available at point of use e.g. dark room? Clear disposal routes

Example incidents

- General lab – cleaner received needle stick from needle in general waste bag. Reassurance required, stress (for BSO)
- Animal facility – researcher suffered anaphylactic reaction from a scratch from a needle used to inject a mouse
- CL1 (mouse) prion lab – researcher received needle stick from a needle at the opening of a waste bin they were disposing to due to the needle being lodged in disposed tissues. Reassurance required
- CL2 Mycobacterium lab – researcher used a needle to resuspend bacterial pellet and pricked themselves in finger tip while resheathing it. Skin infected and lump removed by surgery and antibiotics prescribed. Resolved. Investigated by HSE.....

Further information

- University Safety Office HSD 192 B 'Safe Use of Sharps'
- Online 'Glass and Sharps Hazards' training
- University Safety Office Biological Risk Assessment proforma and accompanying guidance notes. This has been updated to give greater consideration towards sharps hazards