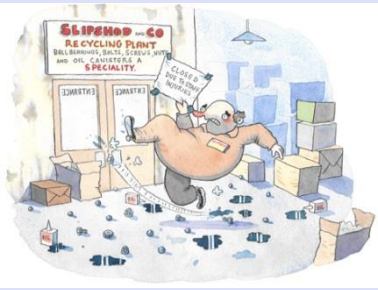
The University of Manchester

Safety Services Guidance



Guidance on investigating accidents, near misses and other incidents

Key word(s):	Accident investigation, incidents, near misses, direct and indirect causes,
Target audience:	Line managers, local and school safety advisors,

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Introduction

1. An accident is usually defined as an unplanned, unexpected event that may cause death, injury, damage or loss. Accidents occur as a result of a failure in the organisation, a deviation from what is 'normal' or 'should happen'. They are always undesirable, but when they do occur, there is an opportunity to learn from them so that future accidents can be prevented or at least made less likely.

2. The outcome of any set of circumstances is often fortuitous. When an item falls off a scaffold, it may hit someone on the head and cause serious injury or death (a fatal or serious injury accident), it may fall next to them and cause no injury (a near miss) or it may fall when no-one is present at all, or it may fall and cause damage to the pavement or a vehicle (an incident). No injury events also provide opportunities to learn how to prevent a recurrence where the outcome may be more serious.

3. The primary objective of investigating these events is to prevent recurrence rather than allocate blame. This can only be done by examining all contributory causes – immediate, and root or indirect causes - in a thorough, open and honest manner. Other objectives are to comply with legal duties under health & safety legislation, and to provide information to the University's insurers in the event of a civil claim.

4. The extent to which any incident needs to be investigated depends on the exact circumstances. The outcomes of any investigation should include a written record or report, the assumptions made and conclusions about the cause(s), identification of evidence that is inconsistent with the conclusion, and recommendations for avoiding a recurrence.

Responsibilities

5. In most circumstances, responsibility for accident investigations lies with the senior manager(s) of the member of staff or student involved. This could be the Head of Administrative Directorate, Head of School, or Head of Institute or Research Centre. They may delegate the function to a line manager (such as a principal investigator), or to a school safety advisor, but will always retain managerial responsibility to ensure that a competent investigation takes place, is properly recorded, and that any recommendations are fully implemented.

6. The Senior Manager should also ensure that reports on accident statistics, accident investigations and recommendations are made regularly to the School or Directorate Safety Committee.

7. Safety Services are responsible for reporting any accident or dangerous occurrence under RIDDOR (see Guidance on reporting). Safety Office staff will

therefore often need to ask for more information about an accident in order to comply with these statutory obligations and complete the HSE report form (an F2508). Typical queries relate to time of absence, injuries suffered, initial information about immediate causes, and contact details. These enquiries should not be confused with a full investigation, although the information will need to be shared.

8. In a few circumstances, Safety Services may feel that the investigation should be carried out by safety professionals, with assistance from the school or administrative unit management staff. This is likely to be the case with:

   - accidents reported to the enforcing authorities under RIDDOR[1]
   - those that involve more than one school or unit
   - those of a particularly sensitive nature or those where there could be widespread implications
   - those where the University's solicitors have issued instructions for the investigation to be carried out under legal privilege

   In general, the Head of Safety Services is responsible for deciding these cases, and for communicating this to relevant parties. Rarely, the Registrar, Secretary and Chief Operating Officer or other senior manager may ask for the investigation (or an additional or follow up investigation) to be carried out by Safety Services.

9. On receipt of a written accident investigation report, University Safety Co-ordinators may also ask for clarification or additional lines of enquiry to be covered before they close off an accident entry in the Events database.

Which accidents should be investigated and to what extent?

10. Ideally, all accidents should be subject to some investigation. Our insurers advocate this, because they may be faced with defending a civil claim for damages several years after what appears to be a trivial event. It is then too late to obtain reliable information.

11. Where individual occurrences are relatively minor but regular, it may be more appropriate to keep statistical information on trends rather than investigate each incident. An example is clean needle stick injuries to student nurses first learning how to unsheathe and handle a hypodermic needle. A marked increase in reports one year might suggest that the teaching material should be reviewed.

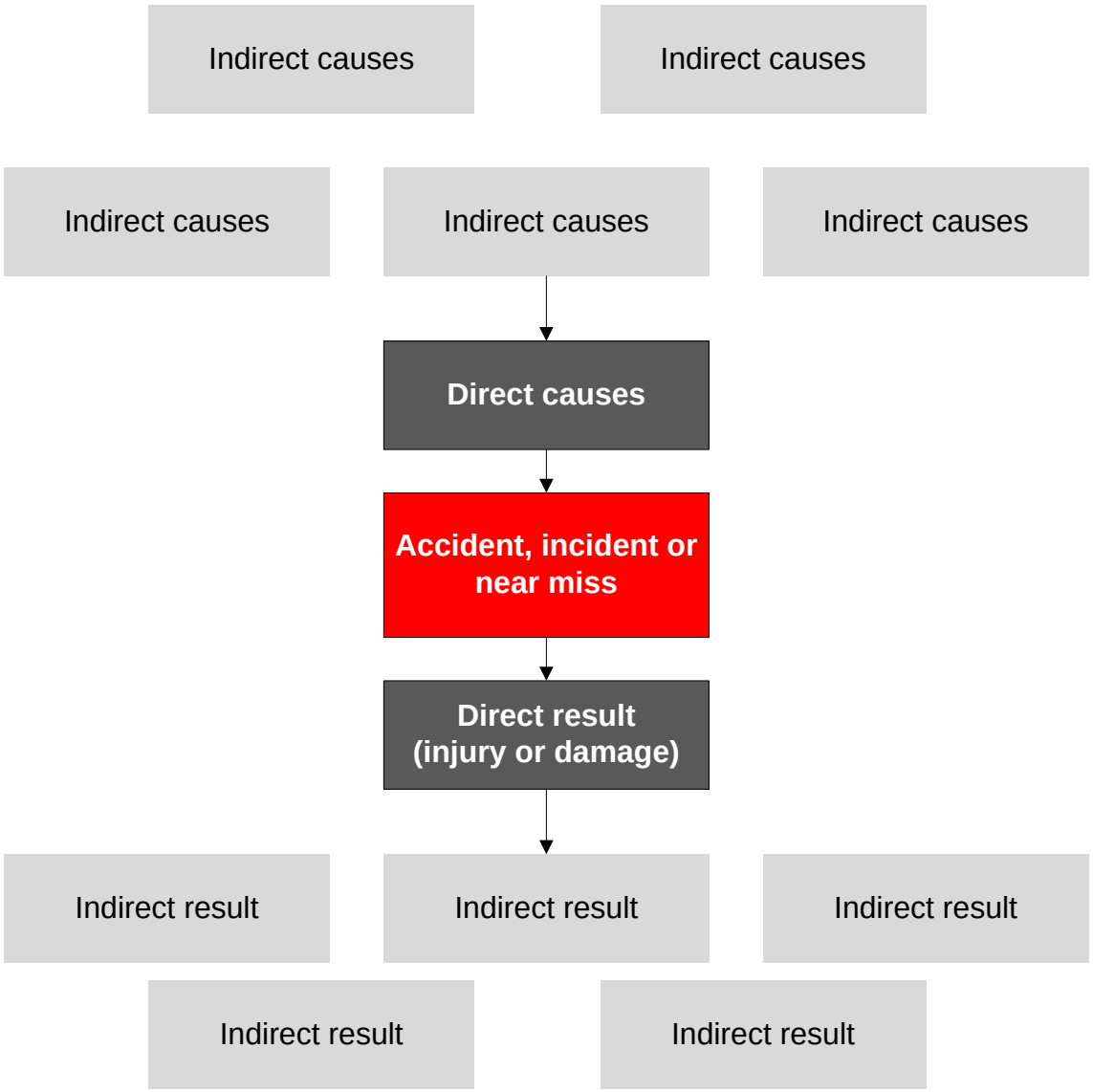
12. Safety Services provide investigation templates and prompt sheets in their website toolkit, to aid the process; these can be adapted to suit particular schools

[1] Reporting of Injuries, Diseases and Dangerous Occurrences Regulations, 2013

or directorate work activities. Further guidance on whether an investigation should take place and the depth of that investigation can be obtained from the University Safety Co-ordinators.

Theories of Accident Causation

13. There are many accident causation models and the terminology varies, but the following sequence is common to most:



14. Many accident investigations look only at the direct (immediate) causes, the accident itself and the direct result. This leads to a consistent underestimation of managerial contributions to accident causes.

Direct and Indirect causes

15. HSE-commissioned research concludes that about 70% accidents in the workplace are attributable to failures in management which typically contribute to the indirect causes. This includes failures to:

    - provide sufficient information about risks, and instructions about how to avoid (or adequately control) them
    - train people to use equipment and protective measures properly
    - provide sufficient levels of supervision to ensure that their instructions and policies are fully implemented
    - report and act upon near misses.

16. Suppose someone trips over an unsecured section of carpet flooring and is injured. The direct cause(s) will often be identified quickly – and might include the loose carpet, someone rushing about, perhaps not concentrating or looking where they were going, or carrying something so they could not see where they stepped. The loose carpet will hopefully be secured in place without delay, and in many cases, that is the only outcome.

17. Suppose, however, that the carpet had been loose for some time, that several other people had tripped over it previously but not sustained injury, that damage to carpets was being reported on a regular basis but nothing was ever done – until someone was actually injured. Indirect causes could include failure to learn from near misses, failure to report defects before something happens, lack of a routine maintenance system or check on floor coverings.

Some examples of indirect causes	Some examples of direct causes
Knowledge / skill deficiencies Motivations conflicting with safety (e.g. desire to save time, complete a job within a deadline) Management failures to instruct, train, supervise, inform Failure to follow a procedure e.g. in a script or risk assessment Design or engineering faults e.g. insufficient safety devices Inadequate maintenance and / or preventative maintenance Improper use of equipment, e.g. beyond its rated capacity Unsafe procedures by others e.g. contractors Lack of, or incomplete understanding of information given in the English language	Operating at unsafe speed or manner (e.g. a pedestrian operated pallet truck turned in too tight a circle) Defeating safety devices (e.g. window opening restrictors) Operating without authority (e.g. no permit to work) Use of defective equipment (e.g. homemade flash back arrestors) Using an unsafe position (e.g. incorrect seating, fragile roof with no crawling boards) Repair, servicing, or observation of energised equipment (e.g. working on live electrical systems) Failure to make secure (e.g. fixing of guards, slings) Failure to use protective equipment (e.g. splashes to the eyes when protective glasses have not been worn) Use of dangerous machinery or equipment with trapping, entanglement, cutting, shearing hazards and inadequate safety devices (e.g. craft knives or Stanley knives) Physical conditions (e.g. condition of stairs, floor surfaces, obstructions, poor lighting) Poor housekeeping (e.g. giving rise to tripping and slipping hazards)

Indirect results or outcomes

18. The direct result will usually be obvious at the site of the accident or incident. Indirect results include hidden costs and impacts on the family of the injured party (e.g. having to accommodate an injured person, carry out the tasks that person would normally do at home, with the children, visits to hospital or GP), temporary staff to cover absences, increased insurance premium, investigation personnel time and resources, time taken to co-operate with investigations by HSE, insurance assessors, etc., implementation of recommendations arising from the investigation, replacement of damaged equipment, checks on similar equipment that might fail in similar fashion.

19. Direct and indirect costs of accidents at work have been extensively researched by HSE and the figures below are taken from their 2010/11 publication[2]. Assumptions have to be made to obtain such estimates and the figures can appear meaningless to individual employers. Indirect costs are usually underestimated.

    - Of the total cost in 2010/11, workplace injury (including fatalities) cost an estimated £5.4 billion.
    - Somewhat over half of the total cost in 2010/11 fell on individuals whilst the remainder was shared between employers and Government.
    - Around £5.7 billion of the total cost in 2010/11 represents financial costs; the remaining £8.0 billion represents the monetary value given to individuals' 'pain, grief and suffering'.

How to Investigate an Accident

20. Very simple accidents can be investigated using the principles described in this guidance. Ideally, however, investigators should attend the STDU course on Accident Investigation, THS35 (book via the Training Catalogue), or have a NEBOSH certificate or higher qualification which covers accident investigation.

21. It is essential to remain objective and open-minded about the causes of any accident. If the investigator feels their objectivity or independence is compromised, Safety Services will arrange for the investigation to be carried out by someone else. The investigation should be carried out as soon as possible after the accident. If delay is unavoidable, the accident site should be left undisturbed until the investigator is ready.

[2] http://www.hse.gov.uk/statistics/pdf/cost-to-britain.pdf

22. The following box lists some simple rules for carrying out investigations. Occasionally, it may be necessary for more complex investigations such as those making use of a team of investigators, techniques such as fault tree analysis etc. These are not covered in this guidance.

Practical accident / incident investigation.

Not all points will be relevant to all investigations. Some of the stages can be a quick mental process.

1. Establish the facts as quickly and completely as possible. Include the names of those involved and any witnesses, the general environmental conditions, any plant, equipment or systems of work, and the sequence of events leading up to the accident.
2. Take photographs of the accident scene.
3. Draw a sketch of the layout, or take measurements of separation distances if appropriate.
4. Interview anyone directly involved, and anyone who saw, heard, smelt or felt anything related to the accident, and the managers involved. Record their statements. DO NOT PROMPT or lead the witness. Use open questioning techniques such as "In your own words, please tell me what happened". Sometimes, it will be essential to record negative statements, for example, from people who were in the vicinity but didn't hear anything.
5. Sometimes it may be necessary to submit equipment or substances for analysis or examination. If so, retain it in a secure place so that it cannot be altered or tampered with.
6. When you have the statements and facts about the physical conditions at the accident site, evaluate the data, establish consistencies and inconsistencies. Try to reconcile any inconsistencies by further questioning or investigation.
7. Arrive at a conclusion about the cause(s) of the accident.
8. If necessary, record any data that is inconsistent with your opinion about the cause(s). NEVER disregard information which is inconsistent with your view.
9. Record details of your investigation and conclusions, including any action taken to deal with the direct and indirect causes, reviews of risk assessments, training needs, etc.
10. Keep copies of all documentation, photos, etc. This evidence may be needed years after the event.
11. Inform Safety Services by sending in a copy of your investigation report.
12. Complete your school / directorate / institute register of accidents and comply with arrangements to report them to your local safety committee.

23. Remember: any documentation or verbal communication may be used in later investigations, for example, by the HSE, or in criminal or civil proceedings. Your views and opinions, as well as the actions taken, may be subject to very close scrutiny.

24. At the end of any investigation, the key findings about cause should be recorded in a report of some kind. For the simplest of investigations, these could be noted on the back of the report form, or in a local database, and copies forwarded to Safety Services. If an investigation template is used, a completed, signed and dated copy should be forwarded to Safety Services. Each one should be formally closed, even where no investigation is carried out.

25. Recommendations and action plans arising from investigations should be sent to the local health & safety committee for consideration and tracking to completion. The Committee should review all the outcomes, and seek to identify any trends or patterns, review local processes for administering and investigating to ensure they remain fit for purpose and effective, and that those carrying out the work are competent and appropriately trained.

26. Go to Safety Services webpage http://www.healthandsafety.manchester.ac.uk/toolkits/accidents/reporting/ for templates to report and investigate accidents, and for checklists.

Document control box	
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