Guidance Note, GN008

CHECKLIST FOR LABORATORY BASED INSPECTIONS

Laboratory based departments – material to help departments develop their own self-inspection checklists

The purpose of a health and safety inspection is to find out whether staff and students in a department are doing what the departmental safety policy requires. Inspection checklists should therefore be based on a department’s own health and safety rules and arrangements as described in the departmental safety policy and other departmental documents.

This material is intended to help with the creation of departmental inspection checklists and must be customised to make it appropriate and specific for the department in which it will be used. The document has been based largely on Appendix 4 of the Departmental Safety Advisers Handbook. It is expected that a department will need to make substantial changes to the document before it can be used as a checklist for the inspection of their own activities.

Previous inspections

- Have the concerns identified during the last inspection(s) of the Department been addressed?

Policy

- Has the departmental safety policy been signed by the current Head of Department?
- Has the departmental safety policy been reviewed in the past 12 months? Are there records of the review?
- Has each member of staff and each postgraduate student either been issued with a personal copy of the policy or had it drawn to his/her attention and been told how to access the text of the policy?
Training

- Have all new staff and students received induction health and safety training using the current departmental induction training checklists? Are there records of that training?
- Are there records of other training provided for staff and students?

Undergraduate Students

- Do written instructions for undergraduate practical work contain necessary information about health and safety?
- Is appropriate health and safety instruction provided during pre-practical talks?
**Postgraduate students (and undergraduate honours students)**

- Have adequate risk assessments being carried out and documented for postgraduate research work in progress? Have the assessments been approved by the students’ supervisors? Is there evidence that the risk assessments are regularly reviewed?

- If there are no risk assessments, are there standard protocols covering the work which incorporate the findings of risk assessments?

- If they expect to be absent for more than “n” days, do supervisors of students appoint replacement supervisors? Are details of the replacements notified to the Departmental Office and to the students concerned?

**Accidents**

- Is there an up to date file of completed accident report forms?
Fire

- Are there sufficient “What to do in event of fire” notices?
- Are corridors and escape routes kept clear of obstructions?
- Are corridors and escape routes kept clear of combustible materials which could become a source of fire and smoke?
- Can all doors on escape routes (as far as a place of safety outside the building) be easily opened?
- Are fire doors kept closed (and not wedged open)?
- Do staff and students know where the nearest fire extinguishers are? Do they know which would be the appropriate extinguisher for a particular fire?

First aid

- Are there sufficient qualified first aiders (with in-date certificates) and are notices posted stating who they are?
- Are there sufficient first aid supplies and are first aid boxes checked regularly?
- Have safety showers and eye wash units been tested during the past six months?
- Have staff and students been given instruction in the immediate actions to be taken in event of chemical contamination of the body or burns/scalds?
Health and Safety  
Because We Care

**Computer workstations**

- Have computer workstations of “users” been assessed and are there records of the assessments? Have the assessments been repeated or reviewed during the last 2 years?

**Access to heights**

- Are there suitable means of accessing storage above head height (e.g. tools, step ladders)? Will they readily to hand when required?
- Have ladders been inspected during the last three months? Are there records of the inspections?

**Manual handling**

- Are there sufficient items of equipment for moving heavy and awkward loads around the building (e.g. trolleys)? Are they in an acceptable condition?

**Housekeeping and good laboratory practice**

- Are floor surfaces clean and in an acceptable condition and unlikely to cause slips and trips?
- Have trailing cables been re-routed so as not to create trip hazards?
- Are benches kept tidy and are gangways kept clear?
• Are there any indications that eating or drinking is carried on in laboratories or that food, drinks, cups etc are stored in laboratories?

• Are there any indications that those wearing gloves for reasons of health and safety do not remove them before touching something which someone without gloves might handle?

• Are lab coats being worn correctly? Are there places for them to be hung when not being worn to keep them away from personal clothing?

• Is eye protection available for those who might require it and is it being worn in accordance with the Department’s rules on eye protection?

• Is there a range of gloves available to protect against the range of chemicals used in the Department? Is it clear which gloves are for which applications?

• Have powdered latex gloves been replaced by powder free hypoallergenic ones?

• Is it possible for people to be accidentally locked in cold rooms (or other walk-in controlled environment rooms)? Can the doors of these rooms be opened from the inside even when the door has been locked from the outside?
**Autoclaves**

- Are there up to date lists of those who are authorised to use autoclaves?
- Is the register of autoclaves up to date and is there written evidence that autoclaves have been regularly inspected in accordance with the manufacturers’ recommendations? Are certificates of inspection of the pressure vessels on file in the Department? Are autoclaves marked with the date of last inspection and when the next inspection is due?
- Are there records of daily/weekly examinations for the proper functioning of safety devices?

**Centrifuges**

- Is there a nominated person responsible for each centrifuge?
- Are there up to date lists of who is authorised to operate centrifuges?
- Is there a log of rotor usage for each centrifuges and is it being kept up to date?
- Are centrifuges and rotors in a clean and dry condition with no evidence of corrosion of critical parts?
- Are there written records of inspection and maintenance of centrifuges? Is it clear when the next maintenance visit is due?
Chemicals

- Are hazard data sheets for chemicals readily accessible (either in hard copy or in an electronic form)?

- Are containers of chemicals correctly labelled and, where appropriate, have hazard warning symbols been used?

- Are strong acids/alkalis and other bottles of hazardous liquid chemicals stored in spill containment trays?

- Have wash bottles containing anything other than water been marked in a highly visible and distinctive manner?

- Is there adequate segregation of incompatible chemicals?

- Are bottle carriers readily available for transport of bottles? Are sealed bottle carriers used for transport of highly flammable liquids (HFLs)?

- Are bulk stocks of HFLs kept in the store external to the building?

- Is the total volume of HFLs in any laboratory or room kept below 50 litres?

- Are all HFLs within the building kept in designated fire resisting cabinets with spillage containment? Are the cabinets correctly labelled? Are they in good condition with no evidence of corrosion? Are they used only for HFLs and not for other chemicals?

- Are ALL refrigerators, cold rooms and freezers marked either to prohibit their use for HFL storage or to permit it because they have been sparkproofed?

- Are ethers susceptible to peroxide formation tested on a regular basis? Is it clear when the next test is due?

- If carcinogens are used in teaching has the Head of Department given/renewed approval for their use during the past 12 months?

- Are there written procedures for work with carcinogens?

- Are there designated areas for work with carcinogens?

- Is transport of carcinogens outside these areas carried out using robust sealed containers?

- Are carcinogens stored separately from other chemicals in locked storage?
Spillage of chemicals

- Would materials and equipment to clean up a chemical spillage be readily to hand (i.e. obtainable within one minute) at any time of the day or night when staff or students are handling chemicals or containers of chemicals? (Consider absorbent granules, scoops or shovels, drums for contaminated granules, protective equipment for those who will be involved in the clean up including gloves, eye/face protection, aprons, boots, and respirators.)

- Might self-contained breathing apparatus be required? Have sufficient staff been trained in the use of breathing apparatus and would it be readily accessible to clear up a spillage?

Compressed gases

- Are cylinders of compressed gases which are not in use kept in the cylinder store outside the building?

- Is the store kept locked?

- Are cylinders correctly segregated in the store and secured in a vertical position?

- Is the store used only for gas cylinders?

- Is there a cylinder trolley for transport of cylinders?

- Are gloves and safety footwear available for those who move cylinders?

- Is there a system in place to ensure that cylinders always travel in lifts unaccompanied?

- Are cylinders in laboratories secured in an upright position?

- Do all in-use cylinders have bottle keys on the cylinder valves to enable an immediate emergency cut off of the gas supply at the bottle?

- Have regulators been replaced within 5 years of date of manufacture regardless of use?

- Are all connections to regulators secure?
Because We Care

- Where appropriate have safety valves been fitted to prevent high pressure being applied to laboratory apparatus?

Cryogenic liquids

- Are cryogenic liquids stored, dispensed and used in locations which are adequately ventilated?
- Are visors and gloves available?
- Is there a system in place to ensure that cryogenic fluids always travel in lifts unaccompanied?
- Do those working with cryogenic fluids wear eye protection and avoid features on their clothing which could trap a spillage of fluid? Do they remove watches and jewellery?

Electrical equipment

- Is it clear how frequently electrical equipment should be (a) visually inspected and (b) tested? Is equipment being examined at these frequencies? Are records being kept?
- Are there any obvious defects in electrical equipment which is in use or available for use?
- Is there a system by which a member of staff or a student could take a faulty item of equipment out of service and report the fault to someone who would then take care of it?
- Is there any overloading of supply sockets?
- Are earth leakage circuit breakers used where electrical equipment is in proximity to water?
• Is electrical equipment which has been brought from home by staff checked for electrical safety?

Fume cupboards and other local exhaust ventilation systems
• Are fume cupboards being used only for experimental work in progress and not for storage?
• Have experiments been set up in fume cupboards in a manner which does not unduly inhibit airflow through the fume cupboards?
• Are the interiors of fume cupboards clean and, where necessary, have the areas behind the baffles been cleaned?
• Are records available of the last 6 month and 12 month inspections of the fume cupboards?
• Are face velocities marked on the cupboards?
• Is it clear when the next inspection is due?
• Have other ventilation systems used to extract airborne contaminants been inspected in the past 12 months? Are certificates of inspection available?
Lifting equipment

- Is it clear who is authorised to use lifting equipment? Have they been trained in its use? Are there records of training?
- Is head/hand/foot protection available to (and used by) those involved in lifting operations?
- Are there arrangements for taking faulty lifting equipment out of use so it cannot be used by anyone?
- Is there an up to date register of lifting equipment?
- If lifting equipment marked with identifying numbers and safe working loads?
- Are in-date certificates of inspection available for all items of lifting equipment? Is it clear when next inspections are due?

Lone working and out of hours working

- Are the Department’s rules on lone working understood and followed?
- Are the Department’s rules on out of hours working understood and followed?
- Are University permits displayed when experimental work is left unattended out of hours?
- Are water supplies to equipment which will run unattended correctly connected?
Machinery

- Are the dangerous moving parts of machinery adequately guarded?
- Where interlock (or trip) switches are used, are they regularly tested? Are records of tests kept?
- Are rules on the wearing of jewellery, loose clothing etc by those operating machinery enforced?

Pressure vessels

- Has the department identified pressure vessels which need to be examined by a competent person under a written scheme of examination? Have examinations been carried out and are certificates of examination available on file? Is it clear when the next examination is due?

Vehicles

- Is it clear who is permitted to drive the Department’s vehicles?
- Are there arrangements for carrying out daily and weekly checks on vehicles? Are records kept of these checks?
- Are there arrangements for ensuring regular servicing of vehicles? Are records kept of servicing? Is it clear when the next services are due?
- Does the Department understand the meaning of the term “hire or reward” as used in road traffic legislation? Does the Department use its vehicles for hire or reward? If so, have necessary permits been obtained?
**Waste**

- Have all the waste streams out from the Department been clearly identified? Can all waste generated by the Department be assigned to a waste stream? Have staff and students been instructed as to which streams are for which types of waste?

- Are there arrangements for ensuring that no hazardous waste goes into black bags?

- Are there arrangements for disposal of waste glassware to prevent those who handle the waste being injured by broken glass?

- Are containers of chemical waste (including mixed solvents) clearly marked with details of their contents?

- Is waste stored in a manner such that it will not present a danger to others? Is combustible waste stored in a manner such that it is unlikely to provide fuel for arson attacks?

---

**Biological safety – containment level 1**

- Are bench surfaces impervious to water and resistant to acids, alkalis, solvents and disinfectants? Are they easy to clean?

- Does the laboratory contain a basin which can be used for handwashing?

- Are lab coats worn in the laboratory and removed when leaving the laboratory?

- Are disinfectants available for use in event of a spillage?

- Is there a routine for disinfection of benchtops and laboratory equipment after use?

- Are materials awaiting disinfection stored in a safe manner (and are pipettes totally immersed in disinfectant)?
• Are contaminated materials (either for recycling or disposal) stored and transported in robust leakproof containers?

Biological safety – containment level 2

• Are there written local rules for the laboratory? Have all those working in the laboratory received copies of the rules?

• Is access to the laboratory restricted to authorised persons? Is it clear who are “authorised persons”?

• Is the laboratory door closed when work is in progress?

• Is there a dedicated wash basin near the door for handwashing with wrist, elbow or foot operated taps?

• Are bench surfaces impervious to water and resistant to acids, alkalis, solvents and disinfectants? Are they easy to clean?

• Are disinfectants available for use in event of a spillage and are there specified disinfection procedures?

• Is there a routine for disinfection of benchtops and laboratory equipment after each work session?

• Is the laboratory mechanically ventilated? If so, is it maintained at an air pressure negative to atmosphere while work is in progress?

• Are infectious materials stored in a safe and secure manner?

• Is a microbiological safety cabinet used for procedures which might give rise to infectious aerosols?
• Has the safety cabinet passed an operator protection factor test (or “KI” test) in the last 12 months? Is a test certificate available?

• Has the safety cabinet been maintained in the last 12 months. Are records of maintenance available?

• Is it clear when the next test and maintenance visit is due?

• Are there procedures for decontamination/fumigation of the cabinet and HEPA filters before maintenance is carried out? Are maintenance workers provided with written confirmation that safety cabinets have been decontaminated/fumigated?

• Are side/back fastening lab coats worn in the laboratory and removed on leaving the laboratory? Is there a location for storage of personal clothing outside the laboratory?

• If gloves are worn for reasons of health and safety, are they removed before touching anything likely to be touched by others?

• Is the autoclave which is used to treat material from the laboratory regularly performance tested using thermocouples or another method of validating performance? Are there records of the tests? Is it clear when the next test is due?

• Are contaminated materials (either for recycling or disposal) stored and transported in robust leakproof containers?

• Are materials awaiting disinfection stored in a safe manner (and are pipettes totally immersed in disinfectant)?

• Are there vaccines available to protect laboratory workers from infectious material used in the laboratory? Have all staff and students been offered vaccinations? Is the Department aware of who has accepted and who has refused vaccinations? Are there records of vaccinations? Is it clear when the next vaccinations are due?
Genetic Modification

- Has all work with genetically modified organisms been approved by the relevant Genetic Modification Safety Committee?