Health Surveillance and Health Monitoring

PRIFYSGOL
BANGOR
UNIVERSITY

Gwasanaethau Iechyd a Diogelwch

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Health and Safety Services

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1. Introduction

This document sets out how Bangor University confirms through health surveillance and health monitoring that its use of certain hazardous products, agents, equipment and materials do not cause harm to staff and others. Where there is a possibility of harm occurring health surveillance and monitoring seeks to detect symptoms as early as possible.

The document primarily considers guidance set out by the Control of Substances Hazardous to Health (COSHH) Regulations, the Control of Vibration at Work Regulations and the Noise at Work Regulations. Where legislation does not directly require health surveillance the document considers that which is advised on the basis of good practice, most often as advised by the Health and Safety Executive (HSE).

The information contained in the document is designed as simple and pragmatic advice, outlining when health monitoring or health surveillance may be required and what form and how often this should be provided.

Health surveillance and health monitoring are undertaken to confirm that work and activities at Bangor University are not adversely impacting on a person's health.

Further information on health risks from potential workplace exposures is available via www.bangor.ac.uk/hss or from the Health and Safety Executive. Advice on Vaccinations, required for work purposes, can be found under "vaccinations" on the University's A-Z of Health and Safety.

2. Risk Assessments and Hierarchy of Risk Control

Risk Assessments should always seek to implement a hierarchy of risk control, through: elimination, substitution, separation, reduction, extraction, training and standard operating procedures and personal protective equipment (ppe). Risk Assessments must always be the first action prior to considering health surveillance or monitoring.

Health surveillance and health monitoring are not the norm and are typically only ever provided where there is an evidential method of assessing health impact, or confirming otherwise, and there is a measured residual risk from an activity. Very few members of staff or post-graduate research students will ever require health surveillance or health monitoring.

Health surveillance and health monitoring are related directly to workplace activities and risks. Such should not be confused with General Health Checks which are offered, from time to time, by the University and local GPs.

3. Different Types of Health Monitoring and Surveillance

a. Health Surveillance is normally a statutory health assessment or relates specifically to a known well-documented risk, such as: work with COSHH Schedule 6 chemicals, use of vibrating equipment, exposure to high levels of noise, exposure to animal allergens and for night shift workers. Health Surveillance will mostly take the form of a face-to-face consultation with an Occupational Health specialist, or via a health questionnaire. Sometimes a combination of both is used.

b. Health Monitoring tends to relate either to a single 'risk' activity or multiple activities that have a known potential to cause harm to an individual, if not suitably controlled, or that individual may pose a risk to themselves or others due to their own health condition. Such scenarios could include those contracted to drive vehicles and for food handlers. Monitoring in these cases can often be undertaken locally, by line managers or via a questionnaire.

The frequency of health surveillance and monitoring should reflect the level of risk and likelihood and can take different forms on a rotating bases. *E.g. Health surveillance may involve a face to face consultation and tests every other year, with a health surveillance questionnaire distributed in-between.*

4. Why Health Surveillance & Monitoring?

The University carries out many activates that were they not suitably controlled could pose a risk to the health of an individual. Controls are normally identified via risk assessment and are monitored accordingly. Some activities can have a higher than normal level of residual risk, as every person reacts differently to exposure, and some scenarios may need to be monitored. Therefore, where there is a higher than normal level of residual risk to health and where there is a credible health assessment method for identifying early signs of potential harm, health surveillance or monitoring may be implemented.

Health surveillance and monitoring are control measures that seek to help manage any residual risk to a person's health, after all other control measures identified in a risk assessment have been implemented. Such offer reassurance and an early warning mechanism were health to be impacted.

5. Is Health Surveillance/Monitoring Compulsory?

All health surveillance is compulsory, as it is implemented with direct reference to legislation and/or required in order to safeguard the individual. Some health monitoring is not compulsory and is offered as reassurance.

In some cases pre-start health surveillance or measurements will be required and for certain occupations a 'leaving' health assessment will also be necessary; the former undertaken to provide a baseline indicator and latter to confirm health status at the time of leaving employment/research study.

6. Responsibility for identifying Health Surveillance and Monitoring Requirements

Each College and Department is responsible for considering the potential need for health surveillance or monitoring as part of their risk assessment process, making reference to this document.

Where there are known hazards and risks that may require health surveillance or monitoring College/Departmental h&s Coordinators and Officers are asked to make contact with the Occupational Health Practitioner to discuss their risk assessment findings.

7. Health Surveillance and Monitoring Records

Health surveillance records related to an identified harmful chemical, material or activity are normally kept by Health and Safety Services (HSS) or in Document Archives, for a period of 40 years after the last assessment. These are treated as Health Records and not Medical Records, as they will not contain what is deemed to be personal medical information.

Where a person's health surveillance record contains 'medical' information these will be retained by/via HSS for the statutory period and will not be shared with others outside of the standard medical records and information controls.

Amassed statistics may be used for general health profile information but such will never refer to an individual nor will an individual be identifiable from any such reports.

Staff and Research Post-graduates who have received health surveillance or monitoring can request a copy of their records to take with them to their new employer.

8. Action following health surveillance and monitoring

During or following the completion of a face-to-face consultation with the Occupational Health Practitioner the person receiving surveillance or monitoring will receive verbal feedback and appropriate summary information provided. A written copy of all results can be provided, where requested.

Where a concern or anomaly has been identified the Occupational Health Practitioner will discuss the next course of action with the person, or confirm that they will make contact with the individual and their line manager to advise or discuss what action may be required.

Feedback following *Paper Questionnaire* health monitoring is not normally given.

Following completion of 'batches' of health surveillance or monitoring, normally per department or 'at risk' staff group, the Occupational Health Practitioner may summarise the findings and provide a short report to the relevant line manager. This report will be made available to all who took part in the surveillance/monitoring and to trades union representatives, if requested. The report will not contain any personal information.

If at any point the Occupational Health Practitioner has a concern emanating from the health surveillance or monitoring they shall discuss with the Head of Health and Safety services in the first instance, and thereafter and where necessary with other relevant occupational health specialists or professionals. In rare cases referral to an Occupational Health Physician or other clinical specialist may be required.

If the Occupational Health Practitioner deems it necessary the member of staff or post-graduate research student may be required to cease exposure to what may be causing an adverse health effect. Such a decision will be relayed to the relevant Head of School or Department immediately, and confirmed with Human Resources or Student Services, if appropriate. In the case of staff, the relevant trades' union representative should be informed.

The Occupational Health Practitioner may temporarily suspend a work activity whilst further investigations and assessments are being undertaken. A suspension of work activity is not an acceptance that workplace risk has caused any harm as removal from the potential risk is considered good practice whilst further tests or assessments are undertaken.

9. In Practice: what's involved and when is it required?

As indicated above, the University has a variety of activities and hazards that, if not properly controlled, could pose a risk to a person's health. These risks can come from hazardous chemicals, inhaling minute particles in the air, through contact with certain animal fur or excrement, and by exposure to high levels of vibration or nose.

Exposure to something with a significant harmful effect is normally very limited or infrequent, if ever. This is particularly evident in the chemical and biological laboratory as direct exposure to a chemical will be limited by the controls and through working methods employed (e.g. decanting and use of chemicals in fume cabinets, under good laboratory practice controls will practically eliminate significant exposure). Risk Assessments and standard operating procedures primary aim is to safeguard the health and safety of the operatives and others who may be affected.

In most cases exposure to trace quantities of many toxic or irritant substances will cause harm only if exposure occurs sufficiently frequently. Though, it is noted that health surveillance may be appropriate even if very small or infrequent exposure to hazardous substance is known to pose a potent risk to health, such as may occur with powerful respiratory sensitizers, recognised carcinogens (i.e. those listed Schedule 6 and used outside of manufacturing process) or highly active biological agents/toxins (such as cytotoxic drugs and neurotoxins).

Where it is considered that health surveillance or health monitoring may be required the relevant School or Department will be asked to re-risk assess their activity to identify current control measures, potential for exposure, length of time and extent of exposure, and to identify whether an alternative method or substance can be used so as to reduce the risks.

For all staff that require health surveillance, information in the form of SOPs and Risk Assessments will be required by the Occupational Health Practitioner.

Health Surveillance and Health Monitoring can take form of: Respiratory Questionnaire, Lung Function Tests (where there is a discernable risk to a person's respiratory system or thyroid), Eyesight Tests, Hearing Tests, Skin Health Questionnaire, Hand/Arm pain and discomfort questionnaire (vibrating equipment), Night Workers Questionnaire, Driver Health Assessment/Questionnaire, blood samples, and/or face to face discussions. Tests and questionnaires will be tailored to the risks and staff potentially exposed to risks.

10. <u>The following section advises on particular risk areas and identifies when Health Surveillance or Health Monitoring may be required.</u>

Schools and Departments are required to firstly review or complete their risk assessments, identifying any potential risk to a person's health. If a level of risk is identified the hierarchy of risk control should be employed. Normally, only if there is a residual level of risk or legislation requires should health surveillance or monitoring be considered. In some cases health monitoring may be undertaken in order to safeguard the person and the institution.

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
SMALL LABORATORY ANIMALS, REPTILES AND INSECTS *<u>Work with animal tissue and work with aquatic animals does not require surveillance.</u>* Animal fur, feathers, dander, dried urine and saliva dusts arise through animal handling and cage or enclosure cleaning. These dusts contain proteins, 'animal aeroallergens' that may cause occupational asthma. In some cases spores from old used animal bedding can also pose a risk to health. Due to possible respiratory sensitisation Health Surveillance may be necessary for regular handling and direct contact with live animals, such as: a. Rats and mice; b. Pigeons and pigeon waste; and, for those who <u>regularly</u> clean cages of animals and handle used animal bedding. *The University's work with Insects (with hairs or scales), such as crickets, locusts, cockroaches, is low level and does not, at present, constitute a significant health risk provided standard procedural controls are in place.*	For staff and post-graduate research students who have <u>frequent</u> and direct contact with animals such as rats, mice and pigeons and/or their used bedding, may be required to attend Health Surveillance, normally, every 12-24 months, dependent on risk exposure and frequency. Those with the greatest risk exposure (Group 1.) will undertake annual health surveillance, including completing a respiratory and skin questionnaire, and perform a Lung Function Test. All Group 1 staff/researchers (who require annual Health Surveillance) will normally also have a **pre-start** Assessment, and ideally then at 6 weeks and again at 12 weeks after the individual has started work to monitor symptoms of possible pre-sensitization. In cases where 24 monthly face to face health surveillance (Group 2) is recommended a health questionnaire will normally be used in the intervening year.	<u>Group 1.</u> Staff and research students who undertake frequent and regular work within the Pigeon House. This is particularly applicable for those cleaning pigeon waste and the pigeon-house. Staff and research students who are required to regularly clean cages and handle bedding of small animals (mice, etc.). A **pre-start** Assessment will be required for this group, followed by 6 and 12 week health evaluations. <u>Group 2.</u> Staff and research students who regularly handle small laboratory animals (e.g. mice, rats) and/or occasionally clean cages and handle bedding of small animals (mice, rats).

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CHEMICAL EXPOSURE Note: this section relates to laboratory type chemicals. Chemicals used in daily cleaning are normally of low risk and would not require health surveillance, provided the use is suitably risk assessed and products are used correctly. *All chemicals must be stored, used and disposed of in accordance with hierarchy of risk, with COSHH Assessment giving particular attention to H-phrases.* Uncontrolled exposure to certain chemicals can have adverse impact on a person's health, sometimes culminating in respiratory, organ or skin damage, or sensitisation. In most cases problematic exposure to a potentially harmful chemical is in fact very small or infrequent, this is particularly evident in the chemical and biological laboratory as direct exposure to a chemical will be limited by the controls and through working methods employed (e.g. decanting and use of chemicals in fume cabinets, under good laboratory practice controls). Just because a person works with laboratory chemicals does not necessitate health surveillance. However, any work with Schedule 6 chemicals (as below and pertinent to University use not 'in manufacture') should be specifically assessed and if exposure thresholds could be reached health surveillance will be compulsorily: • Ortho-tolidine and its salts. Dianisidine and its salts. Dichlorobenzidine and its salts *The small volumes and extent of use of other schedule 6 chemicals would not necessarily/often fall into the 'process' descriptor of the Schedule, as such refer primarily to manufacture of the compound. However, if use changes and*	Group 1. For chemical workers who, even following risk assessment and implementation of controls, may have exposure to Schedule 6 substances, potent sensitizers or similar exposure. Will normally be required to attend for annual health surveillance, which will include: • Completion of a respiratory questionnaire • Respiratory (Lung Function) testing • Skin Health Questionnaire Group 2. For staff and research students who have daily exposure to hazardous laboratory chemicals, such as in chemistry research and chemical decanting, will normally require health monitoring. Will be required undertake periodic Health Monitoring. This will include: • Completion of a respiratory questionnaire • Skin Health Questionnaire **Note**: COSHH/Risk Assessments MUST seek to ensure there is no uncontrolled or unassessed exposure to hazardous chemicals. Health	*At present no known staff or student group have Schedule 6 exposure (per definitions); Dec 2015.* Group 1. At present there should be no Group 1, staff or students, as risks are controlled and suitable assessments are in place. There is currently no work with Schedule 6 chemicals, per the definitions used. If any School intends to commence work with Schedule 6 or other potent risk chemicals, the content of the thorough risk assessment and the SOP should be discussed with HSS, and appropriate health surveillance agreed thereafter. Group 2. Would include: School of Chemistry technical staff who decant chemicals daily, laboratory-research chemists and others with significant hands-on chemical research. Other staff groups may be identified via COSHH Assessment, including those using of skin and/or respiratory sensitizers.

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quantity and potential risk exposure is increased then revised risk assessments must consider whether thresholds are exceeded and health surveillance is required. Particular attention should be given in risk assessments to known 'potent sensitizers' (contact/respiratory allergic reactions), such as Diphenylthiourea, Phenyl isocyanate, and to use of carcinogenic (or suspected carcinogens) materials which have been assigned Particular emphasis is also given to materials assigned with R45 or R49 risk phrases or a H350 or H350i health hazard. Where there is any concern about residual exposure the Occupational Health Practitioner should be contacted.	surveillance/monitoring is no substitute to good laboratory practice.	
DUST, PARTICULATE AND (FUNGAL) SPORES EXPOSURE Note: *for spores from animal bedding see 'Laboratory animals'. For farm bedding see Farm Workers.* Breathing particulates into the bronchial and nasal passages, and lungs can cause both short and long terms ill health, even chronic harm. Particular attention should be given to particulates (incl. fungi) in the ranges of **PM_{10}** ("PM ten", which stands for Particulate Matter up to 10 micrometers [micron, µm] in size, and ranges from around 25 to 100 times thinner than a human hair) and **$PM_{2.5}$** ("PM two point five" = 100 times thinner than a human hair). *A human hair is about 50 micrometers.* Local Exhaust Ventilation (LEV) and suitable risk assessments should ensure particulates from known sources are extracted away from people, and if necessary filtered.	**Dusts and Particulates** Staff and research students who have significant potential exposure to dusts, such as wood and other plant materials. Workers will be required to perform a Lung Function test and complete a Respiratory Questionnaire, every 12 to 24 months. Where health surveillance is every 24 months a respiratory questionnaire will be distributed during the intervening year. Health surveillance should be considered as a final line of defense only and not as part of the primary control measures. Local exhaust ventilation and good standard operating procedures must ensure that human exposure to	Dust & other Particulates Working in activities such as (1st stage) seed-cotton cleaning, experiencing regular exposure to flax dust, wood flour, sheep-wool process manufacturing (including industrial knitting and carpet manufacture), and where a risk assessment and air monitoring has identified an uncontrolled residual risk. *Note: industrial placement staff such as KTP partnerships and lengthy staff secondments.* Fungal Spores Researchers/staff who work with fungi, particularly in confined spaces. Fungi growth chambers/rooms are normally well ventilated and workers

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Reference should always be made to EH40 thresholds and risk assessments. Wood dust is a general term covering a wide variety of airborne wood dusts. Timbers have been divided into two different groups, namely hardwoods and softwoods. Hardwoods are timbers from deciduous trees, including trees from both temperate and tropical zones such as beech, ash, oak, mahogany and teak. Dust is generated by the machining and working of wood and wood-containing materials such as chipboard and fibreboard. Operations such as sawing, turning and routing produce relatively coarse dust, while sanding and assembly operations generate fine dust. Post-cyclone outputs, in board manufacture, have the potential for high levels of particulate matter. Risk assessments should identify cyclone particulate outputs and LEV controls on fibre beads. A WEL assessment may be required for wood working environments. Where the WEL (8-hour TWA) exceeds 5 $mg.m^3$ immediate improvements to LEV and SSW will be required and workers should receive health surveillance, at least until situation returns to safe operating levels. Plant and Seed Splitting and other related processes Any process which involves beating or splitting seeds or plants, particularly whilst dry, will produce dusts and a SSW will be required. Where undertaken indoors LEV must be provided. Methods of working and risk assessment should reflect good practice for wood dusts and risk assessment should confirm particle size (µm) above PM_{10} and below 5$mg.m^3$ WEL.	particulates is kept to a minimum and below the legal (EH40) levels. Health surveillance may be used for those who are regularly working with particulate matter that, were the LEV system to fail undetected, could be exposed to regular levels above WEL. **Fungal Spores** For staff and research students who have significant potential exposure to fungal spores, which have a recognised respiratory impact (sensitisation). Workers will be required to undertake a Lung Function test and complete a Respiratory Questionnaire, every 12/24 months.	would not often require annual health surveillance.

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NANOMATERIALS Exposure to nanomaterials does not meet the criteria requiring health surveillance under the COSHH Regulations, since, as yet, there are no tests or health screening method and no links with occupational disease. However, health monitoring may be appropriate where handling the ***non-nano form*** requires health surveillance, then health monitoring of work using the nanoform might also be appropriate. As this is a developing area this Section will be reviewed regularly.	**<u>As per Chemicals</u>**	As per chemicals.
WELDING In addition to the considerations detailed above (Dust, Particulate...) staff who undertake regular welding may be prone to an increased respiratory (Pneumococcus) risk. There is a potential association between (regular) welding and the development of pneumococcal disease, particularly lobar pneumonia and therefore vaccination is recommended for this staff group. *Good Local Exhaust Ventilation (LEV) and standard workshop practice should reduce potential exposure to welding fumes to as low as reasonably practicable. It is recognised that for one-off fabrication this can prove more difficult, though the need to ensure good LEV and other forms of ventilation is always critical to safeguarding health.* **<u>Vaccinations:</u>** Those who weld regularly are advised to obtain the pneumococcal polysaccharide vaccine (PPV2), via their GP.	**<u>For Welding staff:</u>** Those who are regularly welding are also often exposed to other risks such as noise and will already receive periodic health monitoring. For those whose job is to fabricate and weld health monitoring via a questionnaire will be required, supplemented by Lung Function test. The frequency of the lung function test should be based on frequency of exposure and will normally be offered at least every two years. **<u>For those who occasionally weld</u>**: Dependent upon the frequency and extent of exposure staff may be required complete an annual respiratory questionnaire. Staff may also be offered a lung function test.	All welders (i.e. person who weld at work for at least a few hours every month).

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	Departments/Schools are requested to discuss their requirements with HSS and ensure those applicable are provided with the Respiratory Questionnaire. Staff who fall into this category will normally weld most weeks and at least every month, and those who often undertake prolonged welding but less frequently.	
NOISE EXPOSURE Where noise assessments have identified that workers will be exposed to noise levels in excess of daily or peak control limits, following implementation of control measures. Colleges and Departments are required to use the HSE on-line noise exposure calculator to identify the Daily noise exposure level, or the weekly calculator where exposure is more infrequent. If daily or weekly exposure is in excess of 80dB (A-weighted) average, then a hearing test may be recommended. Hearing test may also be necessary where peak noise levels can exceed 135dB (C-weighted). The decision to perform hearing may depend on the frequency, value, length of time of exposure and impact of the hearing protection being used. Where hearing protection is used the suitability of these should be confirmed using the HSE hearing protection calculator. Health surveillance for staff exposed to Peak Exposure levels (*violent* noise of very short duration) in excess of 120dB should be discussed with the Occupational Health Practitioner, following completion of the on-line calculator and risk	For staff with a potential daily/weekly exposure in excess of 85dB, were hearing protection not to be used, an annual hearing test may be required. For staff with a potential exposure between 80 and 85dB(A) averaged over a day/week, the frequency of a hearing test will depend upon the frequency of such an exposure during the year. Infrequent exposure to noise levels of between 80 and 90dB do not normally require regular hearing test, though a health questionnaire may be used, and appropriate noise risk assessment is required to suitably assess controls and hearing protection that may be required.	Nightclub workers Grounds and Garden Staff Farm Workers --- As an indication of which staff groups require a hearing test the following rough guide is provided: Staff who are often subject to noise in excess of the value shown, in any one day: 80dB = for up to 8 hours 82dB = for up to 5 hours 84dB = for up to 2.5 hours 86dB = for up to 2 hours 88dB = for up to 1.3 hours 90dB = for up to 30 minutes

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
assessment. Details of hearing protection being used should also be confirmed. *All staff exposed to noise above 80dB are required to wear appropriate hearing protection, regardless of whether they receive health surveillance.*		(the above are averages over the course of a whole day)
VIBRATION EXPOSURE <u>Hand-arm Vibration Syndrome</u> Regular or acute exposure to vibration, often through hand held equipment, can cause both short term and chronic ill health conditions; including vibration white finger and joint damage. Tasks which involve the use of equipment which create a vibration and which the operative is required to physically hold on to, should be assessed to identify the 'exposure time' and 'vibration magnitude'. Where exposure can be prolonged or where there are multi activity exposure during the day it will be necessary to systematically assess personal/task exposure using the HSE assessment tools. Prior to this, knowing what the 'trigger time' is essential, as is the anticipated 'vibration magnitude'. <u>Whole Body Vibration</u> Guidance advises that health surveillance as not appropriate. There are no confirmed methods that exist for the detection, or indicate the early onset, of adverse health effects associated with whole body vibration; i.e. lower back pain, that are specifically related to work on vibrating equipment/machinery. Whilst formal health surveillance is therefore not required, the guidance that accompanies the Regulations suggests an approach of reporting and monitoring the symptoms of lower	Where the HSE Tool identifies a significant risk factor staff will be required to attend annual health surveillance. • Annual HAV's Tier 2 Health Assessment • If staff present with symptoms of HAV a more comprehensive assessment (Tier 3) will be undertaken This is in addition to risk assessment and work scheduling tailored to reduce exposure and alternate work activities. Health surveillance will not normally be provided until a risk assessment is received and trigger time/magnitude is known.	Key 'at risk' staff groups: • Grounds & Gardens, Sports Fields • Groundworks Maintenance Staff • Farm Workers Health surveillance should be provided for vibration-exposed employees, i.e. those undertaking activities involving the use of hand-held vibrating tools where: • Workers likely to be exposed in excess of the daily exposure action value of 2.5m/s2 A(8) should undergo regular routine health surveillance • Exposure is likely to be occasionally above the action value and the risk assessment identifies the frequency and severity of exposure may pose a risk to health; or, • Where employees are identified as particularly sensitive to vibration, e.g. previously diagnosed as suffering from hand-arm vibration syndrome.

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
back pain to assist in assessing the need for action on whole body vibration. Staff who regularly use ride-on mowers and farm machinery may be required to complete a periodic questionnaire, if they do not already receive health monitoring/ surveillance.		
FARM WORKERS Zoonosis, noise, vibration, pesticides	Pesticides/Zoonosis: None at present. Review as part of audit process (*no pesticide/crop spraying undertaken by staff: contracted-out*) Noise/Vibration: See Noise & Vibration	Technical/Farm staff who regularly use farm equipment (see farm risk assessment)
CONTRACTED TO DRIVE / DRIVING DUTIES Fitness to drive is a DVLA legal requirement and the onus is placed on the driver to ensure they are fit to drive and do not suffer any chronic or short term medical conditions that may render them a danger to themselves or others.	Staff who are <u>required</u> to drive University vehicles for a <u>significant</u> part of their working day are required to undergo periodic health monitoring. For these(who drive University vehicles for a significant part of their working day) are required to: • Complete a health questionnaire In some cases Driver health monitoring will form part of greater health monitoring or surveillance appointments, e.g. Ground workers who will also receive vibration and noise assessments.	Staff who are assigned their own University vehicle or whose job it is to drive a University vehicle (including off-road vehicles). For example: • Catering delivery • Maintenance response • Security staff • Farm workers • Ground staff

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
	Those who drive occasionally are required to self-refer any condition that may affect their ability to drive safely.	
NIGHT (SHIFT) WORKERS Irregular hours of work and work patterns that include night and early morning shifts can lead to disruption of the internal body clock, sleeping difficulties and fatigue. If workers are fatigued, they will be less alert, their reaction time will be slower, they will find it harder to concentrate and they may make poor decisions. This can lead to accidents and injuries. Where departments have night workers they should undertake a risk assessment that considers • the workload • the work activity • shift timing and duration • direction of shift rotation. It is better for the shifts to run in a 'forward rotation', i.e. morning/afternoon/night • the number and length of breaks within a shift • rest periods between shifts The Working Time Regulations require all night shift workers to be offered health surveillance/monitoring.	Pre-start health questionnaire, then annual health questionnaire. Staff offered self-referral to Occupational Health every 2 years.	Staff who regularly work for periods of 3 hours or more after 11pm. These could include: • Nightclub workers/ management • Night-shift Security and Night Porters • Halls Wardens – frequent night shift/call out rotations • Maintenance technical Staff on Call-out rotations.
BIOLOGICAL AGENTS EXPOSURE Work with some pathogens (normally Hazards Group 3) may require health surveillance to be provided as a way of monitoring controls are effective and to confirm no ill-health impact from work. Such work may also require vaccinations.	Surveillance may involve blood or urine samples and require specialist laboratory analysis. *NOTE: in some cases a pre-start questionnaire is required for work with particular HG2 & 3 pathogens. Such*	Examples of work activity requiring health surveillance would include: • Work with schistosomiasis and similar parasites/parasitic zoonosis.

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
The PI (Principal Investigator) and University Biological Safety Officer will undertake or confirm a risk assessment for all work with applicable pathogens and identify whether health surveillance is required, in accordance with national practices and risk management guidelines. Some Researchers working with human blood and serums are advised to receive Hepatitis B vaccinations. *Staff and students should obtain appropriate vaccinations for their occupational risk exposure. In accordance with any risk assessment or SOP.* Work with Echinococcus granulosus, E. multilocularis, E. vogeli, Leishmania braziliensis, L. donovani, Plasmodium falciparum, Taenia solium, Trypanosoma brucei rhodesiense and other parisites should be assessed to confirm whether health surveillance is possible, or necessary. It is again noted that surveillance is only appropriate where there is an actual test to identify possible ill effects. **VACCINATIONS:** **Laboratory work with human blood** (use of serum or unfixed tissue): **Hepatitis B** vaccination is usually recommended unless samples actively screened for hepatitis or sourced from a screened population, or an individual's involvement in the work lasts for less than eight weeks and operating under good laboratory practice. Unless specifically working with contaminated bloods it may not always be necessary to have a vaccination when the work involves no clear route of entry (no sharps used, etc). The Risk Assessment must clearly consider vaccinations and any mitigation or preventative measures employed.	*should be identified via risk assessment and by discussion with Occupational Health Practitioner.*	• protozoan parasites (causing chronic or progressive ill health condition) *At present (Dec 2015) the University has no BioHazard activity that require health surveillance of Researchers. Also, no researchers work with smallpox vaccine (vaccinia virus or related poxviruses).*

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
Vaccination **is not** required if not directly involved in handling of blood/tissue or for short-term use of blood, per standard teaching lab. controls, in practical classes. Hep. B vaccination will also require a single booster every 5 years. **Other laboratory work with human pathogens:** Vaccination usually recommended if available. Decision will be based on risk assessment and through consultation with the BSO and HSS, where required.		
FOOD HANDLERS Food handler means a "Persons who in the course of their normal routine work come into contact with uncovered food not intended for their personal use". The following principles should be applied as part of a food preparation and risk management strategy: • management commitment and supervision • good facilities • education and training • health reviews • reporting illness to management • applying basic food handling practices and systems • applying basic personal hygiene practices Those suspected of suffering from the following conditions may require a medical examination and if confirmed, be disqualified from being appointed as a food handler: • chronic suppurative conditions, e.g. otitis media with drum perforation • chronic bronchitis with productive, purulent sputum	Pre-employment questionnaire should be used and be directed towards the identification of excreters, whether clinically well or symptomatic, of organisms of importance in food safety. Questionnaire should also be used following a period of absence from work due to sickness or a holiday in a country or place in which an epidemic of gastroenteritis has been reported. Questionnaires should be issues and managed by Catering Management, with reference made to the Occupational Health Practitioner in some cases. Staff should be instructed, as part of their food handling training, on self-examining skin for any unusual signs that might indicate exposure and to report any concerns to a responsible person. Formal reporting can be done through completion of a skin questionnaire.	Catering Food Handlers (waiting-on staff and kitchen staff)

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
• widespread chronic skin conditions, such psoriasis or eczema which makes skin cleansing difficult and are often associated with secondary infection Certain medical conditions may prevent appointment as food handlers. Also, certain temporary conditions may necessitate provisional disqualification from food handling activity, these would include: • infection of the eyes or eyelids • inflammation and/or discharge from ears • oral sepsis • staphylococcal conditions e.g. recurrent boils or open sores • recent history of gastrointestinal infection The following rule with regard to the length of exclusion from work after specific illnesses should be applied • Hepatitis A: six weeks from onset of jaundice • Salmonella food poisoning, cholera, dysentery and typhoid and paratyphoid: three consecutive negative stool specimens taken 48 hours apart • Parasite worms and other parasitic conditions: until successfully treated • Staphylococcal and streptococcal: until successfully treated • All other gastrointestinal illnesses (bacterial or viral): until symptom free • Tuberculosis: seven days from onset of effective treatment.		
UAV PILOTS (CAA permitted)	Self-declaration required as part of Pilot Approval.	Registered UAV Pilots (Pilot in Charge) Note: *this does not necessarily include 'Pilots under Supervision' as there is a*

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
Sensory and motor-control illnesses/conditions can impact upon a UAV Pilot's ability to safely operate and fly a UAV (Drone). Civil Aviation authority require a method for assessing or checking the health of a UAV Pilot. In normal circumstances the use of a health questionnaire is acceptable, with additional health assessments undertaken where a medical condition has been reported.	Health monitoring or surveillance if a reported health condition could realistically impact on the Pilot's ability to safely fly and operate a UAV.	*second trained person available to take charge of the flight during an emergency.*
NURSING / MEDICAL STUDENTS AND STAFF • **also see Radiation for Radiography students & staff** • **also see Biological Agents for Medical students & staff** The potential for medical staff and students to be exposed to communicable diseases and infecting others should be assessed as part of the standard risk assessment. Student Nurses, midwives, radiologists and other related services will be required to follow NHS practice for inoculations and preventative treatments. Medical students and staff will be required to assess pathogenic risk from biological agents (see Biological Agents section).	No formal surveillance at the University. Students will follow NHS Practices at their Placement. Staff will only receive health surveillance or health checks if they are expose to specific risks, as described in the document. Where staff are embedded or work within the NHS environment or control they are expected to follow NHS health surveillance protocols and receive appropriate vaccinations for their occupational risk exposure.	Staff and students working within a hospital or pathology environment.
RADIATION, X-RAY AND LASER & EMF WORKERS The University has no radiation activity which requires statutory health surveillance. Work with ionising radiations are strictly controlled and personal exposure either eliminated or reduced to a level acceptable (both short and long term) to the Ionising Radiation Regulations. All work with ionising radiations is overseen by the University Radiation Protection Officer and monitored by an	Due to low risk nature of University activities only Personal dosimetry will be used to confirm radiation exposure levels and the effectiveness of operating procedures.	• Ionising Radiation (sources) Lab. Workers • X-ray operatives (materials) • X-ray Operatives (human/animal), e.g. Radiography staff and students Due to the low risk nature of University ionising radiation activity no staff or student group should be exposed to radiations which are beyond the

RISK AREA	TYPE OF SURVEILLANCE	AT RISK GROUPS
external Radiation Protection Adviser. Personal dosimetry is used where the radionuclide poses a potential risk to human health through exposure. X-ray facilities are designed so that operators do not have an uncontrolled exposure. This is confirmed by personal monitoring of the operators (human/animal x-ray facilities) and often background monitoring. For materials x-ray facilities background monitoring is the norm. Health surveillance is not recommended for class 3b and 4 laser users. At present the University has no EMF work activity which would necessitate health surveillance. This situation will be monitored in light of impending legislative changes and subsequent guidance materials.		Radiation Protection Regulations threshold values. Certain Radiation Workers will be required to wear body and in some cases finger dosimeters. These will be identified by radiation risk assessment. Radiography students will be required to wear personal dosimeters and follow applicable NHS protocols and procedures to prevent exposure.