Occupational Health and the Anaesthetist 2014

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This guideline has been seen and approved by the AAGBI Board

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Contents

This is a consensus document produced by expert members of a Working Party established by the Association of Anaesthetists of Great Britain and Ireland (AAGBI).

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- **What other guideline statements are available on this topic?**

  There is lot of information on occupational health for doctors. This guidance is targeted specifically at anaesthetists and signposts much of the broader available information.

- **Why was this guideline developed?**

  This original guideline on Blood Borne Viruses (1992 and revised 1996) is updated and extended to cover other occupational health issues relevant to anaesthetists.

- **How and why does this statement differ from existing guidelines?**

  Much of the information in this guideline is new and has not been previously covered.

1. Summary

- The consultant occupational health physician's role is wide-ranging and encompasses health protection in the workplace, wellbeing, fitness for work, and support for staff with chronic conditions. They may also have a role in assisting remediation when a doctor is referred to the regulatory authority or professional assessment.
- Doctors sometimes fail to recognise the role of the occupational health physician, believing them to be an arm of management.
- Sick doctors may be reluctant to seek help and, as a result, self-treat, seek help from colleagues bypassing the usual channels, or delay seeking appropriate help and treatment.
- Staff wellbeing is important to the quality of the delivery of patient care, staff retention and engagement. Wellbeing is achieved by promoting a healthy lifestyle, providing good working arrangements and environment, encouraging positive working relationships, and effective support.
- Hospitals owe a duty of care to employees, and are required to provide prevention, protection and post-exposure care. This includes the provision of personal protective equipment and training in its use. Healthcare workers have professional responsibilities and duties as employees to take up this training and use the equipment provided.
- Blood borne viruses are carried in the blood without necessarily causing symptoms in the infected person. The most prevalent and important blood borne viruses are hepatitis B, C and HIV.
- Blood borne viruses may be transmitted by needlestick injuries or by direct contact with broken skin or mucus membranes. The risk of transmission from a deep penetrating inoculation with a hollow needle is 1:3 for hepatitis B, 1:30 for hepatitis C and 1:300 for HIV. Approximately 25% of reported high-risk injuries occur in the operating theatre or intensive care unit.
- Pre-employment screening for transmissible diseases including tuberculosis and hepatitis B is mandatory for all healthcare workers. Healthcare workers, who perform exposure prone procedures, are required to have HIV and hepatitis C tests. Anaesthetists are not deemed to undertake exposure prone procedures and so may be offered these tests, but are not obliged to undergo them.
- Anaesthetists who have, or think they might have, any serious condition including a blood borne virus must consult a suitably qualified colleague and ask for and follow advice about investigations, treatment and changes to their practice that are considered necessary.
- Occupational exposure to blood borne viruses is inevitable. Immediate first aid (washing with soap and water, or irrigation) must be performed and then urgent assistance sought

from the occupational health department or the emergency department within an hour of the exposure. Post-exposure prophylaxis for HIV for should be started within an hour of exposure. Follow-up for hepatitis C must continue for at least 12 months or longer as sero conversion may be delayed.

- Patients who are the source of exposure should be asked to consent to testing for a blood borne virus. The decision to start post-exposure prophylaxis should be based on a risk assessment of the exposure, and should **never** wait until patient testing has been done. Post-exposure prophylaxis for hepatitis B and C is not available.
- Respiratory infections are an occupational hazard and anaesthetists should take appropriate measures to protect themselves. These include immunisation, use of personal protective equipment – masks, gloves and aprons/gowns, and good hand hygiene.
- Infections that can cause severe illness if acquired include influenza, SARS, novel coronavirus or tuberculosis. When managing patients who may have such infections, doctors should seek and follow guidance from infection prevention and control team, occupational health and/or health and safety teams.
- Work-related musculoskeletal disorders, including manual handling injuries, are the most common type of occupational ill health in the UK accounting for approximately 40% of all sickness absence in the NHS.
- Anaesthetists should receive training in the principles of safe manual handling, and a Patslide® or Hover Matt® employed whenever possible.
- Environmental factors may present risks to the pregnant mother and the developing fetus during a normal pregnancy. Specific hazards include heavy physical work, prolonged standing, long working hours and night shift work, exposure to chemicals such as anaesthetic agents and to ionising radiation. A number of infections, including cytomegalovirus, hepatitis A and B, HIV, listeria, parvovirus, rubella, toxoplasma, and chickenpox are known to be a potential risk to the fetus or neonate and therefore exposure to these should be avoided.
- The pregnant worker must inform the employer as soon as the pregnancy is known as employers are required to carry out a risk assessment to decide how best to limit exposure to hazards including infection and radiation.
- The occupational health physician has a responsibility to the employer to advise on fitness for work and 'reasonable adjustment', and a responsibility to the individual to advise on the natural history of the illness and potential effects on work, and to be their advocate.
- Departments should have a defined and transparent process for referring a doctor to the occupational health physician. This should include guidance on the background information required and the importance of fully involving the doctor in the referral.

- The consultant occupational health physician has a central role in advising and supporting doctors with chronic illness and/or disability.
- Following a period of sick leave, the consultant occupational health physician will work closely with the relevant manager to design a return to work package consistent with good employment practice and the Trust's attendance management policy. He or she will monitor the individual doctor's progress, and suggest modifications when needed.
- If an individual has a disability in the terms of the Disability Section of the Equality Act 2010, he or she may be entitled to 'reasonable adjustment' under the Act. The consultant occupational health physician will advise on this, and work closely with the employee's manager to re-design the job and to modify equipment such that the individual can work.
- The consultant occupational health physician can advise on referral to the General Medical Council or Medical Council of Ireland. If remediation is needed, the consultant occupational health physician's advice about the timing and nature of the remedial package should be sought and followed.

2. Introduction – the role of occupational health

Consultant occupational health physicians advise both the individual doctor and the organisation on the relationship between health and work. This includes the management of any underlying illness within the workplace, and the effect work has on health. They also have a lead role in ensuring that doctors receive appropriate healthcare support at work as part of the management of health and wellbeing. The occupational health service should ensure that factors such as working patterns and professional relationships are addressed by organisations and by individuals [1].

The occupational health physician's role is wide-ranging and encompasses:

- Health protection and management of workplace risk and hazard including:
    - Ergonomics and working hours
    - Biological chemical physical hazards such as chemical risks, blood borne viruses and ionising radiation
    - Psychosocial – behaviour, teamwork, stress and organisational culture
- Wellbeing: Good health, good work, good relationships, good support
- Advice on fitness for work
- Managing chronic conditions
    - Regular review of employees with chronic conditions to promote work ability
    - Management of 'return to work' arrangements following a period of ill health
    - Advice on legal protections (e.g. 'reasonable adjustment' [2]) for those with disabilities
    - Advice on early retirement on the grounds of ill health
- Advising the General Medical Council/Medical Council of Ireland and the National Clinical Assessment Service in the UK
- Role in planning and managing remediation

3. Occupational health and the sick doctor

The occupational health physician's practice is governed by a set of ethical standards that describe how issues of privacy and confidentiality about employees are managed [3]. Medical practitioners sometimes fail to understand the role of the occupational health department, believing it to be an arm of management. Doctors can be reluctant to seek advice from the consultant occupational health physician, partly because of the potential impact of health problems on future careers [1]. Doctors' professional culture, ways of working and their behaviour as patients, present particular challenges to the occupational health department. Organisations should recognise this and provide appropriate resources and facilities to support doctors in accessing occupational health services.

Sick doctors may be reluctant to seek help [4]. Those with chronic diseases describe guilt about letting colleagues and patients down, and many come to work even when unwell (presenteeism). They describe concerns about being stigmatised [5], worries about confidentiality and loss of control [6] and a feeling of shame, of letting themselves down by not meeting their own high personal standards, especially if they have a psychiatric illness. Particular concerns amongst trainees are that they may lose the respect of others by showing vulnerability, and that disclosing a mental illness may threaten their career and job prospects [3]. As a result, doctors may self-treat or seek help from colleagues without going through proper channels; they may not seek help until the condition has become severe [7].

The literature on doctors' health focuses on mental ill health and substance abuse. Depression is said to be as common or more prevalent [5] in physicians as in the general population, although occurring later in life. However, the risk of suicide is greater [8]. Drug misuse is a problem in the medical profession [9], particularly among trainee and non-consultant grade doctors [10] and may begin as a coping strategy to manage psychological or stress-related illness. Indeed, bipolar illness and substance abuse are the main health reasons that doctors appear before regulators [1].

All employers, including the NHS, have a duty of care to its staff. The NHS Constitution for England [11] states that all staff are entitled to a healthy working environment and commits the NHS to providing support and opportunities to enable them to maintain their health, wellbeing and safety wherever they work. There is a requirement for NHS occupational health services to meet national quality standards [12, 13], to employ consultant occupational health physicians [1], and for a doctor who has a health issue to seek and follow the advice of the relevant specialist, i.e. a doctor on the specialist register.

The report of the working group on the health of health professionals, *Invisible Patients* [5], proposed that a group of health professionals (GPs, occupational health physicians and psychiatrists) should be developed with enhanced skills to treat their colleagues. It proposed that this group should refer on to a small number of specialist services to manage

those whose complex problems cannot be dealt with locally and may adversely affect the quality of care. This training is now underway in the UK, through the Royal Colleges of General Practice and Psychiatry, the Faculty of Occupational Medicine and the Association of National Health Service Occupational Physicians. In time, every hospital should have immediate access to a consultant occupational health physician with these enhanced skills.

4. Wellbeing

NHS organisations that pay attention to the wellbeing of staff deliver higher quality of care, make better use of resources, have lower patient mortality and have more satisfied patients [14]. Staff engagement and retention is also better [5]. Good health includes healthy eating, exercise and sensible drinking; wellbeing encompasses physical, social/relational and psychological aspects. Components of a healthy workplace include effective leadership/ management, positive working relationships, competence and environmental mastery, a sense of purpose, personal growth and aspiration and rewards, competent performance and security [15].

Addressing the health and wellbeing of doctors involves many stakeholders. Until recently, the medical profession had adopted a medical model that focussed on treating the impaired physician at a distance from the workplace rather than a preventive biopsychosocial model that is grounded in a positive work-life balance and centred on work arrangements [1].

A practical organisational model for delivering wellbeing, developed by Business in the Community (BITC) takes an integrated, holistic and strategic approach and outlines action that can be taken by both employers and employees to create a healthy workplace [16]. It identifies four main areas for organisations to focus on:

- ‘good health’ is concerned with physical and mental health, including the social determinants of health
- ‘good work’ addresses the work environment and work arrangements
- ‘good relationships’ focuses on managers and their ability to promote health and wellbeing through implementation of best practices and good interpersonal skills
- ‘good support’ ensures that there are high quality support services, such as occupational health or counselling services to support staff.

Good health

A good occupational health service should offer advice to employees on healthy lifestyle choices and encourage the organisation to adopt policies that provide and develop a healthy workplace. Several organisations provide information on aspects of wellbeing with advice on sensible eating, maintaining hydration, time management, work-life balance and ‘workplace wellness interventions’ including, advice on stopping smoking, how to access counselling, ‘burnout’ and ‘peer support’, examples include: British Medical Association website wellbeing page [17]; Peninsula University Medical School [18].

Good work

Now that the implementation of the European Working Time Regulations [19] has reduced the hours worked to an average of 48 hours per week or less , workload and shift work are important considerations. Perception of workload is a function of the job demands and the attendant time pressures [20]. Job demands in anaesthesia are both physical and mental.

Perception of workload is also affected by sleep loss and fatigue, which may result from working shifts or from stressful working conditions. For short shift cycles, it is thought to be better to maintain daytime rhythms by taking naps somewhere quiet and dark, paying attention to the timing and content of meals and using stimulants such as caffeine. Even long-term night shift workers have disrupted circadian rhythms, which means that they work during their low period and try to sleep when alert [21]. Organisations should make efforts to provide convenient quiet accommodation for those on night shifts to take naps, and offer regular meal breaks. The occupational health department can provide advice and support to the organisation about out-of-hours facilities and working arrangements for shift workers.

Stress levels are reduced by the higher levels of social support and role clarity provided by working in good teams [22]. Working with less defined teams and continually having to forge new working relationships are both associated with increased stress. This should be taken into account in planning rotas, particularly for colleagues who are new to the organisation or who are returning to work, e.g. from maternity leave or following illness. The consultant occupational health physician may act as an advocate for the employee by providing advice to management in such circumstances.

Shift work, dysfunctional teams, and poor communication can increase vulnerability to mental health problems, as can interpersonal conflict, low levels of support and the feeling of being poorly managed. Conversely, good relationships with colleagues and supervisors, high levels of job satisfaction and a feeling of accomplishment can be protective. Staff shortages, funding cuts, inadequate space, equipment and administrative back-up, and poor peer and supervisory support also drive up stress levels [5].

Evidence suggests that the healthcare environment can be inherently more challenging than that in other non-health sectors. The current organisation, culture and volume of work in healthcare can combine to make health professionals vulnerable to unhealthy lifestyles. The way work is structured and organised – at a personal and organisational level – seems to have a much greater influence on the risk of developing a mental health problem than dealing with sick and dying patients and their relatives.

The occupational health department can provide advice on the sorts of interventions that might be helpful in addressing poor working relationships and difficult team dynamics. The use of organisational psychologists and of coaching and mentoring can be useful in managing such situations.

Good relationships

According to the BITC model [16], good relationships – at work and at home – provide the 'social capital' that individuals need to maintain good mental health and engagement. Key relationships at work are with line managers and team colleagues. It has been shown that the principal cause of workplace stress is 'the boss' [23], and support from managers is important for wellbeing. The General Medical Council (GMC) recognises this, stating that: 'You must support colleagues who have problems with their performance or health' [24]. Medical managers need to understand how good relationships at work can promote health and wellbeing and that the support of individuals with health problems can reduce the impact of illness by reducing levels of anxiety [25]. An open, accountable and supportive workplace culture in which any concerns can be raised without fear of reprisals reduces harassment and bullying, enhances quality of care and boosts recruitment and retention [5].

Other recognised work-related stressors include: role-based stress (role ambiguity and work role conflict); conflicting demands between work and home life; relationship problems; career development factors (job insecurity, under or over promotion, and thwarted ambition); and organisational structures and culture. These need to be managed to achieve good work.

The occupational health department may provide training to managers and others in promoting good working relationships. They may have access to organisational psychologists and other experts in this field.

Good support

Good occupational health support and counselling is essential to safeguard doctors' health and wellbeing. Key criteria for a bespoke occupational health service for doctors include [1]:

1. The services must be led by a consultant occupational health physician
2. The consultants should be experienced in assessing and managing the doctor who is also a patient. This is not without challenges, as doctors often do not accept the patient role readily. There are many reasons for this: some relate to issues described earlier and others are concerned with beliefs and behaviours about illness, role conflict when with colleagues and perceived loss of control [26]
3. Medical managers (clinical and medical directors, chiefs of service, lead clinicians) must be trained in how to make appropriate referrals to occupational health and how to conduct the pre-referral conversation with the referee. There should be transparency of process and an appreciation of the ethics of practice
4. The service should be part of a larger support network. Many services have single-handed consultants who would benefit from being able to discuss difficult cases, and the opportunity to use mentorship

5. There should be arrangements in place for onward referral to appropriate treatment specialists. Confidentiality of the doctor-patient must be preserved, so arrangements for such treatment would normally be to a different trust, hospital or health board and may be in a different locality. It is helpful to develop links with local liaison psychiatrists and/or psychiatrists specialising in substance abuse

6. There should be links with the postgraduate deanery. This can help to facilitate interventions for trainee doctors when local solutions cannot be identified. It can also provide opportunities to influence deanery practice and to build up relationships with trainers in other specialties. Training in managing the trainee in difficulty is a GMC requirement and occupational medicine input is often greatly appreciated.

Many telephone helplines have been established. A practitioner health programme has been established in London to provide off-site help for doctors with health problems [27], and similar service models exist elsewhere in the UK. This programme is similar to programmes in the United States. A strength of such help facilities is that they are external to employing health trusts, thus ensuring actual and perceived confidentiality of care. On the other hand, the remoteness of such services means that they are unable to satisfactorily address workplace issues. This means that strategic and operational health and wellbeing issues for doctors have not been addressed.

5. Health protection and management of workplace risk and hazard

5a. Blood borne viruses

Blood borne viruses (BBVs) are, by definition, viruses carried in the blood without necessarily causing symptoms in the infected person. The most prevalent and important BBVs are hepatitis B, C and HIV. Blood borne viruses represent a risk to patients and healthcare workers alike. Hospitals owe a duty of care to both groups, which may be summarised as:

- Prevention
- Protection
- Post-exposure care

The AAGBI first issued separate guidance about HIV/AIDS in 1988. This is now incorporated into more generic guidance on occupational health.

Prevalence of hepatitis B [28]:

- A total of 4756 cases of viral hepatitis from England and Wales were notified to the Health Protection Agency in 2008. Of these, 1592 (about 33%) were caused by hepatitis B; and the number of new reports of hepatitis B is increasing each year
- The prevalence of people with antibodies to hepatitis B core antigen (anti-HBc) — a marker of current or previous infection (sero prevalence) — is 1–2% in the UK. In parts of China and South Korea, the sero prevalence is 96%
- Worldwide, approximately 350 million people have chronic hepatitis B
    - The highest rates of chronic hepatitis B (up to 20% of the population) are seen in South Asia, East Asia, and sub-Saharan Africa
    - In the UK, the prevalence of positivity to hepatitis B surface antigen (HBsAg) is highest in those people who were born in countries with endemic infection. Several thousand people with chronic hepatitis B are estimated to come to the UK each year from endemic areas, but often they do not present until the disease is advanced or they become pregnant

Prevalence of hepatitis C [28]

- In the UK, this is estimated to be between 250,000 and 600,000, i.e. around 0.5% of the population carry the virus, most unknowingly
- The incidence of hepatitis C is believed to have peaked at about 15,000 per year in the late 1980s, when injected drug use was particularly common, the virus had not been identified, and needle exchange programmes did not exist

- The present day *true* incidence of hepatitis C is not known
- Between 1992 and 2007 there were 62,238 *laboratory-confirmed* cases reported to the Health Protection Agency
- In 2007 there were 7540 cases confirmed. This was an increase of 12% from the previous year

- Worldwide, hepatitis C is a major health problem, with an estimated 170 million people – 3% of the global population – infected. In some parts of Europe, Egypt, Japan, and the Indian subcontinent, the prevalence is as high as 3–5%

Prevalence of HIV [28]

- By the end of 2011, an estimated 96,000 people were living with HIV in the UK, approximately one quarter of whom were undiagnosed and unaware of their infection
- This is an increase from the 91,500 people estimated to have been living with HIV by the end of 2010. The estimated prevalence of HIV in 2011 was 1.5 per 1000 population of all ages: 2.1 per 1000 men and 1.0 per 1000 women

Since the late 1990s, following work related exposure, at least 17 healthcare workers have contracted hepatitis C and there have been five documented cases of HIV transmission.

Methods and risks of transmission

Blood borne viruses may be transmitted by the percutaneous route (needlestick injuries) or by direct mucocutaneous contact (broken skin or mucus membranes). Risks are highest with a deep penetrating inoculation with a hollow needle where there is visible contamination with blood. For such injuries, the risk of transmission is 1:3 for hepatitis B, 1:30 for hepatitis C and 1:300 for HIV. Approximately 25% of reported high-risk injuries occur in the operating theatre or intensive care unit.

Prevention

Screening for staff

Transmission of hepatitis B and C from infected healthcare workers to patients is well documented. The risk of such transmission for HIV is very much less, and the Department of Health undertook a consultation in 2012 on whether to allow HIV positive healthcare workers to undertake exposure prone procedures (EPP), subject to strict health supervision. In August 2013, it announced that such new arrangements will come into effect in April 2014.

Pre-employment screening for transmissible disease is mandatory for all healthcare workers and includes (for example) tuberculosis and hepatitis B. Since March 2007, in England (at later in other devolved nations), any new healthcare workers who will perform EPP, or existing workers who are new to EPP, are additionally required to have HIV and hepatitis C tests.

Anaesthetists are not deemed to undertake EPP and so may be offered these tests but are not obliged to undergo them. Anaesthetic departments should liaise with their occupational health department to ensure that the work of anaesthetists is correctly classified. Schools of anaesthesia should liaise with the various hospitals to which trainees rotate to minimise the number of pre-employment screens needed. This is particularly an issue where trainees undertake many attachments of short duration. Consideration should be given to trainees having either a lead employer for the whole of training, or a 'health passport' which would be accepted by all hospitals within a school. These measures will save much time and cost for individual hospitals, and minimise delays before new trainees may start work.

Where indicated, these tests will be carried out by the occupational health department with appropriate advice, information and consent. The results of tests must be communicated with due regard to the anaesthetist's confidentiality; emails to lead clinicians or College tutors, or results being left in pigeonholes would not meet the requirements for confidentiality laid down by the Faculty of Occupational Medicine or the GMC.

As with any other serious condition, anaesthetists who have, or think they might have, a BBV must consult a suitably qualified colleague [24] and ask for and follow advice about investigations, treatment and changes to their practice that are considered necessary. They must not rely on self-assessment of the risk they pose to patients [24].

Screening for patients

Routine screening of all patients for BBVs has not been considered practical, effective or affordable. Patients may be offered screening in some high-risk environments, such as renal dialysis units, but care cannot be contingent on accepting such screening. Ante-natal screening for hepatitis B, HIV, syphilis and rubella susceptibility is offered, with a 97% uptake in 2011 in England [29].

Protection

All hospitals owe a responsibility to employees to reduce the risks of employment, which arises from numerous pieces of employment law legislation. This includes the provision of personal protective equipment and training in its use. Healthcare workers have professional responsibilities and duties as employees to take up this training and use the equipment provided. Failure to do this may absolve employers of their responsibility in the event of occupational exposure and harm.

European Directive 2010/32/EU specifically applies to the healthcare setting in the public and private sector and brings together obligations to minimise the risk of harm from sharps injury. Part of the directive mandates the provision of medical devices with safety-engineered protection mechanisms. Concerns have been raised by some anaesthetists that some devices are more difficult to use and may make failure more likely. Anaesthetists must balance any safety benefit to the user against potential harm to the patient.

Post-exposure care

Occupational exposure to BBVs is inevitable, although some injuries in theatre and ICU are judged to be preventable. As well as being trained and provided with the equipment to minimise harm, all staff must be trained in the management of such injury.

Immediate first aid (washing with soap and water, or irrigation) must be performed and then urgent assistance sought from the occupational health department or the emergency department – this should be within an hour of the exposure.

Post-exposure prophylaxis (PEP) for HIV for should be started within an hour of exposure. The decision to start PEP should be based on a risk assessment of the exposure, and should **never** wait until patient testing has been done. PEP for hepatitis B and C is not available.

Patients who are the source of exposure should be asked to consent to testing for BBVs. They should receive appropriate counselling, and are under no obligation to agree (although most do). Patients must not be approached by the healthcare worker affected. Anaesthetised patients must be allowed to recover from the anaesthetic before being approached.

Testing of patients who lack capacity (sedated on ICU for example) remains controversial. Most authorities believe that such testing, while probably ethical, would not be lawful under the Mental Capacity Act 2005, or Adults with Incapacity Act (Scotland) 2000, although this has yet to be tested in court.

Healthcare workers exposed to BBVs must now also be considered to be patients of the occupational health department and must be given time to attend for follow-up. This follow-up will allow for consideration of continuing or stopping PEP for HIV in the light of any patient results and counselling about personal safer sex practice and other matters. Follow-up for hepatitis C must continue for at least 12 months or longer as sero conversion may be delayed, the virus may be cleared, and treatment with interferon considered. Follow-up for trainees rotating between hospitals is particularly challenging. Only 22% of high-risk hepatitis C exposures are followed up correctly [30].

5b. Respiratory infections

Anaesthetists, as specialists in airway management, frequently come into contact with respiratory secretions of patients, and hence respiratory infections are an occupational hazard. This was brought into sharp focus during the SARS outbreak in Toronto, Canada, in 2003 when four anaesthetists/intensivists were infected [31]. The experience of SARS also highlighted the need for more rigorous infection control within anaesthetic practice. This section outlines the measures that anaesthetists should take to protect themselves and their patients from respiratory infections.

Background

All healthcare workers are at risk from acquiring infections from patients and need to take appropriate measures to protect themselves. Healthcare organisations have a duty to provide appropriate personal protective equipment and to train employees to use them appropriately and effectively (Health and Safety at Work Act 1974). Anaesthetists are at particular risk of acquiring infections from the respiratory tracts of their patients; rhinovirus has been documented as a commonly acquired infection in anaesthetists [32]. While most would consider this to be a minor infection of little consequence, patients who have respiratory infections do not present with a known diagnosis. Such patients may have infections that can cause severe illness if acquired and these include: influenza, SARS, novel coronavirus, and tuberculosis.

When patients are being managed in the acute phase of an unknown respiratory infection, a standard approach is needed to ensure that the anaesthetist is protected effectively from all possible types of respiratory infection. This section provides general advice; please also consult your local infection prevention and control policies. When a diagnosis is made, or, in exceptional circumstances, such as a pandemic influenza year or an outbreak of SARS, more specific infection prevention and control advice and action is required. This guidance would be superseded by more specific guidance in those circumstances.

Prevention

There are three key measures that individual anaesthetists can take to prevent the acquisition of respiratory infections from patients [33, 34]:

- Immunisation
- Personal protective equipment (PPE) – masks, gloves and aprons/gowns
- Hand hygiene

Other important measures include the use of filters on respiratory equipment to protect machines from becoming contaminated and prevent efflux of infectious particles into the environment around the respiratory equipment. Each critical care unit should also have

access to a negative pressure isolation room, which ensures that highly infectious patients with air-borne infections can be isolated effectively through controlled ventilation of the facility. More detailed discussion of these measures is outwith the remit of this section. For more information on engineering controls and ventilation please see Health Technical Memorandum 03-01 [35]. Information on appropriate filters for ventilators can be accessed via the ventilator manufacturers.

Immunisation

Each year the World Health Organisation monitors the influenza viruses in circulation and makes recommendations for the strain types that are to be included in the vaccine for the following winter season. Due to the changing nature of influenza viruses, immunisation is required on an annual basis. Immunisation against influenza is recommended annually for healthcare workers to protect them and to prevent spread of influenza within the healthcare setting. Occupational health departments will usually provide healthcare workers with ample opportunities to take up the flu vaccine in early autumn [36]. Immunisation against tuberculosis is also recommended for healthcare workers who are likely to have contact with patients or clinical materials [37].

Personal protective equipment

PPE should be used to minimise the risk of infection in the healthcare worker. The level of PPE used should be appropriate for the risk. Respiratory infections such as influenza are transmitted by large particle droplets. When assessing patients with respiratory infections of unknown cause, droplet precautions should be used. Staff should wear a fluid repellent surgical mask; a visor should also be used if there is a risk of splash onto mucous membranes. In addition to masks +/- visors, gloves and aprons/gowns should also be worn.

If aerosol-generating procedures (AGP) are being undertaken, such as intubation, it is recommended that a filtering face piece (FFP3) mask be used, in addition to eye protection, gloves and a gown. A FFP3 device is a mask that provides the wearer with a high level of protection against droplet carried infections and fine aerosols. These masks fit snugly around the face so that air cannot pass around the mask, only through the filter. For effective use, the wearer must be 'fit tested' to ensure that the mask fits properly and provides the necessary protection. This is a requirement under Health and Safety Executive (HSE) guidance [38]. It is imperative that healthcare workers are fit tested for the use of an FFP3 mask as one design of mask may fit an individual better than another. Anaesthetists should know which make of FFP3 masks fits them and how to obtain them within their healthcare organisation. Information regarding local arrangements for FFP3 mask fit testing can be obtained from your local infection prevention and control team, occupational health and/or health and safety teams.

AGPs include: bronchoscopy; sputum induction; tracheal intubation; post-mortem procedures involving high speed devices; cardio-pulmonary resuscitation; high frequency oscillating ventilation; non-invasive ventilation. This list is not exhaustive, local risk assessment may identify additional procedures for which AGP precautions are indicated. For an illustration of how to use and remove PPE follow this link – http://www.england.nhs.uk/ourwork/eprr/id (accessed 31/08/2014).

Hand hygiene

Hand hygiene remains the most important infection control measure to protect healthcare workers and patients from infections. Clean hands may be decontaminated using alcohol gel between patient contact; soap and water hand washing remains important if hands are visibly dirty or contaminated. See Appendix 1 for hand hygiene methods.

Post-exposure protection

If appropriate PPE is not worn and the staff member is not vaccinated when undertaking assessments and/or AGPs on a patient who is subsequently found to have influenza, prophylaxis with oseltamivir may be offered [39]. Consult your local occupational health physician and Infection Prevention and Control team for further advice. For cases of tuberculosis, contact tracing and follow-up would routinely occur following the identification of a case. Prevention of exposure by use of PPE and hand hygiene, and appropriate immunisation are far more effective than any post-exposure measures. For SARS and other novel coronaviruses there are no post-exposure treatments available.

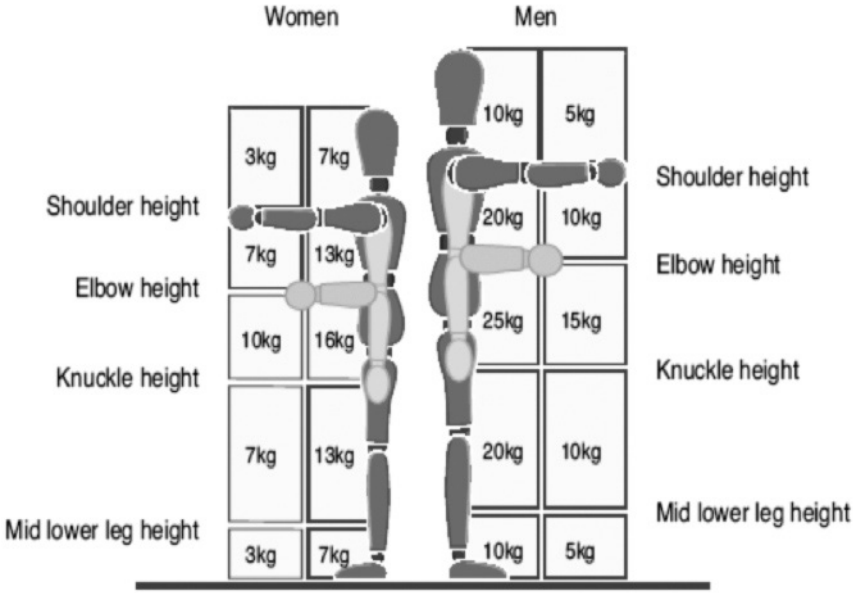
5c. Manual handling and back care

Manual Handling is defined as: "...any transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving thereof) by hand or bodily force."

Work-related musculoskeletal disorders, including manual handling injuries, are the most common type of occupational ill health in the UK. Back pain and other musculoskeletal disorders account for approximately 40% of all sickness absence in the NHS, resulting in a cost in the region of £400 million each year [40].

The HSE is the national independent watchdog for work-related health, safety and illness. The organisation is an independent regulator and acts in the public interest to reduce work-related death and serious injury across Great Britain's workplaces. All employers have a legal responsibility to ensure the health and safety at work of their staff, and this includes the prevention of accidents and work related ill health such as musculoskeletal disorders, back pain and upper limb disorders. There is a legal requirement for employers to consult employees on health and safety matters, as well as union appointed safety representatives.

Numerical guidelines for lifting and lowering:



[*from Manual Handling at Work: A Brief Guide* – HSE; Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence v1.0, http://www.hse.gov.uk/pubns/indg143.pdf (accessed 31/08/2014)]

The manual lifting of people was condemned as unsafe practice in 1996.

Thus the principles of safe manual handling are:

- Avoid manual lifting
- Assess the patient/load and environment and plan the move
- Ensure the task is within your capabilities
- Get close to the patient/load
- Face the direction of movement, avoid twisting
- Flex or bend your knees
- Keep your back upright, avoid stooping
- Ensure your feet are apart, one foot in front of the other (walk stance)
- Ensure a secure hand grip
- Use the commands 'ready, steady, move', numbers can be confusing as some may move on 'three' and some on the unspoken 'four'

When starting in a new hospital environment, staff should receive an induction, including the manual handling procedures in place and the location of suitable equipment.

In anaesthesia, we commonly participate in the lateral transfer of patients from bed to trolley or operating table. Where possible the patient should be encouraged to move independently, shuffling sideways from one surface to another, with or without the use of a Patslide® to assist with the transfer.

If the patient is unable to move independently, a Patslide® or Hover Matt® technique may be used. For the dependent patient, four handlers are required, and more if the patient is obese.

The technique is as follows:

- Tilt the patient towards the far side to insert the Patslide®, partially under the slide sheets, and extending across to the receiving surface
- Bring receiving surface as close as possible and apply brakes
- Adjust heights so that the receiving surface is slightly lower
- Two handlers take hold of the pull straps
- A third handler is required to support the head on the pillow, and a fourth for the feet

- One handler to co-ordinate with a ‘ready, steady, slide’ command
- The two handlers, holding onto the pull straps, transfer their weight from their front leg to their back leg, and slide the patient half way across the surfaces and then repeat to pull the patient fully across onto the receiving surface and its slide sheet

When using a Hover Matt®, one handler must ensure that the air-supply coupling remains intact throughout the manoeuvre and that the air-supply remains turned on.

More information

NHS Employers	www.nhsemployers.org/backinwork
National Back Exchange	www.nationalbackexchange.org
Health and Safety Executive	www.hse.gov.uk/msd
Backcare charity website	www.backcare.org.uk
Society of Diagnostic Medical Sonography	www.sdms.org/msi
Royal College of Nursing	www.rcn.org.uk

5d. Pregnancy

Workforce implications of pregnancy

The number of female anaesthetists likely to be working when pregnant is increasing year on year. Women make up over 30% of consultant workforce and female trainees are approximately double this percentage. Approximately a quarter of consultants are aged 30 to 39 years with nearly all trainees being below the age of 40 years.

Anaesthetists work in an environment where exposure to chemicals such as anaesthetic agents and ionising radiation are common. There is an increasing reliance on complex imaging techniques such as CT and MRI in medical diagnostics and anaesthesia is frequently required to facilitate this. The nature of the work can be physically demanding and, although hours of work have been reduced for trainees over the past few years, most trainees work an increasing proportion of their time at night, with the introduction of shift working patterns. Some of the consultant workforce has opted out of European Working Times legislation and may still work in excess of 48 hours per week. The effects of these environmental factors present risks to the pregnant mother and the developing fetus during a normal pregnancy when the mother is well. Those with pregnancy-related complications would need more individual consideration from their occupational health physician.

Evidence on the effects of working in anaesthesia while pregnant tends to be based on observational studies.

The Royal College of Physicians in conjunction with NHS Plus, published a national guidance document for occupational health professionals containing evidence-based advice for working women during pregnancy and for their employers [41]. The document focuses on a number of specific hazards including lifting/manual handling and heavy physical work, prolonged standing, long working hours and shift work, including night shifts. There is insufficient evidence to suggest that pregnant workers should completely avoid lifting and handling or prolonged standing.

Adverse fetal outcomes include spontaneous miscarriage, stillbirth, low birth weight and pre-term delivery. The UK has one of the highest rates of pre-term delivery in Europe. Adverse maternal outcomes relate to musculoskeletal problems, gestational hypertension including PET, and pre-term early rupture of membranes with subsequent infection.

Associated risks to the fetus

1. Physically demanding work, particularly lifting
   Manual workers including healthcare workers have a significantly higher risk of:
   - Intrauterine growth retardation
   - Pre-term birth
   - PET and hypertension (Relative Risk = 1.6)

   Recommendation: moderate risk - employers should reduce risk of exposure where possible.

2. Long hours (more that 40 h/week)
   Low to moderate risk of:
   - Pre-term delivery
   - Spontaneous miscarriage
   - Perinatal mortality

   Recommendation: Working hours should be reduced to below 40 h/week, especially in late pregnancy.

3. Prolonged standing – more than 3 h per day
   - Pre-term birth – small risk

   Recommendation: try to reduce standing to < 3 h/day.

4. Shift work/night work
   - Pre-term birth

Conflicting evidence. Insufficient to make recommendation about risk of shift or night work.

Risks to mother

Manual handling has significant implications to the health of the pregnant worker (and the fetus), particularly when associated with long periods of standing and/or walking. Hormonal changes during pregnancy affect the ligaments and joint laxity, thereby increasing the risks of injury during manual handling tasks. As pregnancy progresses, and in particular during the last three months, it becomes difficult to achieve and maintain good posture and this further reduces manual handling capability. Care should also be taken by postnatal women who may handle loads, particularly in the three months following childbirth.

Specific areas

Anaesthetic drugs

Exposure to high levels of volatile anaesthetic agents, particularly halogenated hydrocarbons and nitrous oxide is associated with a risk of spontaneous abortion and pre-term labour. The most significant risk of teratogenesis occurs during the first eight weeks of pregnancy, and may occur before the woman is aware that she is pregnant. Most of the experimental work was done in the 1970s when active scavenging systems were not in routine use. It is likely that with modern low flow anaesthetic machines, active scavenging and the prevalence of non-volatile based anaesthetic techniques, there is a very low risk of adverse outcomes. However, it is the employer's responsibility to ensure pregnant workers and those planning pregnancy should be made aware of the potential risks and not work in environments where there is no active scavenging.

The risks to the pregnant anaesthetist can be minimised by the use of well-designed anaesthetic equipment, modern anaesthetic techniques (e.g. TIVA), and high standards in scavenging and ventilation. However, in some areas, control measures cannot be as effectively applied and it can be predicted that exposure may be increased in paediatric, dental and, to some extent, in obstetric anaesthesia.

Employers have an obligation to ensure that environments are adequately ventilated, scavenging systems are present and that they are well maintained and monitored (at least once per year). They should comply with regulations BS6834 1987. Employers must comply with occupational exposure standards, introduced in 1996, for nitrous oxide, halothane, isoflurane and enflurane.

The Department of Health recommends a minimum supply of air of $0.65 m3.s^{-1}$ in anaesthetic rooms. In theatre and recovery areas, ventilation to allow 15 air changes per hour should be provided, and where new ventilation is being installed, extract points should be located near to the head of the recovery bed. In dentistry and midwifery, where Entonox is in use, ventilation should allow five changes of air per hour.

Active scavenging systems should meet Department of Health standards and the presence of a visual flow indicator is essential. Awareness of techniques to minimise atmospheric pollution (e.g. use of closed circuits, introduction of nitrous oxide when the patient is connected to the breathing system, and capping off circuits at the end of each operation) to avoid spill in the environment should be encouraged.

Infections

A number of infections are known to be a potential risk to the fetus or neonate and therefore exposure should be avoided. These include: cytomegalovirus, hepatitis A and B, HIV, listeria,

parvovirus, rubella, toxoplasma, and chickenpox. This list is not exhaustive and the advice should be to take appropriate precautions and avoid unnecessary exposure to any infection.

Ionising radiation

Exposure to high levels of ionising radiation may result in abnormal organogenesis in the developing fetus resulting in spontaneous miscarriage. Other risks include reduction in mental capacity due to disruption in development of a normal CNS, and the development of childhood cancers especially leukaemia. The highest risk to the fetus is in the first trimester and the risk diminishes in later pregnancy.

The risks of these adverse events are related to total dose of radiation, so working in environments where the dose of radiation per patient is high, e.g. CT or angiography, should be avoided.

Typical occupational exposure for an x-ray worker would be 1 to 6 mSV per year and pregnant workers should be exposed to no more that 1 mSv during the pregnancy. At this level of exposure, there is no evidence to show any significant risk of radiation effects to the fetus.

When working in x-ray environments, the anaesthetist should wear a lead gown that wraps around the abdomen, and sit behind lead shielding: good practice whether pregnant or not.

Non-ionising radiation:

MRI - The safety of MRI with respect to the fetus has not been established. The concerns for the fetus include teratogenesis and acoustic nerve damage. The studies so far indicate no increased fetal adverse outcome; however, because of the lack of evidence of long-term effects of MRI on the fetus, it is advisable not to remain in the scan room.

Ultrasound - Pregnant staff working with diagnostic ultrasound do not need to alter their working practice.

Risk assessment

The pregnant worker must inform the employer as soon as the pregnancy is known and employers should carry out a risk assessment to decide how best to limit exposure to hazards including infection and radiation. The assessment should establish what doses of radiation are likely to be received and what can be done to reduce the risk to the baby. This may include restricting time in the environment or being reallocated to non-x-ray lists for the duration of the pregnancy.

6. Advice on fitness to work

Organisations should have systems and policies in place to promote fitness to work and support work attendance. A good work attendance policy recognises that there may be occasions when staff are unable to work because of ill health and should describe how managers, and working with human resources and occupational health, can facilitate an appropriate and supported return to work. The occupational health assessment will focus on:

- Assisting with return to work following sick leave
- Defining the doctor's capability in a good environment
    - What can/can't he or she do?
    - What support does he or she need?
- Enabling the doctor to tackle challenging situations
- Encouraging the doctor to develop robust attitudes to his or her health and wellbeing

The consultant occupational health physician should identify any work-related factors in the illness and the interventions in working arrangements or the work environment necessary to minimise the impact of the illness. The occupational health physician has a responsibility to the employer to advise on fitness for work and 'reasonable adjustment', and a responsibility to the individual to advise on the natural history of the illness and potential effects on work, and to be their advocate.

Self-referral

It is possible for a practitioner to self-refer to an occupational health physician. This might be helpful in planning a return to work after illness, to consider the natural history of a disease and its likely impact on their future career, or to access counselling. Where an employing organisation does not have a consultant occupational health physician who has enhanced skills in managing doctors' illness, it may be valuable to seek an opinion from an expert.

Referring a practitioner to the consultant occupational health physician

Ill health does not always present in a straightforward manner. When a practitioner is in difficulty, it is often useful to refer them to the occupational health physician, even if only to rule out illness as a cause of the problem. Becoming ill, recognising there is a problem and reporting illness can happen at different times, sometimes several months or years apart. Remember, whenever possible, to copy the practitioner into correspondence. As a general rule, it is always better to work with the practitioner rather than to have discussions and make decisions about the practitioner. The doctor-patient is the expert on his or her own illness.

When making a referral to the occupational health physician it is important to provide all the necessary background information. The National Clinical Assessment Service provides a checklist [7].

7. Managing chronic conditions, including arrangements for return to work

The White Paper, *Trust Assurance and Safety* [42], recognises that the increasing complexity of modern clinical practice has added to the pressures health professionals face in their working lives. It proposes that there should be greater support for those with any kind of health problem, to help them maintain their own health and wellbeing and make it easier for them to seek appropriate advice or treatment should they become ill. Health professionals should expect appropriate safeguards to maintain their confidentiality from both clinicians and managers and so may need to receive treatment outside their local area.

Doctors have the same range of illnesses as others of a similar age, including psychiatric illness, diabetes, epilepsy, inflammatory bowel disease, arthritis and multiple sclerosis. The top three causes of sickness absence among NHS employees are: musculoskeletal disorders; mental ill health (including stress, depression and anxiety); and skin problems. Musculoskeletal disorders account for almost half of sick leave taken (45%) by NHS employees. Allergic reactions to gloves and drugs and the need for frequent hand washing as part of infection control measures may cause occupationally acquired dermatitis.

Coping with chronic physical illness includes managing the illness itself, the effects of treatment and the psychological sequelae. It takes an average of two years for a doctor who has a long-term condition to get fully back on track. Doctors who do well are those who learn to recognise symptoms, use support appropriately and value what they can do rather than grieve over what they can no longer do.

Developing a good working relationship with the occupational health physician can be an important part of managing work with a chronic illness. Trust develops as the occupational health physician demonstrates a robust approach to confidentiality, and gets the right balance between support and challenge, showing respect to the individual and telling the truth about the effects of the illness on work. The doctor-patient and the occupational health physician can then identify and meet the needs of senior clinicians such as the clinical director and the service. Topic areas the doctor might usefully discuss with the occupational health physician include:

- Discussing difficulties identified by others
- Confidentiality
- Managing others' curiosity/hostility
- Taking sick leave
- Referral? To whom? By whom?
- Return to work – planning

- On-going surveillance
- Monitoring progress
- Assessments – (especially for trainees, e.g. ARCP)
- Change of job description or role? Specialty change (for trainees)?

Following a period of sick leave, the occupational health physician will work closely with the relevant manager to design a return to work package consistent with good employment practice and the trust's attendance management policy. He or she will monitor the individual doctor's progress, and suggest modifications when needed. Further practical advice about returning to work can be found in:

- The AAGBI's Welfare Resource Pack at: http://www.aagbi.org/sites/default/files welfare_resource_pack_2008_0.pdf
- The Academy of Medical Royal Colleges has advice at: http://www.aomrc.org.uk doc_details/9486-return-to-practice-guidance
- The Royal College of Anaesthetists at http://www.rcoa.ac.uk/system/files/PUB ReturnToWork2012.pdf

Useful articles article include:

- *Anaesthesia News*, May 2010, pages 12-13. Returning to work following a major illness: http://www.aagbi.org/sites/default/files/may2010-1.pdf
- *Anaesthesia News*, Oct 2011, pages 8-9. Returning to work in a wheelchair: http:/www.aagbi.org/sites/default/files/October ANews Final_0.pdf
- RCoA Bulletin, Mar 2011, pages 26-28. Returning to work - as a disabled anaesthetist: http://www.rcoa.ac.uk/system/files/CSQ-Bulletin66.pdf

Security planning/safety net

It is sometimes helpful for the responsible manager to develop a signed agreement with a practitioner who has a relapsing illness. Exemplar templates are provided on the National Clinical Assessment Service (NCAS) website [7]. The agreement might identify early warning signs (e.g. specific thoughts, feelings or behaviours) that the practitioner notices when he is becoming unwell, and the actions the practitioner will take to ensure he gets appropriate help and support. The practitioner can also identify any unwanted extra work-related stress that can contribute to the problem and ways in which they, and the wider department, can manage and limit these.

A similar plan describing the actions that close colleagues will take if a practitioner becomes ill can also be useful. This covers what might happen as a result of the condition, who should notice the signs and whom they should notify. It would be expected that such colleagues receive training on managing the situation.

Employment Rights Act

If an individual has a disability in the terms of the Disability Section of the Equality Act 2010, he or she may be entitled to 'reasonable adjustment' under the Act. The consultant occupational health physician will advise on this, and work closely with the employee's manager to re-design the job and to modify equipment such that the individual can work. The occupational health physician will be able to advise on 'access to work' schemes, which sometimes fund equipment.

A person has a disability under the Act if he has 'a physical or mental impairment which has a substantial (defined as more than 'trivial') and long-term adverse effect on his ability to carry out normal day-to-day activities.' The effect of an impairment is long-term if:

- It has lasted at least 12 months
- The period for which it lasts is likely to be at least 12 months; or
- It is likely to last for the rest of the life of the person affected

If the effect is likely to recur, it is treated as continuing, even if it does not currently have a substantial adverse effect on a person's ability to carry out normal day-to-day activities. Thus, it is not the condition itself, but the impact it has on the individual's ability to carry out full daily duties that constitutes the disability.

Examples of steps which an employer may have to take in relation to a disabled person in order to comply with the Equality Act include:

- Making adjustments to premises
- Allocating some of the disabled person's duties to another person
- Transferring him or her to fill an existing vacancy
- Altering his or her working hours
- Assigning him or her to a different place of work
- Allowing him or her to be absent during working hours for rehabilitation, assessment or treatment
- Giving him or her, or arranging for him or her to be given, training
- Acquiring or modifying equipment

- modifying instructions or reference manuals
- modifying procedures for testing or assessment

Example:

A staff grade anaesthetist who develops back pain might have his job plan altered so he works in a theatre environment where portering staff are on hand to lift patients, has the equipment in his workplace assessed by the occupational health department and is provided with a chair that is suitable for his needs.

A consultant anaesthetist with a depressive illness may temporarily come off the on-call rota and have sufficient time made available in his working week to attend psychotherapy sessions. He might stop working with a surgeon with whom he does not have a good working relationship. Alternatively, the organisation may address the difficulties in communication with the surgeon and wider team, perhaps with the support of the occupational health service or an external organisational psychologist.

8. Referral to regulatory authorities

The consultant occupational health physician can also advise on referral to the GMC or Medical Council of Ireland.

In some circumstances, referral to the GMC may be considered, for instance when substance abuse forms part of the picture or the practitioner appears not to be following the appropriate medical advice. The doctor's consent must be sought but if it is not provided, the treating doctor must notify the health professional of his/her intention to alert the regulator. The facts regarding a person's health and management of the condition may be relevant in determining whether, and if so how, s/he is able or unable to meet the regulator's standards. However, the detail of the diagnosis is not required for concluding whether or not a person's fitness to practise is impaired.

> **Policy statement from the GMC on the meaning of fitness to practise**
>
> The GMC does not need to be involved merely because a doctor is unwell, even if the illness is serious. However, a doctor's fitness to practise is brought into question if it appears that the doctor has a serious medical condition (including an addiction to drugs or alcohol) AND the doctor does not appear to be following the appropriate medical advice about modifying his or her practice. Referral will then be necessary to minimise the risks to patients [5].

It is important not to confuse fitness for work with being 'fit to practice'.

Role in NCAS/GMC

When a practitioner is referred to the NCAS or to the GMC, it is sometimes relevant to make an assessment of the practitioner's health. A recent survey carried out by the revalidation support team found that around 25% of concerns about practice are related to health. NCAS has a small team of experienced occupational health physicians whose responsibilities include advising on whether the doctor has any underlying ill health or disability that could affect practice, and on whether the practitioner is currently well enough to undergo a formal assessment.

Role in planning and managing remediation

If remediation is needed, the consultant occupational health physician's advice about the timing and nature of the remedial package should be sought and followed. It is not appropriate to add further stress to a doctor with a health difficulty by making unrealistic demands or imposing unrealistic timescales.

It takes about two years for a trainee who has been ill to get back to full achievement. It is important to:

- Get well first
- Only make career moves when the trainee is moving to something better and not away from something bad

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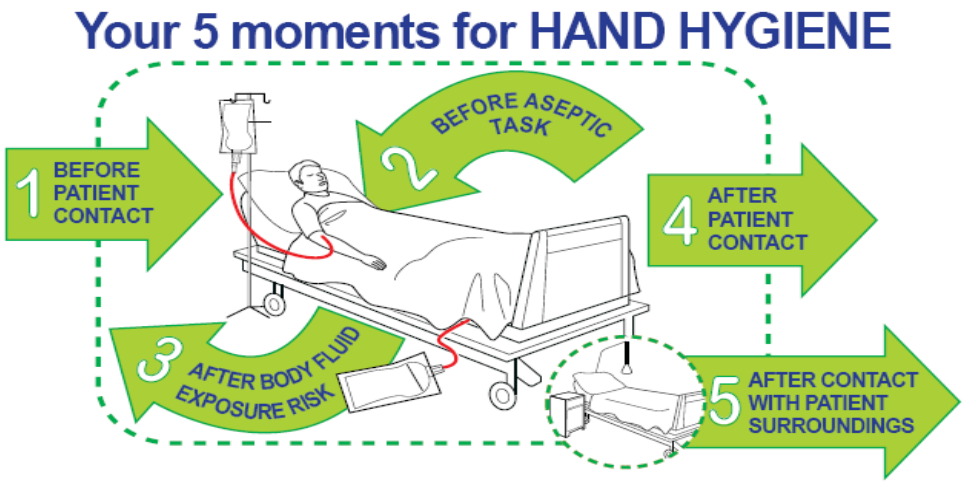
Appendix 1



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