COVID-19: an engineering approach to protecting workers during the pandemic

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Generic rules cannot be applied across all projects. Good engineers know that great design and construction is backed up by best advice and guidance. Developed during an ongoing global pandemic, this document provides guidance for how a collaborative construction site-specific approach can be taken to assess individuals' exposure to hazards.

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Executive Summary

Respect for Workers is more than a slogan

Covid-19 presents peculiar and sometimes particular threats to the population with some demographic groups potentially more prone to the severest outcomes, upon contraction of Covid-19; for instance, workers from a minority ethnic background, workers with underlying medical conditions or older workers. That doesn't mean that outside of those demographic groups people aren't being affected, accordingly the construction industry must take appropriate measures to protect its workforce and their families, minimise the virus exposure risk and enable productive economic work to be carried out for as long as the virus is present in the local environment. Therefore, when reviewing and revising Construction Phase Plans and related risk assessments, taking account of the potential presence of coronavirus and the likelihood of workers contracting Covid-19, employers must engage with and involve the individual employees in establishing their level of exposure risk and the appropriateness of the protective measures.

One size does not fit all

Developed by ICE's Expert Panel on Safety, Health and Wellbeing this document has been designed to assist companies prepare and manage their workplaces in the pandemic, including any reopening and ongoing strategies, complementing the guidance from national organisations such as; the UK's Construction Leadership Council's (CLC) standard operating procedures (CLC 2020) or Construction Industry Federation in Ireland (CIF 2020) or Construction Scotland for example.

This document is a curation of what we understand from the numerous guidance and advice available, distilled into a practical worker-centred 'solution finder' that meets the needs of the public health emergency and the economic crisis. It encompasses both the principles of prevention and ethically aligned design principles, making a substantial addition to the quality guidance available for those assessing the exposure risk and the health of their workforce, facilitating identification of safe working environments, and helping to restart or continue work on construction sites while maintaining and rebuilding this sector of the economy. Guidance covers how to deal with the exposure risk when:

- planning, designing, and/ or carrying out construction work;
- travelling to and from the workplace; and
- workers are living away from their normal homes.

For all the stated reasons 'a one size fits all' approach is not an appropriate approach. This guidance, to be read in conjunction with appropriate statutory guidance, will help avoid blanket rules and restrictions being applied across the construction industry in a less than caring fashion, answering the relevant question; how can workers work in a safe and healthy manner during a pandemic?

An economically sound approach to protecting workers during a pandemic

What is new in this approach is that it demonstrates how specific trustworthy sources of advice and guidance can be applied to managing the work process, while dealing with Covid-19 and other transferrable threats to the health of the workforce. It addresses the work activities and the resources needed to protect individual workers and their families who are or who may be exposed to the hazard. It emphasises how generic rules cannot be applied across all projects and shows how a collaborative construction site-specific approach can be taken to assessing individuals' exposure to hazards, while following scientific advice; protecting the workforce, whilst allowing the continuation of economic activity in construction.

Introduction

The construction industry is used to having to control hazards that cannot be designed out and the emergence of this coronavirus (SARS CoV-2) is an additional hazard that needs to be dealt with responsibly if we are to continue to protect the safety, health and wellbeing of the workforce. No two workplace environments are the same and the exposure risks must be continuously assessed to ensure the safety, health and wellbeing of workers and the public.

As we approach the subject of establishing how workers can return to their usual place of work, after a period of lockdown, in a manner that provides for their safety, health and wellbeing there is a need to remember that infection protection and prevention has always been part of routine and site-specific workplace assessments. Biological hazards (bacterial and viral) such as hepatitis, HIV, legionella, leptospirosis to name a few are not unheard of in the construction industry. While coronavirus is known to be in general circulation or known to be present remember that not everyone is infected nor is every location contaminated. However, if we are to create and maintain a workplace where workers feel safe then realistic, science-driven precautions need to be in place. The physical, mental, and economic health of everyone is critical as society adjusts to living through this pandemic. Remember though that any strategy must be based on full engagement with the workforce and informed agreement by everyone to maintaining the practical measures that will protect workers from exposure to the virus while providing security of employment.

Working safely and working effectively are not mutually exclusive, and the appearance of the novel biological hazard (SARS CoV-2) should not lead to a disproportionate response that could damage the civil engineering sector for years to come. The ethical response to meeting the triple objectives of construction sustainability, that is the long-term sustainability of the industry is therefore based on its ability to meet:

- Public interest, i.e., the community that is served by construction;

- Private interest, i.e., construction businesses, owners and shareholders; and

- Worker interests.

There are several stages to a successful and safe work, including:

- planning and preparing;

- readying the workplace; and

- monitoring for and appropriately reacting to pandemic impacts.

A top-down, 'one size fits all' approach just does not work. As is true with any general safety, health and wellbeing guidance, the control measures need to be tailored to the specific circumstances and the requirements of each workplace, taking into account the number of workers impacted, the layout of the workplace, as well as the demographics of those likely to be affected, noting too that some people are more vulnerable and therefore are at greater risk than others, for instance, workers from a minority ethnic background (Public Health England [PHE], 2020), workers with underlying medical conditions or older workers potentially more prone to the severest outcomes upon contraction of Covid-19.

There is an opportunity for our industry to use the return to work to support the achievement of UN Sustainable Development Goal 8: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".

The construction industry and the civil engineering sector in particular can take a lead and show serious initiative by strongly focusing on how in our recovery planning we are working to achieve and sustain workers' mental, physical and economic wellbeing throughout. To assist with this ICE has developed these general infection prevention advice notes for both workers and companies working in the field of civil engineering construction/ infrastructure development.

This document has been developed to support companies as they prepare or reappraise their workplace reopening or business continuity strategy, complementing the guidance from national organisations such as; the UK's Construction Leadership Council's (CLC) standard operating procedures (CLC 2020), HM Government's working safely during COVID-19 advice (HM Government 2020a) or Construction Industry Federation in Ireland (CIF 2020) for example. The International Labour Organization (ILO 2020) also has a range of useful return to work advice and guidelines to assist in the development of preventive and protective measures.

Respect for workers

The coronavirus pandemic resulted in protracted months-long "stay at home" measures coupled with the daily posting of infection and fatality figures that generated an understandable anxiety in the minds of people returning to work and some apprehension that going back into work will expose them to the risks of contracting the virus and becoming ill with the disease. To alleviate these concerns and anxieties it is important that returning to work takes place in an environment of mutual trust and confidence within the workforce and throughout the company.

The key to this is valuing the workforce and respecting and supporting all workers in a supportive and caring environment, (Considerate Constructors Scheme, [CCS] n.d.). Respect for workers is not simply a slogan. Nor is it achieved by "doing" care. It is about a genuine and constructive interaction between employers and employees as equals. Some of the mechanisms to facilitate this are enshrined in legislation, other mechanisms emerge from industry codes and good practice guidelines.

Participation
Engaging with workers has meaning when that involves workers and/ or their representatives participating fully in the decision-making process regarding their safety, health and wellbeing, up to and including the making of the decisions. This ensures that the decisions on procedures and practices are mutually agreed upon and incorporate the needs of the workers and the company. Remember, the coronavirus control slogan "We are all in this together" is just as important for returning to work as it was during the lockdown.

Information
Communication has long been recognised as critical to good safety, health and wellbeing practices on site. When communicating safety, health and wellbeing measures, workers should be able to understand and agree the rationale behind the decisions. This means having information on how the decisions were arrived at including, where appropriate, the medical and scientific evidence and guidance, and government policies underpinning those measures.

There is a lot of myth, misinformation, and unfounded assumptions as well as out of date information in the news media, on the internet and in general conversation about the virus and solutions to curing or living with it. Clarify the facts before decisions are made and information disseminated to the workforce. Seek information and advice from appropriate expert bodies (see Reference section), recognising that these bodies sometimes differ in their findings and advice. Aim for the best available expert guidance and keep up to date with developments. Good expert information alleviates a lot of the anxieties workers may have.

Reciprocity
Central to the "do no harm" principle is reciprocity. Workers should be encouraged and supported in making decisions about their own health and welfare including the right to refuse work where they genuinely believe their health and welfare is at risk or that they may be putting others at risk, e.g. vulnerable family members.

Flexibility

Knowledge about the coronavirus is constantly evolving, as is knowledge about how social practices affect the spread of the virus. Safety, health and wellbeing practices must reflect the evolving situation and employers should then adjust their practices in the light of new general expert scientific and medical information as well as from any specific information learned from their workers and from observations of on-site procedures. Flexibility also means recognising that the public measures to control the spread of the virus creates unusual personal circumstances for each worker that would not normally be routinely experienced, e.g., the "stay at home" requirement for a full household where only one may be exhibiting symptoms of the virus, or where the care needs of a vulnerable relative have to be met by the family in the absence of normal community carers, and this includes child care when schools and day care facilities are closed.

Procedural Justice

Treating all workers fairly is not the same as treating all workers the same. Procedures to safeguard workers should not lead to discrimination against particular groups within the workforce who may for example be labelled "vulnerable" irrespective of whether each individual is actually vulnerable or not. Ensure that procedures do not reinforce systemic inequalities either by act or omission. Full participation in the decision-making process should facilitate discussion on these issues.

Continuous Improvement

It is important to schedule regular and frequent review meetings with workers' representatives to ensure that the procedures agreed upon reflect current best practice, are up to date with medical or government guidance, are effective and that the concerns of all workers are raised, discussed and addressed.

Medical Care and Occupational Health Assistance

Larger employers may already employ occupational health professionals who will be invaluable members of the coronavirus safety teams providing information on appropriate procedures, PPE, cleaning regimes, etc., as well as advice in support of workers who have been in contact with or have been diagnosed with Covid-19.

In the absence of an occupational health professional employers may seek advice from the relevant Public Health body for specific coronavirus advice or from Employment Medical Advisory Service (EMAS) at the Health and Safety Executive (HSE) and HSE(NI) for general health care practices on-site. Scottish Government website also has specific advice to cover a wide range of situations. WHO's recommended essential preventative measures and additional precautions are set out below.

Mental Health and Wellbeing

Workplace wellbeing relates to all aspects of working life, from the quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organisation. The aim of measures for workplace wellbeing is to complement safety and health measures to make sure workers are safe, healthy, satisfied and engaged at work (ICE 2020).

Fear, worry, and anxiety are normal responses to real or perceived threats and times of uncertainty. A prolonged period of lockdown, with daily doses of information, from a wide variety of sources, regarding the virus, the disease and its actual and/or perceived impact has fed the fear of contracting the virus. This has heightened workers concerns for self and for family now back at or returning to work knowing that the virus is still present and likely be with us for some time. Coupled with this is the impact on mental health and wellbeing associated with long periods of isolation and of not being at work.

Sustained, meaningful and good quality work ordinarily offers a positive effect, which may be dinted by the presence of coronavirus.

Addressing conflicting pressures and anxieties requires a fine balance when adopting standard operating procedures to the particular workplaces and to individual workers. Everyone has their own vulnerabilities and anxiety triggers with individual coping abilities. As was mentioned in the introduction a 'one size fits all' definitely does not work when addressing mental health vulnerabilities of the workforce. It is important therefore to give additional consideration to the mental wellbeing of employees at this time. Caring employers will be aware of this and take this into account as the preparations for returning to work develop. Many employers will already have a mental health or mental welfare programme in place, but should additional assistance be needed advice on managing work related stress and mental wellbeing can be obtained from:

- HSE at https://www.hse.gov.uk/stress/mental-health.htm, and

- HSE(NI) at https://www.hseni.gov.uk/topic/mental-well-being-work.

Appropriate Health Monitoring

Virus vs Disease
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the virus responsible for the spread of the coronavirus disease referred to as COVID-19.

Symptoms
NHS England has indicated that the main symptoms of COVID-19 are:

- high temperature – this means you feel hot to touch on your chest or back;

- new, continuous cough – this means coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual);

- loss or change to your sense of smell or taste – this means you have noticed you cannot smell or taste anything, or things smell or taste different to normal.

There are other symptoms such as muscle aches, tiredness and shortness of breath that are associated with the disease and as more becomes known about the spread of the virus and its effects the list will be amended.

Keep checking your public health advisory body regularly for updates.

Anyone with or suspecting that they have any of the COVID-19 symptoms should seek medical advice as soon as possible and only return to work when medical advice permits. This may include a period of self-isolation.

Establish the principle of "Care not Policing".
Some employers are struggling with the issues of what health monitoring they should carry out, if any, and how frequent these should be, e.g., temperature checks and Covid-19 testing. There are limitations to the effectiveness of these tests when undertaken by employers rather than by Public Health and health care professionals (HCP). There are also substantial resource implications that may be above and beyond what may be reasonable in the circumstances.

Temperature rise is only one of a number of symptoms that an infected person may have. Not every person infected will display all the symptoms and many are known to have displayed no symptoms at all and pass through the disease

relatively unaffected. Thus, temperature testing on entry will only identify those who display this particular symptom missing those with other symptoms or with none at all.

Covid-19 testing is more accurate when carried out by an appropriately trained HCP. There is evidence that swabs taken by untrained people, including those who self-test, are being taken improperly, leading to a higher percentage of inaccurate results. Testing does not yet produce an immediate result and depending on other factors may be several days before the results are returned.

A negative result means only that on the date the test took place the patient was Covid-19 free. It cannot account for the possibility of contracting the virus after the date of testing. This does not mean that testing is ineffective, just that it may not be practically effective if incorporated into workplace procedures (health care settings not withstanding).

It is vital to avoid the perception of running a 'Covid-19 Policing' operation and focus instead on safety, health and wellbeing for all. This approach will deliver a more caring, socially responsible and productive work environment. In the context of mutual trust and confidence (described under Respect for Workers) self-monitoring (rather than requiring daily self-declarations) may be more effective in reducing the likelihood of infected employees coming into work.

Steps to self-monitoring

1. Provide all employees with details of the symptoms of Covid-19 (with the caveat that the absence of symptoms does to necessarily mean the absence of infection). The main symptoms of coronavirus are:

   a) high temperature – this means you feel hot to touch on your chest or back (you do not need to measure your temperature);

   b) new, continuous cough – this means coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual);

   c) loss or change to your sense of smell or taste – this means you have noticed you cannot smell or taste anything, or things smell or taste different to normal.

Most people with coronavirus have at least one of these symptoms.

2. Advise and support workers to self-isolate per current national guidelines (these will differ between the nations in U.K.) if they:

   a) experience any of these symptoms or

   b) have been in contact with anyone who has Covid-19.

3. Advise workers self-isolating with suspected Covid-19 to contact their public health body.

Worker Displaying Symptoms

If a worker begins to display symptoms, while at work, they are to:

a) go home immediately, self-isolate and contact the public health agency for their area (See Public Health Bodies – Sources of Advice below); or

b) if too ill to go home, they are to be isolated from other workers and an ambulance called, informing the emergency services that you have a potential Covid-19 patient too ill to travel.

Advise all workers who have been in contact with a Covid-19 patient to go home and self-isolate for 14 days. Per confidentiality do not disclose the name of the Covid-19 patient to others.

(Note: A 'contact' is a person who has been close to someone who has tested positive for COVID-19 anytime from 2 days before the person was symptomatic up to 7 days from onset of symptoms (this is when they are infectious to others. UK Government (HM Government 2020b) gives more detailed guidance.

Workers with a confirmed diagnosis of Covid-19 must inform their employers which other workers they have been in contact with.

Clean and disinfect workplace areas that the suspected Covid-19 patient has spent time in (HM Government 2020c).

Health Records – Data Protection

Health records are confidential to patients and their GP/ HCP. They may not be disclosed to another person without the express consent of the patient.

When an employer is provided with and maintains records of employees' health conditions they must:

a) Nominate a specific person to securely hold that information, e.g., occupational health professional, Personnel or HR manager.

b) Ensure that this information is physically or digitally secured against unauthorised access,

c) Ensure that the information is not disclosed to any other person,

d) Return the information to the employee and delete all copies of the information when it is no longer required.

When advising workers that they have been in contact with a person diagnosed with Covid-19 do not disclose the identity of the person with the diagnosis. Breaches of General Data Protection Regulations (GDPR) carry heavy penalties running into tens of thousands of pounds for each breach.

For information on employers' duties contact the Information Commissioner at https://ico.org.uk/global/contact-us/

Economic Considerations

It is right to acknowledge that this public health emergency is also an economic crisis affecting the whole of society. Some sections of society (the less affluent) are affected more than others and it is not crass to suggest addressing both crises in parallel. Economic hardship has come to most of society with the advent of the coronavirus pandemic and there is a need to deliver a safe and healthy return to economic activity. With planning for the new reality comes an opportunity to examine how, alongside creating safer and healthier workplaces, the economic fortunes of companies and workers can be enhanced. For instance, in 2017 a McKinsey report indicated the potential for a 50-60% increase in productivity in the construction industry should an effective digitalisation strategy, which met societal, industry and workers needs be adopted (Barbosa et al. 2017). However, achieving that potential requires amongst other factors that workers are granted equal consideration and respect.

Many workers will find that a coming back to work is filled with angst but the overwhelming need to provide personal economic stability will ultimately drive the decision. That does not mean that a country's return to work is an indicator that all is back to where it was. Rather it is the time where employers can reassure their employees that safety, health and wellbeing is more than just a hopeful outcome. It is a reality.

If the lockdown period taught us anything it is that 'we are all in it together' and getting through it and adjusting to the new reality needs the same caring approach. Employers and employees working together for shared economic benefit. The opportunity is presented to collaborate and to demonstrate mutual respect as we get through this in a resilient and

sustainable manner, protecting the economic interests of both construction business and the construction workforce. Organisations may soon come to realise that there are many positive benefits to be had, for all, through embracing agile working concepts. This document recognises that there is an interdependence between safety, health and wellbeing decisions and economic sustainability.

Engineering, Environmental and Administrative Controls

The virus is transmitted primarily through respiratory droplets and aerosol particles or contact with contaminated surfaces. Work-related exposure can occur anytime at the workplace, during work-related travel to an area with local community transmission, as well as on the way to and from the workplace.

The measures set out here, complementing WHO and national statutory guidance are designed to help determine what are the rational safeguards necessary for opening of and working on construction sites. Not all jobs, nor are all sites are equal with regard to exposure risk (WHO 2020a) and as such the controls discussed here are to be introduced and regularly reviewed with regard to site specifics, individual worker needs and the evolving medical and scientific advice.

Remember: controls suitable for one day will not remain consistently suitable and should be reviewed and may well need to be modified in subsequent days.

An exemplar Plan to Protect Workers from Infection is presented in Appendix 1.

Essential preventative measures recommended by World Health Organisation (WHO)

The essential preventative measures are those that apply where most viral or biological hazards are known to exist. They are largely good hygiene procedures:

- **Hand hygiene** - Protect yourself and others from infection by frequently washing your hands [soap and water for at least 20 seconds] or cleansing using an alcohol-based hand rub [with greater than 60% ethanol or 70% isopropanol] and not touching your face; and

- **Respiratory hygiene** - The coronavirus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow).

Additional precautions recommended by World Health Organisation

These recommended additional precautions are not a substitute for the essential preventative measures listed above but may be appropriate in many work circumstances. Make rational choices as to when they are appropriate since inappropriate overuse downplays their importance when they are truly needed:

- **Maintain physical/ social distancing** – WHO recommends maintaining a safe distance of 1m (although some countries recommend different distances, ranging from 1m to 2m. Check for local statutory requirements). Where it is not possible to maintain scientifically recommended physical/ social distances some or all of the following mitigating actions may be needed:

    - increase the frequency of hand washing and surface cleaning;

    - keep the activity time involved as short as possible;

    - use screens or barriers to separate people from each other;

    - use back-to-back or side-to-side working (rather than face-to-face) whenever possible;

- reduce the number of people each person has contact with by using 'fixed teams or partnering' (so each person works with only a few others).

- **Masks** – WHO recently altered its guidance relating to the wearing of face masks, recommending now that face masks be worn, not only on public transport but in circumstances where physical/ social distancing is difficult to maintain. The types of mask that are appropriate vary depending upon age and vulnerability. Medical-grade masks for over 60s and those with health issues and three-layer fabric mask for all others (WHO 2020b);

- **Routinely clean surfaces** – WHO recommends using a chlorine-based disinfectant/ hypochlorite at 1,000 parts per million (ppm) concentration; and

- **Ventilation** – Maintain appropriate ventilation in enclosed spaces and in vehicles (although on fast-driven roads and motorways or in inclement weather this may not be suitable, in which case the use of the other additional precautions become more central). Adequate ventilation can help to reduce the likelihood of transmission of infection and natural ventilation can be one of the effective environmental measures.

Personal Protective Equipment (PPE)

It is important to ensure that PPE, including masks are acquired from a reputable source and meet the meet appropriate regulatory/ national quality standards such as, British and European standards. Not all that is being promoted meet these standards and therefore cannot guarantee the level of protection needed.

Remember also that the wearing of masks recommended for use in controlling spread and/ or transmission of coronavirus are not confused with respiratory protective equipment, often used in construction processes, e.g. where silica or asbestos is known or suspected to be present. As with the wearing of any PPE the exact type and the circumstances for their use should be clear to everyone involved in the work activity.

Immunity passport

WHO has advised that at this point in the pandemic neither the scientific evidence nor the medical testing is sufficient to guarantee the accuracy of any form of 'immunity passport' or 'risk-free certificate'. WHO will keep this under scrutiny and present any updates in their scientific briefs (WHO 2020b). Therefore, at time of writing this guidance immunity passports are not encouraged.

Training

Workers returning to sites, largely to continue the work they were previously engaged with and ostensibly within their sphere of competence and capability. After a long break be conscious that there is the potential for skill fade and that time is to be allowed to adjust/ readjust.

Any training offered should be specific to the individual, needs assessed and introduce the workers to any changes that may have occurred as a result of the pandemic, including:

- The work to be carried out, including how to prepare the site for reopening;

- Ongoing worker communication and engagement procedures;

- Sources of reliable of guidance and information; and

- Any new/ additional controls, precautions, and signage.

Travel to and from Work/ Work Sites

There is public transport guidance relating to travelling to and from work, which WHO advise includes the use of face masks. Statutory guidance on this may vary so make sure to check.

Construction Leadership Council (CLC 2020), Construction Industry Federation (CIF 2020) and Construction Scotland (CS 2020) have detailed guidelines relating to how employees may safely share travel in both personal and company vehicles.

Shared Temporary Living Accommodation

Employers should only consider shared living accommodation as a last resort. On construction projects where the use of shared living accommodation is deemed to be essential for the workforce arrangements need to be in place to maintain all the essential and additional recommended precautionary measures.

Conclusion

Maintaining good mental health

A conversation that is emerging and that will have greater voice in the times ahead is the value of work in enhancing our wellbeing. The issue of maintaining good mental health, during such an unprecedented lockdown has come to the fore with ICE and many employers exploring how workers safety, health and wellbeing may be maintained and/ or enhanced as the crisis evolves and workplaces return to their usual activities, albeit with some levels of additional precaution and control.

Strive to improve safe and healthy working practices

As we create the circumstances to allow us to emerge from the crisis created by the appearance of the coronavirus (SARS-CoV-2), be in no doubt of the role to be played by civil engineers. As the industry adjusts to the new reality it is hoped that with a collective and collaborative approach the good traits, evident in society during the lockdown; the recognition of the true value of key and essential workers and the upsurge in humanitarian and caring actions, will survives the crisis. There is the opportunity to re-evaluate what is important and act towards creating a better construction working life, not rush headlong back to what was.

Sharing good practice and lessons learnt

Finally, good engineers know that great design and construction is backed up by best advice and guidance. As the return to work progresses during the ongoing pandemic there is a need to always refer to credible sources for advice; World Health Organisation continually updates on the spread of and appropriate controls for dealing with coronavirus while ICE, as a learned society, continues to provide a signpost to excellent resources.

Contributors

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Public Health Bodies – Sources of Advice

- Public Health England: https://www.gov.uk/government/organisations/public-health-england
- Public Health Wales: https://phw.nhs.wales
- Health Protection Scotland: https://www.hps.scot.nhs.uk
- Scottish Government Coronavirus Guidance: https://www.gov.scot/collections/coronavirus-covid-19-guidance/
- Public Health Agency (Northern Ireland): https://www.publichealth.hscni.net
- Public Health Ireland: https://www2.hse.ie/coronavirus/
- Public Health European Union: https://ec.europa.eu/health/

Appendix 1: Exemplar Plan to Protect Workers from Infection

PLAN

1. Establish and/or convene the joint worker/management safety, health and wellbeing team to plan and organise appropriate control measures to prevent the spread of infection.
   - Obtain up to date guidance and information from competent expert sources.
   - Integrate plans with the business continuity plan.
2. Agree the necessary preventative and control measures.
   - Ensure fairness and equity of treatment.
3. Agree and adopt engineering, organisational and administrative measures.
   - Social distancing and/or barriers where appropriate.
   - Sufficient ventilation in enclosed areas.
   - Reduce concentrations of workers in e.g., canteens, welfare areas, site entrance.
   - Appropriate training.
   - Integrate these with existing controls measures for site safety.
   - Communicate the plan.
4. Consider other coronavirus related concerns including.
   - Psychosocial hazards.
   - Travel to and for work (on and between sites).
   - Accommodation arrangements.

DO

5. Promote personal hygiene.
   - Hand hygiene.
     - Provide sufficient soap, water and disposable paper towels (preferred) and/ or
     - Disinfectant (at least 60% ethanol) alcohol-based gels.
     - Discourage sharing hand equipment, tools and office supplies.
   - Respiratory hygiene.
     - Provide disposable masks where required.
6. Regularly clean and disinfect.
   - Canteens, welfare areas, offices, storerooms, vehicles, employer-provided accommodation.
   - Electrostatic spray surface cleaning.
   - Use appropriate approved chemicals.
   - Post cleaning schedules.
7. Provide personal protective equipment (PPE) and inform workers of its correct use.

- Ensure workers and management know the correct mask and glove wearing, changing and disposal practices.
- Obtain PPE from reliable sources and ensure it meets requisite standards.

CHECK

8. Conduct appropriate health surveillance.
    - Monitor health status of workers.
    - Establish protocols for workers with symptoms or confirmation of contagion.
    - Communicate confirmed cases to appropriate authorities.
    - Provide advice on Covid-19 symptoms.
    - Provide guidance on self-monitoring.
    - Ensure data protection in accordance the General Data Protection Regulations.

ACT

9. Review and update preventative and control measures as the situation evolves.
10. Review and update as necessary the emergency preparedness plans.
    - For when an individual shows symptoms.
    - For closure of the site in the likelihood of a major spike in cases.