

Returning to human testing: lab and field

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UK

**With thanks to: Prof Carolyn Greig, Prof Ben Levine, Mr Geoff Long, Prof Igor Mekjavic, Prof Hugh Montgomery, Dr Paddy Morgan, Dr Dan Roiz de Sa, Dr Matt Wilkes, Prof Jennie Wilson
and The Physiological Society (Andrew Mackenzie, Thomas Addison, Liam McKay)**

Topics

- Ethical considerations
- Medico-legal & insurance considerations
- Recruitment and health assessment
- Laboratory practice
- Experimental design
- Disinfection and filtering
- PPE
- A "human testing during COVID-19" repository
- Links & Events

Approach

- Discuss each topic in turn
- Please write, as succinctly as possible, any comments or questions you have on the “chat” function – these will go to everyone and may elicit answers and responses
- Any comments made in “chat” will be reviewed and included in the final report of the webinar as appropriate.
- You will be asked if you are happy to sign up to this report when it is produced soon after the meeting

Ethical considerations

- Consider the ethics of performing research that utilises PPE, Coronavirus testing kits, or poses additional risk to participants of contracting COVID-19, against the outcome of studies.
- Stratify the risk related to the testing you intend in terms of the tests to be undertaken, populations to be tested and those undertaking the testing *e.g.*:
 - i. Co-morbidities, age, geographical location *etc.* of researchers and participants
 - ii. Anything aerosol-generating will require greater distancing, unless the participant is wearing a sealed/filtered mask.
- This will be an ongoing, context sensitive, dynamic risk assessment, balancing “benefit” against “cost” for each study in terms of the impact on society of the results, and resource use associated with conducting the study. Can the study be delayed?
- Simply, does the benefit of the proposed research outweigh the associated risks of COVID-19 (infection, critical resource use) in society?

Questions/considerations for the PI?

- If I do this, what has to happen, what might happen?
- What is the value of this?
- Should I do this now?

Medico-legal & insurance considerations

- Participant: check insurance to undertake studies
- Researcher: establish the position regarding the specific cover offered by your institutional insurance/compensation schemes for researchers and participants.
 - In the UK, research staff are employees of their respective institutions and are therefore covered by the employer's and employee's statute responsibilities under Health & Safety at Work Act.
 - One aspect is the protection of staff who may have underlying health problems or disability that may put them at increased risk – staff risk stratification.
 - Seek your institution's Occupational Health Department advice where there is doubt or concern.
- Additional precautions and consent should be considered with regard to rescue and first aid/resuscitation procedures. These may pose additional risks to rescuers with consequent alteration to protocols. The result of which may be reduced capability to resuscitate in the context of a problem, *e.g.* avoidance of airway manoeuvres during resuscitation as they are an Aerosol Generating Procedure. Acquire PPE necessary for resuscitation?
- Insurance cover is likely to be tightly linked to government policy and what it permits/requires. There is still time to influence this.

Recruitment and health assessment

- Try to have preliminaries (recruitment, initial consenting, health history, questionnaires) moved online.
 - This approach requires additional consideration to ensure participant confidentiality (*e.g.* privacy of internet connection, notification, privacy and storage of any conversations/data recorded).
- Participant screening (*e.g.* testing for the presence of the virus RNA upon study enrolment and on completion - **debated**), participant risk stratification.
- In repeat measures experiment (over several days) ask the participant to report daily symptoms (look out for fever, cough, changes in respiratory parameters) and follow-up on post experiment health.
- Consider “symptom-free” washout periods between participants.

Value of testing for Covid-19

- The COVID PCR test will detect viral genome for weeks after the person had the infection and it is widely agreed that people are no longer infectious a few days after the symptoms (most people 7 days, some maybe 14 and only severely ill any longer than this). This means testing people and finding them positive does not indicate that they are infectious – it is only useful for diagnosing that they have had the infection (in the last few weeks). **Even if they do test positive – then the precautions described above would not be different – although obviously they should just not leave their house if they have recently had symptoms and test positive.**
- A rapid PCR test done at the time of the visit (some coming out now that will give results in an hour) is not practical because the person will be in the setting already and will have sat there for an hour! A PCR test done a couple of days before is not helpful for the above reasons. In addition, the test is not 100% sensitive (some are only 30% sensitive). **Far better to go on presence of symptoms (screening) as guide to whether safe to come for tests** or not and as 'everyone knows' this means staying at home for 7 days after start of symptoms.
- Although there is evidence that some people with the virus are asymptomatic - where the prevalence of the virus is low then the number of people who are asymptomatic will be very small. In addition, they are unlikely to present a major risk of transmission compared to someone with symptoms (and if precautions above are applied these are adequate regardless of whether the person has the virus or not).

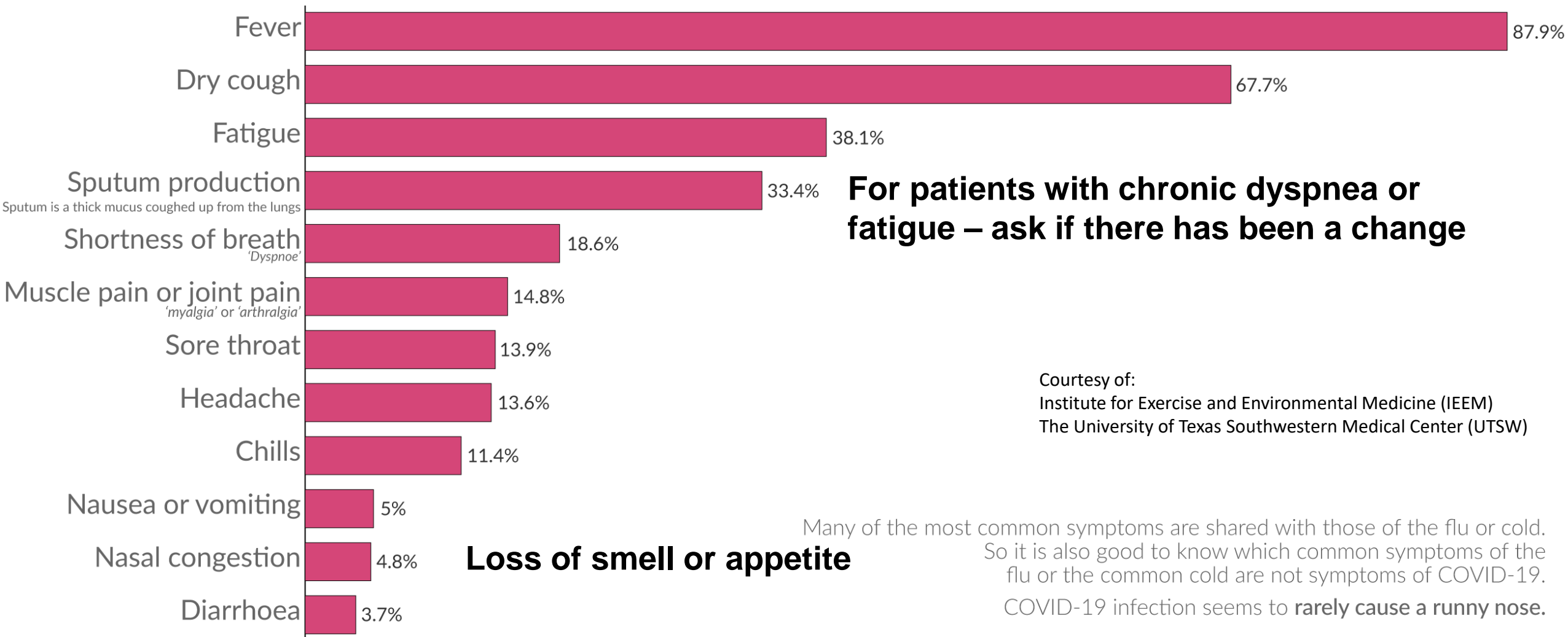
General advice from Professor Jennie Wilson, Professor of Healthcare Epidemiology (UWL)

The symptoms of coronavirus disease [COVID-19]

Our World
in Data

The most common signs and symptoms of 55,924 laboratory confirmed cases of COVID-19.

Reported from China in the period up to February 22, 2020



Data source: World Health Organization (2020). Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). Symptoms in fewer than 1% are not shown.
[OurWorldinData.org](https://www.ourworldindata.org) – Research and data to make progress against the world's largest problems. Licensed under [CC-BY](https://creativecommons.org/licenses/by/4.0/) by the authors.

Laboratory practice

- You should be guided by government guidance on socialising. This is evolving rapidly and should be monitored.
- Laboratory:
 - System for one-way flow of people through the lab. Signage.
 - Minimise staff and volunteer numbers
 - Maintain social distancing unless wearing suitable PPE
 - Minimise surface clutter to ease disinfection
 - Wipe down workstations between participants and before leaving the lab *e.g.* keyboards, chairs, handled equipment.
 - Require regular hand washing on entering and leaving the laboratory.
 - Identify specific loading/unloading delivery areas where social distancing can be maintained but deliveries remain safe and secure.
 - Increase ventilation generally in the facility and particularly in confined spaces where possible
- Field
 - Maintain social distancing, use PPE otherwise
- Have a system for reporting adverse events and initiating contact tracing checks and isolation. Have an action plan in place for what to do in the event of a positive test or post-experiment report of infection (in the UK, COVID-19 is a notifiable disease). As with other testing/screening protocols information governance processes will need to be adhered to.

Experimental design

- Single intervention: consider testing participants before test and confining them during the test (i.e. minimal interaction with other individuals until test is over).
- Repeated measures:
 - Consider asking participants to be in self isolation for the duration of the study (if possible)
 - Consider confining participants to a dormitory
 - Ask the participant to report daily symptoms (look out for fever, cough, changes in respiratory parameters) and follow-up on post experiment health.
 - Consider “symptom-free” washout periods between trials.
- Group comparisons: instead of repeated measures consider group comparisons
- Quasi-replication: instead of 10 participants conducting a single intervention, have 5 participants repeat the trial (i.e. $n=10$ trials). This reduces the number of participants at risk, but adds a burden in justifying the statistics.

Key infection prevention principles

Virus is spread via aerosolized respiratory secretions

Variables impacting transmission:

Respiratory rate/volume

Room size/ventilation (confined vs open space)

Exposure time

Survival time on surfaces

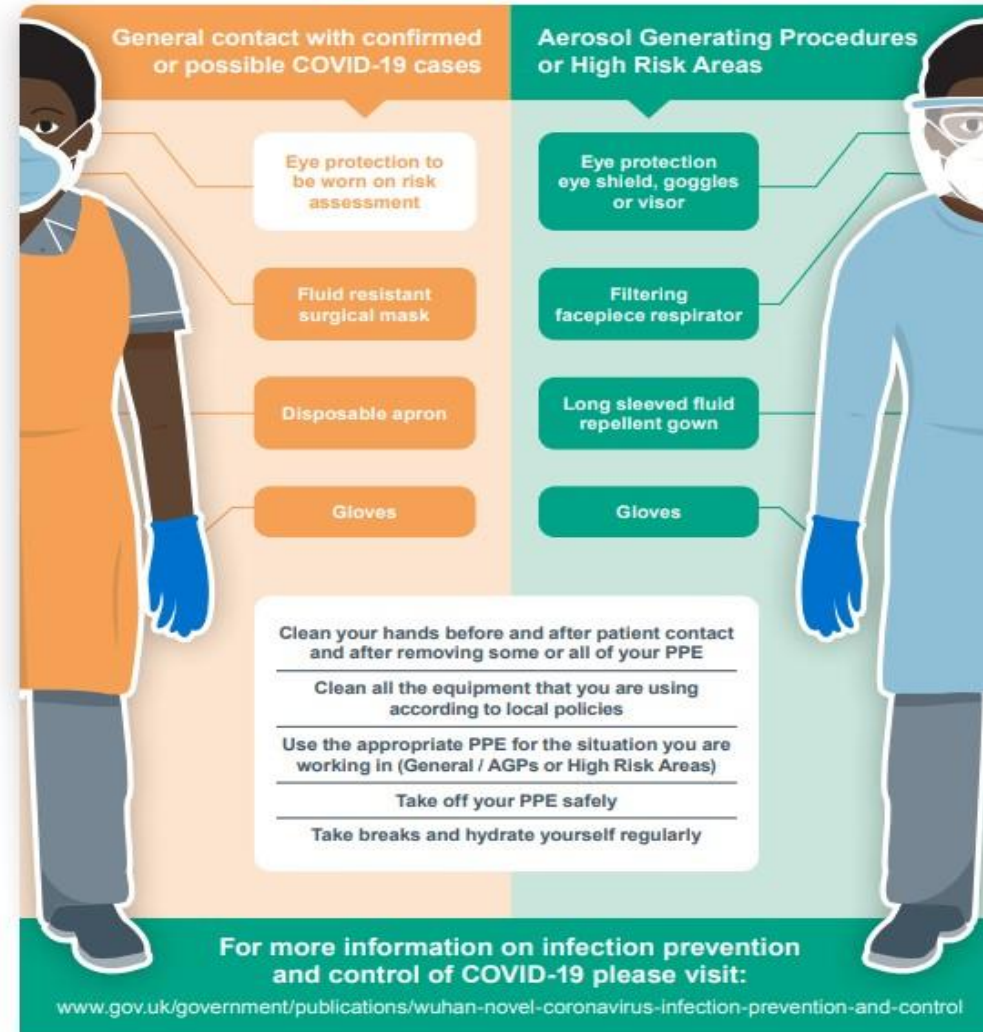
Disinfection and filtering

- Filtration within breathing systems. HMEF filters remove particles $<5\mu\text{m}$ 99.5 % of the time which is sufficient for in-hospital use. The additional benefit of viral filters is the removal of 99.9 % of particles $<5\mu\text{m}$.
- Decontamination
 - Rigorous handwashing and/or use of alcohol gel should be enforced. Hands that are sterile can pick up virus from work surface, the mouth *etc.* and can immediately be spread - so clean hands at every opportunity. Wipe down all surfaces with viricidal solutions/alcohol wipes when used (*e.g.* handles on kit, keyboards) and fully clean all surfaces at the end of each testing session and day.
 - All equipment should be carefully reviewed to ensure that it can be thoroughly and comprehensively sterilised after use (*e.g.* check sample lines, turbines, internal gas pathways, Velcro straps *etc.* can be sterilised).
 - Consider using disposable equipment where possible. Dispose of appropriately.
 - Use appropriate filters as necessary on all equipment that carries a risk of cross infection.
 - Treat anything worn in the laboratory as “infected” and dispose of it carefully before washing hands. Likewise, protective masks *etc.* should be cleaned (alcohol wipes or soap and water) on removal.
 - Decontamination: chlorine-based cleaning solutions have demonstrable ability to clear the virus from surfaces. Soap and water is also effective due to its action disrupting the lipid layer that encases the virus. Current WHO disinfection recommendations include the use of:
 - 70 % Ethyl alcohol to disinfect reusable dedicated equipment (*e.g.*, thermometers) between uses.
 - Sodium hypochlorite at 0.5 % (equivalent 5000 ppm) for disinfection of frequently touched surfaces in homes or healthcare facilities

PPE



COVID-19 Safe ways of working A visual guide to safe PPE



Scrubs as an under layer –
wash at 60 °C
Clog/Crocs - disinfect

<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

PPE

- PPE use requires training on donning and doffing
- The level of PPE required for participant interaction should be based on a risk assessment of the intervention (at all times consider whether an alternate approach is possible that would reduce the risk to researcher and participant).
- Normally, you should not breach social distancing rules to collect samples. To do so safely would require, at minimum: an apron, gloves and fluid resistant surgical mask, hand washing before and after the intervention.
- Masks need to be tightly fitted across nose and sides of mouth. Poorly fitted masks will allow for transmission of up to 60% aerosolized particles.
- Wearing goggles stops you passing the virus from work surface to hand to eye, and a mask into the mouth. It also limits spread through coughing.
- Where there is a risk of an Aerosol Generating Procedure. UK guidance suggests an FFP3 mask or equivalent, eye protection, gloves and fluid resistant suit or surgical gown.

How to put on a face mask

Blue side faces out



Wash hands with water and soap for 20 seconds or use hand sanitiser



Cover your mouth and nose properly. There should be no gaps between your face and the mask



Do not touch your face or the mask while using it. If you need to remove it, wash or sanitise your hands before



Replace with new mask if it gets damp and bin it ASAP



Do not touch the front of the mask. Remove from the back and wash or sanitise hands

Pinch metal nose clip across nose bridge

Gloves required with any subject/patient interaction

Institute for Exercise and Environmental Medicine (IEEM)
The University of Texas Southwestern Medical Center (UTSW)

Risk category

Study Procedures

PPE requirements

Low

Questionnaires, cognitive testing, pill counts, LBNP, IV, blood draws, ECG, blood pressure cuff

Facemask for both subject and staff; 6 ft distance if possible

Medium

MSNA, vascular testing, echocardiography, cardiac outputs, handgrip exercise, HUT

Staff closer than 3 feet wear facemask w/ shield; regular facemasks for other staff

High

Exercise testing, PFTs, whole body heating

COVID test documented, staff closer than 3 feet wear facemask w/ shield; consider gown if < 1 feet. Ensure filters in place on exhalation tubing

Recommended PPE for healthcare workers by secondary care inpatient clinical setting, NHS and independent sector

Setting	Context	Disposable Gloves	Disposable Plastic Apron	Disposable fluid-repellent coverall/gown	Surgical mask	Fluid-resistant (Type IIR) surgical mask	Filtering face piece respirator	Eye/face protection ¹
Acute hospital inpatient and emergency departments, mental health, learning disability, autism, dental and maternity settings	Performing a single aerosol generating procedure ^{2,3} on a possible or confirmed case ³ in any setting outside a higher risk acute care area ⁴	✓ single use ⁵	✗	✓ single use ⁵	✗	✗	✓ single use ⁵	✓ single use ⁵
	Working in a higher risk acute care area ⁴ with possible or confirmed case(s) ³	✓ single use ⁵	✓ single use ⁵	✓ sessional use ⁶	✗	✗	✓ sessional use ⁶	✓ sessional use ⁶
	Working in an inpatient, maternity, radiology area with possible or confirmed case(s) ³ – direct patient care (within 2 metres)	✓ single use ⁵	✓ single use ⁵	✗	✗	✓ sessional use ⁶	✗	✓ sessional use ⁶
	Working in an inpatient area with possible or confirmed case(s) ³ (not within 2 metres)	✗	✗	✗	✗	✓ sessional use ⁶	✗	✓ risk assess sessional use ^{6,7}
	Working in an emergency department/acute assessment area with possible or confirmed case(s) ³ – direct patient care (within 2 metres)	✓ single use ⁵	✓ single use ⁵	✗	✗	✓ sessional use ⁶	✗	✓ sessional use ⁶
	All individuals transferring possible or confirmed case(s) ³ (within 2 metres)	✓ single use ⁵	✓ single use ⁵	✗	✗	✓ single or sessional use ^{5,6}	✗	✓ risk assess single or sessional use ^{5,6,7}
	Operating theatre with possible or confirmed case(s) ³ – no AGPs ²	✓ single use ⁵	✓ single use ⁵	✓ risk assess single use ^{5,7}	✗	✓ single or sessional use ^{5,6}	✗	✓ single or sessional use ^{5,6}
	Labour ward/area – 2nd/3rd stage labour vaginal delivery (no AGPs ²) – possible or confirmed case ³	✓ single use ⁵	✓ single use ⁵	✓ single use ²	✗	✓ single or sessional use ^{5,6}	✗	✓ single or sessional use ^{5,6}
	Inpatient care to any individuals in the extremely vulnerable group undergoing shielding ⁸	✓ single use ⁵	✓ single use ⁵	✗	✓ single use ⁵	✗	✗	✗

Table 1

- This may be single or reusable face/eye protection/full face visor or goggles.
 - The list of aerosol generating procedures (AGPs) is included in section 8.1 at: www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe. (Note AGPs are undergoing a further review at present).
 - A case is any individual meeting case definition for a possible or confirmed case: <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases/investigation-and-initial-clinical-management-of-possible-cases-of-wuhan-novel-coronavirus-wn-cov-infection>
 - Higher risk acute areas include: ICU/HDUs; ED resuscitation areas; wards with non-invasive ventilation; operating theatres; endoscopy units for upper Respiratory, ENT or upper GI endoscopy; and other clinical areas where AGPs are regularly performed.
 - Single use refers to disposal of PPE or decontamination of reusable items e.g. eye protection or respirator, after each patient and/or following completion of a procedure, task, or session; dispose or decontaminate reusable items after each patient contact as per Standard Infection Control Precautions (SICPs).
 - A session refers to a period of time where a healthcare worker is undertaking duties in a specific care setting/exposure environment e.g. on a ward round; providing ongoing care for inpatients. A session ends when the healthcare worker leaves the care setting/exposure environment. Sessional use should always be risk assessed and considered where there are high rates of hospital cases. PPE should be disposed of after each session or earlier if damaged, soiled, or uncomfortable.
 - Risk assessed use refers to utilising PPE when there is an anticipated/likely risk of contamination with splashes, droplets of blood or body fluids.
 - For explanation of shielding and definition of extremely vulnerable groups see guidance: <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>
 - Ambulance staff conveying patients are not required to change or upgrade PPE for the purposes of patient handover.
- Patient use of PPE:** In cohort wards, communal waiting areas and during transportation, it is recommended that suspected or confirmed cases wear a surgical face mask if this can be tolerated. The aim of this is to minimise the dispersal of respiratory secretions, reduce both direct transmission risk and environmental contamination. A surgical face mask should not be worn by patients if there is potential for their clinical care to be compromised (e.g. when receiving oxygen therapy).



Recommended PPE for primary, outpatient, community and social care by setting, NHS and independent sector

Setting	Context	Disposable Gloves	Disposable Plastic Apron	Disposable fluid-repellent coverall/gown	Surgical mask	Fluid-resistant (Type IIR) surgical mask	Filtering face piece respirator	Eye/face protection ¹
Any setting	Performing an aerosol generating procedure ² on a possible or confirmed case ³	✓ single use ⁴	✗	✓ single use ⁴	✗	✗	✓ single use ⁴	✓ single use ⁴
Primary care, ambulatory care, and other non emergency outpatient and other clinical settings e.g. optometry, dental, maternity, mental health	Direct patient care – possible or confirmed case(s) ³ (within 2 metres)	✓ single use ⁴	✓ single use ⁴	✗	✗	✓ single or sessional use ^{4,5}	✗	✓ single or sessional use ^{4,5}
	Working in reception/communal area with possible or confirmed case(s) ³ and unable to maintain 2 metres social distance ⁶	✗	✗	✗	✗	✓ sessional use ⁵	✗	✗
Individuals own home (current place of residence)	Direct care to any member of the household where any member of the household is a possible or confirmed case ^{3,7}	✓ single use ⁴	✓ single use ⁴	✗	✗	✓ single or sessional use ^{4,5}	✗	✓ risk assess single or sessional use ^{4,5,8}
	Direct care or visit to any individuals in the extremely vulnerable group or where a member of the household is within the extremely vulnerable group undergoing shielding ⁹	✓ single use ⁴	✓ single use ⁴	✗	✓ single use ⁴	✗	✗	✗
	Home birth where any member of the household is a possible or confirmed case ^{3,7}	✓ single use ⁴	✓ single use ⁴	✓ single use ⁴	✗	✓ single or sessional use ^{4,5}	✗	✓ single or sessional use ^{4,5}
Community and social care, care home, mental health inpatients and other overnight care facilities e.g. learning disability, hospices, prison healthcare	Facility with possible or confirmed case(s) ³ – and direct resident care (within 2 metres)	✓ single use ⁴	✓ single use ⁴	✗	✗	✓ sessional use ⁵	✗	risk assess sessional use ^{5,8}
Any setting	Collection of nasopharyngeal swab(s)	✓ single use ⁴	✓ single or sessional use ^{4,5}	✗	✗	✓ single or sessional use ^{4,5}	✗	✓ single or sessional use ^{4,5}

Table 2

- This may be single or reusable face/eye protection/full face visor or goggles.
- The list of aerosol generating procedures (AGPs) is included in section 8.1 at: www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe. (Note APGs are undergoing a further review at present)
- A case is any individual meeting case definition for a possible or confirmed case: <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases/investigation-and-initial-clinical-management-of-possible-cases-of-wuhan-novel-coronavirus-wi-cov-infection>
- Single use refers to disposal of PPE or decontamination of reusable items e.g. eye protection or respirator, after each patient and/or following completion of a procedure, task, or session; dispose or decontaminate reusable items after each patient contact as per Standard Infection Control Precautions (SICPs).
- A single session refers to a period of time where a health care worker is undertaking duties in a specific care setting/exposure environment e.g. on a ward round; providing ongoing care for inpatients. A session ends when the health care worker leaves the care setting/exposure environment. Sessional use should always be risk assessed and considered where there are high rates of hospital cases. PPE should be disposed of after each session or earlier if damaged, soiled, or uncomfortable.
- Non clinical staff should maintain 2m social distancing, through marking out a controlled distance; sessional use should always be risk assessed and considered where there are high rates of community cases.
- Initial risk assessment should take place by phone prior to entering the premises or at 2 metres social distance on entering; where the health or social care worker assesses that an individual is symptomatic with suspected/confirmed cases appropriate PPE should be put on prior to providing care.
- Risk assessed use refers to utilising PPE when there is an anticipated/likely risk of contamination with splashes, droplets or blood or body fluids.
- For explanation of shielding and definition of extremely vulnerable groups see guidance: <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>

<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

Recommended PPE for ambulance staff, paramedics, other patient transport services and pharmacy staff

Setting	Context	Disposable Gloves	Disposable Plastic Apron	Disposable fluid-repellent coverall/gown	Surgical mask	Fluid-resistant (Type IIR) surgical mask	Filtering face piece respirator	Eye/face protection ¹
Ambulance staff/paramedic/pre-hospital critical care/Helicopter Emergency Medical Service/hospital transport services	Performing an aerosol generating procedure e.g. intubation, suctioning ^{2,5} on a possible or confirmed case(s) ³	✓ single use ⁴	✗	✓ single use ⁴	✗	✗	✓ single use ²	✓ single use ⁴
	Direct patient care –possible or confirmed case(s) ³ (within 2 metres)	✓ single use ⁴	✓ single use ⁴	✗	✗	✓ single use ⁴	✗	✓ single use ⁴
	Driver conveying possible or confirmed case(s) ³ in vehicle with a bulkhead, no anticipated direct care ⁷	✗	✗	✗	✗	✗	✗	✗
	Driver conveying possible or confirmed case(s) ³ in vehicle without a bulkhead, no direct patient care and within 2 metres ⁷	✗	✗	✗	✗	✓ single or sessional use ^{4,5}	✗	✗
Pharmacy staff/workers	Working in an area with possible or confirmed case(s) ³ and unable to maintain 2 metres social distance ⁶	✗	✗	✗	✗	✓ sessional use ⁵	✗	✗
	Working in an area with possible or confirmed case(s) ³ and able to maintain social distancing	✗	✗	✗	✗	✗	✗	✗

Table 3

1. This may be single or reusable face/eye protection/full face visor or goggles.
2. The list of aerosol generating procedures (AGPs) is included in section 8.1 at: www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe. (Note APGs are undergoing a further review at present)
3. A case is any individual meeting case definition for a possible or confirmed case: <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases/investigation-and-initial-clinical-management-of-possible-cases-of-wuhan-novel-coronavirus-wn-cov-infection>
4. Single use refers to disposal of PPE or decontamination of reusable items e.g. eye protection or respirator, after each patient and/or following completion of a procedure, task, or session; dispose or decontaminate reusable items after each patient contact as per Standard Infection Control Precautions (SICPs).
5. A single session refers to a period of time where a health care worker is undertaking duties in a specific care setting/exposure environment e.g. on a ward round; providing ongoing care for inpatients. A session ends when the health care worker leaves the care setting/exposure environment. Sessional use should always be risk assessed and considered where there are high rates of hospital cases. PPE should be disposed of after each session or earlier if damaged, soiled, or uncomfortable.
6. Non clinical staff should maintain 2m social distancing, through marking out a controlled distance; sessional use should always be risk assessed and considered where there are high rates of community cases.
7. In communal waiting areas and during transportation, it is recommended that suspected or confirmed cases wear a surgical face mask if this can be tolerated. The aim of this is to minimise the dispersal of respiratory secretions, reduce both direct transmission risk and environmental contamination. A surgical facemask should not be worn by patients if there is potential for their clinical care to be compromised (e.g. when receiving oxygen therapy).
8. Ambulance staff conveying patients are not required to change or upgrade PPE for the purposes of patient handover.



<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>

Additional considerations, in addition to standard infection prevention and control precautions,

where there is sustained transmission of COVID-19, taking into account individual risk assessment for this new and emerging pathogen, NHS and independent sector

Setting	Context	Disposable Gloves	Disposable Plastic Apron	Disposable fluid-repellent coverall/gown	Surgical mask	Fluid-resistant (Type IIR) surgical mask	Filtering face piece respirator	Eye/face protection ¹
Any setting	Direct patient/resident care assessing an individual that is not currently a possible or confirmed case ² (within 2 metres)	✓ single use ³	✓ single use ³	✗	✗	✓ risk assess sessional use ^{4,5}	✗	✓ risk assess sessional use ^{4,5}
Any setting	Performing an aerosol generating procedure ⁶ on an individual that is not currently a possible or confirmed case ^{2,7}	✓ single use ³	✗	✓ single use ³	✗	✗	✓ single use ³	✓ single use ³
Any setting	Patient transport service driver conveying any individual to essential healthcare appointment, that is not currently a possible or confirmed case in vehicle without a bulkhead, no direct patient care and within 2 metres	✗	✗	✗	✓ single use ³	✗	✗	✗

Table 4

1. This may be single or reusable face/eye protection/full face visor or goggles.
2. A case is any individual meeting case definition for a possible or confirmed case: <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases/investigation-and-initial-clinical-management-of-possible-cases-of-wuhan-novel-coronavirus-wn-cov-infection>
3. Single use refers to disposal of PPE or decontamination of reusable items e.g. eye protection or respirator, after each patient and/or following completion of a procedure, task, or session; dispose or decontaminate reusable items after each patient contact as per Standard Infection Control Precautions (SICPs).
4. Risk assess refers to utilising PPE when there is an anticipated/likely risk of contamination with splashes, droplets of blood or body fluids. **Where staff consider there is a risk to themselves or the individuals they are caring for they should wear a fluid repellent surgical mask with or without eye protection as determined by the individual staff member for the care episode/session.**
5. A single session refers to a period of time where a health care worker is undertaking duties in a specific care setting/exposure environment e.g. on a ward round; providing ongoing care for inpatients. A session ends when the health care worker leaves the care setting/exposure environment. Sessional use should always be risk assessed and consider the risk of infection to and from patients, residents and health and care workers where COVID-19 is circulating in the community and hospitals. PPE should be disposed of after each session or earlier if damaged, soiled, or uncomfortable.
6. The list of aerosol generating procedures (AGPs) is included in section 8.1 at: www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe. (Note APGs are undergoing a further review at present)
7. Ambulance staff conveying patients are not required to change or upgrade PPE for the purposes of patient handover.



General advice from Professor Jennie Wilson, Professor of Healthcare Epidemiology:

- The general use of a mask (or other face covering) is to prevent respiratory droplets **from the wearer** contaminating people they may be in close contact with. If both volunteer and researcher wear a mask/face covering then they can be within 2 m of each other (in fact 1m is generally considered to be adequate and this guidance may change eventually).
- Face protectors that cover round the face and below the chin may be more practical than a mask (which is uncomfortable and tends to get touched a lot – increasing the risk of transferring virus to the hands).
- **Face protectors can be re-usable** – need to be wiped clean with detergent/disinfectant at the end of the session.
- All people must apply cough etiquette (cough into hand/arm, discard tissues, **wash hands**).
- Worker must wash hands **before and after** contact with each volunteer. Alcohol gel is fine.
- Gloves are not necessary and simply serve to increase the risk that the virus will be transferred between surfaces and people as they are generally not changed immediately after contact with the patient.
- Masks can be worn for a session (but must not be touched as will contaminate hands) but when given to the volunteer must be changed between each person.
- Where possible volunteers should not come if they have ANY symptoms of respiratory infection but obviously in some studies that might be the point! In which case the use of a mask, good hand hygiene will be sufficient but it is also important to ensure that people who potentially have the infection do not come into contact with anyone else!
- Need to think about making arrangements to socially distance in waiting areas and the use of Perspex screen can help to place a barrier between people and reduce the need for masks.
- The local prevalence of SARS-CoV2 needs to be monitored – this will change over time and in many places is already very very low. The level of precautions may therefore need to be flexed over time - important that people involved realise this.

A "human testing during COVID-19" repository

- Question 25 “Questions from the front line”
<https://www.physoc.org/covid19/questions/>

Links & Events

GENERAL

- <https://www.physoc.org/covid19/returning-to-the-lab/>
- <https://www.nihr.ac.uk/documents/restart-framework/24886>
- <https://assets.publishing.service.gov.uk/media/5eb9752086650c2799a57ac5/working-safely-during-covid-19-labs-research-facilities-240520.pdf>
- http://www.campusuicidepreventionva.org/ACHA_Considerations_for_Reopening_IHEs_in_the_COVID-19_Era_May2020.pdf
- https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/C0133-COVID-19-Primary-Care-SOP-GP-practice_V2.1_6-April.pdf

PPE & COVID-19

- https://www.nejm.org/doi/full/10.1056/NEJMvcm2014809?query=C19&cid=DM92284_NEJM_Registered_Users_and_InActive&bid=200873031
- <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe>
- <https://www.acpjournals.org/doi/10.7326/M20-1342>
- <https://pubs.acs.org/doi/10.1021/acsnano.0c03252>

RESUSCITATION GUIDELINES

- <https://www.resus.org.uk/media/statements/resuscitation-council-uk-statements-on-covid-19-coronavirus-cpr-and-resuscitation/covid-community/>

INFECTION PROTECTION & CONTROL: Health-care setting

- <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>
- [https://www.who.int/news-room/q-a-detail/q-a-on-infection-prevention-and-control-for-health-care-workers-caring-for-patients-with-suspected-or-confirmed-2019-ncov#:~:text=Weak%20chlorine%20solution%20\(0.05,with%20soap%20and%20water.](https://www.who.int/news-room/q-a-detail/q-a-on-infection-prevention-and-control-for-health-care-workers-caring-for-patients-with-suspected-or-confirmed-2019-ncov#:~:text=Weak%20chlorine%20solution%20(0.05,with%20soap%20and%20water.)

DISINFECTION

- <https://www.eurosurveillance.org/content/10.2807/1560-7917.ES2013.18.38.20590>
- <https://doi.org/10.1016/j.jhin.2020.01.022>
- <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

CLEANING & WASTE: Non-healthcare settings

- <https://www.gov.uk/government/publications/covid-19-decontamination-in-non-healthcare-settings/covid-19-decontamination-in-non-healthcare-settings>



CORONAVIRUS STAY ALERT TO STAY SAFE

- Keep a safe distance from others
- Stay home as much as possible
- Keep washing your hands regularly



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