COVID-19
Helping you in your role

Procedural Skills using Simulation
For your attention

Whilst this bundle of skills is relevant to the care of patients with confirmed or suspected COVID-19, you must adhere to the up to date infection prevention and control measures including the use of personal protective equipment (PPE).

This can be found at:

https://www.hps.scot.nhs.uk/a-to-z-of-topics/covid-19/
What is this programme?

This is a ‘Once for Scotland’ approach to supporting you cope with COVID-19 in your current or newly assigned role.

The programme can be used to support other resources from NES and Boards.

Remote tele-education

We are using this online learning package in combination with live 30 minute remote tele-education units which have been specifically developed and can be used for rapidly training staff who have been re-deployed.

Use by NHS Boards

This could also be used by Boards as part of a blended approach with face to face learning. The programme could be used to support in house simulated training which could last 30-60 minutes for each unit.
Who is it for?

The following resource has been designed to support:

• any healthcare practitioner working in the NHS or Social Care in Scotland
• practitioners returning to the workplace as part of their induction
• healthcare students who have been recruited

The content of the units will be of relevance to any health or social care practitioner involved in the care of patients with COVID-19 across social, primary and secondary care settings. Some of the skills bundles may also be useful for carers at home.
What will the programme achieve?

Learning outcomes

- To build capacity in the NHS and social care workforce in self-protection against COVID-19
- To build capacity of practitioners in assessing and managing COVID-19 in different healthcare settings
- To build resilience in the NHS and social care workforce through opportunities for simulated practice using tele-education
How is the programme structured?

Three units of skills bundles have been developed to enhance reliability of practice across all settings:

A. Protecting yourself in the workplace skills bundle
B. Assessment and management skills bundle
C. Protecting your workplace skills bundle

There are two additional units:

D. Procedural skills using simulation (this unit)
E. Rehearsing skills using simulation

Users will be able to choose from the menu to meet the needs of their service.

This is a dynamic programme which will be developed as the pandemic and advice changes.
What workplace settings will this programme be relevant to?

Wherever you are working and in whatever role this programme will provide the practical skills you may require to look after those with COVID-19. This hierarchy of education and training needs demonstrates where the units support skills development.
How are the units linked?

The units are based on the following scenario:

A man aged 36 is brought into a healthcare facility by his family with a high fever, sweating, a dry cough which has just started and difficulty in breathing. He is suspected of having COVID-19.
How do I know this training is up to date?

The units have been developed in line with the best evidence based practice from:

- Health Protection Scotland (HPS)
- Public Health England
- World Health Organisation (WHO)
- NHS Inform
Person-Centred Care

The Health Foundation has developed a framework that comprises four principles of person-centred care:

- Affording people dignity, compassion and respect
- Offering coordinated care
- Offering personalised care
- Encouraging and supporting participation in decision making by patients, consumers, carers and families

A person-centred care approach will support you in the development of the knowledge, skills and confidence you need as a health or social care practitioner to more effectively undertake a procedural skill in relation to your patient’s health. This often requires shared decision making and an open shared understanding of the risks involved. Simulation provides opportunities for rehearsing these procedures safely.

Image from The Health Foundation
Why is simulation so useful?

In induction training for pandemics, simulation can be a powerful training tool in upskilling practitioners and supporting return to practice staff.

Simulation can be used to develop both their confidence and competence in technical skills such as venepuncture and IV cannulation.

Developing a shared mental model of the learning outcomes related to a procedure will help to have a common understanding of when it is most efficient to utilise simulation to prepare the workforce.
Development of Skills Expertise

When using simulation for developing practitioner skills the learner practitioner will be coming to the session with a level of experience and expertise (see five stage model on right) and both learner and facilitator need to be aware of this to enhance skills development. Increased complexity in undertaking a procedure for example in PPE requires adjustment on the skills expertise escalator.

(Dreyfus and Dreyfus, 1980)
In a pandemic where PPE requirements may be different it may be more challenging to perform procedural tasks such as venepuncture, ABGs and intubation. Practising procedures using simulation can enhance the area of optimum stress for practitioners in the workplace.

Yerkes, R. M., & Dodson, J. D. (1908) The relation of strength of stimulus to rapidity of habit-formation. Journal of Comparative Neurology and Psychology, 18, 459-482
Design, deliver and debrief - the stages for simulation trainers

The link below provides a quick guide on the 3 Ds on How to Design, Deliver and Debrief for those facilitating simulation training sessions. The guidance also provides useful tips for each of the three stages.

How to Design, Deliver and Debrief
How does a trainer deliver a simulation training session?

Simulation involves an individual or group of learners rehearsing an aspect of their professional practice in a safe learning environment.

**Briefing**
A clear and structured beginning to the training session that often includes; introductions, identification of intended learning, familiarisation with equipment /scenario /environment as required to create a safe learning environment.

**Immersion**
In this stage the learner is involved in the simulation activity. The structure of this stage will be dependent on the intended learning and simulation design.

**Debriefing**
A crucial stage where a discussion about the simulation takes place. There are many approaches to this stage but it aims to allow space for reflection on the simulation and how these reflections relate to the learner(s), their clinical practice and their ongoing development.
Unit D: Rehearsing procedural skills using simulation

Debriefing with good judgement

**Reaction**
- Providing emotional release
- Appreciating level of stress

**Analysis**
- Exploration of behaviours and mental frames

**Summary**
- Lessons learnt

This advocacy-enquiry approach enables the participant in the simulation to safely explore their actions/behaviours in their role having been given time to emotionally disengage from the scenario. The participant can then identify actions/behaviours to enhance or improve their practice.
## Unit D: Rehearsing procedural skills using simulation

### Benefits to:

<table>
<thead>
<tr>
<th>Learners</th>
<th>Health Care Organisations</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Skills can be practised repeatedly</td>
<td>• Tasks/scenarios can be created to demand and aligned to policy</td>
<td>• Risk of harm to patients avoided</td>
</tr>
<tr>
<td>• Training can be tailored to individuals</td>
<td>• Retention and accuracy are increased</td>
<td>• Undesired interference is reduced</td>
</tr>
<tr>
<td>• Training can be chunked for mastery learning</td>
<td>• Reduced training time</td>
<td>• Expectations are met</td>
</tr>
<tr>
<td>• Uncommon scenarios can be used when required</td>
<td>• Provide “pre-trained” novice with enhanced confidence and competence</td>
<td></td>
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<tr>
<td>• Errors can be allowed to evolve and then explored for learning</td>
<td>• Transfer of training from classroom to real situation is enhanced</td>
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<tr>
<td>• Can provide effective feedback to individuals</td>
<td>• Standards against which to evaluate performance and diagnose educational needs are enhanced</td>
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<td></td>
<td>• Changes in working practices</td>
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For the purpose of this unit relevant procedural skills have been identified for the assessment, diagnosis and management of a patient with suspected COVID-19 in the community, primary or secondary care settings.

A procedure is an established or evidence based series of actions or skills undertaken in a certain order or manner.

Procedures vary in their range of complexity.

They can be practised to mastery levels using simulation which enhances both confidence and competence.
Learning outcomes for this unit. You will be able to demonstrate:

• infection control procedures
• safe communication skills
• relevant invasive procedures
• airway management in adult and child
• resuscitation skills
• confirmation and certification of death
**Unit D: Procedural skills linked to assessment, diagnosis and management**

<table>
<thead>
<tr>
<th>Assessment and Diagnosis</th>
<th>Management</th>
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<tbody>
<tr>
<td>• Infection control</td>
<td>• Intubation</td>
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<tr>
<td>• Safe communications</td>
<td>• Non Invasive Ventilation (NIV) set up</td>
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<tr>
<td>• Venepuncture</td>
<td>• Physiotherapy procedures</td>
</tr>
<tr>
<td>• IV cannulation</td>
<td>• Adult and paediatric airway management</td>
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<tr>
<td>• Arterial Blood Gases</td>
<td>• Resuscitation</td>
</tr>
<tr>
<td>• Diagnostic sampling for COVID-19</td>
<td>• $O_2$ administration</td>
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<td></td>
<td>• IM injections</td>
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<td></td>
<td>• IV medicines administration</td>
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<td></td>
<td>• Confirmation of death</td>
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Infection Control - Hand Hygiene procedure
Use the following link below to work through the hand hygiene resource.
When should you perform hand hygiene?
When caring for patients, the daily routine can be summed up in what’s called:

Your 5 moments for Hand Hygiene

1. **Before Touching a Patient**
   - **WHEN:** Clean your hands before touching a patient when approaching him or her
   - **WHY:** To protect the patient against harmful germs carried on your hands

2. **Before Clean/Aseptic Procedure**
   - **WHEN:** Clean your hands immediately before performing a clean/aseptic procedure
   - **WHY:** To protect the patient against harmful germs, including the patient’s own germs, entering his or her body

3. **After Body Fluid Exposure Risk**
   - **WHEN:** Clean your hands immediately after an exposure risk to body fluids (and after glove removal)
   - **WHY:** To protect yourself and the health-care environment from harmful patient germs

4. **After Touching a Patient**
   - **WHEN:** Clean your hands after touching a patient and his or her immediate surroundings when leaving
   - **WHY:** To protect yourself and the health-care environment from harmful patient germs

5. **After Touching Patient Surroundings**
   - **WHEN:** Clean your hands after touching any object or furniture in the patient’s immediate surroundings, when leaving – even without touching the patient
   - **WHY:** To protect yourself and the health-care environment from harmful patient germs

Source: World Health Organization

**COVID-19 response**

Hand hygiene

View videos
Unit D: Assessment and diagnostic procedural skills

Use the links below to view the correct order for putting on (donning), removing (doffing) and disposal of PPE for healthcare workers in primary and secondary care settings. It is essential to follow the correct order for the removal (doffing) of PPE.
Unit D: Assessment and diagnostic procedural skills

Safe communication skills

The programme on safe communication in healthcare practice has been developed to enable you to increase your knowledge and skills in learning safe communication. It will raise awareness of the impact that your ability to communicate, has on patient care.

The units share best evidence based practice on safe communication:

• with patients (e.g. patient centredness and consultation styles)
• with colleagues (e.g. use of SBAR procedure)
• within the organisation (e.g. learning to apologise)
• using different mediums (e.g. telephone) and tools (e.g. medicines reconciliation)
Unit D: Assessment and diagnostic procedural skills

Invasive Procedures:

- Venepuncture
- IV cannulation
- Arterial Blood Gases (ABGs) sampling

Procedures from NHS Lothian – click here to view videos
Unit D: Assessment and diagnostic procedural skills

Laboratory testing and confirmation of COVID-19

A number of concerns have been raised about the sensitivity of diagnostic testing which appears to vary from 60-90%. This may in part be due to sampling techniques from bronchial lavage, sputum and the nasopharynx. In addition, specificity of tests may have been compromised early in the pandemic due to the presence of other corona viruses. Like all clinical practice a negative test result in the presence of symptoms does not exclude COVID-19.

How to obtain an upper respiratory tract diagnostic sample

How to package COVID-19 diagnostic sample for onward transportation
Unit D: Management procedural skills

Potential infectious Aerosol Generating Procedures (AGPs) in COVID-19 are:

- Intubation, extubation and related procedures
- Tracheotomy/tracheostomy procedures
- Manual ventilation
- Open suctioning
- Induction of sputum
- Bronchoscopy
- Non invasive ventilation e.g. BiPAP and CPAP
- High frequency oscillating ventilation
- Surgery and post mortem procedures involving high speed devices
- High flow nasal oxygen
- Some dental procedures

It is essential that wherever you are working during the current pandemic that you are aware of what an Aerosol Generating Procedure is so that you can protect yourself with the appropriate PPE.

Resuscitation Council (UK) statements

2.6. Full Aerosol Generating Procedure (AGP) Personal Protective Equipment (PPE) must be worn by all members of the resuscitation/emergency team before entering the room. Sets of AGP PPE must be readily available where resuscitation equipment is being locally stored.
In a pandemic such as COVID-19 you must adhere to the up to date infection prevention and control measures including the use of personal protective equipment (PPE). This can be found at: https://www.hps.scot.nhs.uk/a-to-z-of-topics/covid-19/
Unit D: Management procedural skills

Setting up Non Invasive Ventilation (NIV)
These include several short video clips on
  • How to fit masks on patients for CPAP and NIV in hospital or home
  • How to set up the following ventilators
    • A40
    • Astral
    • Dream station
    • Lumus or A10 CPAP
    • Nippy3
    • Stellar

Relevant NHS GG&C Resources

Please take appropriate Infection Prevention Control (IPC) measures including PPE as many of these are AGPs https://www.hps.scot.nhs.uk/a-to-z-of-topics/covid-19/
Physiotherapy care of chest in secondary and ITU settings

Please note: to enhance respiratory capacity many patients are being ventilated in the prone position
Unit D: Management procedural skills

Physiotherapy care of chest in community, secondary and ICU settings

- Facilitation of cough
- Airway clearance techniques
- Assessment and monitoring
Unit D: Management procedural skills

- Adult basic airway management
- Airways iGel use for community setting
Unit D: Management procedural skills

Paediatric airway management skills (BASICS Scotland)

Paediatric airway – child under 1

Paediatric airway – child over 1
Oxygen Therapy

The normal oxygen saturation range in healthy individuals on air is between 94-100% measured by a pulse oximeter.

The exception is those patients who are at risk of type 2 respiratory failure because of significant COPD. In these people the target saturation should be 88-92%.

Oxygen is a treatment for hypoxia and not for breathlessness.

Oxygen flow is measured in litres per minute. It is delivered using a flow meter which reads from 0-15 L/min (the level of the middle of the floating ball is the correct flow reading).
Unit D: Management procedural skills

Common Oxygen delivery devices include:

- **Nasal Cannula**
  - For low $O_2$ concentrations
  - Max 2 L/min
  - For non critical patients

- **Fixed performance mask**
- **Variable performance mask**
- **Rebreather mask**
Unit D: Management procedural skills

Common Oxygen delivery devices include:

- **Nasal cannula**
- **Fixed performance mask**
- **Variable performance mask**
- **Rebreather mask**

**Fixed Performance Mask (e.g. Venturi)**
- Allow delivery of precise concentration
- Useful for those with type 2 respiratory failure
- Different colours for different flow rates
Unit D: Management procedural skills

Common Oxygen delivery devices include:

- **Nasal cannula**
- **Fixed performance mask**
- **Variable performance mask**
- **Rebreather mask**

**Variable Performance Mask**
- Use in acute situations
- Do not use in COPD patients
Unit D: Management procedural skills

Common Oxygen delivery devices include:

Nasal cannula

Fixed performance mask

Variable performance mask

Rebreather mask

Rebreather Mask

- For higher concentrations of $O_2$
- For use in critically unwell
- 15 L/min
Unit D: Management procedural skills

Resuscitation

The Resuscitation Council (UK) has provided the following on COVID-19

Resuscitation Council (UK) statements

2.6. Full Aerosol Generating Procedure (AGP) Personal Protective Equipment (PPE) must be worn by all members of the resuscitation/emergency team before entering the room. Sets of AGP PPE must be readily available where resuscitation equipment is being locally stored.

What to do in the community to resuscitate a person with suspected COVID-19

Out of hospital cardiac arrest guidance during COVID-19 pandemic
Unit D: Management procedural skills

IM injections
Use the following link to work through the IM injections resource
Unit D: Management procedural skills

IV medicines administration

Use the following link to work through the IV medicines administration resource

Remember guidance on PPE for COVID-19
Unit D: Management procedural skills

Confirmation of Death Procedure

Confirmation of death can be carried out by any registered health professional in Scotland.

Certification of Death in COVID-19 Pandemic

The letter from the CMO provides Guidance to Medical Practitioners for Death Certification during the COVID-19 Pandemic.
Evaluation

Thank you for taking your time to work through this skills bundle.

CSMEN would greatly appreciate a further 5 minutes of your time to complete our online evaluation. Your comments will help us to continue in developing and improving this bundle in future versions.
Unit D: Acknowledgements

CSMEN Team, NHS Education for Scotland
NMAHP, NHS Education for Scotland
Adam Hill PGD, NHS Education for Scotland
Jordan Napier, University of Dundee
NHS Tayside
Michael Moneypenny, NHS Forth Valley
NHS Lothian
NHS Greater Glasgow and Clyde
BASICS Scotland
Nathan Oliver, NHS Lothian
Chris Carlin, NHS Greater Glasgow & Clyde