

11 May 2020

## Gastroenterological Society of Australia (GESA) Updated Advice on Preventative Measures during Gastrointestinal (GI) Endoscopic Procedures during the COVID-19 Pandemic

Benedict Devereaux, Vice President, GESA  
Arthur Kaffes, Chair, GESA Faculty of Endoscopy  
Simone Strasser, President, GESA  
Elizabeth Wardle, GENCA  
Eugene Athan, Barwon Health and Deakin University  
Sue Greig, Australasian College for Infection Prevention and Control  
Kathryn Haberfield, GESA Infection Control in Endoscopy Committee  
Di Jones, GENCA

### 1. Introduction

GESA has been strongly committed to significantly reducing the number of gastrointestinal endoscopic procedures during the COVID-19 pandemic. On March 20, 2020, GESA released updated guidelines on the appropriate practice of GI endoscopy during the COVID-19 pandemic. A key recommendation was “Strongly consider limiting endoscopy services to Urgent and Emergency cases and deferring elective and semi-elective cases” to limit the number of patients attending hospitals and coming into contact with other patients and hospital staff. This also limits the use of PPE in the context of current and predicted supply deficiencies<sup>1</sup>. This was followed on March 26, 2020 with the publication of a detailed Endoscopic Procedure Triage Guide. In this guide, a very limited number of indications for endoscopic procedures were recommended<sup>2</sup>. From April 1, 2020, all elective and semi-elective surgery and procedures, apart from Category 1 and urgent Category 2 cases, were banned by the Federal Government. Over the month of April, the number of daily new COVID-19 cases has dramatically reduced. On April 21, 2020, after a meeting of the National Cabinet, the Prime Minister, the Hon Scott Morrison, announced a relaxation of restrictions on elective endoscopic and surgical procedures. As of Monday April 27, 2020, all Category 1, 2 and “some important Category 3” procedures could be considered for triaging onto a procedure list. Therefore, the GESA Endoscopic Procedure Triage Guide no longer needs to be observed. Endoscopists and Units throughout the country should adhere to existing protocols in defining Cat 1, 2 and 3 procedures and surgeries. **It is essential to note that restrictions on case numbers remain.** On April 29, 2020, the Infection Control Expert Group (ICEG) of the Australian Department of Health published guidance on the use of personal protective equipment (PPE) in hospitals during the COVID-19 outbreak, providing nationally consistent advice on the appropriate use of PPE<sup>3</sup>.

## **2. COVID-19 and the Risk to Health Care Workers**

The risk of infection to healthcare workers (HCWs) was initially thought to be relatively high, as reported in one of the earliest documentations of SARS-CoV-2 infection in Wuhan, where 29% of cases (40 out of 138) were healthcare workers<sup>4</sup>. However, in a subsequent report, the proportion of healthcare workers infected by COVID-19 was quoted as 2.7%<sup>5</sup>. A report from the WHO-China Joint Commission on Coronavirus Disease 2019 stated that up until February 24, amongst 2055 infected healthcare workers (community/hospital-acquired not defined) there were 22 deaths (1.1%)<sup>6</sup>. A Northern Italian series of 968 HCWs from 41 endoscopy units reported that only 42 (4.3%) tested positive for COVID-19<sup>7</sup>. In Australia, cases of HCW infections are relatively low and a high proportion is either acquired outside the workplace (especially travel-related) or, anecdotally, between HCWs in meetings, tea rooms etc., where physical distancing advice is often ignored.

## **3. PPE use during Endoscopic Procedures and SARS-CoV-19 Transmission**

### **3.1 Background**

The management of high-risk and known COVID-19-positive patients differs from that required for low-risk patients requiring endoscopic procedures. The recommendations will be reviewed regularly and will be amended as the transmission risk profile continues to change over the coming weeks and months. It is also important to note that standard precautions for endoscopic procedures have not changed and incorporate a long sleeve water impermeable gown/apron, disposable gloves and face shield/wrap-around eye-shield.

### **3.2 Classification of Precautions**

Appropriate PPE is determined by the level of precautions applied to a particular patient or clinical scenario. Standard precautions are a series of safe work practices that apply to all patients regardless of their known or suspected infection status. This includes the appropriate use of PPE, when there is a chance of splash or splatter from blood or body substances. In addition to standard precautions, transmission-based precautions may also be applied. Transmission-based precautions include Contact, Droplet and Airborne Precautions (Table 1.)

**Table 1: Classification of Precautions**

<p><b>Standard Precautions</b></p> <p>Apply to all patients and include the use of PPE as appropriate or when indicated, based on the risk of contact with, or splash and splatter by, blood and body substances. This means PPE does not need to be used for all patients but only when a risk is identified; the PPE chosen should be consistent with the risk e.g. direct contact - gloves (possibly a gown), splash - gown, face and eye protection (face shield or goggles and mask), etc.</p>
<p><b>Contact Precautions</b></p> <p>By far the most common transmission-based precaution to be applied in addition to standard precautions. In addition to standard precautions means that instead of choosing PPE when the risk is identified, if contact precautions are applied to a specific patient or procedure, then it is used by all HCWs providing care to that patient, every time. It is not a choice, it is a requirement. Contact precautions have been applied as it has been determined based on risk that standard precautions may not control the transmission of the infectious agent known or suspected to be involved. This means that <b>standard precautions apply PLUS the addition of wearing gloves and a disposable impervious gown or apron.</b></p>
<p><b>Droplet Precautions</b></p> <p>In addition to standard precautions, means that instead of choosing PPE when the risk is identified, if droplet precautions are applied to a specific patient or procedure, then it is used by all HCWs providing care to that patient, every time. It is not a choice, it is a requirement. Droplet precautions have been applied as it has been determined based on risk that standard precautions may not control the transmission of the infectious agent known or suspected to be involved or the procedure being performed. This means that <b>standard precautions apply PLUS the addition of wearing a surgical mask and protective eye wear.</b></p>
<p><b>Airborne Precautions</b></p> <p>In addition to standard precautions means that instead of choosing PPE when the risk is identified, if airborne precautions are applied to a specific patient or procedure, then it is used by all HCWs providing care to that patient, every time. It is not a choice, it is a requirement. Airborne precautions have been applied as it has been determined based on risk that standard precautions may not control the transmission of the infectious agent known or suspected to be involved or the procedure being performed. This means that <b>standard precautions apply PLUS the addition of wearing a P2/N95 respirator (mask) and protective eye wear.</b></p>

**Notes:**

1. Transmission-based precautions is a collective term incorporating Contact, Droplet and Airborne Precautions.
2. Transmission-based precautions can be combined as has been recommended during phases of the COVID-19 pandemic e.g. Standard plus Droplet and Contact Precautions.

### 3.3 Evolution of the Level of Precautions required during the Pandemic

Since the outset of the COVID-19 pandemic, there has been extensive discussion regarding the appropriate level of PPE required whilst performing endoscopic procedures. The World Health Organization (WHO)<sup>8</sup> and the Australian Guidelines for the Prevention and Control of Infection in Healthcare<sup>9</sup> advise that healthcare workers wear a P2/N95 respirator (mask) when there is a risk of airborne transmission whilst performing aerosol-generating procedures (AGPs) on COVID-19 patients. During the earlier phase of the pandemic in Australia, it was considered appropriate, in some centres, to use PPE consistent with standard plus airborne and contact precautions for all endoscopic procedures, especially in areas with community transmission, since no patient could be accurately identified as low risk with limited patient testing for SARS-CoV-19<sup>10</sup>. A study from China reported that no medical staff working in high-risk departments who wore a P2/N95 respirator (mask) and practised strict hand hygiene regardless of patients' infection status became infected<sup>11</sup>. In summary, there was a reasonable argument earlier in the pandemic for the use of PPE consistent with standard plus airborne and contact precautions during every endoscopic procedure.

### 3.4 Current Recommendations for Level of Precautions and PPE

It is challenging to define a universal recommendation for PPE use, which is appropriate for every unit across Australia. In determining the appropriate standard of PPE, two parameters need to be considered:

1. PPE availability
2. The risk associated with COVID-19 prevalence in any one endoscopy unit's patient population.

There is a global and national shortage of PPE. The risk profile of each endoscopic unit should be determined in consultation with local Infection Prevention and Control services and State Health Department authorities.

As stated in the guidance paper from the Infection Control Expert Group (ICEG)<sup>3</sup> released on April 30, 2020, Australia has a high rate of testing and a low percentage of positive results (1.6%) and community transmission is modest and limited to a few localised sites<sup>3</sup>. The ICEG document also advises that "given the relatively low prevalence of COVID-19 in Australia, standard precautions, in addition to standard operating theatre attire or personal protective equipment appropriate for the procedure, are adequate for the performance of AGPs on patients who are not suspected or confirmed cases of COVID-19. **A surgical mask, theatre gown, gloves, eye protection (and head covering only if required as regular theatre attire) should typically be worn.** A P2 respirator is not necessary in this context". This statement referred to "operating theatres, emergency departments and endoscopy units etc.". It is essential to note that standard precautions for endoscopic procedures do not require the use of a surgical mask. **Therefore, in the endoscopy unit setting, this advice equates to the application of PPE consistent with standard plus droplet and contact precautions in most units** (Table 2). If the pandemic continues to evolve on a positive trajectory, future GESA advice will likely be to resort to standard precautions for endoscopic procedures, which do not necessitate a surgical mask but rather a face shield/wrap around eyewear, in addition to a water impervious long sleeve gown (+/- single-use apron) and disposable gloves. Reassuringly, in support of the safety profile of surgical masks, a recent case report supported the utility of surgical masks in protecting health care

workers from SARS-CoV-2 infection even following exposure to AGPs<sup>12</sup>. However, endoscopy units must be prepared to upgrade their PPE to include airborne precautions as early as possible if the COVID-19 prevalence increases in their patient population to minimise the risk to all endoscopy unit staff and subsequent patients attending that unit. This decision on the level of PPE required should be made after consultation with local infection prevention and control experts and government authorities.

**Table 2: PPE in Endoscopy**

Patient risk	Symptoms	PPE recommended
<b>Low-risk patients</b>	<ul style="list-style-type: none"> <li>No symptoms of a respiratory infection (e.g., cough, shortness of breath, diarrhoea, loss of taste/smell) or fever</li> <li>No history of close contact with a suspected or confirmed case of COVID-19</li> <li>No travel from high-risk area during previous 14 days</li> </ul>	<p><b>PPE consistent with standard plus contact and droplet precautions:</b></p> <ul style="list-style-type: none"> <li>Fluid-resistant surgical mask</li> <li>Disposable gloves</li> <li>Disposable hat or balaclava if standard attire in a particular unit</li> <li>Protective eyewear (wrap around glasses or disposable/ reusable face shield)</li> <li>Impervious long-sleeved, disposable/reusable gowns (+/- single use-apron)</li> </ul>
<b>Higher risk or confirmed COVID-19 patients</b>	<p><b>Presence of acute respiratory symptoms or fever with:</b></p> <ul style="list-style-type: none"> <li>No history of contact with a suspected or confirmed case of COVID-19</li> <li>No travel from high-risk area during previous 14 days</li> </ul> <p><b>At least one symptom + one of the following:</b></p> <ul style="list-style-type: none"> <li>Close contact with a suspected or confirmed case of COVID-19 within the previous 14 days</li> <li>Travel from high-risk area during previous 14 days</li> </ul> <p><b>No symptoms but:</b></p> <ul style="list-style-type: none"> <li><b>Identified as linked to a localised higher prevalence COVID-19 population</b></li> <li>Close contact with a suspected or confirmed case of COVID-19 within previous 14 days</li> <li>Travel from high-risk area during previous 14 days</li> </ul>	<p><b>PPE consistent with standard plus contact and airborne precautions:</b></p> <ul style="list-style-type: none"> <li>Fluid-resistant P2/N95 respirator mask or PAPR if P2/N95 masks is not available</li> <li>Disposable gloves</li> <li>Protective eyewear (wrap around glasses or disposable/reusable face shield)</li> <li>Impervious long-sleeved disposable gowns</li> <li>PPE should be fit-checked to confirm correctly fitted prior to starting the procedure for all who will be in the procedure room during the procedure</li> </ul>

#### **4. Conservation of PPE**

In the context of supply shortages of PPE, the following guidelines may be followed:

1. All staff must be trained in the appropriate application and removal of PPE. All PPE needs to be applied correctly. P2/N95 respirators (masks) should be fluid-resistant for use in AGPs and require a fit-check each time one is applied to the face. If they do not fit correctly, then they will not offer the level of protection required for airborne precautions. NB: Facial hair (beards) impedes fit.
2. Having a buddy to check application of PPE is encouraged to ensure correct fitting prior to exposure to an identified risk.
3. Fluid-resistant Level 2-3 surgical masks are appropriate for droplet precautions and the next-best alternative to P2/N95 respirators (masks). Surgical masks should be fitted to minimise gaps between the mask and face. NB: Facial hair (beards) impedes fit.
4. Masks (surgical and P2/N95) can be worn for extended periods up to 4 hours but must be changed (removed and discarded into waste) and hand hygiene performed if touched, damaged, becomes moist, soiled or contaminated<sup>13</sup> or after a procedure on a higher risk or known COVID-19 patient.
5. Protective eye wear can also be worn for extended periods as long as it is not touched. After touching or removing, hand hygiene must be performed. Reusable eye wear can be cleaned and disinfected after use so that it can be reused.
6. Masks cannot be removed and reapplied under any conditions as they are contaminated by the microorganisms in the procedure room and the wearer's microorganisms.
7. Long sleeve gowns should be considered single-use only. However, due to supply shortages, conservation strategies are being considered e.g., wearing a disposable single-use apron and long plastic sleeve covers over a single use or reusable, washable gown. This should be considered by each endoscopy unit/health facility based on a local risk assessment.

#### **5. Endoscopy Procedure Room Considerations for Higher Risk or Confirmed COVID-19 Patients**

In addition to the use of PPE consistent with standard plus airborne and contact precaution, a number of environmental factors must be considered. If available, consideration should be given to performing endoscopic procedures in a negative pressure procedure room. For all procedure rooms, a key consideration is venting of the air from the room, as there may be a risk of contaminating adjacent areas with virus-laden aerosol. The number of staff members in the procedure room during an upper GI endoscopic procedure should be restricted to the minimum, safe number. This mandates the exclusion of training fellows/registrars. It is appreciated that this will have a significant negative impact on many training programmes. Finally, following each procedure, the endoscopy room should undergo surface cleaning and disinfection with adherence to established environmental cleaning protocols.

#### **6. Endoscopy Procedure Room Considerations for Low-Risk Patients**

As the vast majority of patients requiring endoscopic procedures will now be classified as "low-risk" and as a result of updated advice recommending the application of standard plus droplet and contact precautions, regular procedure rooms may be utilised. In addition, a standard number of staff members may be present including training registrars and fellows. This facilitates restoration of training programs. Standard environmental cleaning and disinfection protocols should be adhered to.

## 7. Resource Considerations

These recommendations could have a significant impact on resource utilisation, particularly of PPE. Whereas PPE and environmental protocols are clearly defined for high-risk or known COVID-19 patients, with the use of standard plus droplet and contact precautions for patients assessed as low-risk, i.e. the majority of patients, PPE utilisation should be able to be better predicted. Rapid point-of-care tests are becoming available to detect IgM and IgG antibodies but these do not indicate the current SARS-CoV-19 infection status of patients<sup>14</sup>. Rapid-response nasopharyngeal swab PCR tests to detect virus are not widely available. Therefore, the currently available rapid point-of-care tests have no role in triaging patients requiring endoscopic procedures. If ultimately available and validated, rapid-response PCR tests will allow health systems to accurately triage patients, determined by their COVID-19 status. This will allow further rationalisation of PPE use.

## 8. Summary

Gastrointestinal endoscopists, anaesthetists and nursing staff present during endoscopic procedures, both upper GI and colonoscopy, are at risk of occupational exposure to infectious agents including the SARS-CoV-19 virus. It is possible that asymptomatic SARS-CoV-19-positive patients will undergo endoscopic procedures. Resources currently do not permit the routine naso-pharyngeal swab for pre-procedure screening of GI endoscopy patients and at this time it is not recommended. Rapid-response PCR tests are not yet available. Therefore, we recommend:

- the use of PPE consistent with standard plus droplet and contact precautions for all patients with no identified risk factors; and
- standard plus airborne and contact precautions with P2/N95 respirators (masks) for all known and high-risk COVID-19 patients and where there is a localised higher prevalence of COVID-19 in the population.

Attempts should be made to conserve PPE use until adequate supply is restored. However, endoscopy units should review and be prepared to upscale to PPE consistent with standard plus contact and airborne precautions as early as possible if the COVID-19 prevalence in their patient population increases or a localised outbreak occurs. Preventative staffing and environmental protocols should also be adhered to.

## 9. Recommendations

1. Endoscopists should adhere to the current Department of Health guidelines, defining which endoscopic procedures can currently be performed and reactivate the GESA Endoscopic Procedure Triage Guide in the event of a local rise in COVID-19 population prevalence.
2. PPE consistent with standard plus airborne and contact precautions should be worn for **all gastrointestinal endoscopic procedures** on known or high-risk COVID-19 patients and in identified localised higher prevalence areas: P2/N95 respirator (mask), face shield, eye protection, headwear (balaclava), long sleeve water impervious gown and gloves.
3. PPE consistent with standard plus droplet and contact precautions should be used for **all gastrointestinal endoscopic procedures** for patients with no identified COVID-19 risks and those identified from low prevalence of areas, consistent with established guidelines: surgical mask, eye protection, long sleeve water impervious gown (+/- single-use apron) and gloves.
4. Reasonable efforts should be made to conserve and utilise PPE appropriately.
5. Rapid-response PCR testing for the SARS-CoV-19 virus is not currently widely available but may ultimately play a role in triaging patients requiring endoscopic procedures should there be a rise in positive COVID-19 cases, following appropriate validation.
6. The minimum required number of clinical staff should be present in the procedure room during procedures on higher risk or known COVID-19 patients and the standard number of staff, including trainees may be present during procedures on low-risk patients.
7. Appropriate environmental cleaning and disinfection protocols should be followed after each GI endoscopy procedure.

## References

1. Considerations for Australian Endoscopy Units During the COVID-19 Pandemic - updated 20 March 2020. [\[link\]](#)
2. GESA Guide for Triage of Endoscopic Procedures During the COVID-19 Pandemic. [\[link\]](#)
3. Guidance on the use of PPE in hospitals during the COVID-19 outbreak – Version 4 (24/04/2020). [\[link\]](#)
4. Wang D, Hu B, Hu C, et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China. JAMA. 2020 Feb 7. doi: 10.1001/jama.2020.1585. [Epub ahead of print] [\[link\]](#)
5. Wang J, Zhou M, Liu F. Reasons for healthcare workers becoming infected with novel coronavirus disease 2019 (COVID-19) in China. J Hosp Infect. 2020 Mar 6. pii: S0195-6701(20)30101-8. [\[link\]](#)
6. World Health Organization. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). 2020. [\[link\]](#).
7. Repici A, Aragona G, Cengia G et al. Low risk of covid-19 transmission in GI endoscopy. Gut epub ahead of print 03/05/20. Doi:10.1136/gutjnl-2020-321341. [\[link\]](#)
8. World Health Organization. (2020). Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19): interim guidance, 19 March 2020. World Health Organization. License: CC BY-NC-SA 3.0 IGO). [\[link\]](#)
9. Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra: National Health and Medical Research Council (2019). [\[link\]](#)
10. Thompson CC, Shen L, Lee LS. COVID-19 in Endoscopy: Time to do more? Letter to the Editor. GIE-D-00517. [\[link\]](#)
11. Wang X, Pan Z, Cheng Z. Association between 2019-nCoV transmission and N95 respirator use. J Hosp Infect [Internet]. 2020 Mar 3. [\[link\]](#)
12. Kangqi Ng, Poon BH, Puar THK et al. COVID -19 and the risk to health care workers: A case report. Ann Int Med. Online publication March 16,2020. [\[link\]](#)
13. NSW Government. Clinical Excellence Commission. Application of PPE in response to COVID-19 Pandemic. 19 March 2020. [\[link\]](#)
14. RCPA advises against COVID-19 IgG/IgM rapid tests for the detection of early COVID disease. April 1 2020. [\[link\]](#)

### Disclaimer

The Gastroenterological Society of Australia (GESA) provides advice to endoscopists and endoscopy facilities during the COVID-19 pandemic. It should be noted that this advice is general in nature and thought to be correct at the time of posting. The user should have regard to any information, research or other material, which may have been published or become available subsequently. It is recommended that this advice be considered in the context of the specific endoscopic facility and within the framework provided by the Departments of Health and Local Health Districts.

This statement is consistent with advice provided by the Australian Health Protection Principal Committee (AHPPC).