

## Additional measures for bedside endoscope cleaning to prevent contaminated splash during COVID-19 pandemic

We read the recent European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastroenterology Nurses and Associates (ESGENA) Position Statement on gastrointestinal endoscopy and the COVID-19 pandemic with great interest. The Statement provides guidance to protect against COVID-19 for both patients and endoscopy personnel. We are concerned, however, that the general comment number 3 [1], which states, "Reprocessing of flexible endoscopes and endoscopic accessories should be performed according to published guidelines," is not appropriate in the setting of COVID-19 contaminated endoscopes. The ESGE and ESGENA guidelines in 2018 [2] recommend a pre-cleaning step, which, in the context of COVID-19 contamination, may cause endoscopy personnel to be unnecessarily splashed.

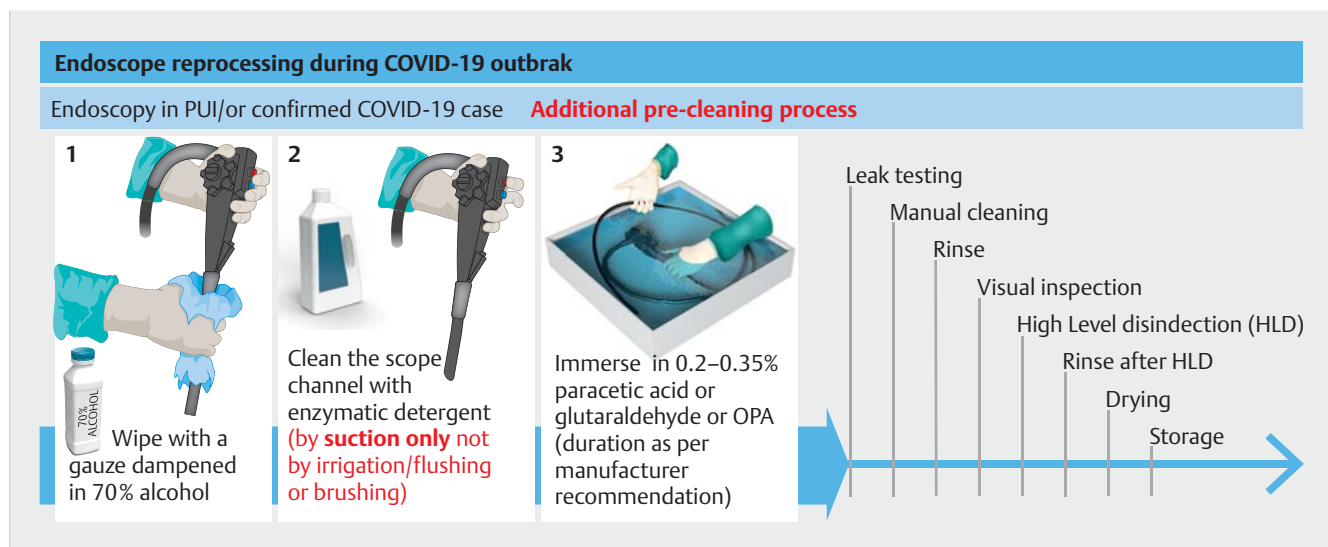
Therefore, during precleaning at the bedside [2], we recommend first applying virucide to the endoscope control section and insertion tube by using a gauze dampened in 70% alcohol. Sec-

ond, to remove debris and to prevent biofilm formation in the endoscope channel, we recommend using enzymatic detergent solution [3]. The use of enzymatic detergent is preferred because it reduces the amount of organic residue compared with the use of nonenzymatic detergent [4]. Notably, we strongly recommend against suction or blowing air, or flushing water into any of the channels as these actions may cause splashing or even aerosolization (► Fig. 1). Thus, we recommend only suctioning the detergent through the working channel [4]. The valves should not be replaced before finishing this process because significant splashing may occur during the valve exchange. Third, we recommend immersing the endoscope in a bin containing 0.2%–0.35% paracetic acid, glutaraldehyde, or ortho-phthalaldehyde solution for the duration recommended by the manufacturer (► Fig. 1). These solutions are virucidal. Ultimately, the endoscope can be transferred to the reprocessing room and undergo the standard reprocessing order, starting

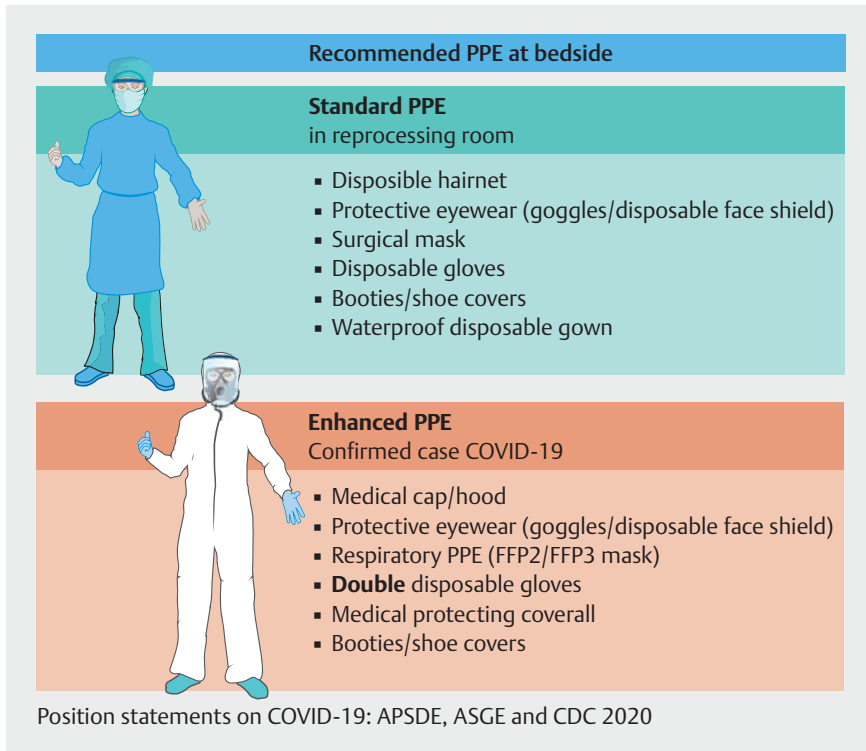
from leak testing, repeat manual cleaning (this time with flushing, rinsing etc.), and standard high-level disinfection [2].

The person who performs the bedside pre-cleaning process should wear an enhanced set of personal protective equipment (PPE) and, in order to make best use of available PPE, that person can be the assistant who is already wearing appropriate PPE. In such a situation, the person in the reprocessing room may wear standard PPE (► Fig. 2) [1]. When the additional safety measures can only be performed in the reprocessing room, the person responsible must wear an enhanced set of PPE.

To win the war against COVID-19, we must prevent all healthcare personnel from becoming infected and further spreading the virus to their communities. As the standard protocol may cause splashing or even aerosolization, steps must be taken to mitigate the transmission risk. While waiting for the study to prove the benefit of these additional



► Fig. 1 Endoscope reprocessing with additional measures for bedside endoscope cleaning during the COVID-19 outbreak. PUI, person under investigation; OPA, ortho-phthalaldehyde.



► **Fig. 2** Personal protective equipment (PPE) for the person who performs the bedside pre-cleaning process and the person in the reprocessing room, according to 2020 position statements on COVID-19 from Asian Pacific Society of Digestive Endoscopy, American Society for Gastrointestinal Endoscopy, and Centers for Disease Control and Prevention.

steps, we believe that “to do more” is essential at present.

### Competing interests

The authors declare that they have no conflicts of interest.

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