



RCPATH advice on the opening of fresh or unfixed histopathological specimens during infectious disease outbreaks

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Histopathology laboratories receive specimens that are fresh or incompletely fixed in formalin that require opening for fixation by a pathologist or biomedical scientist. During infectious disease outbreaks, such as the COVID-19 pandemic, it is sensible to review several aspects of these procedures to reduce the risk of transmission of infection between healthcare staff and patients.

Formalin renders the virus non-viable.¹

The approach to these specimens depends on the risk posed by the procedure, as per the four UK nations' public health guidance.²

There are two main levels of increased risk **if a patient is known or suspected to have COVID-19**:

- aerosol generating procedures – the risk of infection is from the use of high speed or high pressure tools.
- contact with droplets, blood, faeces or other bodily fluids – the risk of infection is from contact with droplets produced by a patient or blood from a viraemic patient. It should be noted that SARS-CoV2 is shed in the faeces.³

For most histopathology specimens, the risk of aerosols being generated is extremely low. Forced inflation of the lungs with formalin would be one example. Exposure to droplets or blood is more frequent and the following precautions are advised.

Please note: The pathologist should assess the risk involved in any particular procedure and act accordingly.

Our advice is as follows

Surgery on patients with confirmed COVID-19 should be avoided where possible. However, emergency surgery may be necessary.

Discussion with the relevant clinical teams regarding the benefit of surgery and consideration of appropriate alternatives should take place in patients with suspected and confirmed COVID-19.

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Where surgery is unavoidable the following is recommended for handling the specimen in the histopathology laboratory:

- Reduce the number of operators to a minimum – e.g. ideally one pathologist and one assisting biomedical scientist/medical laboratory assistant.
- **Personal protective equipment**
 - The dissector should be wearing appropriate personal protective equipment (PPE) according to the level of risk.
 - In procedures involving aerosol generation, PPE should include:
 - fluid resistant disposable gloves
 - fluid resistant long sleeved disposable gown
 - eye protection
 - FFP3 respirator mask.
 - In procedures not involving aerosol generation, PPE should include:
 - fluid-resistant disposable gloves
 - fluid-resistant disposable apron
 - eye protection
 - fluid-resistant (Type IIR) surgical mask (FRSM).
- **Dissection procedure**
 - The dissection/opening procedure will be dependent on the level of risk.
 - In procedures involving aerosol generation, dissection should be performed in a ventilated/fume cupboard.
 - In procedures not involving aerosol generation, dissection should be performed in a well ventilated area, a normal downdraught bench is suitable.
- **Following dissection/opening**
 - PPE should be removed as per public health guidance:
 - The order for PPE removal is gloves, hand hygiene, apron or gown, eye protection, hand hygiene, surgical face mask or FFP3 respirator, hand hygiene
 - Local standard decontamination procedures of the ventilation/fume cupboard and other surfaces should be followed.

References

¹ Centers for Disease Control and Prevention. *Collection and Submission of Postmortem Specimens from Deceased Persons with Known or Suspected COVID-19, March 2020 (Interim Guidance)*. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html>

² Department of Health and Social Care (DHSC), Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS) and Public Health England. *Guidance for infection prevention and control in healthcare settings*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876569/Infection_prevention_and_control_guidance_for_pandemic_coronavirus.pdf

³ Management of corona virus disease-19 (COVID-19): the Zhejiang experience. *Europe PMC*. <https://europepmc.org/article/med/32096367>