Risk Assessment for the continued use of H100D laboratory (and associated areas) during the period of SARS-COV2 pandemic

Activity being assessed:	Risk Assessment for the continued use of H100D during the period of SARS-COV2 pandemic.			Reference:	COVID R/A Ref: 1
Location:	H100D Laboratory RHH	Assessment date:	11/5/20 Reassessed 16/7/21	Review period:	N/A

Hazard What could cause harm?	**What harm might occur, and to whom?**	**Risk Rating (with current controls)**			**Existing control measures**	**Additional control measures** What can we do / use / put in place to further reduce the risks to an acceptable level?	**Residual Risk Rating**		
		L	**S**	**RR**			**L**	**S**	**RR**
Exposure to coronavirus by continued contact with other users of the Royal Hallamshire Hospital (RHH) and exposing other users of the hospital.	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	In line with government requirements to increase social distancing[1], UK NEQAS LI has split into two teams, alternating weekly between being in the office/laboratory and working from home to limit the time spent in the hospital by UK NEQAS LI teams. Regular cleaning of door handles on H floor has been implemented. Use of lifts has been limited to 3 people at any time. In line with current guidelines, staff have been advised if symptoms arise, they are to self-isolate for a minimum of 7 days and 14 if symptoms persist, whilst seeking medical advice. Anyone living with others who have symptoms should self-isolate for a minimum of 14 days[1].	Staff will be reminded of their personal responsibility to prevent infection through coughs, sneezing, social distancing and self-isolation. Staff will be advised to wash hands correctly upon entry to the laboratory. Signage required to facilitate this. New procedure to be implemented when collecting tubing sets from the apheresis unit. UK NEQAS LI staff to knock on the door and request the tubing sets be brought out to limit exposure of UK NEQAS LI staff to patients/donors.	**1**	**3**	**L**

Exposure to coronavirus from working with colleagues in H100D	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	In line with current guidelines, staff have been advised if symptoms arise, they are to self-isolate for a minimum of 7 days and 14 if symptoms persist, whilst seeking medical advice. Anyone living with others who have symptoms should self-isolate for a minimum of 14 days[1]. In H100D, good laboratory practise is (may be worth updating the H100d/HODS cleaning/maintenance sheet with additional checks) observed with the processing of samples in a class two safety cabinet, the use of PPE (disposable gloves and laboratory coats), wiping down of equipment with disinfectant spray, use of autoclaved bottles. Goggles are also available if required	Additional Good microbiological practice and procedure (GMPP)[2] will be implemented to improve the sterility of the laboratory space: • No bags or coats to be brought into the laboratory. Additional storage space required. • Back packs/suitcases used for sample transportation to be cleaned before and after use • Deep cleaning of the laboratory to be instigated weekly. • The removal of jewellery (e.g. rings, bracelets and watches to be removed and stored prior to beginning laboratory work. • Refraining from using mobile electronic devices (for example, mobile telephones, tablets, laptops when not specifically required. • Keeping mobile electronic devices in areas where they could not easily become contaminated or act as a fomite for infection. Where close proximity of such devices to biological agents is unavoidable, ensure they are either protected by a physical barrier or decontaminated before leaving the laboratory. • Provide covering for shared electronic devices that cannot be easily cleaned e.g keyboard. • Implement cleaning after use of shared electronic devices such as keyboards. As a result of the small square footage of the laboratory the number of staff in H100D will be limited to three at any one time (signage required). Within the laboratory, staff will be asked to maintain as much distance from staff as possible. For	**1**	**3**	**L**

						jobs where close proximity is required i.e. working in the hood aliquoting and capping samples, back-to-back or side-to-side working (rather than face-to-face) will be implemented whenever possible[3].			
Exposure to coronavirus from use of flow cytometer in HODs	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	Staff adhere to local laboratory practise.	Staff to verbally check with HODS lab staff that equipment is not is not in use and it is OK for UK NEQAS LI to use.	**1**	**3**	**L**
Exposure to coronavirus from use of haemocytometer in haematology lab	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	Staff adhere to local laboratory practise.	Staff to verbally check with Haematology lab staff that equipment is not is not in use and it is OK for UK NEQAS LI to use.	**1**	**3**	**L**
Exposure to coronavirus from blood products from NHSBT, including waste CD34 harnesses.	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	In H100D, good laboratory practise is observed with the processing of samples in a class two safety cabinet, the use of PPE (disposable gloves and laboratory coats), wiping down of equipment with disinfectant spray, use of autoclaved bottles.	The NHS Blood and Transplant Service (BTS) has issued specific guidance to people donating blood products[4] to ensure they are ok to attend sessions. Potential donors are additionally triaged during the consent process to ensure they are well enough to donate. COVID-19 testing is not performed on donated blood samples as there is no evidence it is transmitted through blood donation[4]. All units received form NHSBT will be thoroughly wiped down with disinfectant spray before processing. Additionally, samples will be fixed prior to any further processing such as cell counting or flow cytometric analysis being performed. Published studies show that paraformaldehyde inactivates a range of viruses[5,6], although the this has not	**1**	**3**	**L**

						been proven with SARS-COV2 due to the novel nature of the virus.			
Exposure to coronavirus from patient donations to UK NEQAS LI	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	UK NEQAS LI's consent process covers recent infection with a class 2, 3 or 4 agent (COSSH hazard group) pathogen. In H100D, good laboratory practise is observed with the processing of samples in a class two safety cabinet, the use of PPE (disposable gloves and laboratory coats), wiping down of equipment with disinfectant spray, use of autoclaved bottles.	Published studies show that peripheral blood samples such as those used by UK NEQAS LI have a low likelihood of carrying the SARS-COV2 virus[7,8]. All patient donations will be thoroughly wiped down with disinfectant spray before use. Additionally, where suitable (i.e. if the samples are for flow cytometry) samples will be fixed before further processing such as cell counting or flow cytometric analysis being performed. Published studies show that paraformaldehyde inactivates a range of viruses[5,6], although the this has not been proven with SARS-COV2 due to the novel nature of the virus.	**1**	**3**	**L**
Exposure to coronavirus from clinical waste samples, excluding CD34 harnesses. (I feel that we should wear face masks for entering the apheresis unit to ensure safety of patients undergoing the procedure, similarly if we need to collect any material from wards) See 'Exposure to coronavirus by continued contact with other users of the Royal Hallamshire Hospital (RHH) and exposing other users of the hospital.'	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**		Published studies show that peripheral blood samples such as those used by UK NEQAS LI have a low likelihood of carrying the SARS-COV2 virus [3,4]. All patient donations will be thoroughly wiped down with disinfectant spray before use. Additionally, where suitable (i.e. if the samples are for flow cytometry) samples will be fixed before further processing such as cell counting or flow cytometric analysis being performed. Published studies show that paraformaldehyde inactivates a range of viruses[5,6], although the this has not been proven with SARS-COV2 due to the novel nature of the virus. Samples will not be processed for molecular trials unless no recent clinical history of infection with a class 2, 3 or 4 agent (COSSH hazard group) can be confirmed as lyophilisation has not been shown to inactivate viruses. All clinical waste deemed suitable for processing	**1**	**3**	**L**

						for molecular trials to be assessed by the Director.			
Exposure to coronavirus from reagents and consumables involved in sample manufacture.	Dry cough, fever, anosmia and ageusia (based on demographic of UK NEQAS LI staff). All staff.	**2**	**3**	**M**	In H100D, good laboratory practise is observed with the processing of samples in a class two safety cabinet, the use of PPE (disposable gloves and laboratory coats), wiping down of equipment with disinfectant spray, use of autoclaved bottles.	All reagents and consumable be thoroughly wiped down with disinfectant spray before use.	**1**	**3**	**L**
Increased lone working due to skeleton staff	If injured may be left undetected. Mental wellbeing. All Staff.	**1**	**2**	**L**	Staff follow STH lone worker policy (QM 473) Risk assessment and checklist in place for use of UoS irradiator	Remind all staff to read the lone worker policy (QM 473). Health and safety officer to ensure this policy is up to date. Skills tasks to be reissued on iPassport. Staff to be reminded to use the irradiator checklist when accessing UoS irradiator. We will encourage lone workers to use the relevant WhatsApp or Teams group before they arrive at the laboratory and let the group know when they are leaving the building.	**1**	**1**	**L**

Likelihood	Guide Description
5	Very likely/imminent – certain to happen
4	Probable – a strong possibility of it happening
3	Possible – it may have happened before
2	Unlikely - could happen but unusual
1	Rare – highly unlikely to occur

Severity	Guide Description
5	Catastrophic - fatality, catastrophic damage
4	Major – significant injury or property damage, hospitalisation
3	Moderate - injury requiring further treatment, lost time
2	Minor - first aid injury, no lost time
1	Very minor – insignificant injury

Likelihood (L)	Severity (S) 1	2	3	4	5
5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5

Risk Rating (RR)	Action
High Risk	Stop the task/activity until controls can be put into place to reduce the risk to an acceptable level
Medium Risk	Determine if further safety precautions are required to reduce risk to as low as is reasonably practicable
Low Risk	No further action, keep under review

Recommendations

- Staff will be reminded of the personal responsibility of staff to prevent infection through coughs and sneezing, and self-isolation.
- Staff will be advised to wash hands correctly upon entry to the laboratory. Signage to be produced to facilitate this.
- New procedure to be implemented when collecting tubing sets from the apheresis unit. UK NEQAS LI staff to knock on the door and request the tubing sets be brought out to limit exposure of UK NEQAS LI to patients/donors.
- Additional Good microbiological practice and procedure (GMPP) will be implemented to improve the sterility of the laboratory space:
    - No bags or coats to be brought into the laboratory. Additional storage space required to facilitate this.
    - Back packs/suitcases used for sample transportation to be cleaned before and after use.
    - Deep cleaning of the laboratory to be instigated weekly
    - The removal of jewellery (e.g. rings, bracelets, and watches to be removed and stored prior to beginning laboratory work.
    - Refraining from using mobile electronic devices (for example, mobile telephones, tablets, laptops when not specifically required.

  - Keeping mobile electronic devices in areas where they could not easily become contaminated or act as a fomite for infection. Where close proximity of such devices to biological agents is unavoidable, ensure they are either protected by a physical barrier or decontaminated before leaving the laboratory.
- As a result of the small square footage of the laboratory, the number of staff in H100D will be limited to three at any one time (signage to be produced to facilitate this). Within the laboratory, staff will be asked to maintain as much distance from other staff as possible.
- For jobs where close proximity is required, i.e. working in the hood aliquoting and capping samples, back-to-back or side-to-side working (rather than face-to-face) will be implemented whenever possible.
- All reagents, consumables and patient samples will be thoroughly wiped down before use with disinfectant spray.
- Where suitable (i.e. if the samples are for flow cytometry) samples will be fixed before further processing such as cell counting or flow cytometric analysis being performed.
- Samples will **not** be processed for molecular trials unless no recent clinical history of infection with a class 2, 3 or 4 agent (COSSH hazard group) can be confirmed.
- All clinical waste deemed suitable for processing for molecular trials to be assessed by the Director.
- Staff to be reminded to use the irradiator checklist when accessing UoS irradiator.
- Remind all staff to read the lone worker policy (QM 473). Health and safety officer to ensure this policy is up to date. Skills tasks to be reissued on iPassport.

Review 16/07/2021

Following the move to step 4 of the national roadmap we have reviewed the risk assessment for the continued use of H100D laboratory (and associated areas) during the period of SARS-COV2 pandemic. The majority of measures have been maintained however a number of minor amendments have been made.

- Split teams working will no longer be implemented.
- Max occupancy of H100D will be maintained at three unless there is large task that specifically requires 4 staff e.g. manufacturing and packing IM. This should be agreed with the Director or Centre Manager. One metre areas will be marked out to facilitate social distancing in this circumstance.

References

1. Guidance on social distancing for everyone in the UK - GOV.UK. https://www.gov.uk/government/publications/covid-19-guidance-on-social-distancing-and-for-vulnerable-people/guidance-on-social-distancing-for-everyone-in-the-uk-and-protecting-older-people-and-vulnerable-adults.
2. Laboratory biosafety guidance related to the novel coronavirus (2019-nCoV). https://www.who.int/docs/default-source/coronaviruse/laboratory-biosafety-novel-coronavirus-version-1-1.pdf?sfvrsn=912a9847_2.
3. Labs and research facilities - Working safely during coronavirus (COVID-19) - Guidance - GOV.UK. https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19/labs-and-research-facilities#labs-3-5.

4. Coronavirus COVID-19 updates - NHS Blood Donation. https://www.blood.co.uk/news-and-campaigns/news-and-statements/coronavirus-covid-19-updates/.

5. Wu, G., Selden, D., Fooks, A. R. & Banyard, A. Inactivation of rabies virus. *J. Virol. Methods* **243**, 109–112 (2017).

6. Kading, R., Crabtree, M. & Miller, B. Inactivation of infectious virus and serological detection of virus antigen in Rift Valley fever virus-exposed mosquitoes fixed with paraformaldehyde. *J. Virol. Methods* **189**, 184–188 (2013).

7. Wang, W. *et al.* Detection of SARS-CoV-2 in Different Types of Clinical Specimens. *JAMA* (2020) doi:10.1001/jama.2020.3786.

8. Wölfel, R. *et al.* Virological assessment of hospitalized patients with COVID-2019. *Nature* (2020) doi:10.1038/s41586-020-2196-x.

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