Summary of the Virtual Flow Cytometry Facility Meeting to establish safe working practices in the COVID-19 era

Three Facilities meeting were held under the auspices of the Royal Microscopical Society to discuss the issues and challenges that are likely to be faced by staff and Lab managers on the re-opening of facilities. The Flow Cytometry Facility meeting was held on 15th April via Zoom. We had 232 registrants and at the peak, there were 184 attendees with participants from all over the world including North and South America, Australia, Asia, and rest of Europe indicating the international interest in these issues.

There was a good deal of commonality with the other facility meetings (Light Microscopy and Electron Microscopy) but each also had its own speciality issues. At this stage, the majority of facilities were either still closed for business or just starting to re-open but some had remained open for business throughout. The moderated discussion was split into five sections with attendees able to speak or contribute via the online chat facility. Poll questions were also asked at various intervals and the results of these are incorporated below.

This document summarises discussions but a recording of the session is available, as is the transcript of the Zoom Chat comments. The views and comments in the document do not necessarily reflect the views of authors/Chairs of the meeting, but simply reflect the points raised at the meeting. This discussion was not intended to provide recommendations but was more of an opportunity to put forward opinions and alternative approaches to similar problems; there will be both National and Institutional guidelines that will, in many instances, dictate the path to be taken.

Section One: Cleaning

Sensible precautions are advised and, if in doubt over cleaning fluids consult local Health and Safety and/or manufacturers. Responsibility was seen in most cases to be the responsibility of the user but should be monitored by core staff. This is especially important as staff will not always be present. Cleaning fluids and procedures should be decided locally but agent should have proven activity against SARC-Cov-2. The consensus was that 70% ethanol is a good general purpose cleaning fluid (backed up by several references). Keyboards, mice and workspace area should be wiped with a paper towel or wipe, do not use a spray bottle, use a wash bottle. Keyboard and mice can be wrapped in clingfilm or similar but this was generally considered to be environmentally unfriendly.

Also, we need to be mindful of engineer visits and be able to decontaminate machines and working area effectively. This will be the responsibility of facility staff.

As with all policies, these need to be effectively, and urgently, communicated with staff and users of the facility and a checklist/Sop provided to help with compliance.

Whose responsibility is it to clean?

Facility Staff 7%

Each user 59%

Depends 34%

Is 70% ethanol sufficient

Yes 66%

No 9%

Not sure 26%

Personal Protective Equipment

Local rules should apply but UK Government guidelines say that we shouldn’t have to do more than we already do. Use of face masks can be considered when social distancing or doing prolonged work. Some Institutes have mandatory face mask policy (but they should provide these). Judging by the poll results, facility members feel more comfortable with the idea of face masks. Gloves were seen as good idea but debate on whether users should bring their own, take off before leaving etc. Although gloves and masks may make people feel safer, many thought they were not needed. The use of Disposable Lab coats was also discussed, but considered environmentally unfriendly and a concern about supply.

There was a division between a no-gloves rule for keyboards, and those who wear them all the time in the Lab. This should be something that is written into an SOP and a label added to relevant keyboards.

PIs have to work with facilities to adopt different working practices

Testing was also discussed– some Institutes will be offering PCR and serology tests for staff as well as temperature taking on arrival.

Should users wear gloves?

Yes 93%

No 4 %

unsure 3%

Would you feel more comfortable if users and staff were wearing masks all the time?

Yes 69%

No 15%

Not sure 16%

Physical Distancing

Reducing interactions with users of the facility will be a priority and should be implemented but be sensible. Prolonged contact has far more risk and transient interactions. As all Labs will likely have a reduced staffing or core hours, the possibly of having a ‘super-user’ from each Lab was something that had been considered. Distancing could be considered from the viewpoint of having fewer people, or moving machines to other areas if possible.

Can cytometers be moved? If so this may increase the possibility of physical distancing but may increase the staff workload. If cytometers are not moved, having only some instruments available for booking and limiting numbers in a room at any one time would lessen interactions. There is also, in some cases, the ability to add a one-way system for entrance/exit to rooms. To reduce occupancy, it is also possible to reduce the number of chairs. Any additional screens and there would need to be consideration and checking of air-flow within the room.

Are each of your instruments housed in individual rooms (physical walls not curtains).

Yes – 2%

No – 88%

Some – 11%

What % of your instruments will be inaccessible at any time due to physical distancing rules?

0-25% - 36%

26-50% - 43%

51-75% - 17%

76-100% - 4%

How long should the room be empty between users?

No gap between users – 34%

15 min – 43%

30 min – 19%

1 hour or more – 4%

Managing Staff

Staff should feel safe in their working environment and it was generally agreed that those who are vulnerable, those caring for vulnerable family members and those with acute child-care issues should be able to work as far as possible from home. We must ensure that staff who are working from home do not feel guilty about not being able to come to work and recognise that smaller facilities will be impacted more. We also need to be mindful that staff can become sick or need to self-isolate at short notice.

Working patterns for those who are physically attending could change e.g. shift-work patters, extending hours of operation, and forming small teams within larger facilities to lessen face to face interactions. Care should be taken with ensuring teams have the same skill sets embedded as it was strongly felt that teams should not mix.

There was an acknowledgement that, in those facilities that are charging a fee for service, this will be a period of reduced income but there was also a hope that most funders would acknowledge that there are unprecedented times.

Remote working was discussed and the need to keep all staff fully in the loop so regular Zoom meetings, virtual coffee breaks and meetings to ‘hand over’ between teams was encouraged.

Public transport can be an issue depending on location and bear in mind that not all schools may be open for all children.

Staff can be working on their own professional development – attend on-line courses etc. Remember that this is possible even if staff are furloughed.

Should staff with small children be expected to work in the facility in person if the school/day-care facilities are still closed?

Yes - 5%

No – 67%

Not sure – 27%

Staff-user interactions and Training

Many tools to allow remote training already exist. There was general agreement that theoretical training in cytometry can be provided virtually but hands-on training should still take place as soon as appropriate measures are in place. However, many facilities have stopped face to face training and/or access to the facility to short-term workers such as summer students.

One issue that was discussed is that many cytometers are running Windows 7 which most Institutes have taken off networks making remote access problematical.

There are many good online resources and many Institutes have used the enforced downtime to provide webinars and on-line resources for both new and more experienced users. All data analysis for example can be run remotely. There are also many communication tools such as text, WhatsApp, and Slack that can be used.

Users will have to understand that facility may not be able to offer the expected level of service especially in the first phase of start-up, although in realty Research Labs are also not likely to be fully operational.

Attendees agreed that sharing of resources would be useful.

In this new COVID era, do you think the most practical way to run your facility should be:

a. Only full-service work (no users allowed in) – 3%

b. User-operated systems as normal – 16%

c. A combination of the two, e.g. full service work for untrained users or specialized equipment – 81%

We would like to say a big Thank You to the RMS particularly Victoria Masters and Adam Clay who both joined all three meetings and did a huge amount of work in a short time to get these Forums up and running. Thanks also to Diane Vaughan (University of Glasgow) fpr additional help with this summary. The Forums were based on an original idea by Peter O’Toole and Alison North around LM facilities but we realised that both LM and Flow Facilities could benefit from discussions.

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A recording of the session is available at:

A transcript of the live chat is also available.

Useful links suggested during the meeting:

<https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19/labs-and-research-facilities>

<https://www.cdw.com/product/seal-shield-silver-storm-medical-grade-keyboard/2009229>

<https://www.starlabgroup.com/GB-en/gloves-safety/laboratory-disinfectant_WebPSub-159946/distel-high-level-disinfectant_PF-SL-154479.html?gclid=Cj0KCQjw-_j1BRDkARIsAJcfmTE0xrLKTZtEiFJlKFUk68BtnGwJKbG6KWXFZvkcfiibMYFeBU6OItwaAp1ZEALw_wcB>

<https://www.hse.gov.uk/pubns/clinical-laboratories.pdf>

<https://www.who.int/publications-detail/laboratory-testing-for-2019-novel-coronavirus-in-suspected-human-cases-20200117>

<https://www.who.int/publications-detail/laboratory-biosafety-guidance-related-to-coronavirus-disease-2019-(covid-19)>

<https://www.amaxperteye.com>

<https://www.rms.org.uk/study-read/news-listing-page/online-microscopy-talks-list.html>

<https://docs.google.com/spreadsheets/d/1lVQ2SH9ii0D71bmu2kpAEiKkbJ8REbwYXrD7912vaDA/edit?usp=sharing>

<https://www.gerbi-gmb.de/Corona>

<https://www.ecdc.europa.eu/sites/default/files/documents/coronavirus-SARS-CoV-2-guidance-environmental-cleaning-non-healthcare-facilities.pdf>

<https://coronavirusexplained.ukri.org/en/article/pub0006/>

<https://www.biorxiv.org/content/10.1101/2020.03.10.986711v1>

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

<https://www.bmj.com/content/369/bmj.m1435>

<https://www.lavision.de/en/news/2020/4302/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5700156/>

<https://www.wetkeys.com/default.asp>

<https://www.amazon.com/BronaGrand-Computer-Keyboard-Protection-Protector/dp/B01AXR9OQ0>