



## IVF LABORATORY MANAGEMENT DURING COVID-19 PANDEMIC

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Acknowledgements: We are thankful to Sue Lee, Lonyl Palao, Sandra Ortiz, and Kausalya Sellakkannu for their meaningful input and thoughtful discussions. Authors would also like to thank members of the College of Reproductive Biology (CRB) including Kelley Chiles, Melanie Clemmer, Susan Walker, Anthony Anderson, Stanley G. Harris, Marlane J. Angle, Michael Stout, Salustiano Ribeiro, Danielle Emily Gandler, Eva Schenkman, and Tammie Schalue.

### Background

The COVID-19 pandemic presents unprecedented challenges to healthcare services worldwide (1,2,3). The Fertility and Reproductive healthcare providers, alongside every other medical specialties, are striving to protect their patients, colleagues, and the general public while retaining continuity and excellence of care within their clinics during these difficult times (4,5).

In accordance with its mission of providing a platform and support for professional interactions among its members (6), CRB will continue to provide meaningful communication to our members during this global crisis.

In this document, we present feedback and suggestions provided by members of the CRB about procedures and changes implemented in different laboratories across the country in response to the COVID-19 pandemic.

### Material and Methods

CRB solicited responses from its members, regarding policies and procedures implemented in individual in vitro fertilization (IVF) laboratories, in response to the COVID-19 guidelines established by the public health officials and professional societies (1,2,3,4,5).

Responses were compiled within two checklists based on services retained by individual laboratories. Goals and rationales behind each suggestion are also included.

### Results

Procedures and suggestions presented in **Checklist 1** apply to laboratories that have completely ceased handling of fresh and/or thawed gametes/embryos. These laboratories have limited their services to regular daily monitoring and maintenance of their cryogenic storage and providing non-laboratory support to their clinics.

**Checklist 2** summarizes feedback provided by laboratories that continue to provide IVF with or without fresh transfers and/or frozen embryo transfer (FET) services during COVID-19 pandemic.

A number of recommendations remain universal for any IVF laboratory regardless of its case load during the pandemic. For convenience, those are replicated in both checklists.

### Checklist 1. Recommendations based on feedback from IVF laboratories that have completely ceased IVF and FET services during COVID-19 pandemic

Index: A - COVID-19 safety, B – Continuity of care, PH – Public health recommendations, FB – Feedback-based

Recommendation	Goal	Rationale
Conduct continuous review of existing recommendations and guidance documents provided by CDC, ASRM, SART, and other pertinent sources.	A	FB
Review and, if necessary, revise current emergency protocols. Communicate with other programs in the area about commitment to reciprocal support in the event one is unable to care for patients or support one’s laboratory.	A,B	FB
Establish regular communication with staff and provide current updates. Stay informed and support team cohesion and morale.	B	FB
Consider limiting on-site presence to one laboratorian, who will be responsible for daily cryotank and laboratory maintenance and housekeeping duties, as defined by laboratory SOPs. The remainder of the team works from their homes and is on standby. Rotate team members for on-site duty every 5-7 days. If two team members are required on site, provide social distancing instructions per CDC guidelines.	B	PH, FB
Strive to create “shelter in place” conditions in laboratory and office areas. Instruct employees not to venture outside until they are ready to leave for the day.	A	PH
Consider turning incubators off in order to limit gas deliveries as well as alarm notifications.	A	FB
Restrict visits to the laboratory and office areas to the absolute minimum (i.e. liquid nitrogen deliveries). Everyone else should stay in touch remotely. Consider performing your own housekeeping in those areas rather than using custodial staff.	A	FB
Work with your clinical partners on designing a workflow for daily COVID-19 screening of your staff and vendors.	A	PH
Encourage staff to wash hands often. Provide instruction on proper hand washing techniques.	A	PH
Consider augmenting SOPs regarding the use of PPEs (gloves, masks, gowns).	A	PH
Consider augmenting your SOPs on sanitizing surfaces and work areas. Review CDC recommendations on sanitizing. Instruct staff on frequency of regular and additional sanitizing (e.g. after liquid nitrogen has been delivered). Exercise caution when choosing cleaning supplies – 7x soap and/or 70% ethanol are effective against COVID-19 virus.	A	PH
Be vigilant about possible medical gas shortages. E.g. maintain additional tanks on site, stay in touch with your sales representative and delivery truck driver, identify an alternative vendor.	B	FB
Order supplies in anticipation of laboratory re-opening. Be prepared for a large number of patients when post-COVID-19 pandemic clinical operations resume.	B	FB
Engage your teams in using downtime for educational activities, SOP revisions, research, reports, writing papers, attending online meetings and webinars.	B	FB

## Checklist 2. Recommendations based on feedback from IVF laboratories that offer IVF and FET services during COVID-19 pandemic

Index: A - COVID-19 safety, B - Continuity of care, PH – Public health recommendations, FB – Feedback-based

Feedback/Recommendation	Goal	Rationale
Conduct continuous review of existing recommendations and guidance documents provided by CDC, ASRM, SART, and other pertinent sources.	A	FB
Review and, if necessary, revise current emergency protocols. Communicate with other programs in the area about commitment to reciprocal support in the event one is unable to care for patients or support one's laboratory.	A,B	FB
Establish regular communication with staff and provide current updates. Stay informed and support team cohesion and morale.	B	FB
Consider limiting on-site staff presence to the minimum required in order to provide care. Establish shifts and teams with the goal to eliminate on site overlaps among teams. Assign off-site teams to work from their homes and be on a standby. Rotate on-site teams every 5-7 days if practical. Provide social distancing instructions per CDC guidelines.	B	PH, FB
Consider assigning team member(s) on a strict home duty so that they can step in to complete procedures should on-site teams become quarantined.	A,B	FB
Work with your clinical partners on potentially limiting and spreading out cycle starts, FETs, biopsies, etc. Consider spreading out procedure start times allowing for enhanced sanitizing of the treatment facilities.	A,B	PH,FB
Consider instituting home collections of semen specimens whenever possible. Consider augmenting sanitizing and infection control procedures for semen collection facilities.	A	PH
Consider social distancing recommendations when assigning duties in the laboratory. Strive to maintain 6 ft. distance among personnel at all times.	A	PH
Strive to create "shelter in place" conditions in laboratory and office areas. Instruct employees not to venture outside until they are ready to leave for the day.	A	PH
Restrict visits to the laboratory and office areas to the absolute minimum. I.e. deliveries of medical gases and supplies. Everyone else should stay in touch remotely. Consider performing your own housekeeping in those areas rather than using custodial staff.	A	FB
Work with your clinical partners on designing a workflow for daily COVID-19 screening of your staff, patients, and vendors.	A	PH
Encourage staff to wash hands often. Provide instruction on proper hand washing techniques.	A	PH
Consider augmenting SOPs regarding the use of PPEs (gloves, masks, gowns)	A	PH
Consider augmenting your SOPs on sanitizing surfaces and work areas. Review CDC recommendations on sanitizing. Instruct staff on frequency of regular and additional sanitizing (e.g. after liquid nitrogen has been delivered). Exercise caution when choosing cleaning supplies – 7x soap and/or 70% ethanol are effective against COVID-19 virus.	A	PH
Be vigilant about possible medical gas shortages. E.g. maintain additional tanks on site, stay in touch with your sales representation and delivery truck driver, identify an alternative vendor.	B	FB
Engage your teams in using downtime for educational activities, SOP revisions, research, reports, writing papers, and attend online meetings and webinars.	B	FB

## Discussion and Conclusions

Much like the other professionals in the field of the reproductive medicine, reproductive laboratory professionals are also striving to provide the best possible care for their patients during the COVID-19 pandemic. The American Society for Reproductive Medicine (ASRM) has issued guidelines for patient management during the pandemic, recommending halting all IVF and FET procedures with the exception of emergent care for cancer patients facing gonadotoxic treatment (4,5). Currently, some clinics have ceased all IVF and FET procedures for the duration of this public emergency, while others remain partially (cancer patients only) or fully operational. Commitment to patients and their frozen gametes and embryos command that all IVF laboratories must remain at least partly operational and, at a minimum, ensure integrity of the frozen inventory.

In an effort to help our community continue to safely manage their laboratories during the COVID-19 crisis, we solicited feedback from the CRB members. Presented recommendations are based upon two major considerations: 1. Personal and public safety and 2. Ensuring the high standard of care that our patients expect from our institutions, i.e. continuity of care (Checklists 1 and 2). Our goal is to address various aspects of our day-to-day operations from infection control to safe practices and team management.

In the absence of current detailed professional recommendations or guidelines for IVF laboratories regarding protocols, procedures and safety measures during a pandemic, we feel that this report may prove useful to our colleagues during these challenging times.

## References

1. Centers for Disease Control and Prevention. Information for Healthcare Professionals <https://www.cdc.gov/coronavirus/2019-nCoV/hcp/index.html>
2. Centers for Disease Control and Prevention. Resources for Clinics and Healthcare Facilities <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/index.html>
3. Centers for Disease Control and Prevention. Information for Laboratories <https://www.cdc.gov/coronavirus/2019-nCoV/lab/index.html>
4. American Society for Reproductive Medicine (ASRM) Patient Management and Clinical Recommendations during the Coronavirus (COVID-19) Pandemic <https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/covid-19/covidtaskforce.pdf>
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6. College of Reproductive Biology [https://www.aab.org/aab/Purpose\\_and\\_Objectives.asp](https://www.aab.org/aab/Purpose_and_Objectives.asp)