M Simulation: Flexible Operations Plan in the COVID-19 Response

Plan Approved- May 28, 2020

This Flexible Operations Plan is intended to fulfill the requirements for a departmental University of Minnesota Sunrise Plan. UMN stakeholders seeking to collaborate with us to implement simulation activities in the COVID-19 response should especially review the first 6 pages of this plan for guidance on criteria used to determine whether a simulation project will be classified as online, hybrid, or is eligible for on-site implementation. Our goal is to keep on-site projects to a minimum for safety. Detailed protocols for on-site simulation are offered in the second half of this plan which are not relevant for those with online projects. Please contact Lou Clark, PhD, MFA, Executive Director of M Simulation at louclark@umn.edu or Anne Woll, MS, Interim Education Director at wollx003@umn.edu with questions or for project planning needs.

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Introduction

This Flexible Operations Plan has been created by M Simulation leadership and staff supported by the Office of Academic Clinical Affairs in accordance with President Gabel's University of Minnesota Sunrise Plan[1], the Minnesota Department of Health[2], CDC[3] and OSHA[4] workplace COVID-19 guidelines, and in dialogue with other healthcare simulation industry leaders. It is a necessary supplement to the UMN Sunrise Plan due to our facilities, services, and associated operations presenting unique safety concerns for the M Simulation team and our stakeholders to address. This plan prioritizes employee and stakeholder safety, and specifies environmental modifications, employee guidelines to support safety, and communication strategies to ensure awareness and compliance. This plan requires a collaborative approach from all stakeholders.

1. **Employee and stakeholder safety**

Since our work necessitates simulating physical procedures in clinical environments and our stakeholders include faculty, residents, and learners who work in clinical environments, our plan outlines resources and procedures to ensure the safest possible working conditions for our full and part-time team members including our more than 300 standardized patients (SPs) classified as independent contractors who do not routinely work in clinical settings. This is imperative as most M Simulation team members and many of our undergraduate learners do not work in clinical settings and risk exposure to COVID-19 from any stakeholders working clinically.

2. **Environmental modifications to support safety**

Our space is a multi-purpose, rather than single-use, space located in a shared facility by design including components of clinical, classroom and traditional office settings. Therefore, this document synthesizes safety considerations pertaining to all three of these environments.

3. **Iteratively assessing and communicating risk**

This plan purposefully identifies iterative assessment and communication of risk as expansion of services in summer 2020 may not constitute a one-time reopening of our on-site facilities and associated services. It is more likely that our team will need to streamline or scale back facility use and associated services if there is a COVID-19 resurgence[5]. Transparent communication coupled with integrity and professionalism are core tenets of ethical simulation practice[6].

Collaborating to Implement Flexible Operations

Implementing flexible operations to meet safety protocols for students returning to clinical environments, accreditation requirements for health sciences programs and trainee learning objectives requires taking innovative approaches with a collaborative style. This necessitates a shift in thinking on the part of the M Simulation Team and our stakeholders. Rather than approach simulation events seeking M Simulation to accommodate and implement predetermined plans, we ask that our stakeholders engage with us in collaborative partnerships to reimagine simulation events with the lowest risk possible for all involved[7]. This process will empower the M Simulation team by relieving the pressure of operating from a reactive place of selling services. Instead, M Simulation team members will operate from a proactive, strength-based place of collaboratively designing curriculum highlighting best practices of simulation methodology including and especially physical and psychological safety[8]. This may likely necessitate implementing new methods and practices to optimally achieve trainee learning objectives. Taking a collaborative approach rather than one of accommodation will improve the quality of our shared work for learners and the patients they ultimately serve with outcomes of decreased risk to safety and increased opportunities of innovation for all especially in the online simulation space.

Figures 1 and 2 below demonstrate occupational risk exposure, and steps employers and workers may take to to decrease hazard, namely COVID-19. The M Simulation Flexible Operations plan recommends online simulation as the default choice to stakeholders as the lowest exposure risk with the highest level of control for M Simulation team members and stakeholders.

Figure 1: OSHA risk exposure pyramid[4]

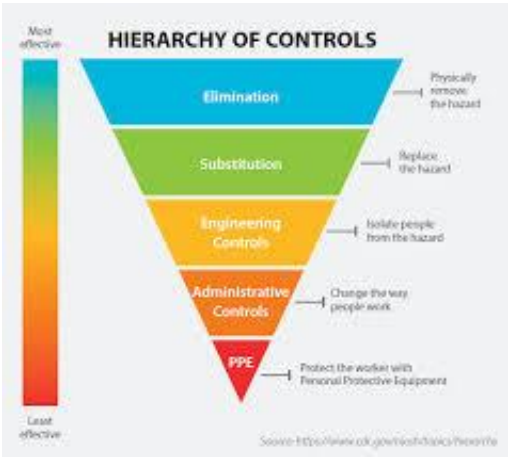


Figure 2: CDC Hierarchy of Controls[3]

Online Simulation

When M Simulation team members are implementing simulation activities online they are in the Low Exposure Risk category of the Occupational Risk pyramid, and the Engineering Controls section of the Hierarchy of Controls inverse pyramid. Given the current COVID-19 hazard this simulation modality is the lowest risk possible with the highest amount of control for M Simulation team members and stakeholders.

Hybrid Simulation - Online and On-Site Simulation

When M Simulation team members are implementing hybrid simulation activities, those working online are in the Low Exposure Risk category of the Occupational Risk pyramid, and the Engineering Controls section of the Hierarchy of Controls inverse pyramid. Those working on-site are in the Medium Exposure Risk category of the Occupational Risk Pyramid, and the Administrative Controls and PPE sections of the Hierarchy of Controls inverse pyramid. Given the current COVID-19 hazard the team members working online still experience the lowest risk possible with the highest amount of control for M Simulation team members and stakeholders. However, M Simulation team members working on-site are increased to a Medium Exposure Risk category while being potentially exposed to stakeholders in the High or Very High Risk exposure categories of the Occupational Risk pyramid. Additionally, employees and stakeholders working on-site have the least control over the hazard having to rely on administrative/policy modifications and PPE.

On-Site Simulation

M Simulation team members working on-site are in the Medium Exposure Risk category of the Occupational Risk Pyramid, and the Administrative Controls and PPE sections of the Hierarchy of Controls inverse pyramid. M Simulation team members working on-site are increased to a Medium Exposure Risk category while being potentially exposed to stakeholders in the High or Very High Risk exposure categories of the Occupational Risk pyramid. Additionally, employees and stakeholders working on-site have the least control over the hazard having to rely on administrative/policy modifications and PPE.

Collaboration Guidelines for M Simulation Team Members and Stakeholders:

1. All stakeholders - internal and external - will have an initial meeting with M Simulation team members including the Executive Director and/or the Interim Education Director and assigned Project Manager/Lead to discuss project needs, discuss whether this project is best done virtually, as a hybrid, or on-site simulation, and multiple options for dates/times event(s) may take place.

   Note: all events will be conceptualized as online simulation unless a collaborative decision is reached to implement the event as a hybrid or on-site simulation based on the criteria below and any other emerging considerations.

Criteria - Online Simulation

- Default option/simulation modality
- SP activities, communication skills training, medical interviewing, clinical reasoning, didactic sessions, demonstration role plays, narrated physical exam skills, SP verbal feedback to learner, faculty feedback to learners •
- Additional physical exam skills training *(in development)*
- Formative assessment
- Summative assessment *(in development)*

Criteria - Hybrid Simulation

- SP activities, communication skills training, medical interviewing, clinical reasoning, didactic sessions, demonstration role plays, narrated physical exam skills assessment, SP feedback and faculty feedback to learners
- Additional physical exam skills training *(in development)*
- Formative assessment
- Summative assessment *(in development)*
- Specific technical and procedural skill that may be combined with any of the above done remotely
- “One off” individual or small group customized training for which learners, faculty, SP(s) and most M Simulation team members are online while one or two M Simulation team members are onsite in order to utilize mannequins or task trainers as integrative with online components

Criteria - On-site Simulation

- Standardized training for a specific technical and procedural skill(s) necessary for safe clinical practice by an advanced group of learners such as incoming interns, residents, or licensed healthcare practitioners that requires utilizing mannequins, task trainers, or other simulation equipment safely within the simulation center setting; skill(s) may not be gained via any other modality than on-site, in person simulation training
- Training meets essential need for graduation requirement that may be achieved in no other manner
- Standardized training for a specific technical and procedural skill(s) necessary for health sciences students to safely work in clinical spaces including training sessions specific to PPE and COVID-19; skill(s)
- PPE and any other needed disinfectants and supplies specific to on-site training must be agreed upon in advance in terms of sourcing and procurement/M Simulation cannot incur the cost

2. For any event deemed as essential to be held as a hybrid or on-site simulation, traditional event schedules will likely be modified in order to promote safe usage of space which includes: smaller group sizes for team training under 10 stakeholders total, (including learners and faculty), down time of individual event spaces to allow for safe cleaning procedures, and partial use of facilities to allow in keeping with social distancing guidelines.

   Our 24,000 square foot simulation facilities in the new Health Science Education Building were intended, previous to the pandemic, to be utilized by multiple learner groups with differing educational needs of varying size including large learner groups far exceeding one hundred people circulating freely throughout the fifth and six floors. Annually M Simulation hosts thousands of UMN health sciences learners, faculty, staff as well as external stakeholders as part of implementing more than 1,000 simulation events per year. As federal and Minnesota state guidelines still recommend limiting the number of people at any one gathering and social distancing, this plan accounts for this recommendation as a significant guiding principle for modifying face-to face simulation events.

Additionally, our new space in the HSEC building was designed to promote independent learning in addition to supported learning. While we hope to return soon to independent/unsupervised learning for students and other stakeholders, for the indefinite future any stakeholder seeking to use our M Simulation facilities will need to be authorized and accompanied by an M Simulation team member.

3. Any simulation project that may be successfully implemented virtually/online will be done so virtually/online in order to keep employees and stakeholders in the low exposure risk category as defined by OSHA COVID-19 workplace guidelines. As the HSEC building is a shared facility this will also help reduce risk for other employees working throughout the building. Moving any simulation activity on-site means that employees and stakeholders will then move to the medium exposure risk category as defined by OSHA COVID-19 workplace guidelines. This means that those stakeholders working clinically who fall into the high or very high exposure risk category as defined by OSHA COVID-19 workplace guidelines may be interacting with M Simulation team members and other stakeholders who would otherwise remain in the low exposure risk category when working online/virtually. Therefore, M Simulation will prioritize essential training for incoming interns and students returning to the clinical environment to be done on-site as necessary. All other projects will be discussed on a case by case basis with the default being virtual/online simulation.

4. The Project Manager will take the dates/times options back to the central scheduler to check the master calendar that will contain all M Simulation projects. Until further notice and unless absolutely necessary, the M Simulation Team will schedule one simulation event during a given time period so that events do not overlap. There may be more than one event per day, but not in the same timeframe. This is to maintain sustainable staffing and allow additional time for cleaning and disinfecting equipment and areas in the simulation center for events that must be held on-site.

5. Once the simulation event is scheduled, the Project Manager will request/hold a follow-up meeting with the stakeholders seeking M Simulation support. During this meeting, they will work collaboratively to design (if new project) or adapt

(pre-existing project) to be safe (virtual) or to decrease the risk (hybrid or fully on-site) in accordance with this Flexible Operations Plan.

6. Following this meeting the M Simulation Project Manager will complete a Simulation Event Description form which describes all of the details of the event and then email it back to the stakeholder(s) event lead to verify or amend it. The M Simulation Project Manager will use this Simulation Event Description form to manage the project on the day of the event.

Online Simulation

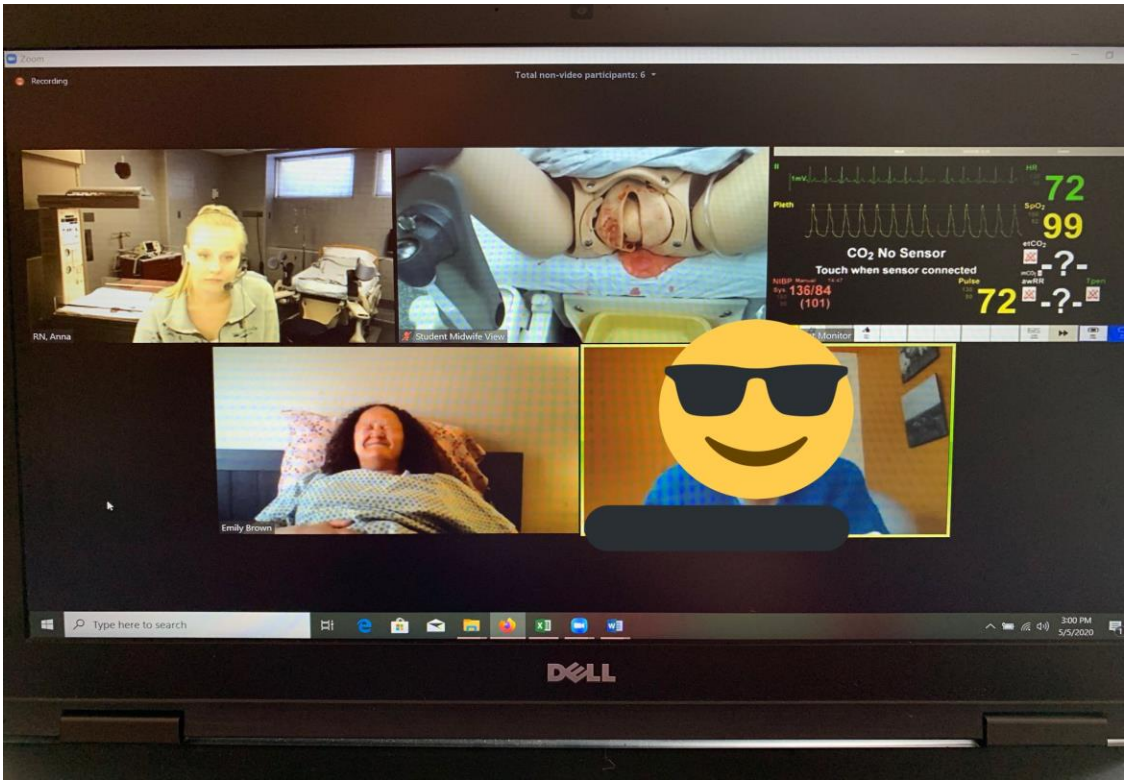
On March 20, 2020 the M Simulation team successfully held its first fully online simulation education event with 15 graduate nursing students who participated in standardized patient (SP) encounters. Since that time the M Simulation team has implemented, fully online, over 1,000 contact hours with more than 700 learners operating at approximately 50% capacity for regularly scheduled programming. We anticipate this capacity will grow and have not turned away stakeholders seeking to implement online simulation.

In addition to supporting UMN learners and faculty, M Simulation hosted the webinar "Zooming with SPs"[9] on March 27, 2020 with 300 attendees to teach other healthcare simulation professionals how they could host such events in order to continue their operations[10]. To date this recorded presentation has been accessed more than 1,000 times from over 35 countries around the world, (*recording is available on our M Simulation website*).

<u>At this time, M Simulation requires that all human simulation activities with SPs remain online at a minimum through the end of August, 2020 and potentially indefinitely.</u> These activities pose low risk to learners, faculty, and M Simulation team members including the SPs. It is optimal that human simulation activities with SPs continue online until there is a COVID-19 vaccine available or at such time as there is no additional risk posed to SPs working on-site. Additionally, by keeping human simulation activities online, this reduces the number of employees and learners in the on-site simulation facilities leaving more room for technical and procedural skills training that must be done in the face-to-face environment.

Hybrid: Online and Onsite Simulation

On May 5, 2020 the M Simulation team successfully held its first hybrid simulation education event with one graduate midwifery student who participated in a coaching session to build on a prior OSCE performance. This supported the student in meeting an essential competency requirement for graduation. The student completed 3 different scenarios with standardized patients (SPs)-fully online. As part of the SP scenarios an M Simulation team member-a nurse-served as an embedded participant working from a remote location. Our nurse appeared as if she was in the setting with the mannequin thanks to our on-site team members photographing the background so she could upload this as her virtual background in Zoom. Additionally, 2 M Simulation team members participated in this event on-site from the simulation center. Those team members operated the mannequins, and one served as the student's "hands" catching the baby from the Noelle birthing simulator during the birthing scenario while the student communicated with the SP online. We anticipate the need for this type of hybrid training to grow. Figure 3 below illustrates how this training appeared on screen in Zoom, (the smiley face is used to de-identify the learner's face):



On-Site Simulation

In April 2020 M Simulation team members supported three projects related to research experiments and uptraining healthcare providers to support frontline workers in the COVID-19 response. These projects were funded through a UMN Rapid Response grant, and this work was presented in a webinar on April 24, 2020[11], (*recording available on M Simulation website*) and published by the Anesthesia Patient Safety Foundation[12]. These projects demonstrated that our M Simulation team members could work effectively in a medium exposure risk environment with decreased controls relying on administrative/procedural controls and PPE. Though this training is possible, it should be reserved for skills training that may not be achieved in online or hybrid formats. Descriptions of the three projects are below, and the last project description of the central line training details processes our team would use to implement this and similar technical and procedural skills training in our simulation facilities.

1. Glo-Germ has in the past been seen as a useful visual aid to instruct proper handwashing, surface cleaning, and containment techniques among children and adults. This is done by utilizing a UV light (i.e. black light) and either form of the translucent Glo-Germ. The two primary forms it is manufactured in are a liquid lotion base and a fine powder. However, in order to utilize Glo-Germ in the testing of anesthesia equipment (i.e. Mechanical ventilators and Oscillators), we needed to create an aerosolized version of Glo-Germ that could be dispensed into an intubated High Fidelity manikin and tracked throughout the anesthesia machine's circuitry. Evidence of Glo-Germ presenting outside of the circuit would in turn indicate that there is a leak in the presumed closed-circuit indicating the spread of a virus. This proved useful as M Simulation team members worked to identify ways in which to test previously designed systems for leaks and the spread of pathogens.

2. The Negative Pressure Aerosolization Hood was designed in collaboration with the University of Minnesota Medical School, Department of Anesthesiology, Department of Pediatrics, and the Department of Mechanical Engineering. This hood was designed to mitigate the exposure of pathogens to health care workers via aerosolization. This was done by creating a negative pressure space between a patient's head and shoulders allowing the surrounding air to be actively pushed through a HEPA filter before being released back into the room.

3. Central Line Workshops were put on in response to the COVID 19 Incident Command Centers request to train Certified Nurse Anesthetists (CRNAs) to their full skill set. By social distancing learners between and during skill training sessions M simulation team

members were able to provide a lower risk simulation space for health care workers as they became familiar with the step wise process of preparing, identifying, inserting and managing a central line in a potentially COVID positive patient.

Equipment Required for On-Site Simulation to be Provided by UMN and/or stakeholders

- Hand sanitizer
- EPA Recommended wipes (see Appendix 1 for product details)
- Face shields (preferred) or goggles for M Simulation team members
- Gloves
- Masks

Safety Protocols to support Flexible Operations

To decrease risk of illness as much as possible during on-site simulation, it is essential that all M Simulation team members and stakeholders adhere to the following guidelines which align with UMN's Sunrise Plan[1], Minnesota Department of Health Recommendations[2], CDC[3], and OSHA[4] guidelines for workplace safety during COVID-19.

Safety Guidelines for M Simulation Team Members

1. Establish a team of online/remote workers and a team of on-site workers.
2. Continue practice of instituting a back-up team/person for each simulation event in the event an employee becomes sick and cannot work.
3. Members working on-site may not bring visitors to the simulation center facilities
4. Members working on-site must take their temperature before reporting to work and at the end of the workday and log their temperatures, ideally at 12-hour intervals. An inventory of digital thermometers has been made available upon request for employees that do not have a thermometer available at home. Employees are advised to consult the CDC guidelines and use the Self Checker tool for any potential COVID-19 symptoms: https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fsymptoms-testing%2Findex.html

   By reporting to work employees will be attesting:

"I understand and agree that due to the COVID 19 Pandemic I will notify my superior and not come to work if I am experiencing any symptoms compatible with COVID 19.

5. Members working on-site will engage in frequent handwashing for 20 seconds or more at a time including after each time they disinfect simulation areas and before and after they eat
6. Members working on-site will practice social distancing of 6 feet or more
7. Members working on-site will wear cloth face coverings/masks at all times except in their personal office area when alone
8. Members working on-site will not serve as models for simulation events even if they have done so previously (e.g. ultrasound) and will have no physical contact with each other or other stakeholders in the simulation facilities
9. Members working on-site will bring limited personal items and store them in an area only they access that is reserved for their personal use. As the M Simulation suite on the 6th floor of the HSEC building is designed as open-concept, team members will determine-in advance of working on-site-on a lockable area with a door to be used as temporary office space.
10. Members working on-site will not congregate in common areas such as conference rooms or the kitchen.
11. Members working on-site are encouraged to bring food that does not need to be microwaved or refrigerated and that can be stored in their designated personal space. Members may use kitchen facilities to refrigerate or microwave their food one at a time but not to congregate.
12. Members working on-site are not permitted to share any office equipment (e.g. desks, chairs, pens) or other equipment (e.g. headphones)

Safety Guidelines for Stakeholders utilizing Simulation Facilities

1. Upon arriving at the simulation center, all stakeholders will be met by a M Simulation Team member who will take attendance. During their time in the simulation center, all stakeholders must take direction/defer to the M Simulation team member.

   <u>During this time the M Simulation member will ask each stakeholder</u>:

   "Are you COVID-19 symptom free?"

2. Any stakeholders who say they have COVID-19 symptoms will not be allowed to participate in the simulation activity and may not enter the simulation center.

3. No visitors are allowed in the simulation center, so stakeholders must be sure before the event date that all stakeholder names (e.g. learners, faculty, staff) are provided to the M Simulation team Project Manager/Lead.
4. No unannounced visitors will be allowed on-site including stakeholders if they are not on the attendance list.
5. All stakeholders participating in on-site simulation will must bring and wear their own cloth face coverings/masks at all times. No stakeholders will be allowed into the simulation center facilities if they do not bring and wear their own mask.
6. All stakeholders including trainees, faculty, staff, and participating in on-site simulation will engage in frequent handwashing for 20 seconds or more at a time including before and after each time they complete a simulation exercise
7. All stakeholders are expected to practice respiratory etiquette including covering coughs and sneezes
8. All stakeholders participating in on-site simulation will practice social distancing of 6 feet or more unless otherwise directed by an M Simulation team member on an as needed basis to achieve a training objective. This will be agreed upon in advance with the curricular leader (e.g. Program Director, Course Director) and the Executive Director of M Simulation or a representative she designates from the M Simulation team
9. All stakeholders should refrain from any physical contact with M Simulation team members and one another unless specifically directed by an M Simulation team member that physical contact is permitted.
10. All stakeholders are asked to keep talking to a minimum
11. All stakeholders may not eat in the simulation facilities at any time
12. All stakeholders must use only those restrooms clearly marked for their use when in the facility
13. All stakeholders must go only where directed in the simulation center by M Simulation Team member; signage will make this clear upon arrival. This is so M Simulation Team members know where and how to disinfect areas.
14. All stakeholders should bring limited or no personal items to the simulation center. Any phones, pens, or wallets, etc. should stay on that person. There is nowhere to leave personal belongings including water bottles and backpacks, etc.

Logistical Guidelines for On-Site Simulation

Preparation for Simulation Events/Set-up

1. Each M Simulation team member should establish a lockable workspace that allows you to be socially distant with at least 6 feet from other employees and stakeholders as your homebase for the day. M Simulation team members working on-site should coordinate and move if needed.
2. M Simulation team members should only use restrooms designated for their use, one of the 5th floor and one on the 6th floor.
3. M Simulation team members should wash their hands prior to donning PPE then go to the storage room to get supplies.
4. Donn PPE: masks, (if not already on), gloves when entering any shared workspace, storage room, or simulation room(s). Ideally face shields or goggles should be worn when stakeholders are present or in dirty rooms when cleaning.
5. Depending on chemicals used, change out gloves or PPE in accordance with the chemical data sheet provided and OSHA guidelines.
6. Sign-in as entering the storage room with name and time.
7. Check, identify, organize supplies needed for the simulation; take what you need but refrain from touching what you do not need in order to keep it clean
8. Wipe down/disinfect all equipment/task trainers/mannequins to be used.
9. Load clean supplies onto a cart.
10. Throw away dirty gloves upon leaving the storage room after cleaning equipment and don new, clean gloves as you are leaving the room.
11. Transport supplies to simulation event rooms.
12. Wipe down surfaces in simulation event rooms.
13. Place equipment in the room in order to establish safe social distancing (may include tape placement on floor or utilization of simulation screen).
14. Consider draping supplies/equipment placed a day in advance of simulation, as appropriate.
15. Confirm appropriate disinfection/hand hygiene supplies are in the room.
16. Ensure room is secured up to the start of the simulation.
17. Post a sign indicating the room is clean and prepped for simulation and that no one may enter without permission of an M Simulation team member.
18. Place any needed handouts in gateway rooms rather than in clean simulation rooms though physical handouts will be discouraged.

During the Simulation Event

1. Stakeholders report to an identified area as directed by the M Simulation team lead.
2. Hand sanitizer and PPE is in place for all stakeholders on arrival.
3. Verbally review safety protocol (PPE, restroom locations, facility use, avoid physical contact with others and unnecessary contact with equipment, social distancing) with stakeholders with verbal acknowledgement from each group member. Standardized safety protocol script for M Simulation team members to use for on-site events in development.
4. Handwashing is required each time before you enter or leave a new simulation space, (e.g. treat this like surgery spaces).
5. Orientation/Pre-brief for stakeholders will take place in this same space with all involved standing-as they are able-and stakeholders will be directed to move to active simulation space(s) by an M Simulation team member.
6. M Simulation staff remain outside of simulation spaces actively in use by stakeholders; staff utilize PA equipment for overhead announcements to assure safe social distance (e.g., to redirect stakeholders to stay socially distant, to direct stakeholders not to make physical contact with one another or equipment in the room not being used as part of the simulation).
7. Staff provides ad hoc supplies, as necessary, by bringing a cart/tray outside the room and leaving it at the doorway; stakeholders will pick up any needed ad hoc items from the cart/tray. So, M Simulation team members will be able to remain outside of simulation rooms in active use by stakeholders.
8. Stakeholders should disinfect surfaces or equipment in between individual participants/learners who remain within the sim room during an active simulation. M Simulation team members will not enter the room during an active simulation to disinfect equipment during the simulation session.
9. Any stakeholders needing to leave the space during an active simulation event need to notify staff so the M Simulation team member can plan for additional disinfection/direction within or in and out of the facility, (e.g. if a faculty member is paged and needs to make a call rather than going and finding a space on their own they need to work with the M Sim team member to do so).
10. Any stakeholder debriefing will take place outside of the active simulation room with all standing-as they are able. An M Simulation team member will direct and move stakeholders to a designated debriefing area.
11. Stakeholders should only move between stations as directed by an M Simulation staff team member in order to minimize contamination/contact.
12. Scheduled downtime is necessary to decrease airborne exposure prior to simulation rooms that were just in active use by stakeholders being disinfected by M Simulation team members, (e.g. each simulation room should sit empty for 15 minutes prior to an M Sim staff member entering and disinfecting the room).

13. Stakeholders dispose of items in assigned receptacles, and wash hands following trash disposal and prior to leaving the simulation center.
14. Stakeholders will be directed to use specific pathways by an M Simulation team member to exit the simulation center and HSEC Building.
15. Stakeholders should continue wearing masks while in the building.
16. Once stakeholders exit from an active simulation room, an M Simulation team member will post a sign indicating the room is dirty.

Post-Simulation Event/Clean-up by M Simulation Team member(s)

1. Donn PPE (if team member took off PPE at any point or if new team member is assisting): masks, gloves, eye protection (e.g. ideally face shields or goggles)
2. Wipe down/disinfect all surfaces and equipment/task trainers/mannequins used prior to removing from the dirty room.
3. Depending on chemicals used, change out gloves or PPE in accordance with the chemical data sheet provided and OSHA guidelines.
4. Place equipment/supplies (after cleaning) on the cart to return storage. The cart should also be disinfected.
5. Throw away dirty gloves upon leaving the simulation room after cleaning equipment and don new, clean gloves as you are leaving the room.
6. Place a sign on the room that indicates the simulation room is clean.
7. Transport the clean equipment to the storage room.
8. Sign into the storage room when returning supplies/equipment.
9. The storage room is intended to be maintained as a clean space. If any contaminated items are inadvertently brought into the space, the individual responsible for that dirty item is to clean that item promptly as well as any part of the space that is impacted by the dirty item.
10. Staff should sanitize hands prior to leaving the storage room.

Logistical Guidelines for M Sim Team for Multiple Session Task Training

1. M Sim Staff will Donn PPE: masks, (if not already on), gloves when entering any shared workspace, storage room, or simulation room(s). Ideally face shields or goggles be worn when stakeholders are present or in dirty rooms when cleaning.
2. Depending on chemicals used, change out gloves or PPE in accordance with the chemical data sheet provided and OSHA guidelines.
3. All simulators and task trainers will be kept in an access controlled storage room, when not in use
4. In order to utilize a simulator or task trainer M Sim staff must sign-in as entering the storage room with name and time.

5. Check, identify, organize supplies needed for the simulation; take what you need but refrain from touching what you do not need in order to keep it clean
6. Wipe down/disinfect all equipment/task trainers/mannequins to be used.
7. Load clean supplies onto a cart.
8. Throw away dirty gloves upon leaving the storage room after cleaning equipment and don new, clean gloves as you are leaving the room.
9. Transport supplies to simulation event rooms.
10. Wipe down surfaces in simulation event rooms.
11. Place equipment in the room in order to establish safe social distancing (may include tape placement on floor or utilization of simulation screen).
12. Consider draping supplies/equipment placed a day in advance of simulation, as appropriate.
13. Confirm appropriate disinfection/hand hygiene supplies are in the room.
14. Ensure room is secured up to the start of the simulation.
15. Post a sign indicating the room is clean and prepped for simulation and that no one may enter without permission of an M Simulation team member.
16. Place any needed handouts in gateway rooms rather than in clean simulation rooms though physical handouts will be discouraged.
17. Before engaging with the task trainer stakeholders must have donned a new set of gloves
18. Throughout the engagement all stakeholders must be practicing proper coughing and sneezing etiquette
19. After the session ends all stakeholders will be escorted to a predetermined waiting area while the room is properly cleaned.
20. M Sim staff will ensure all task trainers, manikins, surfaces and frequently touched areas are cleaned and disinfected with the EPA recommended disinfectant wipes.
21. All up to date CDC recommendations will be taken into account to ensure surfaces are properly disinfected before and after task trainer use.
22. All disposables will be discarded into their appropriate receptacles
23. All reusable material items (Gowns, Surgical Towels, etc.) used during the training will be collected and transported to the washer and dryer.
24. The room at this time will be reset for the next training session
25. M sim Staff will again mark the door to the room as “Clean” and the next group of stakeholders will be allowed to enter
26. After the entire course is finished and stakeholders have exited the facility M Simulation team members will then need to follow the guidelines indicated above in the *“Post-Simulation Event and Cleanup”*

Future Directions: Expanding Modalities for Online Simulation

This Flexible Operations Plan provides detailed guidance for working with SPs, task trainers, mannequins, and other equipment utilized for technical and procedural skills training. As the COVID-19 response continues, a key priority for the M Simulation team is to expand our options for online simulation by adopting other virtual platforms potentially including augmented and virtual reality, and other web-based platforms in addition to Zoom. As we continue to innovate with new and existing technologies, we will update this plan.

Conclusion: Iteratively Assessing and Communicating Risk

This plan purposefully identifies iterative assessment and communication of risk as expansion of services in summer 2020 may not constitute a one-time reopening of our on-site facilities and associated services. It is more likely that our team will need to streamline or scale back facility use and associated services if there is a COVID-19 resurgence. Flexible operations will require us to consistently, collaboratively and imaginatively rebuild programs with stakeholders in keeping with iteratively assessing safety for all as opposed to carrying out business as usual[14].

M Simulation is committed to clear and transparent communication with stakeholders to provide updates to this plan which will be posted on our M Simulation website[15] at:

https://www.simulation.umn.edu/

This Flexible Operations plan may change based on M Simulation team needs as well as based on emerging UMN, state, and federal safety recommendations and guidelines.

Thank you for reading and reviewing this Flexible Operations Plan. Should you have questions or seek to arrange a meeting to discuss collaborating with M Simulation please contact:

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Appendix 1

EPA Recommended Disinfectant Wipes[13]

These are products that are commonly used in our simulation center and are effective against spreading SAR- CoV-2 as long as the identified wait times are followed. Other alternatives may be considered for purchase if they fall on the EPA's list of approved disinfectants.

- *PDI Super Sani-Cloth (2 Min)* - Effective against Bacteria, Multi Resistant Bacteria, Viruses, and Bloodborne Pathogens, and Pathogenic Fungi. These wipes are to be used to clean all surfaces and frequently touched areas before, during, and after task trainer use. (The surface must remain wet for at least 2 min in order for these wipes to be effective)

  Lysol Wipes (4 Min) - Effective at killing 99.9% of bacteria and viruses and more than 95% of allergens, including pet dander, dust mites, and pollen. These wipes are to be used to clean all task trainers and manikins (The surface must remain wet for at least 4 min in order for these wipes to serve as a disinfectant)