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Academic clinical learning environment in obstetrics and gynecology during the COVID-19 pandemic: responses and lessons learned

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Abstract: COVID-19 pandemic is changing profoundly the obstetrics and gynecology (OB/GYN) academic clinical learning environment in many different ways. Rapid developments affecting our learners, patients, faculty and staff require unprecedented collaboration and quick, deeply consequential readjustments, almost on a daily basis. We summarized here our experiences, opportunities, challenges and lessons learned and outline how to move forward. The COVID-19 pandemic taught us there is a clear need for collaboration in implementing the most current evidence-based medicine, rapidly assess and improve the everchanging healthcare environment by problem solving and "how to" instead of "should we" approach. In addition, as a community with very limited resources we have to rely heavily on internal expertise, ingenuity and innovation. The key points to succeed are efficient and timely communication, transparency in decision making and reengagement. As time continues to pass, it is certain that more lessons will emerge.

Keywords: academic learning in obstetrics and gynecology; COVID-19 pandemic; on-line learning.

Introduction

In the early days of the global pandemic caused by the SARS-CoV-2, Hawaii was in a unique situation. Our distant location in the Pacific delayed the arrival of the virus to the island and gave local health and government leaders time to develop plans to respond to the virus in order to protect our population, our health care providers and our learners. When the Accreditation Council for Graduate Medical Education (ACGME) released a statement [1] on March 13, 2020 informing the GME community that accreditation activities including self-study summary submissions and site visits, Clinical Learning Environment Review visits and resident and faculty surveys, the State of Hawaii had only identified two cases of COVID-19 and those cases were travel related. Given the information coming out of other areas in the nation and the world experiencing high levels of community spread, the University of Hawaii John A Burns School of Medicine and the Department of Obstetrics, Gynecology and Women's Health took quick action to limit risk of a significant outbreak in our state. Based on the ACGME stages of the pandemic [2], the University sought to craft a response that would ensure compliance with the four principle requirements spelled out in the guidance:

- Adequate resources and training
- Adequate supervision
- Work hour requirements
- Fellows functioning in core specialty

Given the potential to overwhelm the healthcare systems in Hawaii, the Designated Institutional Official declared the University of Hawaii to be in stage 2 of the pandemic that indicated "increased but manageable clinical demand" [3]. While the COVID-19 has posed many clinical challenges, academic centers need to maintain and continually enhance their educational mission. We report how we have responded to the COVID-19 challenges to the educational mission of our medical center with recommendations to advance this important mission. It was with this in mind that the Department developed its response.

Medical students on obstetrics and gynecology (OB/GYN) clerkship

In order to continue safely training the medical students on their obstetrics and gynecology clerkship, initial steps were taken to limit exposure to any patients with suspected respiratory illnesses and to focus on limiting the number of

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providers taking care of each patient. This lasted until the medical school made the difficult decision to suspend all clinical bedside learning and challenged the clerkships to develop alternative teaching modules so that students could continue to learn essential knowledge and skills. The challenge at that time was the duration of the suspension was unknown. The clerkship leadership had to determine which activities were appropriate for on line learning, which activities were critical to have the students demonstrate in person and establish simulation activities that could be conducted safely with proper social distancing. Another challenge with on line learning modules was calculating how much time the students would need to spend on each module. Given that all clerkships had transitioned to online learning and all meetings were being conducted via Zoom, the potential for student overload was one of the effects monitored closely by the clerkships and the medical school.

Residents

Our residency training program has a high obstetric volume which made the decision to limit resident attendance at uncomplicated normal vaginal deliveries an easy first step to conserve Personal Protective Equipment (PPE) and to limit exposure. Due to quick action on the part of the chief residents and program leadership, the rotation schedule was completely redesigned to minimize the number of residents in each of our partner hospitals while continuing to provide coverage for emergencies. As the health systems made the decision to curtail routine elective surgical procedures, the program was able to create an in-hospital call team and an at home call team with day and night coverage managed based on the original hospital assignment. This provided continued clinical education and limited movement between facilities to limit potential cross contamination.

The residents were still involved in patient care by making chart rounds and participating in cesarean deliveries but faculty performed all vaginal deliveries and conducted all postpartum rounds. Due to the cancellation of elective surgeries, the gynecologic oncologists, the urogynecologists and the reproductive endocrinologists conducted remote teaching on topics related to goals and objectives of each rotation.

Beyond their participation in clinical care, residents were also involved at the advocacy level, working to encourage state officials to enact tight restrictions on business and travel and implement early stay at home orders. Their leadership was also demonstrated while working with hospital and nursing staff to establish protocols for safe patient care and maximum conservation of PPE. The residents mastered the transition to remote didactics rapidly and helped the faculty learn some of the intricacies of digital education. Their resilience was key in rapidly converting the curriculum to maintain their opportunities to participate in their education.

Fellows

At the Maternal Fetal Medicine (MFM) fellowship level, the challenges were slightly different from those faced by the residents in that their curriculum was heavily focused on research and by their unique role in taking care of high risk patients; care that could not always be converted to telemedicine visits. The research challenge revolved around whether or not lab buildings would remain open and whether researchers could access their experiments. The program is actively monitoring any impact on those studies affected. The challenge of enrolling patients in a clinical trial when exposure of providers was limited also created a barrier to research progress that will be monitored going forward. During the early days of the outbreak, one of the fellows was subject to the statewide quarantine after returning from a trip outside of Hawaii. The program was able to redirect this fellow to assist with academic work in developing medical student modules, and grading their assignments and to assist with developing obstetrical guidelines during COVID-19 which included reviewing literature and writing the framework for the guidelines. The senior fellow was able to continue to participate in clinical work during their elective rotation and was able to target those clinical encounters that met their personal learning objectives, such as fetal echocardiograms. The fellows all participate in the general obstetrics service call pool thus ensuring continued competence in the core specialty should they be called upon.

New normal and lessons learned

While the above may seem like everything flowed seamlessly from standard operating procedures to pandemic stage two without incident, it would be naïve to assume there were no challenges faced during this transition. In the initial days, the lack of information regarding how long the students would be required to learn remotely, how long the pandemic might last, how long elective surgeries would need to be delayed all combined to create a baseline discomfort that all providers dealt with daily. While we did not have an overwhelming number of

COVID-19 patients in Hawaii, the reports from across the nation, both in the news and on social media led many providers to fear that our system would suffer a lack of PPE and intensive care capacity seen elsewhere. Early strategies to ensure conservation of PPE added to the perception that a shortage existed. By constantly revising usage guidelines to reflect facility capability to disinfect N95 masks with UV irradiation systems, PPE was indeed preserved and all facilities appear to have weathered the height of the outbreak in Hawaii without incident. The communication of those usage guidelines did lead to confusion as changes were made rapidly as new information became available. This is common in emergency response situations, but still leads to provider confusion and email fatigue in trying to keep up with the changes. In order to mitigate this challenge, our department initiated weekly faculty and staff meetings and daily leadership meetings to ensure a consistent opportunity to disseminate information from department leaders.

While some would view the loss of clinical volume as a challenge in some training programs, for our medical students and residents, the alteration of their schedules provided a respite from their regular schedules and an opportunity to read and complete research projects. Given the requirements to transition to telemedicine, the standard protocol for obstetric visits was revised in consultation with the Maternal Fetal Medicine faculty utilizing national guidelines [4]. The conversion to telemedicine also resulted in challenges. When bandwidth issues limited ability to use synchronous communications, reversion to phone visits was implemented as a simple solution. This worked in both the outpatient and inpatient setting where the MFM faculty could take a history from a hospitalized patient over the phone and have the resident on service listen in to transcribe the notes and orders. This served to efficiently capture the visit information while limiting exposure to possible patients undergoing investigation (PUI) and preserving PPE. In this manner one small action dealt with multiple challenges. The loss of experience in the ultrasound clinic is one challenge that will still require a solution moving forward. This is similar to the loss of gynecologic surgery that is also not easily replicated via distance learning.

Many have talked about what the future will look like as we transition to the "new normal" of medical education. Since the early days of the pandemic and with the benefit of hindsight, we can look back on the department response and identify some of our lessons learned and practices we hope to sustain going forward. Given that Hawaii has experienced a very low level of SARS-CoV-2 infections compared with other areas, we are beginning the transition back to some normalization of clinical operations. Some elective surgeries are taking place, medical students have returned to clinical sites and resident rotations are beginning to return to normal structure. The use of online didactics may continue into the next academic year as it has had the benefit of increasing faculty participation in some of the educational activities. It has also opened up the opportunity to collaborate with national partners and access webinars with experts that previously would not have been possible. The benefit of involving learners, both residents and fellows in the discussions to develop and implement guidelines is also a practice we look to carry forward. The residents often bring a passion for advocacy that assists with guideline implementation and they are more likely to adopt changes in practice when they participate in their development. The reverse mentoring of residents teaching faculty how to use new technology to it's fullest potential is another change we intend to carry forward. One such example was the resident's use of the Internet based application to contact patients from home without revealing their home phone number. They taught this skill to the faculty as the transition to telemedicine required care to be delivered from new locations. The opportunity to discuss learning topics telephonically or over Internet based video platforms expanded the resident's access to subspecialist teaching beyond the traditional lecture times and will be a practice we seek to sustain moving forward. This discussion has focused primarily on the impacts on the students, residents and fellows on the MFM service in our department. While the gynecologic surgical services were impacted deeply by the limitations of elective surgical procedures, our Family Planning fellowship was able to sustain their provision of services through telemedicine abortion services that had already been part of their standard practice. Some changes in workflow were required to accommodate the lack of ultrasound, but again, this provided an opportunity to ensure patients received the care they required with minimal risk of exposure.

Our department, faculty practice and medical school are looking forward to redefine academic clinical learning environment for our medical students, residents, fellows and community. In the continuous quest for excellence in lifelong learning, the COVID-19 pandemic taught us a true spirit of professional family or Ohana in Hawaiian language. The Hawaiian concept is that family and friends are bound together, everyone must work together and not forget each other. Nobody is left out. Essential elements of professional Ohana as we learned dealing with COVID-19 pandemic are: rapid collaboration in implementing most current evidence-based medicine, assess and improve everchanging

healthcare environment by problem solving and "how to" instead of "should we" approach. In addition, as "the island in middle of nowhere" with very limited resources we have to rely heavily on internal expertise, ingenuity and innovation. The key points to success are efficient and timely communication, transparency in decision making and reengagement of the whole Ohana. In order to advance the academic clinical learning environment in women's health, we re-defined on site clinical learning and aggressively implemented distance learning and simulation modules. In order to sustain this positive energy in transforming healthcare, we have to invest in faculty and staff professional development, safety and engagement. Focused, funded and well-designed research will help us to "push envelopes" to conquer the current pandemic. We need to be mindful of being a financially sustainable academic department and medical school as a whole, to continuously lead in healthcare innovation showing indispensable value to local community that meets well-established national and international standards.

Conclusions

COVID-19 is changing our lives profoundly and teaching us valuable lessons on so many different levels. What we experienced and learned will continue to advance the OB/GYN academic clinical learning environment going forward as research regarding the impact of these changes is conducted and disseminated. This initial commentary is our genuine attempt to capture some of our valuable lessons learned during this COVID-19 pandemic. As time continues to pass, it is certain that more lessons will emerge. Our department remains committed to ensuring OB/GYN academic clinical learning environment in the State of Hawaii remains responsive to the needs of our population; even in the face of a global public health emergency. We always need to rely on ourselves first and lead by an example. Our leaners and patients are our inspiration to strive to the highest or in the words of Hawaiian Queen Kapi'olani: E Kulia Ika Nu'u (in translation: Strive to reach the summit)!

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