

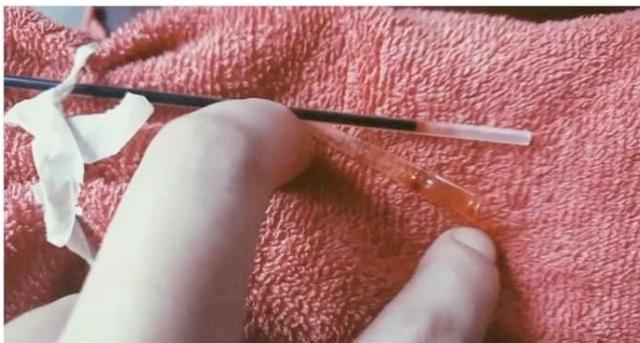
Learning Strategies and Innovations among Medical Students in the Philippines during the COVID-19 Pandemic

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The Experience

As of February 10, 2021, coronavirus disease 2019 (COVID-19) has spread across 219 countries and territories around the world, with 106,321,987 confirmed cases worldwide¹ and 541,560 confirmed cases in the Philippines,² since it was initially identified in Wuhan, China on December 31, 2019.³ Due to increasing cases, many countries have imposed preventive measures to contain the virus which include the closure of schools, colleges, and universities.^{4,7}

Figure 1. An intravenous injection simulation using improvised materials.



Our online learning classes started 11 months ago when the Philippine government imposed a community quarantine on March 10, 2020.⁷ Due to the continuous rise in number of cases, an Enhanced Community Quarantine (ECQ) was imposed after one week.⁸ Under the ECQ, residents were not allowed to leave their homes except in cases of emergency and essential reasons.⁸ Because of this preventive measure, almost all educational institutions shifted to online education. Despite the class suspensions, students were advised to fulfill their educational requirements during the ECQ period.

Our institution opted to use online platforms to facilitate continuous learning processes. This abrupt shift to an online curriculum has enabled creativity, innovation, and adaptability among students and professors alike.^{9,10} However, it has also increased stress and, possibly, the toll on mental health and financial burden among the school community. Various contributing factors include difficulty in adjusting learning strategies, the need for new laptops, smartphones, and tablets, having to perform responsibilities at home, poor internet connectivity, and other unexpected events such as natural calamities.¹¹⁻¹⁵

Our institution employed various strategies and innovations to accommodate for the loss of face-to-face encounters, especially those that need to be in the hospital setting. Training materials were not

easily accessible and available, thus giving rise to various improvisations. For instance, in Pharmacology, we were required to perform the various parenteral routes of drug administration. Due to the strict ECQ implementation, a student resorted to using a towel to simulate a patient's arm, ballpen refills to simulate blood vessels, and a makeshift cotton holder using pens, cotton, and tape **Figure 1**. Meanwhile, other students used stuffed toys to serve as their patients **Figure 2**.

As incoming senior students, we were excited to practice the theoretical knowledge we learned in school by undertaking rounds and meeting actual patients. In the context of this pandemic, we were caught up in the uncertainty of when we would go back to school and the possibility of being the next front-line workers in the hospitals. Despite the challenges, the Filipino spirit of resilience persevered as we adapted to the constant changes, completed all the academic requirements, and we were promoted as clinical clerks in May 2020. In the Philippines, a 4-year Doctor of Medicine program consists of 3 academic years and 1 clinical year, which is the clinical clerkship.¹⁶

Our clinical clerkship, or final year, formally started on June 1, 2020. Had it not been for the pandemic, the usual setup for clinical clerks was supposed to be done in community and hospital settings. The cohort one year ahead of us spent their time at a tertiary level teaching hospital. However, for our cohort, everything was conducted online. We spent the first half of our clerkship in the comforts of our own homes as it would be dangerous to deploy us into hospitals due to risks of infection and/or transmission of COVID-19.

Figure 2. A clinical skills simulation on the preparation and administration of parenteral medications on stuffed toys as simulated patients.



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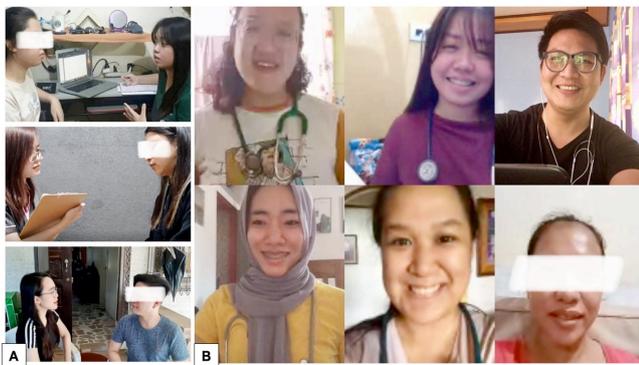
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For the first half, our clerkship syllabus included online rotations among the major departments, namely, Internal Medicine, Obstetrics and Gynecology, Pediatrics, and Surgery, and the minor departments, namely, Family and Community Medicine, Psychiatry, Radiology, Orthopedics, Otorhinolaryngology, and Ophthalmology. This entailed small group discussions (SGDs), presentation of assigned topics, and webinars held online. For the second half, which began in December 2020, the focus was on clinical skills among the major departments. At present, clinical clerkship in the hospital remains uncertain. In the meantime, while compromises are being made in hospitals, online adjustments and leniency are in place.

Figure 3. (A). Patient encounter simulations during our rotations in Internal Medicine, Obstetrics and Gynecology, and Surgery, (B). Screenshot image of a real virtual patient encounter during our Family and Community Medicine rotation via Facebook Messenger (photo posted with consent from the patient)



Online rotation activities include clinical case discussions and conferences, patient encounter simulation scenarios, interactive SGDs, and reporting sessions via Zoom and/or Google Meet. For patient encounter scenarios, students are tasked to make a video recording of simulated clinical history taking and physical examination with their family members as their patients, which is subsequently presented during SGD sessions *Figure 3A*. Some rotations do not require videos but discuss real-life written clinical cases virtually *Figure 4*. The most unforgettable experiences include a virtual patient encounter with a real patient in our Family Medicine rotation *Figure 3B*, and a virtual episiorrhaphy workshop on a chicken as a simulated reproductive

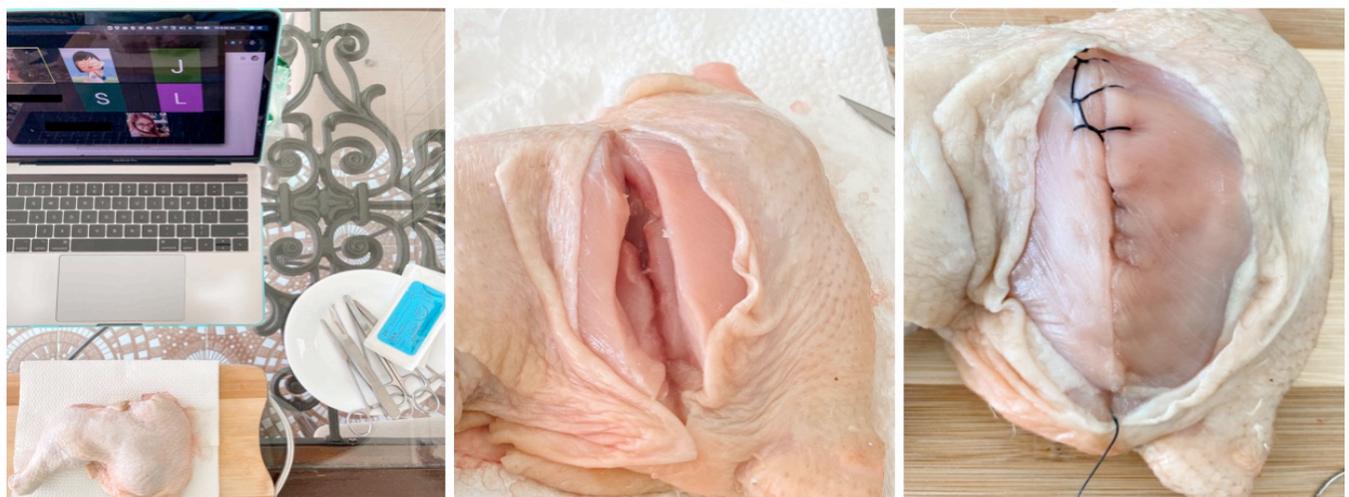
organ of a postpartum patient during our Obstetrics rotation *Figure 5*. Some mobile applications, such as Touch Surgery and Docquity, are also useful.^{17,18} Meanwhile, quizzes and exams are completed at the end of rotations via Google Forms, Microsoft Forms, and/or Edmodo.

It seems easy to handle learning online until you get to the point where actual skills have to be tested and practiced. Online learning has limitations on medical skills which require things to be felt, heard, and seen – all things that need to be tangible to practice the clinical eye. Despite all the challenges, there are also benefits. For instance, it is easier for preceptors to monitor attendance as well as for everyone to hear each other speak since voices are magnified through headphones, earphones, or speakers. Students can now easily go back and review the live online lectures since some professors allow the recording of online classes. The preceptors also give ample time for the students to prepare for their classes and exams. The pandemic blessed everyone with a deeper sense of understanding and consideration of individual struggles and personal life matters.^{9,10,12,19}

Figure 4. Screenshot images of interactive SGDs with preceptors via Zoom meetings during our Internal Medicine rotation.



Figure 5. Virtual workshop and simulation of episiorrhaphy on a chicken during our Obstetrics and Gynecology rotation.



It cannot be denied that the past 11 months was an uphill climb with constant struggle to study and stay on track to become physicians. Nonetheless, this pandemic has brought medical school to our homes and has given us more time to reflect on the pressing national issues affecting the health of the Filipino people. It is also a great opportunity to find a deeper meaning on our chosen career path and a strong motivation to become better physicians in the future.

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