

THE HEALTHCARE OF TOMORROW

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COVID-19
Special Edition



EDITORIAL NOTE

The first COVID-19 case in Lebanon was confirmed on February 21, 2020. On February 29 and after the fourth confirmed COVID-19 case, the Lebanese Education Ministry declared that all universities and schools will be closed until March 8. On March 6, the Lebanese Ministerial Committee extended the closure to include gyms, cinemas and nightclubs and extended the closure of schools and universities for another week. On March 15, a state of public health emergency was declared in order to contain the virus in light of an increase in the number of cases. In less than ten days, the American University of Beirut Medical Center (AUBMC) established a new clinic center, the Pandemic Evaluation Clinic and Center (PECC). The PECC has its own entrance with the first floor being the outpatient facility for screening, assessment, and early identification of respiratory illness. There were newly designed individual negative pressure rooms for intensive care management. To establish this center, a lot of existing functions and units were relocated and the space has been retrofitted to comply with international COVID-19 requirements.

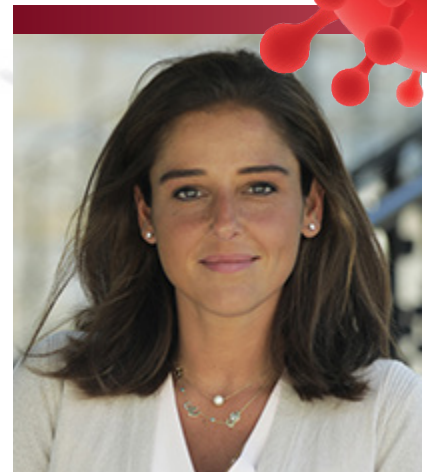
AUBMC also launched an online platform "The Symptom Checker" that patients can use to check their symptoms and find out whether they should visit the PECC Flu Clinic, aiming to minimize unnecessary visits to the flu clinic.

AUBMC also established the AUBMC Corona Response Fund to receive donations to support the ongoing operations of the PECC. With respect to medical education, all clinical rotations were suspended, and surgical medical students used Proximie to attend surgical cases interactively virtually rather than in person. Courses were completely run online, and clinical clerkships were conducted with a minimal number of students and on a rotational basis to avoid crowding.

Additionally, in order to maintain access for our patients to AUBMC services and healthcare providers with the onset of COVID-19, telehealth was developed to provide care virtually. The "Online Visits" service was launched to allow patients to interact with their healthcare providers through live audio and video to avoid trips to the hospital and to maintain physical distancing.

Recently, the official contact-tracing app for Lebanon (Ma3an-Together against Corona) was launched. The tool was developed in close collaboration with a team of faculty members, research assistants, and students from AUB.

This special edition will give a glimpse of the work being done across different academic health centers in the region to combat COVID-19. Enjoy the read and stay safe.



Noha B. Hachach, MPH, mACHE
Director of Medical & Health Strategy
Director for AUBMC Affiliations
American University of Beirut Medical Center

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CONTACT INFORMATION

AAHCI-MENA Regional Office
Saab Medical Library, 3rd Floor

Mohamed H. Sayegh M.D.
Regional Ambassador
Chair of AAHCI Steering Committee

Noha B. Hachach, MPH
Regional Office Manager

Alaa Merhi, MSc
Regional Office Representative

Newsletter Editor
Noha B. Hachach, MPH
To submit news, comments or queries:
Email: aahci@aub.edu.lb
Phone: 01-350000 ext. 4802

IN THE SPOTLIGHT

Sidra Medicine| Qatar



Q: How old is your academic health center (AHC)?

A: Sidra Medicine represents the vision of Her Highness Sheikha Moza Bint Nasser who serves as its Chairperson. This high-tech facility is home to world-class patient care, scientific expertise, and educational resources. Sidra officially opened on the 14th of January 2018.

Q: What are your flagship specialized centers and programs?

A: Sidra Medicine is a different type of a state-of-art specialty academic health center for children, and women in Qatar that promotes education, research, and community development. Sidra offers care in multiple areas in an integrated multidisciplinary fashion.

Pediatric Services:

Focuses on assessment and treatment of pediatric population in Qatar, with high quality family-centered care. Sidra provides care to children presenting with acute and complex, multisystem diseases, or undiagnosed conditions requiring multidisciplinary care and close partnership with pediatric sub-specialty clinical services.

The Pediatrics Complex Care program brings benefit to children living with multiple complex chronic conditions and life limiting diseases. The aim is to close any gaps in care, improve coordination of care, foster collaboration and achieve excellence in the delivery of services and the outcomes for every child who lives with complex, long-term medical conditions.

Women Services:

Sidra is a baby friendly hospital that provides family centered care along the pregnancy journey, reaching to safe labor and birth supported by internationally certified healthcare providers, midwifery care and lactating consultants.

Women services provides maternity care, obstetrics services, reproductive medicine, in vitro fertilization, and maternofetal medicine.

Research:

Sidra is not limited to care provision, but it is thriving to be on the cutting edge in healthcare through its research. Sidra is bringing its research to serve patients through advanced diagnostic technology that would enable a better understanding of the main cause of a patient's disease, and also through advanced therapy by tailoring treatment to each individual case through precision medicine.

As such, interactivity between clinicians, researchers, scientists and students is the main drive to the uniqueness of Sidra care, while truly living the mission of an academic health center. As such, interactivity between clinicians, researchers, scientists and students is the main drive to the uniqueness of Sidra care, while truly living the mission of an academic medical center.

Q: How has membership with AAHCI MENA supported your institution's mission and vision?

A: Regionally, academic health centers are often where the sickest patients go, and is mainly what the country relies on to produce the future health workforce, training the best and brightest clinicians on the latest techniques and advancement to create new breakthrough therapies.

Membership helped Sidra benefit from the new definition of collaboration in a health care setting, to improve patient service and ensure a high quality of care delivery and clinical operations, that funnels down to the betterment of patients, staff, and organizations, guided in that by the experience of other sister organizations in the region.

Sidra was in a better place by such membership, to understand approaches to measuring collaboration, and identify factors that determine the ability of teams to collaborate. Sidra leveraged the diverse data sets of other AAHCI members and artificial intelligence to forecast a community's healthcare needs and improve outcomes at a regional level in a collaborative fashion, discover different and common areas of collaboration, and integrate improvement while considering the AAHCI as a regional benchmark.

Q: What are your AHC's focal areas of research?

A: Robust scientific and clinical research that leads to a better understanding of biology and clinical pathology is an important part of Sidra's mission. This is achieved by building a strong basic science foundation, represented by more than 20 laboratories, coupled with innovative technology development and outstanding clinical and translational research that covers the wide spectrum of investigation. Sidra's plan encompasses investigations into the basic principles of molecular, cellular, and organ-level biology and their relationship to disease.

Key areas of fundamental interest include: molecular and cellular medicine, diagnostics and prognostics, drug and medical device discovery, genomics and genetics, rare diseases, diabetes, heart malformations, autism and other neurodevelopmental disorders, as well as stem cell and regenerative medicine.

Q: Can you give us details about one innovative program or an area of thought leadership within your institution?

A: **Project Imagine:** A number of innovative applications to enhance patient experience and provide better care for patients, families and staff are endorsed by Sidra. Some of the apps developed at Sidra Medicine are the first of their kind in the country and possibly the region. With names such as Saffara, Code Blue, and Sidra Stream.

Saffara: Means whistle in Arabic and is an application that sends the patients a text message in English and Arabic, when it is their turn to be seen by a service in the hospital. For example, "Your medication is ready to pick up from the pharmacy" or "Your physician is ready to see you". Saffara is connected directly with the Sidra electronic medical record system, making it different than other vendor queuing systems. This allows for an integrated patient notification experience, so that our patients can comfortably wait in the café for their appointment or even from home for their medication refill – all without the stress of having to worry that they may miss their turn.

Sidra Stream: An app that can be efficiently used to immediately share key outcomes from important meetings and events, whether planning sessions or board meetings. This allows people to keep on top of priority items that are discussed without having to wait for instructions to trickle down.

Code Blue: Another innovation developed in-house at Sidra Medicine is Code Blue, an application for emergency response. It is used to alert members of a particular clinical team about emergency situations at the press of a button. The alert can be initiated via smartphone or through a web application. As soon as the button is pressed, it immediately alerts emergency staff via millisecond notifications, with an alarm that will reach all the members of the team. It can identify when the code alarm occurred and who started it as well which team members responded to the situation and showed up for action. The back end of the application includes a dashboard which can be used to pick teams, assign members, and provide on-call status. It also allows analytics on how many codes were sent out on a day and what were the responses.

WHAT IS COVID-19

Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases. A novel coronavirus (nCoV) is a new strain that has not been previously identified in humans.

A current outbreak of novel coronavirus (2019-nCoV) was first reported from Wuhan, China, on 31 December 2019.

Symptoms of the virus include fever, cough, shortness of breath, smell and taste aversions, and breathing difficulties. The illness can be more serious for individuals with comorbidities. Standard recommendations to prevent infection spread include regular hand washing, covering mouth and nose when coughing and sneezing, thoroughly cooking meat and eggs, and avoiding close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing.

AAHCI MENA MEMBERS RESPONSES TO THE COVID-19 PANDEMIC

Bezmialem Vakif University Hospital

Istanbul, Turkey



Bezmialem Vakif University hospital is a 600 bed university hospital in the center of Istanbul normally serving around 7000 outpatients per day. As of January 2020, while the first cases of COVID-19 were reported outside China, we formed a pandemic advisory board for the actions to be taken in the hospital and university, with the participation of faculty from different divisions. The board suggested algorithms to be followed at each department; these were frequently revised to remain in line with the recommendations of Turkish Ministry of Health Guidelines. Meetings and seminars were organized engaging our employees at all levels on the utilization of algorithms, basic protection methods, use of personal protective equipment, and follow-up care; this process was also supported with printed documents, training videos, and posters by March 2020.

While preparing for the pandemic, we also focused on planning our physical facilities according to the requirements of the challenges presented by COVID-19. Some areas were reorganized to respond to specific needs, such as a triage area outside the hospital building where all patients who presented to the hospital were subjected to triage, and where fever measurements, symptoms, and contact history inquiries could be taken. Hence, all possible COVID-19 cases could be pre routed within the hospital and directed to COVID isolation sites without allowing the infection to spread to other areas within the hospital.

We also made various arrangements in our inpatient wards to enable patients with confirmed or suspected to have COVID-19 to be hospitalized in isolation. Considering the number of patients likely to present in the future, we gradually transformed the existing wards into COVID units, where strict isolation rules were applied. This also held true for the intensive care units, as we increased the number of beds and ventilators dedicated to COVID-19 patients.

Every precaution was taken to protect our own healthcare staff, as well. The units and working hours of our employees were re-planned so as not to disrupt healthcare services, but also to keep the viral load and physical and mental fatigue of the staff to a minimum scale.

In the meantime, educational activities in the medical school have resumed in the form of online education. We had synchronized and unsynchronized lectures for the students. All of the faculty received developmental guidance in performing online teaching and evaluation. Simulation videos were uploaded to education portals, and exams were performed online as well. We are expecting our students back in October 2020 with every available precaution, including online teaching facilities.

Throughout the time between March-June 2020, we stopped providing care for elective patients, unless it was a necessity, as we were declared a pandemic hospital by the Turkish Ministry of Health. Since the COVID-19 pandemic is not fully terminated, the risk remains until an effective virus-specific treatment and / or vaccine is found. After June 2020, as the number of the new cases nationwide are decreasing, we are returning to a 'new normal' in the hospital. Our guideline is "Working in healthcare institutions during the normalization period in COVID-19 pandemic", issued by the Turkish Ministry of Health.

To ensure that COVID-19 measures and healthcare services continue, our current target is to keep our hospitals and outpatient clinics safe for patients with and without COVID-19 diagnosis. This includes ensuring the safety of health workers and the incoming final-year medical students. All patients will be approached equally in terms of access and safety.

COVID-19 pandemic was a challenge for Bezmialem Vakif University. Our capacity to react quickly helped us during this surge, providing experience for future crises.



Rumez Kazancıoğlu, MD
| Professor of Nephrology |
Rector

AAHCI MENA MEMBERS RESPONSES TO THE COVID-19 PANDEMIC

College of Medicine and Medical Sciences Manama, Bahrain



As the COVID-19 crisis continues, medical schools have to shift to online teaching. Regarding student assessments, many schools decided to hold online written exams and to postpone clinical assessments. CMMS-AGU decided to find a solution to clinically assess students, especially in their final year as our college is a regional one and our students come from various Gulf countries.

The objective structured clinical examination (OSCE) is a performance-based examination used to assess many of the core skills required of physicians that cannot be assessed with written examinations, such as the ability to complete a history, perform a physical examination, or communicate effectively with patients. Reviewing the course specification in most medical schools reveals that nearly 70-80 percent of the required skills can be assessed virtually.

A suggestion to set up an online OSCE exam using the ZOOM meeting application was provided to the college council. Students will use laptops with webcams and microphones while assessors and role players will join from the school campus, with social distancing and safety measures applied. As regards the scarcity of role players—because of the COVID-19 limitations—four out of ten stations were modified into structured oral examinations, where assessors will take the student through a patient's scenario while having a standardized checklist to assess their responses to examiners' questions.

Parallel sets of stations will be facilitated by coordinators and assistant hosts in multiple ZOOM meetings simultaneously. Each meeting will include 10 students, 10 examiners and six role-players. Coordinators (hosts) will assign assessors and role players in designated (virtual) breakout rooms where candidate instructions will be displayed throughout the station on the white board in this virtual room. Candidates will be admitted from the virtual waiting room to the main room to check IDs and compare them with their webcam live pictures. The hosts will use the provided schedule to manually assign students to the virtual breakout rooms (one student per room) and, after ten minutes, the student will be reassigned to the next room. This can be repeated in a parallel manner in multiple ZOOM meetings using the same set of OSCE items, enabling the school to examine a considerable number of students based on the available number of assessors and role players as well as the available hardware devices on campus. Exam psychometrics will be conducted afterwards to compare the performance to past face-to-face OSCEs.

Virtual training on using the zoom application and its features, including the break-out rooms, was held. The students were invited for a mock exam, which 10 students attended with five examiners and two exam supervisors. The stations will include prepared scenarios, structured oral stations, and video stations showing physical examination steps or abnormal clinical signs to be interpreted by students. Triangulating these three types of stations will help for better coverage of clinical skills in the most acceptable and feasible manner under these current unusual circumstances.



Khaled Saeed Tabbara,
MD | Vice President

AAHCI MENA MEMBERS RESPONSES TO THE COVID-19 PANDEMIC

Khalifa University College
Abu Dhabi, United Arab Emirates



Khalifa University's College of Medicine and Health Sciences (KU-CMHS) offers the first four-year, post-baccalaureate allopathic medical degree program in the United Arab Emirates, and is the first governmental medical school located in the capital city of Abu Dhabi. Its mission is to enhance the healthcare ecosystem of Abu Dhabi and the UAE through outstanding education, research, and healthcare services for the community. The program has received the initial accreditation by the Commission for Academic Accreditation. The inaugural class matriculated on August 25, 2019. With the closure of all schools and higher education institutions in the UAE due to the COVID-19 pandemic, KU-CMHS moved to distance learning on March 22, 2020.



Jennie Q. Lou, M.D., M.Sc.
| Assistant Dean for Medical Education & Professor of Epidemiology and Population Health



Robert Hernandez, M.D. | Associate Dean of Academic Affairs & Associate Professor of Medicine

The pandemic served as an opportunity to expand teaching and learning methods, and synchronous and asynchronous distance learning approaches were quickly adopted. Many sessions were pre-recorded and posted in Moodle. Content sharing was managed using Moodle, SharePoint, and a KU shared drive. Course materials were supplemented by e-textbooks and web-based resources. Live online sessions were delivered via web conferencing software such as Zoom, BigBlueButton, or Microsoft Teams. Small group exercises were conducted using Zoom and Lecturio. Assessments were delivered via Moodle or Lecturio. Suspension of the National Board of Medical Examiners Customized Assessment Service resulted in the need to develop in-house, high-stakes assessments. Low-stakes assessments were delivered asynchronously as open-book exercises or timed, close-booked quizzes.

Academic advising was conducted using Zoom. Extracurricular activities, emphasizing wellness, were held on a regular basis and open to students, staff, and faculty. Although non-mandatory, many students participated. A weekly wellness bulletin was published offering a variety of health tips, links to web-based resources, and a calendar of virtual wellness classes. These efforts promoted healthy lifestyles and maintenance of social interactions between students, staff, and faculty.

A variety of challenges occurred with the move to online learning. Students who had returned home to North America (generally eight hours behind Abu Dhabi) found participation in synchronous sessions to be difficult. To accommodate these students, faculty members delivered online review sessions, and synchronous assessments were conducted in the evenings.

Another challenge was delivery of the clinical skills curriculum. Program leaders emphasized communication skills, case-based learning, and clinical decision-making. Virtual OSCEs required students to describe pertinent aspects of clinical interactions and identify correct, incorrect, or missing components of histories and physicals. Students reviewed web-based resources, such as the Bates Video Series, and were encouraged to practice skills with family members. Continuous program evaluation was critical. The Curriculum Committee identified challenges and solutions based on weekly student surveys. Successful solutions were emphasized and strengthened, while problematic solutions were fixed or set aside.

Although disruptive, the move to online learning provided great opportunities for students and faculty. Student satisfaction with course content and delivery increased. The transition to asynchronous activities promoted self-directed learning. Faculty acquired new teaching and assessment skills. Finally, the move encouraged faculty to expand the use of many available digital resources to support more active teaching and learning.

AAHCI MENA MEMBERS RESPONSES TO THE COVID-19 PANDEMIC

Sidra Medicine

Doha, Qatar



Sidra has developed a simplified and rapid, second COVID-19 testing method. The new method uses a pre-treatment of the specimen (swab sample) to replace the ribonucleic acid (RNA) extraction process, currently needed for COVID-19 testing.

Current methods for testing COVID-19 follow a three-step process that starts with obtaining a swab sample from an individual; followed by extraction of viral RNA from the sample; and then detecting the viral RNA specific to COVID-19 by reverse transcription polymerase chain reaction (RT-PCR).

The whole process can take between four to six hours from the time the swab is received in the lab to the time results are reported.

The new method developed in-house at Sidra Medicine's College of American Pathologists (CAP) accredited pathology laboratory, replaces the viral RNA extraction process by simple dilution with nuclease-free water and heat treatment. The diluted sample is treated at 65°C for 10 minutes before detection of viral RNA using a specific type of RT-PCR reagent.

Following guidelines from the Clinical Laboratory Improvements Act (CLIA), the alternative test method has been validated in the Pathology Department of Sidra Medicine.

It produces a faster result than current methods and demonstrates 98 per cent accuracy, compared to the standard method that requires RNA extraction. As the RNA extraction process constitutes a significant part of the cost and time involved in COVID-19 testing, the alternative method, which is significantly cheaper, will be particularly useful for resource-limited countries for expanding their capacity for COVID-19 testing.



Ibrahim Janahi, MD
Chair, Medical Education
& DIO | Division Chief,
Pediatric Pulmonology,
Pediatric Department

BEIRUT EXPLOSION

In addition to the pandemic, the unprecedented explosion on August 4 caused many challenges. It has exacerbated the existing health concerns, raising alarms around a new COVID surge.

With both an economic crisis and political instability, the explosion left the Lebanese healthcare system with extra challenges.

It has caused 220 fatalities, 60,000 injuries, and has left around 300,000 people homeless. The blast has also affected operations at six hospitals and damaged tens of clinics in areas in Beirut worst affected by the explosion.

A few minutes following the explosion, Emergency Units across Beirut were full of injured people. Unfortunately, there was massive close interaction of people, and the Lebanese community braced for a surge of COVID-19 in the following weeks. Two weeks after the explosion, Lebanon witnessed a sharp rise in recorded cases. The country went into full lockdown again, starting August 21, for two weeks aiming to slow down the transmission and decrease the load on hospitals, which are already working at full capacity.

In the current challenge of security issues, financial crisis, and a pandemic, healthcare delivery is obviously suffering.

