Evidence-based medicine helps clinicians triumph in the face of turmoil

American University of Beirut Medical Center uses UpToDate to enhance patient care during a pandemic and disasters

American University of Beirut Medical Center

Frontline caregivers across the world were challenged by the unprecedented demands of COVID-19. On top of those stressors, clinicians at the American University of Beirut Medical Center (AUBMC) in Lebanon faced additional catastrophic events — a devastating explosion and a severe economic downturn — while still managing the unrelenting tide of the pandemic.

"When it came to the COVID-19 pandemic, the major issue was needing to be updated about the latest evidence or the latest news," explains Dr. Firas Kreidieh, a Clinical Fellow in Hematology and Oncology, Department of Internal Medicine at AUBMC. "Even attending physicians and the biggest experts in such diseases needed to update data on a daily basis, because it is a dynamic field and things were changing quickly with no clear-cut answers. Even the researchers and scientists themselves were not really sure of the answers."

UpToDate® evidence-based clinical decision support solution from Wolters Kluwer played a large role in providing the latest evidence and answers to questions, says Dr. Kreidieh. With UpToDate, his team was able to practice evidence-based medicine efficiently and deliver the best patient care under normal and crisis situations. Care teams at AUBMC rose to the challenge, effectively caring for a massive influx of patients during a pandemic, disaster, and an economic crisis.

That sentiment is shared by Dr. Ali Taher, AUBMC Vice Dean and a Professor of Medicine at the Division of Hematology & Oncology. "UpToDate has revolutionized our workflow on the wards and enhanced our ability to further promote patient quality care, particularly during the COVID pandemic and the blast crisis," he says.

Evidence impacting education
Dr. Kreidieh's history with UpToDate dates back to his third year in medical school

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**Dr. Firas Kreidieh
Department of Internal Medicine, AUBMC**

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when he began clinical experience. "At that time, my major use of UpToDate was for disease background and medication information," he recalls. "For example, when doing rounds, the cardiology attending physician might say, 'Please, make sure that there's no contraindications to start the patient on a certain medication.' It's on the wards when you start getting these clinical questions and when you really appreciate the importance of UpToDate to find the answers."

Dr. Kreidieh has served as Medical Chief Resident at the Internal Medicine Department at AUBMC, which started using UpToDate across the medical center in 2007.

"I was responsible for helping [residents and interns] improve their medical education experience — both clinical experience and research experience," he explains. "UpToDate helps our residents and interns by synthesizing the evidence and providing them with what they need to know about a certain topic, enhancing clinical and research skills and increasing efficiency that's reflected back positively in quality patient care."

"I noticed that UpToDate has recently been utilized a lot by medical students on the wards for both preparing talks and looking at drug-drug interactions and drug dose adjustment, in addition to differential diagnosis of clinical symptoms," adds Dr. Taher, who also serves as Vice-Chair for Research at the Department of Internal Medicine and the Director of the Naef K. Basile Cancer Institute at AUBMC.

Speed to answers in a crisis
Dr. Kreidieh and Dr. Taher couldn't have anticipated how the AUBMC team would be tested in the year 2020. With compounding crises, the medical team needed the latest evidence and best practices, but they also needed access to information and recommendations as quickly as possible.

UpToDate proved a worthy partner during the COVID-19 pandemic, Dr. Kreidieh says.

"Given that it is continually updated and available in one reference, UpToDate is and was extremely helpful," he explains. "For example, a resident or intern who was on night duty and had lots of critical patients on the COVID unit to take care of, they could access UpToDate to get a fast, current, concise answer to a question rather than having to search for the data and to go to the articles not really knowing which article to look for. I strongly believe that UpToDate has enhanced our efficiency on the wards. Efficiency is an asset to promoting quality patient care, particularly in situations where time saves lives."
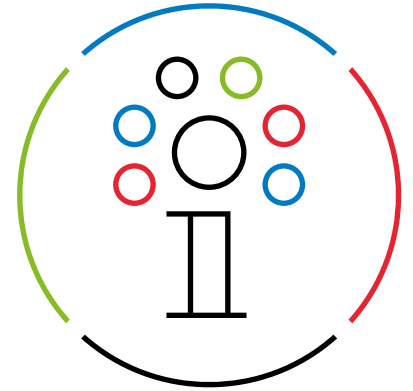
"Use of UpToDate increased during the COVID pandemic with a dedicated icon that takes us to all new data about COVID and that is continuously updated," Dr. Taher says.

Dr. Kreidieh adds: "The more you learn about UpToDate the more you appreciate using it. There's so much to know in medicine, and you may not realize [what you don't know] until somebody tells you or until you learn about it. For example, there are tons of articles written about the COVID-19 pandemic. In searching the [clinical] databases, you will find so many articles that you may actually question, 'Is this really true about COVID-19? Is this a valid paper published about COVID-19?' What is reassuring about UpToDate is that there is a whole section dedicated to COVID-19 information that you can trust to find everything you need to know. And that information is continuously updated as new evidence becomes known."

While in the midst of the pandemic, the AUBMC team suddenly experienced a massive influx of trauma patients when the Beirut port exploded on August 4, 2020, injuring more than 6,000 people.

"I was in the infusion unit and felt the ground move, so I thought it was an earthquake," Dr. Kreidieh recalls. "Then there was a second very loud sound, and I heard a patient who was receiving infusion say, 'This is a bomb!' There was so much smoke that I thought something happened within the AUBMC campus."

The medical center activated Code D, the disaster code, which Dr. Kreidieh explains is seldom activated at the hospital unless a major catastrophe occurs. "A message is sent to all house staff that we really need help, and everybody, even those at home came into the hospital," Dr. Kreidieh says.

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Prof. Ali Taher, MD, PhD, FRCP Division of Hematology & Oncology and Vice-Chair for Research, Department of Internal Medicine, and the Director of the Naef K. Basile Cancer Institute, AUBMC

"The house staff automatically knows how to deal with Code D situations and how to reallocate resources; we coordinated with each other who would be on the floors, who would be in the emergency department."

"Residents used UpToDate on the day of the August 4 blast to get quick answers for acute management, such as tetanus administration," says Dr. Taher. "We use the Epic® electronic medical record, which has a direct link to UpToDate on the main page on the floors so that the teams can use it to search for any questions they have."

While Dr. Kreidieh and his team functioned more in a support capacity than direct care in the immediate aftermath of the explosion, he was impressed and inspired to see his hospital pull together.

"It was really an inspirational scene seeing all the medical teams, including surgery, oncology, internal medicine — all departments were really one hand. And I will never forget that night. They all helped each other, each through his or her own skills, each through what he or she can actually help with."

Direct access to evidence at critical moments
UpToDate can be integrated with a health system's electronic medical record (EMR) for direct access to clinical decision support without interrupting workflow. AUBMC has UpToDate links conveniently in its Epic EMR system, Dr. Kreidieh explains, "so you can simply click on the link for UpToDate and access any data you would like right from the EMR."
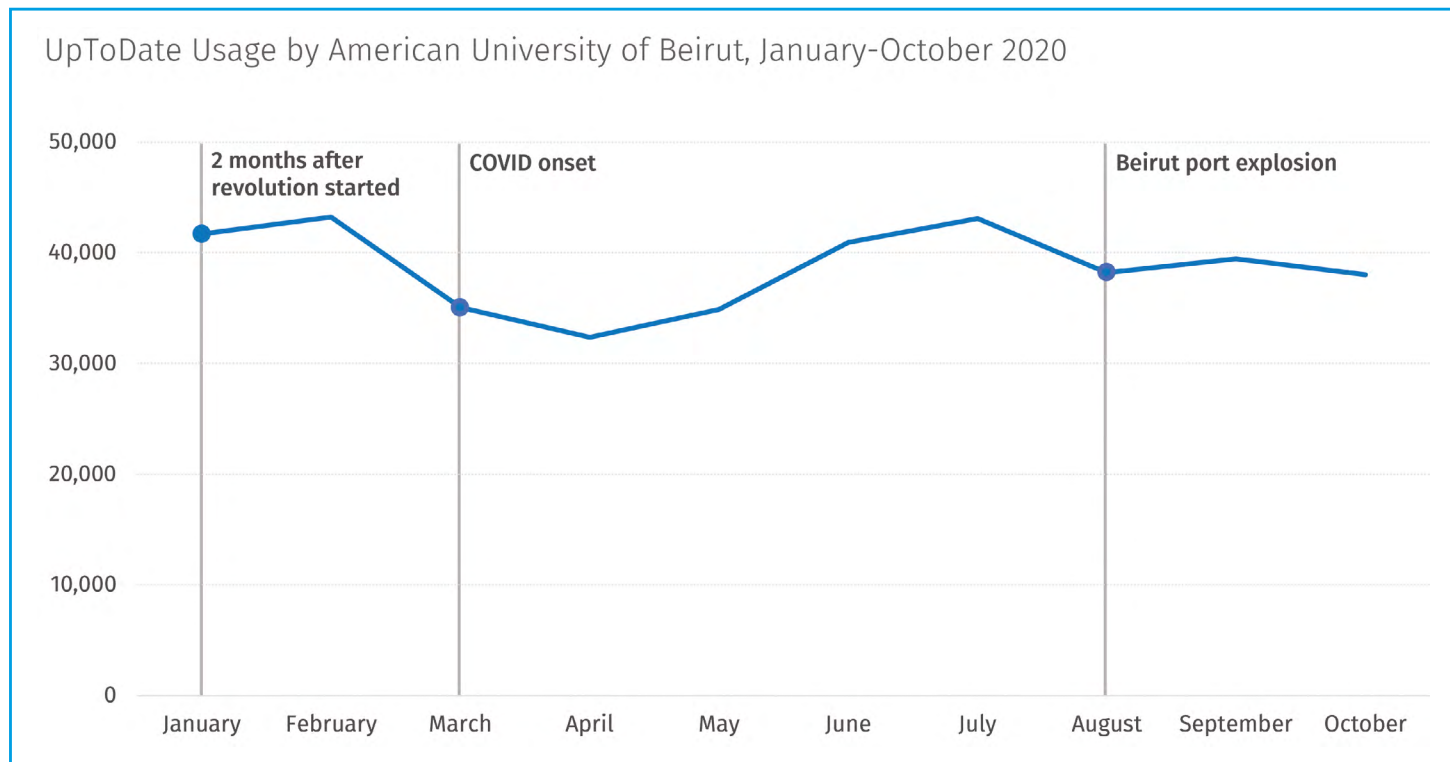
On the night of the explosion, many patients were lacking identification, and thus were only entered into the system with identifying numbers rather than their names and other personal information.

Nonetheless, UpToDate still played a major role in treatment of disaster victims, as clinicians looked up key articles and topics to help them treat the sudden rush of patients. "The major use of UpToDate on the night of the explosion was searching drugs, antibiotics, and botulinum toxin," says Dr. Kreidieh. "The injuries were major, particularly in terms of blast injuries, so there were several antimicrobials that we needed to start patients on."

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UpToDate clinical decision support was a critical tool during times of crisis, reflected in its steady usage by clinicians at AUBMC.

UpToDate Usage by American University of Beirut, January-October 2020

- 2 months after revolution started
- COVID onset
- Beirut port explosion

For example, patients who were injured by flying glass from the explosion often required a botulinum injection. But, Dr. Kreidieh explains, if the patient had already received a prior injection and/or had an infection, there are specific guidelines to be followed. "UpToDate directly provides the guidelines, the table, and the algorithm for that. Not having to search the literature for those answers really saved time and helped us increase our efficiency when dealing with lots of patients and a shortage of house staff," he says.

Efficiency translates into value
"In my specialty of hematology and oncology, there are two major challenges to delivering care, especially here in Lebanon and in developing countries," Dr. Kreidieh observes. "They are financial challenges — those faced by the patients themselves — and accessibility to the medications."

The economic downturn in Lebanon has impacted the way he and his team at AUBMC approaches care. "There are many drugs that are excellent, and supported by clinical trials and data, that help improve survival and progression through survival," he says. "However, these drugs are very expensive and not all of them are covered by the Ministry of Public Health in Lebanon. Hence, many patients have to justify to their insurance companies the reason behind the use of a particular drug or pay for them out of their own pocket, which is very difficult for patients with limited finances and financial hardships. Despite all the situations we've gone through here in Lebanon, thus far we've not faced a major issue in terms of accessibility to drugs."

Whenever the medical center can demonstrate value and cost-effective care, it is especially appreciated in times when healthcare costs and efficiencies need to be managed.

UpToDate provides concise summary of topics relevant to us in medicine and can guide us to look at the references. It saves a lot of time," Dr. Taher says. "AUBMC has recently provided access to UpToDate even when outside the AUB campus."

"Thanks to UpToDate, our efficiency on the wards has increased markedly," Dr. Kreidieh adds. "When you actually have no time to search for answers to a certain question is when UpToDate really proves its value."

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About American University of Beirut Medical Center (AUBMC)
AUBMC began 145 years ago in a small, rented building in Beirut. Over the years, milestones include the founding of the School of Nursing, the first of its kind in the Middle East, and the addition of a state-of-the-art medical center with five Centers of Excellence, an elaborate outpatient facility, an emergency department, research laboratories, classrooms, and offices for academic staff.
https://aubmc.org.lb/pages/home.aspx

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