

## A simple shift in chemistry one of the reasons why the UK COVID-19 variant has become so problematic

Booster shots will give higher levels of virus-neutralising antibodies and more durable protection and help against some of the variants

By Daily Dose Staff



ith 150 million cases and more than 3.5 million deaths, the global effects of the COVID-19 virus have been devastating, particularly for the G20 countries where it has had such a huge impact on the global economy.

According to Peter Hotez, Director, Texas Children's Center for Vaccine Development (CVD), Dean, National School of Tropical Medicine, Professor of Paediatrics and Molecular Virology & Microbiology, Baylor College of Medicine, Houston, Texas, USA, low-income neighbourhoods, especially in the G20 countries, have been particularly hard hit. Also, because of all the social disruptions caused by the pandemic, there has been an overall decline in global paediatric vaccinations, which could result in the return of vaccine-preventable diseases.

Addressing the audience during the Pharma

French Healthcare

& Drug Discovery Conference at the live and inperson Arab Health event at the Dubai World Trade Centre, Professor Hotez gave an overview of COVID-19 vaccines and variants across the globe.

"In the United States, the predominant B.1.1.7 variant (known as the UK variant) has higher transmissibility, higher morbidity and mortality, and is affecting many young adults and adolescents. It is a simple shift in chemistry because of higher interactions of the spike protein of the virus with the receptor; that is one of the reasons why the B.1.1.7 variant has become so problematic," he explained.

Although the virus-neutralising antibodies induced by the two mRNA vaccines in the US (Pfizer-BioNTech and Johnson & Johnson's Janssen) do a good job of neutralising the B.1.1.7

variant spike protein, he warns of the implications of the second mutation in the US, the B.1.351 ZA or South Africa variant and the Brazil variant (P.1.), as the virus-neutralising antibodies are lower against this variant induced by the current vaccines.

"The implications of this is that the vaccines do not work quite as well, and it will also not be surprising to start seeing booster shots later in the year in the US for a third dose of the Pfizer-NioNTech or a second dose of the J&J vaccines, which will give you higher levels of virus-neutralising antibodies and more durable protection, and help us against some of the variants." Professor Hotez said.

The Houston Methodist Hospital recently reported that the B.1.1.7 variant in Houston, in some places, is picking up a second mutation,

which is making the variant look like the South African or the Brazil variants. "This is going to be a trouble area for us down the road in the US and globally," Professor Hotez added.

The good news for the US is that since the vaccines work well against B.1.1.7, and the US is hitting about 60% vaccination rates across the country, cases will continue to trend downward. The hope is that if the country can hit the 70-75% benchmark by July and August, then the transmission is going to decrease dramatically.

However, Professor Hotez underlined tremendous vulnerability in the rest of the world including, Africa, India, many parts of Southeast Asia and Latin America, and even parts of the Middle East, where vaccination rates are low, highlighting the urgency to do something soon.

The Indian Maharashtra strain (B.1.617) that grows out of the Mumbai area is also a variant that is partially resistant to vaccination. Since the growth of the B.1.617 in India, which is now also affecting Pakistan, Nepal, Bangladesh, elsewhere in South Asia, three sub-lineages have been found in 44 countries. We are starting to see these subvariants rise quickly, for example, in the United Kingdom, where the B.1.617.2 is spreading faster than other imported variants.

"It will be important to collect as much evidence as we can on vaccine protection against this variant," he said. "However, the overall good news is there's a lot of convergence in these mutations. They don't seem to be random, and they seem to he converging towards one or the other. But as we make booster shots, I think we are going to have to think about what this consensus sequence will look like for all of these new variants."

FrHealthCare\_EN in French Healthcare



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## COVID-19 has shifted the focus from mental illness to mental wellness in family medicine

The pandemic has been a real test of resilience for mental health services, but healthcare workers need psychological support too, according to a panel of experts.

By Daily Dose Staff

he coronavirus pandemic will have a lasting impact on our mental health, which is why healthcare systems need to maintain current levels of support even after the immediate threat of the virus reduces.

A panel of mental health professionals stressed the importance of preventing burnout and creating support pathways for healthcare workers, speaking at the Arab Health Family Medicine conference on Wednesday.

"We've had a record number of referrals and have been busier than we've ever been. It's very worrying, but our services have really responded to that. It's about meeting the demand, and there's a recognition that this issue will be around for some time and will need sustained attention and investment," Dr Adrian James, President of the Royal College of Psychiatrists in London said.

Both patients and healthcare workers have been forced to find new ways to cope with a massive spike in negative mental health issues due to the pandemic. From immediate effects like fears of contracting the virus to isolation during lockdown, to the impact of long COVID on recovering patients, the pandemic's consequences on mental health



are still being researched and studied.

For healthcare workers, the pandemic has forced a lot of existing mental health pressures to the surface, making them more susceptible to stress, depression and anxiety. Long hours and isolation have also made burnout commonplace among staff

"A lot of staff have lost colleagues, family members and friends. Certainly in the UK and the UAE, we have a lot of international medical staff, particularly from India. The increase in the incidents of COVID-19 in India has had a huge impact on staff mental health," Dr Subodh Dave, Dean of the Royal College of Psychiatrists in London said.

Dr Dave spoke from personal experience. "I'm part of that international staff cohort and I haven't seen my parents in 18 months. For junior colleagues and medical students, it's even more isolating to be away from family for that long."

Dr Nahida Nayaz Ahmed, Consultant

Psychiatrist and Chair of Mental Health at SEHA and Department of Health Abu Dhabi quoted a December 2020 UAE study on the mental health impact of COVID. "Our survey shows young, single, female expatriates working in healthcare are the most affected, particularly in nursing," Dr Ahmed said. SEHA's mental health helpline provided a rudimentary level of 'first aid' for healthcare workers during the pandemic.

The direct impact on staff mental health has led to more healthcare workers prioritising their own wellbeing, a trend that Dr Dave hopes will continue long after. "Broadly, I feel that the direct impact is a rise in healthcare staff seeking help. It's the new cohort that mostly needs support," he added.

Speaking to colleagues, some of whom have multiple comorbidities, Dr Dave noted that many healthcare workers are living in constant fear of contracting the virus and bringing it home to vulnerable family members. "For younger people, they are facing isolation, missing out on crucial socialisation experiences. I hope health systems around the world sit up and learn lessons. We need to increase resilience within our systems to provide healthcare for all who need it."

### Ethnic minorities at greater COVID-19 risk in UK, says diabetes expert

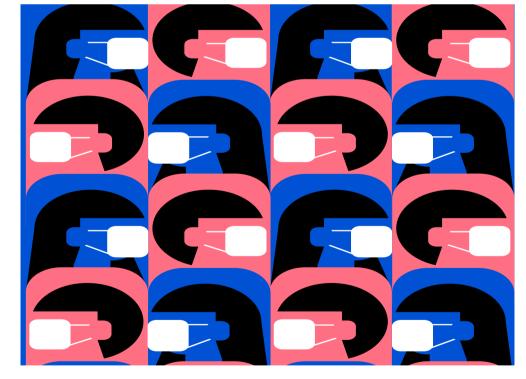
By Matthew Brady, Head of Content

thnic minority groups in Britain and diabetes sufferers are at greater risk of COVID-19 death and admissions, according to Professor Dr Partha Kar FRCP OBE, National Specialty Advisor, Diabetes, NHS England, in his Family Medicine Conference keynote address at Arab Health 2021.

A data set from 2020 in the UK showed that diabetes and ethnicity confer higher COVID-19 risk, Dr Kar said, pointing to a large spike in diabetes-related mortality in April 2020 that suggested COVID-19.

Other data meanwhile demonstrated a link between diabetes and higher ICU admissions, underlining that diabetes is an independent predictor of worse outcomes of COVID-19. Dr Kar added that there is also a rise in newly diagnosed type 2 diabetes in the UK, and that there are many "signals" around immunogenetic potential to cause type 1 diabetes.

Further evidence showed that ethnicity alone conferred greater risk in the UK, irrespective of sex, age, background, diabetes status, and region.



An analysis of medical records and death data for more than 61 million in the UK (population 67 million) revealed marked ethnic inequalities in the risk of death from COVID-19. Black and South Asian groups appear at greatest risk, at 1.7x and 1.3x, respectively.

An assumption that ethnic minorities were tested more for COVID-19, hence the greater admission and mortality numbers, was proved incorrect. Test positivity is however a differentiating factor: positive infections are relatively higher across South Asian, Black and Mixed groups. ICU admissions are markedly higher.

Referring to an "extremely good" study, Dr Kar highlighted the impact of nationwide lockdown across ethnicities and gender - there was a difference in COVID-19 related deaths for ethnic minority groups compared to the White population in the UK, before and after lockdown - and questioned whether work, going out, families getting together, or even men mixing might have been habits or behaviours accounting for greater mortality.

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### Today at a glance

### Arab Health 2020 Congress

Conference	Room	Location	Start	Finish
Total Radiology	Sheikh Maktoum Hall	Dubai World Trade Centre	09:05	17:30
Family Medicine	Dubai D	Dubai World Trade Centre	10:00	17:35
Orthopaedics & MSK	Abu Dhabi B	Dubai World Trade Centre	08:30	17:30
Digital Health & Innovation	Al Ain J & K	Dubai World Trade Centre	09:30	16:45
ENT	Grand Ballroom, Level 2	Conrad Dubai	08:50	17:40
Quality Management	The Ballroom, Level 4	Conrad Dubai	08:30	17:00

### Medlab Middle East 2021 Congress

Conference	Room	Location	Start	Finish
Molecular & Genomic Diagnostics	Dubai Room	Za'abeel Hall 6, Dubai World Trade Centre	09:45	16:45
Blood Transfusion Medicine	Bangkok Room	Za'abeel Hall 1, Dubai World Trade Centre	09:45	16:30



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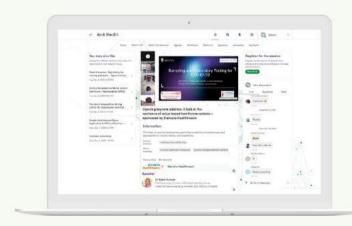
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Register here: <u>Arab Health Focus Day</u> <u>Medlab Middle East Focus Day</u>





### Leader Healthcare: Committed to innovation

By Deepa Narwani, Senior Editor

n the sidelines of Arab Health, Daily Dose caught up with Sukhdeep Sachdev, Global Chief Executive Officer, Leader Healthcare, to find out how the company has responded to the COVID-19 crisis.

He said that there was a lot of conversation around how rapidly COVID-19 can be diagnosed at the start of the pandemic and what can be done to tackle post-COVID-19 issues effectively. Life Sciences became an important focus area and, therefore, in April 2020, Leader Life Sciences was formed.

"We have worked with both the Abu Dhabi and Dubai governments and helped them build labs in a record time of 10 days. These are biosafety level type three labs, which would usually take up to three to four months to build, but we did it in 10 days. That is something our team is very proud of," he shared.

Leader Life Sciences is present at Medlab along with its partner Cellink, a company specializing in advanced bioprinting technologies for pharmaceuticals and drug development. Cellink's products, such as the 3D processor, can replicate any kind of tissue that can be built-in a 3D printed environment. "We are very proud to have such an association at this point in time," he added.

Sachdev said that COVID-19 was an opportunity for healthcare leaders to showcase their company's capabilities and to bring together all the resources, technologies and equipment needed. "It was a time for us to go and stand by the nation and to flex our muscles in a good way," he said.

He also stressed that during these testing times, it was essential to give back to the community. To fulfil this promise, Leader Healthcare was committed to building field hospitals.

"We were able to bring all the technology that



Sukhdeep Sachdev

was needed to survive the pandemic. We also focused on training, education, and after-sales service, during these turbulent times. So COVID-19, while challenging, also provided a learning curve for leaders," he added.

Commenting on the theme of Arab Health this year, 'United by Business', he said that we are living in a time where accessing clinicians and physicians physically was tough, and people had to practice social distancing. But the business has to go on. "We have several businesses and have thought about how we can combine resource management between different business units," he said.

For Leader Healthcare, AI is a big focus area, but during the pandemic, the focus was on trying to pull everything together and seeing how different technological solutions interact with each other.

"Over the last year and a half, we have been able to gather a lot of data," explained Sachdev. "Now, we are working on processing and reforming this data. AI and machine learning became a fancy word for many of us, but all of this is dependent on data. With big data, you can accumulate the data and process and assess it to mitigate the risk and see what applies to you. If the investment is not made in these tools, businesses won't be able to meet customer requirements. Moreover, with these tools, resources can be put to better use and enhance the overall performance."

When asked about future partnerships, Sachdev highlighted that Leader Healthcare Group wants to disrupt the market. "In September, we will be launching another company that will be focusing on biotech and pharmaceuticals," he shared. The reason for venturing into pharmaceuticals, he said, was because worldwide, over 10,000 patents are going to go away, which will lead to a significant gap in the marketplace. This move will help the company in bringing generics into the marketplace.

In conclusion, he said that companies need to make sure that people are their first priority. "In a short while, 70 per cent of our population will be millennials, and they will need to be groomed. This is a major focus area for Leader Healthcare, and we are working towards bringing their dreams to life," he said.

# American Hospital Dubai partners with Etisalat Digital to enhance patient experience

merican Hospital Dubai, the flagship of Mohamed & Obaid Al Mulla Group and a pioneering private healthcare provider in the Middle East and Etisalat Digital, announced a collaboration to enhance patient experience at the healthcare provider facilities. The initiative combines multiple digital technologies that will improve patient experience and access for a seamless wellness journey.

This customized solution will provide realtime information and data where it will eliminate operational bottlenecks and address patient concerns. In addition, advanced data analytics will enhance American Hospital Dubai's capacity planning. The strategic partnership was revealed on the sidelines of Arab Health.

Welcoming the partnership, Sherif Beshara, Chief Executive Officer, Mohamed & Obaid Al Mulla Group, the holding company of American Hospital Dubai, said: "We cherish our partnership with Etisalat and are proud to cross another milestone in operational excellence. American Hospital Dubai is committed to delivering the highest quality patient-focused care, and the initiative is evidence of our desire to continuously

improve our services to enhance healthcare and patient experience."

Salvador Anglada, Group Chief Business Officer Etisalat, said: "We are pleased to continue our collaboration with American Hospital Dubai as their preferred technology partner to conquer new frontiers in digital transformation. This resonates with our strategy of driving the digital future by enabling our partners with innovative solutions."

At Arab Health,
American Hospital
Dubai is also
highlighting its
achievements in
Robotic Surgeries,
as well as AI-led
breakthroughs in
epidemiology.



### Gut health and COVID-19: Is there a link?

Inflammatory bowel disease is an often misunderstood umbrella term for a whole host of gastroenterological issues. Dr Prithvi Priyadarshini, Specialist Gastroenterologist at Al Zahra Hospital, Sharjah demystifies the topic in the context of COVID-19 in her presentation at the Arab Health Family Medicine conference today.

By Deepa Narwani, Senior Editor

evere cases of COVID-19 often include gastrointestinal (GI) symptoms, complicating prognoses for gastroenterologists. As a result, according to Dr Prithvi Priyadarshini, Specialist Gastroenterologist and Head of the Gastroenterology Department at Al Zahra Hospital, Sharjah, the pandemic has added a new layer to her work.

"When we talk about colitis of any cause, patients present with diarrhea, abdominal pain and potential rectal bleeding. The first question we'd ask is if this could be cancer," Dr Priyadarshini said.

COVID-19 has complicated matters, however. "There are two main issues here. Firstly, COVID-19 has affected patients who have already been diagnosed with IBD and are on treatment. Secondly, it is also an issue for patients who are recently developing IBD symptoms and are hesitating to come to hospital due to the pandemic," she explained.

For the first group of patients, their gastroenterologist would have supplied them with a few months' worth of medication to cut out the need for frequent hospital visits. Even so, some patients may develop acute symptoms like diarrhea or bleeding all of a sudden, even on the same medication. This is where step-up therapy has been crucial, where treatment is individualised and constantly tweaked. "The issue is that patients are hesitating to come to hospital. They don't visit as frequently, and they tend to do self-medication even though IBD patients are well aware that this



Dr Prithvi Priyadarshini

could be dangerous."

Telemedicine has made it easier to manage long term patients, Dr Priyadarshini said. "Newly diagnosed patients and the patients who are developing symptoms now are the ones who are lagging behind in proper treatment." A mainstay in IBD diagnosis are endoscopy or colonoscopy procedures. Over the last 18 months, Dr Priyadarshini has observed a lot of hesitation from newly diagnosed patients in undergoing these procedures. "This delays the diagnosis and we need to convince the patient saying that these could be the complications, and these are the reasons why you need a colonoscopy."



When it comes to COVID-19 infected IBD patients, Dr Priyadarshini says it's a completely different story. A lot of times, gastroenterologists work with physicians and intensivists to treat these patients, because both IBD and COVID-19 are treated separately. "If an IBD patient gets COVID-19 it could be mild, moderate or severe. They can come out of it depending on the severity of COVID-19, not the severity of IBD."

Ultimately, gut health needs care and attention, starting with good nutrition, stress management and probiotics, which Dr Priyadarshini sees as "wonderful when taken in a proper sequence and in a proper way".

A lot of her patients have expressed worries over taking the COVID-19 vaccination and whether it will exacerbate IBD. Dr Priyadarshini stresses that there is no link and encourages everyone to get vaccinated. "From January this year, it's very clear to all of us that the vaccine is safe for IBD patients. Please go ahead and take the vaccine. It's safe."

To learn more about IBD, Colitis and updates in management of gut health in primary care, attend Dr Priyadarshini's talk at the Family Medicine conference at 10.15am today.





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### Meeting the increasing demand for immunity boosters

Interview with Tariq-Mitchel Kaadan, Business Development Manager, America Medic & Science (AMS)

By Deepa Narwani, Senior Editor

### What is AMS showcasing at Arab Health?

AMs is an American nutraceutical company. We specialise in the development and manufacturing of all-natural vitamins, minerals, and other healthcare products. We mainly specialise in fertility supplements. But over the years, we have branched out into different categories within the vitamins sector, which we are showcasing here.

### How did AMS respond to the increase in demand for vitamins due to the COVID-19

Due to the pandemic, we saw significant demand for immunity boosters and immunity supporting products such as zinc, vitamin C, and other unique immunity blends. We weren't expecting this demand, and it came as a surprise. But with the support of our team and network of suppliers, vendors, and customers, we have managed to fulfil and meet this demand. We did experience a slowdown in our fertility range, but that's picked up as well now.

### How, in your opinion, can businesses continue to operate in the new normal?

If it weren't for businesses uniting, we wouldn't have made it out of COVID, whether as corporations or individuals. We saw how companies' cooperation allowed for the mass production of masks and other types of protective equipment and vaccines. COVID has allowed us to think outside the box about cooperating and working together to deliver better quality products to customers and better services. The ecosystem and the landscape of healthcare have grown.

### Are there any future plans that you would like to highlight?

We have a few plans in the pipeline but will announce these maybe at the next Arab Health! Our goal has always been to serve our customers better, cater to their needs, and ensure they get their vitamins and supplements most conveniently. We are delighted to be at Arab Health. It's exciting



for us as this is the first show we are attending post the pandemic. It's been nice to see the attendance and see that people are getting comfortable with being around one another again. It's nice to know that exhibitions can still happen the way they used to happen before.

## Quality Management panellists emphasise the importance of patient engagement in digital innovation

By Matthew Brady, Head of Content

Management Conference at Arab Health came together to offer final thoughts following a day of talks on digital innovation.

According to Prof Paul Barach, Clinical Professor, Wayne State University School of Medicine, Children's Hospital of Michigan, while big data is the an "incredible way" to understand population health and realise the "Quadruple Aim", many companies haven't approached this with the best transparency or engagement with patients and providers. He cautioned that questions remain over how it might work - and whether it might exposure patient privacy or bring hospitals "to their knees" through hacking. This can only be adequately examined through a framework of a public-private partnership, that engages ethicists, scientists, and users in a way that supports their journey of wellness.

Melania Endicott, Senior Director of International Education & Training for AHIMA, stressed the importance of having good quality



health information, a need that requires trained staff educated in documentation best practices, how to maintain records and how to ensure the accuracy of data going into records, that is also accessible by the right people at the right time.

Virtual health needs to be viewed as part of the continuum of care, emphasised Katerina Tarasova, Executive Director of International Accreditation at Accreditation Canada, and attention needs to be paid to patient-centric care. Integrated care is an important factor when looking at all the components and how the system is reacting to new developments in virtual health.

Richard Wyatt-Haines, founder and director of HCI, highlighted how no technology can be deployed without people – and that they need to be clear about goals, set by leadership, with the commitment to making it happen. Only by bringing a group together comprising operation managers, clinicians and patients - to ensure they are engaged - can all components come together to ensure success.

## LG showcases medical displays to empower confident diagnosis and operations

G Electronics (LG) is showcasing its advanced medical display solutions to empower better patient care at Arab Health 2021.

Under the show's theme of 'United by Business – Driving the Industry Forward', attendees are exploring the latest technological innovations designed to improve the speed and accuracy of diagnosis and treatment of medical conditions, in accordance with upholding standards of providing quality healthcare. Aligned with this agenda, LG is showcasing its current line-up of medical displays and has also revealed its latest solution especially for Arab Health visitors – announced globally earlier this week.

"As a leader in the premium monitor market, LG is supporting healthcare providers in their efforts to ensure more accurate medical diagnosis, operations and treatment. Medical displays play a pivotal role in ensuring positive long-term outcomes, so the importance of proper perception and interpretation cannot afford to be overlooked. We are proud to be catering towards the healthcare sector and believe that our medical displays are offering a clear market differentiator — owing to the level of detail and practicality we have embedded into each of their designs," said Hongju Jeon, President of LG Electronics Gulf.



## Fujifilm looks to leverage AI across different imaging modalities

By Deepa Narwani, Senior Editor

t Arab Health, Fujifilm Middle East was participating to spotlight its acquisition of Hitachi's Diagnostic Imaging-related business to expand its healthcare business further.

In an interview with *Daily Dose*, Michio Kondo, President, Fujifilm, said that the acquisition was completed on April 1, and their presence here is to show how these companies are collaborating with each other. Excerpts:

### What has been the impact of COVID-19 on the medical imaging industry?

COVID-19 has impacted medical imaging in a big way. All of the investment now has shifted towards medical preparation towards prevention. We have put in a lot of effort to prevent COVID-19. But we recognise that patients will be hesitant now to come into the hospitals due to the pandemic and, therefore, some products and businesses have been impacted.

At the show, we are showcasing solutions in the diagnostic area and are displaying products, such as mobile X-ray and chest-X ray, which are helping in the prevention of COVID-19. We are also working with a pharmaceutical company, who are carrying out the R&D process, and we are supporting the production of the COVID-19 vaccines.

### What has been the impact of AI in medical imaging?

We aim to incorporate AI in all our X-ray products. Currently, most of our products have already



Michio Kondo

been combined with an AI function. We are also working towards incorporating these in CT and MRI. These functionalities are going a long way in helping radiologists.

### How, in your opinion, can companies continue to operate in the new normal?

COVID-19 has accelerated the adoption of technology, which is excellent. But having physical contact is also essential. Thanks to the vaccine, people are ready to travel and have that physical connection again, which is a big motivation. So, we have to prepare for servicing the anticipated demand.

### Are there any future plans you would like to highlight?

The partnership between Fujifilm and Hitachi is quite substantial, and the companies have now merged. We will continue to invest in the healthcare growth business. We are working towards exploring the synergy between the companies.

## UAE's COVID-19 response based on continuous assessment and evaluation



r Farida Al Hosani has outlined the UAE's response to COVID-19 centred on five pillars: healthcare readiness, adopting technologies, unified communication, effective collaboration and emergency response system

During the COVID-19 Special Edition Conference at Medlab Middle East, Dr Farida Al Hosani, Official Spokesperson for the UAE Healthcare Sector, discussed the UAE's response to the COVID-19 pandemic.

She highlighted that the UAE's COVID-19 response was based on continuous assessment and evaluation of the epidemiological status and dynamic action to minimise the impact of the disease. The UAE's response was centred on five pillars: healthcare readiness, adopting technologies, unified communication, effective collaboration and having an emergency response system.

Addressing the audience via video link, Dr Al Hosani, who is also the director of the Communicable Diseases Department of the Abu Dhabi Public Health Centre (ADPHC), explained that the UAE's preparedness to deal with infectious diseases began long before COVID-19, helping to

create an agile healthcare infrastructure to deal with the pandemic.

Dr Al Hosani said: "The adoption of technologies helped the country rapidly upgrade its testing capabilities and diagnostic methods. Unified communication methods were successfully used to build a level of trust between the people and the government. Collaboration between different sectors and institutions, both private and public, has been tremendous and is one of the main success factors in dealing with the pandemic.

"The UAE's emergency response system is also very mature and well established, and has been ranked at the top of the global list of emergency preparedness for the handling of the pandemic."

Some of the key success drivers of the UAE's response to the pandemic include improving monitoring and early detection by expanding the number of surveillance team field medical teams, investing in laboratory capabilities to accelerate testing by adopting the world's first Laboratory Business Management System and establishing drive-through centres across the country, establishing a Home Isolation Programme to provide a better experience for patients, adopting a dynamic dashboard for monitoring the performance of the pandemic measures and overall health system, and a heat map initiative for focused testing and screening in high-risk areas.

"The UAE's experience with the COVID-19 vaccine clinical trials is one to be learned from as it successfully instilled confidence in the population and prepared them for the rollout of the vaccine," Dr Al Hosani explained.



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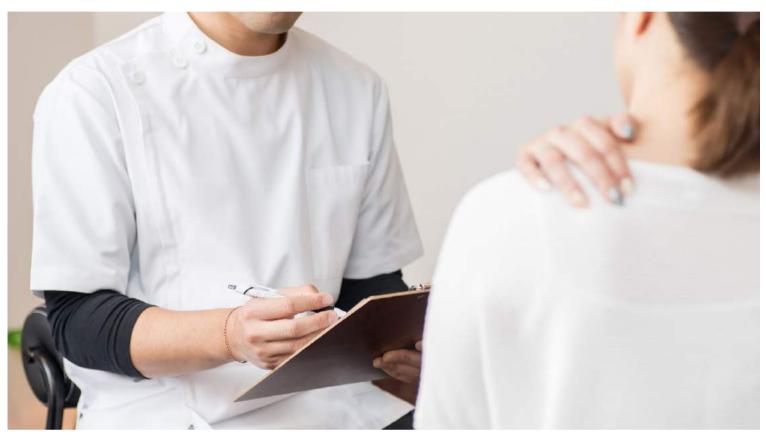




## Musculoskeletal tumours can present diagnostic challenges

### Red flags you cannot miss

By Joel Mayerson, MD, FAOA Medical Director, Perioperative Services Medical Director, Sarcoma Service Line, The Arthur G. James Cancer Hospital and Solove Research Institute Professor, Orthopaedics, Division Chief, Orthopaedic Oncology The Ohio State University College of Medicine Department of Orthopaedics, Columbus, Ohio, USA



usculoskeletal tumours provide a very challenging group of clinical problems that require extensive clinical experience to treat. A thorough knowledge of a diagnostic and treatment algorithms are needed in their evaluation as well. Bone and soft tissue tumours present in many ways when located in the musculoskeletal system. This article will outline the challenges associated with the presentation of both entities.

Benign bone tumours often present in asymptomatic fashion. They are often found serendipitously after an injury or during a screening study in children. In this instance, as long as they are not painful, they are followed clinically. Typically, they will have very welldefined borders and a sclerotic rim. If there are any concerns about the aggressiveness of the lesion, short interval radiographic and clinical follow-up versus advanced imaging is indicated. Malignant bone tumours often cause pain and swelling. Sometimes after an injury, it can be difficult to determine whether radiographic imaging is warranted. The pain is associated with an injury should subside over a couple of days to a couple of weeks. If the pain does not subside plain radiographs of the affected bone should be obtained. Typical symptoms associated with aggressive/malignant bone tumours include night pain that awakens the patient from sleep, pain that is unrelieved by rest, and pain which is constant.

The presence of constant pain is more commonly a worrisome finding. Neoplastic soft tissue musculoskeletal pain is not often increased with activity and is not relieved by rest. Plain radiographs are the first imaging modality that should be obtained upon presentation for a bone lesion. Benign lesions often have a geographic pattern where all borders of the tumour are fully delineated on plain x-ray alone. Malignant tumours have destructive patterns of behaviour characterised by a moth-eaten pattern or

permeative pattern of bone destruction.

Both of these patterns of bone destruction do not allow complete delineation of the borders of the tumour and necessitate further evaluation when present. If there any concerns on plain radiographs about the aggressiveness of the lesion, advanced imaging is required. MRI delineates the bone characteristics as well as the surrounding soft tissue characteristics better than CT scan and is the preferred imaging modality. When an MRI demonstrates aggressive findings, referral to a specialist in musculoskeletal tumours should occur.

Benign soft tissue masses are extremely common. Malignant soft tissue masses are outnumbered by benign masses by greater than 100-1. The exact incidence of benign soft tissue masses is unknown as many of these are asymptomatic and often undetected. The characteristics of benign soft tissue masses are size less than 4-5 cm, superficial to fascia, softer than muscle, and mobility when palpated. Benign soft tissue masses are painful much more frequently than malianant soft tissue masses. Post traumatic injuries can mimic soft tissue masses and need to be followed closely. Stability of size is also a characteristic of a benian soft tissue mass. Pain is a misconstrued characteristic of a soft tissue mass that is malignant. Malignant soft tissue masses most commonly present as a painless mass. The characteristics of malignant soft tissue masses are size greater than 5 cm, deep to fascia, firmer than muscle, fixed to fascia, and those that are rapidly growing. Malignant soft tissue masses in the extremities are most often soft tissue sarcomas. If the presence of any of the characteristics associated with malignant soft tissue masses are present, an MRI with and without contrast is indicated.

Heterogeneity of signal intensity on MRI is also concerning if the lesion is correlated with other findings for malignancy. If there are concerning findings on the MRI, referral to a specialist in musculoskeletal tumours is needed.

Once findings of a potentially aggressive soft tissue or a bone tumour are demonstrated, systemic staging is indicated. Malignant musculoskeletal tumours most commonly metastasize to the lungs and therefore a chest CT is warranted. A technetium whole-body bone scan is utilised for bone tumours to see if the lesion is isolated or multifocal. In patients over 40 years of age where metastatic disease is a concern and abdomen pelvis CT scan should be performed to evaluate for primary tumour sites. A PET-CT scan is also a potential option to evaluate the entire body for metabolically active areas. This test is more expensive and has a higher false-positive

Joel Mayerson

rate than CT and bone scan. Therefore, the clinical care team needs to evaluate the utilisation of a PET-CT carefully.

Systemic problems such as infection can mimic both bone lesions and soft tissue masses. Unexplained extremity pain that does not go away within a couple of weeks should have plain radiographs. Unless the bone and/or soft tissue lesion can be confirmed to be benign on plain x-ray or exam, advanced imaging is often required. Sometimes trauma can also mimic bone and soft tissue masses.

Myositis ossificans is a reactive, posttraumatic bone-forming lesion that demonstrates ossification in the soft tissues. Clinical correlation must be used with the appropriate imaging studies to confirm diagnosis. Biopsy of this lesion should be avoided if at all possible since the histology can be confused for a malignant lesion by an inexperienced pathologist.

Trauma can also cause bleeding into either cystic structures such as a Baker's cyst or the creation of a hematoma. Sometimes advanced imaging can have a difficult time telling the difference between hemorrhagic changes and malignancy as they both can be heterogeneous in signal intensity on MRI. In this case, serial imaging done in short intervals and/or biopsy may be needed to rule out an aggressive lesion.

Musculoskeletal neoplasms are a challenging group of diagnoses for even experienced clinicians. Using the above-outlined algorithm, non-specialist physicians can appropriately evaluate these patients. Whenever the clinical and radiographic evaluation brings a concern for musculoskeletal malignancy, the patient should be referred to a musculoskeletal oncology expert with experience in management of these challenging problems.

Prof Mayerson will be discussing 'Tumours masking as MSK issues – red flags you cannot miss' at the Orthopaedics and MSK conference.

Malignant soft tissue masses are outnumbered by benign masses by greater than 100-1. The exact incidence of benign soft tissue masses is unknown as many of these are asymptomatic and often undetected. The characteristics of benign soft tissue masses are size less than 4-5 cm, superficial to fascia, softer than muscle, and mobility when palpated.

## Merging technology and health

### A transformation programme for hospital systems

By Richard Wyatt-Haines, Director, HCI

echnology is being used as a catalyst to deliver sustainable and repeatable benefits for patients, clinicians, and hospital systems across the globe. Torbay and South Devon NHS Foundation Trust in the UK is one such example.

The CONNECTPlus app which is described in this article is a platform for managing patients with multiple conditions. In England, it is being used to reduce demand and cost.

But for medical tourism destinations such as the UAE, it offers a single digital health platform to manage patients' health journeys, from pre and post treatment.

By using CONNECTPlus the patient's treatment journey begins as soon as they book their treatment. The app enables health services to provide patients with condition specific information and guidance wherever they are in the world. It provides them with the information they need to help them prepare and rehabilitate and can enable them to capture information about their condition to aid the diagnosis and post procedure treatment programmes.

As one of the first integrated care organisations in the UK Torbay and South Devon NHS Foundation Trust provides high quality, personalised acute, elective, specialist, social and community care services to a resident population of over 290,000 people, plus about 100,000 visitors at any one time during the summer holiday season. They employ over 6,500 staff including front-line health and social care staff, such as nurses, occupational therapists, social workers, consultants, and physiotherapists who work in people's homes and community settings.

### The challenge

The hospital, like almost all trusts in the UK, faces multiple challenges of budgetary constraints, shortages of health staff and yet growing demand from an ageing population. In South Devon, the population is on average around 10 years older than the UK general population and within the footprint there are also towns with very high levels of deprivation. These factors bring increased pressures and demands to the health of the population and in turn the hospital.

In addition, COVID-19 has added to the pressures on the system, increasing the backlog of patients needing elective care and outpatient appointments. For example, the usual throughput of hip and knee replacement procedures is 600 per annum and the waiting list has now risen to around 1100. Approximately 75,000 people received treatment in their Emergency Department each year, and 41,000 treated in the Minor Injury Units. There are around 500,000 face-to-face contacts with service users and carers in their homes and communities each year

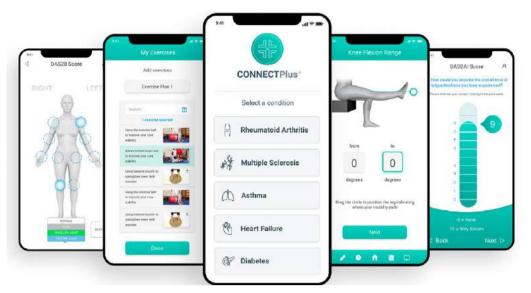
### The role of digital

The trust believes that digital health has a major role to play in in addressing these challenges and, it will mean:

- Increasing capacity with limited resources
- Improving safety and quality
- Empowering citizens, patients, and carers
- Being data driven
- · Saving money

Their overarching digital strategy is a transformation strategy for outpatients which focuses on the following objectives:

- Reducing the number of outpatient appointments required by 30 per cent
- Shortening remaining outpatient appointments and facilitating the delivery of remote virtual consultations (target 50 per cent of outpatient appointments)



• Enabling staff to operate at top of their licence

### The solution

To enable them to scale their use of digital resources, principally video and apps to support and transform their pathways of care to support patients and reduce demand, they formed a joint venture with an independent company,

HCI, with support from the Trust, has designed a unique, multiple long-term conditions app CONNECTPlus and the Trust has selected it as one of its principal digital tools to enable them to deliver the digital health strategy and achieve the transformation objectives for outpatients.

Designed with patients and clinicians, CONNECTPlus is an app that helps people with multiple health conditions. It gives them the information they need to help them manage all their conditions so that they can look after themselves better at home and reduce their demand on the health system.

They can keep a record of how their symptoms progress, the appointments and treatment activities they book and the medications they take so that they can take control of their conditions and are better able to get on with their lives and need fewer appointments.

When patients do need an appointment the trend data they can provide enables more remote and virtual consultations reducing the number of face-to-face appointments.

### The impact

Early evaluation showed a reduction in rheumatology related appointments of up to 50 per cent and seven hours of weekly nursing time released from the rheumatology education programme for patients being prescribed new medications. Within six months, the waiting times for MS clinics were reduced significantly. These early results gave a strong enough indication of the impact of CONNECTPlus to support delivery of the objectives set for the outpatient transformation programme.

The hospital has shorter waiting lists and can focus their resources on the people that really need their help and offer better ways of supporting people to manage their conditions and live their lives more independently.

Adel Jones, Director of Transformation and Partnerships at Torbay and South Devon NHS Trust says of the app: 'I have real confidence in the product because actually, it's been designed by patients and clinicians so that it meets their needs'.

Patients have also responded positively to the use of the app saying: "I believe this app is a tool for empowerment. It is actually something that encourages you to be resilient, it gives you the tools to work with the information, and notice some progress for yourself and think yea, I can do this, I can cope," Valerie Bailey, App user and MS

As a result of the successes achieved at Torbay and South Devon NHS Trust, HCI now provides



Adel Jones

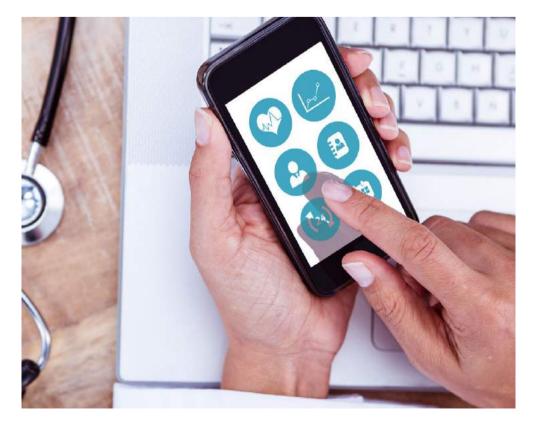


Richard Wyatt-Haines

services to multiple trusts across the UK. It has the largest library of health and care videos in the UK, now standing at around 1,000 videos and is the provider of the National Video Library to NHSx, part of NHS England www.healthandcarevideos. uk. This library supports the patients of secondary and primary care right across England.

### Next steps

2021 brings an accelerated approach to the implementation of CONNECTPlus in the hospital with 15 additional conditions being added across multiple pathways including multiple conditions in Cardiology, Ophthalmology, Gastroenterology, Respiratory and Diabetes, plus a pilot programme in planned care for Hip and Knee replacement where the app will be used for preoperative education, to create a remote joint school, and post-operative monitoring to reduce postprocedure appointments by 80 per cent and achieve savings of £216,000 each year.



You can hear more about the joint venture and the impact that their co-designed solution is having on the health system in the UK and how this can be transferred and applied internationally, in two sessions during Arab Health, the Quality Management Conference on 23rd June and the Digital Health and Innovation Conference on 24 June.

In the sessions, Director of Transformation and Partnerships at Torbay and South Devon NHS Trust, Adel Jones will be joined by Richard Wyatt-Haines, Director of HCI to reflect on the main lessons that have arisen from this programme, focusing on the technology, change methodology, and the impact. They will also discuss how the programme can be extended into more conditions and how staff and systems across the globe can be supported to accelerate the change and the delivery of targeted impact.

## Delays to secure quality management accreditation may be holding hospitals back

Quality management is a constant process, starting with assessing risks and prioritising corrective actions. The pandemic may have caused delays that can impact patient outcomes, according to Joint Commission International's Dr Joel Roos.

By Deepa Narwani, Senior Editor

ospitals and healthcare organisations that adopt a risk-based approach to onsite evaluations can focus their limited resources on the outcomes that truly matter. Dr Joel A Roos, Vice President of International Accreditation, Quality Improvement and Safety at the Joint Commission International (JCI) is speaking at the Arab Health Quality Management conference today to raise awareness of the benefits of the JCI SAFER Matrix.

The SAFER Matrix allows health surveyors to perform real-time, on-site evaluations of deficiencies so organisations can prioritise corrective actions. This data-led approach may make or break overstretched hospitals during the pandemic, so that CEOs and quality improvement teams can focus their efforts on what is important, Dr Roos said.

"One of the key benefits is that organisations can know where they stand. It allows people to focus time, money and effort on the most important product and issues that will affect patient safety. At the end of the day, it provides clarity," he added.

"Infection control in organisations is a priority during the pandemic. We certainly haven't changed our standards. We've noticed an improved quality when we have evaluated institutions for the accreditation process."

Dr Roos noted that it was hard to organise in-person assessments as an accrediting body during the early stages of the pandemic. "The last thing we wanted was to get in the way of patient care in an emergency situation. Hospitals had to delay accreditation and focus on patients ahead of everything else, and rightfully so," he said

JCI adapted their accreditation to conduct remote surveys during lockdown. "This is where video technology, whether it's via cell phones, tablets, or laptops, has been useful. We can do a very accurate and comprehensive survey remotely without ever leaving the confines of another country."

JCI has also adopted a hybrid approach where they send in one person instead of a team, and use technology to expand their teams in other geographies. "We've started using other

technologies and methodologies to perform the same function."

The biggest challenge for hospitals has been to really focus on quality improvement, Dr Roos said. "Healthcare workers have been pressed into service to provide care. It's all hands on deck during the pandemic just to keep the operations running. In a mass casualty event in an emergency department, (healthcare workers) are focused on getting things done, and may be doing things differently than if they were in normal operations."

With COVID-19 pushing telemedicine to the forefront, JCI is now working on accrediting these services. "It's kind of the Wild Wild West (in telemedicine) and there are so many different organisations doing it differently. It's very effective, it's not going away, and nor should it.

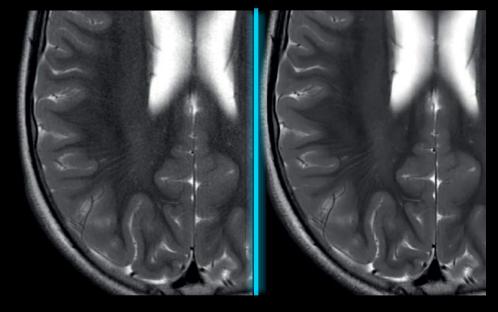
"It has a tremendous role in bringing access to patients in remote areas, for example, but there needs to be some quality standards and methodologies in place. They don't exist. We are clearly going to move in that direction and focus on that to provide a comprehensive solution."

To learn more about improving your organisation's quality management, attend Dr Joel A Roos' talk at 12.45pm at the Quality Management conference at The Conrad Hotel.



Dr Joel Roos





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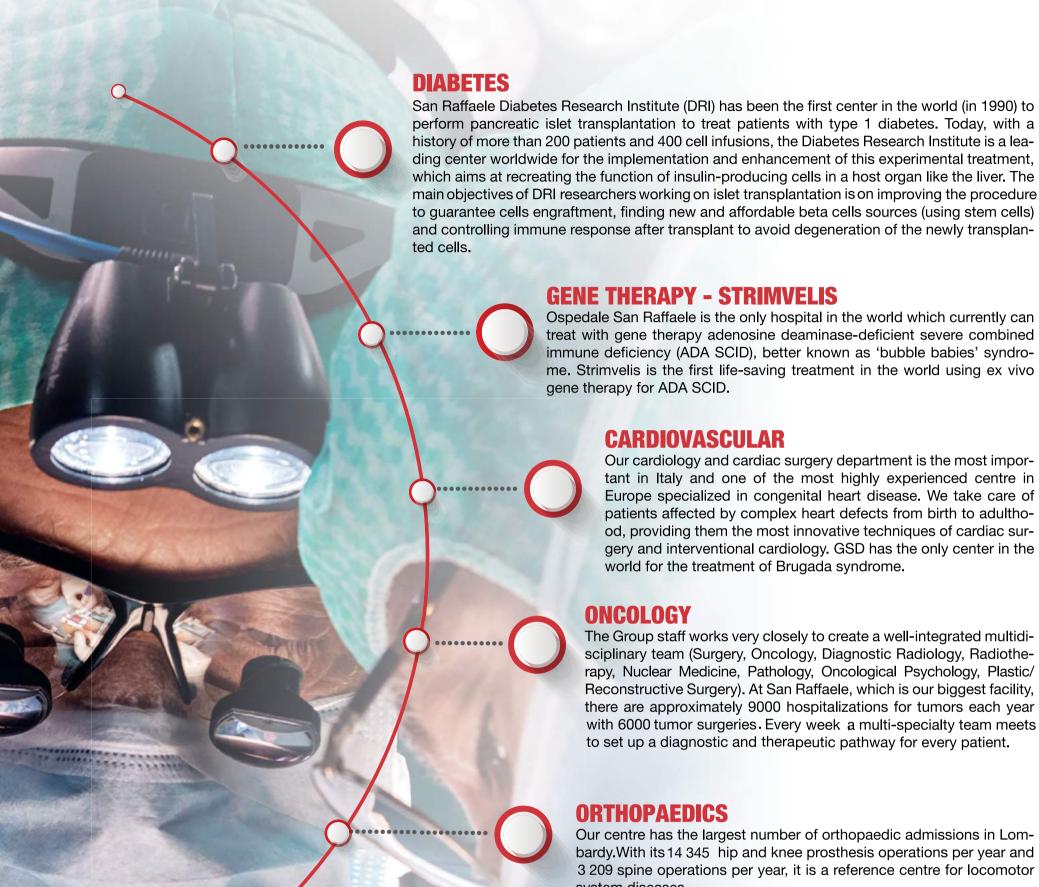
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## Autonomous labs are not far away, says Microsoft Research chief during Medlab Middle East

### The convergence of technology and medicine today will lead to an autonomous future for healthcare

By Daily Dose Staff



ccording to Microsoft Research's Chief Medical Scientist, Dr Junaid Bajwa, we are living in a moment where technology, data and consumer demand is reshaping the healthcare market and redefining how value is defined and captured. This convergence of technology and medicine today, in delivering increasing levels of automation and soon increasing levels of artificial intelligence (AI), will lead to an autonomous future for healthcare.

During his talk at the Laboratory Management Conference at Medlab Middle East, Dr Bajwa examined the role of AI in the laboratory. He said that more and more data in the medical care space, such as increasing data around genetics, about the environments, public health parameters and social circumstances that we live in, and data from wearable devices, is becoming more freely available.

"Combining all of these data assets together is a computational challenge but leveraging that for the purposes of health is the next frontier of healthcare," he explained.

With the World Health Organisation predicting a 14 million shortfall in healthcare workers by

2030, he asked the audience to consider the role that technology can play in fulfilling that gap. "Healthcare is exorbitantly expensive with 5% of the population taking anywhere between 25-60% of those resources from the most vulnerable in society. We need to move to a healthcare system that is not just about diagnosis and treatment, but about recognising and prevention, and ultimately towards the personalisation and personal healthcare," he said.

In the laboratory, there are many areas of innovation in terms of automation advancements in home collection, home testing, Point of Care testing, all ultimately driving better patient experiences. There are also huge technology shifts happening around genome sequencing, digital pathology and automated testing systems.

Dr Bajwa said: "In terms of the role that AI can play, AI requires access to data, access to domain expertise and access to massive computing power. Today's story is one of automation of processes, aggregation of data, moving to intelligent analysis and AI, and then repeating that cycle.

"If we get this right, it really has the potential to reduce costs and support clinicians by unmasking occult disease types, generalising new associations and perhaps even generating new novel hypotheses and new mechanisms with which we diagnosis disease in ways that we could have only imagined in the past."

Process automation, digital integration, expanded access, data management and sharing, logistics, and personalised analytics are only a few things that are enhancing the lab experience. "We are already today creating the "self-driving lab" of the future - autonomous labs are not far away," Dr Bajwa added. "However, AI today is really only being used in specific use cases, but fundamental infrastructure advances are required to achieve AI-driven and autonomous experiments in the future."

Rejoy Penacerrada, Conference Director for Informa Markets, said: "Over the next few days, Medlab will see the return of the much—anticipated Clinical Microbiology Conference focusing on the latest developments in microbiology and immunology and the role of the medical laboratory in both the management of infectious diseases and epidemiology of infections.

"Scientists, researchers, and consultants from across the Middle East region will also be able to exchange their knowledge and views on the current developments at the upcoming Clinical Chemistry, Blood Transfusion and Molecular Diagnostics Conferences at Medlab Middle East."





By Informa Markets

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Arab Health 2021 Robotic Lounge at Hall 4, A10



### Psychiatric care in a pandemic

By Fatima Abbas, Content Executive

r Nahida Ahmed, consultant psychiatrist, and chair of Behavioral Health Council for Abu Dhabi Health Services Company (SEHA) speaks about the importance of breaking the silence surrounding mental health.

## The impact of the pandemic has significantly changed our methods of clinical patient care, in what way has it changed psychiatric care?

There was a pressing need to bring psychiatric care to the surface. Pre COVID, patients suffering from mental and behavioral disorders were hesitant to seek support unless their symptoms were acute. COVID-19 unraveled different mood and coping issues, creating an emphasis on patients coming forward and receive treatment in time. In terms of delivering care, there have been advancements based on studies, with results indicating tele psychiatry and remote care to be very advantageous for our service delivery.

### Has there been an openness to address mental health issues?

Absolutely, because people have been self-isolating or in quarantine which has affected them in various ways. Patients who contracted the virus have not only experienced physical implications but also mental health complexities. Symptomatically, patients who suffer from behavioral or mental disorders are a little different from the others, for example, having an inflammatory response has caused them to be predominantly anxious, or have depressive episodes. Then there are patients who were not affected by the COVID virus, but they were isolated or estranged from their families for a long period. This resulted in insomnia and anxiety



disorders and coping issues. Therefore, there have been different phases in which people were reported to be acutely sick, while some patients with no history of mental disorders communicate that they have not been feeling at ease. So it's a spectrum actually, and all these findings are helping us improve patient care.

### What does the future hold for psychiatric care?

I want to be optimistic, and I believe that although we are in extremely challenging times, the silver lining is that many people on different platforms are using their voice to speak out. From leaders of the countries across the world, to health care

professionals, people are advocating for mental health. There is a focus on not only treatment, but also discussing mental health and well-being. This huge momentum is building up, speaking about self care, staying healthy, and keeping well mentally and physically. Psychiatric help is not only becoming more accessible, but patients are more aware of seeking it. There is an open conversation taking place where people are addressing aspects of discomfort and wanting support. So I think that's where we are heading, people being more mindful about their psychiatric needs.

"The silver lining is that many people on different platforms are using their voice to speak out"



Dr Nahida Ahmed





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