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"Transitioning to future with stronger APAC healthcare ecosystem"

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In conversation with "Dr Ian Chuang, Chief Medical Officer, Elsevier"

The ongoing COVID-19 pandemic plaguing countries worldwide has created unprecedented change for the global economy, especially healthcare institutions at the forefront. Hospitals across the world are facing never before seen challenges that have accelerated the development of technological innovations. As we navigate the complexities of the virus and the amount of disruption it has brought about, one thing is certain – COVID-19 will be with us for the foreseeable future. It's time to focus on this new reality and how we can achieve a sense of normalcy. **Dr Ian Chuang**, who is currently the **Chief Medical Officer at Elsevier** shared his insights on how the healthcare ecosystem can prepare for the 'new-normal' in a post-COVID-19 world.

How can healthcare ecosystems establish a strategic and resilient pandemic preparedness model?

There are and continues to be many lessons to be learned from this pandemic. Some of the areas are broad and systemic, requiring larger-scale evaluation of the fundamentals of the health care system and model of care itself. Ideally, we proceed with any change in a human-centered design thinking approach.

With many uncertainties about the disease, the COVID-19 pandemic has highlighted the importance of accessible and trusted data for frontline clinicians providing care. The pandemic crisis has sped up the delivery and accentuated the weakness in the healthcare system. The healthcare system was not ready when the disease first broke, putting a strain on the entire health system. As healthcare workers were over-taxed and reacting to the evolving crisis, patients were left to figure things out on their own. There was no recipe to fall back. Doctors' offices were closed, elective surgeries canceled, and

patients did not know where to seek care, let alone whether the Emergency Department was safe. The healthcare system was barely keeping up with the demands of COVID-19 related care; definitely, there was a shortfall of how well other care needs were met.

As the healthcare system reacts, ultimately, preparing and equipping the frontline caregivers is where the impact is made for the patients and the population being served. What does the caregiver need in response to the evolving circumstances? Equally important is what do the patients and the broader community being served by the hospital or health care system need to know and do? Communication, access to care, and care coordination are broad needs that are important to build a pandemic preparedness model.

How do we mitigate the adverse health impact from the future pandemic wave by strengthening and collaborating various divisions at healthcare?

The pandemic continues to rage on globally, affecting economies and healthcare systems beyond borders. This has heightened the need for real-time information to be shared and assimilated with the best care standards and experiences globally in order to mitigate any adverse health impact. COVID-19 is unlikely to go away quickly. And after COVID-19, we know there will be something else. This pattern is well established with many data points. Our preparedness should be for what looks like a COVID-19 marathon, but also better preparedness for the next unknown to come.

In times like these, research needs to be combined with real-world evidence and make their way to healthcare professionals so that the knowledge lag and the degree of knowledge variability is minimized. It is important that trusted evidence-based knowledge partners are available for healthcare professionals to seek information and corroborate clinical data with academic research, to enable better quality and safety of patient care.

It has never been a better time to leverage technology to make knowledge readily available and easily accessible to all. Institutions can consider integrating their electronic health record (EHR) system with clinical decision support tools so that healthcare professionals can have timely access to the latest clinical research and guidelines and provide better guidance to patients at the point-of-care. This improves the efficiency of clinicians in their work within the EHR, aligned to a knowledge-driven care process.

How do we protect healthcare workers (doctors, nurses, ward staff) during the course of infectious disease treatment and to set their immune system on alert even during their routine services?

As the first line of defense when combating infectious diseases, infection control measures are critical in helping to protect healthcare workers on the frontlines of care. Healthcare institutions need to have an integrated infection preparedness strategy to minimize nosocomial transmissions and enhance patient safety. The infection preparedness strategy should encompass infection control measures, risk assessment frameworks, stockpile management systems, quarantine requirements, and more. Such a strategy will help to organize and inform all involved personnel to ensure that everyone is clear of their roles in managing the epidemic.

To effectively contain any suspected cases and mitigate the risk of infection to other patients, healthcare institutions should designate isolation rooms or quarantine facilities within their premises to house any suspected cases when admitted. It is also essential for hospitals to have a ready supply of personal protective equipment for healthcare workers. This needs to be constantly monitored to cope with any sudden surges in demand. In addition, institutions need to implement a standard set of safety measures according to the latest guidelines for healthcare workers to abide by. Resources such as an isolation precaution checklist and a personal protective equipment advisory leveraging evidence-based guidelines and clinical best practices enable healthcare workers to provide the best care for patients.

While these pre-defined processes and policies are essential for an organization to be prepared for the unexpected, adherence to these defined best practices is key to its effectiveness. The success of any well-defined process is often limited by its weakest link. Consistency and comprehensiveness of a risk mitigation plan are measured as an organization based on individual performance. But because of the inter-dependencies, a weakness in an individual or an area seeds and cascades across the organization. Hence, the importance of top-down organization and bottom-up individual performance metrics. Supporting clinicians with the latest knowledge and best practice of skills create the cognitive and muscle memory in them to respond to changing clinical scenarios.

Can you elaborate on the need for a strategic partnership between Governments and public health sectors for better pandemic response measures?

The pandemic has highlighted the importance of breaking down the boundaries between different organizations and exploring

opportunities to create a better pandemic response. Never before has there been a better time to leverage the potential of sharing information between the government and healthcare systems to ultimately shape governmental responses to the healthcare crisis and inform the development of potential treatments. This collaborative effort is facilitated by the presence of the right data shared to produce the relevant information and right knowledge to guide both broad public health decisions and actions in coordination with local patient care by health care systems.

An example would be the contact tracing process. The contact tracing process is a time-sensitive and manpower-intensive process, which is essential to quickly identify and isolate close contacts of affected patients. This process can be facilitated through close collaboration between the government and the healthcare system. Some countries have taken to linking the electronic health record system with the immigration systems. This helps to cross-check the date of the initial onset of symptoms with the immigration records. The reality is there is no single starting point or the endpoint of population risk vs individual patient care. We are now all inter-related in some manner, and sometimes in ways that impact our respective health and well-being.

COVID-19 pandemic became a catalyst to address many unattended issues. In your opinion how should such unattended interests at hospitals be addressed?

The COVID-19 pandemic has brought about rapid advancements in healthcare innovation through digitalization and this wave of digitalization is the key to establishing our strategy for future outbreaks. During crisis situations, having access to reliable real-time information is a key enabler to determine our response. With the exponential amounts of discoveries happening daily, it is now the time to integrate digital capabilities with clinical knowledge so that clinicians can keep up with the evolving nature of patient care and disease management.

Knowledge is ultimately most useful if it can be translated within the care process and executed by the clinicians during patient care. Here are some key areas where information technology can integrate clinical knowledge and enable clinicians during a pandemic:

- Access to the source of the latest research and guidelines at the point-of-care.
- Availability of the latest practice guidelines at the point-of-care for clinical decision support to improve efficiencies in clinical workflows.
- Adapting learning priorities of nurses and medical students to ensure their knowledge and skills are abreast to the requirements of the crisis.
- Refreshing and reviewing clinical skills to overcome staffing shortages and shift care teams to equip them with relevant knowledge for different clinical scenarios and re-assignments.

Underlying these is the need for clinical leadership support. Clinical leadership can equip the clinical teams with the necessary tools to ensure safety and quality care. Furthermore, the best practice for disaster or crisis preparedness is established policies and processes to respond quickly and effectively. Enabling this, with regard to the evolving pandemic types of crisis, is an information system infrastructure that supports the evolving care process and standards. Data ultimately inform the leadership and provides important practice-based knowledge for both clinical process improvement as well as research.

Anecdotally, we are hearing from customers and other healthcare organizations who have taken advantage of Elsevier's COVID-19 Healthcare Hub to access, download, and incorporate our content into their care process, quickly adapting how their patients are cared for in reaction to changing recommendations. Similarly, ready-to-use skills and training programs have supported those clinicians who had to quickly step into high acuity patient care scenarios.

Asian Fintech companies and governments have always had a stringent budget for healthcare research activities. What are your visions and suggestions to authoritative bodies (including regulatory bodies) in order to accelerate the discoveries and innovations of life-saving agents?

From the onset of COVID-19 to date, research and discovery are evolving and refining at an exponential rate. What is important is the ability for research to be shared, translated, and transferred to impact any discoveries.

To facilitate the research process, researchers and scientists need to be supported with the right environment to capture clinical trial data securely. It can come in the form of an electronic data capture platform in which researchers can quickly input, monitor and run reports to collect accurate and reliable subject data for analysis. This allows research to be accelerated and ultimately improve outcomes for patients. Historically, information technology and data were viewed as competitive assets by both the healthcare organization and the vendors. This severely limits the kinds of important collaboration for knowledge discovery and running sophisticated research across organizations. Without this alignment of the

digital infrastructure, then all other efforts to accelerate treatment innovation and discovery are more difficult than they need to be.

How do you visualize the APAC Post-COVID-19 perspective?

APAC, post-COVID 19, will see an explosion of innovation in digital health. One key factor is that the population in APAC is much more comfortable and reliant on mobile technology than the USA. Apps are used across services from financial transactions through to navigating a hospital visit. With COVID-19 and the need to be more virtual and transactions to be more digital, APAC is ahead of the curve in terms of familiarity and adaptability. As we push the boundaries with ideas for social tracing, proximity exposure logs, or digital COVID-19 health passport, we see that APAC will benefit the most with wider social acceptability and utility of such apps.

Telemedicine will be greatly adopted to overcome access constraints while mobile applications and big data will bring in a new era of personalized healthcare. Telemedicine is a viable option with limited medical resources, which can now serve a wider population at a relatively lower cost than a face-to-face consultation.

With all the innovation and potential extension of how a population can continue to receive medical care, there are potential quality and safety considerations that must be thought through. Expanding forms of access to care, or receiving care remotely just adds more variables to variation in care, especially care that is not supported by research or recommended best practice. This new reality following COVID-19 faces a risk – where we might think our solution addresses the crux of the problem but in fact, it might introduce other problems elsewhere. Thus, the future of healthcare delivery should be driven by knowledge.

Effectively, it means that healthcare and what patients should expect is a level of care and consistency that aligns with the latest body of knowledge and best practice standards, delivered via an optimized consumer-centered experience that is efficient, and cost-effective. A digital system to enable this vision is the basis of this proposed knowledge-driven care framework. New ideas for innovation and transformation of healthcare delivery must align with a knowledge-driven care process. We need to optimize any design of virtual models of health care to be based on scientific knowledge and best practice that is not dependent on how you receive care (virtual or face-to-face), who provides the care (teaching hospital, community hospital, hospital, or an app), or when care is provided.