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"What's Keeping Me Up at Night?" Reflections on the COVID-19 Pandemic in Asia

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Abstract

Objectives: The 2021 Health Technology Assessment International (HTAi) Asia Policy Forum (APF) aimed to explore the challenges and opportunities presented by the global COVID-19 pandemic for health systems and industry in the Asia region, to discuss how HTA changed during the pandemic, and what its role may be moving forward into a postpandemic era.

Methods: Discussions during the virtual 2021 APF, informed by a premeeting survey of HTA agencies and industry attendees from the region describing their experience during the pandemic, form the basis of this paper.

Results: During the pandemic, regulatory approval for COVID-related technologies was fast-tracked with fewer evidentiary requirements, and little or no HTA being conducted before these technologies were implemented in health systems in the region. "Living HTA" incorporating real-world evidence (RWE) as it was generated became part of the HTA landscape. In comparison, non-COVID technologies experienced regulatory approval and HTA delays. A major concern of APF members was future pandemic preparedness, and to ensure that lessons are learned from COVID-19. Governments need to continue to invest in innovation and allow early regulatory approvals with the increased use of RWE. Capacity building was identified as a key investment, including capacity in HTA, modeling, as well as local production of necessary supplies and equipment. Finally, collaboration at all levels of the health system was viewed as vital.

Conclusions: Post-COVID, different forms of HTA must be embraced as part of the new HTA landscape in addition to increased intra- and intercountry collaboration across all sectors of the health system, including regulatory bodies.

Policy

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Since being declared a global pandemic by the World Health Organization (WHO), COVID-19 has had a devastating negative impact on health, health services, the economy, and livelihoods, and this impact is likely to extend well past the end of the pandemic. Deficiencies have been exposed, with health systems struggling to provide adequate treatment for large numbers of COVID patients due to a lack of facilities (especially intensive care units [ICUs]), equipment such as ventilators and personal protective equipment (PPE), as well as a well-trained medical workforce (1;2).

Prepandemic, Health Technology Assessment (HTA) has been one of the main priority-setting tools used by health policy makers to identify the most efficient allocation of scarce healthcare resources, with the assessment of clinical effectiveness and cost-effectiveness of new health interventions informing public reimbursement and coverage decision making (3;4). However, as discussed in previous Asia Policy Forums (APFs) prior to the COVID pandemic, many countries in the Asia region had limited technical HTA capacity. In an already resource-limited environment, the impact of the COVID-19 pandemic in Asia and beyond has been unprecedented, with an urgent need for rapid guidance and evidence summaries related to COVID-19 technologies encompassing prevention, diagnosis, and treatment (5). During the pandemic, COVID-19 technologies have been fast-tracked, given emergency use authorization by regulators using alternative analytical approaches that sidelined normal HTA processes. Policymakers, under pressure to provide rapid solutions, made provisional approvals of COVID public health measures, diagnostics, therapeutics, and vaccines often based on limited safety and efficacy results of clinical trials, with little or no assessment of clinical or cost-effectiveness (6) and value for money was bypassed in favor of direct price negotiation and procurement (5). The existing lack of HTA capacity in the Asia region has been exacerbated by COVID.

While significant COVID-related challenges remain, the pandemic has not only offered the opportunity to rethink healthcare delivery (e.g., telehealth) but also the way in which HTA is conducted and used by policy makers in the long term, laying the foundation for value-based healthcare assessment (5;7). HTA agencies have responded to the demands of COVID-19 by adapting existing methodologies to provide policy makers with timely information in a climate of rapidly changing and complex scenarios. A recent survey confirmed that HTA agencies adapted

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their processes during COVID, with most reporting a change in methodology when assessing COVID-19 technologies and not conducting cost-effectiveness on these technologies (77 and 62 percent, respectively) (6).

Over the course of the pandemic, many agencies conducted rapid reviews with timelines of 5–10 days instead of the 3–6 months taken for a full HTA, enabling the prioritization of healthcare interventions despite high levels of uncertainty. Unlike full HTA, rapid reviews were conducted along the lines of horizon scanning, using a limited number of databases, artificial intelligence search strategies, and single reviewers, with quality being sacrificed for speed. Some agencies reported that they found the rapid review methodology challenging, dealing with greater pressure, high levels of uncertainty, and rapidly emerging (often changing) evidence (5–7). Rolling reviews, or "living HTA" of technologies given fast track approval, have also become part of the COVID-HTA landscape, where new evidence and information is incorporated as it becomes available. Again, "living HTA" is not a new concept, but rather it embraces the life cycle approach to HTA, where approved technologies are continuously reassessed as real-world data become available (6). The pandemic has also facilitated increased regional, national, and cross-border collaboration, especially the sharing of data and the rapid formulation of COVID guidelines. Prior to COVID, one of the greatest challenges in the Asia region was not only the availability and quality of data but also access of industry to data collected by health systems, and vice versa, with data linkage an issue in most countries. COVID has demonstrated the value in having reliable, connected data sources that can be analyzed in real time, which may have implications for health care moving forward (5–7).

The objective of the 2021 APF was therefore to explore the challenges and opportunities presented by the global COVID-19 pandemic for health systems and industry in the Asia region, to discuss how the role of HTA has changed during the pandemic, and what HTA may look like moving forward into a postpandemic era.

Methods

The ninth APF was a virtual meeting held over three 2.5-hr sessions: 6, 8, and 10 Dec 2021, with fifty-three invited experts in attendance comprising delegates from ten public sector HTA agencies, most of whom are embedded within, or funded by the health departments of their respective countries in the Asia region; thirty-one for-profit industry delegates from fourteen companies with interest and experience in Asia; leaders from HTAi; and the WHO's Western Pacific Region representative.

Discussions were informed by a background paper (8), as well as premeeting surveys of both agency and industry attendees of the APF. Session two of the 2021 virtual series of APF meetings discussed the changing landscape of HTA and regulatory pathways, and the role of HTA in postpandemic health systems in Asia. Breakout discussions were informed by presentations and by the responses to the first survey that described delegate's HTA and regulatory experiences during the pandemic (for questions see Table 1). The final session on Day 3 was the traditional "What's keeping me up at night?" (WKMUAN) session, where mixed groups of agency and industry delegates freely discuss their most pressing issues. Breaking with APF convention, 2021 WKMUAN discussions were informed by the second premeeting survey, which asked delegates to nominate their most prescient concern during the COVID-19 pandemic. Like-minded delegates were then grouped together according to the five selected topics to ensure an in-depth discussion. Each of the five breakout groups were assigned a facilitator and rapporteur, who was responsible for taking notes and summarizing the discussion (see section "Results" for each group's topic). In addition to their topic of choice, all groups were asked to consider what the long-term response to COVID might look like, moving forward into a post-pandemic era. Session one will not be discussed in this paper.

The APF is designed to promote open and constructive dialogue, without fear or favor. As such, meetings are conducted under the Chatham House Rule in which participants are free to share information obtained during the meeting but the identity or affiliation of the person providing the information cannot be revealed (9). This paper provides the authors' summary of the premeeting surveys and the discussions that followed among participants during two sessions of the 2021 APF and does not necessarily represent the consensus view of those attending the meeting, or those of the organizations they represent.

Results

Results of the First Premeeting Survey: Pandemic Regulatory Approval and HTA in the Asia Region

Ten companies completed the first premeeting survey, with six reporting that they have been involved in bringing a COVID-19-related technology to market—encompassing the range of COVID technologies—a diagnostic test, therapeutics, a vaccine, medical consumables, and a ventilator. An urgent need for speed in reviewing submissions was reported by all six companies, with approvals obtained in weeks compared to months prepandemic. The regulatory approval process for these products also differed considerably compared to pre-COVID, with emergency use authorizations granted in some countries with fewer evidentiary requirements. Trust between regulators and industry was key, as evidenced by the flexibility in some requirements required at submission, such as promising interim analysis data, especially for products that addressed an unmet medical need in light of the global health threat. Conditional approvals came with an expectation that these requirements would be fulfilled postapproval when further evidence became available. Only one of these COVID-related products underwent any form of HTA, which was a rapid assessment. For those products that did not undergo an HTA process, there was direct contracting with governments via procurement processes. However, similar to regulatory approval, there was an expectation that a formal HTA process would be conducted once real-world evidence (RWE) became available.

At the same time, nine companies were still investing in and bringing non-COVID technologies to market, including therapeutics and a vaccine. For these products, the regulatory process remained the same as that experienced pre-COVID and regulatory approval was associated with long delays. Four of these products underwent traditional HTA, a process that was also associated with delays compared to pre-COVID. These delays were attributed to the prioritization of COVID-related products by jurisdictions, or due to the disruption of lockdowns, including the need for remote rather than face-to-face meetings. For non-COVID products, there was no change in the assessment process, with the evidentiary requirements being the same as pre-COVID and payers requiring

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Table 1. Premeeting Survey: Regulatory and HTA Experiences during COVID-19

Industry
Since COVID-19 was declared by the WHO as a pandemic in March 2020, has your company been involved in bringing any COVID-related technology to market?
If yes, was this technology a Pathology test Therapeutic (pharmacological, cellular therapy, or device) Vaccine Medical consumable (e.g., PPE) Other (please specify)?
If yes, was the regulatory approval process the same as prepandemic? Same Different
If different, please specify how it was different (e.g., different levels of evidence required)
Did the regulatory process for the same COVID-related product(s) differ across jurisdictions? Yes (please specify) No
If yes, did your product(s) undergo Traditional HTA process Rapid HTA process No HTA process
Has your company tried to bring other non-COVID products to market since March 2020? Yes No
If yes, was this technology a Pathology test Therapeutic (pharmacological, cellular therapy, or device) Vaccine Medical consumable Other (please specify)
If yes, was the regulatory approval process the same as prepandemic? Same Different
If different, please specify how it was different (e.g., different levels of evidence required)
Did the regulatory process for the same non-COVID product(s) differ across jurisdictions? Yes (please specify) No
If yes, did your product(s) undergo Traditional HTA process Rapid HTA process No HTA process
If yes, have you experienced any regulatory approval or HTA-related issues bringing new non-COVID product(s) to market? for example, different levels of evidence required (higher, lower?) than in past
HTA agencies
Does your agency have a direct relationship with the Department of Health/Public Health?
Since COVID-19 was declared by the WHO as a pandemic in March 2020, has your country fast-tracked regulatory approval of any SARS-COV-2 tests?
If yes, please specify how many and which tests
Before regulatory approval, did any of these tests undergo Traditional HTA process Rapid HTA process No HTA process
If HTA was undertaken, was your agency involved?
If tests were approved, were they Diagnostic Antibody (nondiagnostic, indicating past infection) Both
If diagnostic tests were approved, were they Molecular (e.g., RT-PCR) Rapid antigen POCT Both

(*Continued*)

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Table 1. (*Continued*)

If rapid antigen tests have been approved, are they for use By health professionals only Home use Both Only in areas of high prevalence Other (please specify)
Has your country fast-tracked regulatory approval of any therapeutics for the treatment of COVID-19?
If therapeutics were approved, were they (tick all that apply) Remdesivir Chloroquine/hydroxychloroquine Dexamethasone Tocilizumab Convalescent plasma Other immune modulators (please specify) Other antivirals (please specify) Other technology (e.g., devices such as ventilators please specify)
Before regulatory approval, did any of these therapeutics undergo Traditional HTA process Rapid HTA process No HTA process
If HTA was undertaken, was your agency involved?
Has your country fast-tracked regulatory approval (emergency authorization) of any SARS-COV-2 vaccines?
If vaccines were approved, were they (tick all that apply) Pfizer-mRNA Astra Zeneca ChAdOx1 Moderna mRNA Novavax Sinovac Sinopharm Sputnik V Other (please specify)
Since emergency authorization, have any of these vaccines undergone traditional regulatory approval?
If yes, before regulatory approval, did any of these vaccines undergo Traditional HTA process Rapid HTA process No HTA process
If HTA was undertaken, was your agency involved?
Since the beginning of the pandemic, has your agency conducted horizon scanning to identify new and emerging COVID technologies? No Yes—COVID tests Yes—COVID therapeutics Yes—COVID vaccines
Since the beginning of the pandemic, has your agency conducted rapid HTA on COVID technologies? No Yes—COVID tests Yes—COVID therapeutics Yes—COVID vaccines
Since the beginning of the pandemic, has your agency been requested to conduct rapid HTA on non-COVID technologies in order to set healthcare priorities postpandemic?
Since the beginning of the pandemic, has your agency collaborated with other agencies in the region to develop protocols or guidelines/advice for SARS-COV-2?
Since the beginning of the pandemic, has your agency been requested to identify disinvestment opportunities to fund health care for COVID?

HTA, Health Technology Assessment; PPE, personal protective equipment.

published, peer-reviewed evidence, which resulted in significant delays in approvals.

Eight of the ten HTA agencies attending the APF completed the first premeeting survey, seven of which have a direct relationship with their respective Departments of Health. Seven of the eight countries fast-tracked COVID tests, with only one test undergoing any form of HTA (rapid HTA). Most countries approved a mix of COVID tests, including multiple diagnostic polymerase chain reaction tests and rapid antigen tests (RATs), with Singapore and Vietnam also approving the use of antibody tests, which are indicative only of past infection. Of interest is the FELUDA test, the first test to use gene-editing technology, which was developed and approved for use in India in addition to the suite of all other available tests. Although associated with poor sensitivity and a high rate of false negatives, RATs were approved by most countries mainly as they are cheap and considered helpful in areas of high

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COVID prevalence. Singapore, India, Malaysia, and Indonesia approved RATs for home and health professional use, whereas the Philippines approved their use only in high prevalence areas. Japan and Vietnam approved the use of RATs by health professionals only.

Seven countries fast-tracked regulatory approval of COVID therapeutics, with only two undergoing some form of HTA (rapid) in Malaysia and the Philippines. Malaysia was the only country that did not approve the use of remdesivir, which was the only therapeutic approved for use in Vietnam. Hydroxychloroquine was only approved in the Philippines and India, which, with growing evidence, later removed it from use. The relatively low-cost, repurposed corticosteroid, dexamethasone, which has both an anti-inflammatory and immunomodulatory effect, was approved by the Philippines and Taiwan despite clinically meaningful reductions in mortality only reported in patients on ventilators and high-flow oxygen (10). Convalescent plasma was approved in three countries in spite of the lack of evidence of efficacy. As of Dec 2020, it is unclear whether all or some of these therapeutics are still in use. Of interest was the number of countries ($n = 7$) that approved at least one high-cost immune modulator such as tocilizumab ($n = 5$).

Unsurprisingly, all eight countries fast-tracked regulatory approval of several SARS-CoV-2 vaccines, ranging from two approved by Singapore (the Pfizer and Moderna mRNA vaccines) to six approved in India, including a locally manufactured version of the Astra Zeneca vaccine. Only Malaysia and the Philippines conducted some form of HTA (rapid) on vaccines.

'What's Keeping Me Up at Night?' Reflections of the COVID-19 pandemic in Asia

The discussions of the five WKMUAN breakout groups are summarized below.

Group 1: Sustainability of the Health System Moving Forward, Including Consideration of the Potential Tsunami of Non-COVID Morbidity/Mortality from Untreated Illness

Group one reiterated the point that there will be a tsunami of non-COVID morbidity and mortality from untreated illness and deferred care, with delays in surgery and general care (diabetes, screening appointments, cardiac, etc.). The potentially large volume of patients will put an added strain on health systems and acute care services that are already stretched to their limits, both financially and in terms of workforce. Health systems are currently unprepared for this, and urgent thought needs to be given by decision makers around how this will be managed moving forward.

One of the critical factors to be considered when discussing the sustainability of health care post-COVID is the issue of vaccine effectiveness, and whether vaccine efficacy can be maintained in the face of new variants. Concerns were raised about the need for booster requirements, especially that some countries are delivering booster shots while others still do not have access to vaccines. Vaccine uptake was also discussed, acknowledging that unvaccinated patients place an even greater pressure on emergency care and hospital capacity and have poorer outcomes. The role of government in mandating vaccines and how aggressive these policies should be was also discussed, especially given Singapore's vaccine mandate which requires unvaccinated inpatients to pay for their care from 1 Jan 2022.

Discussions then turned to whether COVID and subsequent budgetary constraints would stifle innovation. The pandemic has accelerated some innovation, not the least of which has been the development of COVID diagnostics, vaccines, and therapeutics. After much resistance in the past, innovation in the digital health space has been universally embraced by governments and patients, with the adoption of telehealth to deliver health care remotely. Governments are funding and rolling out the technology/infrastructure needed to drive remote health platforms such as 5G networks. In addition, as alluded to in the first survey, managed entry agreements (MEAs) for technologies have been widely implemented with approvals dependent on submission of RWE once it becomes available. Concerns were raised that a post-COVID world may increase the health care divide between lower middle income (LMICs) and developed countries, with LMICs having less access to expensive technologies in the future. Conversely, digital innovation has enabled greater global collaboration during the pandemic.

The sustainability of health care moving forward into a post-pandemic era was then explored, using the lessons learned from COVID. Governments need to put policy in place to address issues of capacity, not just healthcare workers, who have experienced burn out, but capacity of information technology and HTA. In addition, governments need to address supply chain issues, where production and manufacturing delays interrupted the global supply chain resulting in shortages of PPE and ventilators (and now vaccines) in those countries of greatest need. Finally, the role of patients and the general public in sustainable health care were discussed, with education, health literacy, and consistent communication of key messaging identified as important lessons learned from COVID. It was felt that the HTA community and organizations such as the WHO will have a crucial role to play in advising governments post-COVID.

Group 2: The Role of Industry in Supporting the Process of New Technology and Technology Innovation, Including Consideration of the Impact of "Lost Investment" in Healthcare Technology as a Result of a Shift of Resources to Pandemic-Related Areas

From an industry perspective, it was felt that there was not necessarily a shift in resource allocation away from investment in innovation, but rather significant levels of deferred or underutilized care or a "loss of patients" seeking routine, non-COVID care due to the challenges and stresses in the health system. Of concern to industry members was the impact of the pandemic on non-COVID clinical trials, many of which have been postponed or halted altogether, resulting in a delay in evidence generation and subsequent delays in patient access. Concerns were expressed about the long-term "tail" of delayed care, and what role industry and government can play in getting patients back to care. COVID did, however, present an opportunity for a positive shift in resources with the sharing of intellectual property (IP), which grew out of global supply chain issues for acute care resources, for example, making the IP for ventilators freely available.

Supply chain issues affected movement of, and access to, some products and raw materials, causing an increase in price, resulting in a reallocation of resources away from other types of investments. This led to a discussion around countries needing to find the right balance of investing in a localized production capacity for necessary supplies and equipment. The pandemic also heightened the mismatch between HTA agency evidence-based decisions and those charged with implementing policy due to the reallocation of resources by government to COVID-related activities. Although the virtual environment may have had good outcomes for some during the pandemic, it was felt at times that it

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hindered communication between stakeholders, especially around problem solving.

Moving to the future, COVID has taught us that by engaging in early dialogue across stakeholders and continuing to cooperate and build trust can help solve common healthcare challenges. The pandemic has opened conversations about how to improve other aspects of care, and that industry can, and should share more, even between competitors and in a nonpublic health emergency.

Group 3: Expedited/Emergency Regulatory Approval versus Traditional HTA of Vaccines, Diagnostics, and Therapeutics

Reaffirming the results from the first survey, participants reported that most countries adopted a rapid access route for COVID technologies, bypassing formal HTA processes. In addition, it was recounted that the quality of industry-generated evidence for regulatory decision making was assessed differently during COVID compared to pre-2020, resulting in very different outcomes, for example, poor evidence resulting in a positive regulatory outcome. Industry members reported that at times they found it challenging to meet the changing evidentiary requirements set by governments during the changing pandemic landscape. A discussion then ensued around the need for governments to invest in and build HTA capacity, which the pandemic exposed as being critically under resourced. Singapore was held up as an example of a country that recognized the need to fund and expand HTA capacity to meet demand and facilitate patient access to innovative health technologies.

Despite limited resources, COVID has highlighted the success of global and regional HTA collaboration and information sharing, reducing duplication of effort, and this needs to continue moving forward into the postpandemic era. In addition, there should be greater communication and cooperation between regulatory bodies and HTA agencies, to clearly understand the difference in evidentiary requirements, and to work together to reduce uncertainty and risk in decision making. A good example of this is the potential of horizon scanning, and rapid reviews produced by HTA agencies to contribute to the regulatory decision-making process, and this should be explored further moving forward.

Group 4: Rationing of Health Care during Pandemic, Including Consideration of Identifying Low-Value Care in Order to Fund New Innovations

As many countries reported large reductions in non-COVID-related health care, due to changes in both patient and provider behavior, many healthcare facilities had capacity to reallocate and shift resources to support the pandemic and deal with the surge of COVID-19 patients. During the pandemic, decisions were made rapidly without conscious thought that healthcare resources were being rationed. Under such time restraints, and with limited evidence, formal HTA was difficult to conduct, and the long-term impact of these rapid decisions was not usually considered as decision makers were simply trying to "put out the COVID fire." Evidence generation for non-COVID technologies was severely disrupted due to the pandemic, with many clinical trials stopped or interrupted, and data needed to support MEAs were lacking.

The group discussed the value of timely communication of important public health messages with the public, especially when decisions appeared to have been made rapidly such as the decision to vaccinate against COVID. The past 2 years have demonstrated that sharing information by using clear and effective messaging is critical in gaining the public's trust and negating misinformation about the pandemic. In addition, the continual generation and evaluation of RWE around these rapid decisions give reassurance to the public.

While there was little experience of identifying low-value care reported during the pandemic, there was a general feeling that the health system and health workers were unconsciously reevaluating the feasibility of continuing "business as usual." Fear of contracting infection while visiting a health facility led many patients to defer care and many healthcare facilities to cancel services to limit the number of face-to-face interactions. Moving forward, data describing the impact of this missed care need to be evaluated to not only identify the effect of missed care on morbidity and mortality but also any potential benefit to health systems and patients from reductions in low-value care.

Group 5: How To Improve Pandemic Capability (Infection Control, Rapid Testing, Primary Health Care, Public–Private Partnerships, Digital Health Care, etc.) and Resource Allocation, Including Consideration of Lessons Learned from Pandemic Preparedness (or Lack of)

The COVID pandemic has seen resources allocated to many public health initiatives and interventions. The focus of this group, however, was the value-add role of HTA during the pandemic, and how to focus this expertise into those areas of greatest need to deliver maximum benefit, such as evaluating diagnostic tests or ICU interventions rather than resource allocation in health care, which should be the remit of other, non-HTA agencies.

One of the key lessons learned during the pandemic was that early regional and global collaboration was essential in the face of great uncertainty. Most HTA agencies struggled to provide sufficient evidence for decision making, and as the pandemic progressed, with the rapidly changing evidence base. Earlier cross-country collaboration to leverage resources would reduce duplication and drive efficiencies, especially in a climate of finite resources. Looking to the future, increased collaboration should extend to improving links with research institutes, and more importantly, regulators. In addition, the role of horizon scanning should be explored more, both during and postpandemic, especially around emergency authorizations. Projection modeling has been key to decision making during COVID, and increased investment in modeling capability and capacity is essential.

Pandemic preparedness varied across countries. Countries experienced with severe acute respiratory syndrome and Middle East respiratory syndrome such as Hong Kong, South Korea, and Singapore had sufficient stockpiles of PPE and ventilators, as well as having well-trained staff who knew how to appropriately work with infectious diseases in PPE, protecting the health workforce from infection. Public health control measures, especially mask wearing, were normalized in these countries. When under extreme time pressure, with the need for rapid decision making, it is important to leverage existing behavior norms and information systems.

The importance of communication was again reiterated, with government needing to play a strong role in delivering the right messages to keep ahead of misinformation, ensuring public trust and confidence. As we have seen during COVID, policy works best when consistent; however, when faced with a rapidly changing evidence base, policy must be agile, with any alterations being transparent and communicated well to ensure continued trust.

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Finally, evaluation of the global pandemic response should be conducted, reflecting on what strategies worked, what strategies failed to optimize resource allocation, and to refine and embed learnings in readiness for the next pandemic.

Discussion

It is clear from these results is that the pandemic has been challenging for both industry and agencies, not only from the sheer magnitude and workload of dealing with COVID but also the difficulties in maintaining "business as usual"—delivering patient access to innovative health care. In addition, there appears to be a disconnect between regulators and HTA agencies, despite their obvious overlapping remits of assessing (often the same) evidence to make recommendations to policy makers on whether to approve a technology for market or to recommend the uptake of a technology in the health system. Moving forward into the post-COVID era, HTA needs to develop collaborative relationships with regulatory bodies, particularly in the areas of postmarket surveillance and the reassessment process after the generation of RWE (5;7). Over the course of the pandemic, HTA agencies have had to adapt to using new and challenging methodologies such as ultra-rapid reviews and "living HTA," synthesizing large volumes of rapidly emerging evidence associated with high levels of uncertainty. Although many HTA practitioners feel that some of these changes will be here to stay post-COVID, others warn against setting methodological precedents, and that COVID-19 technologies should be assessed in the same way as any other healthcare technology (6).

Conclusions

Moving forward, different forms of HTA must be embraced and form part of the HTA landscape in addition to increased intra- and intercountry collaboration across all sectors of the health system, including regulatory bodies. Multidisciplinary HTA using a technology lifecycle and systems approach is needed, rather than just HTA for technology adoption or cost containment. HTA systems need to be better positioned to weather future crises and have flexible frameworks in place for agile prioritization, evidence generation and assessment, and reassessment.

Conflicts of Interest. L.M. is the Scientific Secretary for the HTAi Asia Policy Forum and B.K. is the Chair of the HTAi Asia Policy Forum Organizing Committee. As such, both are paid for these roles by HTAi.

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