Coping with Coronavirus disease 2019: current state review and SWOT analysis to improve the urological services in Southeast Asia

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ABSTRACT

Introduction: We investigated the impact of Coronavirus Disease 2019 (COVID-19) pandemic on urological services by analyzing current attitudes and practices of urologists in the Southeast Asian (SEA) countries and create ways for improvement.

Materials and methods: Quantitative data were used as critical indicators of workload of urological services from each country in SEA. Qualitative data analysis was done to describe the current state of attitudes of urologists against COVID-19 in the region. A strengths, weaknesses, opportunities, and threats (SWOT) analysis was performed to formulate strategic action plans.

Results: A total of seven urologists from six SEA countries completed the survey. Approximately 21–40% reduction in elective surgeries and outpatient visits, as stated by 42.9% and 57.1% of respondents, respectively was noted. Collectively, most respondents (71.4%) experienced <20% reduction in emergency visits. Various strategies were utilized as reaction to the pandemic. These include utilization of virtual communication platforms, pre-surgical COVID-19 screening, and limited number of accepted outpatient appointments and surgeries. Face to face patient consultations were still considered needed by many urologists although most countries had prohibited direct patient contact. The national response of countries such as Malaysia, Singapore, Thailand, and Vietnam were successful in controlling the pandemic. However, Indonesia and Philippines struggled because of the limited testing and tracing capabilities. Through the SWOT analysis, strategies were identified which can help overcome COVID-19 and any other future pandemics: (1) restarting the urological services in a safe and sustainable manner; (2) optimizing financial and infrastructural capacities; and (3) regional collaboration to strengthen the health systems.

Conclusion: COVID-19 negatively impacted many health aspects, especially the delivery of urological services in SEA. Therefore, to ensure sustainability of urological services during the pandemic crisis, health care system should focus on safe, resilient, and adaptive approach with regional collaboration.

KEYWORDS:
Southeast Asia; Urological Services; Urologist; Global Urology; Developing Countries; High-Income Countries; Low and Middle-Income Countries

INTRODUCTION

All countries worldwide are in the state of turmoil shortly after the emergence of a novel coronavirus disease 2019 (COVID-19) and its rapid global spread. Southeast Asia (SEA) was hit the earliest outside its origin in China. The first spread was reported in Thailand on January 13, 2020.[1] Furthermore, the 11 SEA countries including Brunei, Myanmar, Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam were greatly affected by the pandemic. As of July 15, 2021, the cumulative number of confirmed cases in 11 SEA countries reached over 19,000,000 patients. In order to combat the outbreaks, regional authorities have implemented numerous non-pharmaceutical interventions (NPIs) and preventative strategies like mandated quarantine and case isolation, restriction of all mass gatherings or public events, suspension of schools and other educational facilities, and large-scale social restriction including local and national lockdowns.[2]

Pandemic readiness and preparedness vary among SEA countries and there are several countries that are particularly vulnerable to this destructive outbreak. During this challenging time, urologists, as part of subspecialized healthcare resources may take an important leadership role: endeavoring to maintain patient care virtually, prioritizing patient safety, and protecting the larger community from potential coronavirus exposure. Generally surveying the impacts of COVID-19 on urological services, the rapid increase in the number of cases is overwhelming, as confirmed by many studies. However, less is known about the personal and daily experience of the practicing urologists in developing countries. Furthermore, a better understanding of potential factors may be helpful for urologists during this

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pandemic, such as collegial supports and coping strategies. The primary objective was to examine how the current COVID-19 pandemic affected the urological services in SEA countries, represented by the authors who are urologists in Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. The secondary objective was to create strategies that will help improve the delivery of urological services.

MATERIAL AND METHODS

A survey based on the hybrid-methods design was used. Quantitative and qualitative data from each participating urologists across SEA countries were collected to describe the primary objective.

Descriptive Quantitative Data and Qualitative Data Analysis

The survey consisted of a 20-point questionnaire which was answered by each respective certified urologist. Convenience sampling was employed to include several urologists in the SEA. The questionnaire was based on standard urological clinical pathway per region's hospitals and their perception to several adaptive models of relevant urological services during COVID-19 pandemic. These urologists were asked to fill-out a quantitative survey and describe the daily urological practices in their respective hospitals through qualitative questions. Each country was classified based on gross national income per capita from the World Bank Country's status, to illustrate the possible impact of socio-economic welfare on national policy towards pandemic. The qualitative response was coded by the first and second authors. They assigned a code to each qualitative response after reading through all responses. Answers could be given to multiple coding categories. No statistical analyses were performed based on qualitative responses.

Strengths, Weaknesses, Opportunities, and Threats Analysis

Strengths, weaknesses, opportunities, and threats (SWOT) analysis refers to assessing and evaluating the four elements of the acronym that influence a specific topic.[3] It is effective situation analysis techniques which comprehensively, systematically, and accurately assess the scenario of the case. This method helps formulate corresponding strategies, plans, and countermeasures in clinical decision-making and complicated systems analysis. Internal factors such as financial resources, healthcare resources and accessibility were identified as either strengths or weaknesses. In contrast, external factors such as policy trends, demographics, political and economic regulations were identified as opportunities or threats. Therefore, SWOT analysis was performed to develop prospective solutions meant to improve the collaborative development of urological services in SEA during the COVID-19 crisis.

RESULTS

The questionnaires were sent to ten urologists, three of them refused to join the study and were classified as non-responder. Demographic data of the consultant urologists are displayed in Table I. All respondents were males, majority practicing in an academic institution and focusing primarily on stones and oncology subspecialties.

Regarding the epidemiological burdens, four out of seven respondents disclosed that they were working in COVID-19 managing hospitals, and two out of all participants were working in a hospital with a total of >30 COVID-19 cases. One respondent reported with cases of severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) among colleagues in their department (Fig. 1).

Regarding preventive potential disruption in urological services, four urologists stated that their urological association in their country did not develop or apply specific COVID-19 guidelines. It was disclosed by five out of seven surgeons that their institution provides healthcare personnel training on COVID-19. Three out of seven respondents experienced COVID-19 testing with nasopharyngeal or oropharyngeal swab tests. Surgical masks were reported as the personal protective equipment (PPE) that was commonly provided in their hospitals (Fig. 1).

Numerical data to describe the current situation each country is summarized in Table II. With the relatively rapid action and effective measures designated to control the spread of the pandemic by each government, several countries such as Singapore, Thailand, Malaysia, and Vietnam had achieved impressive results compared with Indonesia and Philippines. It appears that the low and middle-income countries (LMICs) status did not necessarily affect the current pandemic status of the region.

The current situation and personal perspective of urologists from each country are described below.

Indonesia

Indonesia was deeply affected by COVID-19, same as other developing countries. Despite being ranked as the largest economy in the region, Indonesia is struggling to cope with COVID-19 crisis.[4]

By mid July 2021, the proportions of death-related to COVID-19 reached to 69,210 cases, making it one of the highest number of cases in the world. The government gradually established the decentralized lockdowns but never reached the same rigidity level compared to other countries.[5] The implementation of polymerase chain reaction (PCR) testing across countries was low during that time.[6]

Danarto (An-Nur Surgery Specialty Hospital, Yogyakarta) noted that the spread of coronavirus in Indonesia had significantly impacted the urological services in general, shown by a drastic reduction during the earlier phase of the pandemic. However, this only lasted for eight weeks after the government decided to adjust the PSBB rules in many regions by early June 2020, resulting in a bounce-back rate of outpatient visits, elective surgeries, and ED visits. Due to the ongoing crisis, the Indonesian Urological Association took immediate action by releasing specific guidelines for urological services during COVID-19 pandemic to help local urologists make a clinical decision. With the current situation, Indonesia still has a long way to overcome the pandemic; thus, sustaining the urological services is going to be challenging with extra precautions, and utilization of PPE is mandatory.

Malaysia

In Malaysia, the first COVID-19 case was diagnosed on January 25, 2020. They had the largest cumulative number of COVID-19 cases among SEA countries by March 21, 2020. The active cases had reached from <30 cases at the earlier March 2020 to 2,766 cases by the end of March 2020. Nevertheless, the outbreak was considered under control by early June 2020. Currently, Malaysia has entered its recovery from COVID-19 pandemic.[7] It took not less than eight months after the government announced the first case, and the country was recognized to successfully managed the pandemic by the World Health Organization (WHO).[8] One of the contributing factors was because to the Ministry of Health of Malaysia constructed prompt and responsive action for COVID-19, promulgated the Movement Control Order early March 2020, and strictly enforced mass testing and rapid contact tracing.[9]

Teng Aik Ong (University of Malaya, Kuala Lumpur) reported that urological services in his center had been back to almost normal. However, during the earlier phase COVID-19, there was a massive cut down in outpatient visits and the number of elective surgeries. In terms of current challenges, issues that need to be addressed include concerns over clearing the backlog of cases. Zoom platform is a new thing learned to have meetings and ward rounds. For the latest development, there was a resurgent of COVID-19 cases in Malaysia in the early part of 2021. However, the health care system had learned to cope with such surge. The clinical service was adjusted to the appropriate level to mitigate the spread of the disease, while maintaining adequate service to urgent and semi-urgent cases, such as uro-oncology. Such balancing act will be the strategy in the new normal.

Philippines

As the second most populous country in the region, Philippines was affected by the pandemic quite early and currently is still struggling to defend against COVID-19.10 At first, the Philippine government declared a state of a national public health emergency that engendered the formation of an Inter-Agency Task Force, enforcing multiple forms of home quarantines and lockdowns in regions with high number of COVID-19 cases.[11] These measures have continued in changing levels of severity until recently and the government is focusing now on escalating the number of mass testing to reproduce the success of better-performing countries such as Singapore and South Korea.[12]

Abraham and Zialcita of the National Kidney and Transplant Institute in Manila reported the Philippines' perspectives. Abraham stated that the pandemic had really caused a significant reduction in the delivery of urological services nationwide. This was mainly because of the prioritization of the pandemic related cases by the health care system. A concerted effort was made by the urological department to prioritize cases according to their severity, consistent with the guidelines set forth by the EAU. This prioritization has led to a reduction of cases being catered per day. The decline in case load was aggravated by fear of patients to seek medical help during the pandemic, thereby causing a drop in outpatient consultations. In order to overcome the risks of contracting the disease, several practitioners applied control measures such as the widespread utilization of virtual consultations and specialized PPE. Many hospitals were challenged but specialized centers in the Philippines such as the National Kidney and Transplant Institute and St. Luke's Medical Center had resumed all elective surgeries and were able to cope with the pandemic. In fact, percutaneous nephrolithotomy, laparoscopy and robotic-assisted surgeries were offered to patients who needed them. The expedient preoperative evaluation of patients for COVID-19 infection was made possible with the GeneXpert® testing which allowed the prompt release of results within hours. Ziacilta confirmed the importance of utilization of virtual consultations, such as Viber® and WhatsApp® platforms, in order to avoid face-to-face consultations. Dr Abraham also expressed the importance of preoperative evaluation with oropharyngeal and nasopharyngeal swab reverse transcription-polymerase chain reaction (RT-PCR) among patients and inclusive of their family members. In terms of organizational reactions to the pandemic, the Philippine Urological Association responded by arranging webinars to disseminate guidelines on the practice of urology during the pandemic, with the goals of optimizing the delivery of care while protecting the practicing physician from contracting the coronavirus disease.

Singapore

No government was adequately prepared for this new pandemic, including Singapore as the most developed country in the region. However, since the first confirmed cases were reported in the country on January 23, 2020, Singapore has eventually achieved impressive results to surmount the spread of COVID-19 by enacting public health measures based on advice of experts to learn from the 2003 SARS pandemic.[13] This included a combination of social and workplace distancing, aggressive contact tracing, strict quarantine measures of infected and the closed contacts individuals, travel advisories, and entry restriction, which was then supported by high public compliance.[14] As of July 15, 2021, there were 62,804 cases with 36 deaths in Singapore.

Allen Sim (Department of Urology, Singapore General Hospital) expressed his gratitude that most of the positive cases are contained in dormitories with few positive community cases. Thus, the healthcare system is not overwhelmed. He explained that the urological services had not been much affected other than the decrease in volume during the peak of the pandemic. One of the critical issues now is that almost all meetings are conducted online, with many webinars readily available for all range of urological topics. Despite of the measures created, he expressed the craving for the international conferences and human physical interactions, which he believed many urologists are experiencing webinar fatigue and shared the same sentiment.

Thailand

Being the first country to encounter the coronavirus in the region, Thailand is considered by many experts to have successfully handled the pandemic.[15] In total, 372,215 cases were detected, and 3,032 deaths by the mid of July 2021.

Table I: Demographic data

Variables	N = 7, count
Gender	
Male	7
Female	0
Years of practice	
1–5	1
6–10	1
>10	5
Country origin	
Indonesia	1
Malaysia	1
Philippines	2
Singapore	1
Thailand	1
Vietnam	1
Types of hospital/institution	
Academic hospital	4
Non-academic public hospital	1
Private practice	1
Mixture of public and private practices	1
Subspecialty field of urology	
General urology	5
Stones	6
BPH	4
Uro-oncology	6
Renal transplantation	3

Table II: Summary of actual status of COVID-19 pandemic's burden across Southeast Asian region

Country	Classification*	Population (in millions)†	Date first reported confirmed cases	No. confirmed cases**	No. of test performed**	CFR (%)	IFR (%)
Indonesia	Upper-middle income	267.0	March 2, 2020	2.670.046	22.373.873	2.6	2.6
Malaysia	Upper-middle income	32.7	January 25, 2020	867.567	15.866.357	0.7	0.7
Philippines	Lower-middle income	109.2	January 30, 2020	1.485.457	15.662.056	1.7	1.8
Singapore	High-income	6.2	January 23, 2020	62.804	14.751.144	<0.1	0.1
Thailand	Upper-middle income	69.0	January 13, 2020	372.215	8.129.670	0.8	0.8
Vietnam	Lower-middle income	98.7	January 23, 2020	38.239	8.434.266	0.4	0.4

Abbreviations: COVID-19, coronavirus disease 2019; CFR, case fatality rate; IFR, infection fatality rate
*Classified according to the World Bank country income status.30 According to official statistics of World Bank for 2021 fiscal year, calculated using the World Bank Atlas method, low-income economies are defined as those with a gross national income (GNI) per capita of $1,035 or less in 2019; lower middle-income economies are those with a GNI per capita between $1,036 and $4,045; upper middle-income economies are those with a GNI per capita between $4,046 and $12,535; high-income economies are those with a GNI per capita of $12,536 or more
†Data from U.S. and World Population Clock by United States Census Bureau,31 as of July 15, 2020
**Based on data reported to the registries as of July 15, 2020

Three months after the government established a state of emergency in late March 2020, most daily activities returned to normal in Bangkok and other royal territories. The early response was probably in disarray, but with improved coordination and communication, the government managed to respond better to the pandemic.[16]

It is suggested that robust central control and a well-developed health care system, complemented by near-universal health coverage, had been the key to such accomplishment. This allowed the successful implementation of active case finding, contact tracing, and other confinement protocols through the extensive and well-distributed network of healthcare providers. The country has been listed among the Global Health Security Index's top tier as the most prepared country for national health security.[17] Thailand has also become the highest adopter in compliance with mask-wearing in public places, which appears to have helped the slow spread of the virus.[18]

Supachai Sathidmangkang (Faculty of the Medicine Siriraj Hospital, Mahidol University, Bangkok) admitted that COVID-19 era has transformed healthcare activity into the new normal since the first confirmed cases on January 13, 2020. The number of COVID-19 cases had risen rapidly, overfilled hospital beds, medical personnel, and wearing of PPE keep patients and healthcare personnel safe. Regarding the impact on the urological services in his daily practices, he has been asked to limit his work in outpatient and surgical procedures. This resulted in a three-month backlog of cases of the non-urgent surgeries delayed because of the postponement. The preoperative COVID-19 screening protocol is compulsory for patients who needed to undergo surgery. He noted that the most crucial matter to consider is patient care based on prioritization and consequently the tiered surgery system is the key.

Table III: SWOT analysis

Influencing Factors	Influencing Factors	Weaknesses
	1. Risk-stratify the elective surgery according to latest evidence[32]** 2. Specific guidelines for COVID-19 launched by several urological societies and groups32* 3. Growing recognition of urology as an essential part of a robust health system33* 4. Widely available resources[34]*	1. Possibility to operate on large volume diseases caused by delay due to pandemic, lead to longer operating room time and more positive surgical margins* 2. Geographical maldistributions of urological workforces in low and middle-income countries (LMIC)[35]* 3. Poor health insurance coverage in some countries[36]* 4. Large patient volumes[34]***
	Strategies	
Opportunities	**⇧ S → ⇧ O**	**W → ⇧ O**
1. Surgery may be the safer option among various treatment modalities which requires multiple visits, e.g. chemotherapy and radiotherapy[22]**** 2. Incorporation of technology in bridging the distance, e.g. telemedicine & video conferencing23* 3. Task-sharing/hospital co-management and task-shifting[29]*	1. Perform surgery based on risk stratification and wear the proper PPE[32]** 2. Enhance technical skills and appropriate knowledge among resident and non-urologist through additional training, webinars, podcast, etc.[29]** 3. Offers rewards or grants for HCW such as job promotion or recognition-of-services*	1. Allocate additional/extended work after hours or during weekend to cope the backlog[37]** 2. Expand the telemedicine usages, optimization of the OR schedules and augment with ambulatory surgery center, if necessary[23]* 3. Revitalize the advanced HCW e.g. the physician assistants, nurse practitioners, and advanced registered nurse[29]*
Threats	⇧ S → T	
1. Despite its benefits, the surgery risk stratification approach could potentially lead to worse disease progression[22,32]**** 2. The long waiting list could create anxiety and deprived overall quality of life among patients[38]*** 3. Shortage of PPE due to surging global demand & depleted stockpiles[28] * 4. Healthcare personnel duty-hour restriction[39]** 5. Political inconsistencies among countries are unequivocally rising from religious, cultural, economic and government systems diversity* 6. Catastrophic expenditure on surgery26* 7. Economic changes[25]* 8. Ethical obligations[40]**	1. Perform critical analysis of the literature on surgical delay as a guide timing of treatment to minimize risk to patients and hospital resources[32]** 2. Perform a multi-disciplinary approach to consider all the aspects of each case, including the type and stage of disease, the age, the physical status, the psychological issues, and the availability of alternative treatments[38]** 3. Keep patients well-informed through website's posts, emails or texts[23]* 4. Relationship building among staffs[23]**	1. Optimization in resource allocation according to benchmark for PPE required in urological procedures[23]* 2. Use effective shift duration and staff placement according to the routine tasks[39]* 3. Optimize workforce schedules[39]* 4. Ramping up telehealth to deliver services to keep staff on the job[23]* 5. Consider patient's perspective as a victim and vector of disease, while still putting forward the basic ethical principles (autonomy, non-maleficence, beneficence and justice) when encountered difficult judgment[40]**

S: Strengths, W: Weaknesses, O: Opportunities, T: Threats, ⇧: Optmizing, : Eliminate
*Administrative factors; **Healthcare worker related factors;
***Patient related factors; ****Disease related factors

Vietnam

Vietnam is among the most successful countries to halt the COVID-19 and earned much international praise for its effective pandemic response.19 Since its first confirmed cases on January 23, 2021 to July 31, 2021, Vietnam had detected 38,239 cases with only 138 deaths, compared to 5,829,724 detected cases with more than 100,000 deaths in France during the same timeline. One contributing factor was the ability of the government to fully implement strict enforcement of large-scale lockdown protocols and obligatory quarantine with very high public compliance, utilizing its state apparatus of a centralized system of the government.[20]

In terms of the specific impact on urological services, Dong Nguyen (Bình Dân Hospital, Ho Chi Minh City) reported no significant changes during the pandemic. This was probably due to COVID-19 situation being relatively under control in the country. The Vietnam Urological Association did not develop specific guidelines, and Mr. Dong did not apply specific guidelines for his daily practices.

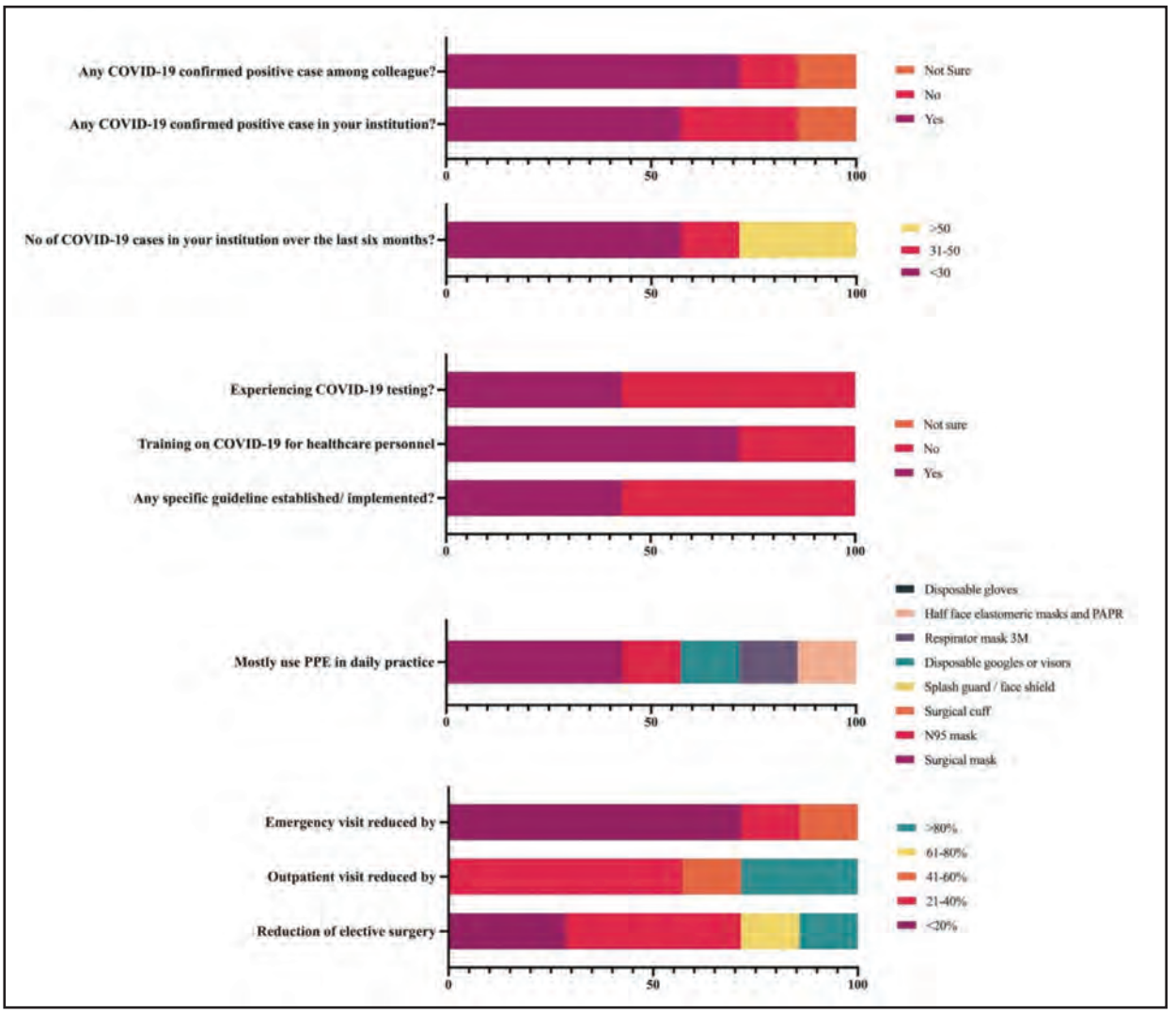

Fig. 1: Overview of the individual consultant urologist's statements on the questionnaire. For the full question texts, please refer to the questionnaire in the supplemental data.

DISCUSSION

Through the SWOT analysis (See Table III), several strategies can be developed: (1) reboot the urological services safely and sustainably; (2) optimize financial and infrastructural capacities; and (3) regional collaboration to strengthen the health systems. Although these cannot cover all possible problems, these strategies aimed at urologists at SEA countries, and we tried to cover a wide range of situations encountered during the pandemic.

Reboot the urological services in a safe and sustainable manner

Resumption, followed by a consistent delivery of specialized services such as urology during a pandemic crisis is essential. A delay can potentially lead to serious adverse events, which can result to an extensive procedure, and may complicate by worsening the disease condition and progression. However, the safety of both healthcare providers and patients is paramount. Proper strategy is effective to maintain the balance between the resumption of urological routine services while strengthening the efforts to curb the spread of COVID-19 through the following principles: (1) Determine if the pandemic curve, the outbreak is within the region.[21] This is intended to engage relevant stakeholders and authorities to take necessary actions. Urological services, especially elective surgeries, should ideally be started when the curves flatten out, no vast surges or sustained spikes, and the community spreads is considerably under control. It is essential to note from the previous Spanish flu pandemic experienced, a second wave which was more lethal than the previous one. (2) Perform a reliable COVID-19 screening.[22] The gold standard is the molecular testing of upper or lower respiratory tract samples through RT-PCR. The rapid serology tests are less reliable due to antibodies' uncertain serodiagnostic power against SARS-COV-2. Nevertheless, this can be done as an alternative, by combining with chest computerized tomography as being adopted in some hospitals in Beijing. (3) Carry out a graded approach based on risk stratification for urological services based on the guidelines published by several groups and societies, and the provided objective perspectives on prioritizing patients during the pandemic. (4) Develop a well-planned non-surgical program for urological patients. Management of urological

patients often require non-surgical programs such as routine consultations and rehabilitation. This urges incorporation of technology in bridging the gap, such as telemedicine.[23] (5) Ensure sustainable efforts.[24] Without a dynamic system and continuity, the whole process will not be completed. The key strategy here is to maintain a steady but gradual services capacity and flexibility to adapt to the ever-changing situation. Start with small capacity of services, then adjust the number based on the epidemic curve in the SEA region. Maximize the procedure that can be done without hospitalization. Keep updated on the current development of the pandemic and adjust the health practices appropriately.

Optimizing financial and infrastructural capacities
There are several potential problems with the infrastructural and financial aspects of the government such as reduced access to urological facilities due to lockdown orders, reduced funds for most surgical cares due to ratcheting or reallocation of the state budget,[25] and most surgical cares have financially enormous spending.[26] These can be a hinderance to our efforts towards managing the pandemic.

The role of related stakeholders is essential, but a urologist may still contribute in several ways. First, by embracing adoption of technology to help patients with access challenges. Although still new and relatively low uptake, telemedicine is still the primary choice. Secondly, build a solid supply chain by promoting and empowering locally made PPEs.[27] The pandemic demands us to be creative, and utilization of the locally made PPE can be the perfect alternative while maintaining the high standards of production and quality control procedures. Thirdly, drastically reduce the expenditure in surgical cases & PPE using supply chain resilient concepts.[28] This is important to cope with the risk of enormous spending from surgical diseases and can be done through sustainability practices. Fourthly, divide the PPE stockpiles into emergency and routine care purposes.[27] The goal is to be prepared when pandemic-related emergency cases occur while maintaining routine urological care sustainability.

Regional collaboration to strengthen the health systems
The discrepancy of urologist distribution highlights an area for further improvement. The geographic proximity and close economic and structural ties of SEA countries call for multi-regional collaborations. This can be by information sharing from the experts to provide joint statements through additional training, webinars, podcast, etc. and may optimize patient care during the COVID-19 crisis.[29]

On a larger scale, the second phase of this and in any future pandemic, which many countries have not experienced, may need a regional capacity sharing system.[29] This allows us to share essential resources such as regional vaccines and PPEs. This will enable less developed countries to employ healthcare workforces from nearby countries through mutual recognition arrangements.

From this point forward, health security, in general, is a pivotal part of regional and national security and is best managed by a united SEA. Urologists should be prepared to contribute to further development by taking an important leadership role during this unprecedented time.

The limitations of the study include the small sample size, lack of diversity, and the recruitment methods with limited number of respondents. Larger studies are needed to expand the data from another developing country, to increase generalizability, and to compare unique experiences among urologists during the COVID-19 crisis.

CONCLUSIONS

Several challenges and opportunities in SEA countries regarding continuing urological services during the COVID-19 pandemic were identified in this study. Each country has a unique approach and progress towards COVID-19 management. These findings helped us recognize potential areas for improvement and strategies to emphasize the safety for both patients and urologists. Thus, strengthening future collaboration by joint efforts should be implemented by recognizing the need for multi-stakeholder initiatives and involving all SEA members in an approach to ensure' sustainability of urological services during a pandemic. Finally, the focus of urological services recovery should be based on resilient, adaptive, and sustainable approach.

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