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PROCEEDING
THE 3rd SRIWIJAYA INTERNATIONAL CONFERENCE ON PUBLIC HEALTH

The Work Place Initiative: Health, Safety and Wellbeing Regarding COVID-19

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PREFACE

On behalf of the organizing committee, I am delighted to welcome you to the 3nd Sriwijaya International Conference on public Health (SICPH 2021) during 21th october 2021 at Palembang South Sumatera, Indonesia. The SICPH 2021 is international conference organized by Faculty of Public Health, Sriwijaya University (UNSRI). I would like to extend my warmest welcome to all the participant of The SICPH 2021 under the theme ***"The Impact of Climate Change on Infectious Disease Transmission".***

The SICPH 2021 consists of keynote sessions from well known expert speakers in the field of public health, and academic paper sessions (oral presentations) who are coming from several region. This conference seeks to bring together academics, public health professionals, researchers, scientists, students and health stakeholders from a wide range of disciplines to present their latest research experience and further development in all areas of public health. We hoped that this conference will be usefull platform for researchers to present their finding in the areas on multidisciplinary realted to public health and health system issues.

This conference will provide opportunities to exchange ideas, knowledge, and development of the latest research among the participants. We will publish the paper as output from the SICPH 2021 in proceeding book with ISBN and selected paper will be published in Jurnal ilmu kesehatan masyarakat- SINTA 3 (a nationally-accredited journal). The SICPH 2021 is being attended by about 50 participants. I hope you enjoy the conference.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any govermental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The conference committee expresses its gratitude towards all the keynote speakers, authors, reviewers, and participanst for the great contribution to enssure the succes of this event. Finnally, I sincerely thank all the members of the organizing committee who have worked hard to prepare this conference.

Palembang, October 2021

Chair,

Anita Camelia, SKM., MKKK.

PREFACE

First of all, let us thank God, the Almighty, who has given His grace and guidance so that the 3rd Sriwijaya International Conference of Public Health (SICPH) with the theme of The Workplace Initiative: Health, Safety and Wellbeing Regarding Covid:19 can be held successfully. I welcome all of you to this seminar which has received great attention not only from university, but also other communities to submit papers to be presented in this seminar. I express my highest gratitude and appreciation the presenters.

The conference is divided in two session, the first session is speeches and the second session is round table discussion. In the first session, the invited keynote speakers were Prof. Dr. Tan Malaka, MOH, DrPH, SpOk, HIU (A Professor from Medical Faculty Universitas Sriwijaya), Prof. Dr. Retneswari Masilamani (University Tunku Abdul Rahman, Malaysia), Prof.Dr.Joselito L. Gapaz MD, M.PH(University of the Philippines) and Prof. Dr Tjandra Yoga Aditama, MHA,DTM&H, DTCE,SpP(C).FIRS (Professor from Griffith University, Australia)

Of course, this conference activity would not have succeeded without the support of all parties involved, as well as the presence of all participants in all regions in Indonesia and internationally. I especially thank to all the organizing committees for their hard work, perseverance, and patience in preparing and organizing this conference so that it can go well, smoothly and successfully.

Finally, through this conference let us extend the network and cooperation among all stakeholders of the public health sector, especially in Indonesia and in the world in general, to build a better public health world in Indonesia

Thank you for participating in this conference.

Dean of Public Health Faculty,

Universitas Sriwijaya

Dr. Misnaniarti, S.K.M, M.K.M

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A YEAR AND A HALF TREND ANALYSIS AND SPATIAL DISTRIBUTION OF COVID-19 CASES IN PALEMBANG

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ABSTRACT

SARS-CoV-2 has spread worldwide after its discovery in Wuhan, China, in December 2019. The number of confirmed illnesses in Indonesia has gradually risen since early March 2020 in Jakarta. Virus containment efforts are ongoing throughout the nation, including in Palembang city. For the first time, a spatial-temporal model of SARS-CoV-2 transmission in Palembang is utilized, as is a patient and environmental profile for all confirmed COVID-19 cases. The data were collected from the Palembang City Health Office website between March 24, 2020, and September 30, 2021. Demographics and confirmed case classification of SARS-CoV-2 positive individuals were used to classify the data. The data gathered is thorough for each of Palembang's 18 districts. ***Results:*** *A cumulative total of 30,324 confirmed cases were reported in Palembang throughout the study period. There were 1,177 fatalities out of a total of 30,324, or 3.88%. COVID-19 spread throughout Palembang's districts after the first confirmed case. This study is the first to provide detailed demographic and COVID-19 presentation chronology information on confirmed SARS-CoV-2 patients in Palembang. Geographic and temporal data were used to illustrate how the illness spread throughout the district's cities and territory. The introduction of variants of concern may be responsible for the surge in new confirmed cases across all subdistricts. The current Indonesian Task Force constantly utilizes this data to advise on the prospective construction or removal of physical distancing measures and the potential availability of healthcare capacity to contain the pandemic.*

Keywords: *SARS-CoV-2; subdistricts; pandemic; transmission, variants of concerns*

ABSTRAK

SARS-CoV-2 telah menyebar ke seluruh dunia setelah pertama dilaporkan di Wuhan, Cina pada Desember 2019. Kasus terkonfirmasi pertama di Indonesia di awal Maret 2020 di kota Jakarta. Upaya penanggulangan virus terus dilakukan secara nasional, termasuk di kota Palembang. Untuk pertama kalinya, model spasial-temporal penularan SARS-CoV-2 di Palembang digunakan, seperti profil pasien dan lingkungan kecamatan. Data dikumpulkan dari situs web Dinas Kesehatan Kota Palembang antara 24 Maret 2020 hingga 30 September 2021. Untuk mengkategorikan data, digunakan kategorisasi demografi dan kasus terkonfirmasi pasien positif SARS-CoV-2. Pengumpulan data dilakukan secara menyeluruh dan komprehensif untuk masing-masing 18 kecamatan di Palembang. Total kumulatif 30.324 kasus yang dikonfirmasi dilaporkan di Palembang selama periode penelitian. Ada 1.177 kematian dari total 30.324, atau 3,8%. COVID-19 menyebar ke seluruh kecamatan Palembang setelah terkonfirmasi kasus pertama. Penelitian ini merupakan penelitian pertama yang memberikan informasi rinci demografi dan kronologis presentasi COVID-19 pasien terkonfirmasi SARS-CoV-2 di Palembang. Data geografis

dan temporal digunakan untuk menggambarkan bagaimana penyakit menyebar ke seluruh kota dan wilayah kabupaten. Masuknya varian of concerns mungkin bertanggung jawab atas lonjakan kasus baru yang dikonfirmasi di semua distrik. Data ini dapat digunakan oleh Gugus Tugas kota Palembang terkait saran penanggulangan atau penerapan PPKM/PSBB, serta meningkatkan ketersediaan kapasitas layanan kesehatan, dalam upaya menanggulangi pandemi.

Kata kunci: SARS-CoV-2; kecamatan; pandemi; transmisi, variants of concerns

Introduction

Since the first cases of severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) were discovered in December of this year in Wuhan, China, the virus has spread worldwide. According to the World Health Organization (WHO), the total number of confirmed sick individuals worldwide on August 23, 2020, was 23,057,288, with a total death toll of 800,906 [1]. Indonesia, the world's second-most populous South-East Asian country, has reported and continues to report large cases [2]. On March 2, 2020, the first case was reported in Indonesia.

Global attempts to contain the virus are still underway. Because the number of asymptomatic diseases and the rate of disease transmission are unknowns, evaluating these initiatives is difficult. COVID-19 has a higher reproductive number than previous coronavirus epidemics [3], [4], and most infected individuals seem to be asymptomatic. Consequently, the number of new verified COVID-19 cases and deaths continues to rise worldwide, including in Indonesia.

Governments have focused on conventional public health measures to limit the pandemic's spread and reduce new infections. For many years, isolating and separating people has been the primary goal of public health treatments such as quarantine, social isolation, and community confinement [5], [6]. Despite Indonesia's control measures (physical isolation, home quarantine, public messages encouraging hand washing and mask use in public, and local travel restrictions), the number of new cases in the nation continues to rise. Due to the difficulties in tracking confirmed cases back to their origins through transmission chains in many situations, the WHO refers to the virus's spread in Indonesia as "community transmission" [7]. As a result, understanding transmission routes and patterns is important [8], [9].

We used a spatio-temporal reasoning model to analyze national data to understand COVID-19 transmission in Palembang better. The data provides detailed information on COVID-19 monitoring in 18 sub-districts throughout Palembang, which may be used for future prediction modeling.

Method

This study used an internet-based descriptive cross-sectional research design from March 2020 to September 2021. The COVID-19 case data was gathered from the Palembang City Health Office website [10] and South Sumatra Province Health Office [11]. Until the ending of September 2021, both data collection methodologies were completed by downloading databases.

Geographically, the area of Palembang City is 400.61 km, located at 2°.59'.27.99" South Latitude, 104°.45'24.24" East Longitude. The number of sub-districts is 18, the number of community units (RW) is 107, and there are 916 household units (RT) with independent local governments and parliamentary bodies. There are 41 PUSKEMAS (primary healthcare institutions) [12] and twenty-three hospitals (secondary healthcare facilities) in this city [13], with two hospitals designated as national referral sites for COVID-19 treatment [14]. The total population of Palembang stands at 1,696,244 (2020) [15], with the median age around 30 years [16].

We used the Palembang City Health Office website [10] and South Sumatra Province Health Office [11]. Data on demographics confirmed cases, and fatality results were collected from 18 sub-districts between March 24, 2020, and September 30, 2021. Under Article 3 of Regulation Number 45 (2014), paragraphs 1 and 2, the Indonesian Ministry of Health approved the use of anonymized population-level data in public health.

The Indonesian sampling and testing approach is to examine all COVID-19 occurrences and clusters and their interrelationships. According to the recommendations, the goal is to isolate at least 90% of probable patients and collect specimens within 48 hours after symptoms start to prevent secondary transmission to the maximum degree feasible. It is advised that specimens be submitted to referral labs and obtained within 72 hours. During this time, people should remain self-isolated. Every day, the results of epidemiological and laboratory investigations must be submitted to the Ministry of Health and the National COVID-19 Taskforce [17] for evaluation through specified data-collecting channels.

There were two classifications: confirmed infected and fatality cases. Univariate logistic regression was used to examine factors associated with COVID-19 transmission and mortality. The number of new confirmed cases in each city was on an XY axis graph. The number of weekly new confirmed cases in each sub-district was colored on a map—the yellow, orange, and red categories the low, middle and high-risk zone.

Results and Discussions

The health office reported 30,324 confirmed COVID-19 infections in Palembang between March 24, 2020, and September 30, 2021. 3,88% (1,177/30,324) who tested positive for SARS-CoV-2 RT-PCR deceased (see Figure 1). The first confirmed case was on March 24, 2020. Two-person returning from traveling the red zone in Jakarta. The first fatality case was on March 24, 2020, one of the confirmed cases. Jakarta had the first one on March 2, nine days after the WHO declared COVID-19 as a pandemic [18]. Similar transmission patterns were found in five Chinese cities that were not close to Wuhan [19]. Eighty-nine laboratories have been assigned to examine suspected patient samples by April 29, 2020. Forty-eight hospital labs, 18 ministry labs, 15 university labs, and 3 Directorate of Livestock laboratories [20]. The incident has kept rising, and on June-August 2021, the weekly confirmed the surge, with 538 cases per day. Indonesian authorities have allowed both public and private laboratories to perform confirmatory RT-PCR investigations to improve national diagnostic capacity. Even though the epidemics began in different provinces, additional cases quickly followed once a case was verified.

At the beginning of the pandemic, several sub-districts (kecamatan) had high confirmed cases. The spatial analysis found that the two most populous kecamatan, Ilir Barat I and Sukarame, have the high weekly confirmed cases, as shown in Figure 2. In the middle of 2021, all sub-district were in high confirmed cases from June 2021 until July 2021 and decreased to Moderate status in August 2021. The Government applied for the prolonged PPKM program; thus, the transmission of COVID-19 can be reduced. The travel restriction, business and social activities were forbidden after 20.00. Citizens were encouraged to take precautionary and hygienic precautions [17]. The first detection of Variant of Concern, the Delta variant, in the early year of 2021, might cause the surge in the confirmed cases [21]. The virus can spread faster than the previous ancestor and has caused surge cases in India and worldwide.

Figure 1. Daily Cumulative Confirmation Cases and Daily Fatality Cases in Palembang from March 24, 2020, to September 30, 2021

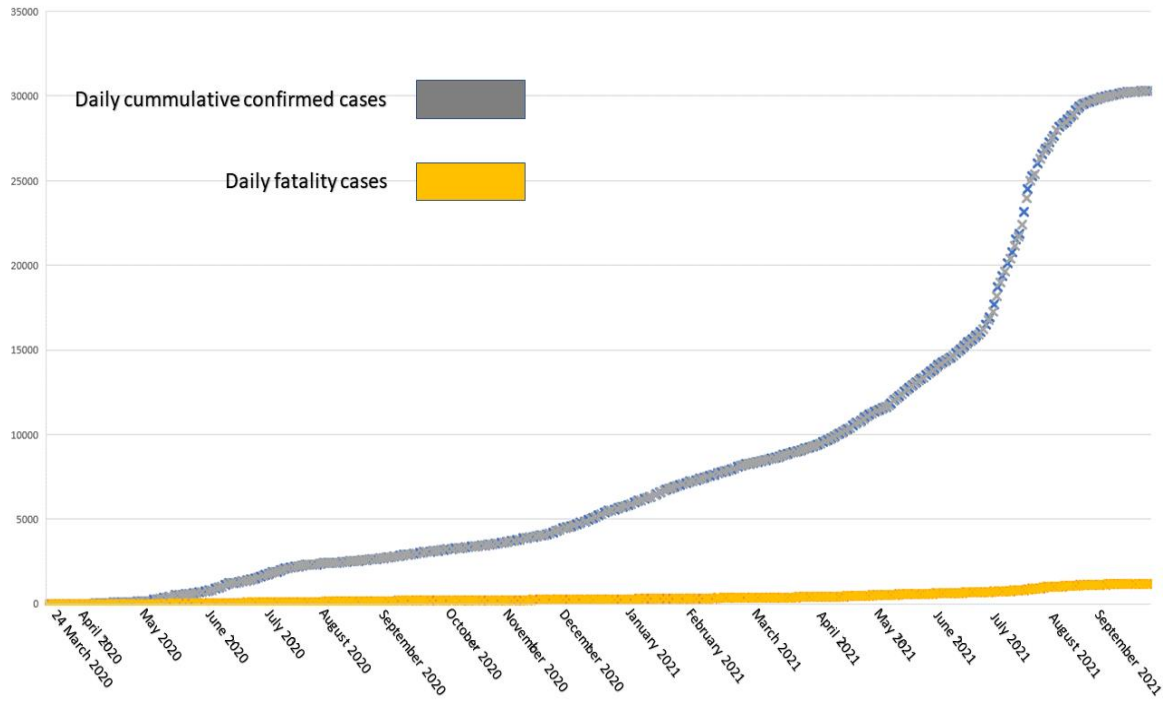
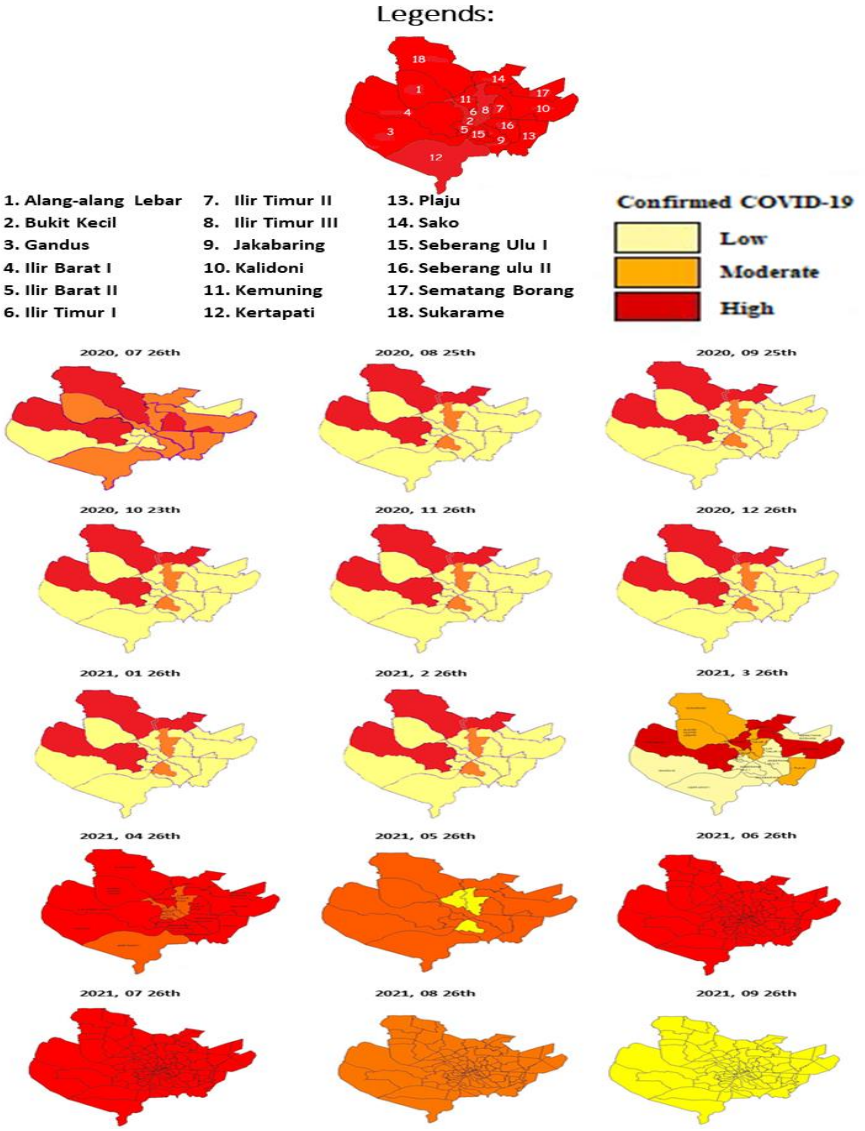


Figure 2. Weekly Confirmed New Cases from July 2020 to September 2021 categories in the low, moderate and high-risk zone of Palembang subdistricts



The strength of our research is that the data was collected centrally by the Health Office of Palembang city/South Sumatra province and geographically evaluated. This ensured that the reporting was constant and that it could cover the whole Palembang regional area. However, there are several problems in this study. Gaps in data, especially early in the pandemic. Further geographical modeling efforts have been hampered by completion variability. Because Palembang is a significant transit hub in Sumatra-Java, some confirmed COVID-19 cases might have been imported from other areas. However,

the information collected so far cannot differentiate between local transmission and imported seeding. Data reporting was also delayed. Local governments are overwhelmed with data management structures due to staff competence in initial specimen processing. As a consequence of the testing data not being complete, the findings were prone to response bias (patient genomic sequence, social interaction history).

Conclusion

In conclusion, the first transmission case in Palembang was on March 24, 2020; the disease arrived in the city due to other pandemics (Jakarta). Given the Palembang's high population density and mobility, predominance was expected. The spatial analysis showed that the cases kept rising and peaked from June to August 2021; the introduction of variants of concern may be responsible for the surge in new confirmed cases across all parts of the city.

As shown by the data presented, COVID-19 affected all Palembang subdistricts. To prevent the health system from collapsing, better preparedness against the pandemic, such as faster testing results, massive tracing of the asymptomatic and better treatment (also for vaccination and centralized isolation facilities). The current Palembang Task Force is continuously using this data to assist in the management of the pandemic.

Acknowledgment

We want to thank the Health Department of Palembang municipality and the South Sumatra province for the permits and data collection.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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