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FIRST CLUSTER OF COVID-19 CASES IN MALAYSIA: PUBLIC HEALTH RESPONSE AND CHALLENGES

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SUMMARY

This research article highlights the first cluster of COVID-19 cases in Malaysia which originated from a group of foreign tourists. The cluster involved 3 cases from 8 close contacts of a COVID-19 case, who was visiting Singapore for holidays. The public health responses and challenges in containing the outbreak we also underlined with the focus on rapid and effective risk communication between relevant authorities in different countries.

Keywords: COVID-19, first cluster, Malaysia, public health response

1.0 Introduction

Coronavirus Disease 2019 (COVID-19) outbreak began in late December 2019 in the city of Wuhan in central China has rapidly spread to other countries. As of September 2020, this pandemic has spread to more than 200 countries from six continents worldwide with more than 27 million confirmed cases reported and more than 900,00 recorded deaths (1). In Malaysia, the first cluster of COVID-19 was reported on 25th January 2020. It involved the very first three COVID-19 cases detected in our country. Here, we report the public health response and management of this first cluster of COVID-19 cases in Malaysia.

2.0 The First cluster of COVID-19 cases in Malaysia

The first cluster of COVID-19 cases in Malaysia involved 3 cases from 8 close contacts of a COVID-19 case, who was visiting Singapore for holidays (2). The index case, Mr. A, was a 66

years old man, a Chinese citizen from Wuhan, China who travelled by flight from Wuhan through Guangzhou to Singapore with nine family members and friends on 20th January 2020. They checked-in at a hotel on Sentosa Island upon arrival until 23rd January 2020, on which they planned to travel to Malaysia.

On 21st January 2020, Mr. A developed fever and cough. He presented to the Emergency Department of Singapore General Hospital (SGH) on the next day when his condition worsened and was immediately admitted and tested positive for COVID-19 on the following day. On 22nd January 2020, Mr. A's son was also admitted after he developed cough the day before.

In the morning on 23rd January 2020, the 8 close contacts left Singapore via land using a private tour van to Johor Bahru, the capital of Johore state, Malaysia and checked in to a hotel at a theme park. The Ministry of Health (MOH) Malaysia was informed by its counterpart in Singapore that eight close contacts of Mr. A had entered Malaysia. A team from Johor State Health Department (JSHD) and Johor Bahru District Health Office (JBDHO) were immediately sent to the hotel for rapid assessment and response.

Upon arrival, all eight contacts were found to be healthy without any symptom. Their body temperatures were normal. Nasopharyngeal and oropharyngeal swabs were collected and immediately sent to the National Public Health Laboratory (NPHL) in Sungai Buloh, Selangor State, Malaysia, for reverse transcription polymerase chain reaction (RT-PCR) to detect SARS-CoV-2.

The team provided health education to all hotel staff. Staff that served these eight contacts were given N95 mask to protect themselves. The hotel was also advised to: 1) enforce strict room surveillance to restrict the movement of the eight contacts through CCTV and by stationing guards in front of their rooms; 2) place prepared meals on trolleys outside their rooms to minimize contact; 3) withhold housekeeping in the contacts' rooms during their stay; 4) inform JBDHO should the contacts become symptomatic; and 5) allow JBDHO to decontaminate the room after the contacts checkout later.

On 24th January 2020, after blood samples for serology test were collected, the contacts were transported by a private tour van from the hotel to Kuala Lumpur International Airport (KLIA). This 320km journey from Johore State to KLIA was covered without any stop and escorted by JBDHO. Upon arrival to the airport, the contacts were passed over to health team in KLIA and were quarantined in a designated place. They were not allowed to enter the airport before the test results were available. The full travel history was illustrated in **Figure 1.**

On 25th January 2020, three of Mr. A's close contacts, namely his wife and two grandsons were confirmed positive for COVID-19 and admitted to Sungai Buloh Hospital in Selangor state, Malaysia. Mr. A's daughter in-law, the mother of the two admitted children, was tested negative but was allowed to stay in with them in the ward. The other family of four with negative result were flown home to China from KLIA (see **Table 1**).

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Figure 1: Travel history of 8 close contacts of index case.

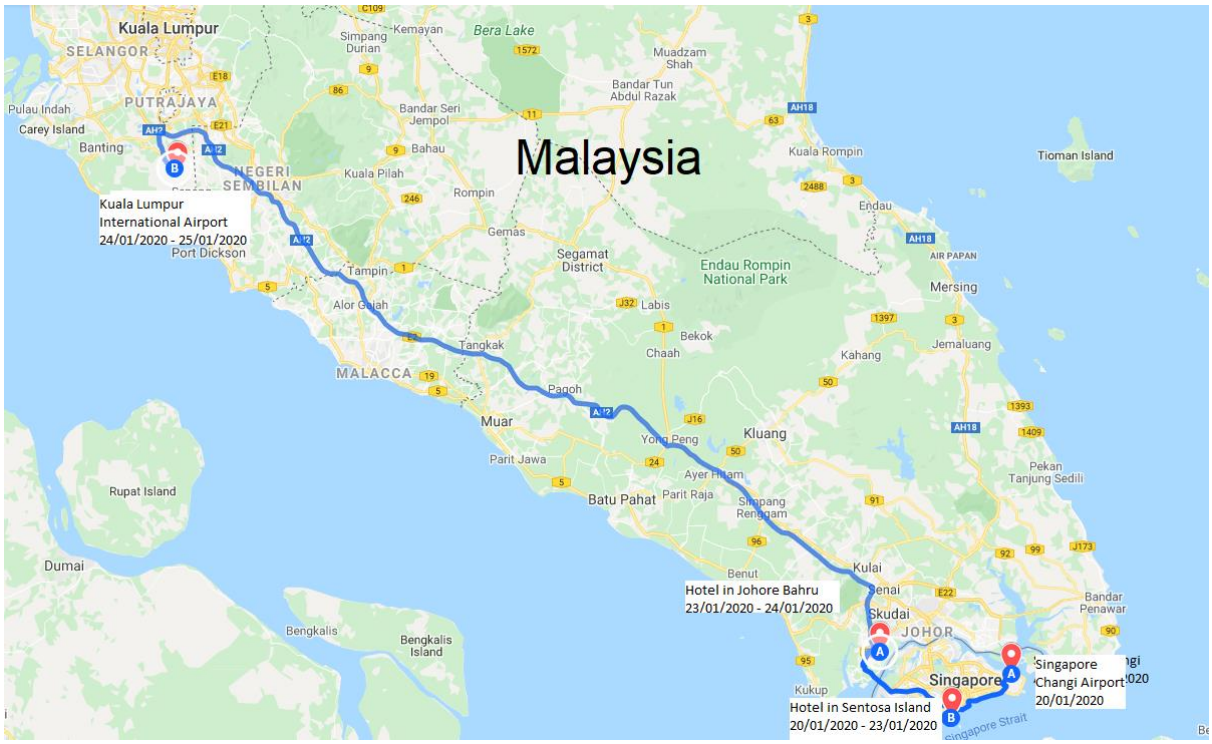

Table 1: COVID-19 screening test results of eight close contacts with their sociodemographic profile

Contact	Age (year)	Gender	Relation to Mr A	Test result
No. 1	65	Female	Wife	Positive
No. 2	36	Female	Daughter in-law	Negative
No. 3	11	Male	Grandson	Positive
No. 4	2	Male	Grandson	Positive
No. 5	38	Male	Friend (Husband)	Negative
No. 6	37	Female	Friend's Wife	Negative
No. 7	11	Male	Friend's son	Negative
No. 8	3	Male	Friend's son	Negative

Public Health Response

This was the very first cases and cluster of COVID-19 reported in Malaysia. To revise, MOH Malaysia has established comprehensive guideline in management of COVID-19 (3). The field investigation which was performed via epidemiological study and laboratory study suggests establishment of epidemiological link to the index case with the laboratory study confirming the cases. During this period of containment, a series of risk communication with the MOH Singapore, state health office, MOH Malaysia and KLIA Health office were done to ensure all parties were kept informed.

List of active outbreak control measures taken by MOH Malaysia:
1. Home/room surveillance for all 8 close contacts;
2. Body temperature and symptoms were monitored at least twice daily;
3. Nasopharyngeal swab samples taken were sent urgently to NPHL;
4. Health education and targeted advices were given including the use of masks, cough etiquette and hand hygiene;
5. "Home monitoring tool" was provided and explained. Contacts were advised to inform health personnel if they developed any symptom;
6. Meals were delivered to the rooms by the hotel staff and placed outside the room for self-collection to minimize contact;
7. No room cleaning by housekeeping was allowed.
8. The hotel manager monitored the movement of contacts through CCTV and a security guard was placed in front of contacts' rooms;
9. Disinfection of the rooms was carried out by JBDHO team after contacts checked-out;

Finally, after the results of the close contacts were known, a total of 20 healthcare personnel and 10 hotel staffs who had contact with the positive cases were identified, sampled, quarantined, and monitored for 14 days. All of them tested negative.

Public Health Challenges

The main challenge faced in managing this outbreak was to keep these close contacts under surveillance. The hotel wanted them to be evacuated as soon as possible to avoid media attention and to reduce the risk of transmission as the hotel was fully occupied, mostly by travelers with children. Suitable place to quarantine these otherwise healthy contacts was difficult to find at short notice, especially one that would prevent transmission of disease, yet not infringe on their human right. As a result, contacts insisted to be sent back to Singapore initially, and later made arrangement with their embassy through the travel agent to fly home directly through KLIA. The delay of the collected blood samples in reaching NPHL due to heavy traffic only added to the frustration.

3.0 Conclusion

This case study demonstrates the competency of Malaysian public health authorities in containing the spread of COVID-19 from this very first cluster detected in the country, despite the challenges facing them. It also highlights the importance of rapid and effective risk communication between relevant authorities between and within countries in outbreak control

Acknowledgement

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This study obtained ethical approval from the National Medical Research Registry (NMRR), Ministry of Health Malaysia (Registration number NMRR-20-720-54598).

Declaration

We declare no competing interests.

Authors contribution

MSAK, CZL, TCR, NAA, NAL led the conceptualization, analysis and writing of this manuscript. SNACMD, AR, NM, NR, MAW contributed in the collection, processing, cleaning, analysis and interpretation of data. All authors interpreted the findings, contributed to writing the manuscript, reviewed the final manuscript and approved the final version for publication.

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