

# COVID-19 Antibody Surveillance Among Healthcare Workers in A Non-COVID designated Cardiology Centre

HWEI SUNG LING<sup>1</sup>, Ing Xiang Pang<sup>2</sup>, Alan Yean Yip Fong<sup>3</sup>, Tiong Kiam Ong<sup>2</sup>, Ning Zhang Khiew<sup>2</sup>, Yee Ling Cham<sup>2</sup>, Asri Said<sup>4</sup>, Yen Yee Oon<sup>2</sup>, Keng Tat Koh<sup>2</sup>, Chen Ting Tan<sup>2</sup>, Kian Hui Ho<sup>2</sup>, Francis Eng Pbeng Shu<sup>2</sup>, Chandan Deepak Bhavnani<sup>2</sup>, and Lean Seng Chen<sup>2</sup>

<sup>1</sup>Universiti Malaysia Sarawak Faculty of Medicine and Health Sciences

<sup>2</sup>Sarawak Heart Centre

<sup>3</sup>Clinical Research Centre Sarawak

<sup>4</sup>UNIMAS

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## Abstract

**BACKGROUND:** Reports on healthcare worker antibody response to COVID-19 infection are scarce. We aim to determine the COVID-19 antibody prevalence among healthcare workers in a cardiology centre and the relationship between case definition criteria with the COVID-19 antibody result. **METHODS:** Convenience sampling was applied. Healthcare workers in Sarawak Heart Centre (SHC) cardiology, radiology, and emergency unit were recruited. A survey form on clinical symptoms and close contact history was distributed. HEALGEN COVID-19 IgG/IgM rapid test was performed using serum/ whole blood specimen. Staff with positive COVID-19 antibody results were referred to the infectious disease specialist for assessment. **RESULTS:** A total of 310 staff were screened. 220(71%) were female, and the mean age was  $36 \pm 7.7$  years old. 46(14.8%) staff reported having clinical symptoms at some stage from the end of January 2020 to the time of this surveillance. Number of staff who had a history of overseas travel, close contact with confirmed COVID-19 patients, or had visited places with identified COVID-19 clusters were 4(1.3%), 24(7.7%) and 24(7.7%) respectively. There were 14 staff (4.5%) with positive tests positive, 2 for IgM, and 12 for IgG. All those with positive antibody were subsequently tested negative with RT-PCR test. The history of having clinical symptoms and exposure to COVID-19 cluster area were independently associated with a positive IgG result. **CONCLUSION:** The application of COVID-19 antibody serology rapid tests could determine true exposure of staff to the infection and allow us to reassess existing measures of infection control within the hospital.

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**AUTHORS:** Hwei Sung Ling<sup>1,2</sup>, Ing Xiang Pang<sup>1</sup>, Lean Seng Chen<sup>1</sup>, Chandan Deepak Bhavnani<sup>1</sup>, Francis Eng Pbeng Shu<sup>1</sup>, Kian Hui Ho<sup>1</sup>, Chen Ting Tan<sup>1</sup>, Keng Tat Koh<sup>1</sup>, Yen Yee Oon<sup>1</sup>, Said Asri<sup>1,2</sup>, Yee Ling Cham<sup>1</sup>, Ning Zhang Khiew<sup>1</sup>, Alan Yean Yip Fong<sup>1,3</sup>, Tiong Kiam Ong<sup>1</sup>

## AFFILIATIONS:

<sup>1</sup>Cardiology Department, Sarawak Heart Centre, Ministry of Health Malaysia

<sup>2</sup>Faculty of Medicine and Health Science, Universiti Malaysia Sarawak

<sup>3</sup>Clinical Research Centre, Ministry of Health Malaysia, Kuching, Sarawak

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## **ABSTRACT**

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### **METHODS:**

Convenience sampling was applied. Healthcare workers in Sarawak Heart Centre (SHC) cardiology, radiology, and emergency unit were recruited. A survey form on clinical symptoms and close contact history was distributed. HEALGEN COVID-19 IgG/IgM rapid test was performed using serum/ whole blood specimen. Staff with positive COVID-19 antibody results were referred to the infectious disease specialist for assessment.

### **RESULTS:**

A total of 310 staff were screened. 220(71%) were female, and the mean age was  $36 \pm 7.7$  years old. 46(14.8%) staff reported having clinical symptoms at some stage from the end of January 2020 to the time of this surveillance. Number of staff who had a history of overseas travel, close contact with confirmed COVID-19 patients, or had visited places with identified COVID-19 clusters were 4(1.3%), 24(7.7%) and 24(7.7%) respectively. There were 14 staff (4.5%) with positive tests positive, 2 for IgM, and 12 for IgG. All those with positive antibody were subsequently tested negative with RT-PCR test. The history of having clinical symptoms and exposure to COVID-19 cluster area were independently associated with a positive IgG result.

### **CONCLUSION:**

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**Keywords:** COVID-19, Healthcare worker, Antibody, Surveillance, Sarawak

### **Introduction:**

The novel coronavirus disease (COVID-19) or SARS-CoV-2<sup>1</sup> gained attention after a citywide lockdown was implemented in Hubei, China.<sup>2</sup> To date, COVID-19 had infected more than 3,000,000 people in the world. This pandemic has currently left more than 230,000 dead and almost two-thirds of the world's countries locked down.<sup>3,4</sup>

Malaysia recorded its first confirmed COVID case on 25<sup>th</sup> January 2020.<sup>5</sup> At the time of writing, Malaysia tallied 6176 confirmed cases and 103 deaths.<sup>6</sup> Kuching, the most populated city in Sarawak, was among the areas with most confirmed COVID-19 cases and death in Malaysia.<sup>7</sup> Majority of the cases in Malaysia were contributed by a few clusters, including one religious assembly event in East Malaysia.<sup>8</sup>

SARS-CoV-2 virus displayed high transmissibility ( $R_0$  of 2.68)<sup>9</sup> and longer incubation period (6 days)<sup>9</sup> compared to the Middle East Mediterranean virus. The virus can transmit from human-to-human via respiratory droplets, aerosol, and fecal-oral route. These natures of the virus may explain the rapid spread of the global pandemic and high case-fatality rate.<sup>10</sup>

Healthcare workers are not spared from this disease.<sup>11</sup> China<sup>12</sup> recorded 3.47% and Netherlands 4-9.5% of infected healthcare workers (HCW).<sup>13</sup> Contact tracing revealed most of the infected HCW acquired the