

Dengue Seroprevalence in Malaysian Adult: A Comparison Study of Urban & Rural Population

Nor Azila Muhammad Azami¹, Meng Ling Moi², Sharifah Azura Salleh³, Hui-min Neoh¹, Mohd Arman Kamaruddin¹, Nazihah Abdul Jalal¹, Norliza Ismail¹, Tomohiko Takasaki⁴, Ichiro Kurane⁵ & Rahman Jamal^{1*}

THE MALAYSIAN COHORT
Our Gift To The Future Generation

¹UKM Medical Molecular Biology Institute, UKMML, Malaysia; ²Institute of Tropical Medicine, Nagasaki University, Nagasaki, Japan; ³Department of Medical Microbiology and Immunology, UKMMC, Malaysia; ⁴Kanagawa Prefectural Institute of Public Health, Kanagawa, Japan; ⁵National Institute of Infectious Diseases, Tokyo, Japan

*Corresponding contact: rahmani@ppukm.ukm.edu.my

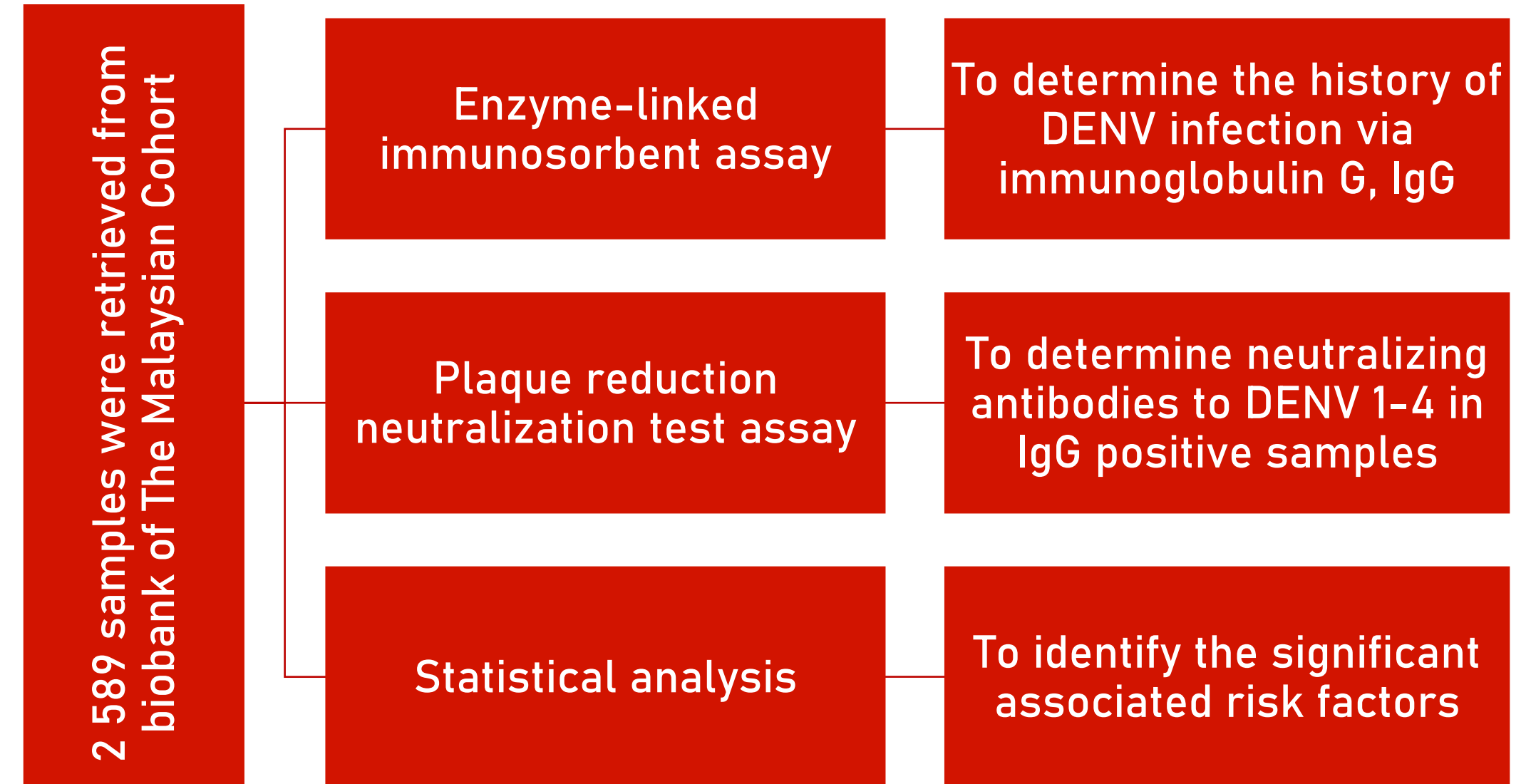
Year of Publication: 2020

INTRODUCTION

As a dengue hyperendemic country, Malaysia monitors its dengue cases using the passive surveillance system. However, current system is only able to capture symptomatic cases. Since most dengue virus (DENV) infection are asymptomatic, periodic serosurvey is essential to determine the magnitude of DENV infection.

The Malaysian Cohort (TMC) has recruited at least 100,000 healthy Malaysian and their biological samples, such as serum, was stored in the biobank. This study utilized blood samples from TMC project and a total of 2958 samples were used in this dengue seroprevalence study.

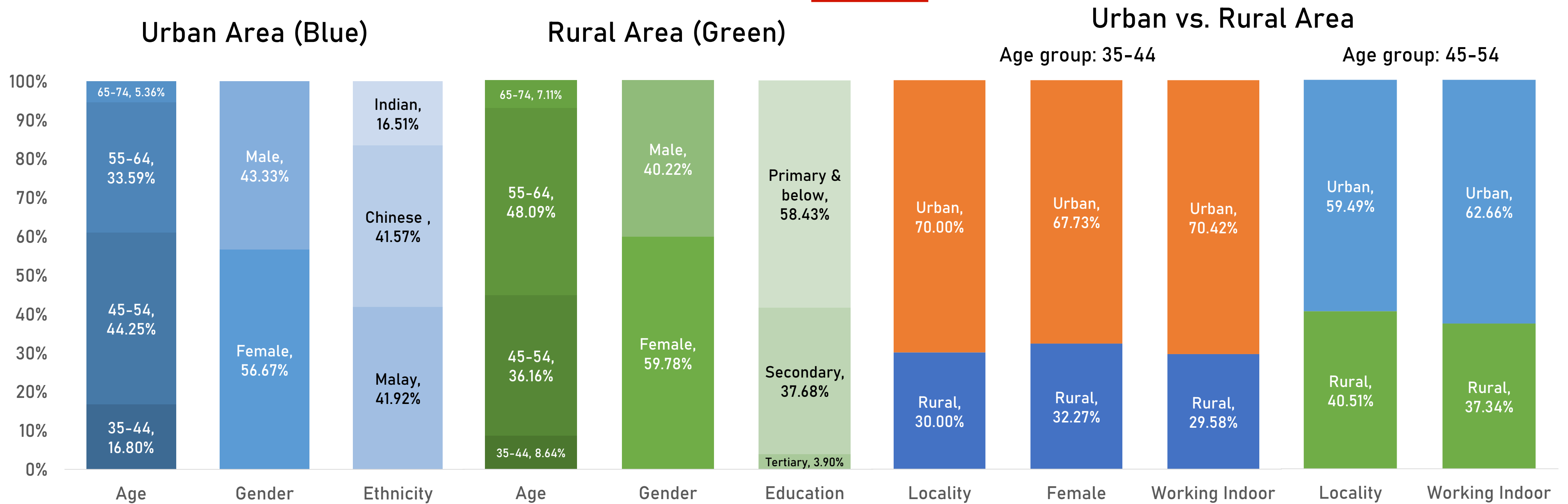
METHODS



RESULTS AND DISCUSSION

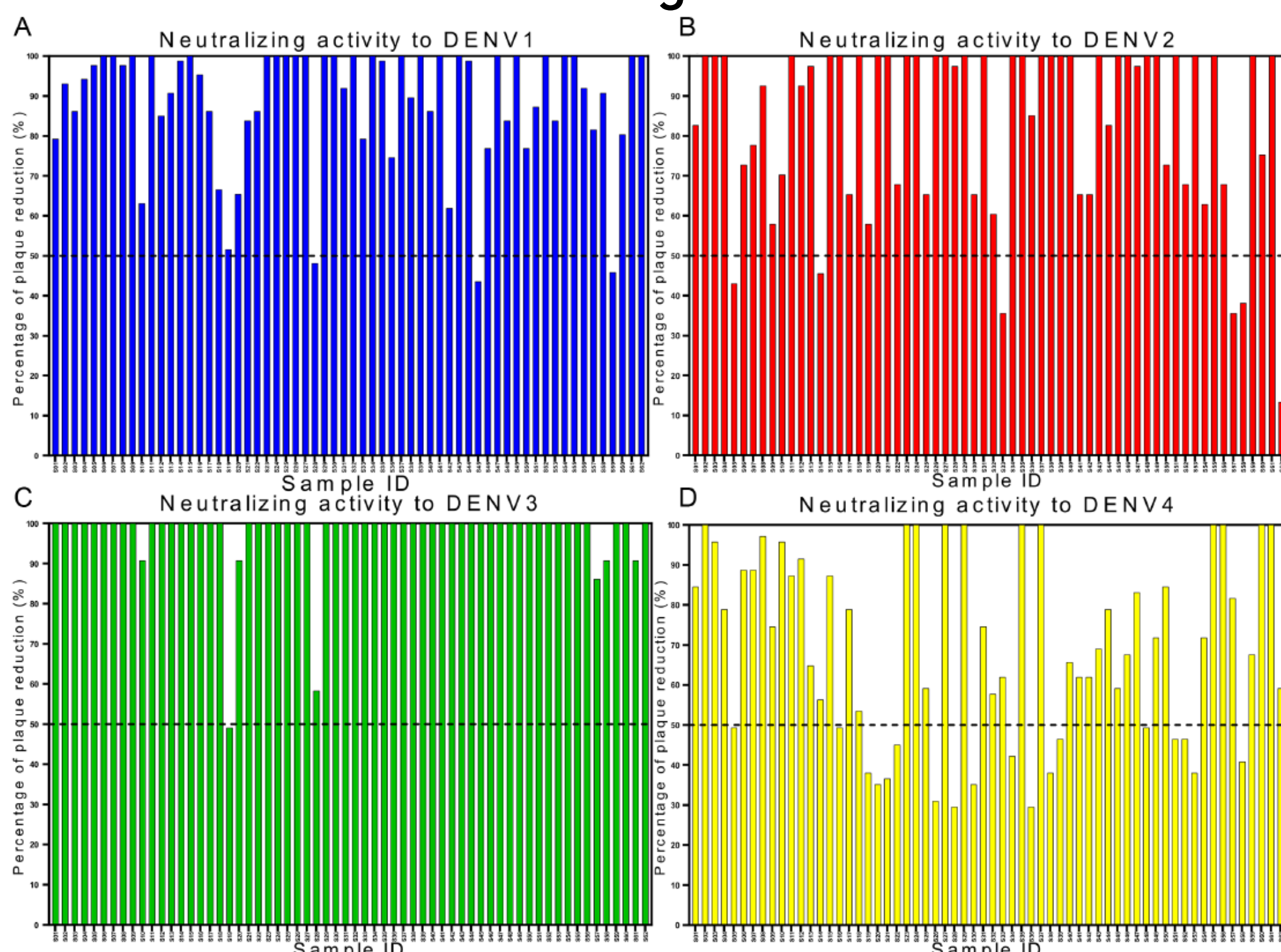
Dengue IgG Seroprevalence* in Adults of

*Only significant results are shown.

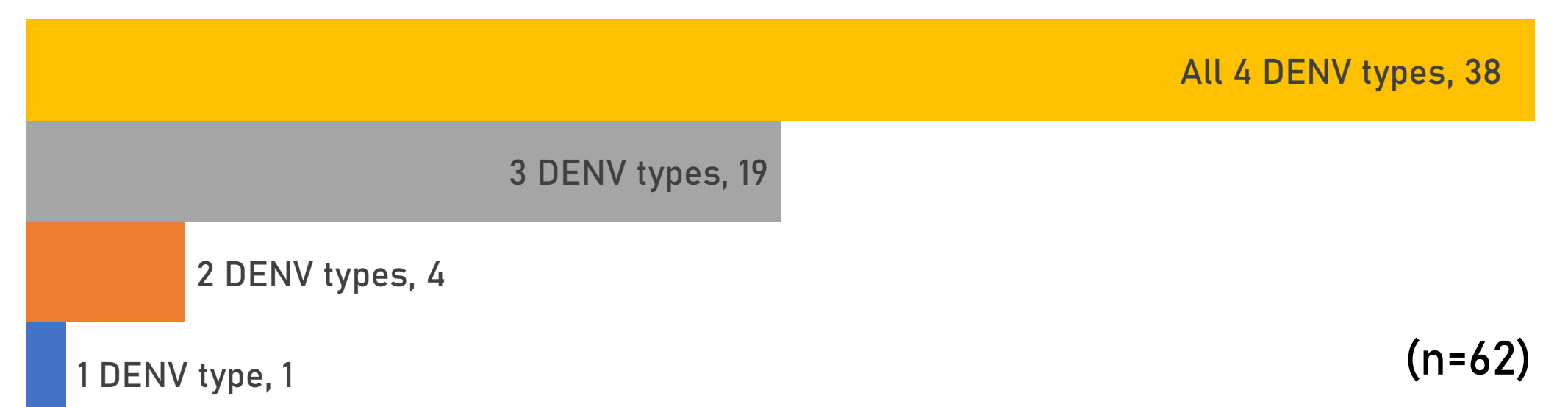


Adults in urban areas are more likely to have been exposed to DENV infection than those lived in rural areas.

Presence of Neutralizing Antibodies to DENV 1-4 in Dengue-IgG Positive Serum



In dengue IgG-positive serum samples, 98.39% of the samples had neutralizing antibodies against DENV3, but only 70.97% of them had neutralizing antibodies against DENV4.



Interestingly, as many as 61.3% of samples are having neutralizing antibodies against all 4 serotypes of DENV, indicating that they have been infected by all 4 types of DENV previously.

CONCLUSION

The high seroprevalence of dengue found in urban and rural areas suggests that both urban and rural communities are vital for establishing and sustaining DENV transmission in Malaysia.

REFERENCE

Azami, Nor Azila Muhammad, et al. "Dengue epidemic in Malaysia: urban versus rural comparison of dengue immunoglobulin G seroprevalence among Malaysian adults aged 35-74 years." *Transactions of The Royal Society of Tropical Medicine and Hygiene* (2020).

Note: This poster was adapted by Ying-Xian Goh, Nor Azila Muhammad Azami, Mohd Arman Kamaruddin & Rahman Jamal for communication purpose only.



ACKNOWLEDGEMENTS

This project was funded by Ministry of Science, Technology and Innovation (MOSTI), Malaysia (ER-05-01-02-MEB001) and Research Program on Emerging and Re-emerging Infectious Diseases of the Agency for Research and Development, Japan. Additional funding was provided by Universiti Kebangsaan Malaysia and Nagasaki University. We thank all the members of TMC study group, including staffs and research assistants.