

Ng Oon Tek



Senior Consultant, Department of Infectious Diseases, TTSH/NCID
Head, Infectious Disease Research Laboratory, NCID
Chair, Quality & Safety Unit, NCID
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Research Interests:

- General Infectious Diseases
- Antimicrobial Resistance
- Emerging Infectious Disease
- HIV Medicine

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Biography

A/Prof Ng serves as a Senior Consultant in the Department of Infectious Disease and Head, Infectious Disease Research Laboratory. He is also currently Director of the Antimicrobial Resistance Coordinating Office (AMRCO), Communicable Diseases Agency (CDA). Following graduation with a National University of Singapore MBBS, he completed Internal Medicine training in Singhealth cluster and obtained the MRCP (UK) and MMed (Int Med), with the Seah Cheng Siang Gold medal for best Internal Medicine candidate. Subsequent Infectious Disease subspecialty training was completed in Tan Tock Seng Hospital. This was followed by a Master of Public Health degree at Johns Hopkins followed by a year-long research fellowship with a US NIH funded group led by Prof Thomas Quinn. With increasing research involvement, he completed a PhD in the LKC School of Medicine.

A/Prof Ng has interest in research integrating public health, laboratory medicine and clinical medicine to improve patient outcomes. His prior translational research work includes clinical HIV management especially increasing access to vital diagnostic testing and emerging infectious diseases. In the area of antimicrobial resistance (AMR), he oversees a group applying genomics to understand AMR transmission and improve control measures.

Selected Publications

- Koh V, Cabrera R, Sridatta PSR, Thevasagayam NM, Lim ZQ, Marimuthu K, Venkatachalam I, Cherng BPZ, Fong RKC, Pada SK, Ooi ST, Smitasin N, Thoon KC, Hsu LY, Koh TH, De PP, Tan TY, Chan D, Deepak RN, Tee NWS, Gan YH, Matlock W, Eyre DW, Ang M, Lin RTP, Teo J, **Ng OT**; Carbapenemase-Producing Enterobacteriaceae in Singapore (CaPES) Study Group. Plasmid dynamics driving carbapenemase gene dissemination in healthcare environments: a nationwide analysis of closed Enterobacterales genomes. *Nat Commun.* 2025 Oct 28;16(1):9522. doi: 10.1038/s41467-025-64515-7. PMID: 41152242.
<https://www.nature.com/articles/s41467-025-64515-7>
- Sutjipto S, Aung AH, Soon MML, Jing C, Ang BSP, Sadarangani SP, Chong KW, **Ng OT**, Marimuthu K, Lim WY, Chow A, Vasoo S. Plastic Waste and COVID-19 Incidence Among Hospital Staff After Deescalation in PPE Use. *JAMA Network Open.* 2025 Apr 1;8(4):e255264. doi: 10.1001/jamanetworkopen.2025.5264. PMID: 40232716.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2832735>
- Wang M, Ge L, Chen L, Komarow L, Hanson B, Reyes J, Cober E, Alenazi T, Zong Z, Xie Q, Liu Z, Li L, Yu Y, Gao H, Kanj SS, Figueroa J, Herc E, Cordova E, Weston G, Ananth Tambyah P, Garcia-Diaz J, Kaye KS, Dhar S, Munita JM, Salata RA, Vilchez S, Stryjewski ME, Villegas Botero MV, Iovleva A, Evans SR, Baum K, Hill C, Kreiswirth BN, Patel R, Paterson DL, Arias CA, Bonomo RA, Chambers HF, Fowler VG Jr, Satlin MJ, van Duin D, Doi Y; Multi-Drug Resistant Organism Network Investigators*. Clinical Outcomes and Bacterial Characteristics of Carbapenem-resistant *Acinetobacter baumannii* Among Patients From Different Global Regions. *Clin Infect Dis.* 2024 Feb 17;78(2):248-258. doi: 10.1093/cid/ciad556. PMID: 37738153; PMCID: PMC10874260. (***Co-author as part of the Multi-Drug Resistant Organism Network Investigators group authorship**)
<https://academic.oup.com/cid/article/78/2/248/7278825>
- Kang JTL, Teo JJY, Bertrand D, Ng A, Ravikrishnan A, Yong M, **Ng OT**, Marimuthu K, Chen SL, Chng KR, Gan YH, Nagarajan N. Long-term ecological and evolutionary dynamics in the gut microbiomes of carbapenemase-producing Enterobacteriaceae colonized subjects. *Nat Microbiol.* 2022 Oct;7(10):1516-1524. doi: 10.1038/s41564-022-01221-w. Epub 2022 Sep 15. PMID: 36109646; PMCID: PMC9519440.
<https://www.nature.com/articles/s41564-022-01221-w>
- **Ng OT**, Marimuthu K, Lim N, Lim ZQ, Thevasagayam NM, Koh V, Chiew CJ, Ma S, Koh M, Low PY, Tan SB, Ho J, Maurer-Stroh S, Lee VJM, Leo YS, Tan KB, Cook AR, Tan CC. Analysis of COVID-19 Incidence and Severity Among Adults Vaccinated With 2-Dose mRNA COVID-19 or Inactivated SARS-CoV-2 Vaccines With and Without Boosters in Singapore. *JAMA Netw Open.* 2022 Aug 1;5(8):e2228900. doi: 10.1001/jamanetworkopen.2022.28900. PMID: 36018588.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2795654>
- Marimuthu K, Venkatachalam I, Koh V, Harbarth S, Perencevich E, Cherng BPZ, Fong RKC, Pada SK, Ooi ST, Smitasin N, Thoon KC, Tambyah PA, Hsu LY, Koh TH, De PP, Tan TY, Chan D, Deepak RN, Tee NWS, Kwa A, Cai Y, Teo YY, Thevasagayam NM, Prakki SRS, Xu W, Khong WX, Henderson D, Stoesser N, Eyre DW, Crook D, Ang M, Lin RTP, Chow A, Cook AR, Teo J, **Ng OT**; Carbapenemase-Producing Enterobacteriaceae in Singapore (CaPES) Study Group. Whole

genome sequencing reveals hidden transmission of carbapenemase-producing Enterobacteriales. Nat Commun. 2022 Jun 1;13(1):3052. doi: 10.1038/s41467-022-30637-5. PMID: 35650193; PMCID: PMC9160272.

<https://www.nature.com/articles/s41467-022-30637-5>

- Wang M, Earley M, Chen L, Hanson BM, Yu Y, Liu Z, Salcedo S, Cober E, Li L, Kanj SS, Gao H, Munita JM, Ordoñez K, Weston G, Satlin MJ, Valderrama-Beltrán SL, Marimuthu K, Stryjewski ME, Komarow L, Luterbach C, Marshall SH, Rudin SD, Manca C, Paterson DL, Reyes J, Villegas MV, Evans S, Hill C, Arias R, Baum K, Fries BC, Doi Y, Patel R, Kreiswirth BN, Bonomo RA, Chambers HF, Fowler VG Jr, Arias CA, van Duin D; Multi-Drug Resistant Organism Network Investigators*. Clinical outcomes and bacterial characteristics of carbapenem-resistant Klebsiella pneumoniae complex among patients from different global regions (CRACKLE-2): a prospective, multicentre, cohort study. Lancet Infect Dis. 2021 Nov 9:S1473-3099(21)00399-6. doi: 10.1016/S1473-3099(21)00399-6. Epub ahead of print. PMID: 34767753. (***Co-author as part of the Multi-Drug Resistant Organism Network Investigators group authorship**)

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(21\)00399-6/abstract](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(21)00399-6/abstract)

- Ng OT**, Marimuthu K, Koh V, Pang J, Linn KZ, Sun J, De Wang L, Chia WN, Tiu C, Chan M, Ling LM, Vasoo S, Abdad MY, Chia PY, Lee TH, Lin RJ, Sadarangani SP, Chen MI, Said Z, Kurupatham L, Pung R, Wang LF, Cook AR, Leo YS, Lee VJ. SARS-CoV-2 seroprevalence and transmission risk factors among high-risk close contacts: a retrospective cohort study. Lancet Infect Dis. 2020 Nov 2:S1473-3099(20)30833-1. doi: 10.1016/S1473-3099(20)30833-1. Epub ahead of print. PMID: 33152271.

[https://www.thelancet.com/article/S1473-3099\(20\)30833-1/fulltext](https://www.thelancet.com/article/S1473-3099(20)30833-1/fulltext)

- Chng KR, Li C, Bertrand D, Ng AHQ, Kwah JS, Low HM, Tong C, Natrajan M, Zhang MH, Xu L, Ko KKK, Ho EXP, Av-Shalom TV, Teo JWP, Khor CC; MetaSUB Consortium, Chen SL, Mason CE, **Ng OT**, Marimuthu K, Ang B, Nagarajan N. Cartography of opportunistic pathogens and antibiotic resistance genes in a tertiary hospital environment. Nat Med. 2020 Jun;26(6):941-951. doi: 10.1038/s41591-020-0894-4. Epub 2020 Jun 8.

<https://www.nature.com/articles/s41591-020-0894-4>

- Ng OT**, Marimuthu K, Chia PY, Koh V, Chiew CJ, De Wang L, Young BE, Chan M, Vasoo S, Ling LM, Lye DC, Kam KQ, Thoon KC, Kurupatham L, Said Z, Goh E, Low C, Lim SK, Raj P, Oh O, Koh VTJ, Poh C, Mak TM, Cui L, Cook AR, Lin RTP, Leo YS, Lee VJM. SARS-CoV-2 Infection among Travelers Returning from Wuhan, China. N Engl J Med. 2020 Apr 9;382(15):1476-1478. doi: 10.1056/NEJMc2003100. Epub 2020 Mar 12.

<https://www.nejm.org/doi/full/10.1056/NEJMc2003100>

Notable Research Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
Communicable Diseases Division, Ministry of Health (MOH CDD) Operational Research Fund	2020

Research Study on Seroprevalence and Exposure Risk Factors Among Close Contacts of COVID-19 Cases	
NMRC COVID-19 Research Fund (COVID19RF) Transmission Potential of Asymptomatic SARS-CoV-2-infected Persons	2020
CENTRE GRANT (CG) Collaborative Solutions Targeting Antimicrobial Resistance Threats in Health Systems	2021
NMRC COVID-19 Research Fund (COVID19RF) Determining the Impact of SARS-CoV-2 Variants and Vaccination on Close-contact Attack Rates and Acquisition Risk Factors	2021
CoSTAR-HS ARG Seed Grant Development of a clinically relevant human-associated microbiota mouse model of intestinal carbapenem-resistant Enterobacteriales carriage and decolonization	2022
Programme for Research in Epidemic Preparedness and REsponse (PREPARE) - Outbreak Research Strategic Funds PREPARE Outbreak Research on Monkeypox in Singapore	2022
NMRC OPEN FUND – LARGE COLLABORATIVE GRANT AntiMicrobial resistance Research & Intervention Alliance Singapore (AMRITAS)	2023
Programme for Research in Epidemic Preparedness and REsponse (PREPARE): PREPARE Strategic Commissioned Studies Metagenomics for emerging infectious disease detection and surveillance	2024
Programme for Research in Epidemic Preparedness and REsponse (PREPARE): PREPARE Clinical Trial Funds A Clinically-Oriented Antimicrobial Resistance Surveillance Network for Healthcare-associated infections (ACORN-HAI)	2024
NMRC Clinician Scientist Award (Senior Investigator) A novel isolation room model based on culture-independent Hi-C metagenomics for tracking antimicrobial resistance transmission between patients and hospital environmental reservoirs	2025
Programme for Research in Epidemic Preparedness and Response (PREPARE): Strategic Research Funding Studying Hygiene Interventions to reduce Nosocomial Infections in southeast Asian Intensive Care Units (SHINIA-ICU)	2025
NMRC Clinician Scientist-Individual Research Grant (CS-IRG) Clinical integration of whole genome sequencing and molecular epidemiology for infection control targeting carbapenem-resistance transmission	2025

Translating Research Into Healthcare

1. Guna antibiotik harus ikut arahan doktor (“Use antibiotics as directed by your doctor”), published in Berita Harian on 26 Feb 2024.
<https://www.beritaharian.sg/kesihatan/guna-antibiotik-harus-ikut-arahan-doktor>
2. Analysis of COVID-19 Incidence and Severity Among Adults Vaccinated With 2-Dose mRNA COVID-19 or Inactivated SARS-CoV-2 Vaccines With and Without Boosters in Singapore (Ng OT *et al.*, JAMA Network Open. 2022 Aug 1;5(8):e2228900. doi: 10.1001/jamanetworkopen.2022.28900)

- Paper was cited by The Federal Office of Public Health (Bundesamt für Gesundheit) as part of Annex 4 submitted to Government of Switzerland on the analysis of the Efficacy of the vaccines.

The Federal Office of Public Health (FOPH) is the Swiss federal government's centre for public health and a part of the Swiss Federal Department of Home Affairs. In addition to developing national health policy, it also represents the interests of its country within international health organizations such as the OECD or the World Health Organization.

Policy citation link (Plum X Metrix):

https://plu.mx/plum/a/policy_citation?doi=10.1001/jamanetworkopen.2022.28900

3. Transmission modes of severe acute respiratory syndrome coronavirus 2 and implications on infection control: a review (Ong SWX *et al.*, Singapore Med J. 2020 Jul 30. doi: 10.11622/smedj.2020114)

- The paper was cited by Sax Institute as part of the evidence snapshot and was commissioned by the Australian Commission on Safety and Quality in Health Care as part of the information to better protect healthcare workers during the SARS-CoV-2 virus.

The Sax Institute is an independent, not-for-profit organisation that improves health and wellbeing by driving better use of evidence in policies, programs and services. It is a Evidence Specialist team working collaboratively to embed research into the fabric of policy, program and service delivery decisions. The team develop, test and deliver best practice approaches to working at the interface of research and health decision-making.

Policy citation link (Plum X Metrix):

https://plu.mx/plum/a/policy_citation?doi=10.11622/smedj.2020114