



# 1<sup>st</sup> Congress of Medicine and Health 2024

Theme : Medical Advances in Science  
and Health (MASH)

## PROGRAM & ABSTRACT BOOK

22-23 June 2024

Putrajaya Marriott Hotel

Organiser  
Faculty of Medicine, UKM



[www.ukm.my/medicine](http://www.ukm.my/medicine)  
f @ X v t in

## ORAL PRESENTATIONS

AB3

# The Impact of Educational Intervention on Reducing Inappropriate Urine Culture Orders: A Tertiary Teaching Hospital Experience

**XIONG KHEE CHEONG<sup>1,2\*</sup>, MUHAMMAD YUSUF ZAWIR ABD RAHIM<sup>1,2</sup>, NAJMA KORI<sup>1,2</sup>, UMMU AFEERA ZAINULABID<sup>3</sup>, RAMLIZA RAMLI<sup>4</sup>, CHEE LAN LAU<sup>5</sup>, NOR HAMIZAH MISWAN<sup>6</sup>, PETRICK PERIYASAMY<sup>1</sup>**

<sup>1</sup>*Department of Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia*

<sup>2</sup>*Department of Medicine, Hospital Canselor Tuanku Muhriz, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur*

<sup>3</sup>*Department of Medicine, International Islamic University Malaysia*

<sup>4</sup>*Bacteriology Unit, Department of Laboratory Diagnostic Services, Hospital Canselor Tuanku Muhriz, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur*

<sup>5</sup>*Department, of Pharmacy, Hospital Canselor Tuanku Muhriz, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur*

<sup>6</sup>*Department of Mathematical Sciences, Faculty of Science and Technology, Universiti Kebangsaan Malaysia*

*\*Correspondence: cheongxk@ukm.edu.my*

### Abstract

Inappropriate urine cultures contribute significantly to unnecessary healthcare costs, overdiagnosis of urinary tract infection (UTI) and the development of antimicrobial resistance. The objective of this study is to assess the effectiveness of educational intervention in changing clinician's behaviour on ordering urine cultures in accordance with diagnostic stewardship. The study was conducted over a five month period in medical wards of a teaching hospital. Educational interventions included education sessions, distribution of pocket cards summarising urinary tract infection diagnostic criteria, and clinicians receiving real time feedback on ordering practices. Pre- and post-intervention data were obtained to evaluate the behavioural changes and appropriateness of urine culture ordering. A total of 349 hospitalised patients with 401 urine cultures were analysed. The median age was 68 years old, 51.1% male and 50.2% midstream urine specimens. The number of urine cultures ordered decreased significantly by 55.2% post-intervention ( $P < 0.05$ ). In addition, the amount of urine cultures ordered for panculture workout decreased by 52% (IRR: 0.52,  $P = 0.07$ ). Urine culture orders for UTI symptoms increased from 19.1% before intervention to 37% after intervention ( $P < 0.05$ ). The reduction

of unnecessary urine culture tests resulted in an anticipated laboratory cost savings of RM 3519 in this study. In conclusion, this study demonstrates the positive impact of educational interventions in reducing inappropriate urine culture and optimising resource utilization, hence minimizing the emergence of antimicrobial resistance. Future studies should look into the sustainability and scalability of educational interventions in promoting diagnostic stewardship.

Keywords: Education intervention; urine culture orders; diagnostic stewardship