

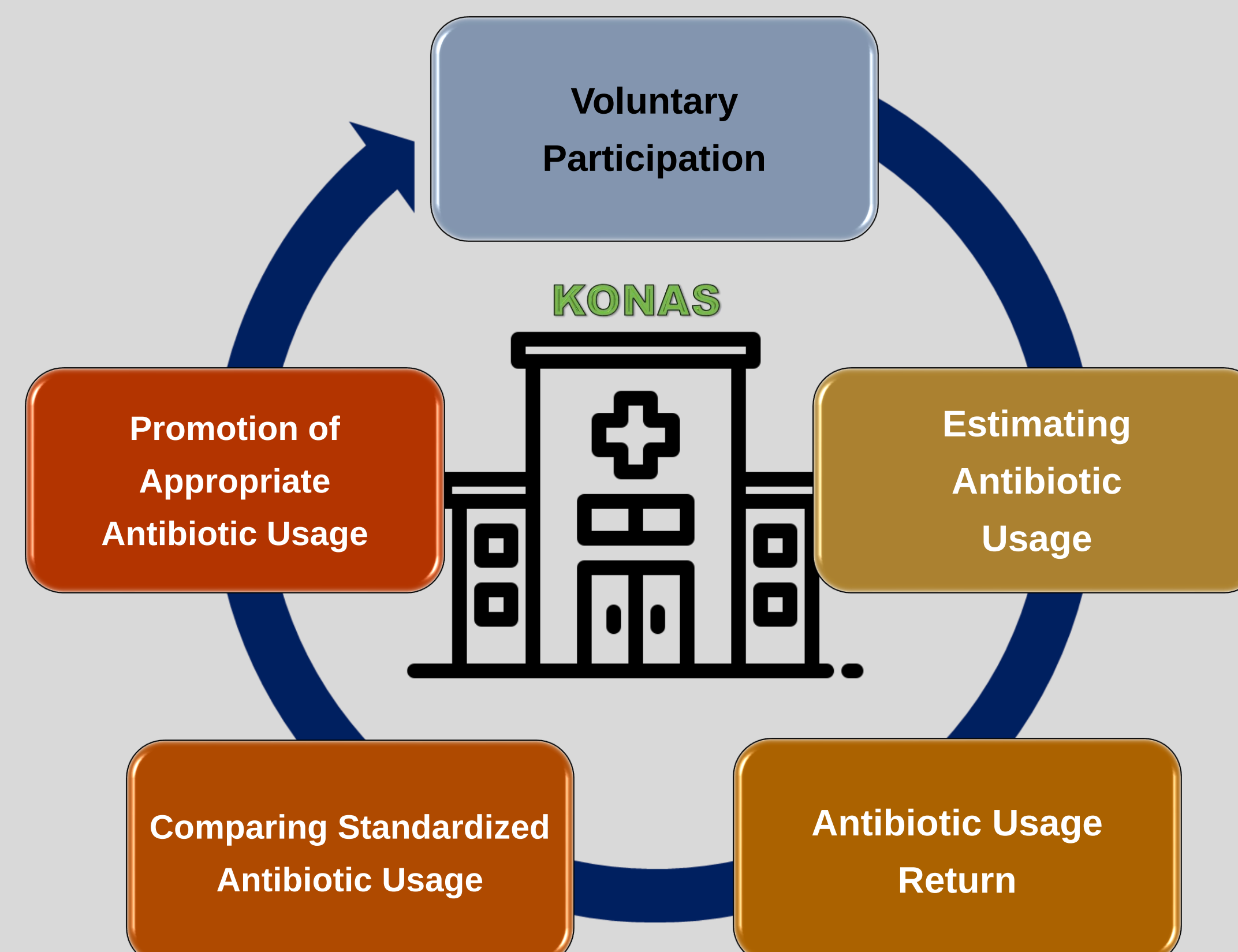
EFFECTS OF ANTIMICROBIAL STEWARDSHIP PROGRAM AT TERTIARY AND SECONDARY HOSPITALS IN SOUTH KOREA

Jihye shin*, Jungmi Chae, Yeonmi Choi, Dong-Sook Kim

1. Pharmaceuticals & Medical Technologies Research Division, Health Insurance Review & Assessment Service, Wonju, Korea, Republic Of

INTRODUCTION

- With the global spread of antibiotic-resistant bacteria, WHO urges nations to address indiscriminate antibiotic use and resistance with an international action plan.
- Antimicrobial stewardship programs (ASPs) are effective in curbing antimicrobial resistance by reducing inappropriate use.
- In 2020, Korea's antimicrobial consumption (21.0DDD) was higher than the OECD average (15.6DDD).



- To promote ASP, the Korean Society of Infectious Diseases and Health Insurance Review & Assessment (HIRA) collaboratively launched the Korea National Antimicrobial Use Analysis System (KONAS).
- The KONAS system enables hospitals to assess their data in comparison with others, fostering self-evaluation, benchmarking, and collaborative efforts to enhance stewardship.
- In 2020, KONAS initiated a pilot project with **26 institutions**; and **presently, 110 tertiary and general hospitals** are actively participating.

AIM

- Comparing antibiotic usage trends and assess the impact of KONAS on antibiotic utilization, categorized by antibiotics type, between participating (tertiary and secondary) hospitals and non-participating ones.

METHOD

- Utilizing national health insurance claims data for both tertiary and secondary hospitals, covering the period from January 1, 2018, to December 31, 2022. primary outcome measures in-hospital antibiotic usage, quantified as days of therapy (DOT) per 1,000 patient days.
 - DOT: Cumulative days of administration of specific antimicrobial agents to individual patients.
- To equalize antibiotic usage differences across hospitals based on their characteristics, propensity score matching(1:1) is implemented for adjustment.
- Conducting a retrospective interrupted time series analysis with ARIMA model over a 60-month period to evaluate the antibiotic usage in participating hospitals of the KONAS system compared to non-participating hospitals.

CONCLUSIONS

- Demonstrating KONAS' effectiveness during the COVID-19 pandemic is challenging due to restricted antibiotic use guided by clinical guidelines and government-controlled healthcare utilization. But, it highlights the need for ongoing vigilance in managing prescriptions during health crises.
- Introduction of KONAS represents a well-prepared state for intervention activities, monitoring, and education related to antibiotic usage. These interventions have proven effective in promoting the appropriate utilization of antibiotic classes like Metronidazole and Carbapenem.
- Continued interventions are vital for maintaining positive trends and extending them to other antibiotics. A collaborative, multidisciplinary approach involving healthcare providers, policymakers, and the public is crucial to combat antimicrobial resistance comprehensively.

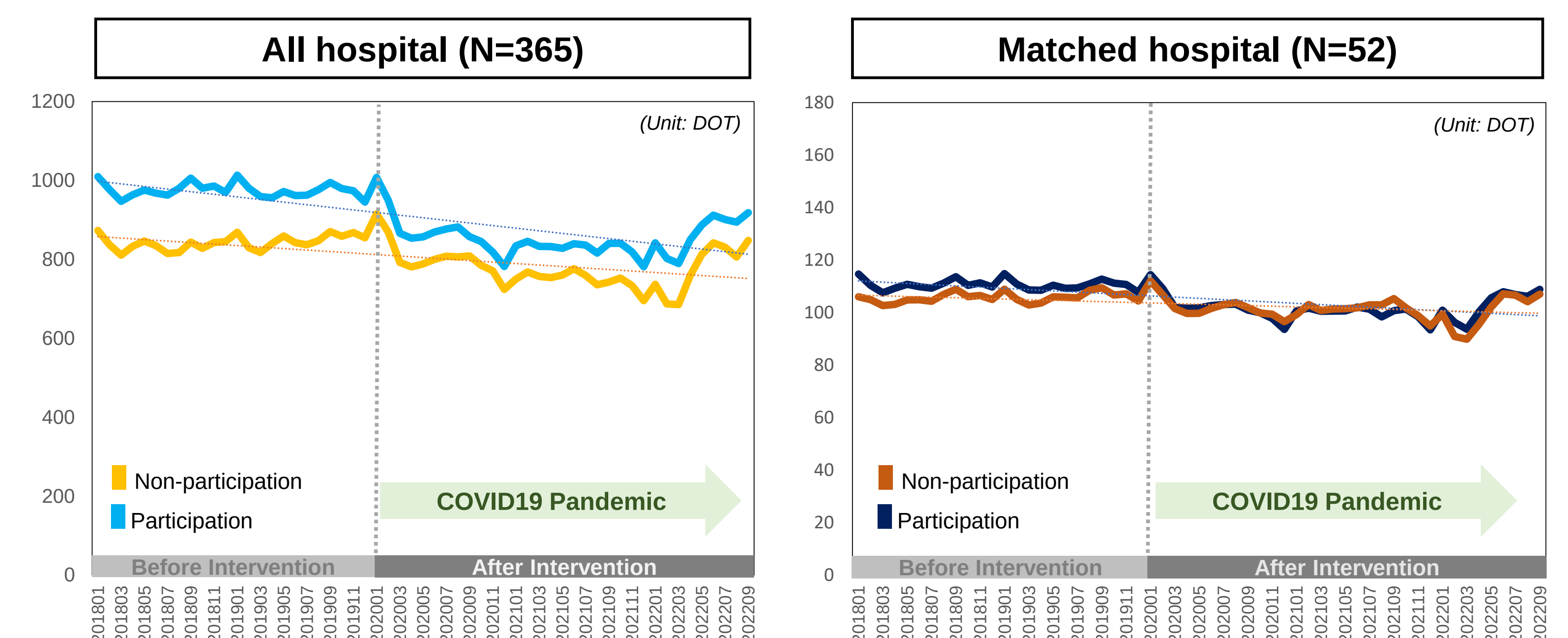
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RESULTS

» Trend of Antibiotic usage

- In 2020, overall antibiotic usage decreased due to the COVID-19 pandemic, irrespective of KONAS participation. After matching hospitals with similar characteristics, no significant difference in antibiotic usage was observed, and overall antibiotic consumption declined.



» Effect of KONAS System

- Among matched KONAS hospitals, most antibiotic classes exhibited no significant usage differences, except for metronidazole and carbapenem.

