

# hospital pharmacy

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### Director's Forum

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#### **Integration of an Academic Medical Center and a Large Health System: Implications for Pharmacy**

Brian L. Erstad, Tina Aramaki, Kurt Weibel

<https://doi.org/10.1177/0018578718823735> |

First Published January 10, 2019

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#### **Awareness About Ebola Virus Disease Among the Health Care Professionals in Karachi, Pakistan**

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<https://doi.org/10.1177/0018578718817472> |

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#### **The Newly Available FAERS Public Dashboard: Implications for Health Care Professionals**

Atul Kumar

<https://doi.org/10.1177/0018578718795271> |

First Published August 23, 2018

[Abstract](#)



### Original Article

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#### **A Retrospective Surveillance of the Antibiotics Prophylactic Use of Surgical Procedures in Private Hospitals in Indonesia**

Fauna Herawati<sup>ORCID</sup>, Rika Yulia, Eelko Hak, Adriaan H. Hartono, Timo Michiels, Herman J. Woerdenbag, Christina Avanti


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First Published August 21, 2018

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# A Retrospective Surveillance of the Antibiotics Prophylactic Use of Surgical Procedures in Private Hospitals in Indonesia

Hospital Pharmacy  
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Fauna Herawati<sup>1</sup> , Rika Yulia<sup>1</sup>, Eelko Hak<sup>2</sup>, Adriaan H. Hartono<sup>1,2</sup>, Timo Michiels<sup>1,2</sup>, Herman J. Woerdenbag<sup>2</sup>, and Christina Avanti<sup>1</sup>

## Abstract

**Background:** According to international guidelines, prophylactic antibiotics in elective surgery should be given as a single dose 30 to 60 minutes before the operation is conducted. Postoperative administration of antibiotics should be discontinued 24 hours after surgery to minimize bacterial resistance and to keep control over hospitalization costs. There is a lack of data on the actual antibiotic use around surgical procedures in Indonesia. **Objective:** This retrospective surveillance study aimed to obtain defined daily doses (DDD) and DDDs per 100 bed days (DDD-100BD) for prophylactically used antibiotics in two private hospitals in Surabaya, East Java. These hospitals are considered to be representative for the current situation in Indonesia. **Method:** Data from a total of 693 patients over a nearly 1-year period (2016) were collected and evaluated. **Results:** The overall DDD per patient was 1.5 for hospital A and 1.7 for hospital B. The overall DDD-100BD was 30 for hospital B. Of the 24 antibiotics given prophylactically, ceftriaxone was the most commonly used in both hospitals. **Conclusion:** There was a clear discrepancy between daily practice in both hospitals and the recommendations in the guidelines. This study shows that better adherence to antibiotic stewardship is needed in Indonesia. Substantial improvements need to be made toward guided precision therapy regarding quantity (dose and frequency), route of administration (prolonged intravenous), and choice of the type of antibiotic.

## Keywords

defined daily doses (DDD), DDD per 100 bed days (DDD-100BD), antibiotic prophylaxis, operating theater, antibiotic resistance

## The Impact on Practice

This study will encourage the hospital management to do better antibiotic stewardship program, rational antibiotic use, and prevent bacterial resistant occurrence infection for the patient.

## Introduction

Antibiotic prophylaxis is defined as the use of antibiotics before, during, and after a surgical procedure to prevent infections, and is common practice in and around operating theaters. Antibiotic prophylaxis should, however, be applied carefully. Excessive use as well as the application of broad spectrum antibiotics harbor a serious risk of resistance development. Examples are the emergence of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteria and of hypervirulent strains such as *Clostridium difficile*, which is a growing cause of antibiotic-associated colitis.<sup>1,2</sup>

The World Health Organization (WHO) has published a surveillance report on antimicrobial resistance at a global

scale, from which it becomes clear that data on the incidence of antibiotic resistance in Indonesia are very scarce. A more general picture for the South East Asian area has been generated in projects of the Asian Network for Surveillance of Resistant Pathogens (ANSORP) and in the Gonococcal Antimicrobial Surveillance Programme (GASP).<sup>3</sup> A systematic review shows that the only article about antibiotic stewardship in Indonesia is the Antimicrobial Resistance in Indonesia (AMRIN) study.<sup>4</sup>

To stimulate responsible prophylactic use of antibiotics, various guidelines exist. On an international level, there are “Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery” and “Antibiotic Prophylaxis in Surgery”<sup>5,6</sup>; the

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