

UNIVERSITI TEKNOLOGI MARA

**A DRUG UTILIZATION REVIEW OF
SELECTED ANTIBIOTICS IN THE
MEDICAL WARDS AT HOSPITAL
ANGKATAN TENTERA TUANKU
MIZAN**

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requirement for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledge as referenced work. This dissertation has not been submitted to any other academic institution or non-academic institution for any degree of qualification.

I, hereby, acknowledge that I have been supplied with Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Antibiotic is mainly used in the treatment of infection. There are many classes of antibiotics with different efficacy towards different type of microorganisms and infections. As antibiotic resistance has turned into a major world healthcare service; a right, effective, important and safe utilization of antibiotic agents must be an obligatory practice. In order to do that, a drug utilization review (DUR) is considered an important element to ensure a safe and appropriate use of antibiotic. This was a retrospective study of antibiotics usage and pattern in the medical wards of Hospital Angkatan Tentera Tuanku Mizan (HATTM). Prescriptions and bed medication chart were collected irrespective of the indications. The data were then extracted into a data collection form developed by WHO, containing information regarding length of stay in hospital, name of drugs, cost as well as trade/generic name of the drug, numbers of drugs prescribed, their dosage, frequency, route of administration and duration of therapy. The Defined Daily Dose (DDD) and anatomical therapeutic chemical (ATC); (Always, Better, Control) ABC and (Vital, Essential, Non-essential) VEN analysis and thirteen indicators created by Strengthening Pharmaceutical Systems Program (SPS) were used in the analysis and comparison of data. The objective of the study is to conduct a drug utilization review of prescribed antibiotics at the medical wards of HATTM. A total of 247 records were retrieved and included in this study. Then the samples were categorized by age into young adults (ages 18-35 years; n = 56), middle-aged adults (ages 36-55 years, n = 62), and older adults (aged older than 55 years, n = 129). There were associations between the incidence of pneumonia and cost of treatment with number of stays in hospital ($p=0.019$; $p=0.00$). About 31% of antibiotics were prescribed by their internationally recognized international non-proprietary names (INN). Only 26 type of antibiotics were mainly been used and were categorized according to ABC analysis with Class A (5; 19.2%), Class B (3; 11.6%) and Class C (18; 69.2%). On performing VEN analysis, the findings revealed that 7(26.9%) of the antibiotics were vital, 6(23.1%) grouped as essential and 13(50%) of the items as the non-essential medicines. The findings showed that only 1(14.3%) of the antibiotics was vital and belonged to Class A (AV). Most vital, essential and non-essential antibiotics belonged to Class C, 5(71.4%), 4(66.6%) and 9(69.2%) respectively. Top 5 list of antibiotics DDD that were commonly used in the medical wards at HATTM in the year of 2014 were Ceftriaxone Inj (87.6), Augmentin Inj (52.4), Augmentin Tab (42.1), Azithromycin Inj (8.7) and Azithromycin Tab (46.8). Almost all patient treated received at least 2 antibiotics at any given time with 11 days of average of hospital stays. Average costs of antibiotics incurred according to 3 different group of age were RM 213.55 (young adults), RM 223.17 (middle aged adults) and RM 201.95 (older adults) respectively.

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