

**UNIVERSITI TEKNOLOGI MARA**

**REVISITING MEDICINE ADMINISTRATION  
ERRORS IN MEDICAL WARD  
AT HOSPITAL MELAKA**

**DAHLIA BT MD SHAH**

Dissertation submitted in partial fulfillment  
of the requirements for the degree of  
**Master in Pharmacy Practice**

**Faculty of Pharmacy**

February 2015

## ABSTRACT

Medication error can occur at any stage of medication process. Studies have shown that potential medication errors are more commonly detected and stopped in the early stages of medication processing (prescribing and preparing the medication). However, medication administration itself has less safeguard mechanisms against errors. Thus, the aim of this study is to examine the Medication Administration Errors in the adult medical wards of Hospital Melaka in order to assess the effectiveness of quality improvement activities on medication error rate using prospective observational, direct, and disguised observation technique. Dispensing error observation was conducted at pharmacy before administration error observation. Administration error observation was conducted in six medical wards at Hospital Melaka. The observations were made on three drug rounds per day for the duration of 14 working days. In total, 7.2% errors (215/2995) occurred in two medication use processes (dispensing and administration). Medication administration error rate (11.5%) was higher than dispensing rate (5.95%). The current administration rate was lower compared to the previous study in 2009 (48%). However if time error is excluded, then the rate becomes higher (9.3%) as compared to 2009 (4.9%). The most common type of error in dispensing stage was improper drug labeling (58.3%), while in administration stage it was technique error (53.9%). Ward, drug ATC class, and number of patient under nurse's care were associated factors to error rate. As a conclusion, higher administration error rate in the current study indicates the need to review the current drug administration procedures by the nurses. The higher percentage of identified errors must be viewed seriously and the collaboration of all healthcare professionals is essential to ensure consistent quality of care and safety of patients.

*Keyword: Medication errors, medication administration errors*

# ACKNOWLEDGEMENT

Alhamdulillah, all Praise is due to Allah for His Blessings and granting me the strength in completing this dissertation.

First and foremost, my appreciation goes to my supervisor, Professor Dr. Mohamed Mansor Bin Manan for his supervision and continuous support. His invaluable help of constructive comments and suggestions throughout the project have contributed to the success of this research. Not forgotten my co-supervisor, Pn. Saidatul Raihan for her support and knowledge regarding this research.

I am highly thankful and indebted to Pn. Mazirah Bt Ibrahim, pharmacist from Hospital Tengku Ampuan Najihah for her kindness of giving permission using her questionnaire as part of my research. I also would like to express my sincere gratitude to Hospital Melaka's management and pharmacy staff especially Ms Ong Zee Yun, Ms Nadzirah Ishak, Ms Chew Soo Foong, Ms Kam Sin Yoo, Ms Siti Rahmah binti Johari and Mr. Fakarruddin bin Karim for their patience and dedication during data collection.

My thanks also goes to the Pharmaceutical Services Division for giving me the opportunity to pursue my studies, JPA for awarding me scholarship, the Faculty of Pharmacy UiTM, and the National Medical Research Registry (NMRR) centre whom all have helped me in completing this study.

My deepest gratitude goes to my family especially beloved my mother; Sulimah Binti Othman for their endless prayers and encouragement, all of my colleagues and those who have directly or indirectly have lent their hand in this venture. Your kindness means a lot to me.

Last but not least, this dissertation is dedicated to my late father who has been my constant source of inspiration. May Allah bless all of you.

# TABLE OF CONTENT

<b>CONFIRMATION BY PANEL OF EXAMINERS</b>	<b>ii</b>
<b>AUTHOR'S DECLARATION</b>	<b>iii</b>
<b>ABSTRACT</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT</b>	<b>v</b>
<b>TABLE OF CONTENT</b>	<b>vi</b>
<b>LIST OF TABLES</b>	<b>vii</b>
<b>LIST OF FIGURES</b>	<b>viii</b>
<b>LIST OF ABBREVIATIONS / NOMENCLATURE</b>	<b>ix</b>
<b>CHAPTER ONE : INTRODUCTION</b>	<b>1</b>
1.1 Background	1
1.2 Problem Statement	4
1.3 Objectives Of The Study	6
1.4 Research Question	6
1.5 Operational Definition	6
1.6 Scope Of The Study	13
1.7 Significance Of The Study	14

1.8 Rational Of The Study	14
<b>CHAPTER TWO : LITERATURE REVIEW</b>	<b>16</b>
2.1 Medication Error	16
2.2 Medication Administration Error	20
<b>CHAPTER THREE : METHODOLOGY</b>	<b>28</b>
3.1 Study Setting	28
3.2 Study Design	29
3.3 In Patient Medicine Delivery System	30
3.4 Study Population	32
3.5 Sampling Frame	32
3.6 Sample Size Calculation	33
3.7 Sample Selection Criteria	34
3.8 Data Collection	34
3.9 Statistical Data Analysis	37
3.10 Ethical Consideration	37
<b>CHAPTER FOUR : RESULT</b>	<b>39</b>
4.1 Dispensing Errors	39