

UNIVERSITI TEKNOLOGI MARA

**BLOOD SPECIMEN REJECTION PATTERN IN
CHEMICAL PATHOLOGY LABORATORY OF
HOSPITAL SUNGAI BULOH FROM JULY TO
DECEMBER 2016**

NUR AIN BINTI ISMAIL

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Faculty of Health Sciences**

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ABSTRACT

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In clinical laboratory testing, it can be divided into three phases which are pre-analytical, analytical and post-analytical phase. Among all these three phases, it had been found out that most errors happened in pre-analytical phase. As its effect, these will lead to specimen rejection in laboratories which may cause delay in getting patient diagnosis as well as delaying the treatment for patient. Therefore, this study was conducted in order to focus on pattern of specimen rejection and major causes that lead to specimen rejection. Thus, a retrospective study had been conducted by collecting data of specimen rejection along with causes that lead to its rejection. Total number of rejected blood samples in chemical pathology laboratory of Hospital Sungai Buloh had been collected from July to December 2016 including reasons for rejection. The data was then analyzed statistically in order to find any significance pattern of rejection in laboratories and to find most common reason that lead to blood specimen rejection. After analyzing the data, there was an increasing pattern in first 3 months and decreasing pattern in the last 3 months. There was also significant increase in month of September where number of rejected specimens was 1056 in total. Other than that, hemolysis was found as the major factor that causes rejection of blood specimen. In conclusion, sample handling must be done with full of care in order to avoid errors in clinical laboratory testing.

Key words : pre-analytical, rejection pattern, hemolysis

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CHAPTER 1 :

INTRODUCTION

1.1 Background of the study

Clinical laboratories play a crucial role in diagnosis and management of patients. The increased focus on patient safety and awareness that the information provided by these laboratories has direct impact on diagnosis and treatment requires that laboratories prioritize reduction in error rates and therefore increase patient safety and credibility of the service (Guimaraes et al, 2012). There are three phases of laboratory testing, which is pre-analytical, analytical and post-analytical. According to Synevo Central Lab (2010), there is heterogeneity of available data and a lack of definition of laboratory error which includes pre-analytical 46%, analytical 7% and post-analytical 47%. This shows that the highest error that happened in laboratory was caused by pre-analytical error. As its effect, this may cause specimen to be rejected in laboratory.

According to Rose Romeo, the most top 5 causes of pre-analytical errors in a Stat Lab includes collection tubes not filled properly, patient identification error, inappropriate tubes/container, test request error and empty tube. Several types of collection errors include patient identification and preparation, selecting the site and site preparation for phlebotomy technique, test collection procedures (proper venepuncture technique, order of draw, proper tube mixing and correct specimen volume), specimen handling and processing and specimen transport. All kind of errors at any stage of the collection, testing and reporting process should be alerted by laboratory staff because all these errors can potentially lead to a serious patient misdiagnosis.