



UNIVERSITI TEKNOLOGI MARA

**STUDY ON COST AND USAGE PATTERN OF ANTI-DIABETIC AGENTS IN
OUTPATIENT PHARMACY DEPARTMENT OF HOSPITAL SELAYANG IN
YEAR 2007 USING DDD METHOD**

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ABSTRACT

The increasing use of anti-diabetic leads the increment of cost of medication in Hospital Selayang. A study was done in Hospital Selayang to determine the cost and usage of anti-diabetic agent in Outpatient Pharmacy Department (OPD) of Hospital Selayang in 2007. In addition, this study will cover the cost of anti-diabetic agent, in the treatment of type 1 and 2 Diabetic Mellitus in Hospital Selayang base on Clinical Practice Guidelines, Management of Type 2 Diabetes Mellitus Third Edition (2004).

The anti-diabetic agents are available in Outpatient Pharmacy Department are Metformin (biguanides), Gliclazide and Glibenclamide (sulfonylurea), Acarbose (Alpha-glucoside Inhibitor), Rosiglitazone (Thiazolidinediones), insulins that are the intermediate acting combined with fast acting insulin, short acting, intermediate-acting and long acting respectively. Data was obtained from Hospital Inventory System (HIS), Bin card from Outpatient Pharmacy Department substore and Outpatient Pharmacy Department Medication Indent 2007.

Nine of anti-diabetic agent was studied and the higher cost for 2007 is insulin intermediate acting combined with fast acting. However, Gliclazide was the higher anti-diabetic agent used.

1.1 Overview of Diabetes Mellitus

Diabetes mellitus (DM) is a group of metabolic disorder characterized by hyperglycemia and abnormalities in carbohydrate, fat and protein metabolism. It result from defect in insulin secretion, insulin sensitivity or both. Chronic microvascular, macrovascular and neurophatic complication may ensue.¹⁰

Type 1 DM is generally develops in childhood or early adults from immune-mediated destruction of pancreatic B cells, resulting in absolute deficiency of insulin. Hyperglycemia occurs when 80% to 90% of B cells are destroyed.

Type 2 DM accounts for as many as 90% cases and usually characterized by the presence of both insulin resistance and insulin deficiency.

The national prevalence of diabetes in Malaysia was found to be 8.3% (7.8% - 8.7%)^{11, 12}. From other studies conducted in Malaysia, the prevalence seemed to be on the rise. With further industrialization plus modernization, the number of people affected by diabetes may double by 2010.¹¹ Similar accounts were observed elsewhere in many literatures where urbanization and modernization changed the lifestyles e.g. inappropriate diet, and lack of physical activity, of some population which was associated with the increase risk of having diabetes. Thus it also will increase the usage of antidiabetic agent in Malaysia.

There have been numerous studies on pattern of antidiabetic usage in Hospital.

However, the data on relationship between antidiabetic agent usage pattern in types 1 and 2 diabetes Mellitus is still insufficient. Therefore, the study is done to investigate the problem. In addition, this study also will compare usage of antidibetic in Outpatient Pharmacy Deparment in Hospital Selayang to usage of antidibetic in Malaysia in 2005 and 2004.

The Objective of the study are then to determines the usage pattern and cost of anti-diabetic in Outpatient Department in Hospital Selayang and also to identify the cost of anti-diabetic agent are use in the treatment of Diabetes Mellitus type 1 and 2.