

**AN OPTIMAL MODEL OF CLINICAL MANAGEMENT
IN ORDER TO REDUCE MATERNAL MORTALITY RATE
IN TYPE C HOSPITAL IN THE PROVINCE OF EAST JAVA**

**An Operation Research Using Mathematic Integer Program
Sardjana**

Abstract

BACKGROUND: From the Reports on Maternal Mortality (Laporan Kematian Ibu, LKI) in 1999, it was found that 18 districts in East Java had Maternal Mortality Rate (MMR) or less than 100 per 100.000 livebirths. In 1999 in East Java province, there were 566.712 livebirths, 3.473 stillborns, and 493 maternal postpartum death. From 493 maternal death, 204 were caused by bleeding (41,37%), infection 28 (5,67%), toxemia 104 (21,20%), and 137 (31,86%) resulted from other causes. Sub-regional areas with MMR above 100 per 100.000 livebirths comprised of Mayoralties of Pasuruan, Mojokerto, Madiun, Kediri and Probolinggo; and Districts of Situbondo, Trenggalek, Mojokerto, Jombang, Tuban, Lamongan, Pacitan. Probolinggo, Nganjuk, Ponorogo and Bondowoso.

To increase the quality of medical service in hospital, the implementation of Clinical Management (CM) is required. CM is defined as an instrument of service process provided to the patients, presenting as an objective quantitative measurement at the level of input, process, and output of health care service for the patients. CM is not a rigid standard, but it is designed to become a reference from which, by collecting and analyzing data, one may be able to foresee the possible problems that may happen in order to find the opportunity that can be used to improve service for the patients (Australian Council on Healthcare Standards, 1990).

PURPOSE: This study was aimed in general to develop an optimal model of CM in order to reduce maternal mortality rate in type C government-owned hospitals in East Java province, and in particular to:

1. Determine the influence of working ethos variable in CM model, and to optimize CM model in order to reduce MMR in Government-Owned Type C Hospitals in East Java.
2. Determine the influence of blood facilities variable in CM model, and to optimize CM model in order to reduce MMR in Government-Owned Type C Hospitals in East Java.
3. Determine the influence of communication facilities variable in CM model, and to optimize CM model in order to reduce MMR in Government-Owned Type C Hospitals in East Java.

METHOD: This study was an Operational Research System Analysis (ORSA) using mathematic integer program approach, and was carried out in government-owned type C hospitals in East Java Province, which served as the population in this study. The main variables observed were a) working ethos, with sub variables of income, linear thinking, holidays, years of education and age; b) blood facilities, with sub variables of blood supply, linear thinking, budget, and blood demand; c) communication facilities, with sub variables of budget, team agreement, and linear thinking.

RESULT: From the results of this study, it can be concluded as follows:

1. An optimal model of clinical management in order to reduce maternal mortality rate in type c hospital in the province of East Java is fit (P. Value: 0.47743).
2. The contribution of working ethos variable in CM model in order to reduce maternal mortality in government-owned type C hospitals was 45.46%.
3. The contribution of blood facilities variable in CM model in order to reduce maternal mortality in government-owned type C hospitals was 27.22%.
4. The contribution of communication facilities variable in CM model in order to reduce maternal mortality in government-owned type C hospitals was 26.95%.

Optimum MC in order to reduce maternal mortality in government-owned type C hospitals can be optimized by maximizing main variables and the sub variables of working ethos, blood facilities, and communication facilities. Based on the results of this study, it can be recommended that the government, particularly the Department of Health, should reorient the program to reduce maternal mortality rate by referring to the results of CM researches.

Keywords : optimum model, clinical management, working ethos, blood facilities, communication facilities, maternal mortality.