

# Analysis of Hemodialysis Service Needs at X Hospital of East Java

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**Abstract.** This study aims to analyze the needs of hemodialysis services at X hospital of East Java. Descriptive observational study during June-July 2017. Data collection through interviews with installation and staff head, observation and analysis of secondary data from reports of hemodialysis installations and other data from various sources of installation such as human resources, medical records. Needs and feasibility analysis of hemodialysis services at this study shows that there is considerable potential for the development of hemodialysis services in X hospital of East Java. The number of patients with chronic kidney disease is very large in X hospital of East Java. Hemodialysis services are believed to provide significant benefits because there is a decrease in the number of patients after hemodialysis. In addition there are many regulations that support the development of hemodialysis services in hospitals. This study recommends the importance of special teams to plan for the fulfillment of infrastructure, human resources and equipment needs.

**Keywords:** analysis of need; hemodialysis service; X hospital of East Java

## 1. INTRODUCTION

Kidney disease is one of the degenerative diseases. Kidney disease consists of many types, including Glomerulonephritis, Renal Amyloidosis, Diabetic Kidney Disease, Renal Vasculitis, Urinary Stones, Tubulointerstitial Disease, Urinary Tract Infection, Chronic Kidney Disease, Acute Kidney Failure and many more. Kidney failure is classified into two broad categories: (1) acute renal failure, in which all or almost all kidney work is suddenly disrupted but may eventually improve again as is usual, and (2) chronic renal failure, also known as CKD (Chronic Kidney Disease), in which the kidneys progressively lose their nephron function gradually until all the functioning of the kidney is decreased (Price & Wilson, 2006).

Handling of kidney disease can be done in a variety of ways, ranging from blood pressure control, diet regulation, pharmacological therapy, fluid and electrolyte restriction, to Renal Replacement Therapy, which can include hemodialysis, peritoneal dialysis or kidney transplantation. Patients with end-stage Renal Disease (CVD)/end-stage renal/terminal renal failure (GGT) require Renal Replacement Therapy (Renal Replacement Therapy) one of which is hemodialysis (HD), which is currently the number of patients requiring hemodialysis increasingly the number of days increases and certainly requires medical expenses that are not few in number.

Based on data from the World Health Organization (WHO), it is said worldwide, the number of people receiving Renal Replacement Therapy is estimated at more than 1.4 million, with

an incidence rate of about 8% per year (Sarah et al , 2008). Indonesia is one of the countries with high rates of kidney failure, according to the Indonesian Nephrology Association (PERNEFRI) in the Report of Indonesian Renal Registry, in 2012 there were 16,040 patients with renal failure. Reportedly in 2012 only 9161 patients are active in hemodialysis activities. In Jakarta alone, there are 1,192 hemodialysis patients with major disease diagnoses (PERNEFRI 2003).

One of the areas in the hospital that became a priority in the effort to improve the service quality in the hospital is hemodialysis service that has been increasing the number of patients in recent years. The number of patients with kidney failure each year has increased by about 15%. Kidney failure cases in patients who seek treatment and require the most hemodialysis due to diabetes cases about 33%, and increased year by year. The availability of hemodialysis machine in X hospital of East Java as much as 19 machines is still less so that has been given the addition of a number of hemodialysis machine up to now reaches 23 hemodialysis machine. However, the availability of hemodialysis machine is still felt less. This study aims to analyze the needs of hemodialysis services in Sidorajo hospital.

## 2. METHOD

Descriptive observational study during June-July 2017. Data collection through interviews with the head of the installation and executive personnel in hemodialysis services; direct observation of hemodialysis service actions, completeness of

infrastructure, human resources and equipment in the hemodialysis chamber; retrieval of secondary data from reports of hemodialysis installations and other data from various installation sources such as human resources, medical records.

### 3. RESULTS AND DISCUSSION

Feasibility analysis of hospital service needs provides information on morbidity and mortality, and regulation of the development of hemodialysis installations. The purpose of hemodialysis service needs analysis is to assess the community's need for hemodialysis services. The analysis was conducted to find out the potential of adding hemodialysis facility in X hospital of East Java.

#### Morbidity Analysis

Table 1. Most Disease Cases in 2015

Disease	Total
Acute upper respiratory infection	300.131
Disease of the muscular system and the connective tissue	137.311
Stomach ulcers and twelve fingers	101.205
The fever is unknown cause	63.401
Diarrhea and gastroenteritis	45.396
Sore throat	44.695
High blood disease	42.388
Allergic skin disease	32.576
Pulp and tissue diseases	30.400

Source: Medical Record

Table 1 shows that chronic kidney disease is not included in most diseases in X hospital of East Java but chronic kidney disease is a global public health problem with increasing prevalence and incidence of kidney failure, poor prognosis and high cost. The prevalence of chronic kidney disease increases with the increasing number of elderly population and the incidence of diabetes mellitus and hypertension.

Table 2 explains that the number of patients with chronic kidney disease in X hospital of East Java occupies the top position in both outpatient and inpatient services. The number of outpatients and inpatients with the diagnosis of End Stage Renal Disease (ESRD) also increases annually. In addition to the increasing number of patients with degenerative diseases such as Diabetes mellitus, as well as the number of hypertensive patients is high enough then it can potentially increase the number of patients with Chronic Kidney Disease and also End Stage Renal Disease (ESRD). Other diseases that have the potential to increase the number of Chronic Kidney Disease and End Stage Renal Disease is Urinary Tract Infection (UTI) and Urinary Tract (BSK) as shown in the table above.

From this table shows that the number of PGK and ESRD patients in X hospital of East Java will potentially increase every year.

Table 2. Number of Outpatient and Inpatient Based on Diagnosis of Disease at X hospital of East Java 2014-2016

Diagnose	Outpatient			Inpatient		
	2014	2015	2016	2014	2015	2016
Diabetes mellitus	20.428	21.001	22.923	2.292	2.135	1.934
Hypertension	10.269	10.517	9.281	135	83	60
Chronic Kidney Disease	912	975	1016	862	968	995
End Stage Renal Disease	859	816	931	827	716	815
Urinary tract infection	498	897	1163	27	31	33
Urinary Channels	153	487	521	159	213	261

Source: Medical Record

#### Mortality Analysis

Table 3. Data Number of Patients Hemodialysis X hospital of East Java Died in 2012-2016

	2012	2013	2014	2015	2016
Total	214	134	144	97	89

Table 3 shows that there is a decrease in the number of hemodialysis patients who died in 2012-2016. It is expected that with the addition of hemodialysis machine, it can improve adequate hemodialysis service for the patient, so that it will improve the quality of life of the patient, and decrease the mortality rate of the chronic kidney disease patients who performed hemodialysis in X hospital of East Java.

#### Regulatory Analysis of Hemodialysis Services

The legal basis used as a guide in hemodialysis service in X hospital of East Java, among others,

- a. Law no. 36 of 2009 on Health
- b. Law no. 44 of 2009 on Hospital
- c. Government Regulation no. 32 of 1996 on Health Personnel
- d. Minister of Health Regulation no. 812/MENKES/PER/VII/2010 on the Implementation of Dialysis Services at Health Services Facilities
- e. Minister of Health Regulation no. 436/MENKES/SK/IV/1993 on the Implementation of Medical Service Standard in Hospital
- f. Minister of Health Decree No. 983/MENKES/SK/1992 on Guidelines for General Hospital Organization
- g. Decree of the Director General of Medical Services Ministry of Health No.

- HK.03.05/11/1125/2007 on Guidelines for Hemodialysis Services in Health Care Facilities
- h. Regional Regulation of Regency no. 03 of 2001 on the Establishment and Organizational Structure of Regional Technical Institutions
- i. Regional Regulation of Regency no. 21 of 2008 on Organization of Regional Devices of Regency
- j. Decision of Bupati Head of Second Level Region No. 117 of 2000 on Guidelines for Implementation of Regional Regulations of the Regency No. 11 of 1998 on Organizational Structure of Hospital.
- k. Regency Regulation no. 74 of 2008 on Minimum Service Standards Regional General Hospital.
- l. Decision of Regency Decision of Regency No. 20 of 1994 on Hospital Service Standards and Standard of Medical Service at District General Hospital

With the various regulatory references above, the X hospital of East Java in conducting the development of hemodialysis services committed to using all the regulations as a reference.

#### **4. CONCLUSION**

Needs and feasibility analysis of hemodialysis service in this study indicate that there is considerable potential for the development of hemodialysis service in X hospital of East Java. This study recommends the importance of special teams to plan for the fulfillment of infrastructure, human resources and equipment needs.

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