Sistem antrian pelayanan mri dengan model antrian M/M/L (studi kasus instalasi radiologi RSUP Fatmawati) = Queueing system of mri service with M/M/L queueing model (a case study of radiology instalation in RSUP Fatmawati)

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Abstrak

[ABSTRAK
Sistem antrian yang di terapkan untuk pelayanan MRI Instalasi Radiologi RSUP Fatmawati menghasilkan antrian yang panjang. Berdasarkan hasil telaah dokumen dan observasi terhadap pelayanan perjanjian, didapatkan panjang antrian mencapai 20 hari. Tujuan dari penelitian ini adalah untuk mengetahui kinerja antrian berdasarkan model antrian M/M/1dari Teori Antrian. Melalui teori ini didapatkan komponen antrian yang mempengaruhi sebuah sistem antrian mencakup distribusi waktu antar kedatangan pasien, distribusi waktu pelayanan, pemberi pelayanan atau server, kapasitas sistem, populasi sumber, dan disiplin antrian. Penelitian ini merupakan jenis penelitian studi kasus dengan kuantifikasi. Sehingga pendekatan penelitian yang digunakan adalah kualitatif dan kuantitatif. Pendekatan kualitatif digunakan untuk menjelaskan komponen sistem antrian dimana distribusi waktu antar kedatangan pasien bersifat independen, distribusi waktu pelayanan bervariasi 24 hingga 400 menit, jumlah server 1 kesatuan, populasi sumber yang tidak terbatas, serta pasien yang dilayani berdasarkan kombinasi disiplin Pertama Datang Pertama Dilayani dan disiplin prioritas. Pendekatan kuantitatif digunakan untuk menghitung kinerja sistem antrian sehingga di dapatkan mean jumlah pasien di dalam sistem sebesar 0,889 per jam, Mean jumlah pasien dalam antrian sebesar 0,009 per jam, Utilisasi pelayanan sebesar 88,9%, Distribusi response time sebesar 10,31 jam, dan Mean waktu tunggu sebesar 1.14 jam.
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ABSTRACT The Queueing system which has been implemented for MRI Service in Radiology Instalation in RSUP Fatmawati results in a long queue. Based on the report and observation to the scheduling service, the queue for MRI examinationm reachs 20 days long. This research aims to measure the queue performance by using M/M/1 queueing model taken from queueing theory. Using this theory, queue components affecting a queueing system includes the interarrival time distribution, service time distribution, number of server, System Capasity, Population source, and Queueing Diciplin. This research is a quantification case study using both qualitative and quantitative method. The qualitative method is used to explain each of the queue components while quantitative method is used to calculate the queue performance. the qualitative method results in an independent interarrival, various service time distribution range from 24 up to 400 minutes, 1 server serves 1 examination at a time, and an infinite source of patients which comes to the queue, and a combination of First Come First served with Priority Queueing Dicipline. Quantitative method results in 0,889 per hour mean number of customer, 0,009 per hour mean number waiting customers, 88,9% of server utilization, 10,31 hour of distribution of response time of a customer, and 1,14 hour distribution of waiting time.
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