

A STUDY OF QUEUES IN TANDEM RELEVANT TO HOSPITAL SERVICES

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Abstract: Single channel queuing model consisting of two stages of service has been considered. To resolve the system in steady state, matrix method, in view of linear operator, has been applied and some interesting results have been derived.

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1. Introduction

In hospital service situation exist; patients have to pass successively through several stages to get specialized service of every stage one after another in a series. This situation is known as queue in series or queue in tandem. For example, some patients arriving at the registration counter have to go to, first for a dressings specialist check up and then he goes for some types of immunization service or, dressings for infections etc, done by a different person servicing the patients. There will be two stages of services.

Let us take the simplified one channel queuing model consisting of two stages of service as shown in figure:-

