

Porkaew Ruangpeng 2014: Analysis of Queuing System and Development of Patient Service System : A Case Study of Outpatient Service in Phatthalung Hospital. Master of Science (Statistics), Major Field: Statistics, Department of Statistics. Thesis Advisor: Miss Thidaporn Supapakorn, Ph.D. 124 pages.

The purpose of this research is to compare the current system and the new system of outpatient service at Phatthalung Hospital in three divisions: medical record, outpatient and pharmacy service divisions. Both systems are simulated by using Arena version 14. After 100 times of independent simulation are created, then, the indicators for analyzing the efficiency are the average total time, average waiting time of the services and idle time percentage of officer.

In the medical record division: the new system is done by adding one officer at the register for sending patients. The average waiting time is less than 15% of the current system (221 seconds) and the idle time percentage of officer is more than 20%.

In the outpatient division: three new systems are created. The first system is done by changing the working time, the second system is done by adding one nurse and changing the working time and the third system is done by adding one physician and one nurse. The results of the second system is the most suitable since the average time of patients in the system is 2,182.92 seconds which is 50% decreasing from the current system.

In the pharmacy service division: two new systems are created. The first system is done by adding one pharmacist at screen point and the second system is done by allocating the human resources. The results of both systems show that the average waiting time at screen point is less than 20% of the current system (68 seconds) and the idle time percentage of the pharmacist is more than 30%. Found that the two new systems are better than the current system, it is recommended the second system since the manpower allocation is appropriate for the workload.

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