

# Advanced Facilitation for Hospital Appointment System

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## ABSTRACT

This system is proposed present advanced facilitation for patient appointment in hospital. In previous years, the patients firstly call to hospital, and then receptionist receives that call and asks name and other information. These processes require more time and that's why it is very tedious. To avoid this, we want to give advance facilitation for calling system for hospital. In this hospital, patients call only through mobile to the hospital, then there is no need of receptionist to receive call; this call is automatically received by system. If the patient call to the system, then system send the code and tentative time of the appointment through SMS. The advantage of this system is, it reduces the time of appointment and there is no need of patient to wait in queue for their appointment. There is no human interaction in this system for the appointment of patients.

**Keywords :** SMS, Physicians, OPD, Appointment.

## I. INTRODUCTION

Now a day's every one want a facility which reduce their efforts, minimum time and provide a way to do their work more easily. Advance appointment system through calling is a system, which a user or a patient can access the mobile number assign by hospital, and through the mobile, the patient can easily make their appointments. The term of "appointment" refer to the period of time allocated in the schedule to a particular patient's visit and "service time" refers to the amount of time the physician actually spends with the patient (which may be Shorter or longer than the appointment duration). An appointment system allows individuals to conveniently and securely book their appointments through calling. Associated to the typical stand in line method, the calling appointment system mightominously Upsurge patient's satisfaction with registration and decrease total waiting time successfully.

## II. METHODS AND MATERIAL

### 1. Literature Review

A. The impact of strategic operations management decisions on community hospital performance[1].

They proposed that the obvious differences in previous hospital research and current hospital practice in managing demand is that previous research tends to focus on a reactive approach to manage demand through internal improvement of facility utilization and better scheduling policies . In static appointment scheduling all decisions must be made prior to the beginning of a session, which is the most common appointment system in healthcare. In dynamic appointment scheduling the schedule of future arrivals are revised continuously over the course of the day based on the current state of the system. This is applicable when patient arrivals to the service area can be regulated dynamically, which generally involves patients already admitted to a hospital or clinic.

### B. Online Appointment Scheduling System for Hospitals—An Analytical Study.

Appointment scheduling systems are used to manage access to service providers. Many factors affect the performance of appointment systems which include arrival and service time variability, patient and provider preferences, available information technology and the experience level of the scheduling staff .Thus a proper scheduling system has to develop by considering all

these factors which will increase patient satisfaction, which in turn increases profit. An online scheduling system allows individuals to conveniently and securely book their appointments online. Compared to the usual queuing method, the web-based appointment system could significantly increase patient's satisfaction with registration and reduce total waiting time effectively.

### C. The Analysis of Appointment System to Reduce Outpatient Waiting Time at Indonesia's Public Hospital.

Outpatient services have become an important component of health care. By hidebound thinking, the medical profession emphasized that a physician's time is more valuable than a patient's time. Consequently, the appointment system was designed to minimize physicians' idle time overlooking patients' waiting time. This is no longer valid in today's consumer oriented society. Long waiting times for treatment in the outpatient department followed by short consultations has long been a complaint. Nowadays, customers use waiting time as a decisive factor in choosing a service provider. Therefore, idle time of both parties must be considered in designing an appointment system although these two objectives are contradicted to each other. This research aims to provide a study of the major causes of patients length of time for medical treatment in a outpatient clinic at one of Indonesian public hospital and also provide recommendation on the best strategy to improve the appointment system so that can maximize the effectiveness and efficiency of resource and capacity. The hospital queue model use single-channel multiphase systems. Queuing theory be the first tool to look at patient waiting times on each server independently. The results show that the hospital should change the appointment system for physicians. Applying 'doctor on call' system may appear to reduce doctor's idle time but lead to high patients' waiting times. In some cases, the appointment system make doctor to be back and forth to the hospital, so it was not directly affect the productivity of a doctor. Not only construct the appointment system, they should take attention of patient flow and set scheduling of the capacity to increase the effective and efficiency outpatient department performance.

## 2. Problem Statement

In today's consumer oriented society, customers use waiting time as a decisive factor in choosing a service provider. The medical profession emphasized that a physician's time is more valuable than a patient's time which is of no importance today, hence our aim is to design a system which can be used by hospital to manage daily appointment for a doctor so that patient that will be visiting for treatment shall get satisfaction in terms of waiting time and book appointment.

## 3. Problem Solution

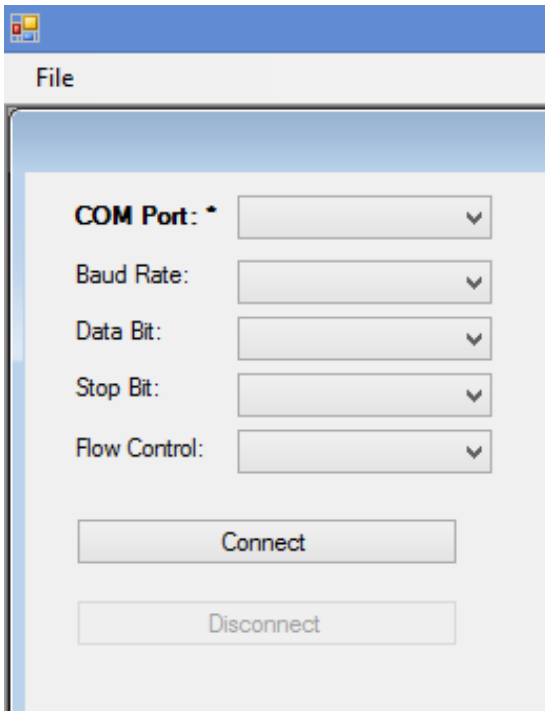
Existing system of hospitals have an appointment system which handle by one receptionist, the problem with this system is that:

- Complexity in manual system of handling patient's details.
- There will be improper listening name and it is tedious to maintain record.
- Inconsistency in case of appointment time given to the patient.
- Searching in existing system is tedious and time consuming.

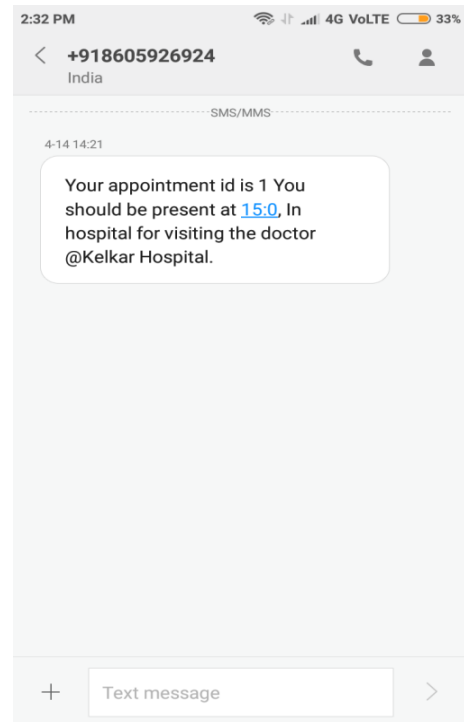
## III. RESULTS AND DISCUSSION

### EXPERIMENTAL RESULT

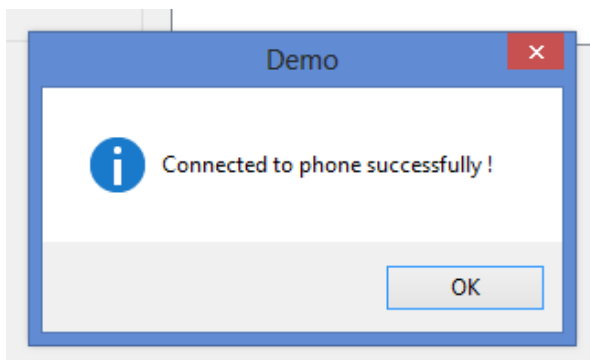
- 1) First important task in system is, to connect phone to system through GSM.
- 2) GSM requires the specifications to interface with system.
- 3) After providing the correct specification of GSM the phone connected successfully to the system.
- 4) Now, system is ready to receive a call. Incoming call is receive through system.
- 5) Patients receive a SMS of appointment with appointment ID and time.



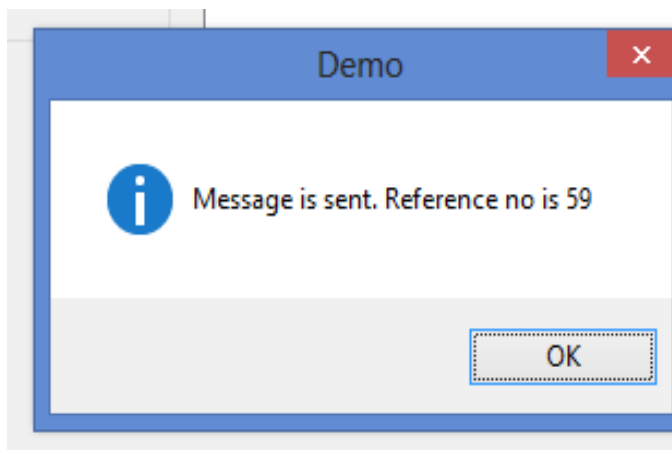
**Figure 1.** GSM Required Specifications



**Figure 4.** SMS for appointment details



**Figure 2.** Phone connected to System



**Figure 3.** System Acknowledgement for SMS Sending

#### IV.CONCLUSION

With the development of calling appointment system, patients are able to book their own appointment with ease. They will be reminded of their appointments via SMS that will be promptly sent to them before their appointment time. Associated to the typical stand in line method, the calling appointment system might suggestively upsurge patient's fulfillment with appointment and decrease total waiting time successfully. However, further improvements are needed for broad use of the system. For refining the core operations in outpatient clinics in respect of health applications, paper-based methods were used which resulted in low quality and efficiency as well as longer waiting times for both scheduled and walk-in patients.

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