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Improving Health Care Accessibility: Strategies and Recommendations

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Abstract. Access time refers to the interval between requesting and actual outpatient appointment. It reflects healthcare accessibility and has a great influence on patient treatment and satisfaction. King Faisal Specialist Hospital and Research Center, Jeddah, Saudi Arabia studied the accessibility to outpatient services in order to develop useful strategies and recommendations for improvement. Utilized, unutilized and no-show appointments were analyzed. It is crucial to manage no-shows and short notice appointment cancellations by preparing a waiting list for those patients who can be called in to an appointment on the same day using an open access policy. An overlapping appointment scheduling model can be useful to minimize patient waiting time and doctor idle time in addition to the sensible use of appointment overbooking that can significantly improve productivity.

Keywords. Healthcare, Accessibility, Quality Improvement, Hospitals.

Introduction

Healthcare organizations are interested in developing improvement tools to achieve better patient outcomes and better system performance through safety, effectiveness, efficiency, availability, accessibility, appropriateness and equity [1, 2]. Accessibility and effectiveness are the two principal dimensions essentially considered and highly valued by patients [3]. Access time is the interval between requesting an appointment and the actual appointment. Waiting time is the time spent at clinic before examination. Both have a great influence on patient treatment and satisfaction [4, 5]. It is common for patients not to show up for their scheduled appointments. Unattended appointments result in under-utilization of valuable resources [6].

1. Methods

To reduce the long outpatient appointment delays, of several weeks, and high no-show rates, King Faisal Specialist Hospital and Research Center, Jeddah, Saudi Arabia analyzed the accessibility to outpatient services in order to develop useful strategies and recommendations. Retrospective data, Nov 2014 to May 2015, were retrieved from the hospital data warehouse, including number of active clinics, number of available appointment slots, number of patients seen and number of no-show patients in addition to calculating their percentages.

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2. Results

A thorough data analysis was conducted to explore the current utilization level and the potential for improvement. The total number of outpatient clinics is 541, considering the variation of the number of covered clinics by each provider according to weekly clinical schedule and other administrative tasks. As per hospital policy, each regular clinic has 10 appointment slots, each adult backup clinic has 4 slots and each pediatric backup clinic has 3 slots, a total of 5,047 appointment slots are available. The total utilized appointments are 4,357 (86%), unutilized slots are 690 (14%). Total number of outpatients seen is 2,852; 65% of total utilized slots (4,357). The total number of no-shows is 1,505 patients; 35% of utilized slots. We can objectively estimate the potential capacity for more patients to be seen by utilizing both of the unutilized and the no-show appointment slots. A total of 2195, 43%, more patients could have been seen if the unutilized appointment slots were utilized and the no-show patients were replaced.

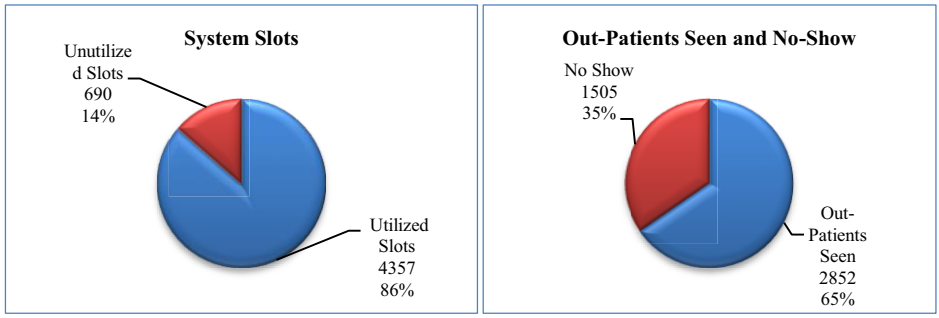

Figure 1. Utilized and Unutilized Outpatient Slots + Seen and No-Show Appointments.

Table 1. Number of Clinics, Available Appointment Slots, Utilized, Patients Seen and No-Shows.

No.	Clinic	Total # of Clinics	Available Slots	Utilized Slots	Unutilized Slots	Patients Seen	No-Show Patients
1	Adult Clinic-1	25	250	216	34	122	94
2	Adult Clinic-2	91	910	969	-59	580	389
4	Adult Clinic-3	81	810	661	149	416	245
5	Adult Clinic-4	89	890	682	208	375	307
5	Adult Backup Clinic	29	116	54	62	33	21
6	Pediatric Clinic-1	119	1190	995	195	776	219
7	Pediatric Clinic-2	80	800	780	20	550	230
8	Pediatric Backup Clinic	27	81	0	81	N/A	N/A
*	**Total**	**541**	**5,047**	**4,357**	**690**	**2,852**	**1,505**

Available Slots = 10 per Regular Clinic, 4 per Adult Backup Clinic, 3 per Pediatric Backup Clinic.

Table 2. Number and Percentage of Unutilized, No-Show and Potential Outpatient Appointments.

No.	Clinic	Potential more patients	% Potential more patients	% Utilized slots	% Unutilized slots	% Patients seen in relation to utilized	% No-Shows in relation to utilized
1	Adult Clinic-1	128	51%	86%	14%	56%	44%
2	Adult Clinic-2	330	36%	106%	-6%	60%	40%
3	Adult Clinic-3	394	49%	82%	18%	63%	37%
4	Adult Clinic-4	515	58%	77%	23%	55%	45%
5	Adult Backup Clinic	83	72%	47%	53%	61%	39%
6	Pediatric Clinic-1	414	35%	84%	16%	78%	22%
7	Pediatric Clinic-2	250	31%	98%	3%	71%	29%
8	Pediatric Backup Clinic	81	100%	0%	100%	N/A	N/A
*	**Total**	**2,195**	**43%**	**86%**	**14%**	**65%**	**35%**

Potential = Unutilized Appointment Slots + No-Shows.

3. Discussion and Recommendations

The main objective of this study is to highlight gaps in the process of scheduling patients reflecting accessibility and recommending interventions to improve healthcare services provision. Studies show that the rate of no-show increases with increasing time between requesting an appointment and the actual appointment. Patients with longer appointment delays are more likely not to show up [7, 8]. Longer waiting times, inside outpatient clinics, have been shown to be related to lower patient satisfaction rates which in turn lead to less reliable appointment keeping behaviors by patients [9]. Currently backup clinics, adults and pediatrics, were very much under-utilized. More efficient and productive plans should be in place. Our study is recommending a group of actions and further analysis. We need to study the access time as well as the waiting time of different hospital services; both should be analyzed per specialty, per clinic and per individual healthcare provider. We need to identify, analyze, study and minimize the causes of the no-show, as much as possible by using both objective and subjective methods; conducting a root cause analysis to identify the root causes of the problem and also by surveying patients to identify their reasons and justifications for not showing up to their appointments. No-show rates as well as short notice outpatient appointment cancellations can be managed and reduced effectively through a plan to replace those patients with other easily accessed patients; preparing a short waiting list for those patients who can be called in to an appointment on the same day or make them appointment requests on the day they prefer. This is called open access or advanced access policy, which has lately become a popular paradigm in practice and the subject of active research [9]. Another plan is needed for more efficient utilization of the backup clinics. We should also consider an Overlapping Appointment Scheduling (OLAS) model to minimize patient waiting time and doctor idle time in the clinics and/or practice a sensible use of appointment overbooking that can significantly improve a clinic's performance and productivity [10].

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