

Original Research Article

Measuring patient experience with patient care coordinators during decongestion of outpatient department of an apex tertiary care referral public hospital in India

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ABSTRACT

Background: Specialized hospitals are faced with overcrowding in OPDs, improper behaviour of staff and navigation difficulties. In an apex tertiary care referral public hospital of India, Patient care coordinators (PCCs) were introduced to help patients navigate as a part of an OPD decongestion project. A novel concept involving patient interaction, called for measuring patient experience, to provide a baseline measurement, further improvements needed and benchmarking. For this, the model for decongestion also needed to be studied.

Methods: A descriptive and cross-sectional study was conducted. Direct observations were conducted to study decongestion model and expectations from PCCs. Patient experience was measured from 400 patients using a 27-item questionnaire designed by researcher. A 5-point Likert's scale was used for their availability, politeness, promptness, guidance, information accuracy, emotional support, etc. Dichotomous scale was also used to measure competence of PCCs.

Results: A patient reception centre with three different zones was created based on status of appointments, unique hospital identification number (UHID) and new or re-visit patients. Waiting areas were created and crowd distributed based on handling capacities of sub-waiting areas dynamically adjusting to service time of doctors. PCCs facilitated navigation to right destinations. Patients had positive experience irrespective of age, gender and educational status. It related positively with a confident next visit.

Conclusions: Introduction of PCCs is an effective way for assisting patient navigation. The study contributes by providing a measure of experience and benchmarking. It succinctly describes a model for decongesting OPD that may be adopted in similar settings.

Keywords: Outpatient department, Overcrowding, Patient experience, Patient care coordinators

INTRODUCTION

OPD is the first point of contact with hospital staff and is the mirror of a hospital reflecting its functioning.¹ Highly specialized hospitals are overcrowded due to lack of effective OPD queue management.²

Other related problems are delays in consultation, improper behaviour of staff, poor logistic arrangements, support services, etc.³

The hospital under study was an apex tertiary care referral public hospital of India with mammoth OPD visits of 5000 patients per day. Patients and their attendants were seen wading their ways in the ocean of overcrowded places. Patient care coordinators (PCCs) were introduced inter alia to facilitate an OPD decongestion project. They assisted patients navigate through a transformed OPD. Since this was a novel concept at the hospital and involved interaction with patients, it called for measuring patient experience. The

study provides a baseline measurement for further improvements needed and benchmarking. For this, the model for decongestion also needed to be studied. The study introduces to the infrastructural and operational measures undertaken to decongest the OPD of use in resource constrained countries. It adds to academics by delving upon the construct of patient experience with respect to these PCCs.

The study aimed at measuring patient experience with respect to PCCs and describes the model for decongestion OPD of an apex tertiary care referral public hospital in India.

Conceptual framework: patient care coordinators and patient experience

Care coordination has been defined as deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves marshalling of personnel and other resources needed to carry out patient care activities and is often managed by exchange of information among participants responsible for different aspects of care.⁴ Over 40 definitions of care coordination exist, and many related terms are used interchangeably with care coordination e.g., collaborative care, continuity of care, disease management, case management, care management, and care or patient navigation.⁵ The concept of patient care coordinators has been applied in healthcare delivery amongst nurses and has been linked to positive health outcomes.⁶ Coordination through a clinician has also been emphasized for navigating complex healthcare delivery systems.⁷ Similar to these concepts, this study focuses on PCCs in OPD settings to assist patients during navigation.

Patient experience reflects occurrences that happen to people and the extent that people's needs are met across the continuum of care.^{8,9} It can be used to benchmark hospital performance and monitor effectiveness of interventions.¹⁰ Experience with a healthcare service can have a direct impact on the patient's expectations of the services.¹¹ Measurement is fundamental to improving the quality of hospital care.¹²

There are various tools in vogue to measure patient experience in hospitals such as Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), Quality from the Patients' Perspective (QPP), Picker Patient Experience Questionnaire (PPE-15), NHS Inpatient Survey, Scottish Inpatient Patient Experience Survey, Hong Kong Inpatient Experience Questionnaire, Norwegian Patient Experience Questionnaire (NORPEQ), Patient Experiences with Inpatient Care (I-PAHC), etc.¹⁰ But since questions need to be designed around what actually occurred during a visit, various

themes from systematic reviews and studies have been explored which have domains like:¹⁰

- Information,¹³⁻¹⁵
- Respect, dignity, politeness, physical or emotional comfort,¹⁶⁻²⁰
- Responsiveness, prompt access or communication,^{15-18,21}
- Skills, competence or commitment of the staff,^{14,17}
- Environment or infrastructure,¹³⁻¹⁵
- Behaviour of staff,^{21,22}
- Discipline of queues,²¹
- Continuity of transition,
- Care after leaving hospital.

METHODS

Study design

A descriptive and cross-sectional study was conducted which aimed at measuring patient experience at the OPD with respect to services offered through patient care coordinators. Major objectives were to study the model for decongesting OPD, enumerate expectations from patient care coordinators and measuring related patient experience.

Setting

The study setting was the OPD of an apex tertiary care referral public hospital in India.

Sample

To arrive at a maximum sample size, a prevalence of positive experience was assumed to be 50% patients. Taking 95% Confidence Interval and 5% Type I error, using $n = 4pq/d^2$ formula for cross-sectional studies, a sample size of 400 was taken (p =prevalence, $q = 1-p$ and d = precision). Proportionate numbers of patients were enrolled from the three waiting areas dedicated to different specialties based on OPD visits representation basis. Therefore, questionnaires were administered to 65 patients from Medicine, 35 from paediatrics and 300 from rest of the specialties. Consecutive consenting patients that exited from these three areas concluding their journey in OPD were enrolled until the sample size was attained.

Instruments or surveys (questions) used

Direct observations were conducted to study the model for decongesting OPD and enumerate expectations from PCCs. Patient experience was measured using a 27-item, self-administered questionnaire designed by researcher based on themes from review of literature and fine tuned as per enumerated expected roles of PCCs as derived from the direct observations. The tool was designed around what actually occurred during the OPD visit with

respect to the PCCs. Demographic data viz. department for consultation, age, gender and education were also captured to test association with patient experience. Face and content validity was done by expert hospital administrators. Cronbach's alpha of piloted questionnaire (30 observations) emerged to be 0.63, which acceptable considering the number of items in the questionnaire. Experience was measured on a 5-point Likert's scale in terms of their availability, politeness, promptness, awareness of the OPD process, guidance, solution to queries, information accuracy, emotional support, queue discipline in various counters and judicious release of patient in batches based on service time of doctors; and overall impression. Dichotomous scale was also used to measure competence of PCCs regarding directions provided, orientation given about other PCCs, signage boards or helping patients with special needs to dedicated counter, etc.

Data analysis

Data analysis was done using SPSS. Descriptive statistics were compiled and for further analysis Pearson Chi square test and ANOVA were used.

RESULTS

Model for Decongesting OPD

It was found that, a new *Patient Reception Centre* (PRC) was created which had three different zones for registering OPD patients. These were based on status of prior appointment, Unique Hospital Identification number (UHID) and on new or re-visit (Figure 1).

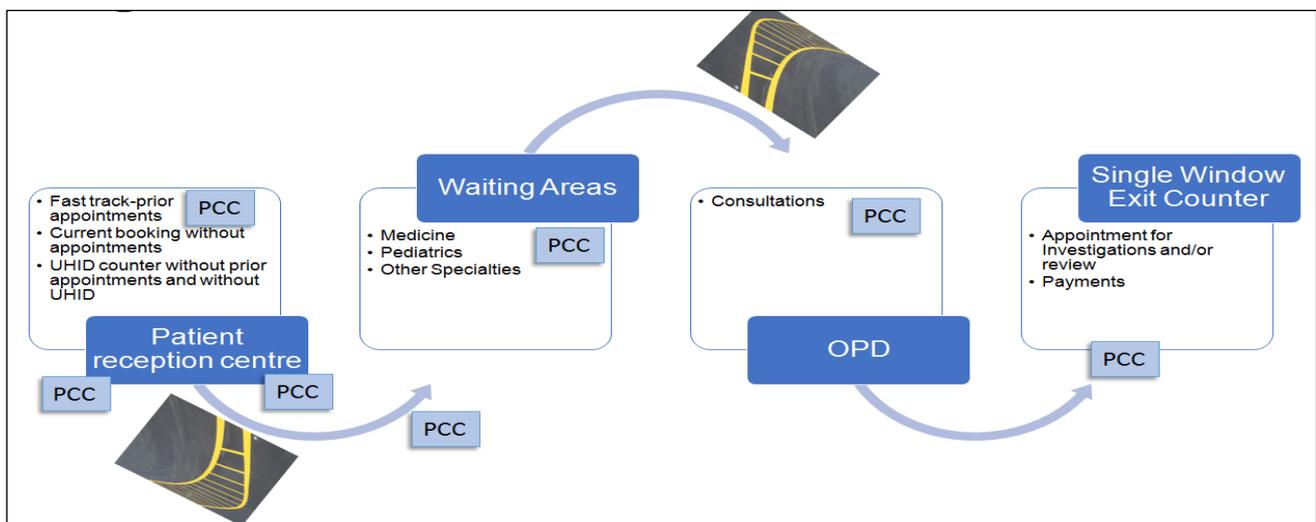


Figure 1: Model for decongestion.

Registration of patient with prior appointments and a valid UHID was done through Fast Track area which required scanning of a bar-code or entering appointment number generated at the time of appointment. These appointments were taken through web-based appointment or interactive voice response system, through single window exit counters (SWEC) created to facilitate next OPD or Lab or radiological investigation appointment or from kiosks conveniently located near the entry gate of hospital.

For patient with UHID without appointment, current appointments were given subject to open slots adjusting dynamically to cancellations and no-shows using specially designed algorithms. A large electronic coloured coded screen displayed status of available current and other appointments for various days. Others without appointment and a UHID, a dedicated UHID area catered to them as this required generation of UHID and system entry of patient particulars which had longer service times. They were then directed to the current

booking counters or kiosks depending on open booking slots. Colour coded wrist bands matching different areas were tied to patients before sending to respective waiting areas for easy identification and assistance.

Waiting areas were created for crowd distribution for medicine and paediatrics departments. The erstwhile registration area was converted into waiting area for rest of the specialties. Before the patients were released, stamping of the band was done to prevent unauthorized or out of turn entries. Only one attendant per patient was allowed inside. On entering sub-waiting areas, an entry scan of the bar-code of the OPD card was done. Based on the handling capacities of the sub-waiting area near the consultation rooms and dynamic adjustments to the service time of doctors, patients were released in batches to the sub-waiting areas. In case of delays in throughput, the registration at patient reception centre was curtailed or slowed to avoid overloading of the system beyond its handling capacity. Finally, after consultation, patients were directed to the single window exit counters (SWEC)

for follow up OPD appointments and/or investigations. An exit scan was done before the patient left the OPD to SWEC. This scan helped in generating data for monitoring the compliance to all the steps and reports for management for further action.

The PCCs provided guidance and facilitated their navigation to right destinations. The figure demonstrates the various areas and positioning of the PCCs. Patient care managers (PCMs) supervised the work of PCCs.

Expectations from the PCCs

- Available at all times during the OPD visit
- Polite and humble
- Prompt and responsive
- Awareness about the processes involved in OPD journey
- Proper guidance
- Response to queries to be satisfactory at PRC, Waiting areas and SWEC
- Accurate information
- Emotional support
- Directing patients to the right destination
- Maintain queue discipline at PRC and SWEC
- Distribution of patients to counters that facilitated their maximum utilisation
- Explain to patients the next step in their OPD journey and sensitisation to yellow track and other signage to reach waiting areas, availability of other PCCs that can provide further assistance, counter for elderly/ specially-abled, stamping at waiting areas.
- Release of patients in batches to the respective specialty OPD so that there is neither overcrowding at OPD nor underutilisation of doctors.
- Card scanning at entry and exit of the OPDs.
- Direction to the right OPD room.

Demographics

Males accounted for 54.8% of the visits and females for 45.2%. It was found that 2.7% of the patients had no formal education, 0.5% had attended primary school, and 31.4% had been to middle, high or intermediate school while 65.4% were graduates and above. Patients between 18 years to 60 years constituted 88.4%, 9.3% patients were less than 18 years and 2.3% were above 60 years.

Patient experience

The study revealed a positive experience with all the parameters except awareness (32.5%) about supervisors or PCMs and a lower level satisfaction (score between 3 and 4) with them (Table 1 and 2).

The experience was statistically uniformly positive irrespective of the gender, age, education (Pearson Chi square test). As the satisfaction with the any item of experience increased, it led to a statistically significant

increase in the overall impression and likelihood of a confident next visit (Pearson Chi square test). Considering that the accessibility domain of a patient experience is constituted by their availability, politeness and promptness of response, it was found that as the accessibility increases, statistically the overall impression increases and the patient is confident of the next visit (ANOVA test).

Table 1: Patient experience- dichotomous scale.

Variable	Percentage
Awareness about patient care coordinators (PCC)	95.5%
PCC giving right directions	90.9%
Information provided about the yellow tracks leading to OPD	73.5%
Information provided about the concerned OPD floor	76.1%
Information provided about other PCCs in blue dress on the way for help	86.2%
Information provided about the signage for guiding to OPD	88.1%
Information provided about the special counters for unaccompanied old patients	84.1%
Information about stamping of card for granting access to OPD	87.3%
Entry scan done	87.6%
Exit scan done	73.8%
Directed to right specialty OPD or Centre at the outside of PRC	91.2%
Awareness about PCM	32.5%
Confident to visit the hospital through the help of PCCs	88.6%

Table 2: Patient experience- likert scale.

Variable	Percentage satisfied (≥ 3) and above	Mean
Availability	92.5%	4.1
Politeness	91.0%	4.0
Response	90.3%	4.0
PCC process awareness	88.5%	4.0
Satisfaction with guidance	85.6%	4.0
Answered query well	87.6%	4.1
Information accuracy	88.4%	4.0
Emotional support	88.8%	4.0
Discipline of the queues in PRC	92.2%	4.2
Counters utilization	90.9%	4.2
Utilization of doctors	88.8%	4.0
Discipline of the queues in SWEC	88.9%	4.0
Guidance at SWEC	89.8%	4.1
Satisfied with help of PCM	83.4%	3.8
Satisfaction with supervision	86.1%	3.9
Overall impression	91.9%	4.1

DISCUSSION

The study describes the concept of patient care coordinators. Amongst the different definitions of care coordination prevalent worldwide, patient navigation may, to an extent, literally refer to patient care coordination of the present study. The concept amongst nurses and clinician has existed but coordination through the journey seems to be novel.^{6,7} Considering the newly implemented decongestion plan, the role of PCCs also appears to be critical especially with such huge volumes of patients and attendants coming from different educational background.

Managing overcrowding has been the root of many studies. In the present study, it involved creating more waiting areas enhancing the handling capacity of the system. It also involved process re-engineering distributing patients in different waiting areas. Even during registration, categories of patient needed longer times were segregated facilitating those with prior appointments. Process re-engineering had been studied extensively in the healthcare industry.²³⁻²⁷ The present study revealed that the registration appointments were adjusted based on algorithms related to cancellations and average appointments. Algorithm based OPD scheduling dependant on inputs of average time for history and treatment have been recommended.² Another study sought to determine an optimal server level and at a minimum total cost which include waiting and service costs in homogenous servers in order to reduce patients' congestions in the hospital as low as reasonably practicable using a multi-server queuing model.²⁸ Recommendation to convert the single-channel queuing units in multi-channel queuing units has also been made in other studies.²⁹ The present study did not involve modifying the servers i.e. the doctors but based on their throughput, the staggered release of batches of patients was executed depending upon the availability of space in the sub-waiting areas.

Another study that tracked patients during the OPD visit with the help of a software that allowed generation of live management information. Hospital Administrators could see patient volumes at all times, real and calculated future waiting times for OPD, and consulting rooms. They could also see, in real time, any appointment, delay times as and when they happen. As soon as waiting times exceed the set limits, Administrators were alerted by the system and could act accordingly.¹

The present study revealed that experience was uniformly positive across domains, irrespective of age, education and gender while Vadhana in his study had found that patient with lower education has a higher level of satisfaction.³⁰ Patient experiences with availability of PCCs were found to be positive in more than 92% of the patients. A study on overcrowding of the OPD at tertiary care institute by Umer K et al, found that non-availability of key personnel is considered as the main reason for the

under-utilization of public health facilities resulting in overcrowding.³¹ The present study found that mean score for politeness was 4.1 and more than 91% of patients were satisfied with politeness of PCCs. In another study, patients were most dissatisfied with failure to show compassion, lack of politeness and inadequate listening by OPD staff.³² Polite, cheerful, cooperative and efficient staff at OPD builds up public relation of utmost importance.³³ Multivariate analysis has also established that politeness was the most powerful predictor variable of patient satisfaction.³⁴

CONCLUSION

Patients had positive experience with PCCS including their behaviour irrespective of age, education and gender of the patient. Positive experience was positively associated with confident next visit. Introduction of PCCs is an effective way for assisting patient navigation and optimum dynamic way of managing a large number of patients in OPD. Study findings can act as benchmarking with respect to this concept of patient care coordinators and it can allow for regular monitoring of the system. Since the study revealed that there was low level of awareness about Patient Care Managers and compliance with exit scan, it is recommended that suitable interventions like public display of such information may be undertaken. The study is limited to the experience with scope of the services offered by the patient care coordinators and does not encompass the experience in entirety. The domains explored here can be used for measuring patient experience in healthcare delivery systems that adopt patient care coordination through PCCs. The study succinctly describes a model for decongesting OPD that may be adopted in similar settings.

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