A Study of Patient Waiting Period in Diagnostic Center- An Application of Service Blueprint at Diagnostic Centers of Bangalore City

Uma Sharma[1], Yogashree C.N[2], Varun S Bharadwaj[3], Rahul Sangolli[4],
[1]*Professor, RV. Institute of Management, Bangalore*
[2,3,4] *Students, RV Institute of Management. Bangalore*

***Abstract*— Patient care at diagnostic centres is the primary deliverable that service providers such as diagnostic centres aim to provide. A patient's diagnostic journey in the Indian Healthcare delivery system is seen to be consuming 12 hours to complete a diagnostic process and get the report to the consulting doctor to get the treatment started for the illness. Reducing service delivery time to ensure the diagnostic journey is less burdening on the patient who is already compromised with regard to their health n money, can go a long in ensuring efficiency of health care delivery systems (Grundy J, Annear P 2010,.Engel, Nora,2015).**

***Index Terms*—Service, diagnostic process, Service delivery**

I. INTRODUCTION

Diagnostic centres are the major point of service to get a clinical examination done. They can be described as specialist hospitals that provide a variety of diagnostic exams and medical imaging services to assist in the diagnosis of a range of medical disorders. Patients' access to diagnostic services is defined as a diagnostic journey, as part of this journey patients have high involvement in decision making regarding diagnostic centres to test , travel arrangements to deposit samples or give a test and incur expenses all these when they are already compromised and unwell.

Adopting supply side strategies that enable patients to get ease of service at such life-support providing diagnostic points should be seen as the basic service provided. Therefore, the design of services should be given more consideration in diagnostic centres (Kelly1993). Design of service delivery can be formalized and standardized by developing a service blueprint for the service delivered. Sequential and effective capturing of each task that is integral to the service delivery is possible through a service blueprint (Bitner, 2008). A service blueprint is a two dimensional visual representation tool that is an aid to end-to-end plan of all tasks and processes involved in a service delivery. Central to the blueprint is the service experience from the customer's perspective (Solomon, 1987). It outlines all the steps involved in delivering a service, including the front stage (visible to the customer) and backstage (hidden from the customer) processes.

II. LITERATURE REVIEW

Literature on the subject of patient care at diagnostic centres and the challenges in the ecosystem has studies that assess the impact on the users of the service and on the service provider's perspective. These studies are generically grouped under the study area of health seeking behaviour of patients.

Health seeking behaviour is the major area of study that has investigates into the topic of patient behaviour towards seeking treatment and their intentions towards health care providers. Insights from studies in this area have given an understanding that health seeking behaviour is driven by the topic of this area of research and have given insights like health seeking behaviour is being driven by patient's household determinants, sociocultural determinants, institutional and systemic determinants. (MacKian 2003).

III. OBJECTIVES OF THE STUDY

(1)To understand the service process at the diagnostic centre

(2)To develop a service blueprint that depicts the sequence of the service delivery at diagnostic centre while fulfilling the customer needs.

IV. HYPOTHESIS FOR THE STUDY

H_0: Patients who are provided with estimated wait time by staff at diagnostic points do not show higher levels of satisfaction for service.
H_1: Patients who are provided with estimated wait time by staff at diagnostic points show higher levels of satisfaction for service.
H_0: The diagnostic centre staff's professionalism, friendly conduct and information provided to the patients were not satisfying.
H_1: The diagnostic centre staff's professionalism, friendly conduct and information provided to the patients were satisfying.

V. HELPFUL HINTS

Figures and Tables

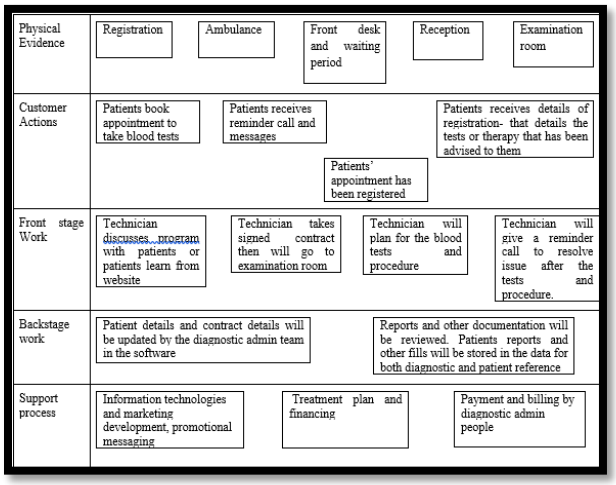
TABLE 1: Results of Pearson's Test and't' Test for User Perception of Waiting Time and its Relation with Diagnostic Centre Staff Instructions

	V1	V2
Mean	3.5	3.4
Variance	1.1	1.0
Observation	104	104
Pearson Correlation	0.44	
Hypothesised Mean	0	
df	103	
Statistics	1.15	

TABLE 2: Results of Pearson's Test and 't'Test On – Service Users Perception of Diagnostic Centre Staff's Professionalism and Clarity in Giving the Service Information

	R1	R2
Mean	3.4	3.8
Variance	1.2	0.6
Observation	104	104
Pearson Correlation	0.2461	
Hypothesised Mean	0	
df	103	
Statistics	-3.6	
p	0.0	
T critical		

Pic: Service Blue-print proposed for diagnostic centres



Service blue print explains five service action areas and the service plan with identified role and action is sequentially depicted for each of the service action area. As per the results of the study the service pain points are identified more in the interaction with staff in the initial phase such as- Physical Evidence, Customer Actions, Front stage Work these are mapped with detailed service action and sequencing. Back stage and support process signifies the user connect to the service and the extent of assurance they are provided at the diagnostic centre.

VI. CONCLUSION

Patient waiting period and better service by staff at health care delivery points is generally seen as a point of agony by both the service provider and user. Considering the compromised state, the patient are in the waiting time reduction effort is proposed through this study. Adding to the existing studies in the area of health seeking behaviour of the patients this study has proposed a service blueprint which identifies that efficient appointment scheduling, staff interaction and assigning appointments , staff providing patients with details of total waiting time involved, utilization of technology are key

interventions that can streamline operations and improve patient flow.

In conclusion, the service blueprint for the diagnostic centre's waiting period for patients highlights the importance of optimizing and enhancing the overall patient experience. Reducing waiting times and improving the efficiency of diagnostic processes should be a top priority to ensure patient satisfaction and loyalty. By carefully analysing and redesigning the various touch-points in the patient journey, the diagnostic centre can create a more seamless and pleasant experience for patients, resulting in increased patient retention and positive word-of-mouth referrals. To achieve this, the diagnostic centre should consider implementing various strategies such as leveraging technology to automate appointment scheduling and check-ins, optimizing resource allocation to minimize bottlenecks, and enhancing communication with patients about expected wait times. Additionally, investing in staff training and equipping them with the necessary tools and knowledge will lead to improved service delivery and patient engagement.

Furthermore, actively seeking and incorporating patient feedback into the service blueprinting process can help identify areas of improvement and address potential pain points in the waiting period. Regularly monitoring key performance indicators and benchmarking against industry standards will also enable the diagnostic centre to track progress and continuously refine their patient-centric approach.

REFERENCE

[1] Engel, Nora, et al. "Barriers to point-of-care testing in India: results from qualitative research across different settings, users and major diseases." *PLoS One* 10.8 (2015): e0135112.

[2] Grundy, John, and Peter Annear. "Health-seeking behavior studies: a literature review of study design and methods with a focus on Cambodia." *Health policy and health finance knowledge hub working paper series* 7 (2010).

[3] Yellapa V, Devadasan N, Krumeich A, Pant Pai N, Vadnais C, Pai M, Engel N. How patients navigate the diagnostic ecosystem in a fragmented health system: a qualitative study from India. Glob Health Action. 2017;10(1):1350452. doi: 10.1080/16549716.2017.1350452. PMID: 28762894; PMCID: PMC5645647.

[4] Kostopoulos, Ioannis (Giannis) & Gounaris, Spiros & Boukis, Achilleas. (2012). Service blueprinting effectiveness: Drivers of success. Managing Service Quality. 22. 10.1108/09604521211287552.

[5] Surprenant, C.F. and Solomon, M.R. (1987), "Predictability and personalization in the service encounter", Journal of Marketing, Vol. 51 No. 2, pp. 86-96.

[6] Kelley, S.W. (1993), "Discretion and the service employee", Journal of Retailing, Vol. 69 No.1.

[7] Bitner, M.,Ostrom, A. and Morgan, F. (2008), "Service blueprinting: a practical technique for service innovation", California Management Review, Vol. 50 No. 3.

[8] MacKian, S. 2003. A review of health seeking behaviour: problems and prospects. HSD/WP/05/03. Manchester: University of Manchester Health Systems Development Programme.

[9] Sitaram Khadka, Oshan Shrestha, Gaurab Koirala, Utshab Acharya, Gopal Adhikari,Health seeking behavior and self-medication practice among undergraduate medical students of a teaching hospital: A cross-sectional study,Annals of Medicine and Surgery,Volume 78,2022.

[10] Health seeking behavior and health service utilization in Pakistan: challenging the policy makers Babar T. Shaikh and Juanita Hatcher ,Journal of Public Health VoI. 27, No. 1, Advance Access Publication 8 December 2004.

[11] Mosadeghrad AM. Factors influencing healthcare service quality. Int J Health Policy Manag. 2014 Jul 26;3(2):77-89. doi: 10.15171/ijhpm.2014.65. PMID: 25114946; PMCID: PMC4122083.

[12] Operationalizing Co-Production in Public Services Delivery: The contribution of service blueprinting. Public Management Review. 16. 10.1080/14719037.2013.848923.