

Problems in Adoption and Implementation of E-Rakt Kosh Scheme in The Blood Bank– A Single Center Experience From Uttarakhand, India

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Abstract

Background: The e-Rakt Kosh is an ambitious project to digitize blood banks across country for various objectives leading to smooth functioning for the benefit of patients. Most blood banks in the country have adopted it but there are ground realities that act as barriers in full implementation and adoption of this program. The knowledge of common issues that the staff of the blood bank feels toward the well-functioning of the program is beneficial to chart out strategies for improvement. **Study:** A questionnaire based study focusing on difficulties in the proper usage of the e-Rakt Kosh portal were noted and analyzed. **Result:** Seven key issues were identified that acted as roadblocks to the proper adoption and implementation of online entry and record keeping. Inappropriate manpower, computers and training were key parameters along with technological glitches of the online entry procedure. **Conclusion:** Proper and periodic assessment of performance is vital along with adequate manpower and infrastructure support in order to make this project a success in every blood bank.

Keywords: Blood Bank, Transfusion services, Web services, Medical information system, Blood donations, Human Resource, Digital platform, online portal.

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INTRODUCTION

The e-Rakt Kosh is an initiative for centralized blood bank management system launched in April 2016 with objectives directed toward better blood bank functionality like safe and adequate blood supply, preventing wastage, reducing turnaround time, networking of blood banks and donor repository [1]. The salient features described are web based application with adhar linkage, decision support, statutory reports and guideline enforcements. It has many components including biometric donor management system for identification, tracking of donors, a centralized blood inventory management system, biomedical waste management system, generation of rare blood group donor registry and alert and notification system. Various features like blood availability, camp schedules and nearby blood banks can be located in its portal. Apart from it, registration of individual donor to track and maintain the profile is also possible [2]. The future shall reveal more and more technological advances with the help of digital technology and virtual reality to ensure that right blood is received by right candidate at right time [3]. In the developing countries, there are still many hiccups in adoption of newer technologies and knowledge of glitches is important for modification or amendments in these directions.

MATERIALS AND METHODS

An assessment of problems was noted down since the start of the project in our blood bank and the problems however trivial that interfered with the optimum utilization of the initiative of e-Rakt Kosh were included. The source of information regarding problem of online entry in the portal were staff and doctors of the blood bank. Their concerns were all gathered and tabulated. A total of six support staff and two doctors involved in the process were part of the study. The problems unrelated to the online work such as routine work were excluded. Final check of the list of problems was done and all the work was performed in Microsoft word program.

RESULTS

The seven key barriers to effective online participation under e-Rakt Kosh portal were found that directly or indirectly affected the performance and adherence. Main problems arose from lack of appropriate staff for the work. Single time training of a single staff was another problem. Besides it regular training in the initial year of the implementation was found missing. On the program front, lack of option for simultaneous collaborative online work was limiting factor. With only one dedicated desktop for this work

coupled with weak interrupted internet speed or electricity was another factor. Backlog from inadequate entries due to manpower deficit was later recognized as important barrier in the long run. Lack of any

knowledge about toll free troubleshooting number is also problematic. A list of all these problems is described in (table 1) the article.

Table-1: The common problems for suboptimal functioning of online work for e-Rakt Kosh

S.N.	Description of the problem faced while participating in e-Rakt Kosh
1.	Lack of dedicated manpower – Staff doing routine work with entry lack motivation and are overburdened thus prone to default and mistakes.
2.	Lack of adequate training – Only one candidate as given training, besides it regular updation or feedback was deficient
3.	The program was not user friendly- The online work was not multi-collaborative at the same time. The entry work is cumbersome and tedious and not simple and crisp.
4.	Lack of adequate number of computers – The work requires 3-5 computers at each station like screening, stargaze, dispatch etc.
5.	Disruption in electricity or net connection. – Local issue of the institute
6.	Backlog of entries- Inadequate staffing results in one person only entering donor features while the entry regarding issue of the blood is not done for weeks. This also results in mismatch between online data and in-house availability of blood products as they do not match in real time.
7.	No knowledge of toll free troubleshooting support.

Abbreviation: S.N. = serial number,

DISCUSSION

Digitization of workflow management certainly helps in any workplace and in modern times is need of the hour. Managerial matters, quality assurance, haemovigilance, financial-managerial tasks and post transfusion care can easily be monitored with increased efficiency through digital assistance [4]. Our study highlights that lack of sufficient staff or human resource, including untrained, in the job is major limiting factor. The need for infrastructure upgrading of skills and modernization of blood banks along with manpower development is paramount to quality services [5]. Manpower shortage has even been problem for developed nations and the condition in developing nations is abysmal [6]. Human factors shall always be critical element in the healthcare delivery despite ground breaking technological advancements [7]. Various reasons play their role as barriers to adoption of newer technologies in the healthcare and chiefly can be categorized in individual, technological, organizational and environmental factors [8]. The absence of dedicated online entry staff with ample numbers to ensure round the clock works is the basic requirement for real time entry. The staff collecting sample, also takes donations and monitors storage and sampling and is thus bound to falter on proper entries. In conclusion, more staff for dedicated work and more computers are critical to efficient participation in this commendable initiative.

REFERENCES

- National Health Mission. (2019). About eRaktKosh [Internet] India; 2019[Last accessed 2019, Jan 20] Available from: www.eraktkosh.in/BLDAHIMS/bloodbank/about.cnt
- National Health Mission. About eRakt Kosh [Internet] India;2019[Last accessed 2019, Jan 20] Available from: www.eraktkosh.in/BLDAHIMS/bloodbank/transactions/bbpublicindex.html
- Wong, K.F. (2011). Virtual blood bank. *J Pathol Inform.* 2:6
- Spyropoulos, B., Botsivaly, M., Tzavaras, A., & Spyropoulou, P. (2009). Towards" digital blood-banking", ITU-T Kaleidoscope: Innovations for Digital Inclusions, 2009.
- Sardana, V. N. (1996). Blood banking services in India. *Health Millions.* 22(6):11-3.
- Garcia, E., Bennett, A., DeFranco, M., Schulze, M., Tanabe, P. A., Hampshire, J., ... & Lee, H. (2011). American Society for Clinical Pathology's 2011 vacancy survey of US clinical laboratories. *Laboratory Medicine*, 42(4), 199-206.
- Thimbleby, H. (2013). Technology and the future of healthcare. *J Public Health Res.*2013; 2(3):28.
- AL-Hadban, W. K. M., Yusof, S. A. M., & Hashim, K. F. (2016). The Barriers and Facilitators to the Adoption of New Technologies in Public Healthcare Sector: A Qualitative Investigation. *International Journal of Business and Management*, 12(1), 159.
- Avgar, A. C., Litwin, A. S., & Pronovost, P. J. *Drivers and barriers in health IT adoption: a proposed framework. Appl Clin Inform.* 2012; 9: 488–500. doi: 10.4338. ACI-2012-07-R-0029.[PMC free article][PubMed][Cross Ref].