



Overview of Patient Data Management Using the Primary Care Application at the Registration Unit of Bulango Timur Community Health

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ABSTRACT

Effective patient data management is an important component of quality health services. The BPJS Kesehatan Primary Care (P-Care) application is used to support patient registration and data management at Bulango Timur Community Health Center. This study aimed to describe patient data management using the Primary Care application based on the Human, Organization, Technology-Fit (HOT-Fit) approach. A qualitative descriptive method with a case study approach was employed. Informants were selected purposively, and data were collected through in-depth interviews, observation, and documentation. Data were analyzed through data reduction, data presentation, and conclusion drawing. The findings showed that, in the Human aspect, registration staff had adequate knowledge and skills to operate the application, although training and socialization were not conducted routinely. In the Organization aspect, the health center provided facilities, task division, coordination, and information technology support; however, a specific standard operating procedure for Primary Care use was not available. In the Technology aspect, the application facilitated patient registration, membership verification, data entry, storage, retrieval, and referral processes, but internet and server disruptions occasionally slowed service. The Fit aspect indicated that human resources, organizational support, and technology were generally aligned with registration needs. Overall, patient data management using Primary Care was implemented well and supported more systematic and efficient service delivery. Further improvement is needed in network infrastructure, internal SOP development, and periodic staff training.

INTRODUCTION

Digital transformation has changed the delivery of health services, including administrative processes and patient data management. Health information systems can facilitate data collection, processing, storage, retrieval, and reporting, while supporting more timely and accurate services. At primary health care facilities, digital systems are increasingly important because registration and patient data activities involve large volumes of information and require continuity between administrative and clinical services.

In Indonesia, the Primary Care (P-Care) application developed for BPJS Kesehatan is used by first-level health facilities to support services for National Health Insurance (JKN) participants. The application supports activities such as patient registration, membership verification, recording of services, diagnosis entry, and referral processes. Its use is intended to reduce dependence on manual recording and improve the organization and accessibility of patient data.

Nevertheless, the implementation of health information systems may encounter technical and organizational barriers. Previous studies cited in the original research reported problems including unstable internet connections, application errors, slow system access, incomplete data, and repeated manual entry. These problems may increase waiting time and workload when the system cannot be accessed.

Initial observations at Bulango Timur Community Health Center identified application and connectivity disruptions that could interfere with registration and referral services for BPJS participants. Because the registration process depends substantially on online access, system or network problems may delay patient services. Therefore, this study examined patient data management using the Primary Care application at the registration unit of Bulango Timur Community Health Center in 2026, using the HOT-Fit framework.

METHODS

This study used a qualitative descriptive method with a case study approach. The study was conducted at the registration unit of Bulango Timur Community Health Center in 2026. Three informants were selected purposively: a key informant who was the head of the health center, a main informant who was a registration officer, and a supporting informant who managed information technology. The original study identified the informants as E.S.A., A.D., and S.R.A., respectively.

Data were collected through in-depth interviews, direct observation, and documentation. Interviews explored the use of Primary Care according to the Human, Organization, Technology, and Fit dimensions. Observation focused on the registration process, including patient data entry and electronic data management. Documentation included relevant service procedures, registration reports, and records related to Primary Care use.

Data processing followed qualitative procedures involving selection and organization of relevant information. Analysis used the Miles and Huberman model, consisting of data reduction, data presentation, and conclusion drawing and verification. The analysis was organized around the HOT-Fit dimensions and the overall process of patient data management.

RESULTS

Table 1. Characteristics of Informants

Informant	Age	Education	Position
Key (E.S.A.)	43	Bachelor's degree in Public Health	Head of Community Health Center
Main (A.D.)	45	Diploma I	Registration Officer
Supporting (S.R.A.)	40	Senior High School	IT Manager

Human Aspect

The Human aspect was generally well implemented. The three informants understood the role and function of Primary Care in supporting services for JKN participants. The application was reported to facilitate registration, membership verification, patient data management, and service effectiveness compared with manual recording. Staff were able to operate the application according to their respective duties. Their skills were developed mainly through work experience, peer assistance, IT support, and self-directed learning. However, formal training and socialization were not conducted regularly, particularly when system updates occurred.

Organization Aspect

The Organization aspect showed organizational support through the provision of computers, internet access, task allocation, coordination, and IT assistance. Registration and medical-record staff were responsible for entering and managing patient data, while the IT manager provided technical support and managed user access. Coordination among staff allowed technical problems to be communicated and addressed. However, no specific internal SOP for Primary Care use was available at the time of the study. Staff therefore relied on BPJS technical guidance and the health center's existing service flow.

Technology Aspect

Primary Care supported patient membership verification, data entry, data storage, retrieval, and referral processes. Electronic storage made patient information easier to retrieve during service delivery. Computers, internet access, and IT support were available to facilitate daily use. Nevertheless, unstable internet connections, occasional server problems, and system updates could interrupt data entry and retrieval and increase service and waiting time. The study did not report loss of patient data, but technical instability reduced the smoothness of service.

Fit Aspect

The Fit aspect indicated a good alignment among staff capabilities, organizational support, and the technology used. Informants considered the application consistent with registration duties because it supported registration, JKN membership verification, patient data management, and information retrieval. The application had become integrated into the patient service flow. The main factors identified for further improvement were internet quality, supporting equipment, staff training, and an internal SOP.

Patient Data Management

Patient data management using Primary Care was reported to be well implemented. The application enabled patient information to be entered, stored, and retrieved in a more systematic manner than manual recording. It also supported the management of JKN participant data and contributed to more organized registration services. The findings nevertheless indicate that data management would benefit from continued attention to data accuracy and completeness, infrastructure reliability, and standardized procedures.

DISCUSSION

The findings show that the implementation of Primary Care at Bulango Timur Community Health Center involves interacting human, organizational, and technological components. Staff competence supports routine system use, but the absence of regular training means that continued competence development depends substantially on experience and workplace assistance. Periodic training is therefore relevant, especially when system functions or procedures change.

Organizational support was evident through task division, coordination, facilities, and IT assistance. At the same time, the absence of a specific SOP represents a procedural gap because staff do not have a single internal reference describing Primary Care use within the local service workflow. The original study therefore recommends developing an SOP adapted to the health center's registration process.

Technology was useful for electronic patient data management and registration activities, but system performance depended on supporting infrastructure. Internet and server disruptions could slow registration and referral processes. This finding is consistent with the previous studies discussed in the original KTI, which also identified network and application problems as barriers to Primary Care implementation. Thus, application quality alone is insufficient when connectivity and supporting equipment are unstable.

From the HOT-Fit perspective, the findings suggest that the three principal components generally support one another. Staff can use the system, the organization provides basic support, and the technology meets important registration needs. However, the fit can be strengthened through regular training, clearer internal procedures, and improved infrastructure. These measures are particularly relevant because interruptions in an online registration system can affect the continuity and speed of patient services.

CONCLUSION

Patient data management using the Primary Care application at the registration unit of Bulango Timur Community Health Center was implemented well in 2026. Staff had adequate operational capability, organizational support was available through facilities, task division, coordination, and IT assistance, and the application supported electronic entry, storage, and retrieval of patient data. The main limitations identified were the absence of a specific Primary Care SOP, irregular training, and occasional internet and server disruptions. The HOT-Fit findings indicate that human, organizational, and technological components were generally aligned with service needs. Improvement should focus on developing an internal SOP, conducting periodic training and socialization, and strengthening internet and equipment infrastructure.

RECOMMENDATIONS

The health center should develop a specific SOP for Primary Care use, conduct periodic training or socialization for staff, and improve supporting infrastructure, particularly internet connectivity and computer maintenance. Registration staff should maintain the accuracy, completeness, and security of patient data through identity verification and periodic data review. The IT manager should monitor network, hardware, and application conditions so that technical problems can be addressed promptly. Future studies should involve more informants and multiple health facilities and may use mixed methods or examine additional factors such as user satisfaction, service quality, and system integration.

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