



International Journal of Advance Research in Nursing

Volume 8; Issue 1; Jan-Jun 2025; Page No. 52-55

Received: 28-10-2024
Accepted: 02-12-2024

Indexed Journal
Peer Reviewed Journal

Health ATM: New approach to health anywhere

Sandeep Kumar Singh

Assistant Professor, College of Nursing, All India Institute of Medical Sciences Gorakhpur, Uttar Pradesh, India

Corresponding Author: Sandeep Kumar Singh

DOI: <https://doi.org/10.33545/nursing.2025.v8.i1.A.447>

Abstract

Health Dynamic changes in health care continuum in India telemedicine has evolved and its effective with the health ATM for quick testing more than 65+health parameters which can help in providing comprehensive health screenings and diagnosis and treatment of the people affected with any disorders and will provide real time specialist consultation via Telemedicine support.

Keywords: Health ATM, telemedicine, universal health coverage, digital India, Ayushman Bharat

Introduction

India is a large country with a population of more than 1.35 billion. About 70 % of its population live in rural areas which are lacking necessary physical infrastructure. At the same time, about 70% of the healthcare infrastructure and manpower is concentrated in urban areas where only 30% percent of the population resides. Doctor to patient ratio in India is approximately 1:1500 which is lower than what has been recommended by WHO (1:1000). The doctor to patient ratio is more skewed in case of rural areas and is about 1:25000. Therefore, posing a serious challenge in delivering the health care services efficiently and uniformly throughout the country ^[1].

About 60% of the health care expenses in India are out of pocket expenditure which is highest among the other BRICS nations. Infrastructure and resource availability is another challenge in India. India, therefore, needs a sustainable, connected, low cost, efficient and secure model for inclusive healthcare delivery ^[1].

The approach of public Health System in India towards universal health coverage is changing with Ayushman Bharat and Digital India Flagship Programme ^[2].

Telemedicine platform has redefined the landscape of healthcare accessibility in India. This revolutionary platform, designed to transcend geographical limitations, facilitates remote consultations between healthcare providers and patients. Leveraging its comprehensive features and functionalities, eSanjeevani has been implemented nationally for the Ministry of Health and Family Welfare (MoHFW) as the National Telemedicine Service ^[3].

Telemedicine with proper screening will provide real time treatment and Health ATM will play a vital role. It is providing Quick, Easy, Preventive Health Screening more than 65+ Health Parameters ^[4].

Health ATM is an intelligent and compact health kiosk, which is an aggregation of various medical Internet of Things (IoT) enabled devices connected with compliant backend software, allowing hassle-free, and automatic capturing and streaming of vital health parameters to minimize human error to process the data. Health ATM provides instant testing of 65+ parameters – invasive & non-invasive, diagnosing several diseases ^[5].

Health ATM

Health ATMs are touch-screen automated teller machine-sized machines integrated with medical devices that enable Point of care testing. The platform includes HB analyser, Pulse oximeter, temperature, oxygen saturation levels, digital stethoscope, infrared thermometer, fetal heart rate Doppler, blood pressure machine, ECG 12, otoscope, dermatoscope, glucometer, body mass composition. It covers wide scope of healthcare screening and diagnostic facilities including Non communicable diseases, maternal and infant, general pathology tests including 11 parameters Urine test, Lipid profile, Hemoglobin and Malarial parasites, etc and Rapid tests. It automatically captures data from all integrated devices. It is a flexible platform that can integrate more devices as per the requirement ^[6].

Need of Health ATM

- An ideal solution to address the growing burden of increasing patients in Hospitals & Health centers
- Aids in dealing with the skewed Patient to Doctor ratio in rural areas
- Assists clinical staff at Health Centers by providing better Point of Care Services
- An effective tool in disseminating Primary Healthcare Services in rural areas
- Nudging people to become health conscious & adopt

healthy lifestyle

- Serves as Wellness walk-ins in Urban areas
- Cost effective and affordable

Benefits of Health ATM

Portable and Compact

Compact design of Healthcare Kiosk is optimal for screening. Its portability makes it easy to move and set up, providing flexible healthcare.

User-friendly

Users can easily navigate through the intuitive interface of machines, enhancing patient experience and efficiency in healthcare settings.

Cost Effective

With lighter setup requirements Health Kiosk is a cost-effective solution that makes healthcare more accessible and affordable.

Secured and Reliable

Clinics On Cloud uses robust safety protocols such as VAPT, HIPAA, ISO 27001, and GDPR compliance. Provides users with secure, reliable access.

Certified Medical Grade Devices

FDA/CE-authorized medical gadgets at Smart Health Kiosk, along with the machine's approval from ISO and CDSCO, guarantee dependability and safety

Work in offline mode

Clinics on Cloud Portable medical Health Kiosk helps users do examinations with little or no access to energy and internet, thanks to its 3–4-day battery life.

Digital health record

Replace the conventional pen-and-paper approach, minimize human error, maximize workforce efficiency, and offer immediate data access.

Impact analysis

Data analytics platform produces Impact Analysis studies for healthcare delivery initiatives, enhancing their local operation efficiency.

Easy Installation and Training

Clinics on Cloud Multifunctional Health Kiosk plug-and-play setup eliminates the need for extensive installation. Authorized staff receives brief training.

Features of Health ATM

Health Monitoring

Medical Kiosk enables full-body health monitoring of more than 60 medical parameters, such as invasive and non-invasive tests.

Instant ECG

ECG reports are instantly generated and shared with the users, allowing a quick assessment of cardiac health, including 6 and 12 lead readings.

Telemedicine

Doctors can virtually diagnose a patient, view medical records, and issue prescriptions simultaneously, which makes healthcare convenient.

Data Analytics

Analytics dashboard provides insights into public health trends and prevalence of diseases, facilitating proactive healthcare management.

AI Implementation

Based on health data, The Portable Health ATM utilizes AI to create personalized diet plans. Its AI capabilities also assist in finding anomalies.

Cloud Connectivity

Users data are kept safely in the cloud, which enables access to their health records. ensuring medical data can be retrieved easily.

Smart Reports

The Healthcare Kiosk generates detailed color-coded reports. These comprehensive reports improve diagnostic efficiency and patient care.

Patient App

Health records can be accessed with the Clinics on Cloud patient app. Includes all previous reports and documents.

ABDM Integration

The Ayushman Bharat Digital Mission platform makes it possible for users to easily share their Medical Checkup ATM test results.

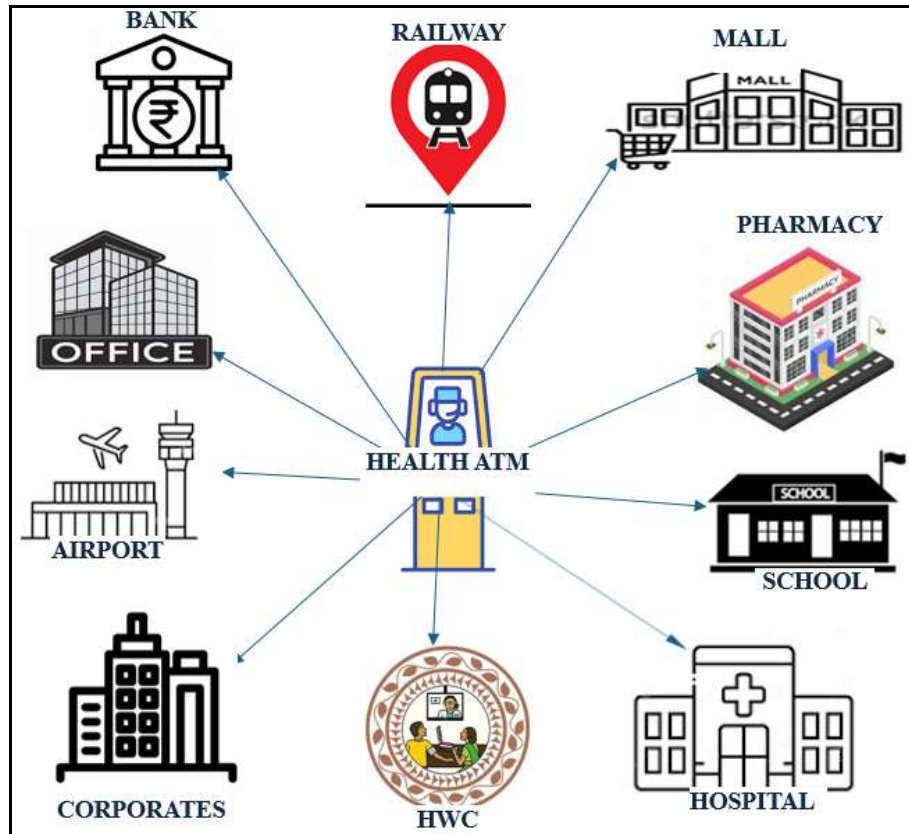
eSanjeevani Integration

eSanjeevani network has been connected to the Telemedicine Kiosk. Users can consult doctors across India through this telehealth system.

Health ATM Deployment

Health ATM plays a vital role in early identification of disease and preventing them. As the trend is shifting towards increasing prevalence of non-communicable diseases, a great emphasis is laid on Rapid testing and management of non-communicable diseases and communicable diseases.

From Rural areas to Airport lounge, Health ATM is a quick tool that can prod people to get a health check-up done on the go.



Challenges and Limitations

Privacy and Security Concerns: Handling sensitive health data and ensuring secure communication between the Health ATM and healthcare providers is a significant concern.

Technological Barriers: The need for reliable internet connections and the potential for technical malfunctions or breakdowns in rural or remote areas.

User Acceptance: Resistance from patients or healthcare providers who may be sceptical about the effectiveness or safety of automated health monitoring systems.

Regulation and Standardization: The need for standardized protocols, certifications, and regulations to ensure the safety and accuracy of health tests performed by automated machines.

Future prospects of health ATMS

Future of Health ATMs in India

Integration with Government Health Programs: Health ATMs can play a crucial role in India's public health initiatives. By integrating them into government-run healthcare schemes like Ayushman Bharat, these machines could help provide affordable health services to a larger section of the population [7].

AI and IoT Integration: The next generation of Health ATMs could incorporate Artificial Intelligence (AI) and Internet of Things (IoT) technology for more accurate diagnostics. AI could help in analyzing data from multiple sensors, making the diagnosis more precise, while IoT could allow real-time sharing of data with healthcare providers [8].

Wider Adoption and Scalability: With continued advancements in technology, lower costs, and government

support, Health ATMs could become more widespread across India. They have the potential to be installed in schools, malls, transportation hubs, and even villages, improving healthcare access across the nation [9].

Health ATMs have the potential to revolutionize healthcare delivery in India, especially in rural areas where access to healthcare is limited [10]. They offer a cost-effective, accessible, and efficient solution to the country's healthcare challenges. However, challenges such as technological limitations, user acceptance, and data security must be addressed to ensure the success and sustainability of Health ATMs in the long term. With the right implementation and continuous improvement, Health ATMs can play a significant role in bridging the healthcare gap in India [11].

Conclusion

Health ATMs have the potential to revolutionize healthcare delivery in India, especially in rural areas where access to healthcare is limited. They offer a cost-effective, accessible, and efficient solution to the country's healthcare challenges. However, challenges such as technological limitations, user acceptance, and data security must be addressed to ensure the success and sustainability of Health ATMs in the long term. With the right implementation and continuous improvement, Health ATMs can play a significant role in bridging the healthcare gap in India.

Recommendations for Future Research: Further studies on the clinical accuracy of Health ATM diagnostics, user satisfaction, and long-term impact on public health are needed to fully understand their effectiveness.

References

1. Technology Information, Forecasting and Assessment Council (TIFAC). Current trend in telemedicine in

- India [Internet]. [cited 2022]. Available from: <https://www.tifac.org.in/index.php/reports-publications/recent-publications/2-uncategorised/1120-current-trends-in-telemedicine-in-india>
2. Ministry of Health and Family Welfare [MoHFW]. [Internet]. Available from: <https://mohfw.gov.in/node/558>
 3. Alenoghena C, Ohize H, Adejo A, *et al.* Telemedicine: a survey of telecommunication technologies, developments, and challenges. *J Sens Actuator Netw.* 2023;12:20. [cited 2023]. Available from: [Google Scholar]
 4. Health ATMs: Future of healthcare in India. [Internet] [cited 2024]. Available from: <https://yolohealth.in/health-check-up-started-at-indore-airport/>
 5. Clinics on Cloud. General Health Parameters Checked by Our Health Kiosk machine [Internet] [cited 2024 Dec 12]. Available from: <https://clinicsoncloud.com/health-kiosk/>
 6. Bansal S, Rathi VN, *et al.* Telemedicine: The role of health ATMs in rural India. *Telemed J E Health.* 2019;25(6):487-495.
 7. Ministry of Health and Family Welfare. Integration with government health programs: Health ATMs can play a crucial role in India's public health initiatives. New Delhi: Ministry of Health and Family Welfare; 2021. Available from: <https://mohfw.gov.in>
 8. Smith J, Kumar A, *et al.* Revolutionizing disease diagnosis: integrating artificial intelligence and IoT in smart healthcare systems. New Delhi: TechHealth Publications; 2023. Available from: <https://www.techhealth.com/report>
 9. Government of India. Digital India: Technology to transform a connected nation. New Delhi: Ministry of Electronics and Information Technology; 2015. Available from: <https://www.digitalindia.gov.in>
 10. Ministry of Health and Family Welfare. National Telemedicine Guidelines. New Delhi: Ministry of Health and Family Welfare; 2021. Available from: <https://mohfw.gov.in>
 11. Health ATMs: A solution to rural healthcare problems? *Econ Times.* 2019. Available from: <https://economictimes.indiatimes.com>

How to Cite This Article

Singh SK. Health ATM: New approach to health anywhere. *International Journal of Advance Research in Nursing.* 2025; 8(1):52-55.

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.