Digital Health Transformation through ABHA Scan and Share in Punjab: A Field-Level Implementation Review

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Abstract

This study is aimed at reviewing the on-ground implementation and progress of the Ayushman Bharat Digital Mission (ABDM) in District level Public Hospitals in Punjab, India, with a focus on the 'Scan and Share' feature for Outpatient Department (OPD) registration using ABHA (Ayushman Bharat Health Account) QR codes. The findings are directly drawn from actual facility level experience, field observations, and data collected between April 2024 and July 2025, this report highlights the potential, challenges, and impact of digitally transforming hospital OPD registration system across public hospitals in Punjab.

Keywords: Ayushman Bharat Digital Mission, ABDM, Ayushman Bhart Health Account, ABHA, Digital Health, Punjab Government Hospitals, National Health Authority, NHA

Introduction

Digital India is the moto that was given almost a decade back and now it must be said that India has gone digital in quiet a few sectors. Features like UPI payments are now seen common when even a street vendor accepts the digital payments. Then in this fast paced, data driven, smartphone age society how health can stay behind. We have seen online OPD registrations and appointments in large private hospitals. This was lagging in the public system and only a handful of premium public institutes were offering online OPD registrations.

However, moving forward to 2021, India came with its own solution to go digital in the public healthcare landscape, when Ayushman Bharat Digital Mission was launched by Government of India. The nodal agency implementing this project was National Health Authority (NHA) which was already handling a large public project of health insurance called Ayushman Bharat Pardhan Mantri Jan Arogya Yojana. The Ayushman Bharat Digital Mission (ABDM) was launched with a vision to develop the necessary digital infrastructure to support integrated healthcare services across India. There are three components in the ABDM that are Health ID, Healthcare Professionals Registry, and Healthcare Facilities Registry. **"**ABDM is aspiring to drive substantial change in the healthcare ecosystem of the country." (Sharma et al., 2023)

When it comes to taking a first step toward actual use of ABDM and ABHA Number the very first practical step of this initiative is the use of ABHA QR codes to streamline patient identification and registration through the 'Scan and Share' feature. This system aims to reduce wait times, improve data accuracy, and promote interoperability in healthcare services. "The Scan and Share service is an innovative facility under the Ayushman Bharat Digital Mission (ABDM) aimed at transforming healthcare accessibility and efficiency." (Opiah, 2024)

The base of this Scan and Share system is smartphone based Personal Health Record (PHR) applications. Government of India has launched its own application named ABHA App, while

there are other PHR apps available from private players as well. “The most notable feature of the PHR is that the information contained within it is under the individual’s control.” (Sharma et al., 2023)

The necessity of using this digital system is creation of Ayushman Bharat Health Account or commonly known as ABHA Number, a 14-digit unique health identification to be issued to every Indian citizen. “ABHA accounts create an authenticated unique health identity on which these consolidated and integrated health records would be maintained for each citizen on a common platform.” (Manan & Manan, 2023)

Punjab began creating ABHA Numbers back in 2021 and till July 2025 more than 1.50 crore ABHA numbers covering almost 49% population are created. They adopted this Scan and Share initiative in 2022 but the actual on ground implementation happened in a phased manner in 2024 when the proper Project Management Unit with 10 members team got setup in April 2024. This started as an initial pilot implementation followed by a statewide rollout in all the District Level Hospitals.

Implementation Journey

Early Phase: Pilot Facilities

Government of India Launched the ABDM in September 2021 and Scan and Share initiative was started on 10 November 2022. On 30 April 2024, my participation started in this program as IEC Expert at NHM Punjab and became actively involved in ABDM’s implementation. As of NHA public dashboard for ABDM, till 29 April 2024, there were only 10 facilities active in Punjab for token generation that too on a haphazard manner working once a while only.

Adding to this, initially, five Aam Aadmi Clinics (Primary Level Health and Wellness Centers) in the Mohali district were identified for pilot testing. However, due to limited footfall, the uptake of the Scan and Share feature remained modest.

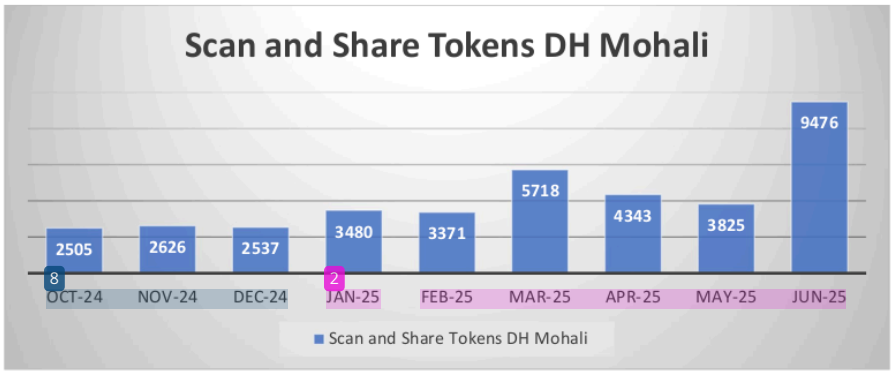
In August 2024, our team conducted field visits to AIIMS Bathinda and District Hospital Bathinda. AIIMS Bathinda had already made the use of Scan and Share mandatory, leveraging nursing staff and a private partner (Driefcase PHR) to assist patients. This visit presented valuable insight into successful implementation models and operational contexts.

Pilot Success: District Hospital Mohali

In September 2024, District Hospital Mohali, with an average daily OPD footfall of 1500, was selected for a full-fledged pilot. Initially, only one OPD counter out of available eight was designated for ABHA based registration. There were issues like internet connectivity, staff, and patients' hesitation to adapt to new mode, low digital literacy etc. Our three-member implementation team provided daily support and conducted hands-on facilitation. Visual IEC tools such as banners, posters, and QR codes were placed strategically across the OPD registration area in the hospital.

From October 1, 2024, the implementation team worked alongside hospital staff and nursing interns for 3 weeks continuous. Token generation began at 100–120 per day, supported by announcements and public interactions. Initial 10 days were like when the team members were acting as master trainers, then the next 10 days were spent in observation and occasional support as and when required. Gradually, the number grew, and feedback from patients and staff helped us troubleshoot early-stage issues.

The numbers show a gradual shift in OPD registration through ABHA Scan and Share at DH Mohali as below:



Data as per Public Dashboard NHA (https://dashboard.abdm.gov.in/abdm/scanshare)

Impact on OPD registration efficiency and waiting duration:

All the patients visiting to any District Level government hospital in Punjab are registered through HMIS portal only. A comparative time-motion study was conducted at District Hospital Mohali to evaluate the efficiency of ABHA Scan and Share against traditional manual OPD registration. Each group consisted of 20 patient registrations (n = 20).

Both set of patients were examined and time was noted for 2 elements, one is time spent in queue, second is time taken by operating staff to enter data and generate slip on HMIS portal and the result were as below:

Registration Time on HMIS Portal (in seconds)

a) Manual Entry: Mean = 90 sec, SD = 10 sec

b) Scan and Share: Mean = 30 sec, SD = 5 sec

Queue Time (in minutes)

a) Manual Queue Time: Mean = 25 min, SD = 3 min

b) Scan and Share Queue Time: Mean = 6 min, SD = 1 min

Interpretation:

Time Efficiency: Patients using Scan and Share were registered almost 3 times faster than those using manual entry.

Queue Reduction: The digital system cut average queue time by approximately 76%.

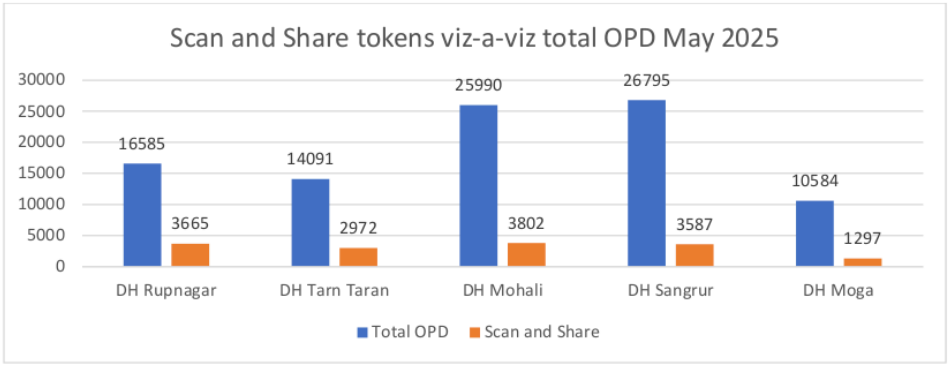
"The Time and Motion study was also conducted by Ranjan et al. (2025) which showcased approximately 60% reduction in time spent in registration."

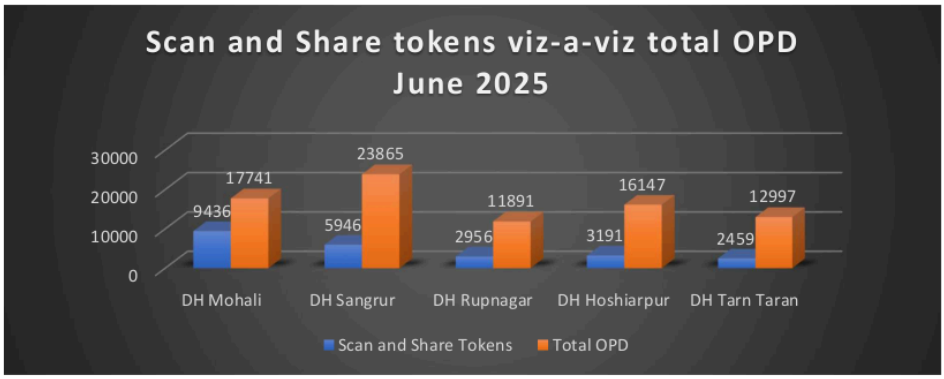
The observed average time savings of 60 seconds in registration and almost 19 minutes in queue per patient indicates a few operational gains such as Reduced patient congestion, shorter wait times, lower staff and patient exhaustion, and increased output per OPD counter. These findings support the worth of investing in digital health infrastructure like ABHA Scan and Share for public hospitals which in turn can transform the whole landscape for the public hospitals thus providing efficient and timely services to the patients.

Statewide Rollout and Monitoring

Encouraged by the Mohali success, the program was extended to all 23 district hospitals by December 2024. Implementation picked pace from February 2025 onwards. By March-April 2025, our state team conducted extensive monitoring visits to these district hospitals to conduct field assessments, meet hospital leadership, and resolve bottlenecks.

Most of the district hospitals in Punjab have picked the pace and are showing good numbers in scan and share OPD registration. A handful number of district hospitals have completed the first target of converting minimum of 10% OPD to Scan and Share mode. Numbers for months of May and June 2025 are supporting this as below:





As clearly seen from the data snapshots for the months of May and June 2025, where top 5 government district hospitals from Punjab are shown with respect to their OPD registration done through ABHA Scan and Share and in the traditional manual way.

Observations from the data and interactions with the staff at these hospitals have highlighted that the ease of registration process, word of mouth, regular IEC and awareness, reduced time in queue and, accurate data entries are some of the key factors driving more and more patients to shift from manual to digital registration mode.

Field Testimonials and Feedback

OPD Operators at DH Mohali: She was the very first OPD operator who was chosen on the only counter in pilot phase that started in October 2024. She has testified faster, error-free registration and appreciated digital productivity. Also stated that now almost 90% patients visiting her counter do not need any sort of guidance or assistance.

Senior Medical Officer at DH Mohali: Facility in charge for DH Mohali has noted enhanced workflow and applauded the role of interns, announcements, and frontline staff. The hospital is working on to achieve 80% saturation in Scan and Share by August 2025.

Patients: Various patients were interacted regarding their experiences. Majority of patients initially were hesitant due to misunderstanding around QR codes (mistaken for UPI/financial scans). After the awareness and public display in a government institute helped in attaining trust to use the services.

Challenges Identified

Technological Glitches: There are a few issues in the HMIS while using ABHA Scan and Share, although the data is fetched from the linked account but still issues like incorrect age mapping, scanning failures are reported on several occasions.

Public Perception: Although India has a large mobile internet penetration but still there is low digital literacy which in turn cause cases like mistrust of Scan and Share QR codes due to financial scam fears.

Learnings and Recommendations

Pilot Learnings are Scalable: A pilot project at District Hospital Mohali is a considered a success and demonstrates how organized support, grassroot awareness, and management engagement can produce replicable models.

Behavior Change: Behavior change is a gradual and time consuming process, it has been evident in the case of DH Mohali as well were initial numbers were low but with time behavior change worked, thus converging more and more patients to digital mode of registration instead of manual one, and now as shown in numbers for June 2025, it outweighed the manual process registering almost 53% OPD numbers through scan and share.

Conclusion

Punjab's implementation of the ABHA Scan and Share feature in OPD registration demonstrates the power of well-executed IEC and pilot-driven scaling in public health digitization. ABHA Scan and Share is a service that will be at the core of the public healthcare system soon in India. "This service allows both old and new patients to scan a QR code and share their demographic information with the hospital, such as name, father's name, age, gender, address, mobile number, and so on. This shortens the time spent at the OPD registration counter from on an average of 50 min to 4–5 min and provides accurate data in the hospital record." (Sharma et al., 2023) Sustained efforts are essential in system stability to drive this paradigm shift from traditional practices to digital one in the public hospitals. It will also require a large-scale patient education on digital literacy and usages of data control in the PHR apps, which is must for the patients to utilize the services to full potential, while also keeping their data safe.

"The transition toward digitized healthcare administration represents a significant paradigm shift in how patients interact with healthcare facilities. While digital transformation introduces new

requirements for both patients and providers, the efficiency benefits appear to outweigh these considerations. The observed variations in processing time patterns between traditional and digital systems highlight the fundamental differences in their operational mechanisms." (Ranjan et al., 2025)

The digital health initiative is a program with very wide scope and can create a health ecosystem where paperless medical records and record sharing between various health services provider will be just a click away, but with the full control in the hands of the personal who is at the epicenter of this data. "The healthcare landscape in India is undergoing a significant digital transformation through the Ayushman Bharat Digital Mission (ABDM)." (Ranjan et al., 2025)

The Scan and Share feature is swiftly evolving as a cornerstone of OPD registration in public hospitals across India. With increasing involvement from private healthcare providers, Ayushman Bharat Digital Mission is poised to become one of the largest and most integrated digital health record systems in the world.

Acknowledgments

Public Dashboard, National Health Authority, MoHFW, India (https://dashboard.abdm.gov.in/abdm/scanshare)

Official Twitter Handle ABDM, Punjab (X)

References

Manan, & Manan. (2023, December 15). ABHA Accounts: India's interoperable and portable health data management system • Software Freedom Law Center, India. *Software Freedom Law Center, India • Defender of Your Digital Freedom*. https://sflc.in/abha-

accounts-indias-interoperable-and-portable-health-data-management-system/?utm_source=chatgpt.com

Opiah, A. (2024, June 25). India’s NHA to advance digital healthcare via ABHA card tokenization. *Biometric Update | Biometrics News, Companies and Explainers*. https://www.biometricupdate.com/202406/indias-nha-to-advance-digital-healthcare-via-abha-card-tokenization?utm_source=chatgpt.com

Ranjan, A., Singh, G., Singh, H., & Singh, M. (2025). Digital Transformation of Healthcare Access: A comparative time series analysis of online versus conventional OPD registrations at a tertiary care hospital. *Cureus*. https://doi.org/10.7759/cureus.81970

Sharma, R. S., Rohatgi, A., Jain, S., & Singh, D. (2023). The Ayushman Bharat Digital Mission (ABDM): making of India's Digital Health Story. *CSI Transactions on ICT*, *11*(1), 3–9. https://doi.org/10.1007/s40012-023-00375-0

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