

## About ABDM

The Ayushman Bharat Digital Mission (ABDM) aims to develop the backbone necessary to support the integrated digital health infrastructure of the country. It will bridge the existing gap among different stakeholders of the healthcare ecosystem through digital highways.

ABDM envisages to improve the access, efficiency, effectiveness, and transparency of the healthcare delivery system in the country.

## Building Blocks and Benefits



### Ayushman Bharat Health Account (ABHA)

#### (earlier Health ID)

- Voluntarily generated **random 14-digit unique identification number**
- Anyone can generate their own ABHA and link their electronic health records
- ABHA can be generated with one's consent at an ABDM-linked health facility or using an ABDM-compliant application. ABHA will work as the common identifier across healthcare facilities to which digital health records can be linked.
- Enroll at - <https://abha.abdm.gov.in/>

### PHR Applications



ABHA

- ABDM-enabled applications that can create ABHA, link records, and share them on demand
- Helps users link, securely store and access medical records e.g. prescriptions, diagnostic, building longitudinal health records
- **User control** over sharing specific or all records based on consent
- Enroll using PHR mobile application - <https://play.google.com/store/apps/details?id=in.ndhm.phr>



### Healthcare Professionals Registry

- A comprehensive repository of all healthcare professionals across modern and traditional systems of medicine
- Respective councils verify the healthcare professionals concerned
- Currently, doctors and nurses can enroll at - <https://doctor.abdm.gov.in/en>



### Health Facility Registry

- A comprehensive repository of health facilities across different systems of medicine
- Includes both public and private health facilities such as hospitals, clinics, diagnostic laboratories, imaging centres, pharmacies, and blood banks.
- Enroll at - <https://facility.abdm.gov.in/>

## Problem Statement



### **The Problem of Long Queues**

When individuals visit health facilities, especially large Government hospitals, the first-time visitors get an OPD (Out-patient Department) card. This OPD card has the basic details of the individuals and the department concerned for their medical check-up. In large Government hospitals with subsidized care, it is typically seen that patients experience long queues for OPD registration, where waiting time may extend from a couple of hours to the whole day at times. In some instances, it is even seen that individuals start joining queues as early as 4 am and some are forced to come the next day due to registration counters closing by the time one's turn arrives.

### **The Causes of Delays in OPD Registration Queues**

For getting the OPD card, individuals join the line and wait their turn. When their turn arrives at the counter, they provide basic demographic information like their name, age and gender, and description of their ailment or display a medical referral slip. The counter clerk enters these details in the system and prints their OPD card, allocating the department for their OPD check-up. These are the following issues in the above process causing delays:

1. Manual input by the data entry operator.
2. Noise and other disturbances cause confusion leading to wrong entries and hence registration has to be done multiple times.
3. Non-availability of sufficient staff at reception counters

Therefore, reducing this waiting time in queues will be crucial in helping citizens avail services in a hassle-free and time-bound manner.

## Proposed Solutions



UPI QR Codes for Payments



ABDM QR Codes for Registration

### Introducing Scan and Share

Drawing inspiration from the success and convenience of UPI (Unified Payments Interface) QR Codes used for payment, the National Health Authority (NHA) has developed QR-oriented solutions to address the issues highlighted previously. NHA has introduced QR Codes at health facilities for scanning and sharing patient details and health records. By displaying these QRs at multiple places in the waiting and registration area, patients could easily discover them and scan them using their smartphones for faster OPD registration.

There are various ABDM-enabled smartphone health applications in the market that allow individuals to create their Ayushman Bharat Health Account (ABHA) number, link and store their personal health records (PHR) against their ABHA number and share them with health facilities for various care purposes. These applications also enable the scanning of QR codes in the OPD registration area, allowing individuals to transfer their demographic information (name, age, gender, and ABHA number) to the HMIS (Health Management Information system) of the hospital concerned.

The hospital's HMIS solution consumes this information and generates a token number for the patients. This token number is then sent to the mobile phone of the patients who can wait at designated areas until their token number is displayed on the overhead screens. Once a patient whose number is displayed on the screen arrives at the counter, the operator can retrieve the demographic details from the system based on the token number and print the OPD card. This process drastically reduces the wait time for patients, doing away with the need to stand in incessantly long queues. Patients only visit the counter for any applicable payments and availing their OPD card.

## Scan and Pull for Non-smartphone Users

Inclusivity is a core design principle for ABDM. To ensure that we don't leave behind those that may not have access to smartphones or be technologically oriented, there is an alternate flow to ensure a similar seamless experience of sharing information. For those without a smartphone, the creation of ABHA with a physical copy would be critical. As we are still in the early days of ABDM, it is advised to Hospitals that they may set up ABHA creation counters or kiosks to ease in this process.

Once patients have a physical copy of their ABHA, they would need to queue at the registration counter. As their turn arrives, the registration counter would scan the QR code on their ABHA card and pull their demographic details (name, age, gender, and ABHA number) into the HMIS (Health Management Information system) of the hospital. While this option would entail standing in a queue; however, due to the quicker input of details, the overall turnaround time would be much lower than and completely error free compared to the manual process.

## Sharing Medical Records

Extending the same functionality further, the QR codes can also be used to seamlessly share the digital health records of patients with a healthcare professional. When patients visit the relevant professional's desk in the hospital, where the QR code specific to the professional is displayed, patients can then scan this QR code and send their digital health records stored on their smartphones to the professional's system. This mechanism emulates the current system of patients sharing their health records in physical form with healthcare professionals. The healthcare professional could then either write a physical prescription or even a digital prescription and this could then be made available to patients for further use and action.

## Benefits for Stakeholders



Reduced waiting time in  
Registration Queues



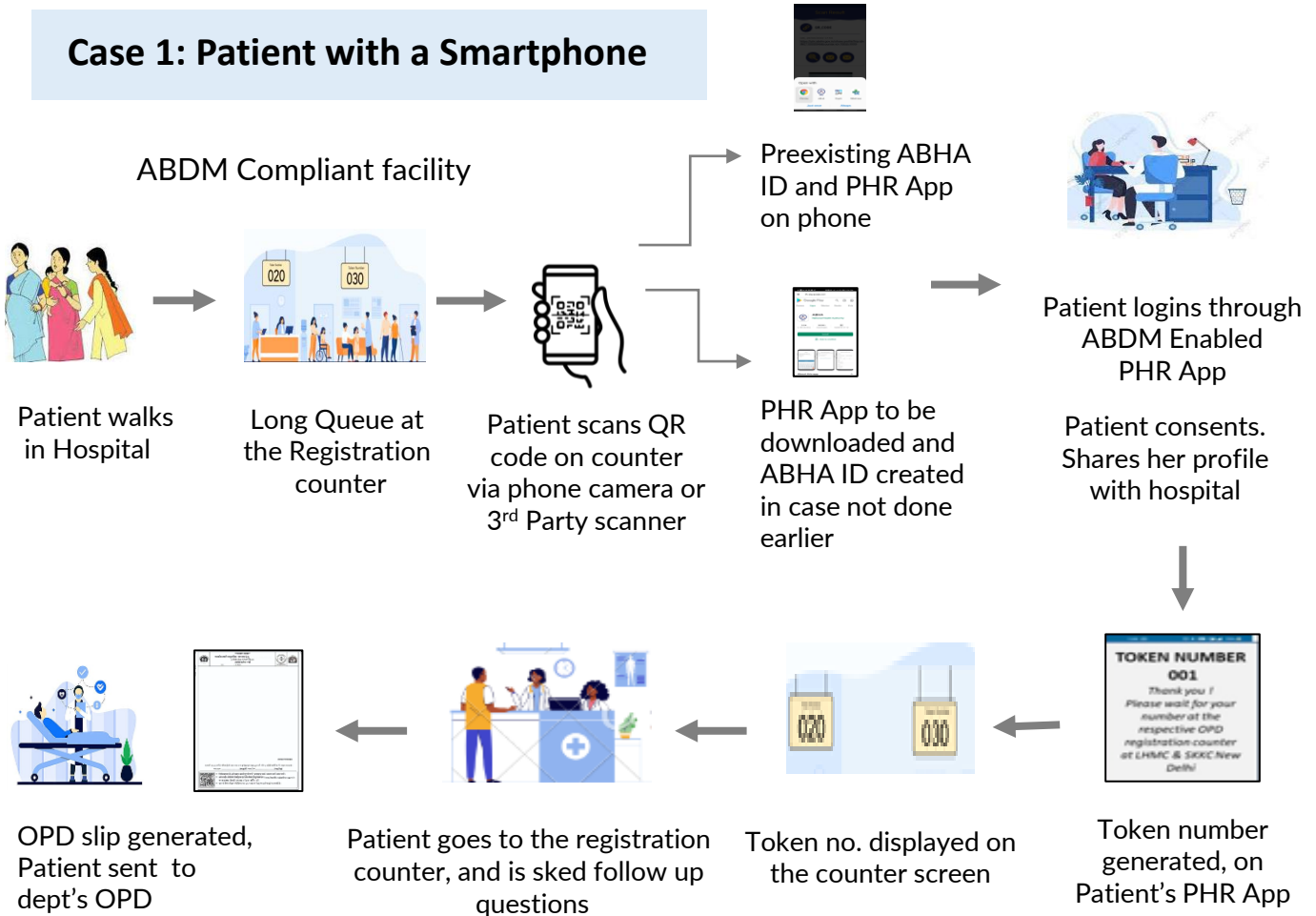
Direct linking of ABHA Number  
of Patient



Linking of Health Records  
made easier with ABHA

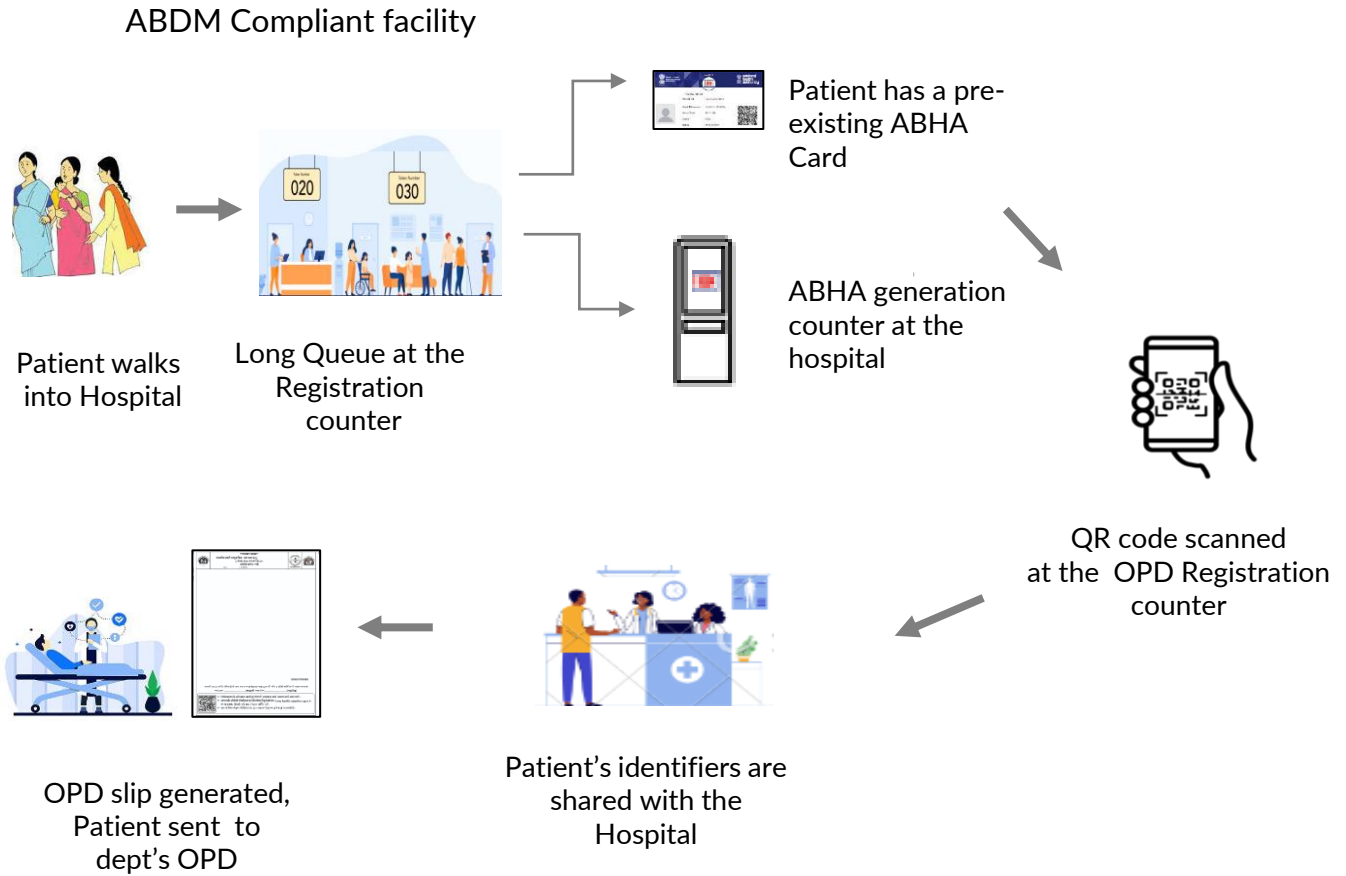
## “Scan and Share” User Journey

### Case 1: Patient with a Smartphone



1. Lady X comes from a town 100 km away to an ABDM Compliant hospital to see a Gynaecologist. She has a breastfeeding child and is unable to stand in a queue.
2. At the OPD registration, she notices the hospital's ABDM Compliant HIP (Health facility) QR Code displayed at the counter as well as multiple avenues in the premise.
3. If she has an ABHA ID and PHR App, she scans the QR Code on her smartphone, selects the application, and opens it. If she doesn't have a PHR App, post scanning the QR code, she sees a list of compliant PHR Apps. She may select any application from the play store, download and open it and can also create ABHA ID if not done earlier
4. She will be then redirected to the share profile page. Once she provides consent and clicks “share”, she completes the express registration. Her details are thereby shared with the health facility to their HMIS.
5. Post this, a token is generated and reflected on the PHR App that she used. She can now sit in the waiting area until her token number appears on the display screen of the OPD registration counter.
6. The average validity of the token is 30 mins and the wait time is 4-5 mins. Once at the counter, she is asked basic questions about health issues, followed up, and directed to the gynaecology department to seek consultation.
7. If she misses her token number for any reasons, she can still go to the counter and generate registration slip.

## Case 2: Patient without a Smartphone



1. Lady X comes from a town 100 km away to an ABDM Compliant hospital to see a Gynaecologist. She has a breastfeeding child and is unable to stand in a queue.
2. She doesn't have a smartphone, but she has an ABHA Card which can be scanned at the hospital's OPD registration counter through the QR reader.
3. In case, she doesn't have an ABHA card, she is redirected to the ABHA generation counter and the ABHA card is created either through biometric or face authentication.
4. Post this, patient's basic details needed for OPD registration are shared with the hospital. A few follow-up questions regarding health issues are asked at the counter and with the OPD slip she is sent to the respective gynaecology department of the hospital.

## Guidance for Hospitals

Hospitals, especially large ones, can implement the “Scan & Share” option and greatly improve patient satisfaction. Before embarking on implementing “Scan & Share” the hospital administration must make some provisions in the physical infrastructure and human resources as listed below:

### 1. Physical Infrastructure & Software

- **ABDM-Enabled HMIS Solution:** Most hospitals have HMIS solutions however, in order to implement “Scan & Share” hospitals need to have an ABDM-enabled HMIS installed. It is preferable to have a web-based solution with data stored in the cloud for better availability and responsiveness.
- **Dedicated counters for “Scan & Share”:** While it is desirable that the entire registration process in a hospital be fully digitized and patients are able to freely register using the “Scan & Share” facility, one may start with one or two dedicated counters and progressively expand further. Alternatively, the hospitals can have the facility in all counters where a patient comes in a normal queue and simply quotes his/her token number and the OPD clerk can punch in the token number to retrieve the details and generate the OPD slip. This can be done based on the facility available in the HMIS.
- **Display and Announcement facilities:** The patients need to have a clear idea of where and when their token numbers are appearing so that they can go to the respective counter when their turn arrives. For this purpose, the hospitals must ensure a sufficient number of display systems for showing a) a consolidated list of counters and token numbers currently being processed and b) small display systems appropriately placed near a counter showing the current token number being processed.
- **Queue Management display:** While the HMIS generates the token numbers and also manages them, an appropriate technological solution needs to be deployed to display the token information in the display units mentioned above. For example, the display systems could be smart so that they can simply be used to open up a web page showing the counter and token details (as is being done in the Lady Hardinge Hospital Pilot) or there could be separate systems that can communicate with the HMIS and relay the analog data to non-smart TVs installed as display systems.
- **Facilitation center & QR Code Standees:** Sufficient number of QR code standees need to be placed in the OPD registration area so as to enable easy access to patients to scan a QR code. Further, it is desirable to have facilitation counters that can guide patients and also create ABHA cards for users without smartphones to be used for scanning at the counter by the counter clerk.
- **Connectivity infrastructure:** The pilot project clearly demonstrated the importance of having proper internet connectivity (preferably fiber-based) and a reliable power supply. It is always good to have redundant connections of good quality to ensure a smooth and seamless registration process. This is a necessary condition to even start “Scan & Share”.

## 2. Human Resources and IEC

- **Human Resources:** While in the long run IT system will ensure lesser reliance on human interference in the registration process, the initial stages require that the existing human resources are trained. The registration clerks need to be trained on using the HMIS system and the new method of registration based on the “Scan & Share” process, including scanning the ABHA cards of the patients. A good network team is also desirable to ensure connectivity issues are addressed timely. Facilitation counters must be manned with people aware of ABDM and the whole idea of “Scan & Share”.
- **IEC:** Given the possible initial resistance of patients to use “Scan & Share”, it is a good idea to have sufficient IEC activities in the hospital in the form of banners and posters. Also, it will be good to inform patients to carry their Aadhaar cards in case they do not have their ABHA numbers. For follow-up patients, messages can be sent to their phone numbers asking them to come prepared to avail “Scan & Share” feature. NHA will also be engaging in mass campaigns in the form of radio jingles, newspaper ads, and other means to spread the message further.

## 3. HMIS requirements

Hospitals need to ensure that their HMIS solutions have the features listed below:

- Integration across the three milestones of ABDM.
- Provision of a cloud-based solution.
- Installation of a dynamic queue management system for both online and offline patients as well as a feature for real-time capturing of shared profile details.
- A skip queue management functionality as per the token number and feature to address instances for handling missing numbers must be incorporated.
- Linkage of existing UHID with ABHA system for follow-up patients and auto assignment of new UHID and linking the same with ABHA system for new patients need to be done.
- A configurable time duration for token expiry in API as per HSPA/HIP/HMIS requirements, to stop the patient from scanning the QR code multiple times post-issuance of token needs to be in place.
- A unique and in-sequence token number should be assigned to each patient.
- A check feature that ensures scans can only be done during the OPD timings (weekend/weekday) of any facility needs to be incorporated.

Apart from the above, the hospital needs to register itself in HFR and register all its professionals in the HPR. The second stage of “Scan & Share” will be sharing health records with the health professional via PHR apps. NHA is currently developing this feature and will move to production shortly. HMIS solution providers and hospitals are advised to keep these upcoming features in mind and prepare accordingly.