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Digital Health for All: The Turn to Digitized Healthcare in India

In India, the use of digital technologies has become the key to the everyday operation of the welfare state in terms of accessing essential and life-sustaining entitlements. In this context, our article explores the genesis of India's digital turn in healthcare and maps the characteristics of a 'digital health for all' policy, based on empirical analysis of India's first digital-based universal health coverage programme – *Rashtriya Swasthya Bima Yojana* (RSBY) – with fieldwork material from the states of Jharkhand and Chhattisgarh. Being a smart-card-centred programme, RSBY marks the genesis of a digital approach to healthcare in India. The experiences of this scheme hold crucial implications for the digital healthcare landscape in India, as in the past its promoters pitched for its use to provide quality healthcare at lower cost. The technological design of the programme illustrates the construction and politics of a digitalized public-private welfare policy intended to meet the health needs of the poorest. By examining data on digital access to healthcare in the RSBY programme, as propounded and sustained by public health policies and a public-private model of governance, our article raises questions about the construction of new digital health policies and their contribution to private health markets. In doing so, it explores the key question of how digital technologies are transforming access to healthcare in India.

1. Introduction – The genesis of India's digital turn in healthcare

Nehru's dream of a new India had technology at its core, be it by building large dams, supporting scientific research, or setting up big factories (Arnold, 2013; Chakravarty, 1989; Nehru, 1958). Nehruvian ideas on technology as a panacea for the country resurfaced with new vigour in the technology-led development of the 1990s and beyond (Burawoy, 2000; Ferguson and Gupta, 2002; Sanyal, 2014). Liberalization, privatization and globalization of the economy and of key technological sectors became the new mantra for catapulting India into fast-track growth and development (Chatterjee, 2008; Kohli, 2004, 1989). In this perspective, digital technologies such as mobile phones, the internet, and personal computers were seen as new tools for approaching development planning and projects (Bhatnagar, 2000; Heeks, 2017; Sreekumar and Rivera-Sánchez, 2008). The coming of these technologies not only marked a new beginning for development planning, but also the start of the ICT4D (Information and Communication Technologies for Development) approach in India (Bhatnagar, 2010; Sreekumar, 2011, 2007). Following a decade of economic reforms, structural changes in various sectors, and early experiences of ICT projects, the Indian state was ready to experiment further with digital technologies for development. At the turn of the 21st century, the passing of the IT Act in 2000, for instance, and the formulation of the National e-Governance Plan (NeGP) in 2006 showed the rapid strides made by the Indian state towards the digitalization of governance and welfare. Moreover, the focus of systematic planning began to give increasing importance to digital technologies and the role of public-private partnership for health (Raman and Björkman, 2009). Meanwhile, the National Health Policy of 2002 mentioned and acknowledged, albeit briefly, the upcoming role of information technology and 'its adoption in the health sector' (Ministry of Health and Family Welfare, 2002). The assemblages of public policies on IT, electronic governance, and health expanded the possibilities for project planning on digital welfare. This was strongly reflected in the planning phase of the 11th Five Year Plan (FYP) from 2007-12, when dedicated committees and working groups were set up by the government to study and design digital technology-based projects for the welfare of the poor (Report of 11th Plan Working Group on Integrated Smart Card System, Planning Commission, Government of India, 2007). The experts in these bodies were drawn from the IT, banking, and government sectors. In the imaginaries of these experts, the use of biometrics and smart card digital technologies was seen as a key enabler for managing welfare access and implementing reforms in the way entitlements were delivered. The doors of digital welfare were being opened, and with that a new turn marking the beginning of digitized healthcare in the country; a turn that was to become crucial not only for healthcare, but for the entire gamut of entitlements provided by the welfare state. Moreover, this turn was happening in a globalized world with increasing use and emphasis on digital technologies and their potential to bring revolutionary changes all over the globe.

The state's obsession with tracking and controlling its population resonated with the new potential for using body biometrics as an identification tool, working in association with the country's technology sector (and market) (Breckenridge, 2014; Mishra, 2021; Rao and Nair, 2019). This new alliance garnered participation and interest from financial companies, bureaucrats, bankers, and development experts, deciding the fate of millions of poor households and paving the way for digitized healthcare governance. As a result, the first biometric smart-card-based programme for healthcare (RSBY) was approved and launched in 2008 (one year before the famous Aadhaar project). Aadhaar is the name of the world's largest digital ID system. Launched in 2009, it assigns a unique identity number to almost all the Indian population, combining identification, fingerprints, and iris data. Initially non-mandatory, the current government has connected Aadhaar to the private sector, making it in effect mandatory to open a bank account, create a phone account, or take out insurance or a loan. The policy construction of RSBY provided for a prominent role for private players in the implementation and operation of its

healthcare access technologies. These private players were insurance companies and the third-party technology service providers who were contracted by the insurance companies to do enrolment of beneficiaries and hospital claims processing. Beneficiaries' demographic and biometric data was recorded during enrolment for the smart card and stored in the central database of the RSBY system. RSBY provided health coverage for hospitalization worth 30,000 rupees (400 euros) per year for BPL (below poverty line) families with five members. This amount is the maximum total coverage for 5 people of the same family for one year, meaning that if one member of the family uses this amount at the beginning of the year, the other family members covered by the card will not benefit from it and will have to pay out-of-pocket to access healthcare until the end of the year. Later, however, it was extended to 11 different categories of family. Even though more than 70% of health expenditure is borne by individual households (Patel et al., 2011), this programme held out the promise, for the first time, of a certain degree of health security for millions of India's poor. The last updated data from 2017 showed 38 million RSBY active smartcards (see the RSBY weblink, http://www.rsby.gov.in/about_rsby.aspx). The RSBY system ran for almost 10 years (from 2008 to 2018). In 2015, however, it was superseded as, shortly after coming to power, the Modi Government announced its flagship 'Digital India' programme, giving fresh impetus to the use of digitalization for governance, bureaucracy, and healthcare (Vision of Digital India, <https://digitalindia.gov.in/content/vision-and-vision-areas>). Digital India reflected a new alignment of the state with digital technologies for managing and administering the governance and development of the country. In the wake of Digital India, RSBY was 'Modi(fied)' into a new programme called *Pradhan Mantri Jan Arogya Yojana* (PM-JAY), commonly dubbed 'Modicare' (see About PM-JAY, <https://www.pmjay.gov.in/about/pmjay>). This new scheme provides increased financial coverage for healthcare with 500,000 rupees (6,000 euros) a year for families, without any significant financial planning and budget outlays (Key to Budget Documents 2020-21, Ministry of Finance, Government of India, 2020). The continuity of digital technologies from RSBY to PM-JAY can be seen with the use of biometrics identification, digital registration and database driven access to avail healthcare services in empanelled hospitals. The experiences of RSBY during its 10-year operational phase, the push for Digital India, and the announcement of the PM-JAY programme together hold two key implications. Firstly, that the Indian state experimented with digital healthcare for a decade through RSBY, thereby normalizing the digitalization of universal health coverage. A process completely transacted through digital software and hardware technologies for identification and verification of beneficiaries entitled to access universal health coverage services in empanelled hospitals. Secondly, that the switch from RSBY to PM-JAY reflects new configurations and calibrations of digital technologies, actors, and private markets to align with the broader Digital India policy. While the latest programme no longer uses smart cards, the commonality of biometrics with the extensive and pervasive transition to the Aadhaar system is at the heart of this new recalibration. Aadhaar is India's digital 'new normal', and RSBY has been crucial in creating this new normal for the healthcare sector. Biometric datafication and digitalization processes incorporate a multiplicity of technologies, actors, and institutions, which our research proposes to parse and correlate empirically through the in-depth analysis of RSBY, the foundation stone of digital health policies in India.

2. Methods – Studying RSBY in Northern India

Primary and secondary data sources were used for this paper. The secondary sources were mainly official government statistics, such as indicators on development *vis-à-vis* RSBY. These were collected from government reports, data dashboards and consolidated statistical summaries published by various Government of India departments. The RSBY policy and guideline documents contain details of the institutions, eligibility requirements and benefits involved in the scheme; however, many actors are not identified or mentioned in these documents. The core of this paper also relies on primary empirical data collected with the help of ethnographic fieldwork in the states of Jharkhand and Chhattisgarh, as shown on the map. The focus of the fieldwork was strongly driven with the objectives to explore and unpack the RSBY system and its operation by interviewing various actors, and institutions. The empirical focus was also tilted towards the beneficiaries because of the use and need of the universal health coverage programme by the poor families in the states of Jharkhand and Chhattisgarh.

Guided by these objectives we identified the key actors and institutions and tried to understand what role they played in the operation of the system, and how they helped with providing access to universal health coverage. These actors belonged to multiple institutions, some are public authorities such as the Ministry of Labour and Employment, the State Nodal Agency (SNA), public hospitals and district or block-level government departments, others are private entities such as private clinics, insurance companies, third-party administrators and technology providers. The state Nodal Agency is the key agency responsible for regulating policy/implementation guidelines, tendering, contracting with private entities, coordinating committees, and organizing grievance-related meetings with stakeholders. However, insurance companies and technology providers are managing enrolment of beneficiaries, empanelling hospitals, ensuring the everyday functioning of the program at the ground level.

We collected qualitative data from two districts of Jharkhand and Chhattisgarh, which included the capital districts of Ranchi and Raipur (see figure 1). Moreover, one of the strong reasons to choose the states of Jharkhand and Chhattisgarh for studying RSBY is because of the high prevalence of poverty in these two states, as highlighted in table 1 and 2. Due to high percentage of poverty, 47.9% in Chhattisgarh and 42.4% in Jharkhand, the dire need of access to universal health coverage is much more crucial and critical in these two states. More so, it is because of this reason, among all the actors, that we have explored the system more extensively from the beneficiary's perspective, because they were the targets of the digital system. Furthermore, Chhattisgarh and Jharkhand have sizeable tribal populations who live in extreme poverty and are in dire need of healthcare support from the welfare state. RSBY was implemented in both the states from the very beginning from 2009 onwards.

We conducted a total of 165 unstructured qualitative interviews with various actors involved in the implementation, operation, and usage of RSBY. At the time of the Jharkhand fieldwork, the scheme was in suspended animation due to a pending vigilance inquiry amidst allegations of corruption. In Chhattisgarh, the scheme was fully operational during our fieldwork. The aim of the qualitative interviews was mainly to explore and understand the different perspective of specific actors, their function and role in the RSBY system. Moreover, interviews with beneficiaries focused on understanding their experiences, views, encounters, and the way they traversed the journey to access universal health coverage using the smart card and providing their biometrics. The initial round of interviews was based on purposive and convenience-based sampling by contacting various actors and institutions mentioned on the RSBY website; from there on we relied on snowball sampling. Our primary empirical data collection incorporates qualitative responses from various actors using the technique of unstructured brief but in-depth interviews, lasting between 30 minutes and several hours, conducted in three languages (Hindi, English and the local Chotanagpuri). At the village level, the interviews incorporated different actors, such as beneficiaries, village representatives (Mukhiya/Sarpanch), community health workers – Accredited Social Health Activists (ASHAs) and Anganwadi workers (AWWs) – primary health centre doctors, and village-level officials. At the block and district level, it includes block programme officials, block development officials, district programme managers, community health centre doctors, medical officers in district hospitals, private hospital doctors, and district hospital officials. At state level, we interviewed SNA officials, senior bureaucrats, technology experts, managers and consultants of partner insurance companies, doctors, and engineers associated with technology providers. The process of transcription began during the fieldwork by marking the interviews with specific codes/acronyms to flag specific interviews for full or partial transcription. Transcriptions were fully translated into English and imported into nVivo software, along with the field notes, to conduct a qualitative analysis (O'Neill, 2013). We used a two-step coding method with different sets of nodes: a first round of descriptive thematic coding followed by a second round of analytic coding related to our research questions (Saldaña, 2009).

We initiated the interviews with contextual and simple questions to open the conversation about RSBY. For example, if we were meeting a hospital manager, interviews opened with questions on the way RSBY was operated in the hospital, where people register, who handles the data entry operations, and from there the detailed trail of operations followed. When we were meeting insurance companies and technology providers, the aim was to understand the way insurance claims were handled in the digital system. While meeting government officials, the focus was on understanding the bureaucratic administration and the regulative aspects of RSBY. However, when talking to beneficiaries, we systematically asked them about their journey from the time they enrolled in the system to the time they used the smart card in the hospital. Detailed interactions with our interviewees provided hands-on insights into the ground realities of RSBY and the bureaucratic approach towards the everyday practices involved. Insights with officials revealed the increasing emphasis on the efficiency of biometric identification for addressing government challenges of providing healthcare welfare. Agents from insurance companies and private technology providers emphasised how RSBY made for a more technologically savvy and market-friendly healthcare system. For many beneficiaries, community health workers and village level representatives, by contrast, the issue at hand was the increased necessity of biometrics and smart cards for access to healthcare, instead of ramping up public infrastructure to provide quality healthcare. Responses from these actors helped identify the problems and challenges with RSBY faced by beneficiaries in rural areas, and in turn showed up the cracks in digital health policies and in the biometric-based approach for providing access to universal health coverage.

Inspired by a sociological approach of digital health (Lupton, 2014), this methodology helped us to collect extensive empirical data. We were able to analyse the RSBY system from the perspectives of actors belonging to different institutions and more importantly from beneficiaries who availed hospitalisation services. The detailed interactions with beneficiaries helped to map their entire journey from enrolment in the villages to usage in hospitals with help of smart cards and biometrics identification. Based on this, the following results section

reflects the everyday operations and experiences of the digital turn to healthcare, now strongly established in India thanks to RSBY.

3. Results - The long and arduous trek to 'digitized healthcare for all'

At the present juncture, when free and unconditioned access to health care as a human right has become more important than ever, empirical insights from the RSBY programme show that the Indian state is increasingly making access to healthcare conditional upon digital technologies. These insights reveal how the technological design of RSBY unfolded on the ground, and how it encountered various social, cultural, and bureaucratic challenges. RSBY made smartcards compulsory to access healthcare coverage and constitutes a crucial turn towards digitized healthcare. This part of the paper highlights its critical implications for beneficiaries in poor families, and also for public policy. By describing the long and arduous path to access digitized healthcare, and the growing alliance between technology and private health players it implies, we show how digitalization is pushing healthcare into private hands. This alliance has made biometrics the new mantra, with a 'one-solution-for-all-problems' approach. Public healthcare policies that focus on digital and biometric technology rather than on addressing bureaucratic and infrastructure problems reflect a misplaced outlook, where technologies became the new gatekeepers, deciding which beneficiaries may and may not access universal health coverage. It has created new combinations of problems and obstacles for the welfare-dependent poor, while at the same time giving rise to new forms of corruption, exploitation, and misuse in the healthcare system.

3.1 Start of the trek: entering the database

The RSBY trek to healthcare started with the enrolment of beneficiaries for the smart card and the corresponding database. The process began by collecting and assimilating specific data lists of eligible beneficiaries. Initially the RSBY program only enrolled BPL categories of unorganised workers families, however, it was later extended to a total of 11 categories (see RSBY weblink, <http://www.rsby.gov.in/Documents.aspx?ID=1sub10.>) In Jharkhand, the beneficiary data list was based on the 2002-2003 census, which was fraught with difficulties. As one of the district programme officials said, "It was very old data, we used to face a lot of problems." In Chhattisgarh, meanwhile, the data list was based on the latest census (2011); however, it was still too old to be accurate, as one of the project officers told us: "Basically data of 2011 socio-economic caste census is being used for this enrolment. Even after having this census data, there were many people who were left out in the data list and from enrolment." This data list was collected by district and block departments and was passed on to the respective state nodal agencies in both states. They then had to send the data list to the central authority for lock-in/encryption with the URNs (unique reference numbers) of the beneficiary families. After receiving the approved enrolment list, state actors then handed it over to the partner insurance companies, which in turn sent it to their third-party administrators, their technology providers.

On receiving the URN data list, the technology providers coordinated with government district and block officials to devise the enrolment roadmap. In the process of enrolment, community health workers (ASHAs and AWWs) played a key role in identifying beneficiaries as per the list and informing them about enrolment. As one ASHA worker in Jharkhand mentioned: "We did not identify the families, it was already in the list which came from the block, we helped in identifying the names." After identifying and informing people as per the list, the community health workers (CHWs) distributed 'enrolment slips' to the beneficiary families, to be brought in for enrolment. They faced many complaints and verbal assaults from families whose names were missing from the URN list despite being eligible for the scheme. After spreading information about the enrolment, the technology provider set up an enrolment camp in the village. The enrolment team included engineers, district level officials and CHWs. Along with the demographic details of the beneficiaries, including name, age, parents, spouse, and address, prints of all 10 fingers were collected from the 5 family members. This was followed by the verification of the collected biometrics and demographic details, using the CHWs' fingerprints. However, the process of collecting biometrics with fingerprint scans was a major challenge for the enrolment team, as reflected by one engineer: "We have the most difficult situation [matching] biometrics scans, since people in the villages work and their hands gets rough, and it becomes difficult to get their fingerprint scans." With these multiple processes incorporating data, data lists, demographic, and biometric details fraught with problems and difficulties, beneficiaries were enrolled for the RSBY smart card and database.

After enrolling beneficiaries in the system, the standard procedure was to deliver the smart card, which, according to the technology providers and insurance companies, was done the same day. However, this claim was contested by many of the beneficiaries and CHWs. As reflected by one the CHWs in Chhattisgarh: "Smart cards are not given on the same day [...] it used to take more time and was to be collected from the Gram Panchayat." Even in Jharkhand, delivery of smart cards was not smooth and incurred delays, as noted by another CHW: "It used to take at least one to one and a half months. It did not come by post, but it used to come to the block ICDS office."

When asked about the delivery of smart cards, an engineer working with a technology provider in Jharkhand stated reasons relating to difficult geography, infrastructure problems, electricity, and logistical challenges. Both Jharkhand and Chhattisgarh have problems of Maoist violence, remote forest topography, and lack of basic infrastructure (roads, schools, hospitals, electricity, water). Data anomalies, challenges in enrolment and problems associated with smart card delivery had a major bearing on the RSBY enrolment rate in both states. In Jharkhand, the enrolment rate was around 45%, whereas in Chhattisgarh it rose as high as 90%. However, the enrolment percentages are not reliable pointers to the actual usage of the programme. This was reflected by a key official in Chhattisgarh: “The standard time for enrolment is 3 months as per Government of India. [...] it is practically not possible [...] you can consider the time taken anywhere between 4-6 months.” The limited validity of the card, and the long delays incurred in the enrolment process, created staggered usage of the smart card and reduced coverage by 4-5 months in a year, for a supposedly annual universal health coverage programme.

From being left off the URN list to receiving a delayed smart card delivery, beneficiaries had a hard task actually getting onto the database. Being outside the system meant having to bear one’s own healthcare expenses. But those who passed these initial hurdles to enter the system faced other complications: getting the smart cards did not mean that the beneficiaries accessed health services when the medical need arose. This was strongly reflected in the views of the beneficiaries and CHWs. As one told us: “Only 2–3 people have used it, but many people enrolled. There were around 70–80 families from my village who were enrolled in the scheme.” Indeed, after all the complicated processes required to obtain the smart card, information on how to use it was not easy to find, as one of the state officials said: “It has been observed that beneficiaries got their smart cards, but they are not availing the benefit of that because of lack of awareness.” From our fieldwork data, for most of the people who understood the purpose of the scheme, knowing how and where to use the cards was quite a challenge.

3.2 The trek to hospital to receive smart-card-based healthcare

Once the smart cards had been signed up to, created, and delivered, they could only be used in hospitals ‘empanelled’ (accredited) under the RSBY programme. The hospital empanelment process entailed its own politics, with the influence of private health players, and was opaquer than the smart card enrolment process. As the programme was modelled on a public-private partnership, both public and private hospitals were eligible to be empanelled. Public hospitals were empanelled by default as part of the programme, provided they had the technological infrastructure for reading and managing smart cards (as stated in the ‘Guidance for Enrolment of Hospitals’ under Annexure IV in ‘RSBY Policy Guidelines, Dated 13-03-2008’). Private hospitals, on the other hand, were empanelled on the basis of certain criteria, such as being licensed under the Nursing Home Act, having the required number of qualified doctors and beds, and meeting anaesthesia, biosafety and fire safety standards, among other things. It was striking to observe, however, that many private hospitals sprang up in rural areas of Chhattisgarh and Jharkhand to cash in on the programme. Due to the profits expected from the scheme, some private hospitals used their power and influence to be empanelled even if they did not meet the initial requirements, as mentioned by an insurance agent working on empanelment: “Private hospital people came to my office, saying I want to empanel, I sent my men to check, they said this hospital is not fit for empanelment. Then these people went to the government to get in.” According to several officers in charge of empanelment, there was a great deal of political influence and malpractice associated with the empanelment of private hospitals without adequate medical infrastructures. Gradually, these criteria were considerably altered in both states, where few hospitals could meet them, as one state official recounted: “We relaxed our criteria to empanel more hospitals, earlier we wanted only 10-bedded hospitals with all facilities. But we relaxed it to 5-bedded, and even to 2-bedded hospitals.” This relaxation of the empanelment criteria had a major bearing on the quality of healthcare and further extended the outreach of small private hospitals; as the owner of a private nursing home in Ranchi aptly reflected: “If there were 30 patients per month in the hospital then 20–22 patients used to be from RSBY [...] we also did this work for our advertisement.”

Amidst the political wrangling and the relaxation of the empanelment process, a high number of private hospitals were empanelled to provide healthcare services for the beneficiaries who owned a RSBY smart card (Al Dahdah and Mishra, 2020). The process of empanelment provided the hospitals with the required hardware and software technologies such as card readers, biometric scanners, as well as hospitalization transaction management software to register and book treatment packages. When a beneficiary visited an empanelled hospital in search of health services, the first obstacle was the initial diagnosis of the symptomatic medical condition. With the indications provided on the preliminary slip by a doctor, the beneficiary had to visit the designated smart card desk to request the RSBY smart-card-based services. After checking the validity of the card to initiate the transaction, the beneficiary’s smart card was inserted into the card reader along with the hospital card. Every hospital had its own smart card, with details of the hospital and its unique identifier as per its empanelment record, along with details of the treatment packages. As mentioned by the all the hospital-based respondents, especially the managers, smart

card operators and doctors concerned. Both URN numbers – from the smart card and from the biometric scans – had to match before the beneficiary could be registered at the hospital. Problems often arose where URN details and biometrics scans did not match, or where either the card reader or the thumb reader malfunctioned, as highlighted by one engineer: “There are problems with mismatch of biometrics, sometimes there is mismatch with URN data, so then biometrics becomes a problem too.”

As per the guidelines, digital identification and authentication of the beneficiary – via smart card and biometrics – was required for the hospitalization transaction, in order to register and ‘block’ the indicative treatment package. According to the official agreement between the State Nodal Agency and the insurance company (Annex I, Hospital Services – Admission Procedure), only after successful completion of this transaction could a beneficiary be admitted. ‘Package blocking’ refers to the booking of healthcare treatment procedures, predefined as ‘packages’ in the hospitalization software, with specific designations and prices. We were told at every hospital (public and private alike) that registration and blocking were done before any patients were admitted. As reflected by one of the hospital managers, “The hospital card is swiped, and from the given list of packages in the pre-installed software the specific package is selected, the amount is selected, and then blocking is done.” Health cover was provided only for a pre-specified list of medical conditions and procedures, and charges were deducted from the beneficiary’s smart card. Officially, Appendix 2 in the ‘*List of Day Care Procedures*’ lists details of 20 procedures, and Annexure 3 the ‘*Provisional/Suggested list for Medical and Surgical Interventions/Procedures in General Ward*’, had details of 1,090 surgical and non-surgical (medical) procedures. The process of blocking packages is a key moment, subject to a great deal of malpractice; deliberately or otherwise, this step technologically conditioned access to medical treatment for all RSBY patients.

Once the patient was admitted, the treatment process could begin. To this end, the insurer and the technology provider had to ensure that the treatment being provided was correct and justified in accordance with various accepted medical guidelines. With the help of a team of doctors well versed in these guidelines, the technology providers, operating on behalf of the insurance companies, had two ways of verifying this: through the data stored on their server, or through spot inspections at suspect hospitals. However, any claim that the insurance companies found suspicious was not reimbursed. All of the hospital-based respondents, particularly managers and those in charge of RSBY operations, spoke of pending claims and substantial amounts of money that had never been reimbursed by insurers, even several years later. They highlighted the importance of uploading claims data containing all patient details and documents every day; failing to do so led to claims being rejected, as explained by one insurance consultant: “If the data is not uploaded in 24 hours, then the claim for the case is rejected by the insurance company.” By the time a patient was discharged, along with hard copies of hospitalization documents, a patient data file had to be created and sent to three places at once, and again specifically to the technology provider server for claims processing.

The digital and data-driven claims processing for the hospitals involved multiple infrastructure and procedural challenges. The lack of proper digitized documentation and reports would lead to the non-payment of medical procedures, but private and public hospitals were not on equal footing. Public hospitals were said to be non-compliant. Responding to this allegation, one of the government hospital doctors pointed out that they were unable to provide all of documents required to process their claims: “We lack infrastructure and facilities like X-ray, for which RSBY says that you should provide details and documents of each and every investigation; it is not possible.” They also mentioned timetable challenges and patient load as something that created problems in keeping up with all the required documentation. Based on our interviews with State officials and private hospital managers, for the private hospitals, claims were rejected mostly on the grounds of smart card manipulation, blocking unnecessary treatment packages, and carrying out surgeries that were not required. These practices, often adopted and utilized by private hospitals, fuelled the privatization of healthcare, with serious implications for beneficiaries, especially for the poor who depend entirely on the welfare state for healthcare. For them, RSBY served to encourage excessively profit-oriented healthcare practices. As one of the beneficiary’s said: “In private hospitals they (doctors) for making money try to exaggerate things and even if things can be done normal, they try to do it caesarean (c-section) for making profits [..]”.

3.3 The finishing line: technology, exploitation, and healthcare as a business

During our research, we observed an important focus on technological processes in digitized healthcare, which tend to bypass any understanding of the needs, requirements, and difficulties of beneficiaries. The reliance on technology in RSBY brought many problems with data acquisition, digital enrolment, URN list omissions, difficulties in biometric scans, and the manipulation of treatment packages in the hospitalization software. The top-down digital model of RSBY showed that the priority in healthcare was now placed on identification rather than on improving care infrastructure and the quality of health services. Moreover, due to lack of infrastructure and services in public hospitals, many beneficiaries were compelled to visit private hospitals.

With many beneficiaries visiting private hospitals, cases of financial exploitation and manipulation of the scheme were more frequently reported. If any beneficiary faced problems with RSBY services at a private hospital, they could approach and talk to the technology provider coordinators. Individual technology provider coordinators were stationed at private hospitals to help beneficiaries in case of exploitation by the private hospital. As one of them told us: “We have to talk and find out from patients about the things they don’t know, what problem they are facing, information on all the steps for treatment under RSBY.” However, these coordinators were only stationed at private hospitals, and mostly in the city, as explained by the technology provider engineer: “The reason for stationing coordinators in private hospitals is also because private hospitals are the ones which demand more money from the patients. This does not happen in the public hospitals because the treatment provided is reasonable.” Although official guidelines refer to a District Grievance Redressal Committee (DGRC), during fieldwork in both states no beneficiary mentioned any knowledge of the DGRC (as stated in Section 20 ‘Grievance Redressal’ of “Draft Agreement Between SNA and Insurance Company”, 2012). Even with coordinators present at private hospitals to help beneficiaries, the exploitative and manipulative practices of private health hospitals continued.

The technological black box of the RSBY system, and the underlying protocols for booking treatment packages, provided avenues for misuse and exploitation and fuelled the engines of the healthcare business. On this point, according to one of the doctors: “manipulation was done in the way that the package is booked [...] (for instance) it's booked for bilateral, but the treatment is done for unilateral.” Reflecting on the practices of private hospitals, a beneficiary said: “I have used [the smart card] before in a private hospital in Raipur, they said it will take more than 1.5 lakh [...]. In private hospitals smart-card-based treatment is a business, for the hospitals and the doctors. Until they are discharged, people cannot figure out how much money has been deducted from their account.” Several private hospitals used this public healthcare policy solely for business purposes, as a manager of a private hospital reminded us: “We are here to do business, to make some profit.”

Several beneficiaries spoke of spending extra out-of-pocket money under the programme, as illustrated by this testimony: “We went to the private hospital. They took cash separately, deducted Rs 25,000 from the smart card and took Rs 15,000 extra as cash for the treatment.” For them, dramatic health expenditure would not have been necessary if they had first visited a public hospital. Several doctors talked about patients who were supposed to be in the general ward but were kept in ICU, so that the prices were deliberately escalated and the smart card money rapidly exhausted. Nor was it simply a matter of exploitation for money, in addition to the amount on the card, but also a way to angle for larger amounts, through needless and manipulative medical interventions. This was reflected by a family member who brought a pregnant woman in for delivery; the private hospital pushed for a C-section right from the beginning: “They said it’s over the due date, so normal delivery will not be done.” The smart card was used to exploit people who could not question the doctors at these hospitals, where they were often going for the first time because of the scheme. One of the CHWs mentioned grave manipulations by certain private hospitals in Raipur, confirmed by an inquiry and investigations, leading to the suspension of several doctors. Exploitation was excessive, with caesarean, uterus, and cataract surgeries, as repeatedly mentioned by both patients and CHWs in several villages.

These issues, flagged up many times during our fieldwork, reflect not only the challenges and problems of the digital system, but also the exploitative trap of private hospitals and the rampant profit-seeking and business-oriented outlook of private health players. Moreover, due to poor infrastructure and the lack of services at primary, secondary, referral and district-level public healthcare facilities, many beneficiaries were left with no choice than to visit private hospitals, only to face financial exploitation and medical manipulation, leading to still greater distrust in the way the healthcare system functions. Furthermore, to sustain their profitable business model, private hospitals targeted and contacted beneficiaries with the help of a systematic public relations and marketing network, and by organizing camps in villages. Private hospitals hired PROs (public relations officers) as middlemen to communicate, connect and supply patients to hospitals from remote villages, along the lines of a business supply chain model.

A technology provider coordinator at a private hospital confirmed this: “PROs are hired by hospitals; their work is to bring patients from the rural areas [...]. They bring them from villages, and they go back on their own. Mostly cataract.” Substantiating this, a beneficiary told us: “They collect them together at one place [...] take them like a flock of sheep.” Empirical reflections from the fieldwork show that the RSBY programme worked more in favour of private hospitals, and gave fresh impetus to digitally-enabled healthcare privatization and business practices. The digital turn to healthcare, with the primacy of biometric identification, has not solved the problems of accessing quality healthcare; rather it has displaced them, onto the state’s obsession with identifying people rather than onto the challenge of ensuring their health welfare rights.

4. Discussing the turn to digitized healthcare and market-based welfarism

Fieldwork insights from both implementers and beneficiaries reflect the centrality and compulsory nature of digital technology for access to a crucial human welfare entitlement. The recent switch from RSBY to the entirely Aadhaar-dependent PM-JAY programme confirms this, making public healthcare policy completely digitally driven and governed. Through its RSBY universal health coverage programme, the state orientated its policies and alliances towards a new digital rigour, based on a more extensive market approach. Our research also shows that while bolstering the private healthcare sector, digitized healthcare has not helped public hospitals to scale and extend their own infrastructure, despite the fact that bringing public hospitals under RSBY was advertised as a way of generating incentives and revenues for their infrastructure development. Indeed, due to the lack of infrastructure, services, and proper document and record management, public hospitals were not on a level playing field with private hospitals. From the very inception of RSBY, public hospitals were at a disadvantage. The scheme sustained the advantage of private hospitals, catering more to the practice of healthcare as a business. This has crucial implications for understanding the technology model and market-centric approach of the welfare state in India. In line with the wider pro-business policy of the Indian State, this case also reflects a global trend towards expanding private healthcare markets in the Global South and beyond.

Our empirical insights from Jharkhand and Chhattisgarh point to the key role of public health infrastructures in serving and operating the welfare state's universal health coverage mandate, especially for poor and below-poverty-line groups. The use of smart cards to book the treatment packages listed in the hospitalization database was limited by the actual availability of the healthcare services and infrastructure at the hospital. In the public hospitals, at the primary and secondary level, resource, and infrastructure constraints (basic diagnosis, availability of doctors, necessary medicines, beds, surgical care, etc) limited the scope of the scheme. Capitalizing on this, the private hospitals created new opportunities for profit making with the scheme, through middlemen in villages, public relations, advertisements, and organizing camps in rural areas to reach out to patients they had never accessed before. Our research suggests that RSBY, through its emphasis on the private sector, has contributed to the privatization of healthcare. Instead of strengthening the government health systems, there has been a massive rise in private hospitals in both rural and urban areas. This is reflected from usage statistics of PM-JAY programme, where 63% of claims were made from private hospitals and 37% from public hospitals as on August 2019 (Report on Top Utilized Private Hospitals, PM-JAY, NHA). Due to exploitation and the exaggerated charges levied by private hospitals, this created more financial stress among the rural population, pushing them further into poverty. As shown quantitatively by colleagues, the likelihood of incurring any out of pocket spending (inpatient and outpatient) rose by 30% due to RSBY (Karan et al., 2017). However, after being exploited and incurring out-of-pocket costs far in excess of the RSBY coverage ceiling, many people from rural areas came back to large government hospitals that offer almost free healthcare, which are still heavily overburdened and still lack the human resources and medical infrastructure maintenance that RSBY was supposed to improve. Public health establishments continue to play a vital role in safeguarding not only the inclusive and fair implementation of universal health coverage programmes, but also protection from exploitation and medical manipulation.

For many beneficiaries, one of the most crucial aspects of accessing universal health coverage was the need to have basic services in hospitals, not digital technologies. Indeed, many beneficiaries expressed their concerns about the lack of regulation of the excessive monopolistic, manipulative, and exploitative practices of private hospitals. As one of the beneficiary's said: "there (private hospitals) they do not have any standard, they charge exorbitantly and other than smart card they charge extra". There is a dire need for regulation and for new institutional mechanisms to address excessive privatization and monopoly practices that treat healthcare as a business endeavour rather than a welfare entitlement. Moreover, the fieldwork shows that from the implementation through to the operational use of the digital and data-driven model of healthcare, these infrastructures have just replicated and carried over structural data and survey anomalies into a new digital database. The implementation and operation with biometrics, smart cards, and databases became a test bed for technological experiments by the state in alliance with private technology and health providers. In doing so, the state has not only changed the dynamics of welfarism but has projected a new market-oriented outlook onto welfare. This trend has been consolidated by the new scheme replacing RSBY, which has not brought about any significant policy changes in terms of technology and ideology for solving the problems of the healthcare sector.

5. Conclusion – (Un)trusted technologies

In India today, there is a strong government push for accessing food, finding employment, getting social security pensions, scholarships, and universal health coverage through digital technology. As India's first digital universal health coverage programme, RSBY is a foundation stone to the turn to digitized healthcare. In doing so, it normalized biometric-based identification as a key enabler for accessing healthcare entitlements. In rural areas where the need for the welfare state is vital, digitized healthcare is seen as a central tool for addressing structural

problems such as identifying beneficiaries, tracking, and auditing entitlements, or tackling corruption, fraud, and inefficiency. In interviews and conversations with the research team, the beneficiaries explained that biometrics has become a new all-consuming reality, as they were not able to access entitlements without a biometric identity. They also pointed out that the biometric system has not made things easier or more efficient for them. Indeed, countering the claims of inclusiveness made by government officials and policy makers, beneficiaries pointed out that it has become easier for the government to filter people out, while making it more onerous for people to negotiate the process of proving their identity. In the case of RSBY, the need to establish a successful biometric scan or to get through the digitized welfare process had, they suggested, direct consequences for life and limb.

Many respondents felt that the advent of a digital identity complicated things for them and helped those who were described by several respondents as more “powerful”, “educated”, and “aware”. If a village does not have the basic infrastructure of electricity, roads, a health centre, schools, and safe drinking water, then what good, they asked, could digitalization and digital identity do for people? Their views on the lack of a holistic ground-level approach to basic infrastructure reflected a sense of unease about government policies and approaches to welfare. Users often said that the approach to digital identity and the digitalization of services was acceptable, but not if it was seen by the state as the only solution to all the problems of development, corruption, and inefficiency. The ideology of mistrust has become a two-way process between the state and the beneficiaries, especially for people who are poor and have historically faced structural inequalities. The state does not trust its people and has brought in the use of biometrics as a source of truth and trust. Reciprocally, the excessive compulsory – and compulsive – use of digital identity for each and everything pertaining to human life, from childbirth to death certificates, leads to a lack of trust and faith in the state.

The process and channels for accessing universal health coverage through digital biometric identification not only lead to technology determining the fates of millions, but are also fuelling the engines of healthcare as a business, creating new forms of exploitation, medical manipulation and abuse. This becomes more crucial when no alternative mechanism is provided in the public policy approach to healthcare, and this has created a point-of-no-return scenario. In the wake of Covid-19, the role of the welfare state has become more vital than ever for poor families, who have always faced socio-economic inequalities and now have been badly impacted by the pandemic. Given the severe challenges faced by the public health system and the dominance of unaffordable private healthcare in India, the response to the Covid-19 crisis could have prioritized the strengthening of an affordable and accessible healthcare system for all. Instead, the crisis has exacerbated long-lasting health inequalities: out-of-pocket health expenses have hit the roof, and many health facilities collapsed or shut down as a result of the pandemic. What the crisis did succeed in consolidating and bringing forward is a digitally-driven way of managing healthcare in India.

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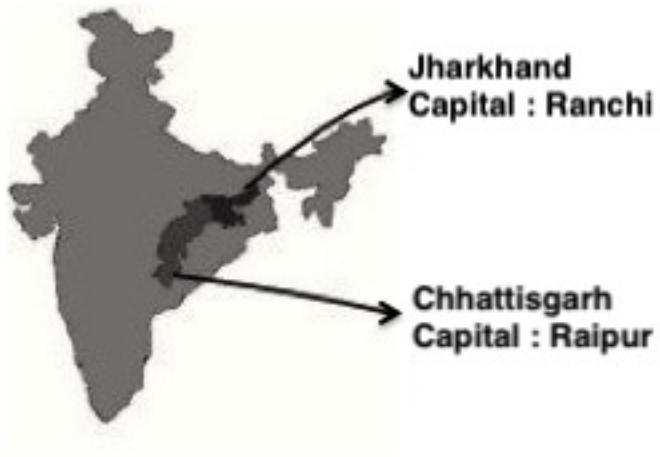
Table 1: Jharkhand key statistics

Area (Sq. Km)	79716
Districts	24
Towns	228
Villages	32394
Households (000s)	6254.7
Population	32988134
Sex Ratio	948
% of SC population	12.08
% of ST population	26.2
Literacy Rate	67.6
Gender Gap in Literacy Rate (%)	22.2
Poverty %	42.4%

Table 2: Chhattisgarh key statistics

Area (Sq. Km)	135192
Districts	27
Towns	182
Villages	20126
Households (000s)	5650.7
Population	25545198
Sex Ratio	991
% of SC population	12.8
% of ST population	30.6
Literacy Rate	71
Gender Gap in Literacy Rate (%)	20.9
Poverty %	47.9

Source: Selected Socio-Economic Statistics, 2017. Government of India, Ministry of Statistics and Programme Implementation, Central Statistics Office, Social Statistics Division; C Rangarajan Committee Report on Poverty Estimation, 2014; Census of India, 2011



Journal Pre-proof

Highlights

- biometric-based identification is a key enabler for accessing healthcare in India
- digitized welfare process has direct consequences for life and limb
- accessing UHC through biometrics is creating new forms of exploitation and abuse

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