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Delivering hospital-led integrated care: innovations by GNRC Hospitals, Assam

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July 2020

India Health Systems Project

Working paper #6

Table of Contents

Preface

The India Health Systems Project is motivated by the goal of advancing health system reforms in India to provide equitable access to good quality of care and financial risk protection for its citizens. The project adopts a system approach to assess the strengths and weaknesses of India's current healthcare system, identify underlying causes, propose potential solutions drawing on best practices within India and international experience, and, finally, to monitor and evaluate progress and impacts of reforms.

The Working Paper Series presents products from the project. They include research papers, country cases, and analytical tools for conducting health system and reform analysis. The intended audiences are researchers, health policy analysts and practitioners of health systems reform in India—at the national- and state-level—and worldwide.

Funding from the Bill and Melinda Gates Foundation (OPP-1181215 and OPP-1181222) is gratefully acknowledged.

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Acknowledgments

The author gratefully acknowledge Professor Winnie Yip for her guidance in conceptualizing the study.

The author is grateful for the contributions from Dr. Nomal Borah (Founder, Chairman and Managing Director, GNRC) and Priyanka Borah (Deputy Managing Director, GNRC), Satabdee Borah (Executive Director), Mrinal Ali Hazarika (Deputy Manager) and others from GNRC the team. Their patience and cooperation with the data collection process made this study possible.

Abstract

Assam's health system faces several challenges, as in many other parts of India, and both the public and private sectors have failed to deliver healthcare services in an integrated and patient-friendly way. GNRC, a private sector hospital chain, was founded with an aim to address many of these gaps by delivering integrated healthcare services to low-income populations in Assam and other parts of north-eastern India.

Using both primary and secondary data, this paper presents the interventions that GNRC has undertaken to address challenges of fragmentation and poor access to care in Assam: (1) *integrating care linking hospitals to primary healthcare services*, including preventive-promotive and curative care, as well as dental care, diagnostics, and drugs; (2) *promoting provider behavior that prioritizes quality and accountability*, and (3) *delivering easily accessible and patient-friendly care*, through conveniently located and timed services.

We conclude the paper with a discussion on the way forward for GNRC and the challenges of scalability. This paper is intended to inform interventions in both public and private sectors and is envisioned to be useful for readers involved in designing healthcare delivery reforms at the central and decentralized government levels.

Introduction

India's health system faces problems of fragmentation, or lack of integration, across different levels of care and different types of healthcare providers [1]. "Fragmentation" in healthcare delivery means the systemic misalignment of incentives, or lack of coordination, leading to inefficient allocation of resources or harm to patients [2]. Integrated care is contraposed to fragmented care. Integrated health services delivery is defined as an approach to strengthening people-centered health systems by promoting the delivery of comprehensive, high-quality services [3]. Such care is designed according to the population's multi-dimensional needs and is delivered by a coordinated multidisciplinary team of providers working across settings and levels of care [3]. It requires effective management to ensure optimal outcomes and the appropriate use of resources.

Evidence from across different countries has shown that fragmentation adversely impacts quality, cost, health status and public satisfaction, and integrated care can alleviate many of these problems [2, 4-10]. However, even with an extensive evidence-base, integrated care has not been a focus of the Indian health system. The context of the state of Assam in north-eastern India reflects many of these problems of fragmentation of the health system and a neglect of integrated healthcare delivery.

GNRC Hospitals in Assam, a chain of private sector multi-specialty hospitals providing low-cost care, led an innovation of integrated care delivery in the state through vertical integration of hospital-based secondary services with out-patient primary care and community-based preventative care. GNRC Hospitals have achieved higher efficiencies and profitability through their model of hospital-led integrated care and secondary prevention. This model presents important lessons on how, to achieve integration, organization-wide changes need to be made to compose the care-team, pay the right incentives for rational care, and provide comprehensive primary care, including preventative services. This model provides useful lessons for contexts like India, where weak primary care systems are a barrier to achieving a more conventional primary healthcare-led integrated delivery.

Through this case study, we aim to examine how GNRC has integrated hospital-based care with primary care (focused on secondary prevention) through community-outreach, illustrate how this integration has led to financial sustainability of the model, and highlight potential lessons on how to achieve hospital-led integrated care in low resource settings.

Data and Methods

This paper is based on an analysis of both primary and secondary data related to GNRC's operations in Assam. Primary data was collected during 2019 by the author (AK) through individual and group interviews with the following representatives from (i) the management team comprising of the Founder-Chairman and Managing Director, Deputy Managing Director, Executive Director, Deputy Manager and Advisors; and (ii) the GNRC clinical team – community health workers (*Swasthya Mitras)*, chief medical officers and hospital superintendents, physicians, and nurses. The author also conducted field-visits

to three GNRC hospitals to observe and interact with providers. For secondary data, AK collected publicly available literature about GNRC's programs, including grey literature, internal documents shared by GNRC about their programs, and media reports.

The paper has limitations. We have relied on internal data from GNRC for our analysis. There is no third-party assessment of the indicators and process outcomes that we present in this paper. The paper presents a description of the model used by GNRC to address the challenges of fragmented healthcare delivery in India, with a discussion of some key strengths and challenges, and it is not intended to be an evaluation of GNRC's interventions.

Healthcare context in Assam

At the outset, it is important to understand the socio-demographic context of Assam. The state of Assam in northeast India has a population of 31 million [11]. The state is predominantly rural (86%) [11]. According to a recent report from The World Bank, a third of the state is poor (32%) [12]. The incidence of poverty in Assam remains higher than the national average, with poverty levels being very high in some parts of the state.

The following sections describe Assam's healthcare context across some key health system performance indicators (see Table 1).

Table 1

A snapshot of the health system problems in Assam	
Health status	Highest maternal mortality in country (MMR: 237 against 130 all India)*
	Low life expectancy (LEB: 63.9 years against 69 all India)*
	Second highest infant mortality in the country (IMR: 44 against 34 all India)*
	51.2% disease burden caused by non-communicable diseases, highest number of deaths among adults caused by strokes, cardiovascular diseases and cancers[¤]
Financial Risk Protection	Only 2.6% population covered by insurance.[ɢ] 40% population will be covered by PM-JAY
	OOPE is 54.2%. 64% OOPE on medicines; one of the highest OOPE on diagnostics and transportation (38% against 16% all India) .[ɢ]
	6% population face catastrophic health expenses .[ɢ]
	Highest expenditure per hospitalization case in the country at INR 52,368; highest OOPE in public sector .[ɢ]
Access	Poor geographical access due to difficult terrain and poor infrastructure for transportation (leading to forgone care, delayed care and high indirect costs in transportation and loss of wages)
Delivery system	Fragmented delivery without linkages between different levels of care – no identification of high-risk NCD cases (leading to high disease burden); no continued management of NCD cases; delayed care seeking and delayed referrals/no referrals (leading to poor/fatal outcomes)
	Lack of comprehensive primary care, poorer capacities at lower level providers (both public + private), no gate-keeping – leading to secondary/tertiary over-crowding and inefficient use of scarce resources

* NITI Aayog accessed on November 1, 2019 (data from Sample Registration Survey 2016)
¤ India: Health of the Nation's States — The India State-Level Disease Burden Initiative. New Delhi: ICMR, PHFI, and IHME; 2017.
ɢ National Sample Survey Organization (NSSO) (2015). National Sample Survey , 71st Round

Healthcare Delivery and Provider Behavior

Healthcare in Assam is delivered by both the public and private sectors. The public system with its network of medical college hospitals, community health centers (CHCs), primary health centers (PHCs), sub centers (SCs) or health, and wellness centers (HWCs) exists alongside the private system. The private sector is widely variable in quality and is

heterogeneous, including a range of providers - large super specialty hospitals, doctors with small individual practices, chemists and traditional healers. The availability of qualified providers and the quality of services are far worse in smaller towns and rural areas. The public system suffers from challenges of shortfall and resource constraints. Additionally, since their focus is predominantly on maternal and child care, a majority of the health needs of the community go unmet.

While almost equal percentage of the population access public and private sector healthcare for out-patient services, almost 88% people use public sector hospitals – where care is theoretically provided free of cost. Given this, it is worrisome that the state has the highest expenditure per hospitalization case in the country at INR 52,368 and the highest OOPE in the public sector [13].

Assam has a fragmented health delivery system where primary, secondary and tertiary care are not coordinated. Additionally, because of the lack of gate-keeping and poor quality of primary care, people often visit hospitals directly, even for conditions that can be managed by lower level providers. When geographical access is a challenge, most people either wait till their illness worsens or they go to the "bigger" hospitals rather than spending the same amount of resources to seek care from a primary health center.

The health system faces challenges related to incentivizing and monitoring providers to deliver good quality and patient-friendly care. Incentives for providers are not aligned to the goals of better health outcomes, and care provided by the health system is rarely patient-friendly. Due to perverse incentives, providers are often motivated to induce supply and provide irrational care. With lower hospitalization rates and high operating costs, there are perverse incentives for hospitals to provide irrational care and hold onto patients when they should be referred elsewhere. This leads to inefficiencies and cost escalation in the system. This affects both clinical quality of care as well as patients' perception of quality. To add to this, providers (public and private) are seldom evaluated for clinical quality and hardly ever held accountable for treatment outcomes.

Financial Risk Protection

Financial risk protection in Assam is quite poor, as seen from low insurance coverage and high out-of-pocket expenses (OOPE). Insurance coverage in the state is low (2.6%) [14], OOPE high (54.2%) [14], and 6% of the families face catastrophic health expenditures [14]. Almost 64% of health expenditure is on medicines, followed by diagnostics and transportation (38%) – one of the highest in the country (compared to a national average of 16%) [14].

Access to Care

Access to care is limited by many factors in Assam. Difficult geographical terrain with hard to reach riverine areas, tea estates with very limited infrastructure, hilly and forest areas pose major challenges to healthcare access. Frequent floods, insurgency and civil unrest in the border areas further complicate these challenges.

While the public system is free, patients often face issues of access, especially for people in the riverine and hilly districts. The private sector, especially hospital care, is unaffordable to most families. The financial barriers to access are high not only for the low-income population but also for the large middle class that earns between $2 and $10 per day. The majority of this section of the population is not covered by the government's health protection schemes, nor by commercial insurers. Even though they are not classified as "poor," a single health shock or long-term expenses linked to a chronic disease can be catastrophic and easily push them into poverty.

Health Status

All of the above-mentioned factors contribute to poor health outcomes in Assam. The state lags behind most other Indian states and the national averages. It has the highest maternal mortality (237 per 100,000 live births) [15], the second-highest infant mortality (44 per 1000 live births) [15], and the lowest life expectancy at birth in the country (63.9 years) [15]. The state is also grappling with a very high prevalence of non-communicable diseases (NCDs), with more than half the deaths caused by NCDs, especially cardiovascular diseases and cancers [16].

Overview of GNRC

GNRC (originally named Guwahati Neurological Research Center) is a private hospital first established in 1987 by neurologist Dr. Nomal Chandra Borah.

GNRC's focus on providing low-cost services and outreach to underserved communities can be traced back to the ideologies of its founder, Dr. Borah. At a time when most doctors were seeking opportunities abroad or in the private sector in India's metropolitan cities, Dr. Borah returned to Assam and sought out opportunities to work in the state's poorest communities to use his influence as a local doctor as a force for progressive change. His work extended beyond the confines of his hospital to reach out to the poor and sick in underserved communities. After running GNRC as a super-specialty hospital for years, mainly catering to high-income patients, the organization went through a process of revisiting its strategy. This was inspired by Dr. Borah's time in the rural areas of the state and his deep understanding of the challenges faced by the people in accessing timely, quality, and affordable healthcare. In 2012 GNRC started its community outreach program – Medireach, which was soon followed by the community health worker program (*Swasthya Mitra*). Thus began GNRC's new focus on delivering "ultra low-cost care" to Assam's sizeable low-middle income population by improving efficiencies of integrating primary and secondary care. Contrary to common hospital business models, prevent unnecessary hospitalizations. The underlying focus of all GNRC's innovations was to increase cost efficiencies in each component of care delivery.

At the time of this study, GNRC has a network of four 100 to 300 bedded hospitals with services across 21 specialties. Each hospital has state-of-the-art diagnostic facilities and fully stocked pharmacies. GNRC focuses on detection and early intervention and management of seven high burden conditions – stroke, heart attack, hip fracture,

osteoporosis, chronic kidney disease, breast cancer, cervical cancer, and prostate cancer. Services are priced lower than those of other private players, with price differences of more than 50% in some cases; OPD charges are $1 to $2, and the first 24 hours of emergency care is provided free of cost.

GNRC Interventions Aimed at Integrated Care

GNRC Hospitals have undertaken several interventions documented elsewhere [17-20]. Noteworthy among these have been building low-cost hospital infrastructure, involving the catchment community in the supply chain and creating a sense of community-ownership, training schools for nurses and specialists. The focus of this case study is on GNRC's interventions in leading integrated care.

1. Integrated care linking hospitals with primary care

Integration of GNRC's hospital-based secondary care with comprehensive primary care was the fundamental change in their delivery model.

According to an internal analysis conducted by GNRC, almost 45% of hospitalizations, especially for non-communicable conditions, could be prevented if timely care was available to the patients. In most of these cases, the disease is usually so advanced due to lack of care or delayed care, that the hospitals cannot achieve the desired levels of cure, even when the patient is admitted. Once these patients are discharged, the hospitals (like in all cases of a fragmented system), were on their own, without continuous disease management. This put them in the same cycle of foregone care or waiting till it was too late. The internal data also showed that almost 85% of the cases that were in the GNRC Hospitals could have been managed at a primary care level. The hospitals were crowded with fairly simple and preventable causes, and expensive resources and scarce specialists' time were being spent inefficiently. This had two direct impacts – one, patients were spending money wastefully, and two, the profitability of the hospitals was lower.

1.1 Medireach: The integration at GNRC started in 2012 with a pilot outreach project called Medireach in communities where the majority of their patients came from, i.e., rural areas and smaller towns of Kamrup district. The project has a re-purposed bus that has a medical team and supplies. The vans visit the communities, raise awareness about seeking timely care, regular management of chronic conditions, and provide curative care to the ill. This initiative addressed the huge unmet need for easily accessible care in the communities. The patients did not have to travel long distances, miss wages, incur expenses on transport, and very often delay or forego care-seeking. Although public PHCs are mostly functional in Assam, their focus is primarily on pregnancy and childhood-related conditions. They are not equipped to care for other conditions such as chronic diseases. Difficult terrain also makes it harder for patients to access these facilities, especially given their limited hours of operation. The Medireach vehicles visit a defined catchment once a week to conduct simple diagnostic tests and provide curative care to patients. A Medireach vehicle is capable of conducting ECGs, blood sugar, ultrasonography, X-ray, and pap-smear. They also collect, store and transport blood and urine samples for other tests that are conducted at the hospital laboratories. A number of towns and villages do not have access to reliable and affordable diagnostic services.

Private diagnostic centers are often expensive, and the ones in the public sector are usually only at CHCs or district hospitals and often involve long wait times. The convenient timings of the Medireach vans make them more popular among the patients than public health facilities. The diagnostic tests and sample collection also help patients save time and money.

Medireach has scaled up to cover around 15 million people in 12 districts.[1] The initiative has increased awareness among the communities about GNRC and consequently increased the number of patients that come to GNRC for care.

1.2 Swasthya Mitras: GNRC's community health workers of Swasthya Mitras are the key to its model of integrated delivery. GNRC's primary care initiative has grown beyond Medireach into a well-planned community health worker program. GNRC has trained ~8000 community health workers – *Swasthya Mitras* (meaning "A Friend for Health") who provide basic primary and preventative care for 20 million people across 24 districts[2] in the state. They identify high-risk cases for NCDs and acute illnesses and refer them to the GNRC hospitals. Each *Swasthya Mitra* is selected from amongst the local women with at least a high-school degree. After being selected based on an aptitude test and an interview administered by the GNRC program managers, the *Swasthya Mitra* undergoes one month of pre-service and two months of in-service training. Each *Swasthya Mitra* looks after 250 households, enumerates her catchment, and maintains health records of each individual on existing conditions as well as at-risk indicators. They promote health practices, coach chronic disease patients for lifestyle changes, and monitor patients' health in the community.

While the *Swasthya Mitra* is similar in profile to the community health workers under India's national ASHA program, the difference lies in her roles and responsibilities. The *Swasthya Mitra*'s focus is on NCDs and other illnesses, while the ASHAs focus on pregnant women and small children. The *Swasthya Mitra* maintains close linkages with the ASHA in the village and refers the maternal and child health cases to her. The *Swasthya Mitra* also refers patients to the local sub-center and primary health center that can be managed by these facilities. All other patients who need curative care or diagnoses are referred by the *Swasthya Mitras* to the GNRC Hospitals. Almost 50% of GNRC's patients are from the communities and are referred by the *Swasthya Mitras*.

1.3 Re-designing the care team: Re-designing the composition of the care team is another innovation key to GNRC's model. When designing the team, the focus was not on the position or designation of the staff, but on the roles that they are required to perform. This helped shift GNRC's focus from the typical question of "*how many doctors or how many nurses*?" to a more production-function linked question of "*what needs to be done at which level for optimal care*?"

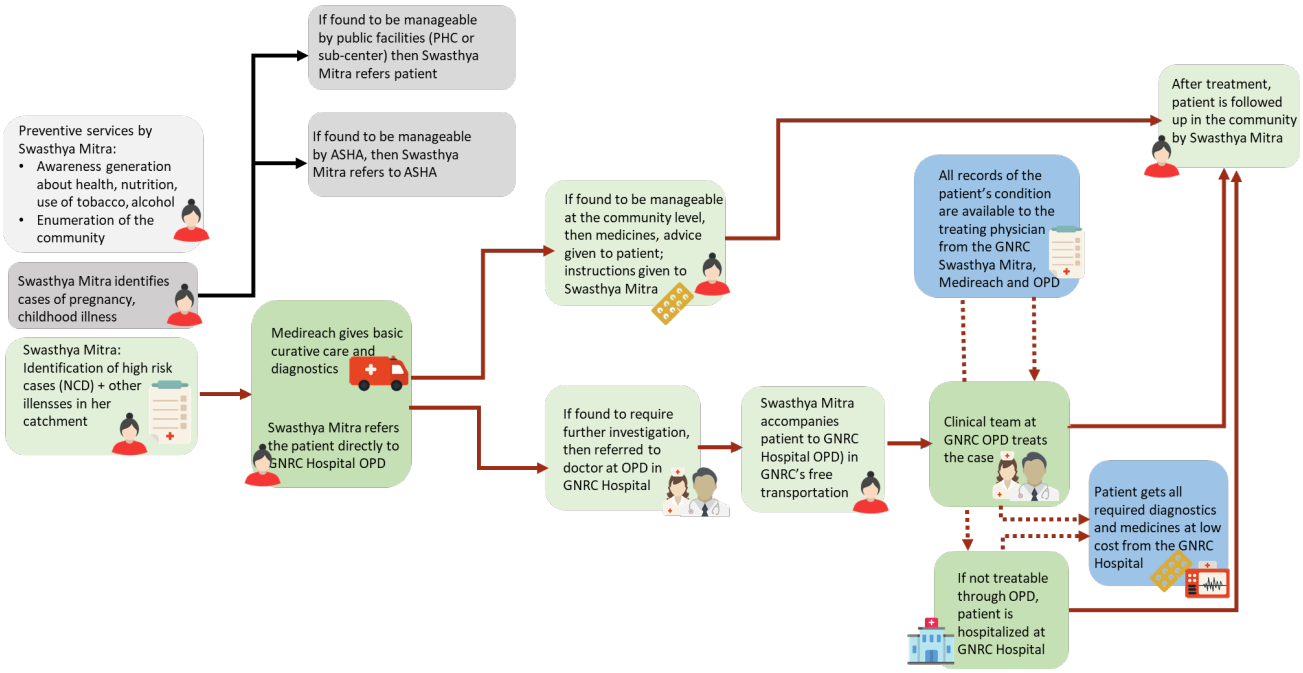
The care team at GNRC comprises of the *Swasthya Mitras*, laboratory technicians, nurses, general physicians, and specialists.

Traditionally, catchment enumeration and identification of high-risk cases is not something that has been done in Assam, even by primary care teams, let alone by a hospital. The *Swasthya Mitras* of GNRC undertake this regularly in their communities, along with maintaining population-based health records. This helps the prevention of disease and disease progression, as well as in facilitated timely care. The Medireach teams comprised a coordinator at the central office based at a GNRC hospital, a clinical team of 11 doctors and nurses, and five technicians. A team of a nurse, a doctor, and a technician visits their catchments once a week, undertakes the simpler diagnostic tests, and provide curative care. This is far more cost-effective, as the same resources are able to cater to a larger population, replacing the need for a brick-and-mortar clinic and a laboratory (that would often struggle with optimal volumes, especially due to access issues in the state). Usually, these services are not easily accessible to people in the rural areas and smaller towns of Assam, without traveling great distances and incurring high costs.

The **out-patient care teams in GNRC hospitals** comprise of nurses and a physician. These care teams function like a more typical primary care team, except they have greater information about their patients (through the community-based care of *Swasthya Mitras*), are better able to ensure right referral decisions, and are assured of continuity of care (whether in the hospital or post-discharge by the *Swasthya Mitras*). **GNRC's hospital departments** are headed by specialists. A number of them are graduates of the two-year training course for specialists that was introduced to address the huge specialist-shortage in the state.[3] The complicated cases needing advanced care are overseen by the specialists, while physicians and nurses effectively manage most cases for clinical out-patient care, and by the *Swasthya Mitras* in the community.

The care pathway of a patient is presented in Figure 1. It shows the coordination between the Swasthya Mitras and the clinical care teams at each level, providing both primary care and in-patient hospital care. It is interesting to note how the *Swasthya Mitra* is closely involved in the care process, making it easier for follow-up and community-based (non-hospital) management of cases.

Figure 1: Care Pathway of a patient at GNRC



2. Promoting provider behavior that prioritizes quality and accountability

Incentives and motivation of the clinical team have to be aligned with innovations in service delivery. Most innovations in integration often fail because providers are not motivated to perform their new roles within the same conventional incentive system.

GNRC has innovated in recruiting and paying doctors. While most private hospitals in Assam compete to attract senior physicians and specialists, GNRC recruits early and mid-career medical graduates. The volume of patients and a wide range of cases that the GNRC hospitals receive are attractive for early and mid-career doctors to gain experience. Additionally, GNRC also finds that these doctors are more sensitive to the needs of the lower-income patients (who are GNRC's focus customer base); they are more 'trainable' to GNRC's approach to healthcare (which is a significant shift from the conventional model in India); and are more motivated to provide patient-centric care.

Another departure from other private sector hospitals was in payment mechanisms. Most private hospitals pay physicians a share of the fees that they charge their patients – both for out-patient consultations and hospitalizations. Some of the more senior physicians even get a share of the profits that they help generate for the hospital. These systems create perverse incentives for doctors. GNRC pays fixed salaries to their doctors with a component of the performance bonus determined by the management based on pre-defined performance criteria. These criteria include patients' feedback on the perceived quality of the doctor, contributions to research and publications, and the volume of patients that they treat. The criteria for promotions include the length of service and loyalty, quality of service, research, and contributions towards bringing down the cost of

treatment. As a result, doctors do not ask patients for unnecessary "follow-up" visits, and most conditions are effectively managed *Swasthya Mitras* in the community. Doctors are also not motivated to keep patients for longer hospital stays or prescribe unnecessary drugs and diagnostic tests. This makes care more efficient from both the patients' and the system's perspectives.

Swasthya Mitras are paid for their household visits and their efforts to promote the people's health-seeking behavior. They are paid INR 10 (~$0.14) for visiting each household once, bringing their basic earnings to INR 2500 (~$35) per month. For helping a patient seek appropriate care at a GNRC hospital out-patient department or from the Medireach team, and facilitating the process at a GNRC hospital for the patient, the *Swasthya Mitra* receives a share of the fees. On an average, a *Swasthya Mitra* earns around INR 6000-7000 per month (~$85-100), which is higher than the average income in the state.[4]

3. Delivering easily accessible and patient-friendly care

GNRC has undertaken the several initiatives to make their services more patient-friendly and address the barriers to access commonly faced by their target users.

3.1 Convenience of care: OPD clinics run for 12 hours a day, making them convenient for patients. For patients who come from satellite towns and villages, GNRC runs free transportation – buses that ply from all district headquarters in the state to their hospitals. This addresses the lack of reliable and affordable transportation for people to access care. Almost 20,000 patients avail of these GNRC transport services every month.

3.2 Low-cost, same-day diagnostics: A patient-centered initiative that GNRC has started is to run and complete all diagnostic tests within the same day. Most patients lose multiple days' wages when they seek care (even for out-patient or primary care) due to repeated visits for diagnostics, laboratory reports, and medicines. All GNRC hospitals are a one-stop-shop with fully equipped pharmacies, laboratory, and imaging facilities. Each OPD visit is completed in one day so that patients do not incur additional and indirect expenses like transportation or accommodation when they come from far-flung areas. Because of this convenience, the volume of patients accessing diagnostic services is high. This, in turn, helps GNRC utilize its equipment to the maximum, often a problem with most diagnostic facilities.

3.3 Low-cost drugs: Medicines stocked and sold by the pharmacies at GNRC hospitals are generics and branded generics. This keeps their costs down, and patients incur fewer expenses on drugs, which is one of the highest avenues of out-of-pocket expense in the state. Each prescription of the GNRC doctors is checked at the time of discharge or check-

out by the patients. Patients are referred to an outside chemist only if the drug is not available in the in-house pharmacy.

3.4 *Swasthya Mitra* as the facilitator of the care process: Having the *Swasthya Mitra* accompany patients to the hospital helps overcome barriers to access. The *Swsathya Mitra* acts as a medical social worker as well as a companion for the patient in navigating the entire care process. Regular interactive sessions are conducted for the family members of the in-patients admitted to the hospital. These sessions are organized within the hospital premises to create awareness about hygiene, sanitation, healthy living practices, prevention, and management of diseases. The sessions act as platforms for patients' family members/caregivers to connect as a support network. These are also used to responds to queries from patients and their families about their health conditions and about other health issues. The primary care services helps GNRC know their patients better, not just from their hospital records when they visit, but also on a day-to-day basis from their records maintained by the *Swasthya Mitras*. This helps them tailor their care to their patients' needs.

A superior patient experience is a core tenet of GNRC's value proposition for its patients. A positive patient experience not only fosters loyalty and increases revenue, it also improves clinical outcomes by increasing adherence to health-promoting activities, medical advice, and treatment plans.

Way Forward

Keeping with the goal of making care more efficient, GNRC is planning to include more nurse practitioners into their clinical care teams. GNRC had established the Asian Institute of Nursing Education in 2004 with the vision to provide quality education in nursing. Since its inception, the institute has been offering bachelor's and master's degrees in nursing. The institute has recently started the nurse practitioner course to help nurses play a more expanded role, making the care process more efficient. The first batch of nurse practitioners will graduate in 2020, and in addition to creating roles in the care teams at GNRC, a number of these practitioners could be placed within the public system's health and wellness centers as mid-level health professionals (under the Ayushman Bharat program).

GNRC is also closely integrated with the other aspect of Ayushman Bharat – the Pradhan Mantri Jan Arogya Yojana (PM-JAY). The GNRC hospitals are empaneled under PM-JAY, and have seen the third highest patient volumes under this program in the state [21]. Because of their cost efficiencies, the PM-JAY rates are attractive to GNRC, while most other private hospitals find the rates too low to sustain.

GNRC is planning to strengthen its model of hospital-led integrated care and scale it to different states across India. The way GNRC has conceptualized its care process for the patient is innovative in the Indian context. It provides a good example of how an organization can successfully combine patient-centered care with financial sustainability – two goals that are often perceived as contraposed to each other, especially for private

sector healthcare in India. The GNRC model also underscores that innovations need to be systemic – a change in one aspect of the organization affects and is affected by other aspects. Good reform designs with sustainable change need to take these interlinkages into account and plan for comprehensive system-wide transformation.

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Endnotes

[1]Medireach vehicles covers the following districts: Kamrup (Metro), Kamrup (Rural), Nagaon, Nalbari, Baksa, Borpeta, Bongaigaon, Goalpara, Darrang, Udalguiri, Sonitpur and Morigaon.

[2]SawsthyaMitras cover the following districts: Kamrup (R), Nalbari, Morigaon, Darrang, Baksa, Udalguri, Nowgaon, Hojai, Sonitpur, Biswanath, Chariali, Lakhimpur, Dhemaji, Golaghat, Jorhat, Sivsagar, Dibrugarh, Tinsuikia, Borpeta, Bongaigaon, Kokrajhar, Dhubri, South Salmora, Goalpara, Karimganj

[3]The GNRC Institute of Allied Health Sciences imparts 2-year training courses certified by the Diplomate of National Board (DNB) of the National Board of Examination, Government of India. The focus is onspecialities of Neurology, Cardiology, Radiology and Imaging and Critical Care.

[4] As per the Ministry of Finance (Government of India) data, the per capita income in Assam is INR 67,620 (2018)