DVARA
Health Finance

Vital Signs

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Dear Reader,

Dvara Health Finance's (DHF) mission is to ensure that spending on health translates into better financial and health outcomes for all Indians. We aim to offer at-scale, tailored financing and information services that will enable lower out-of-pocket expenditure for the individual at the point-of-care.

Our first offering, called NEEM, combines automatic savings, top-up insurance and out-patient care coordination. We have deployed this solution with three partners to date, collectively serving over 1000 families; approximately 5000 individuals under care. We have been delighted to add 1Bridge and Sarvagram to our list of partners in recent months. We are also very pleased with our partnership with Zeno Health that is enabling us to provide NEEM customers with affordable generics for chronic diseases.

Our quarterly newsletter, 'Vital Signs', is an effort to build a community of practice for health sector innovators and practitioners in India. We aim to share learnings from new healthcare models and build a vibrant community that helps improve the value equation for household spending on health.

In our sixth issue, we report back on developments and health outcomes data from our first implementation - in partnership with Mann Deshi Foundation in Satara district of Maharashtra. We have encountered a fairly high burden of disease, the vast majority of which were only identified during our screening process. Encouragingly, we have seen sharp uptake of health worker services, initiation of treatment and successful health outcomes. Over 3/4ths of individuals identified to be in "hypertensive crisis' ' during our screening have been found to have moved at least one lower stage of severity. From a business model perspective, we are encouraged by a high retention rate in our monthly subscription model, signalling that perceived value even from a "narrow" non-communicable disease focussed approach is high.

We were also pleased to collaborate with Dr Nachiket Mor and a team of outstanding primary care practitioners to co-author a paper titled "Evolution of community health workers: the fourth stage" published in the Frontiers in Public Health (May 2023). The principal contribution of the paper is identifying the seventeen features of high-performance health worker models. We summarise the paper and its key ideas in Section 2. Section 3 is a customer case study.

We would love to get your thoughts on this issue. Please send your suggestions on what you would like to see in future issues or anything health financing-related at communications.health@dvara.com. You can also subscribe to the newsletter by signing up here.

Happy reading and wishing you good health!

Bindu Ananth
Founder & CEO - Dvara Health Finance

Section 1: A progress update from the NEEM Mann Deshi Program

As we complete 9 months since the launch of the NEEM program in partnership with Mann Deshi, we provide updates from the ground in Mann Taluka

Dvara Health Finance's NEEM program is a per-member-per-month (PMPM) subscription-based healthcare program in which each member is empaneled under the care of a dedicated health worker – the Health Sakhi – who in turn, is supervised by a centralized tele-care team.

The NEEM Program is highly focused on non-communicable diseases (NCDs) in adult populations – even more specifically, cardiovascular disease (including hypertension) and Type 2 diabetes. These highly prevalent conditions are the starting point of patient journeys which lead to bankrupting hospitalizations, if not deaths – events that the NEEM Program aims to minimize through its hybrid intensive approach to community-based patient care.

Individual customers from the community are enrolled by dedicated NEEM Program agents. Upon enrolling in the NEEM Program, the enrollee as well as their family members gain access to a suite of healthcare services, paid for on a PMPM basis.

The NEEM Care team, is as follows:

• The Health Sakhi is a locally-recruited 10th standard graduate or higher, who is assigned to serve NEEM members who reside no more than 10 km from her home. She is trained to provide highly protocolized care and intensive follow-up to the members assigned to her. A Health Sakhi typically provides care to 150 families; with a ceiling of 200 families under their care.

• A team of Health Sakhis is overseen by a Digital Doctor – a tele-physician with full allopathic prescribing powers. As many as 20 Health Sakhis can be managed by a single Digital Doctor.

• Digital Doctors provide evidence-based protocol-driven medical care to NEEM patients as required. Nonetheless, they are backed by a team of medical specialists, for instances when specialized expert knowledge needs to be called upon.

As part of the NEEM Program, an adult patient can expect to experience the following care events:

(i) An in-person baseline screening by the Health Sakhi focusing on non-communicable diseases (NCDs) but also covering triage for visual acuity, oral lesions and chronic pain. All of the work leading up to the final handing over of the prescription is completed by the Health Sakhi using an electronic health record and guided by a computerized decision support system.

(ii) Receipt of a health status report, and counseling on the same

(iii) Digitally-delivered protocol-driven prescriptions as needed, from a fully licensed tele-medicine physician

(iv) Frequent follow-up visits in-person, from the Health Sakhi, during which continuity of care is ensured. The

(v) Accessible and affordable care, through the last-mile provision of generic medicines

(vi) Access to specialized care offerings, through disease-specific add-on offerings and highly-qualified medical specialists

Condition	Percentage of Screened Patients	Total Count (n)
Stage II hypertension or higher	34.8%	1,116
Hypertensive crisis [a subset of Stage II or higher]	2.4%	78
Diabetes before confirmatory testing	7.5%	239
Diabetes screening (RBS >= 140)	14.8%	473
BMI >= 25	33.8%	1,084
>=1 condition, out of: Stage II hypertension or higher, Diabetes before confirmatory testing OR BMI>=25	55.3%	1,771

The NEEM Program in Mann Taluka has so far successfully delivered care to 1135 families, and has featured upwards of 6300 patient-Health Sakhi interactions - while uncovering a number of interesting themes:

I] Disease prevalence exceeding prevalence for the State, as per NFHS-5:

• 39.0% of men, and 32.1% of women were found to have blood pressure high enough to need treatment (Stage 2 hypertension or higher); higher than NFHS-5 data for Maharashtra, which reported 24.4% & 23.1% respectively).

• 16.9% of men, and 13.4% of women were found to have high (>=140 mg/dl)random blood sugar readings; relative to NFHS-5 data for Maharashtra (15.3% & 14.6% respectively).

II] High proportions of newly discovered disease

• 34.8% of the screened population have blood pressure high enough to need treatment - but over four-fifths (80%) of these individuals have never been prescribed treatment for blood pressure previously.

• 7.5% of the screened population were found to have type 2 diabetes, at the time of point-of-care baseline screening. One-third (33%) of these individuals were unaware of this status.

III] Improvement in health outcomes over time

Over half of patients with an initial diagnosis of Stage 2 hypertension, have improved to a Stage 1 hypertension or lower. Over three-quarters of patients with an initial diagnosis of hypertensive crisis at baseline, improved to a stage of lesser disease severity.

Interestingly, 61.5% of patients in hypertensive crisis were women.

Reference: International Institute for Population Sciences. National Family Health Survey-5 2019-20; State Fact Sheet Maharashtra. Accessed June 2023, from http://rchiips.org/nfhs/NFHS-5_FCTS/Maharashtra.pdf

Section 2: What We're Reading: Evolution of community health workers: the fourth stage

In this section, we summarize work that highlights the opportunity to empower community health workers in order to solve primary care challenges globally

In the face of limited numbers of physicians and worsening physician-patient ratios across health systems, there is a clear acceptance that traditional physician-led, specialist-reliant healthcare models are impractical for the delivery of meaningful primary care.

This has led to a number of care delivery models featuring community health workers (CHWs) - the responsibilities of whom have evolved with time. Dr. Mor categorizes these evolutions to present a classification based on the features involved and responsibilities of CHWs:

Complexity and Task breadth →		
Autonomy ↓	**Narrow**	**Broad**
Low	Stage 1: Health Messenger	Stage 2: Physician Extender
High	Stage 3: Focused Provider	Stage 4: Comprehensive Provider

Stage 1: Health Messenger.
The CHW, often as a part-time worker, is responsible for health-related messaging and knowledge disbursal in an area of specific focus. E.g. The Accredited Social Health Activist (ASHA) in India and the Health-Development-Army (HDA) volunteer in Ethiopia.

Stage 2: Physician Extender.
The CHW as a full-time care provider is responsible for broader tasks that enable doctors to extend their reach beyond the clinic. E.g. The Costa Rican ATAP (Asistente Tecnico en Atencion Primaria) and the Brazilian ACS (Agentes Comunitarios de Saude)

Stage 3: Focused Provider.
The CHW is assigned specialized roles featuring complexity that require significant training - with the aim of substituting for responsibilities that are covered by doctors in traditional GP (general practitioner) models. E.g. SEARCH (Society for Education, Action and Research in Community Health) village health workers in Gadhchiroli, Maharashtra, India in the space of perinatal through to infant mortality; mental health interventions in Nepal, and Family Welfare Assistants (for family planning services) and Health Assistants (provision of vaccinations and treatment for malaria and tuberculosis), in Bangladesh.

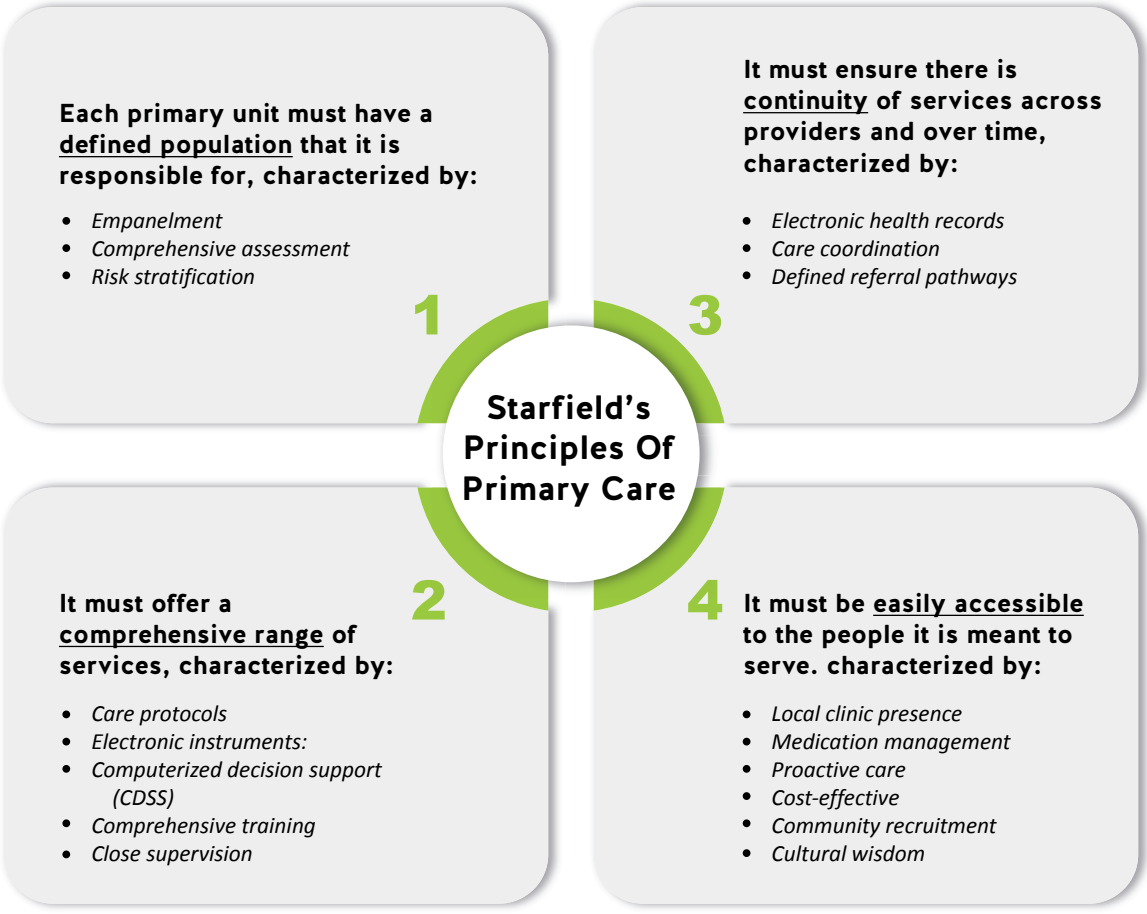
Stage 4: Comprehensive Provider.
Models in which CHWs are able to provide comprehensive primary care, under the remote supervision of a GP. The GP must however, not be physically present for, or need to directly interact with most patients. While this stage may not truly exist at present, the Alaskan Community Health Aide and Iranian Behvarz programs are representative of this evolution stage to the closest extent.

Mor et al go on to perform a qualitative comparative analysis (with respect to this 4th evolutionary stage of the CHW as the comprehensive provider) of six programs - the 2 above, and a further 4 working in rural Indian settings - against the characteristics of comprehensive primary care (see diagram) as elucidated by Barbara Starfield - the results of which can be found here.

The qualitative comparative analysis presented suggests that the following characteristics, are mandatory to develop a highly functional primary care program in which CHWs can serve as comprehensive providers:
(i) Empanelment (ii) Comprehensive assessment, (iii) Risk stratification (iv) Care protocols, and (v) Cultural wisdom

Mor et al write:

> The 6 absolutely essential features are (i) close supervision of the CHW; (ii) taking responsibility for coordinating the overall healthcare of the patient; (iii) defined referral pathways for the CHW to follow so that she knows when to move away from her protocols and consult with an expert; (iv) full medication management for the patient and not simply offering advice and guidance; (v) taking a proactive approach toward managing patients and not simply waiting for them show up at her clinic; (vi) a focus on cost-effectiveness so that the program uses scarce physician and financial resources in a very parsimonious manner.



Term	Description
Empanelment	Allows for care teams to have a clear picture beforehand, of which individuals or populations they are responsible for – and allows them to better track patients over time
Comprehensive Assessment	Protocol-guided comprehensive assessments can eliminate errors by omission, as well as deliver maximal benefit to patients for the time spent with providers
Risk Stratification	Risk stratification allows care teams to focus resources on those patients that need attention the most
Care Protocols	A thorough examination of each patient, in conjunction with well-defined treatment protocols can reduce errors and ensure accurate diagnoses and treatment plans
Electronic Instruments	Equipping care teams with instruments that allow them to arrive at diagnoses accurately and quickly, while also easing patient constraints
Computerized Decision Support (CDSS)	Decision support for evidence-based medicine as an aid - allows providers to deliver care more effectively
Comprehensive Training	Training primary care providers on critical clinical, technical, and communication skills is a key component of effective primary care
Close Supervision	The strength of supervision directly impacts the quality of primary care on offer
Electronic Health Records	EHRs allow for longitudinal records to be maintained, and reduce the likelihood of fragmented care delivery
Care Coordination	When specialty care referrals and/or follow-up care is required, guiding (and advocating for) patients is crucial in their care journey
Defined Referral Pathways	The identification and development of a high-quality referral network of hospitals and medical specialists
Local Clinic	The presence of a healthcare provider at a fixed location where the patient knows they are assured to receive care as well as privacy, is important for accessibility
Medication Management	Assisting patients in how they receive and subsequently manage their prescribed medicines – including avoiding polypharmacy
Proactive Care	Where healthcare providers venture out to where their patients are – and not wait to be approached by patients, as in a traditional GP setup
Cost-effective	A measure of the efficiency with which finances and licensed providers are harnessed
Community Recruitment	Brings with it the benefits of accessibility and cultural sensitivity
Cultural Wisdom	The incorporation of cultural practices can improve the effectiveness of care and adherence to healthcare recommendations

References:
Mor, N., Ananth, B.,et al. (2023). Evolution of community health workers: the fourth stage. Frontiers in public health, 11, 1209673. https://doi.org/10.3389/fpubh.2023.1209673

Starfield, B. (1998). Primary care: balancing health needs, services, and technology. Religion in America. https://books.google.co.in/books?hl=en&lr=&id=QMm17oCEjrEC&oi=fnd&pg=PA3&ots=1nKAAASBIj&sig=GmeYevJ2272mlwBw_-0sE0lL1hE&redir_esc=y#v=onepage&q&f=false

Vital Signs | Newsletter | Volume VI, July 2023

Section 3: Case Study

In this section, we provide a customer case study on what proactive care can mean for patient adherence, comprehension and long-term outcomes

Sarita (name changed to protect identity) is a 37 year old married female who is a member of the new 1Bridge NEEM cohort. She is a homemaker but also works on her family's plot of farmland as required.

Sarita's baseline health screening, conducted by a trained Dvara Health Sakhi, revealed exceptionally high random blood glucose levels - in excess of 300 mg/dl.

When her case was brought to the attention of the NEEM Digital Doctor and a patient consultation was initiated, Sarita revealed to the Health Sakhi and Digital Doctor that she had a prescription for insulin. The combination of uncontrolled blood sugar levels and an existing insulin prescription would typically lead to a re-evaluation of medications prescribed to a patient; possibly an increase in dosages or a change made to prescribed insulin analogues based on their duration of action. Sarita however, had an unexpected request - could the Digital Doctor prescribed her oral medications for diabetes instead?

Over the course of the provider-patient interaction, Sarita revealed that she had had a short hospitalization episode 5-6 years ago, after a fall. During this hospitalization, she had been prescribed (subcutaneously injectable) insulin - which she was then discharged home on.

Sarita subsequently did not attend her follow-up visit at the hospital due to family commitments and so was never taken off insulin. While initially regular with its use, the high costs of insulin began to bother Sarita - who in turn, began to ration its use. This indiscriminate rationing of medicines, likely contributed to her concerningly high blood sugar levels. As she had been asymptomatic, and as addressing her diagnosis would mean having to commute to the nearest health centre or hospital - Sarita reported that she chose not to take any further action, for more than 5 years. Moreover - at no point had she been told about the serious nature of her diagnosis.

This case study highlights several important learnings:

(i) how It is essential for providers to factor in patient needs, be it social, economic, or cultural - on an ongoing basis, (ii) the importance of proactive close follow-up care, (iii) the value of open discussions with care providers in addressing the reasons behind non-adherence, (iv) that asymptomatic non communicable diseases (NCDs) can be easily ignored by patients - and how accessibility and quality guidance from providers, can be key to helping patients address their diagnoses.

The Digital Doctor subsequently prescribed appropriate oral medications for Sarita, and directed Sarita's assigned Health Sakhi to follow up closely with her every 3-4 days to ensure adherence to the prescribed medications. 1.5 months into her NEEM care journey, Sarita is already showing positive signs with respect to bringing her blood sugar level closer to manageable levels.

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