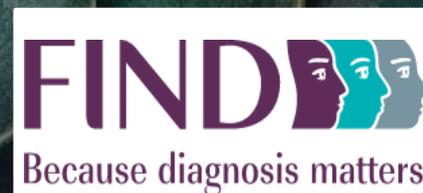


Diagnostic Gap and Digital Health Landscape Assessment for India

November 3rd 2020



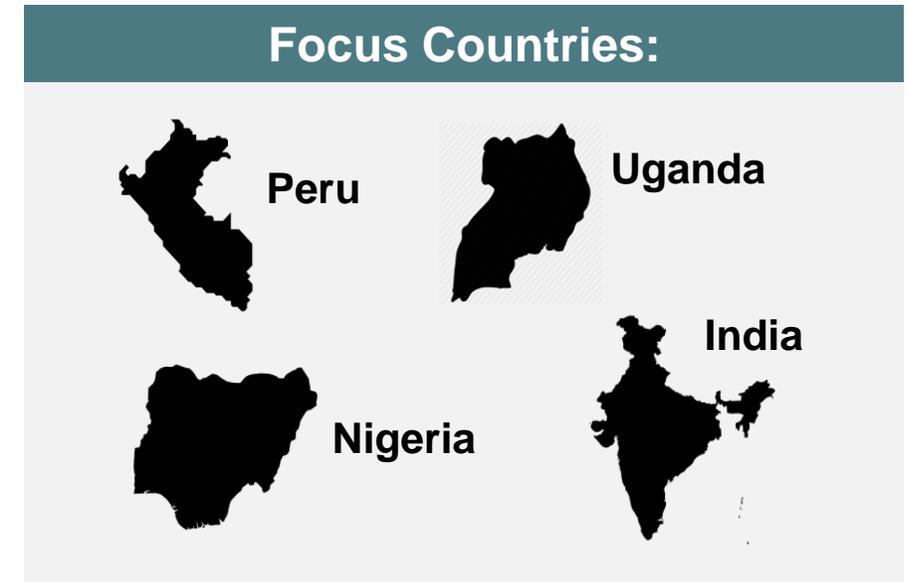
The assessment's objective was to prioritize diagnostic gaps in four focus countries and identify relevant digital health solutions that can address them

Primary objective:

- Identify the key gaps that prevent patients from accessing a quality diagnosis and how digital health solutions may address those gaps

Secondary objectives:

- Identify existing and promising digital health solutions in Peru, India, Nigeria and Uganda that are addressing some of these gaps.
- Identify the enablers and barriers to scale for digital health solutions



In India, the mixed methods research methodology included direct patient feedback, global and in-country expert opinion and desk research



256 Patient Surveys

- *Objective:* Understand barriers for patients seeking health care and recommendations for improvements of health care services
- *Mode:* Deployed by mobile phone via interactive voice response
- *Geography & Timeline:* Administered at the national level, between April and May 2020



63 Key Informant Interviews

- Included global and in-country experts across India, representing:
 - ❖ Patient advocacy groups
 - ❖ Government (Ministry of Health)
 - ❖ Implementing Partners
 - ❖ Public Health Experts
 - ❖ Funders
 - ❖ Digital Health Experts
 - ❖ Digital Solution Vendors



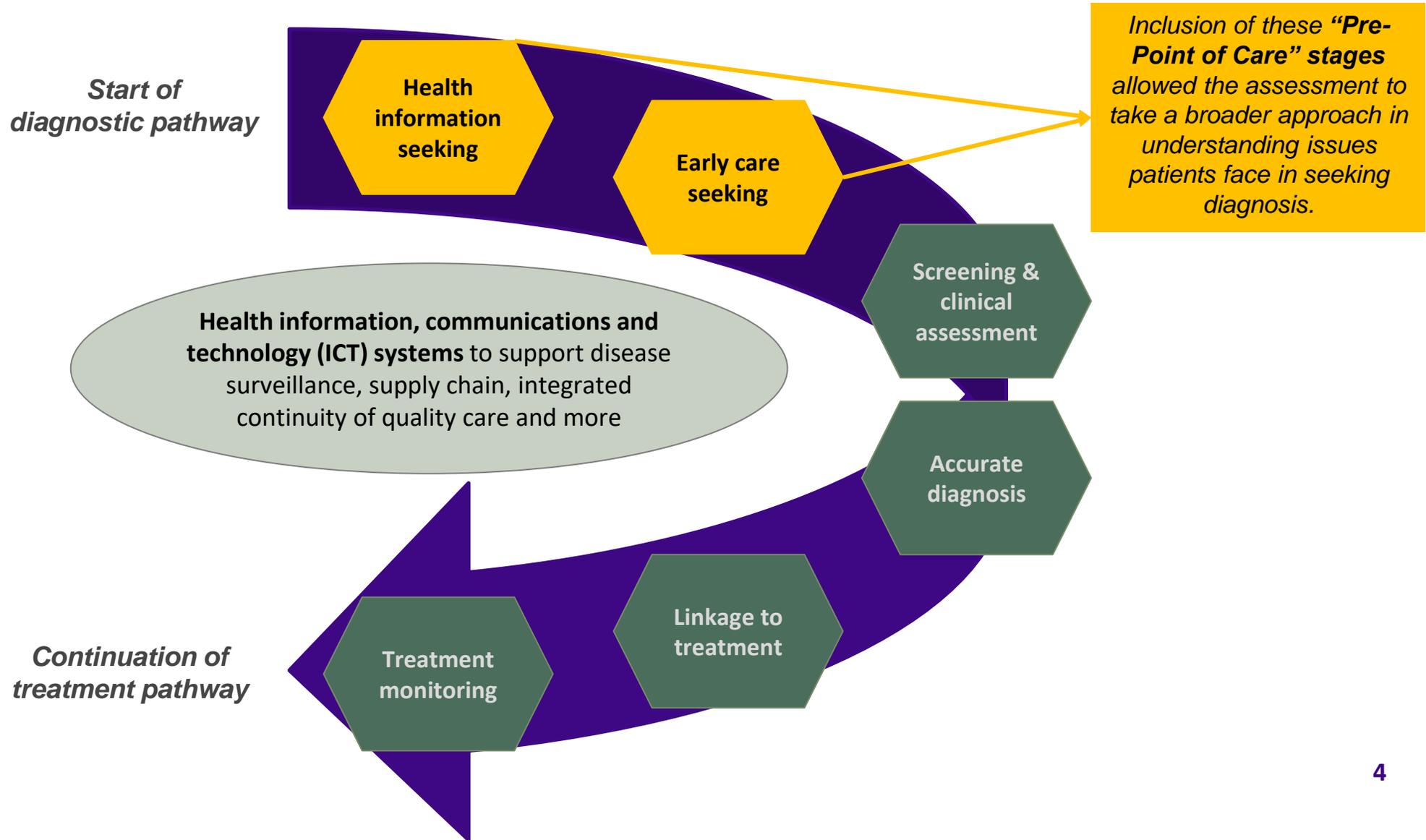
Publication Desk Review

- Broad review of public health literature and digital health solution landscapes
- Included health system and policy review, disease burden assessment, further validation of findings from stakeholder interviews and country-specific digital health solution landscaping

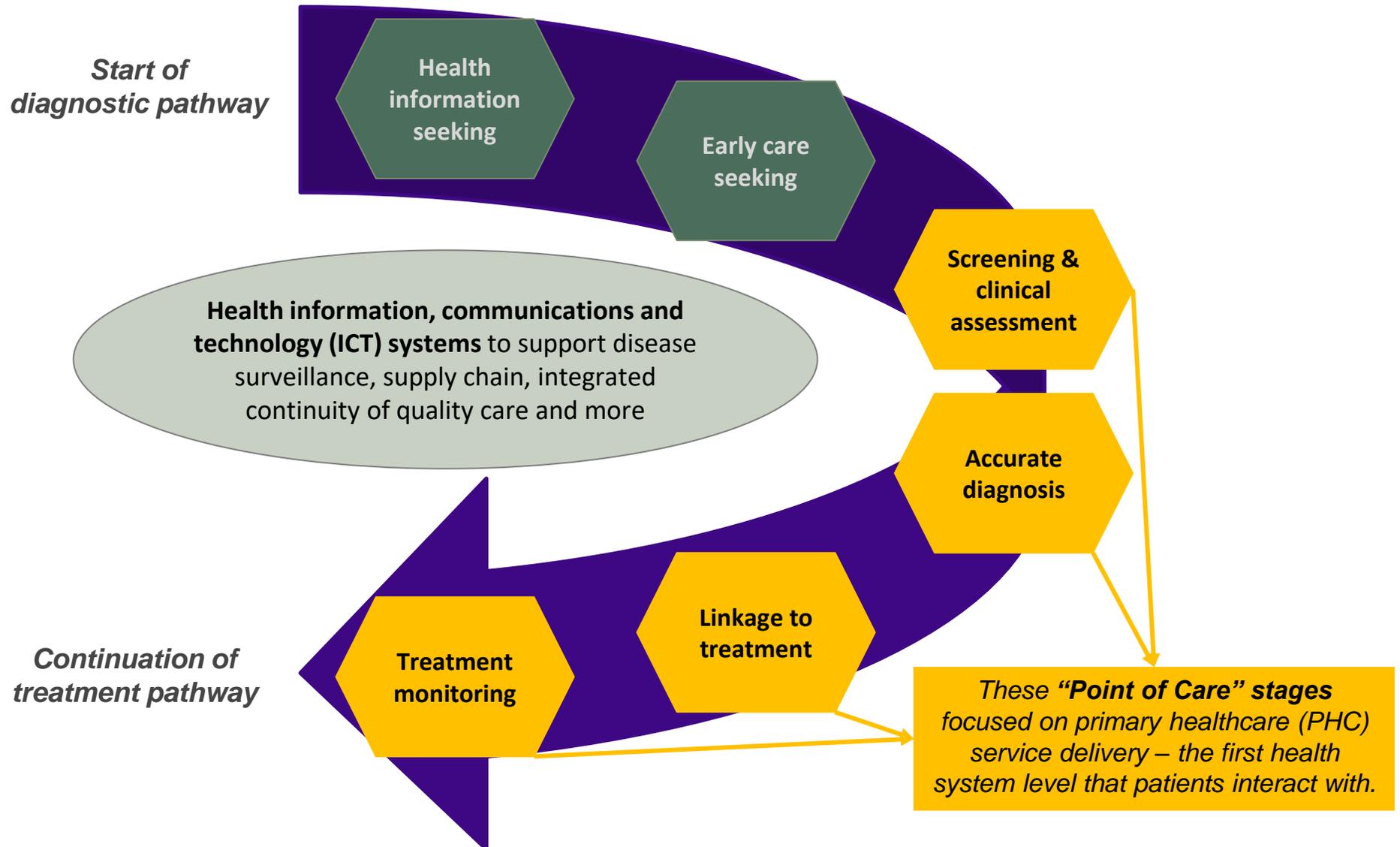


Research conducted between
March to July 2020

The assessment aimed to take a patient-focused perspective, considering all diagnostic related steps in the patient pathway, in a disease agnostic manner



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Country-specific diagnostic gaps prioritization methodology

The following factors were scored and weighted for each gap to determine the prioritization of the diagnostic gaps into **High**, **Medium** and **Low** priority gaps:

1. Potential of the gap causing direct and negative impact on patient health (45%)

- The more likely the gap is to directly cause morbidity and mortality, the higher the priority

2. Consistently prioritized by multiple stakeholders, especially patients (40%)

- The more strongly the feedback was expressed by patients and/or unanimous from different stakeholders, the higher the priority

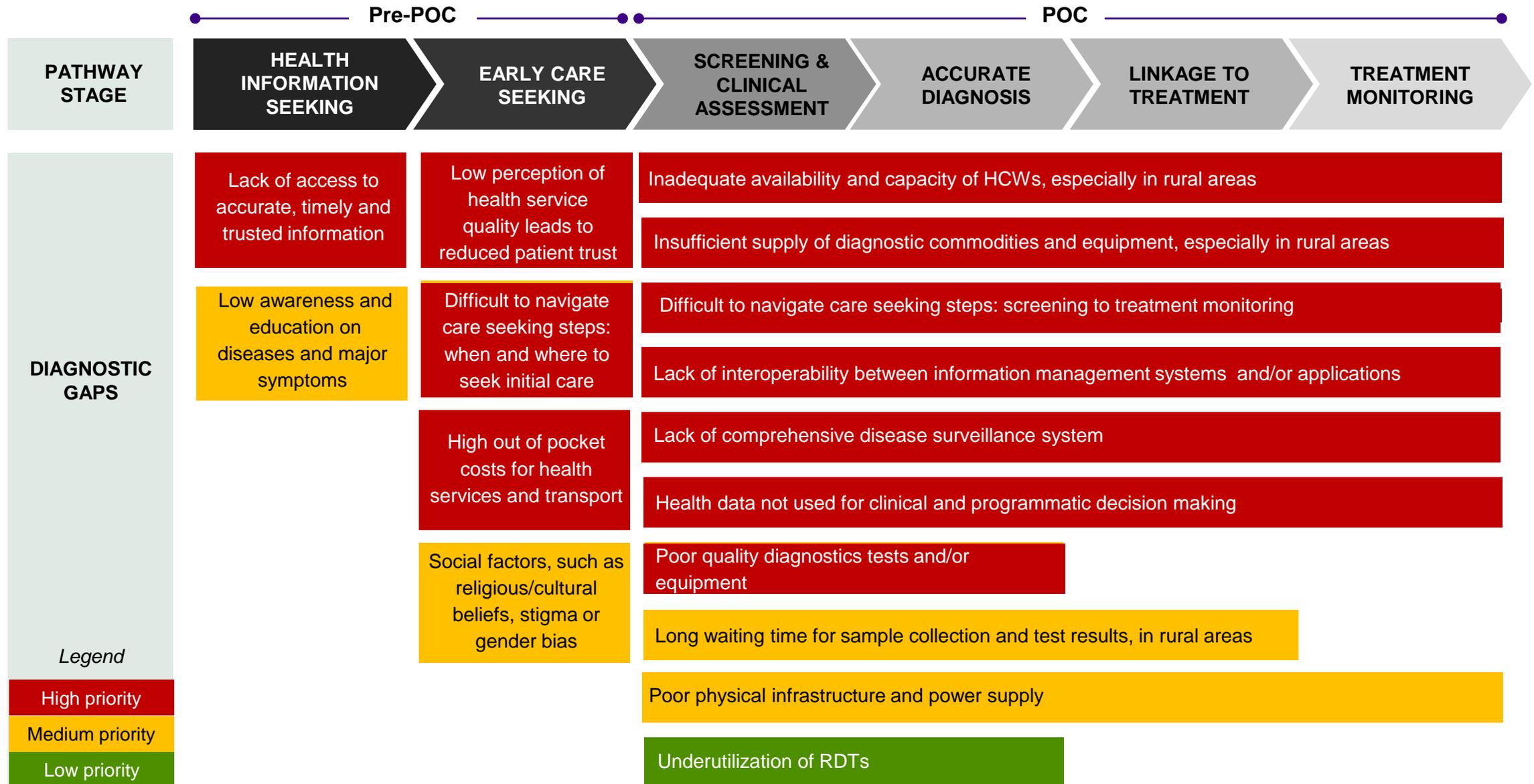
3. Applicability of the gap to multiple stages in the patient pathway (15%)

- The more likely the gap affects multiple stages of the patient pathway/health system , the higher the priority





India: Prioritized diagnostic gaps across the patient pathway



Legend

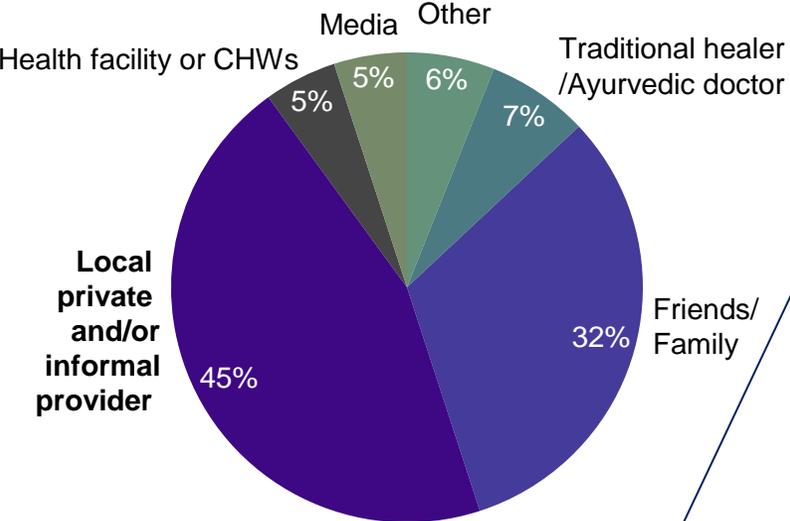
High priority

Medium priority

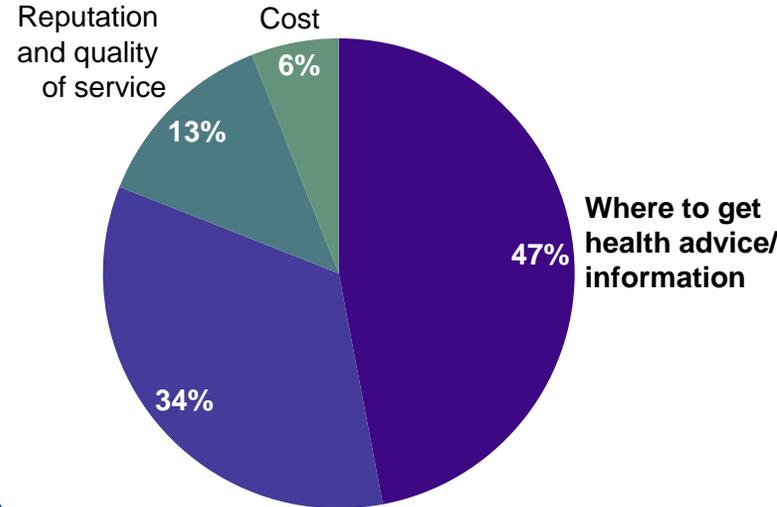
Low priority

In India, patients indicated dependence on local informal providers for health information and care seeking, with a strong desire for better access to quality information

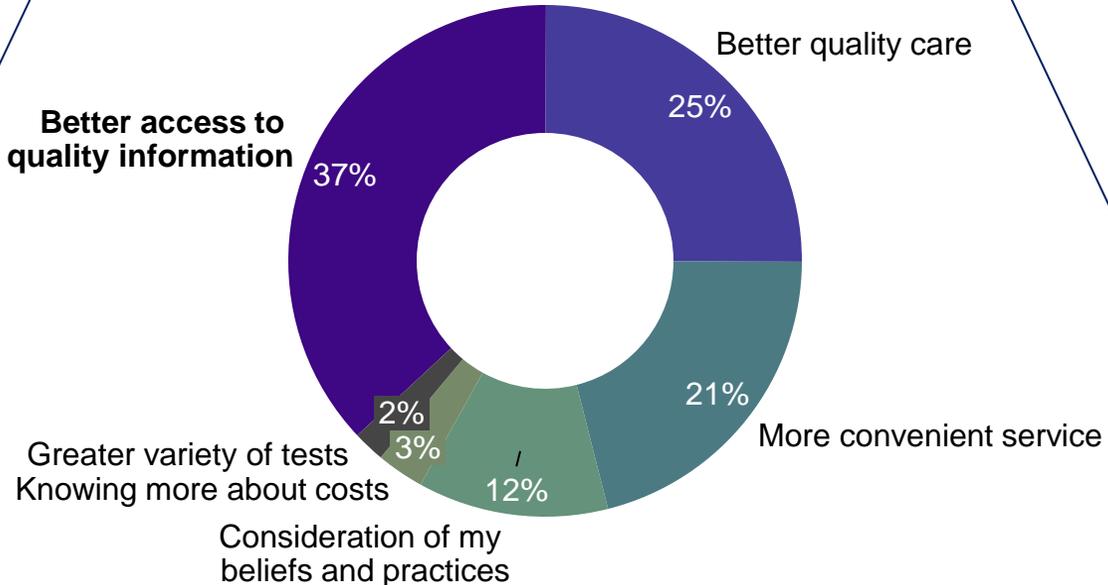
Where do you normally obtain health care advice when you feel sick?



What additional information would have been valuable to you in making your last decision to seek healthcare?



What improvements to health services or advice would be most important to you?



What would happen if you don't see a HCW



A lack of interoperability between information management systems and/or devices is a critical barrier to connected diagnostics

Absence of interoperability standards at a country level

Continued fragmentation and non-standardization of technology solutions

Inability to connect and integrate different software and hardware solutions

Barrier to:

- Connect standalone disease-specific LIMS and logistics IMS solutions
- Connect LIMS and EMR
- Cost-effective bundling of POC diagnostic devices and biometric monitors for broader diagnostic capabilities



NCDs and AMR are largely unaddressed throughout the patient pathway

NCDs: High health need, but neglected by MOH and donors

- Gaps in Pre-POC stages have most consequence for the patients: NCDs are often asymptomatic in early stages and individuals do not seek care if they feel well, leading to late care seeking and severely worse health outcomes
- In the POC stages, overburdened HCWs don't have time, resources or mandate to address NCDs
- If hypertension and diabetes screening and diagnosis can be prioritized, cardiovascular disease burden will be reduced significantly



Health needs and donor funding are not completely aligned. Funding is directed more to communicable diseases and MNCH; now and in the next five to ten years, the priority health needs are in NCDs, AMR and the infectious portfolio in the post-COVID world.

- Country Head, Implementing Partner, India

Antimicrobial Resistance (AMR) and future outbreak preparedness: Increasing and unaddressed threat, neglected by MOH and donors

- Pre-POC stages are fundamental gaps, given no or low awareness and information on AMR and its effects
- A lack of a functioning and integrated disease surveillance system needs to be addressed to manage AMR and outbreak threats

The following priorities for the digital health agenda were identified to address the key diagnostic gaps:

1

Engage patients with health knowledge to empower them and drive demand for quality care



2

Empower HCWs in delivering more accurate and efficient diagnosis closer to the POC to build trust in the patient-provider relationship



3

Shift focus to disease prevention and screening to identify health risks, diagnose diseases and target individual and community-level intervention earlier



4

Enable connected diagnostic systems, better use of data for decision-making and personalization of healthcare through interoperability



5

Establish appropriate evaluation standards and stage gates for implementation of digital diagnostics in country



Digital Health Priorities

Digital Health Solution Types

1

Engage patients with health knowledge to empower them and drive demand for quality care



Targeted client communication, via IVR, SMS, social media or mobile app
On-demand information services, health info and service marketplaces
Geo-mapping of health facilities and services by mobile or web

2

Empower HCWs in delivering more accurate and efficient diagnosis closer to the POC to build trust in the patient-provider relationship



HCW training job aids with apps using text, images, audio, video
HCW decision making support tools for clinical decision, patient screening, risk assessment, workflow and supply chain support
Smart portable devices, connected to apps. Can use AI for risk assessment, triage and diagnosis.

3

Shift focus to disease prevention and screening to identify health risks, diagnose diseases and target individual and community-level intervention earlier



Personal health tracking - case finding & notification contact tracing with apps delivered on mobile or web-based devices
Public health and disease surveillance systems
Bundled testing

4

Enable connected diagnostic systems, better use of data for decision-making and personalization of healthcare through interoperability



Data collection, storage, aggregation and visualization
Data exchange and interoperability – Connectivity and data exchange across systems using hardware and software apps

5

Establish appropriate evaluation standards and stage gates for implementation of digital diagnostics in country



Strengthen the evaluation, regulatory and implementation frameworks for digital diagnostic tools and platforms

India has an enabling technical environment but shares challenges in sustainable financing and MOH transition for longer-term implementation

Category	Enabler/Barrier to Scale	Peru	India	Nigeria	Uganda
Technical	Mobile penetration	Green	Green	Yellow	Yellow
Technical	Smartphone penetration	Yellow	Green	Yellow	Red
Technical	Digital infrastructure	Yellow	Green	Red	Red
Technical	Digital literacy and capacity of HCWs and MOH	Red	Yellow	Red	Red
Technical	Digitally trained workforce	Yellow	Green	Yellow	Red
Technical	Digital system standards	Red	Yellow	Red	Red
Technical, Ecosystem	National patient identifier	Yellow	Green	Red	Yellow
Ecosystem	Enabling gov't policy	Yellow	Green	Green	Yellow
Financial	Sustainable financing	Red	Red	Red	Red
Operational, Financial	Appetite for failure / long-term commitment	Red	Red	Red	Red
Operational	Clinical and operational validation, realized value proposition	<i>Enabler, dependent on solution.</i>			
Operational	User-centric, modular design	<i>Enabler, dependent on solution.</i>			
Operational, Ecosystem	Fit into broader health system	<i>Enabler, dependent on solution.</i>			

Legend

Enabler	Moderate Enabler	Barrier
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At the end of the day, it's all about the value proposition, in the field and for each stakeholder.

- Digital Solution Vendor, India

The digital opportunity is about bringing screening and diagnostics closer to the patient, in their home, community or at PHC



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Integration of screening & diagnostic service delivery with digital systems is a huge gap and should be the next revolution in public health.

- Country Head, Implementing Partner, India

Panel Discussion

MODERATOR



Sanjay Sarin,
Head of FIND India

PANELISTS



Dr Ramya Ananthakrishnan,
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Blessina Kumar,
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