



**Evaluating Digital Health Transformation in Pan American Region Countries
(Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic and
Jamaica) - Using Global Digital Health Monitor Indicator**

International Institute of Health Management Research, Delhi

Mentor- Dr. Nishikant Bele
IIHMR Delhi

Presented by- Dr. Shradha Bihani
(PG/23/113)

Mentor Approval

presentation incorporating the necessary changes as discussed. Kindly review them at your convenience and let me know if any further modifications are required.

I look forward to your feedback.

Thank you,

Shradha Bihani

...



Nishikant Bele
To You

5:01 PM

...



Approved
Nishikant

Get [Outlook for Android](#)

...

Introduction (1/2)

- Digital health is transforming healthcare delivery globally through tools like electronic health records (EHRs), telemedicine, and AI. It enhances efficiency, equity, and decision-making across health systems.
- As per WHO, digital health represents the integration of information and communication technologies into all aspects of healthcare, helping individuals, providers, and systems make informed decisions.
- In the Pan American region, countries face diverse challenges—ranging from aging populations to health inequities—that require robust digital solutions. The COVID-19 pandemic accelerated demand for digital health, highlighting the need for resilient, scalable systems.

Introduction (2/2)

- However, digital maturity levels vary significantly across countries. While nations like Brazil (adopting telemedicine and developing e-SUS software) and Chile (Digital Hospital initiative) show advanced digital infrastructure and governance, others like Jamaica (policy gaps) and the Dominican Republic (disparities in infrastructure, digital literacy) are still developing key components.
- This study assesses the digital health maturity of seven countries—Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, and Jamaica—using the WHO-ITU framework to benchmark progress and identify gaps.

Research Question

How does the Global Digital Health Monitor Indicator (GDHMI) assess the status of digital health transformation in Pan American Region countries – Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic and Jamaica?

Objectives of Your Study



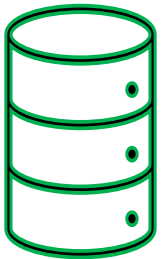
Methodology (1/2)

Research Design

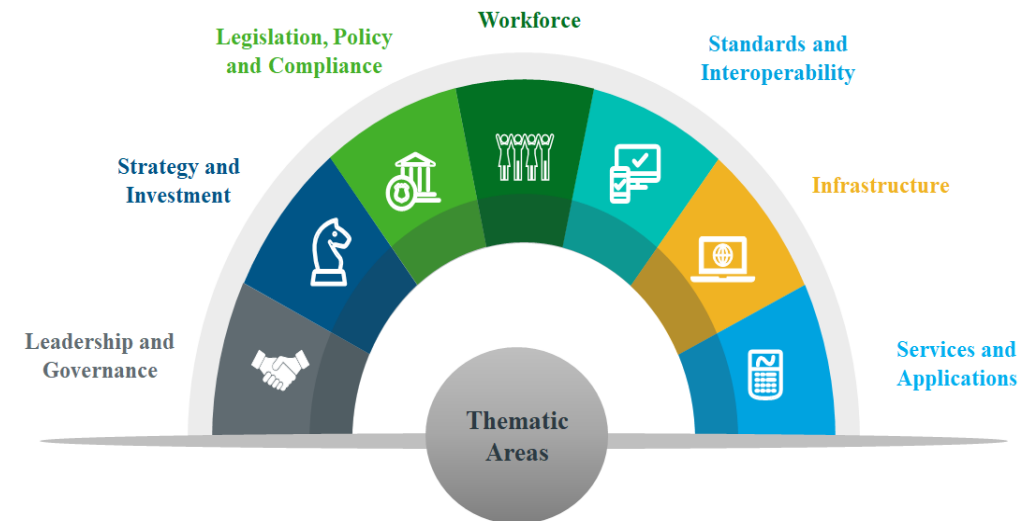


A descriptive research design was employed. The **Digital Health Maturity Scoring Tool** is a structured assessment framework designed to evaluate the development and effectiveness of digital health systems within a healthcare environment. This tool is based on the **WHO/ITU eHealth Strategy Toolkit**, which categorizes digital health readiness into seven thematic areas.

Data Collection and Country Selection



Secondary data was collected from WHO, PAHO, government portals, and public repositories. Of the 35 PAHO member countries, only 7 with sufficient data across 23 indicators were included. Countries with incomplete data were excluded to preserve accuracy.



Methodology (2/2)

Each of these **seven areas** is further broken down into **23 key indicators**, providing a detailed assessment of a country's digital health ecosystem.

Scoring scale across 23 key indicators

- **1: Non-existent**
- **2: First initial steps taken**
- **3: Existing but not in working order**
- **4: Existing in working order but not implemented at organizational level, or scaled at developmental level**
- **5: Fully developed, implemented, and is scalable**

By aggregating these scores, each country will receive an overall **Digital Health Maturity Score**, placing them within a **Digital Health Maturity Scale** from Level 1 (least mature) to Level 5 (most mature).

Digital Health Maturity Scoring Scale

- **1: Very beginning stage**
- **2: Early stage, with foundational elements in development**
- **3: Moderate level of progress**
- **4: Advanced stage with most enablers in place**
- **5: Highest maturity level**

Dimension	Current Maturity (0-5)
Leadership & Governance	4.2
Strategy & Investment	3.8
Legislation, Policy & Standards	3.5
Workforce	3.2
Standards & Interoperability	3.0
Infrastructure	2.8
Services & Applications	2.5

[illegible]

Dimension	Maturity Level (0-5)
Leadership & Governance	4
Strategy & Investment	4
Legislation, Policy & Standards	5
Workforce	2
Standards & Interoperability	2
Infrastructure	3
Services & Applications	3

[illegible]

Results (3/7)

Chile scored **4** - It has strong investment and digital health service delivery systems, such as the Digital Hospital initiative

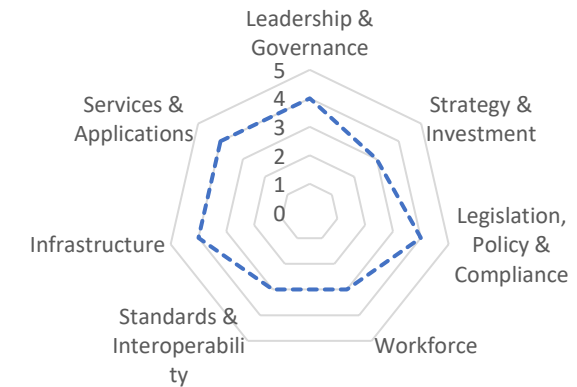


Figure 3 : Chile's Digital Readiness Profile

[illegible]

Dimension	Maturity Level (0-5)
Leadership &...	4
Strategy & Investment	3
Legislation, Policy &...	3
Workforce	3
Standards & Interopera...	3
Infrastructure	2
Services & Applications	2

[illegible]

Dimension	Maturity Level (0-5)
Leadership &...	2
Strategy & Investment	3
Legislation, Policy &...	4
Workforce	2
Standards & Interopera...	3
Infrastructure	3
Services & Applications	3

[illegible]

Dimension	Maturity Score (0-5)
Leadership & Governance	3
Strategy & Investment	4
Legislation, Policy & Standards	5
Workforce	4
Standards & Interoperability	3
Infrastructure	2
Services & Applications	2

[illegible]

Dimension	Maturity Level (0-5)
Leadership & Governance	3
Strategy & Investment	3
Legislation, Policy & Standards	4
Workforce	2
Standards & Interoperability	1
Infrastructure	2
Services & Applications	2

[illegible]

Discussion (1/2)

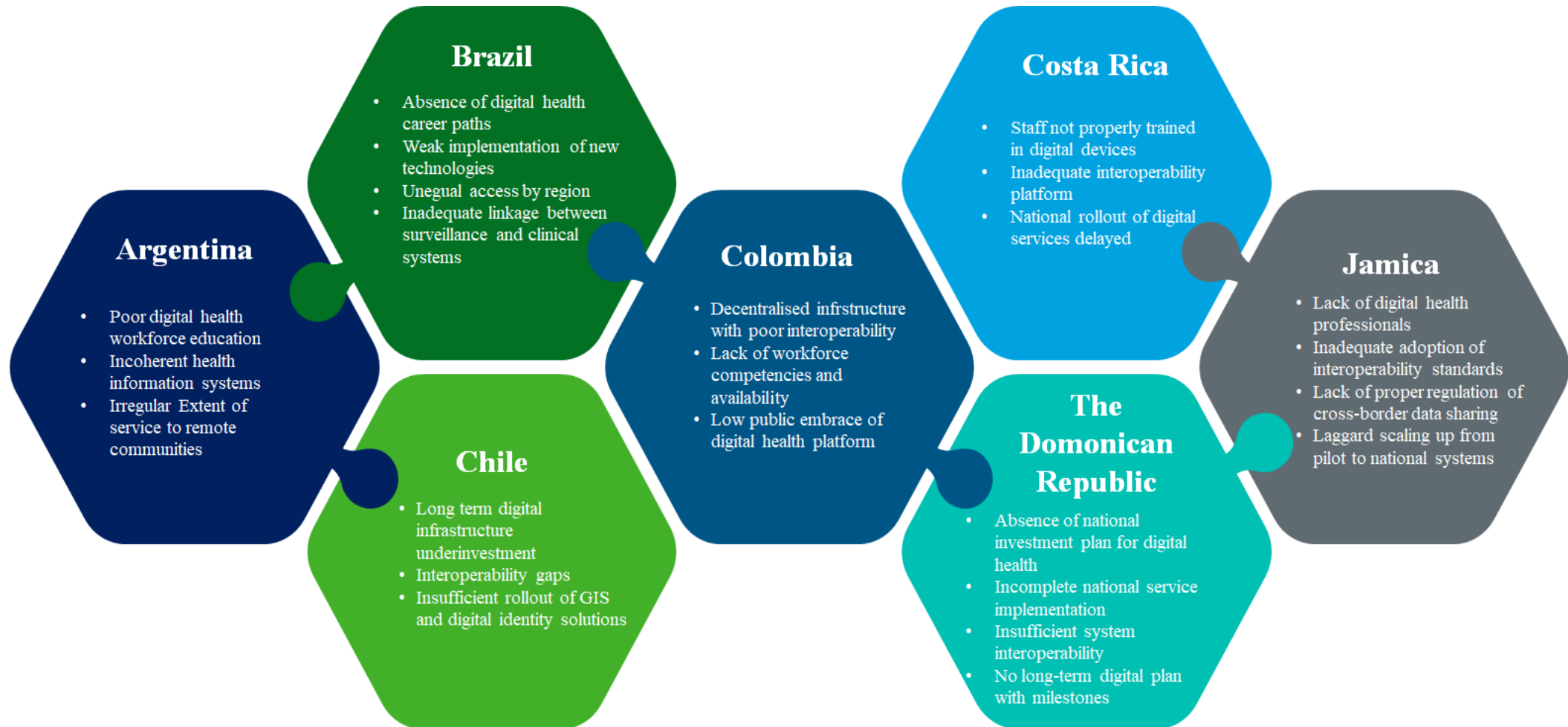


Discussion

- 1 Digital health maturity varies widely across countries despite regional similarities
- 2 High-performing countries (Brazil, Chile, Colombia) have strong governance, integrated platforms, and sustained investments.
- 3 Moderate-maturity countries (Argentina, Costa Rica, Jamaica, Dominican Republic) show fragmented systems and partial implementation.
- 4 Success is driven by operationalization, not just planning
- 5 Stakeholder coordination is key: strong collaboration between government, private sector, and donors boosts sustainability

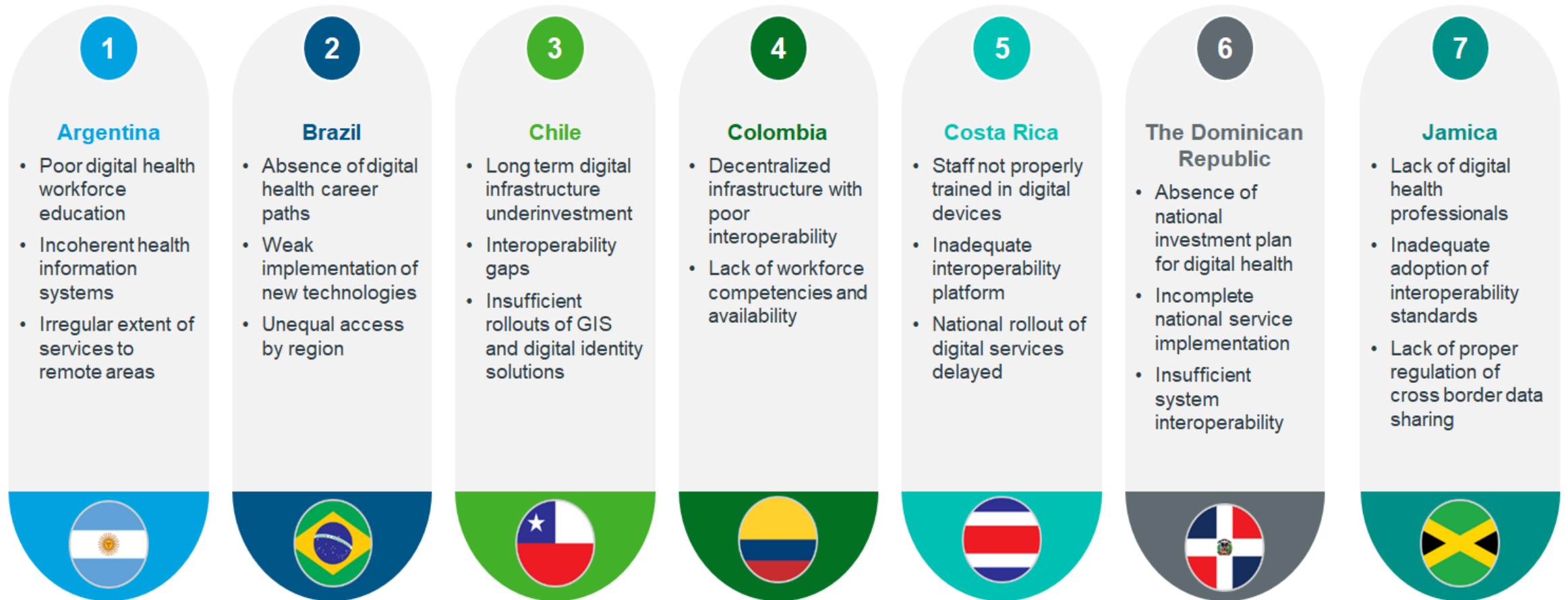
Discussion (2/2)

Country wise gaps identified



Conclusion

Digital transformation in healthcare across the Pan American region (Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, and Jamaica) is underway but remains inconsistent. Most countries are in the moderate maturity phase, with foundational elements in place but not fully implemented.



Recommendations

ANNEXURE (1/2)

Leadership & Governance	Rating	Strategy and	Rating	Legislation, Policy,	Rating	Workforce	Rating	Standards &	Rating	Infrastructure	Rating	Services &	Rating
National governance bodies established to prioritize digital health	No central body; digital health governance is ad hoc	Existence of a national eHealth/digital health strategy or framework	No digital health strategy; draft developed but not reviewed	Legal framework established for data protection and cybersecurity	No data security law for digital health	Digital health included in pre-service training of health professional.	No digital health curriculum in pre-service training	Established national digital health architecture and/or health information exchange	No national digital health architecture or health information exchange (HIE) established	Network infrastructure readiness for digital health	0	Digitally scaled health systems implemented at the national level	National priority areas are not supported by digital health at any scale.
	Governance exists but is inactive or irregular		National digital health strategy or framework approved.		A data security law for digital health is proposed and under review		Digital health curriculum proposed, under review		National digital health architecture/HIE proposed, not approved		<25		<25% of national priority areas supported by digital health, with implementation initiated
	Governance and working groups are active with defined scope and regular stakeholder engagement		National digital health costing plan developed and approved.		A data security law for digital health is passed but not fully implemented		Digital health curriculum underway, covers <50% trainees		National digital health architecture/HIE operable with core functions		26-50		25-50% of national priority areas supported by scaled digital health systems
	Fully functional, government-led governance with inter-ministerial consultation and active monitoring via a work plan		National digital health strategy partially implemented with resources for full execution		A data security law for digital health is implemented but poorly enforced		Digital health taught to 50-75% of health trainees		Government leads and enforces fully implemented national digital health architecture/HIE		51-75		50-75% of national priority areas supported by scaled digital health systems
	Institutionalized, nationally recognized digital health governance with inter-ministerial consultation, gender-balanced teams, and stable oversight		National digital health strategy fully implemented, with planning for the next cycle underway		A data security law for digital health is implemented and consistently enforced		Digital health taught to >75% of health trainees		National digital health architecture/HIE provides core functions, is regularly updated, and supports strategic planning and		>75		All national priority areas supported by >75% national-scale digital health systems with monitoring and evaluation
	Digital health is absent from the national strategy and implemented ad hoc		No budget line item for digital health available.		No law protecting individual privacy in digital health data		No digital health curriculum in in-service training		No digital health standards for data exchange, security, privacy, or hardware		No plan for supporting digital health infrastructure and maintenance		Health system registries of providers and facilities are unavailable, inaccessible, and outdated
Digital health integrated into national strategic planning	Digital health inclusion is under discussion with proposed language under review	Public funding allocated for digital health initiatives	Non-systematic budget for digital health exists, often project-based	Privacy laws governing consent, confidentiality, and access to health data	A privacy law for digital health data is proposed and under review	Digital health integrated into in-service training programs	Digital health curriculum proposed for in-service training	Adoption of standardized health information protocols	Some digital health standards for data exchange, security, and hardware are adopted	Plans and support in place for maintaining digital health infrastructure	Plan for digital health infrastructure developed but not implemented	Digital identities and GIS mapping established for providers, administrators, and facilities	Health system registries are under development but not yet available
	Digital health is included in national strategies or plans		A structured digital health budget exists but is underfunded (less than 50% of need)		A privacy law for digital health data is passed but not fully implemented		Digital health curriculum implemented for <50% workforce		National digital health standards for data exchange and security have been published and disseminated		Partial implementation of digital health infrastructure plan, with 0-25% of required infrastructure in use		Health system registries are available but incomplete and inconsistently maintained
	Digital health is implemented under national strategies or plans		A structured digital health budget exists but is moderately underfunded (over 50% of need)		A privacy law for digital health data is implemented but inconsistently enforced		Digital health curriculum implemented for 50-75% workforce		Industry-based digital health standards are widely used, with routine conformance testing for quality assurance		Partial and consistent implementation of digital health infrastructure plan, with 25-50% of required infrastructure in use		Health system registries are available, used, regularly updated, and geo-tagged for GIS mapping
	Digital health is implemented, evaluated, and optimized in national strategies or plans		A structured digital health budget exists and fully meets the country's needs		A privacy law for digital health data is implemented, consistently enforced, with protections for vulnerable groups		Digital health curriculum implemented for >75% workforce		Data standards are updated regularly and used for health system monitoring and national planning		75% of public healthcare sector has available, maintained, and upgraded digital health infrastructure with		Geotagged health system registries are available, actively used, and regularly updated and evaluated

ANNEXURE (2/2)

Systems in place for adopting and governing emerging technologies	No emerging technologies plan for public health goals	Regulation s ensuring confidenti ality and patient data privacy	No protocols or policies govern the use of connected medical devices and health services	Training programs developed for the digital health workforce	There is no training available for digital health workforce in the country.	Digit al ident ity syste ms in place for indivi duals	No secure registry or master patient index exists.
	A plan for an emerging technology exists but is not implemented		Protocols for connected devices and digital health services are proposed and under review		Digital health workforce gaps assessed, training in development		A secure registry exists, but is incomplete, underused, and irregularly maintained
	A plan for emerging technology exists, with identified governance mechanisms		Protocols for connected devices and digital health services are passed but not fully implemented		Professional training is available, but graduates are not yet deployed.		A secure registry exists, is in use, and includes <25% of the relevant population
	An emerging technology plan is implemented, funded, monitored, with governance mechanisms in place		Protocols for connected health services, including AI, are implemented but not consistently enforced		Trained digital health professionals deployed, gaps remain		A secure registry exists, is in use, and includes 25-50% of the relevant population
	An emerging technology plan is implemented, funded, monitored, updated, with active governance mechanism		Protocols for connected health services, including AI, are implemented and consistently enforced		Sufficient trained digital health professionals available		A secure registry exists, is in use, and includes >75% of the relevant population, with data curated and strategies in place to ensure full representation
National digital health plans include equity, diversity, and human rights considerations	Digital health strategies lack consideration of equity and human rights	Policies in place for secure cross-border health data exchange and privacy	No protocols exist for secure cross-border health data exchange and privacy	Establishe d career pathways for public sector digital health profession als	No digital health workforce strategy; distribution is ad hoc	Secur e syste ms avail able for patien t feedba ck	No secure patient feedback system exists.
	Digital health strategies consider equity and human rights ad hoc		Cross-border data exchange protocols proposed and under review		National needs assessment identifies digital health skills, focusing on female health workers		A secure patient feedback system exists for some services, but is incomplete, sporadically used, and irregularly maintained
	Digital health strategies formally consider equity and human rights, but lack specific strategies to address them.		Cross-border data exchange protocols passed but not fully implemented		Digital health roles mapped to workforce schemes, 25-50% public sector workforce in place.		A secure feedback system exists, is active, and includes data from <25% of relevant services/locations, available to some of the population
	Digital health strategies formally consider equity and human rights, with ad hoc strategies to address them		Cross-border data exchange protocols implemented but not consistently enforced		HR policy and plan exist for digital health skills, 50-75% public sector workforce in place		A secure feedback system exists, is active, and includes data from 25-75% of relevant services/locations, available to most of the population
	Digital health strategies are evaluated for equity and human rights, with documented plans to address access gaps for vulnerable groups		Cross-border data protocols implemented and consistently enforced		Long-term plan for digital health workforce in place, >75% positions filled, with focus on female workers and sustainable performance management		A secure feedback system exists, is accessible, active, and includes data from >75% of services/locations, available to 100% of the population
						Digit al health suppo rts popul ation health mana geme nt efforts	No digital health contribution to routine reporting or data-driven population health management
							Digital systems at district/state levels contribute to national public health reporting and population health management
							Digital systems at facility/community levels support national public health decision-making
							Digital systems at facilities, communities, and individual levels support public health decision-making
							Digital systems at all levels enable timely public health reporting and decision making

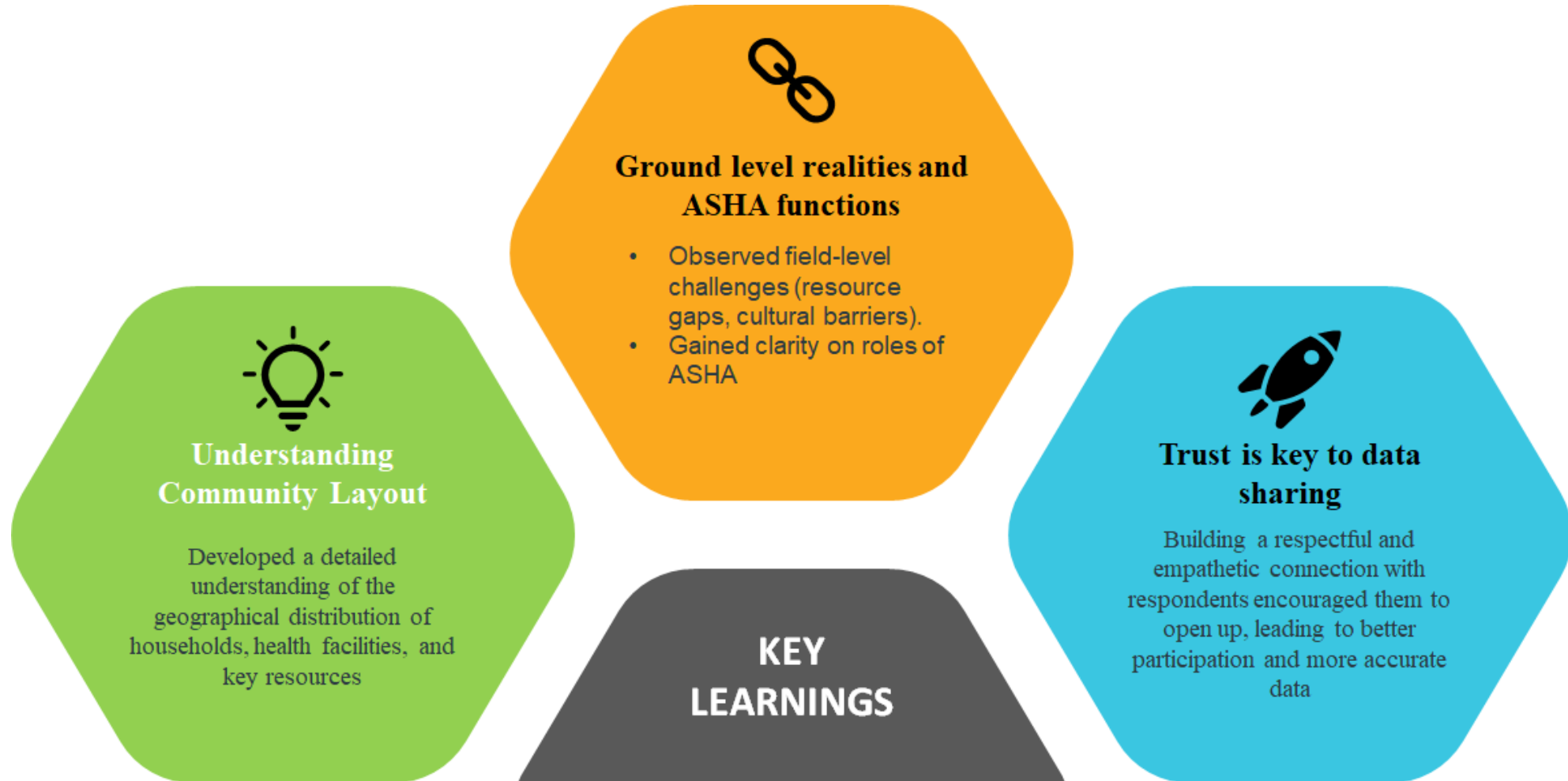
References (Only Vancouver Style)

- Shah B, Allen JLY, Chaudhury H, O'Shaughnessy J, Tyrrell CSB. The role of digital health in the future of integrated care. Clinics in Integrated Care [Internet]. 2022 Dec 1 [cited 2025 Apr 29];15:100131. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S2666869622000434>
- Digital implementation investment guide (DIIG): integrating digital interventions into health programmes [Internet]. [cited 2025 May 6]. Available from: <https://iris.who.int/bitstream/handle/10665/334306/9789240010567-eng.pdf?sequence=1>
- Harris T. Digital transformation in healthcare: Expert Guide and Insights for 2024 [Internet]. 2024 [cited 2025 Apr 29]. Available from: <https://www.torryharris.com/knowledge-zone/digital-transformation-in-healthcare>
- Washington DC. 61st Directing Council 76th Session of the Regional Committee of WHO for the Americas [Internet]. [cited 2025 Apr 29]. Available from: <https://www.paho.org/sites/default/files/2024-08/cd61-inf-10-b-e-roadmap-digital-transformation.pdf?utm>
- National eHealth Strategy Toolkit [Internet]. 2012. Available from: www.who.int
- Design Gastón Cleiman Diego Vapore Nahuel Vercellino A, Bermúdez N, Conde A, Doane D, Ibararán P, Kang D, et al. THE GOLDEN OPPORTUNITY OF FOR LATIN AMERICA AND THE CARIBBEAN [Internet]. 2022 [cited 2025 Apr 30]. Available from: <https://publications.iadb.org/en/golden-opportunity-digital-health-latin-america-and-caribbean>
- 68th SESSION OF THE EXECUTIVE COMMITTEE [Internet]. 2021 [cited 2025 Apr 30]. Available from: <https://iris.paho.org/handle/10665.2/59014>
- Ministry of Health & Wellness, Jamaica [Internet]. 2021 [cited 2025 Jun 15]. Jamaica pursues digital transformation of health sector. Available from: <https://www.moh.gov.jm/jamaica-pursues-digital-transformation-of-health-sector/?utm> World Bank. World bank. [cited 2025 Jun 14]. Unemployment, total (% of total labor force) (modeled ILO estimate). Available from: <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS>

INVOLVEMENT IN COMMUNITY OUTREACH PROGRAMME (COP) ACTIVITIES

- **Total no. of visits done by the Student: 10**
- **Day-wise activities done by the student:**
 1. Mapping and listing of the area.
 2. Interaction with the community and frontline healthcare workers.
 3. Conducted health profile survey

KEY LEARNING FROM COP ACTIVITIES



Ground level realities and ASHA functions

- Observed field-level challenges (resource gaps, cultural barriers).
- Gained clarity on roles of ASHA



Understanding Community Layout

Developed a detailed understanding of the geographical distribution of households, health facilities, and key resources



Trust is key to data sharing

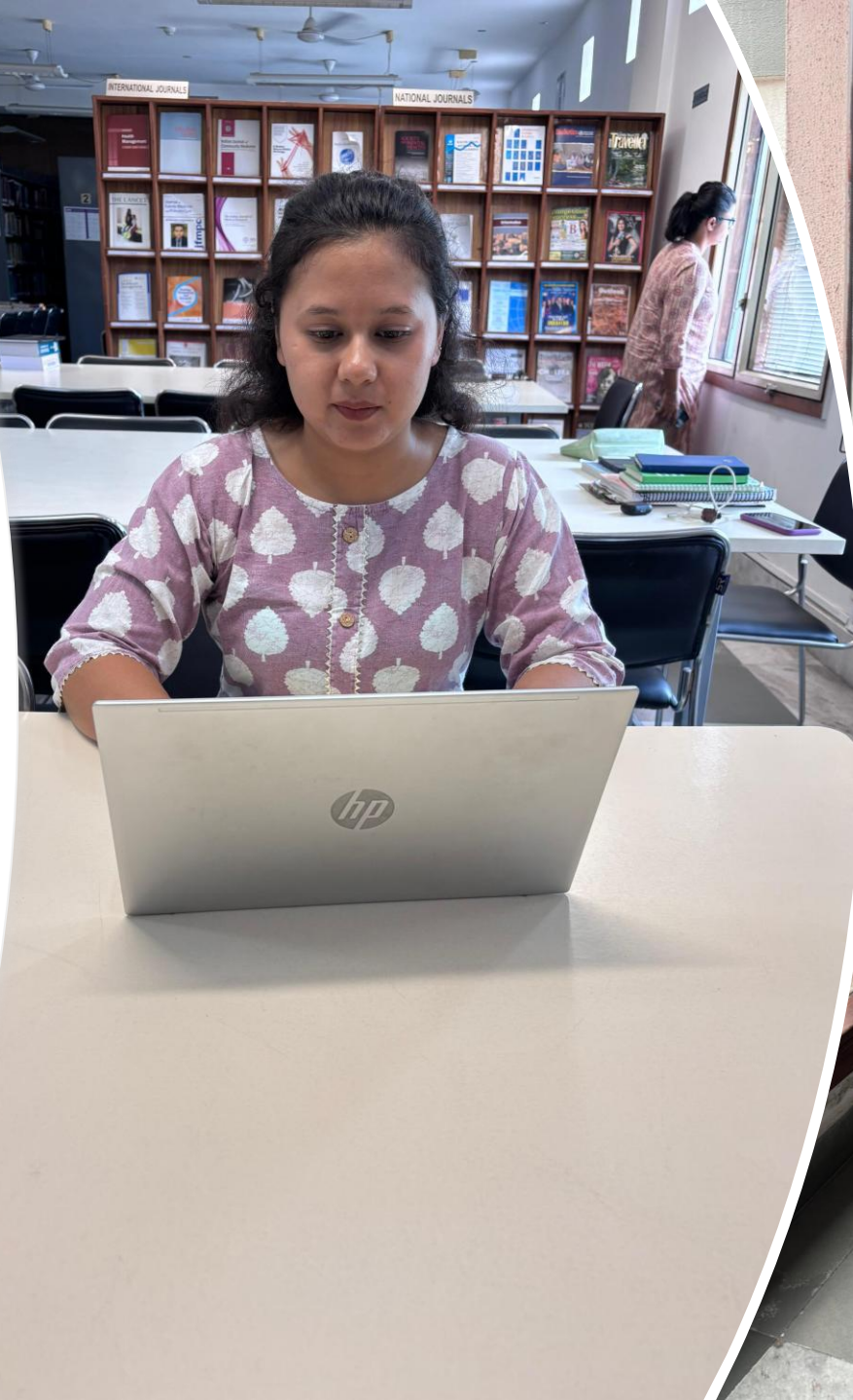
Building a respectful and empathetic connection with respondents encouraged them to open up, leading to better participation and more accurate data

KEY LEARNINGS

COP FIELD ACTIVITIES PHOTOGRAPHS



Pictorial Journey (1/2)



Pictorial Journey (2/2)



Thank You

Any Questions