
Navigating the Health Technology Revolution: Innovation and Equity in Primary Health Care

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Director

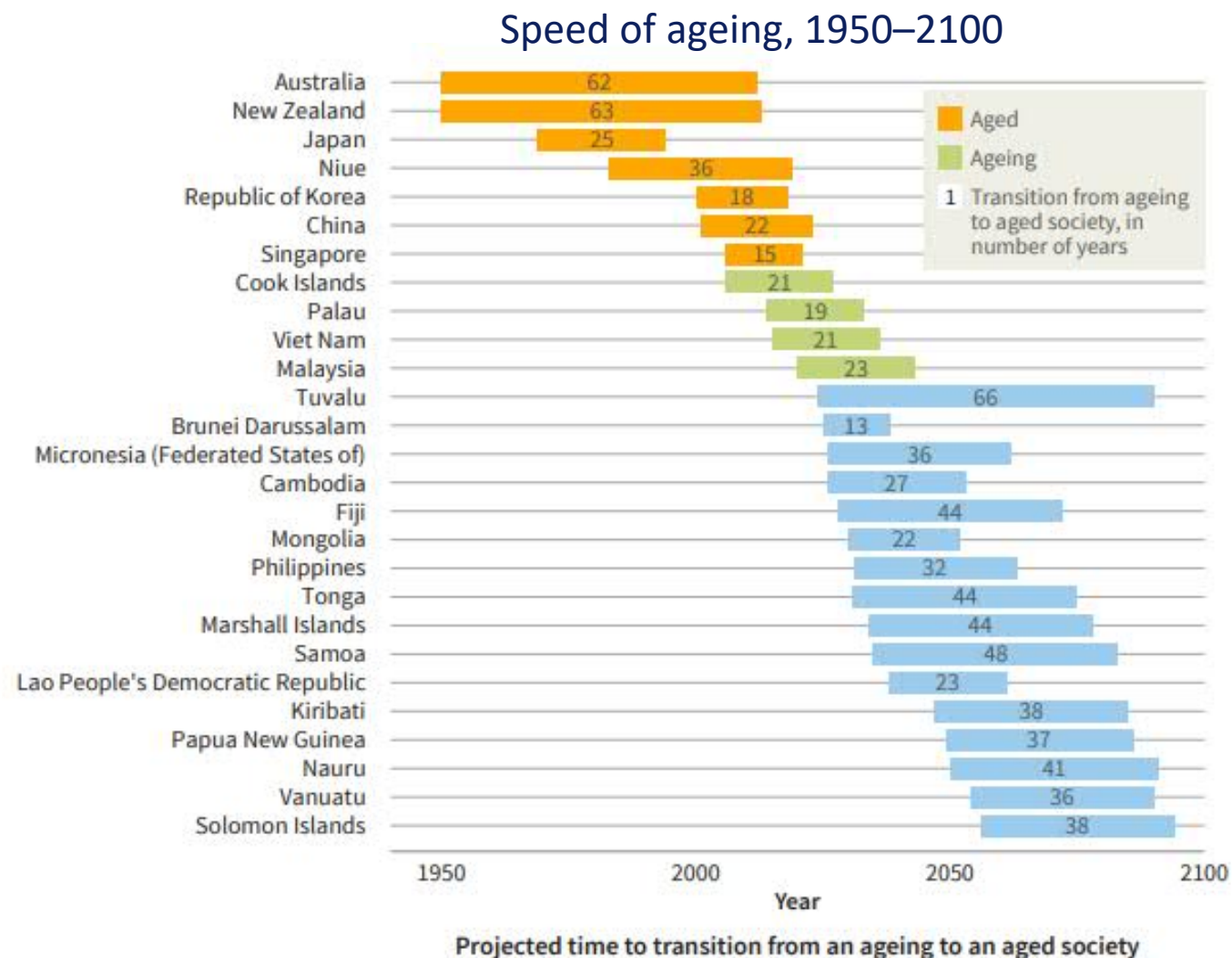
Data, Strategy, and Innovation

WHO Regional Office for the Western Pacific



Western Pacific is ageing fast

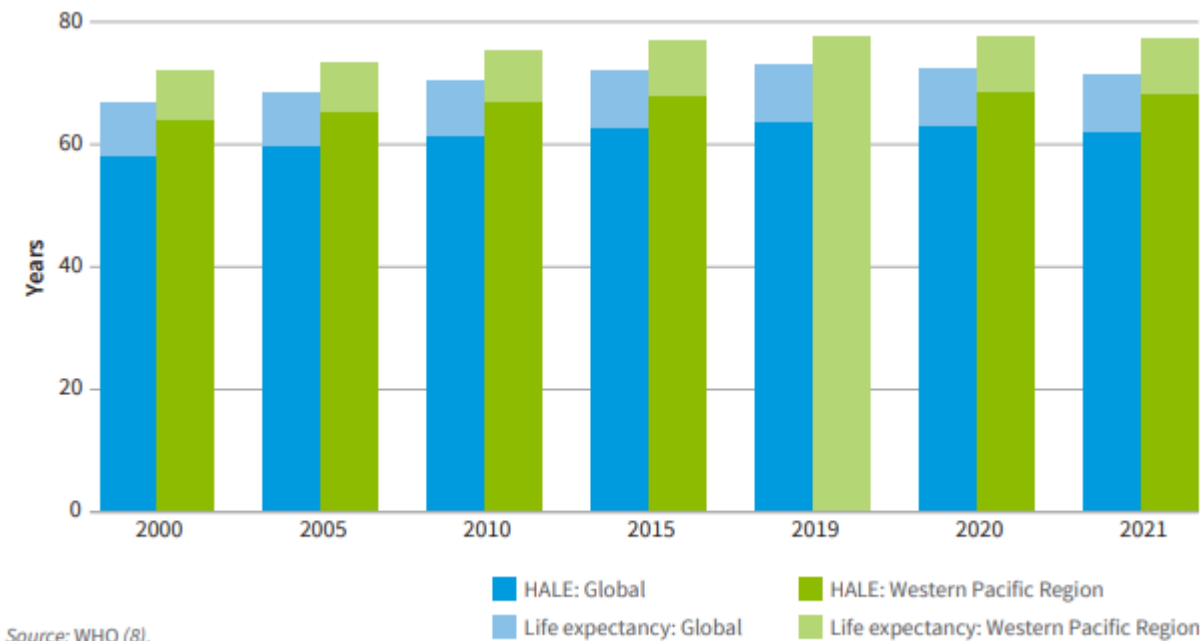
More than 240 million older people are residing in the Western Pacific Region. This number is projected to **double** by 2050.



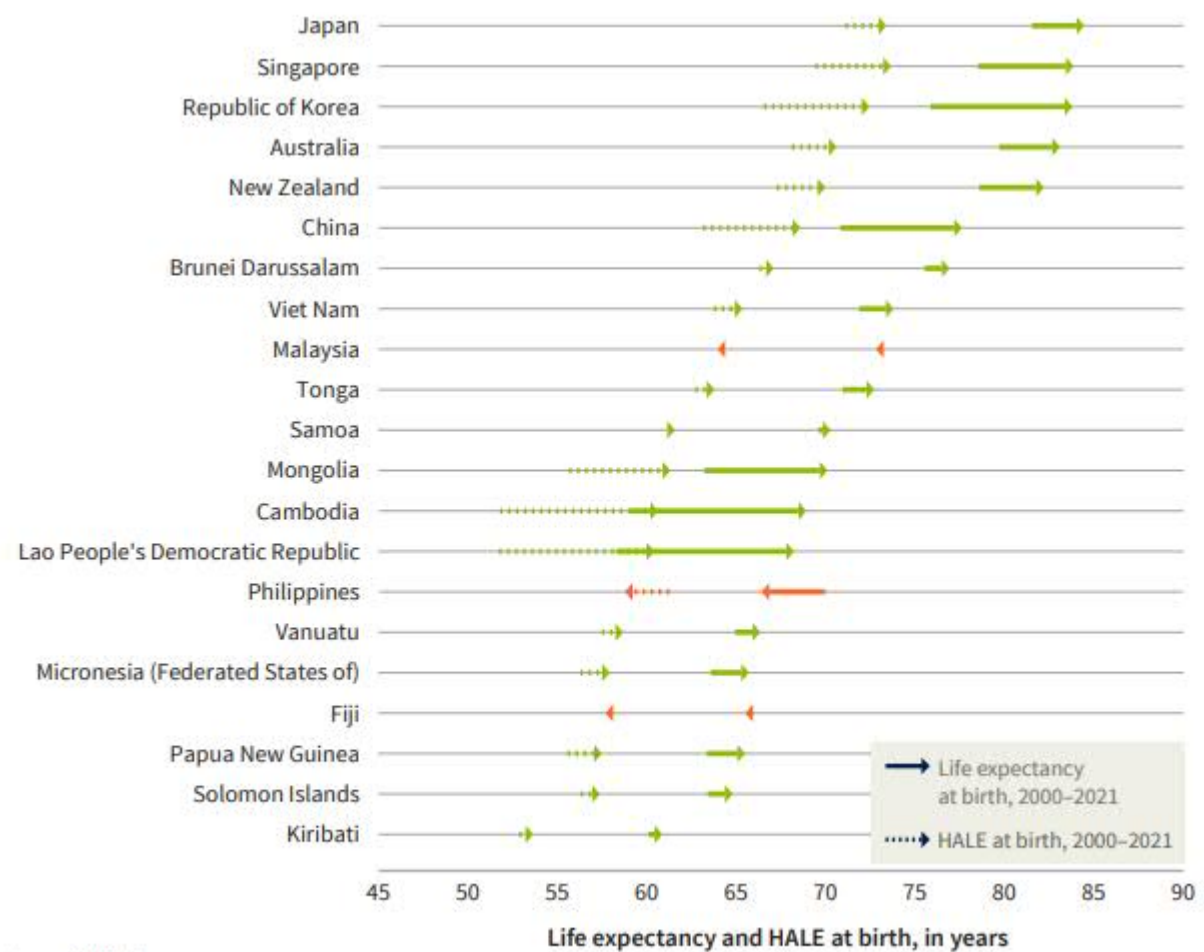
Note: For Nauru, Palau and Kiribati, speeds of ageing are estimated by the recent or future population ageing.
Source: 2022 Revision of World Population Prospects (12).

People are living longer, but not necessarily healthier and not everywhere

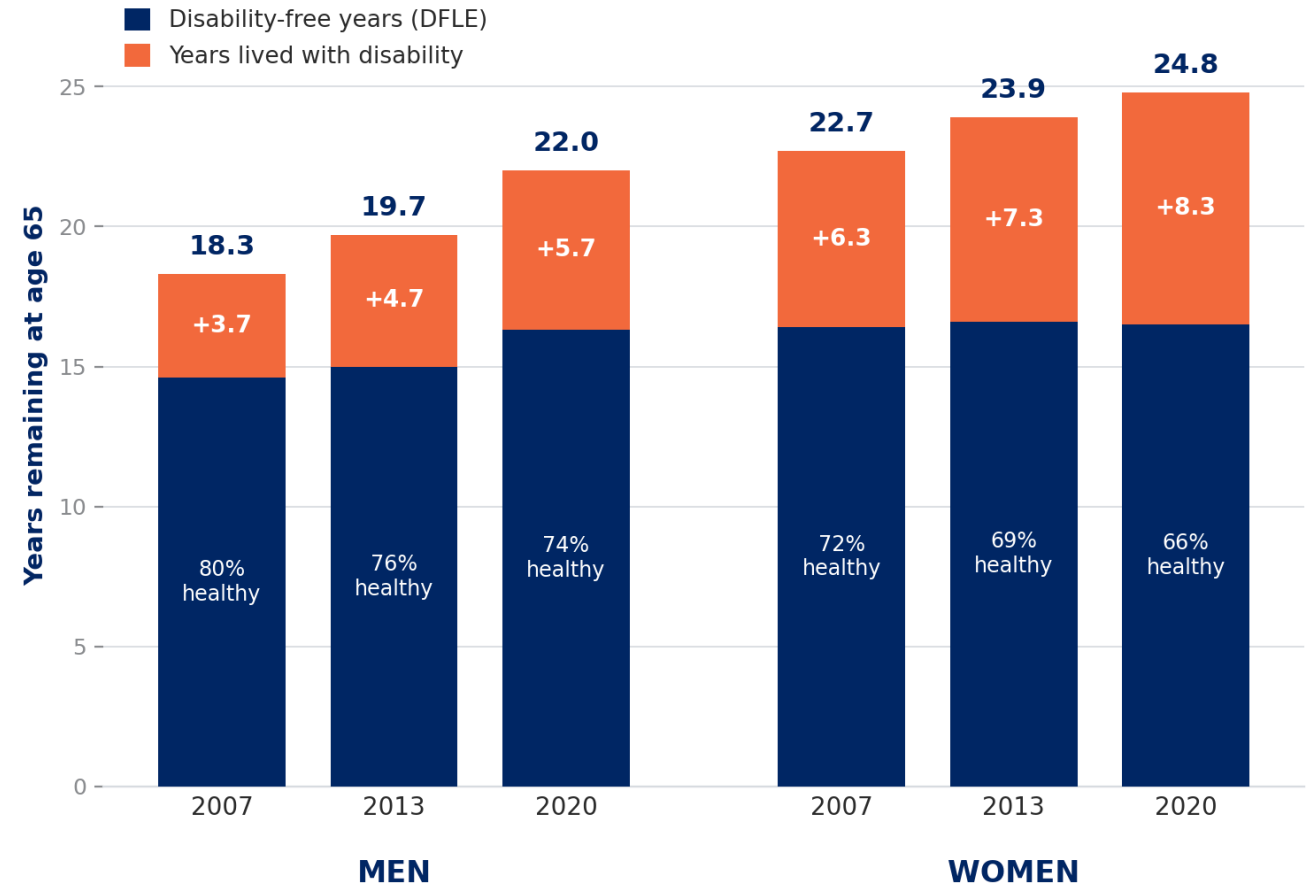
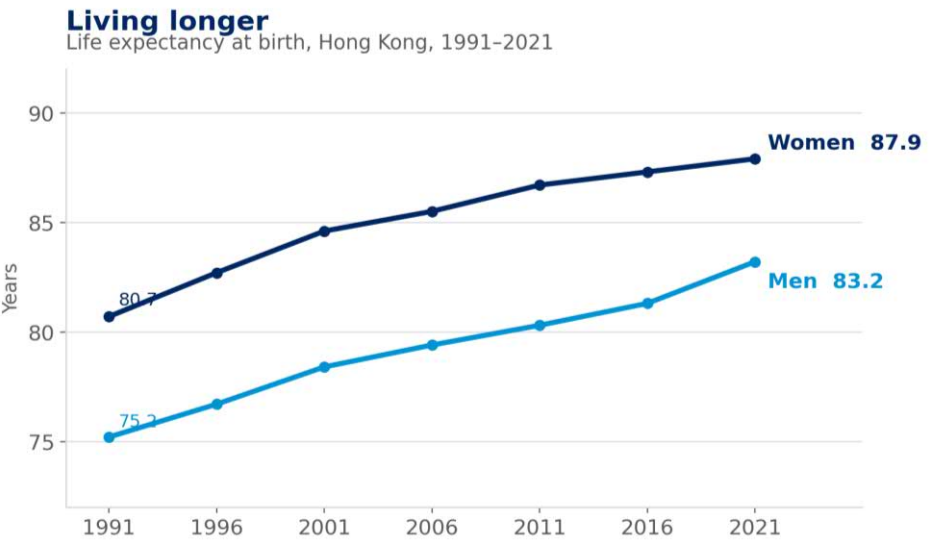
Life expectancy and HALE at 60 years, global and Western Pacific Region, 2000–2021



Life expectancy and HALE at 60 years, 2000 and 2021



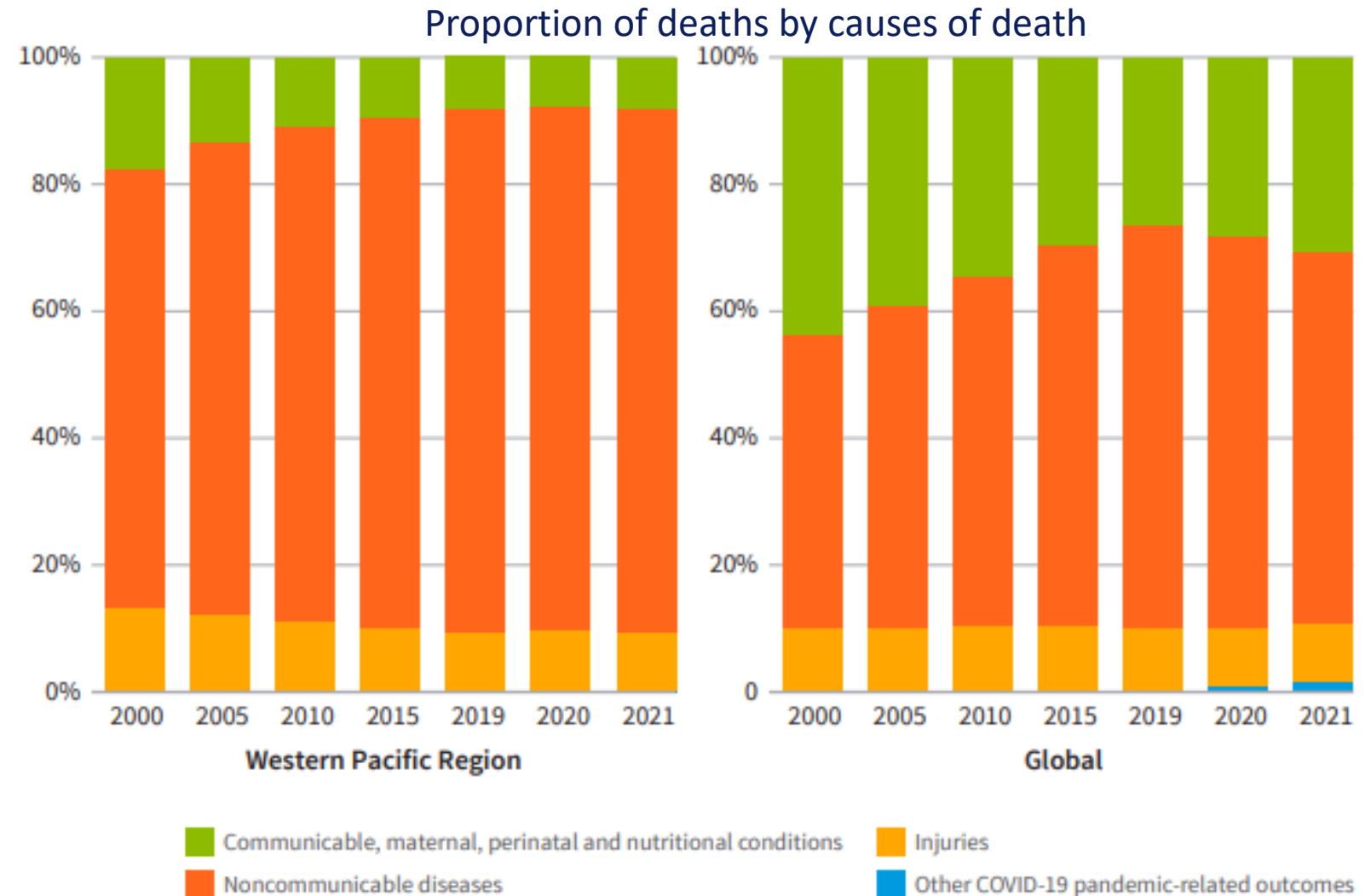
People in Hong Kong SAR lives longer than almost anywhere, yet healthy years are not keeping pace.



Sources: Census and Statistics Department, Demographic Trends in Hong Kong 1991 to 2021 (life expectancy at birth) and Hong Kong Population Projections 2022 to 2046 (population aged 65 and over). Chung et al., Lancet Regional Health Western Pacific 2023;41:100909 (life expectancy and disability-free life expectancy at age 65, Sullivan method).

Shift in disease burden to NCDs

Majority of the disease burden is now due to NCDs in the Western Pacific Region in comparison to the global average.

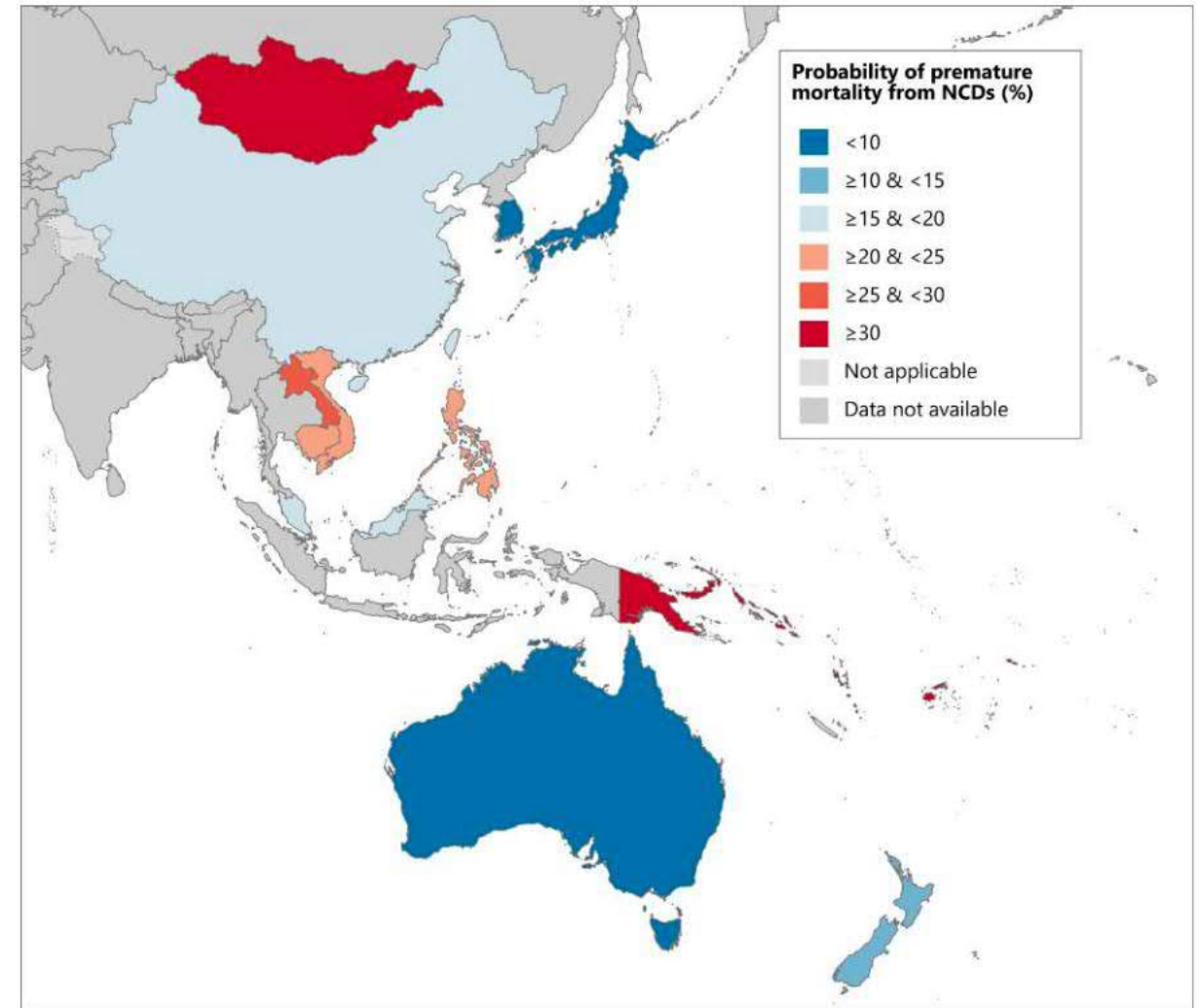


Note: Other COVID-19 pandemic-related outcomes capture the deaths that cannot be attributed to specific causes.

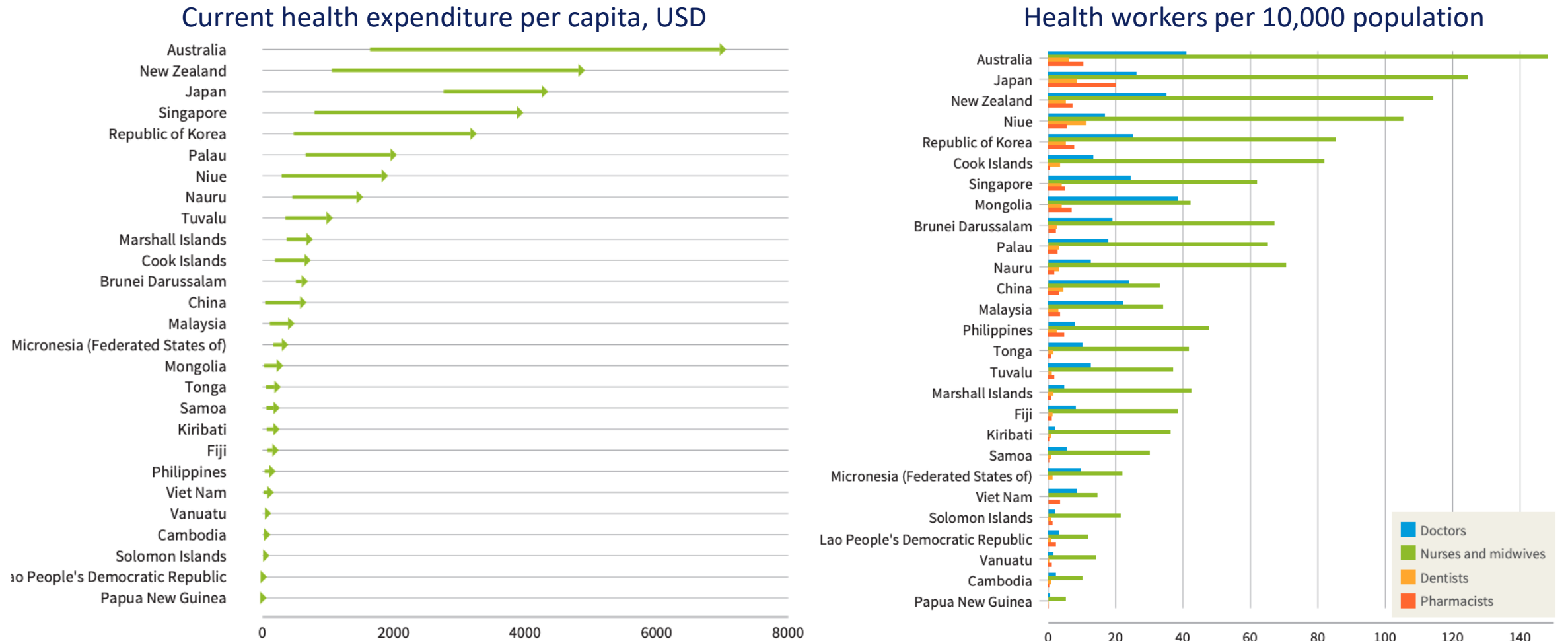
Higher burden in LMIC and PIC

Premature NCD mortality in the Western Pacific Region has particularly high burdens among middle-income countries and Pacific Island Countries.

Probability of premature mortality from major NCDs



With disparities in health expenditure and workforce



From “sick” system to “health system”



“Sick system” to focus on diseases

- Unhealthy environment and absence of support creates sick people
- Health system focuses on diseases

Health systems work with communities to promote health, including:

- Incentives for prevention
- Services closer to people
- Workforce capacity on social determinants

AI may Address Major Bottlenecks in Health

Specialist Shortages & Limited Basic Care



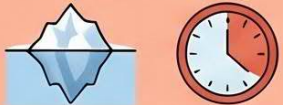
Traditional healthcare relies on specialized doctors for complex screenings, often leaving remote areas with undetected chronic conditions.

AI-Assisted Diagnosis & Triage



Point-of-care AI enables non-specialists to detect TB, malaria, cervical cancer, and cardiac arrhythmia using low-cost hardware.

Reactive Care & Late-Stage Crises



Systems currently wait for symptoms to emerge, leading to expensive medical crises and unchecked epidemiological spreads.

Predictive Analytics & Risk Stratification



Epidemiological modeling identifies at-risk individuals and predicts outbreaks before they spread, allowing for targeted responses.

Severe Health Worker Overburden



Frontline workers face massive patient loads and language barriers that limit their ability to provide personalized care.

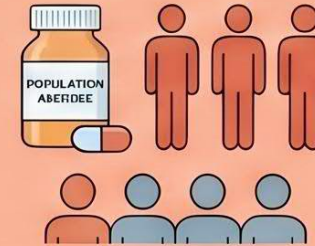
NLP & Community Health Worker (CHW) Augmentation



Voice-based tools in local languages extend the "cognitive reach" of workers, digitizing records in real-time for system-wide visibility.

SOLVING STRUCTURAL SYSTEM BOTTLENECKS

One-Size-Fits-All Population Dosing



Drug dosing is often based on population averages, exacerbated by the historic underrepresentation of non-European populations in clinical trials.

Genomic & Precision Medicine Platforms



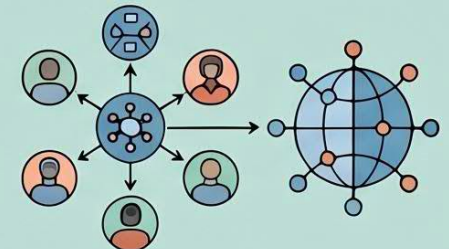
Pharmacogenomic personalization tailors treatment to the individual, addressing genetic diversity and improving drug efficacy.

Siloed Paper Records & Centralization



Hidden information in fragmented systems prevents data sharing and excludes local health systems from broader medical insights.

Interoperable Federated Infrastructure

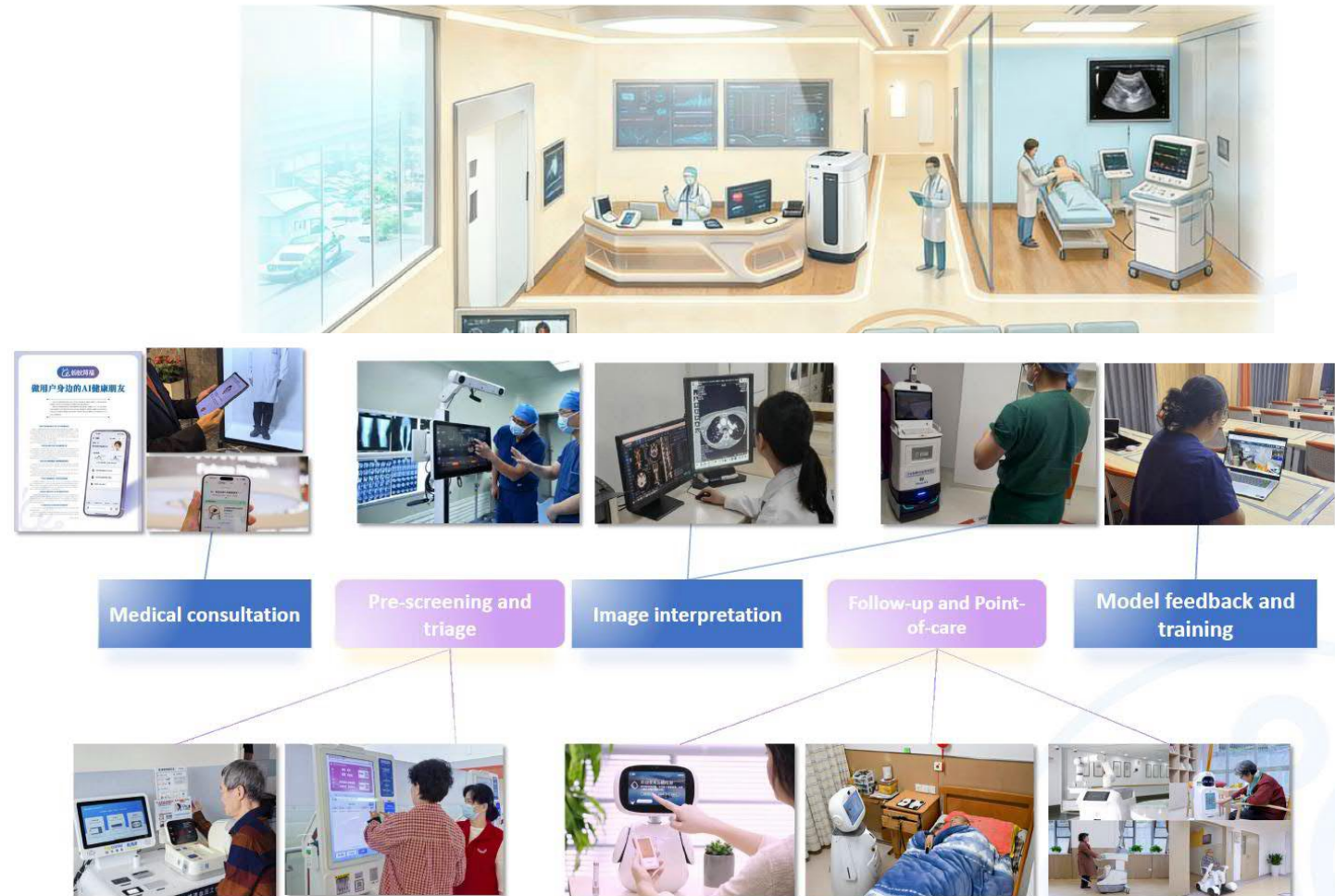


Federated architectures allow for data sharing without centralization, enabling health systems to participate in global learning networks.

Use Case 1: Tsinghua AI – PHC Model Room

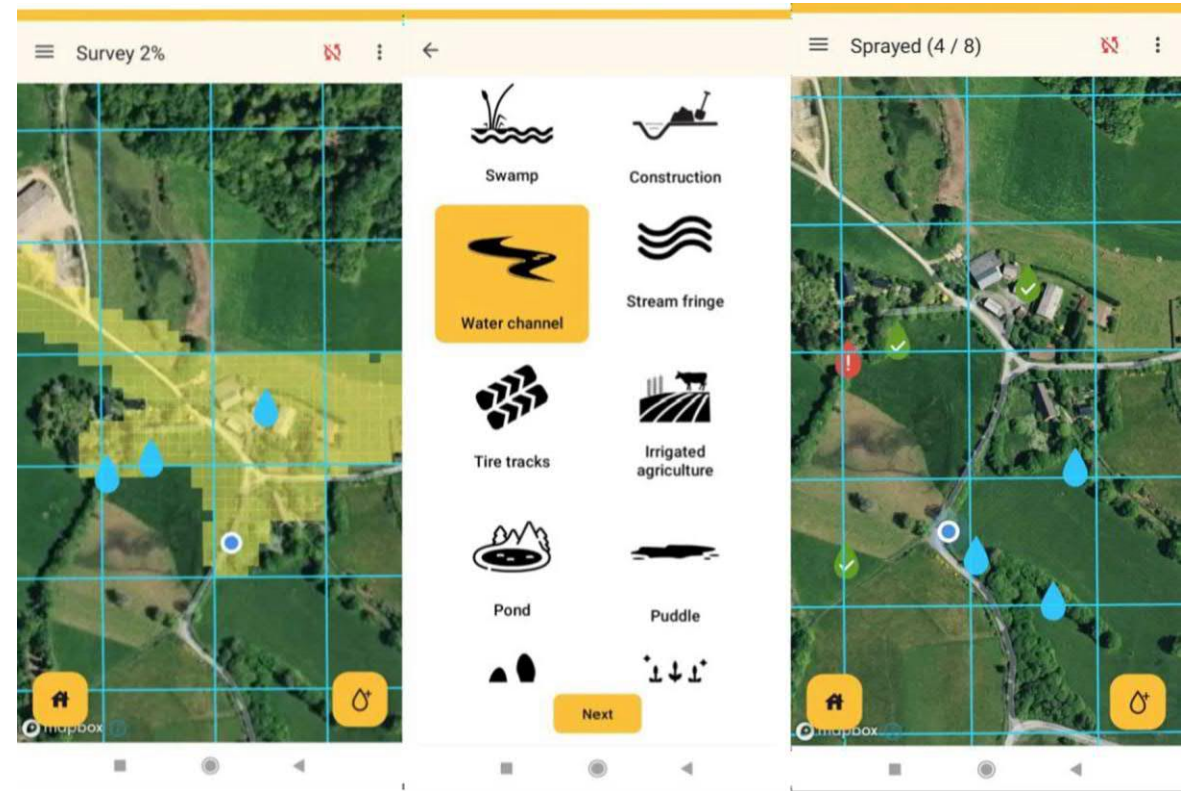
AI equipment + 8 PHC staff $\approx$ a Professional 20-person health center
with an estimated 35% increase in care-processing efficiency

Primary health care system integrates smart devices - including blood pressure monitors and remote consultation terminals - as core components for delivering accessible, data-driven care.



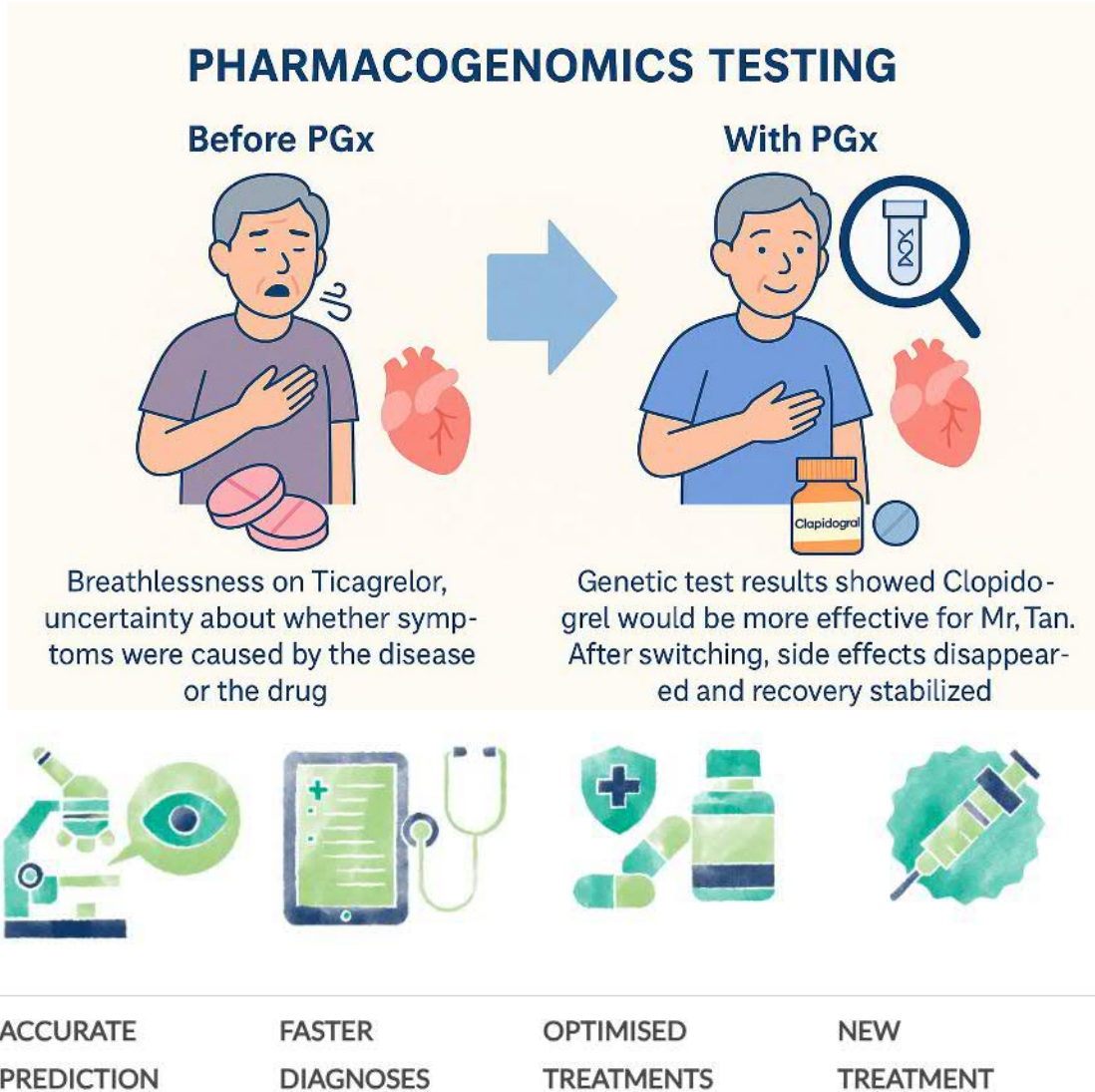
Use Case 2: Zzapp Malaria - AI-guided targeting

Malaria control platform uses AI to identify mosquito breeding hotspots, enabling targeted field interventions that reduced mosquito populations by up to 75% in African countries.



Use Case 3: Singapore's National Precision Medicine Programme

Singapore is using DNA data to predict disease risk and personalize treatments to improve population health outcomes across the national health system.



AI can also benefit low-resource, challenging settings

Primary Care Under Pressure

Rising NCD, ageing, and mental health demands.



Where to start

Task efficiency to support health workers

Rural, remote & island settings

Distance, transport, and small workforces delay access to care.



Where to start

Triage and outreach — reach people earlier

Fragmented data system

Limited data infrastructure and variable digital literacy.



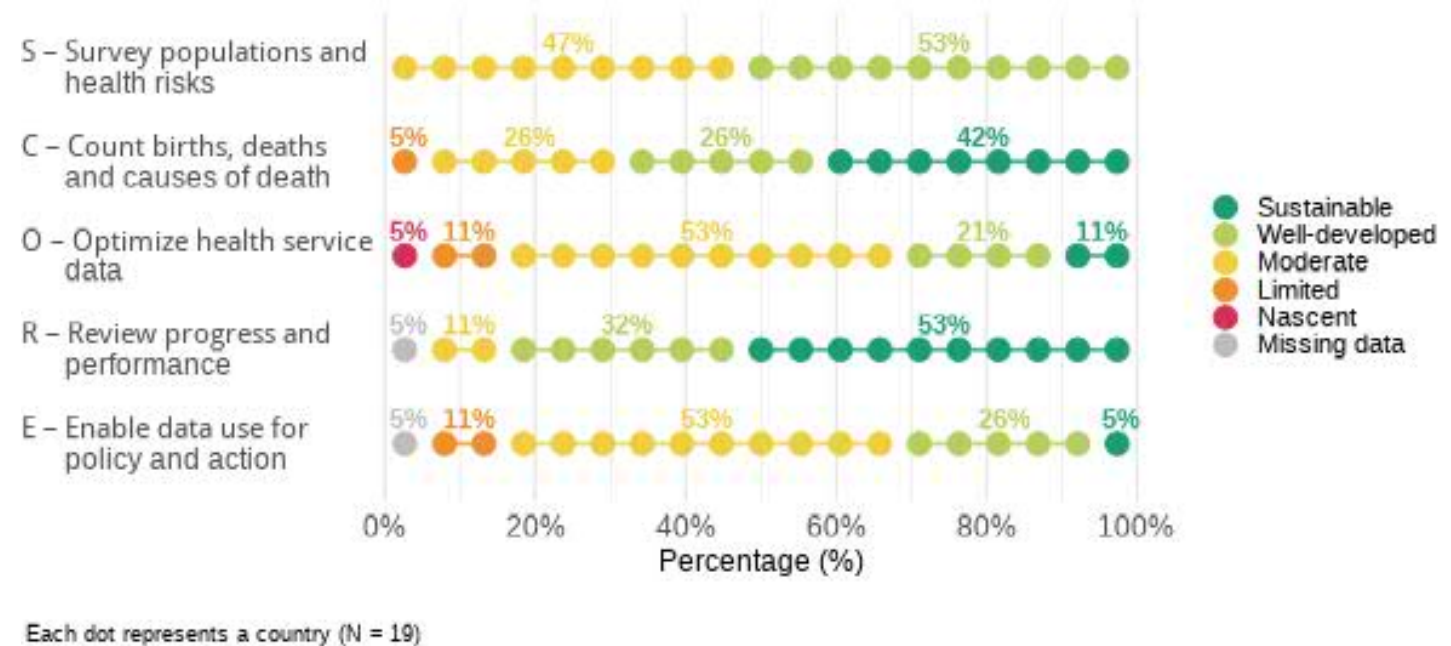
Where to start

Integrate multi-source information for insights

Regional Health information systems gaps

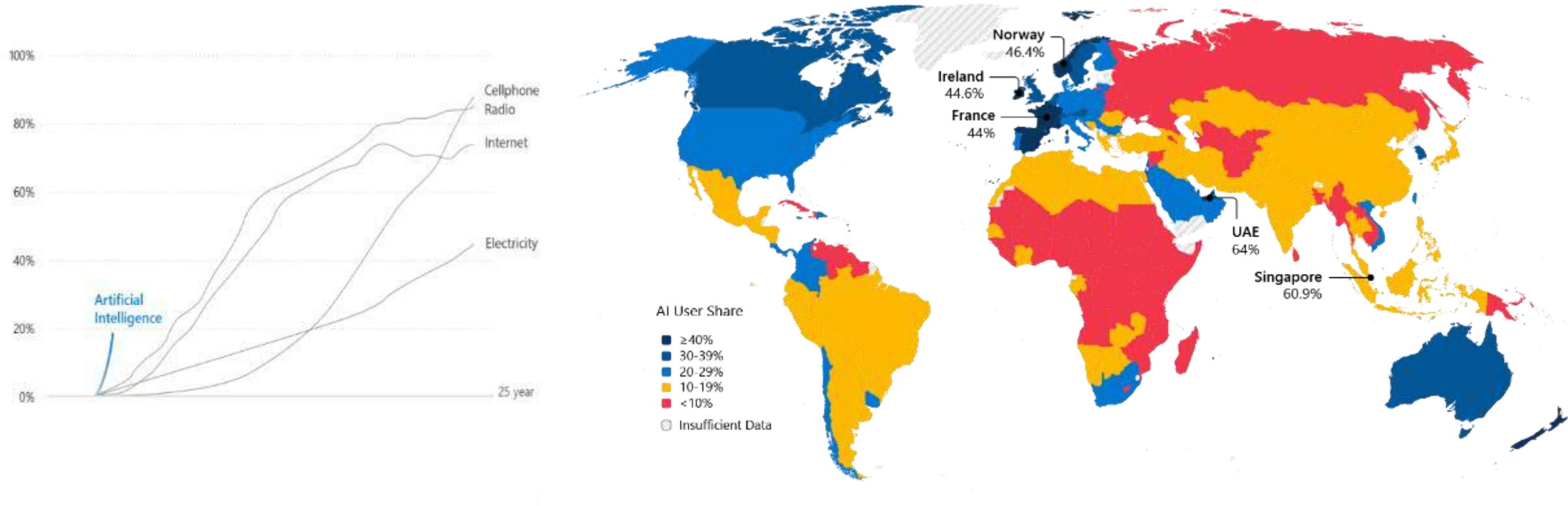
Mortality statistics in the region is weak, and significant gaps remain in data systems, governance, and evidence-based policymaking.

Distribution of regional HIS capacity by SCORE interventions



Source: WHO WPRO (2026)

AI is mostly implemented in high-income settings



Despite global interest, most real-world AI deployments come from the developed settings

Source: Microsoft AI Economy Institute (2026), Global AI Adoption in 2025

The challenges are real — and so is the way through



Governance



No AI rules



No oversight



Unclear liability



Infrastructure



Weak internet



Limited power



Few devices



Data



Limited data



Poor quality



Data silos



Capacity & trust



Few experts



Little training



Low trust



Financing



Limited funding



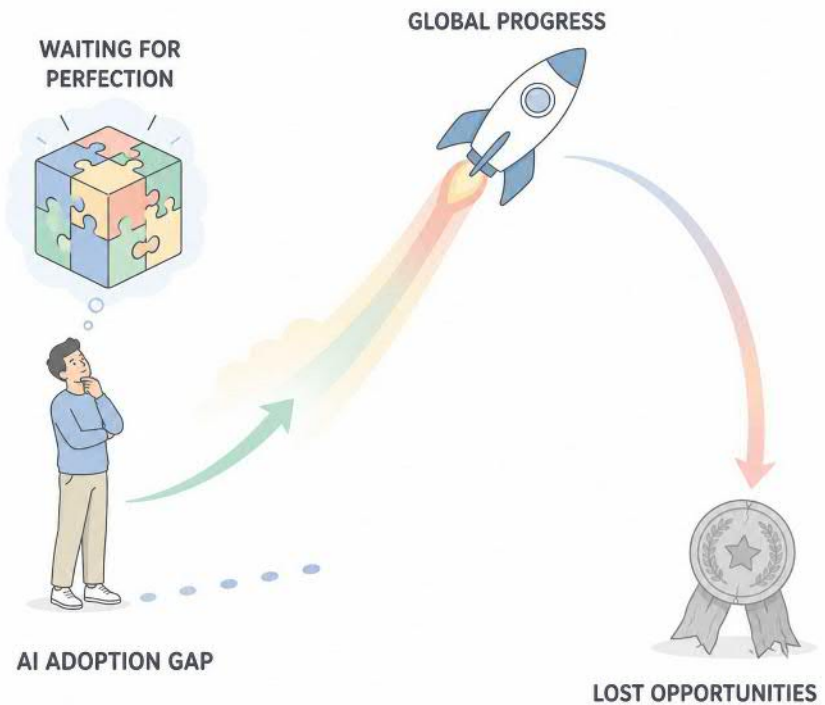
Donor-reliant



Hard to sustain

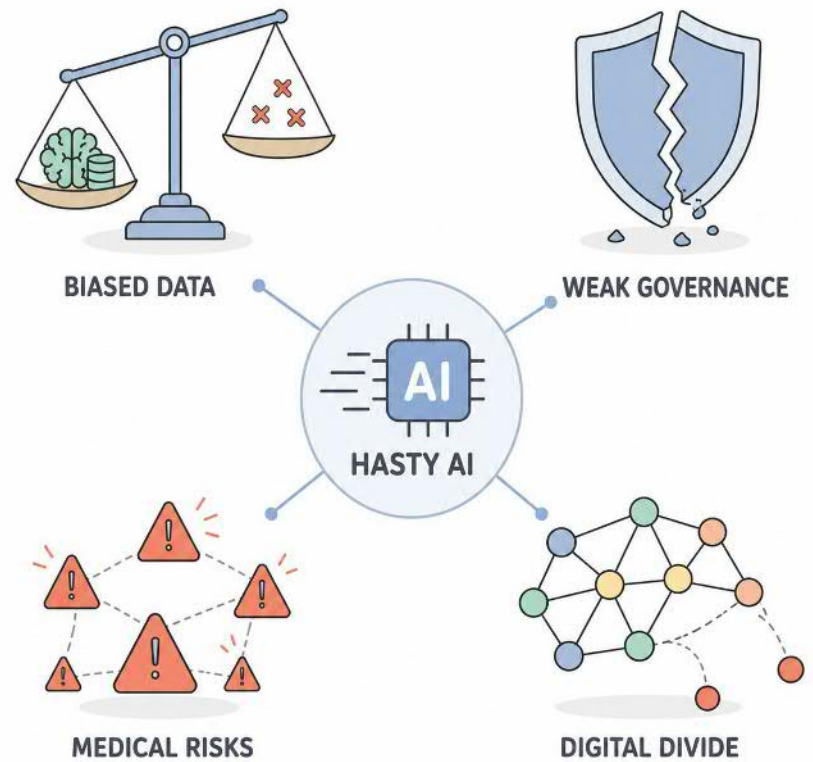
Two Potential Risks

Delayed implementation

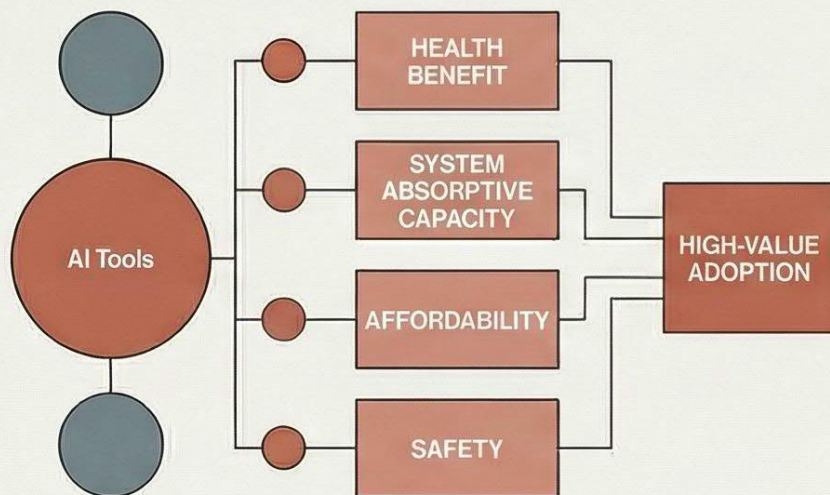


The answer is
neither - start
where the
ecosystem can
support it

Inadequate implementation

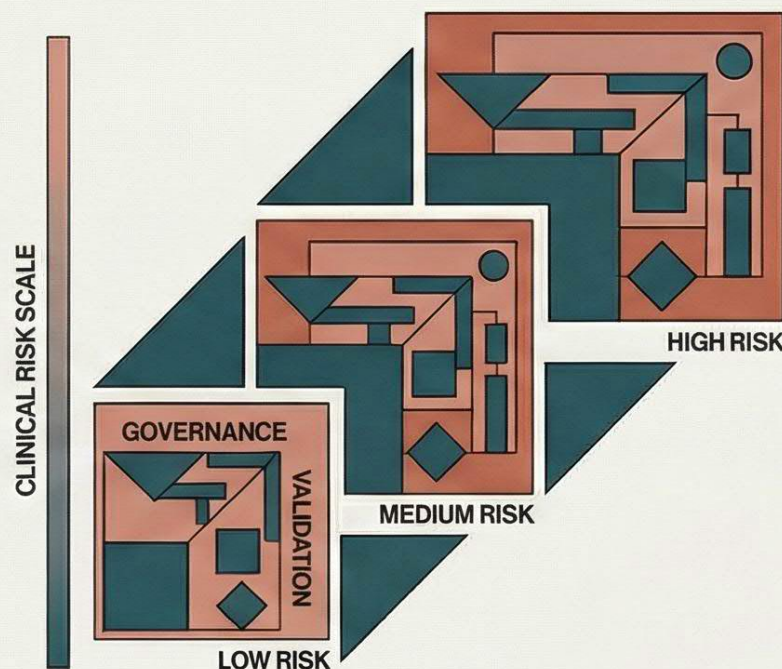


Solution: Risk-Based Approach (RC 77 Document)



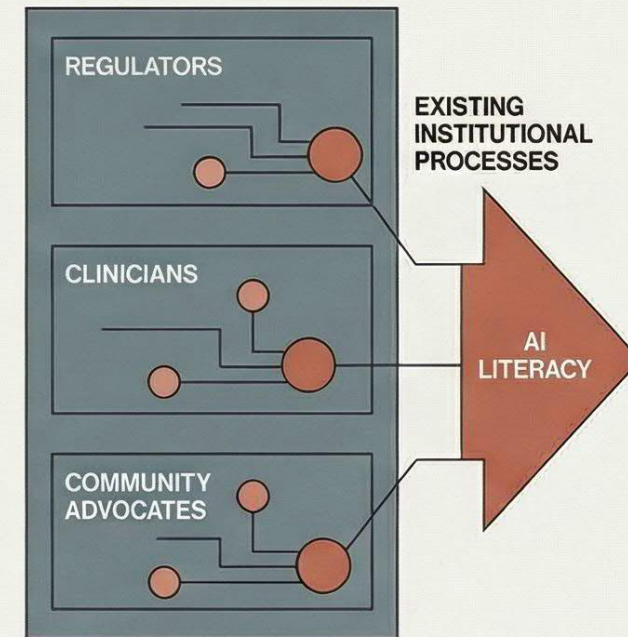
PRIORITY 1: PRIORITIZE HIGH-VALUE USE CASES

Evaluate AI tools based on health benefit, system absorptive capacity, affordability, and safety.



PRIORITY 2: BUILD RISK-PROPORTIONATE ECOSYSTEMS

Deploy governance, infrastructure, and validation protocols that scale with the clinical risk of the AI application.



PRIORITY 3: STRENGTHEN PUBLIC SECTOR CAPACITY

Embed AI literacy within existing institutional processes for regulators, clinicians, and community advocates.

Countries can start using AI with “the minimum ecosystem”

	MINIMUM ECOSYSTEM	MORE ADVANCED ECOSYSTEM
Governance	Designated authority and institutional accountability	Formal oversight, ethics review, regulatory pathways
Infrastructure & data	Basic privacy and security in place	Interoperability and data-sovereignty safeguards
Validation	Evidence from similar settings	Independent prospective validation before rollout
Financing	Funding for deployment and maintenance	Full-lifecycle funding with a sustainability plan
Capacity	Staff able to use and oversee the AI tool	Specialized, multidisciplinary oversight
What is possible?	Lower-risk, human-in-the-loop uses can begin now.	Higher-risk uses become responsibly possible as the ecosystem matures.

Summary

- Western Pacific populations are living longer but not healthier, with persistent inequities.
- Progress in the region, particularly in NCD related indicators has stagnated since 2015.
- A shift is needed from disease-focused care to health-enabling systems.
- Digital health and AI can address major public health bottlenecks, including in low-resource settings.
- Yet implementation gaps remain, with technologies not reaching where they are most needed.
- WHO advocates for a focused, risk-proportionate approach which helps avoid delays and ensures appropriate, scalable adoption particularly in LMIC settings.

Thank you