Understanding HALE Indonesia

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Indonesia has added years to life

but has it added health to those years?

I. The Paradox of Longevity

The Paradox of Longevity

Two individuals, both of whom live to age 80



Joni

Develops significant functional limitations at age 55 and lives with varying degrees of disability for the remaining 25 years



Sinta

Remains largely healthy and independent until age 75, experiencing substantial functional limitations only during the final five years

Both live equally long. But have they had equally healthy lives?

Healthy Life Expectancy captures the difference between living longer and living healthier

Life expectancy (LE) measures how many years a person is expected to live

Healthy life expectancy (HALE) measures the expected number of years lived in full health

HALE combines two dimensions of population health:

1. **Survival:** how long do people live?
2. **Health status:** how healthy are the years they live?

HALE adjusts years lived for non-fatal health loss, and tells us whether gains in **longevity** are translating into gains in **healthy longevity**

Constructing HALE: Five Simple Steps

1. **Start with mortality by age**
   - How many people survive to each age?
2. **Count the years lived**
   - How many years does the population collectively live?
3. **Measure health at each age**
   - How healthy are those years?
4. **Adjust years lived for health**
   - Convert total years into healthy years
5. **Add the healthy years**
   - The result is HALE

HALE is a slow-moving indicator

What drives HALE?	How quickly does it usually change?
Mortality — fewer deaths increase expected years of life, especially when mortality falls at younger ages	Usually gradually, although major shocks can cause rapid changes
Morbidity & disability — lower prevalence or severity of ill health increases the share of life lived in good health	Usually slowly, as disease patterns and disability evolve over several years
Balance between the two — longer life does not necessarily mean proportionately more healthy life	HALE rises most when survival and health improve together
Major shocks — pandemics, conflict, disasters	Can produce large short-term changes, particularly through mortality
New data or methods — revised life tables, surveys, disability estimates or models	Can produce an apparent change in HALE even when population health has not changed materially

Changes in HALE generally emerge over several years, not from one year to the next. Small annual movements may reflect data or modelling variation rather than real changes in population health.

International approaches to estimating HALE vary considerably, reflecting differences in data availability and how HALE is used

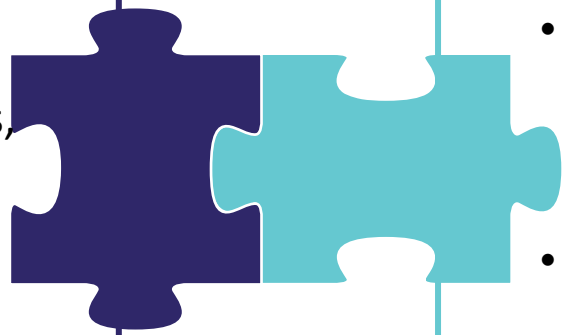
Country / System	Frequency / practice	Key point
WHO	Biennial expected collection & dissemination	Clearest international benchmark
Eurostat / EU	Annual	Feasible because underlying health-status data are collected routinely
Japan	Every 3 years	Aligned with major national health survey cycle
United Kingdom	Annual, using 3-year rolling averages	Frequent reporting while reducing year-to-year statistical noise
Australia	Historically periodic; moving toward more frequent estimates	Linked to national Burden of Disease estimation
Malaysia	Periodic Burden of Disease studies	National HALE generated as part of BoD exercises
Singapore	Regular monitoring using GBD estimates	Does not require independent annual national estimation

The Relationship Between LE and HALE

Two Interacting Processes

Changes in Mortality

- Reductions in premature deaths increase survival and life expectancy
- More people survive to older ages, where chronic disease and functional limitations become more common
- Better treatment can extend the lives of people already living with serious illness or disability



Changes in Morbidity

- Disease prevention can postpone the onset of illness and disability
- Effective chronic disease management and rehabilitation can reduce the severity and duration of health loss
- Rising chronic disease prevalence, risk-factor exposure or disability severity can slow improvements in HALE

The balance between these processes determines whether additional years of life are predominantly healthy or accompanied by greater health loss.

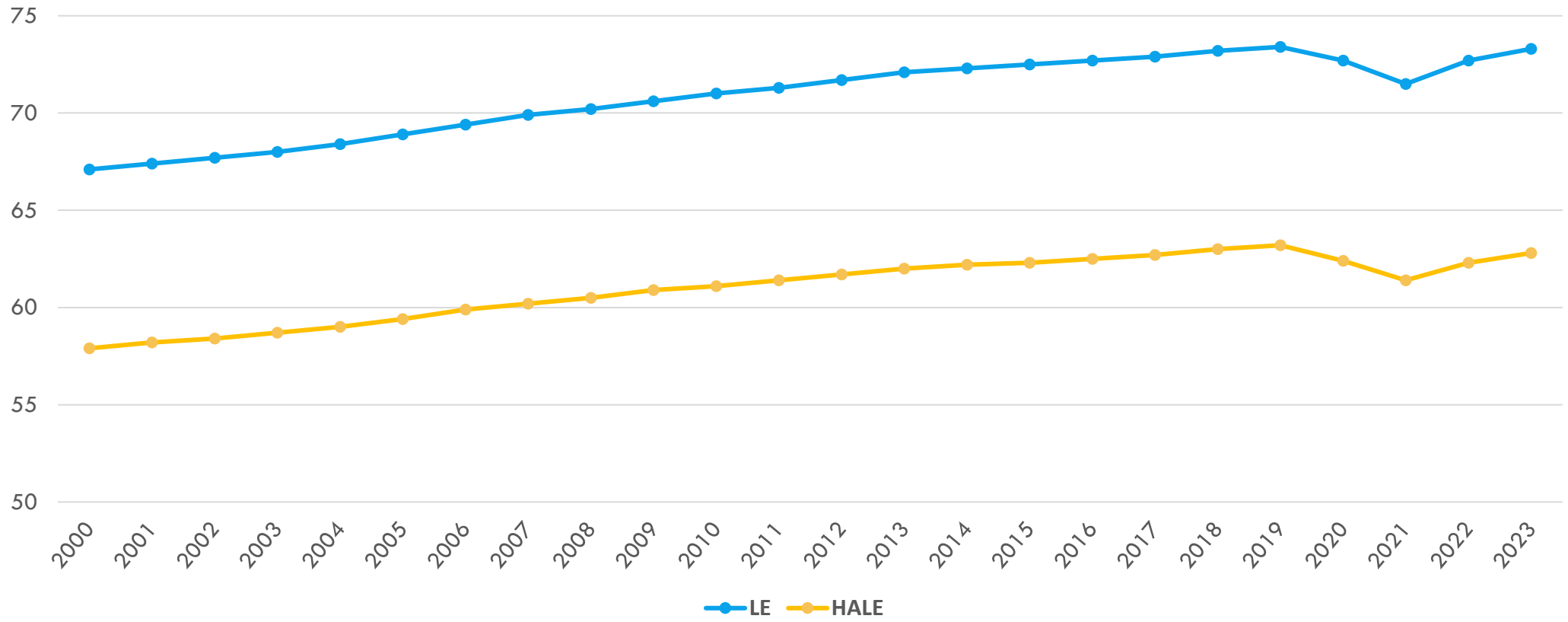
Four Possible Trajectories of Life Expectancy and Healthy Life Expectancy

Trajectory	Life expectancy	HALE	Implication
I	Increasing	Increasing	Both improve; health gap may narrow or widen
II	Increasing	Decreasing	Health gap widens
III	Decreasing	Increasing	Health gap narrows
IV	Decreasing	Decreasing	Both deteriorate; health gap may narrow or widen

Even when LE and HALE are both increasing, the health gap can widen if LE improves faster than HALE

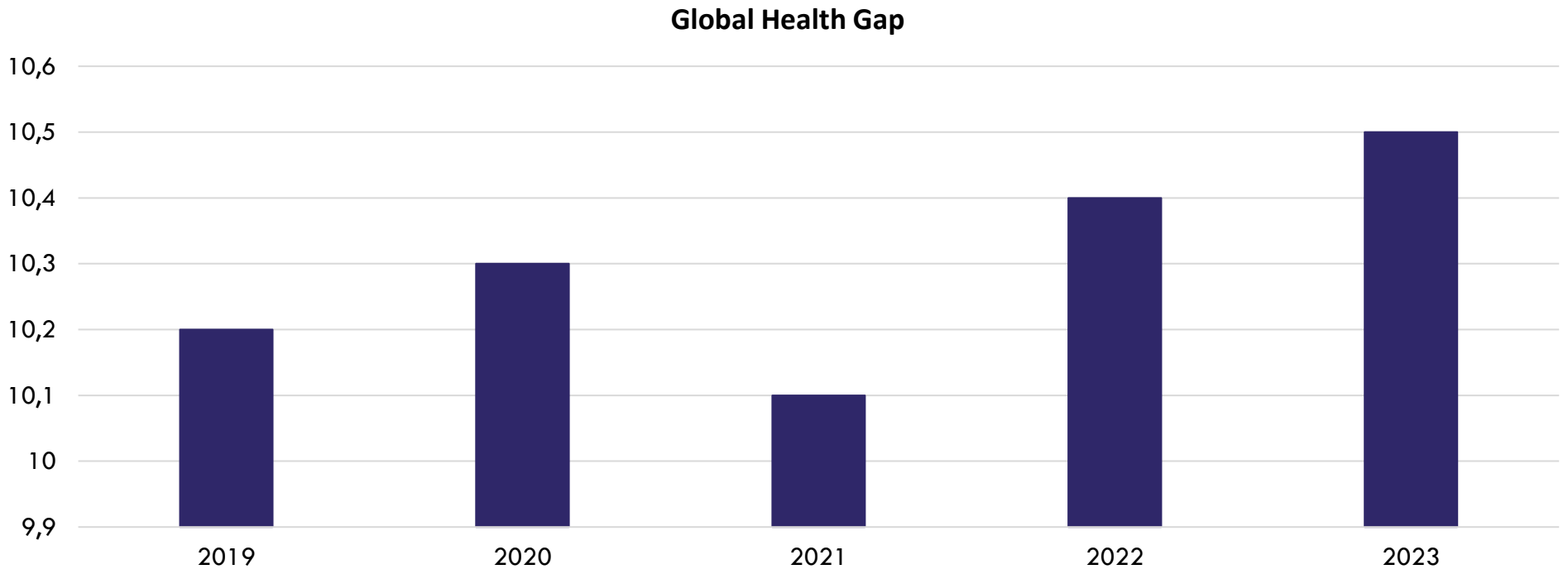
II. Lessons from Global Experience

Globally, HALE has risen more slowly than life expectancy



Humanity has succeeded in extending life (+6.2) – but less successful in ensuring that the additional years are lived in full health (+4.9)

Long term improvements can conceal periods of slower recovery



By 2023, global life expectancy had almost recovered to its pre-pandemic level, but healthy life expectancy remained below its 2019 level, increasing the health gap

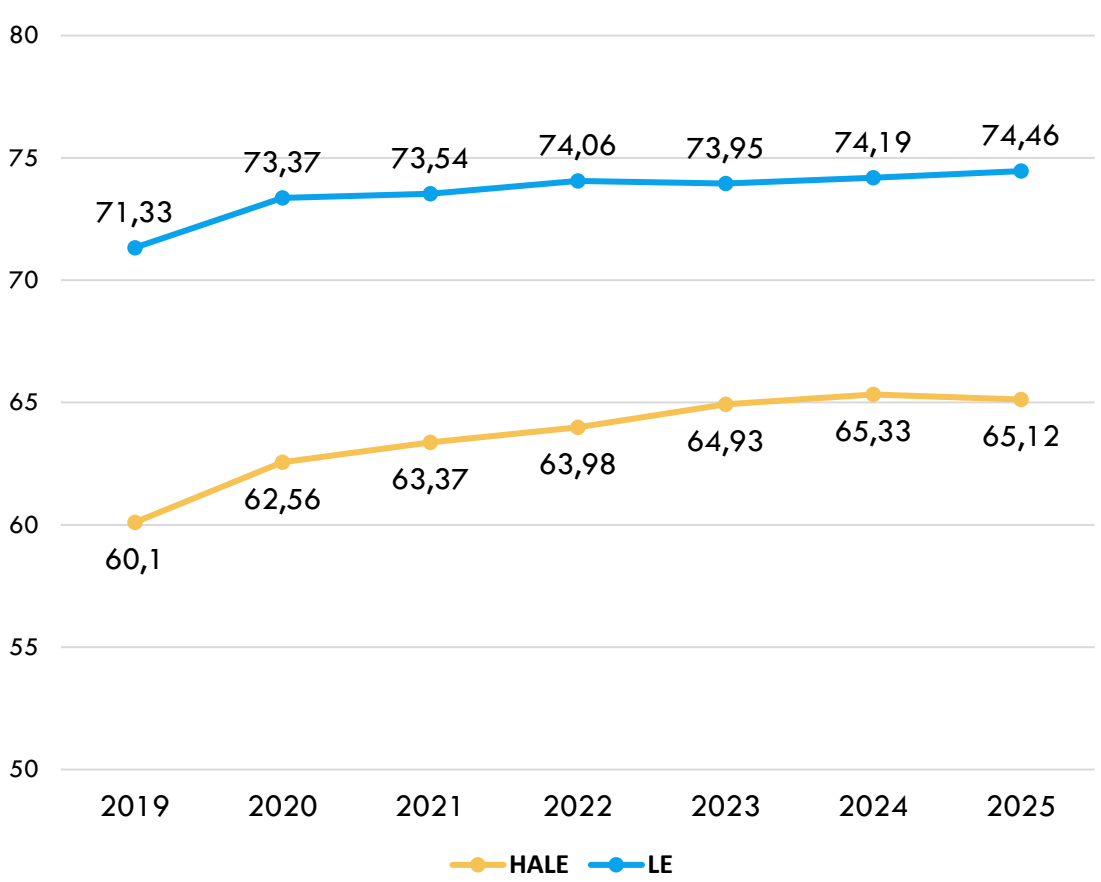
The health gap has widened across countries with very different life expectancies

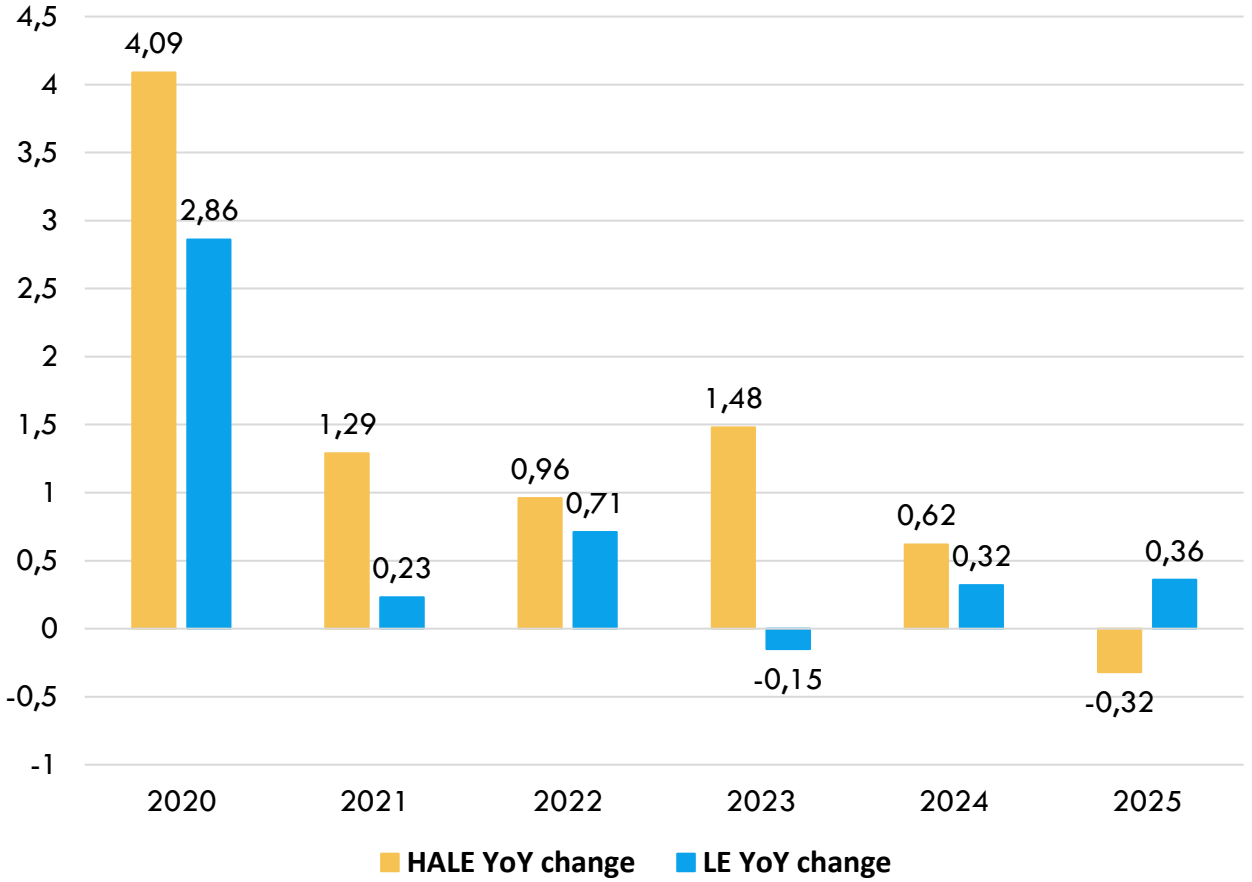
Country / Grouping	Life Expectancy (2010)	HALE at Birth (2010)	Health Gap (2010)	Life Expectancy (Latest)	HALE at Birth (Latest)	Health Gap (Latest)	10-Year Gap Change
Japan	83.2 yrs	73.1 yrs	10.1 yrs	84.6 yrs	74.1 yrs	10.5 yrs	+0.4 yrs (Widening)
Singapore	82.1 yrs	72.8 yrs	9.3 yrs	83.9 yrs	73.9 yrs	10.0 yrs	+0.7 yrs (Widening)
Thailand	75.3 yrs	66.8 yrs	8.5 yrs	77.2 yrs	68.3 yrs	8.9 yrs	+0.4 yrs (Widening)
Malaysia	74.5 yrs	65.2 yrs	9.3 yrs	75.1 yrs	65.7 yrs	9.4 yrs	+0.1 yrs (Widening)
Indonesia	70.1 yrs	61.7 yrs	8.4 yrs	71.9 yrs	62.8 yrs	9.1 yrs	+0.7 yrs (Widening)
Philippines	69.8 yrs	61.3 yrs	8.5 yrs	71.2 yrs	62.0 yrs	9.2 yrs	+0.7 yrs (Widening)
OECD Average	79.7 yrs	69.8 yrs	9.9 yrs	80.7 yrs	70.3 yrs	10.4 yrs	+0.5 yrs (Widening)

However, a widening health gap is not inevitable

Country/ Setting	Total LE0 (2010)	HALE at Birth (2010)	Health Gap (2010)	Total LE0 (Recent)	HALE at Birth (Recent)	Health Gap (Recent)	Change in Health Gap (LE0–HALE0)	Relevant Health System and Policy Developments
Norway / Sweden (Nordic Model)	81.2 yrs	71.4 yrs	9.8 yrs	83.2 yrs	73.8 yrs	9.4 yrs	-0.4 yrs (Narrowing)	Integrated primary care, active aging policies, and aggressive reduction of smoking and cardiovascular risk.
Estonia / Latvia (Baltic Transition)	75.8 yrs	64.9 yrs	10.9 yrs	78.8 yrs	68.3 yrs	10.5 yrs	-0.4 yrs (Narrowing)	Aggressive alcohol taxation, road safety laws, and modern hypertension/statin treatment rollout.
Costa Rica (Universal Primary Care)	79.3 yrs	69.7 yrs	9.6 yrs	80.8 yrs	71.6 yrs	9.2 yrs	-0.4 yrs (Narrowing)	Comprehensive primary care system that prioritizes early NCD screening and community-based chronic disease control.
Rwanda (Low-Income Catch-up)	62.3 yrs	54.1 yrs	8.2 yrs	67.5 yrs	59.8 yrs	7.7 yrs	-0.5 yrs (Narrowing)	Universal community health insurance drastically cutting malaria, maternal disability, and childhood undernutrition.

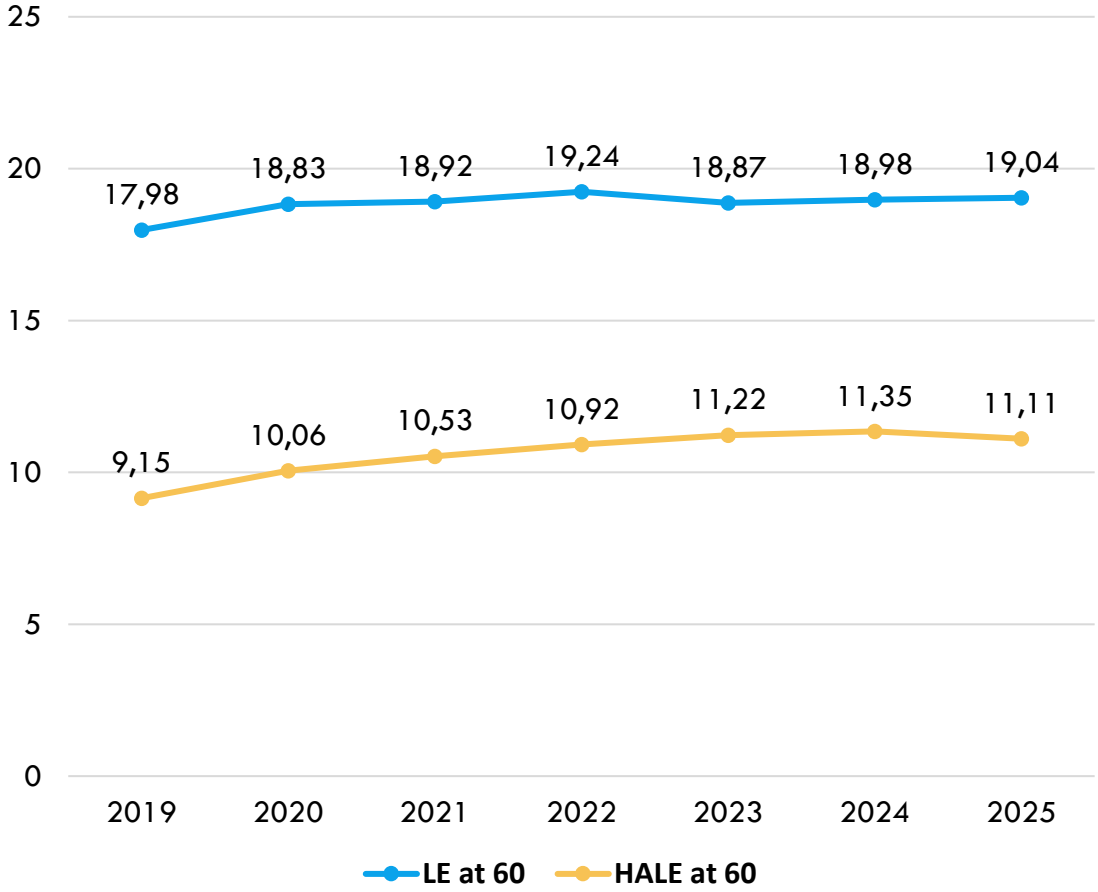
In Indonesia also, HALE at birth has risen faster than LE in recent years

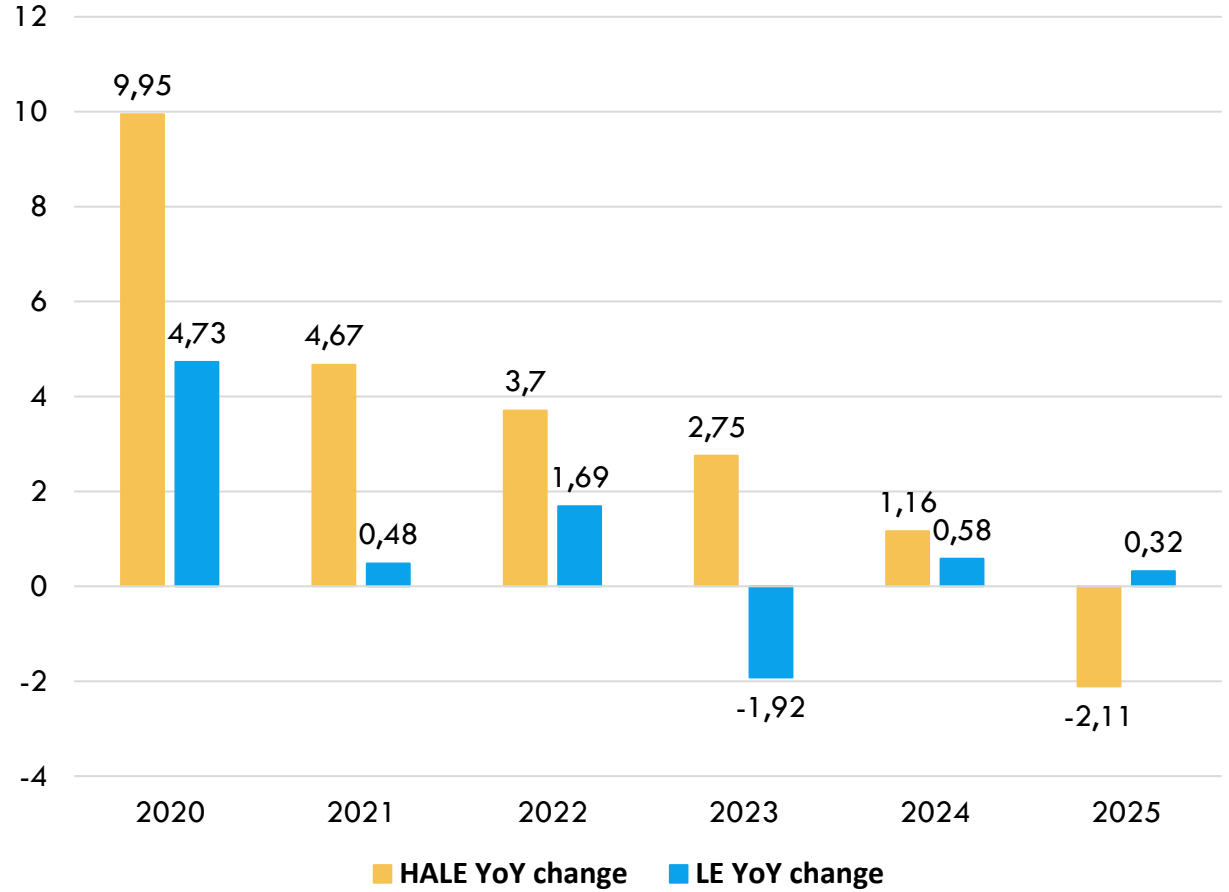




The important question is not simply whether both indicators are improving, but whether they are improving at the same pace

Likewise, HALE at age 60 has also increased faster than LE in most years





Healthy longevity is not simply about adding years at the end of life. It is also about preserving health and functional capacity throughout those additional years.

What can Indonesia learn from these international experiences?

Three lessons:

1. Increasing life expectancy is not sufficient
2. The health gap is not necessarily stable
3. Gains in HALE depend on preventing and reducing disability and premature deaths

Three questions:

1. How has Indonesia's health gap evolved?
2. At what ages, and from which health conditions, are healthy years being lost?
3. Which changes in mortality and morbidity offer the greatest opportunities for improvement?

III. Indonesia’s Health Gap

Understanding Indonesia's Health Gap

Health Gap = Life Expectancy – Healthy Life Expectancy

Life expectancy: 74.46 years

Healthy life expectancy: 65.12 years

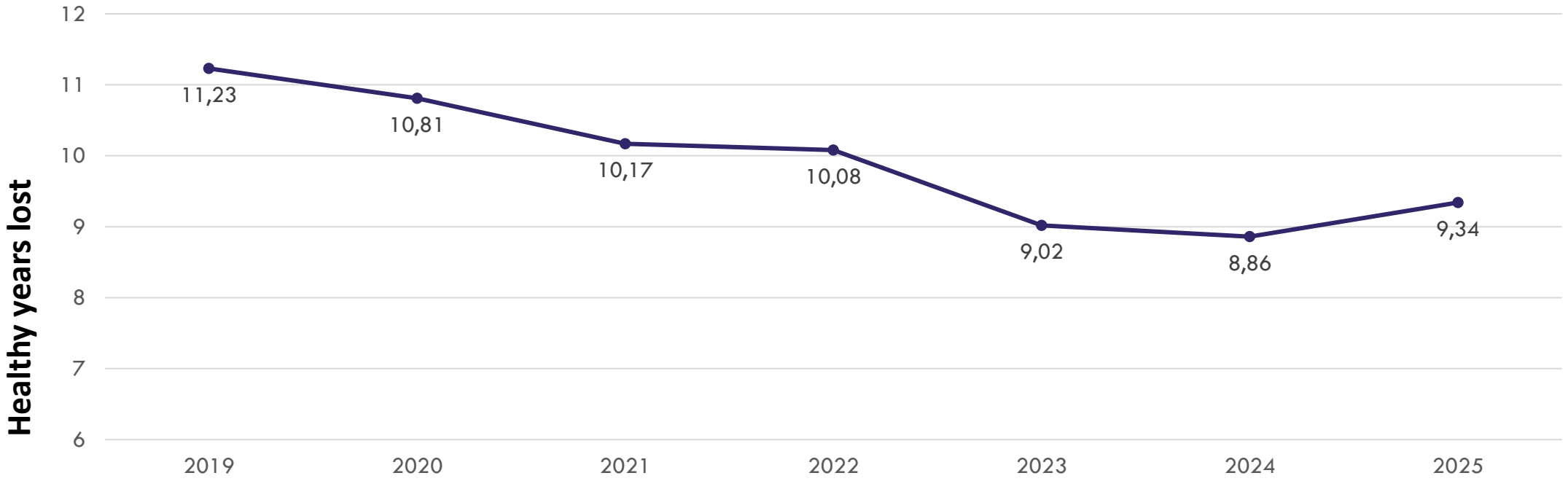
Health gap: 9.34 equivalent health years lost

Healthy life share: 87.5%

- The health gap measures the equivalent years of full health lost to morbidity, accounting for the duration and severity of ill health
- It does not mean that Indonesians live in good health until age 65 and then spend nine years in poor health

Indonesia's Health Gap Has Narrowed—But Not Consistently

Indonesia's health gap at birth, 2020–2025



Indonesia has made huge progress in reducing health loss, but there's no room for complacency

Gains in Healthy Years Outpaced Longevity Until 2024

2025 Estimates Suggest a Reversal

Indicator	2020–2024	2024–2025
Change in LE	+0.82 years	+0.27 years
Change in HALE	+2.77 years	−0.21 years
Change in health gap	−1.95 years	+0.48 years

The proportion of expected life lived in equivalent full health increased from 85.3% in 2020 to 88.1% in 2024, before declining to 87.5% in 2025.

2020–2024: Healthy longevity improves faster than survival. HALE gains substantially exceed LE gains, resulting in a narrowing health gap.

2024–2025: Survival improves, but healthy longevity stalls. LE continues to increase while the preliminary HALE estimate declines slightly.

The challenge is to sustain gains in healthy years while continuing to extend life.

What can we learn from the Health Gap?

We know how many healthy life years are lost, but not why.

Three critical questions remain unanswered:

When?

At which ages do health losses accumulate most rapidly?

Why?

Which diseases, disabilities and other health conditions contribute most to these losses?

What can change?

How much of the observed health loss could potentially be reduced through improved prevention, treatment and rehabilitation?

To answer these questions, we must move beyond measuring the gap to decomposing it

IV. The Drivers of the Health Gap

What lies behind Indonesia's Health Gap?

Estimates for 2025 indicate a health gap of **9.34 health years lost.**

Decomposing the 9.34 years helps answer three questions:

1. **Where are healthy years being lost?** Identify the contribution of different age groups to the overall health gap.
2. **Why are healthy years being lost?** Identify the diseases and health conditions responsible for non-fatal health loss.
3. **What explains changes over time?** Distinguish the effects of changes in mortality from changes in morbidity.

Understanding the composition of the health gap helps identify where interventions might make the greatest difference.

How do we decompose HALE?

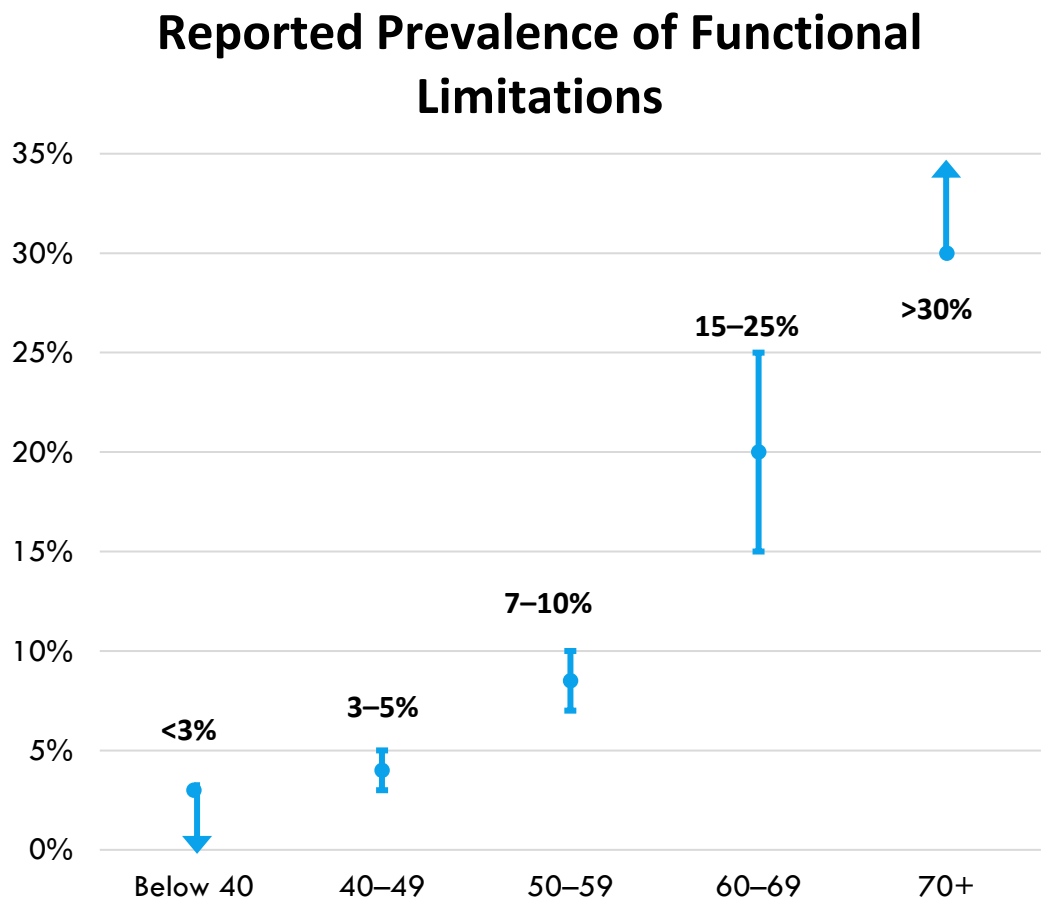
Three Complementary Approaches

Dimension	Analytical approach	What it reveals
Age-specific decomposition	Life tables combined with age-specific health-status measures	Where equivalent healthy years are lost across the life course
Cause-specific attribution	Disease-specific years lived with disability (YLDs), supported by epidemiological and claims data	Which conditions account for non-fatal health loss
Mortality–morbidity decomposition	Counterfactual comparison of changes in survival and health status	How much each component contributes to changes in HALE over time

Data sources used in the Indonesia analysis:

- BPS life tables and SUSENAS functional limitation data for national HALE estimation
- IHME Global Burden of Disease estimates and BPJS K claims for cause-specific attribution
- Historical mortality and health-status series for projections and decomposition of changes over time

At what age does health loss begin to accelerate?



Two important findings emerge:

1. **The first inflection occurs in midlife.** Functional limitations begin to increase appreciably between ages 40 and 59.
2. **The second acceleration occurs after age 60.** Functional limitations become substantially more common, particularly after age 70.

Health loss accumulates progressively across the life course; it does not suddenly begin at retirement.

Decomposing the Single-Year Health Gap

Unpacking Indonesia's HALE in 2025



Older Adults (60+): Account for 74.7% (6.97 years) of all lost healthy time



Working-Age Adults (15-59): Account for 22.3% (2.09 years) of lost time



Youth (0-14): Account for 3.0% (0.28 years) of lost time

Where Healthy Years Are Lost—and Where Prevention May Matter Most

The age profile of health loss has different implications at different stages of life

Age group	What the decomposition suggests
0–39 years	Relatively low prevalence of functional limitations, although preventing serious early-life illness and disability remains important
40–59 years	Functional limitations begin to rise; conditions developing during these years may persist for decades
60–69 years	Health loss accelerates as chronic disease, functional decline and multimorbidity become more prevalent
70+ years	Highest prevalence of functional limitations and substantial health loss per year lived

The age group experiencing the greatest health loss today is not necessarily the age group in which preventive interventions would generate the greatest future gains → **Policy must consider both where health loss occurs and when it could have been prevented**

What would happen if we reduced morbidity by 20% in different age bands?

0-4 yrs

0.03 healthy years gained

5-14 yrs

0.03 healthy years gained

15-39 yrs

0.1 healthy years gained

40-49 yrs

0.1 healthy years gained

50-59 yrs

0.22 healthy years gained

60-69 yrs

0.45 healthy years gained

70+ yrs

0.95 healthy years gained

Which conditions account for Indonesia's lost healthy years?

Leading contributors to non-fatal health loss

Disease or Condition	Attribution % / Years Lost	Implications
Cardiovascular and cerebrovascular disease, including stroke	**28% (2.58 yrs)**	Serious functional consequences among survivors
Musculoskeletal conditions, including low back pain and osteoarthritis	**18% (1.69 yrs)**	Long-duration pain and functional limitations
Diabetes and chronic kidney disease complications	**15% (1.38 yrs)**	Chronic illness, complications and progressive disability
Mental and neurological conditions, including depression and dementia	**14% (1.30 yrs)**	Substantial health loss, including during working ages
Respiratory (COPD), asthma	**11% (1.02 yrs)**	Persistent breathing difficulties, reduced physical capacity
Other (infectious diseases, injuries and trauma)	**15% (1.37 yrs)**	Temporary functional limitations, and in some cases, lasting disability

Longitudinal Decomposition — Explaining Indonesia's Progress (2020 vs. 2025)

- **The Top-Line Benchmark (The "What"):**
  - **2020 Baseline:** $HALE_0 = 62.56$ years; Total Life Expectancy = 73.37 years
  - **2025 Baseline:** $HALE_0 = 65.12$ years; Total Life Expectancy = 74.46 years
  - **Net Health Gain** ($\Delta HALE_0$): **+2.56** Healthy Years gained across the population.
- **Unpacking the +2.56 Years Gain (The "Why"):**
  - **Mortality Effect: +0.79 years (31%)** gained from fewer premature deaths
  - **Morbidity Effect: +1.31 years (69%)** gained from lower disability & better functional health among survivors

Longitudinal Decomposition — Explaining Indonesia's Progress (2020 vs. 2025) cont.

Life Stage /Cohort	Survival Gains (Mortality Effect)	Health Quality Gains (Morbidity Effect)	Total Age Contribution	Share of Total Gain (%)	Interpretation
Youth (0-14)	+0.08 yrs	+0.01 yrs	+0.08 yrs	3.2%	Steady, consolidated baseline in infant and under-5 survival.
Working Age (15-59)	+0.45 yrs	+0.92 yrs	+1.38 yrs	53.8%	Primary Growth Engine: Driven heavily by improved health status and non-fatal chronic disease control in adults.
Older Adults (60+)	+0.26 yrs	+0.84 yrs	+1.10 yrs	43.0%	Successful Morbidity Compression: Health quality gains outpaced survival gains threefold, meaning seniors gained more active, functional years.
National Total	+0.79 yrs (31%)	+1.77 yrs (69%	+2.56 yrs	100.0%	Balanced Progress: Over two-thirds of progress came from improving quality of life, not just extending biological lifespan.

Insights from Decomposition HALE (2020-25)

1. **Progress Over Time: Quality of Life Led the Expansion (2020–2025)**
    - **Morbidity Reduction Was the Primary Engine:** Over two-thirds came from reducing disability and improving functional health, rather than survival alone
    - **Working-Age Adults Drove National Gains:** Adults aged 15-59 contributed 54% of total progress, directly enhancing workforce productivity and economic potential
    - **Evidence of Healthy Aging:** Seniors (60+) gained +0.84 years in improved functional capacity, confirming early success in compressing disability into later life
2. **The Current Challenge: The 9.34-Year Health Gap (2025)**
    - **Concentration in Older Age:** Nearly three-quarters (6.97 years) of all lost healthy life is concentrated in the 60+age group
    - **NCDs Drive Three-Quarters of All Disability:** Cardiovascular disease & stroke (28%), musculoskeletal disorders (18%), diabetes & kidney disease (15%), and neurological/mental health conditions (14%)
3. **Implications for Health Policy & Budgeting**
    - **Consolidate Working-Age Gains:** Sustain early screening and workplace wellness to protect the massive gains achieved among adults aged 15-59.
    - **Shift from emergency treatment to healthy aging: E**xpand community-based NCD management, stroke rehabilitation, and integrated elderly long-term care.

V. Policy Priorities for Healthier Lives

Three Pathways to More Healthy Years

1. Prevent or postpone disease and disability

- Reduce exposure to major behavioral, metabolic and environmental risks
- Prevent the onset of chronic conditions and delay their progression

2. Reduce health loss among people already living with disease

- Improve diagnosis, continuity of treatment and long-term disease control
- Expand rehabilitation, mental health care and management of disabling conditions

3. Preserve functional capacity as people age

- Prevent avoidable deterioration in mobility, cognition and sensory function
- Support independence through integrated geriatric care and appropriate community services

Objective: add healthy years throughout the life course, not simply to extend survival

From Screening to Control: The Opportunity for Indonesia

Indonesia has already established a major platform for early detection. The next challenge is to convert detection into sustained improvements in health.

- By November 1, 2026, more than **114 million people** had undergone examinations through the Cek Kesehatan Gratis (CKG) program
- The Ministry of Health reported identifying more than **8 million people** with asymptomatic hypertension or diabetes
- WHO estimated that in 2024 only **5% of Indonesian adults aged 30–79** with hypertension had their blood pressure controlled

The opportunity is to complete the continuum of care:



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Beyond Chronic Disease Prevention: Reducing the Burden of Disability

Some of the largest causes of lost healthy years receive less policy attention than their contribution to disability warrants

Priority condition	Potential policy response
Musculoskeletal disorders and chronic pain	Earlier management, physiotherapy, occupational health and rehabilitation
Stroke-related disability	Prevention, timely treatment and structured post-stroke rehabilitation
Mental health conditions	Integration of diagnosis and treatment into primary care
Hearing and visual impairment	Earlier identification, treatment and access to assistive technologies
Age-related functional decline	Integrated geriatric assessment, rehabilitation and community-based support

Implications

- Reducing disability requires interventions beyond the conventional focus on preventing premature death
- Effective treatment and rehabilitation can improve healthy longevity even when life expectancy changes little
- Functional outcomes should become a more prominent measure of health-system performance
- **Healthy longevity requires a health system that prevents disability—and helps people recover or maintain function when illness occurs**

Which investments would generate the greatest gains in healthy years?

The largest disease burden does not necessarily identify the best investment

Policy prioritization requires answering four questions:

1. **How much health loss is potentially avoidable?** Age- and cause-specific contributions to HALE loss
2. **How effective are available interventions?** Expected reductions in disease onset, severity and duration
3. **What would implementation require?** Costs, delivery capacity, coverage and financial sustainability
4. **Who would benefit?** Distribution of gains across income groups, provinces, sex and age

Investment Areas

- Integrated hypertension and diabetes management through primary care.
- Early intervention and rehabilitation for disabling chronic conditions.
- Functional preservation and community-based support for older people.
- Population-level action on tobacco, diet, air pollution and occupational risks.

Indonesia has added years to life, but has it added health to those years?

Yes—but substantial scope for improvement remains.

Progress is not yet secure. 2025 estimates suggest a reversal, with life expectancy increasing while HALE declined slightly.

Later life remains marked by substantial health loss. At age 60, Indonesians can expect approximately 19 more years of life, but only 11.1 equivalent years in full health.

Further gains require preventing illness earlier and preserving function throughout life. Priorities include chronic disease management, rehabilitation and support for independent living.

The goal is to ensure that a greater share of Indonesia's longer lives are lived in good health.

If healthy years became the measure of success, what would Indonesia do differently?

Discussion Questions

1. If Indonesia could prioritize only two major interventions to improve HALE, which should they be?
2. What evidence would convince us that these interventions offer the greatest returns in healthy years gained?
3. What would need to change in health financing, service delivery and accountability to implement them effectively?

Our ambition should be measured not simply by how many years Indonesians live, but by how many of those years they can live in good health.

Thank you

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Mini Workshop
HEALTH ADJUSTED LIFE EXPECTANCY (HALE)
INDONESIA