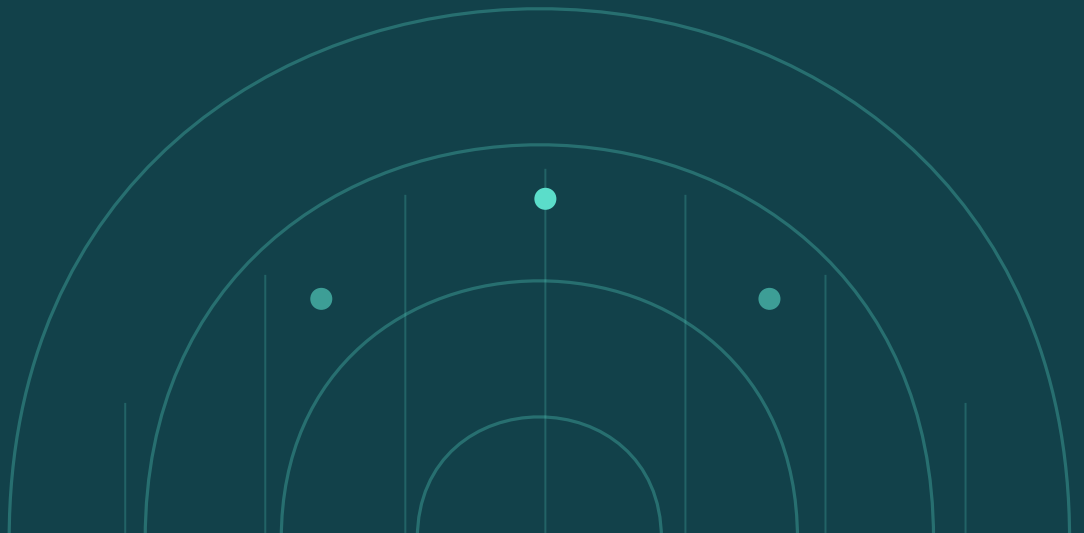


WHITE PAPER · 2023 EDITION · VOLUME I

Early Detection and Continuity of Care

Bridging Indonesia's Preventive Health Gap

Building a stronger nation through a healthier, more productive population



ABOUT THIS DOCUMENT

Plebo wrote and published this paper as a contribution to the public conversation about preventive health in Indonesia. It is analytical in nature and is not intended as medical or investment advice.

Every figure here comes from official government publications, international bodies, or statements by public officials, with research closing at the end of 2023. Sources appear in the footnotes of the relevant page and are collected in Notes & Sources.

The field observations in Part Three are qualitative. They come from Plebo's day-to-day operations and are not presented as population-based research.

2023 Edition · Volume I
Plebo · Jakarta, Indonesia
plebo.id

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The argument in one paragraph

Indonesia does not fail at early detection because too few people get tested. It fails because test results stop at the page: never understood by the person, never read as a pattern by the institution, never turned into action. The country has already paid for detection. It has not yet collected the benefit.

What we see every day, and why we wrote this down

We read thousands of lab reports a year. Eventually one thing becomes hard to ignore.

Plebo works in a layer almost nobody talks about: what happens between the moment someone gives a blood sample and the moment that person actually does something about the result. We handle home collection, the laboratory workflow, and how results are presented.

The biggest problem we run into is not people refusing to get tested. Testing happens at enormous scale here: through company medical check-ups, through screening programs, through government initiatives, through people going on their own. The problem starts afterward. The result comes out, gets a quick glance, gets filed away, and that is the end of it.

Most people who receive a lab report do not really know what it says. They see a column of numbers, some arrows, and reference ranges that explain nothing about their own life. The company paying for the testing usually receives a stack of individual documents

and no picture of its workforce at all. Between the two of them, nobody feels responsible for the next step.

The money has been spent. The effort has been spent. The sample has been drawn. The value still evaporates. A condition that could have been caught at its cheapest stage resurfaces a decade or more later as catastrophic disease, at its most expensive stage, when there are few options left.

This paper is our attempt to set that problem down plainly, using data anyone can check. We chose not to dress it up in marketing language. Some of the criticism in here applies to our own industry, and to us.

We wrote it because the problem is fixable, and because no single party will fix it alone. It requires employers, BPJS, providers, and lenders to stop treating health testing as an annual obligation and start treating it as a starting point.

Plebo

Jakarta, 2023

Six things worth reading first

01 · The cost is growing faster than the capacity to carry it

Catastrophic disease cost BPJS Kesehatan, Indonesia's national health insurer, almost Rp24.1 trillion (about USD 1.6 billion) in 2022. That was 34.3 percent more than the year before, and it absorbed 21 percent of the insurer's entire claims burden.¹ The worrying part is not the size. It is the speed.

03 · The testing happens. The knowledge never arrives

Indonesia's national health survey measured high blood pressure in 34.1 percent of adults. Only 8.8 percent had ever been diagnosed.³ The measurement works. What fails is the journey from a reading to awareness and treatment.

05 · The country pays twice

Indonesia pays to detect, then pays again to treat the disease it had already glimpsed. On top of that, roughly two million citizens travel abroad for treatment every year.⁶

02 · Health spending sits almost entirely downstream

Roughly 91 percent of national health insurance spending goes to curative care. Health promotion and prevention get 4.7 percent.² The system is built to pay for disease, not to prevent it.

04 · The leak has layers, not one hole

Of every 100 Indonesians living with diabetes, about half are undiagnosed. Of those diagnosed, only two-thirds are on treatment. Of those on treatment, only a third are actually well controlled.^{4,5} Eleven people are left.

06 · What is missing is follow-up, not equipment

Indonesia is not short of laboratories or screening programs. What does not exist is the layer that turns a result into understanding, understanding into a decision, and a decision into change that lasts.

“The country has already paid for detection. It has not collected the benefit.”

¹ BPJS Kesehatan, 2022 report. ² Ministry of Health, briefing to Commission IX of the House of Representatives, March 2021. ³ Riskesdas 2018 national health survey. ⁴ IDF Diabetes Atlas, 2021. ⁵ PERKENI, 2021. ⁶ Statement by the President of Indonesia, 6 March 2023.

Indonesia's health system in one page

Most of the figures in this paper come from four institutions. If you have not worked in Indonesia before, this page is worth ninety seconds.

BPJS Kesehatan

The single national health insurer, created in 2014. It runs JKN, the national health insurance scheme, which is mandatory and covers the large majority of the population. It pays hospitals and clinics, and its claims data is the clearest window into what disease actually costs the country.

JKN

Jaminan Kesehatan Nasional, the scheme itself. Funded through payroll contributions, individual premiums, and government subsidies for the poor. When this paper refers to national health spending, it usually means JKN spending.

Kemenkes

The Ministry of Health. It sets policy, runs the primary care network of community health centers, and publishes the national health surveys this paper draws on.

Riskesdas

The national basic health survey, run roughly every five years. It matters here because it measures people directly, taking blood pressure and blood samples, rather than relying on self-reported history. That is what makes the gap between measured and diagnosed prevalence visible.

~280m

Population, of which roughly 190 million are of working age

Rp112 tn

Annual national health insurance spending, about USD 7.5 billion

Rp15,000

Approximate rupiah per US dollar used for conversions in this paper

One more thing worth knowing: employer-funded medical check-ups are widespread in Indonesia, partly driven by occupational health regulation. That private testing runs in parallel to the public system, at significant scale, and is largely invisible in national health data. Part Three returns to it.

Nine numbers that frame this paper

Rp24.1_T

Catastrophic disease cost to BPJS Kesehatan in 2022, about USD 1.6 billion¹

34.3%

Increase over the previous year, in a single year¹

23.3_m

Catastrophic cases handled in 2022, up 18.6 percent¹

91%

Share of national health insurance spending that is curative²

4.7%

Share left for health promotion and prevention²

21%

Catastrophic disease as a share of the insurer's total claims¹

34.1%

Adults with high blood pressure by direct measurement³

8.8%

Share of them who have actually been diagnosed³

±50%

Indonesians with diabetes who remain undiagnosed^{4,5}

¹BPJS Kesehatan, 2022 report. ²Ministry of Health, briefing to Commission IX, March 2021. ³Riskesdas 2018, prevalence by measurement among adults aged 18 and over. ⁴IDF Diabetes Atlas, 2021. ⁵PERKENI, 2021.

01

PART ONE

A Cost That Keeps Growing

Before talking about prevention, it helps to look at what Indonesia pays when prevention does not happen, and how fast that price is rising.

Eight diseases, one fifth of the entire burden

Indonesia's national health insurance scheme classifies eight conditions as catastrophic: heart disease, cancer, stroke, kidney failure, liver cirrhosis, thalassemia, leukemia, and hemophilia.¹

What links them is not the organ or the cause. It is the cost pattern. Treatment runs long, often for life, and consumes money far out of proportion to the number of patients.

In 2022, BPJS Kesehatan handled around 23.3 million catastrophic cases, 18.6 percent more than in 2021, at a cost of nearly Rp24.1 trillion. That cost rose 34.3 percent in a single year.¹ This group of diseases absorbs about 21 percent of the insurer's entire claims burden.

The number matters for a different reason. Almost every disease on that list develops slowly, spends years without symptoms, and leaves a trail that a routine lab panel can read long before the patient feels anything is wrong.

Rp24.06 tn

Total catastrophic disease cost, 2022

+34.3%

Cost increase from 2021

+18.6%

Case volume increase from 2021

Why this is a detection problem

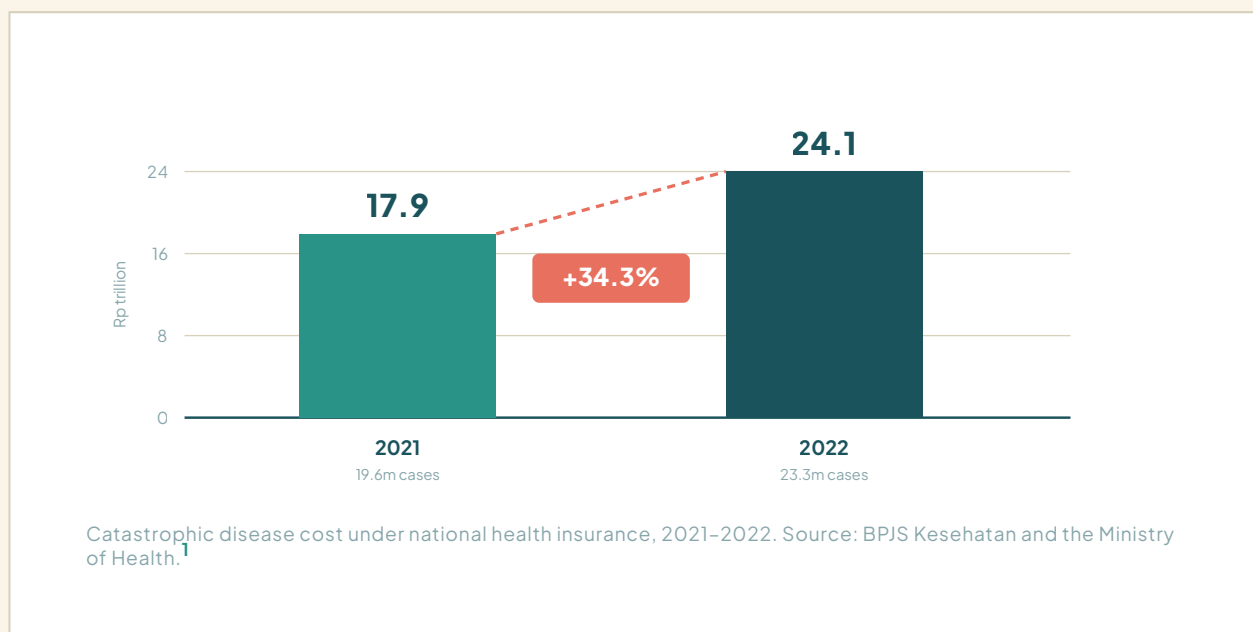
Heart disease, stroke, kidney failure, and most cancers do not arrive overnight. They build over years through blood pressure, blood sugar, lipid profile, and kidney function drifting slowly out of range. All of it is measurable, and cheap to measure.

Heart disease alone accounted for Rp12.14 trillion across 15.5 million cases in 2022. One disease, half the national catastrophic burden.

¹ BPJS Kesehatan, 2022 annual reporting, as cited in national media, 2023.

The number is not the problem. The slope is.

A Rp24 trillion burden can be budgeted for. A burden growing by a third every year cannot be budgeted for indefinitely.



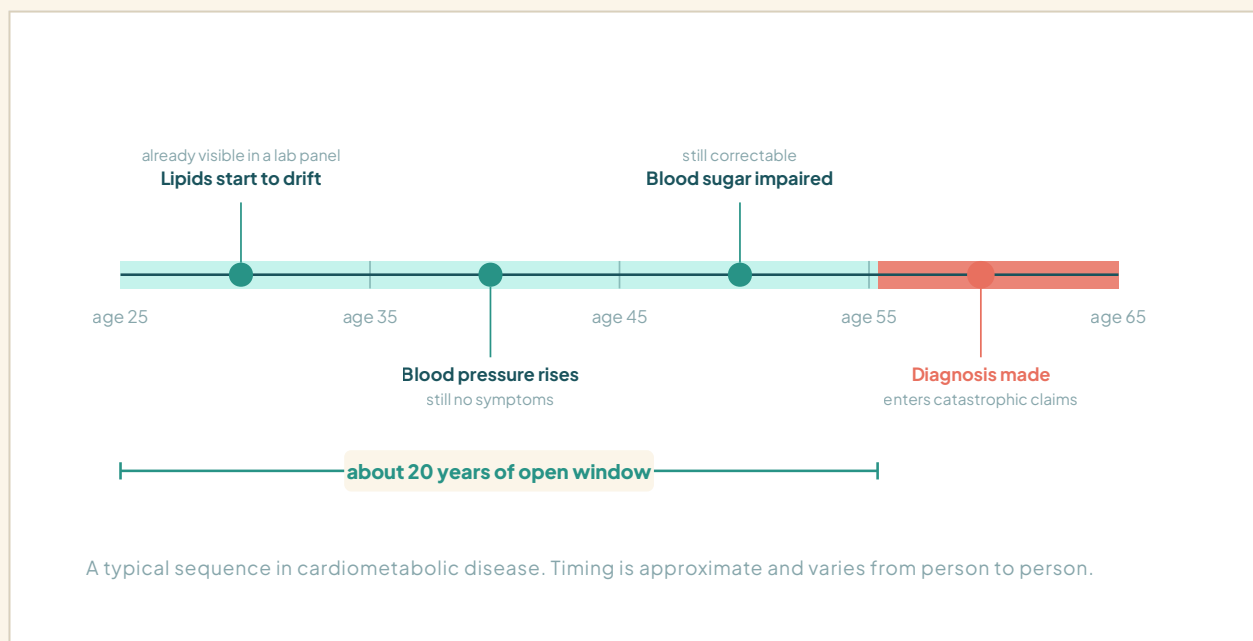
At this rate the issue stops being an annual budget line and becomes structural. Each year's additional burden comes from a new cohort of patients who, ten or fifteen years earlier, were still in a correctable state.

Adding hospital capacity, equipment, and specialists is still necessary. But that improves how many patients can be absorbed, not how fast they arrive. As long as the arrival rate is untouched, any amount of capacity will fall behind.

¹The 2021 figure is derived from the reported 34.3 percent increase for 2022 and is consistent with Ministry of Health reporting of 19.6 million catastrophic cases in 2021.

Catastrophic disease does not arrive overnight

This is why the numbers on the previous two pages are a detection problem rather than a budget problem. Between the first abnormal reading in a lab panel and the day a diagnosis is made, there are usually fifteen to twenty years.



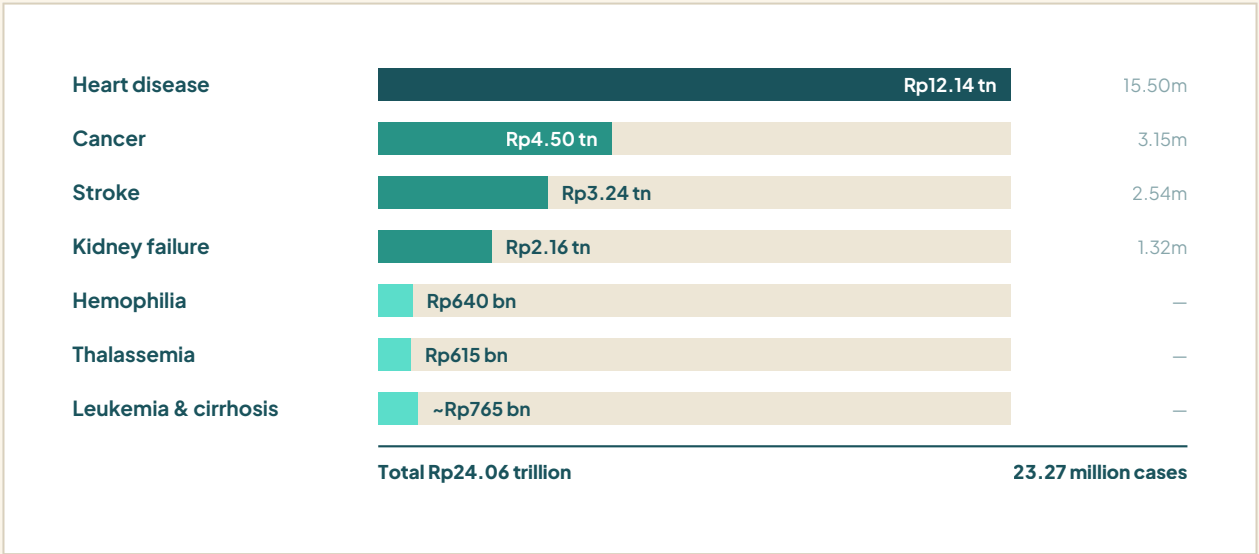
Twenty years is a very long time. In that span, a working Indonesian will almost certainly have gone through a company medical check-up ten times or more, and will almost certainly have had their blood pressure taken at a clinic.

The window is not closed. It is wide open, repeatedly, for two decades, and it is walked past again and again without anyone acting on what was already visible inside it.

Every catastrophic case reaching BPJS today is a twenty-year window that has already closed. The cases that will arrive in 2040 are still open right now.

Where the money goes

Four diseases absorb almost nine out of every ten rupiah spent on catastrophic care. They share something that is rarely said in the same breath: each one has laboratory markers that can be tracked for years before a diagnosis is made.



Markers that have been available all along

Blood pressure for heart disease and stroke. Blood glucose and HbA1c for the diabetes that ends in kidney failure. Creatinine and eGFR for kidney function. A lipid panel for cardiovascular risk. All of these sit among the cheapest tests available in any Indonesian laboratory.

The gap between a test that costs a few dollars and treatment that costs thousands is not a technology gap. It is a time gap. And in most cases that time is spent without anyone noticing.

So the more useful question is not how to finance this burden, but why markers that are already cheap and already available produce no action.

1 BPJS Kesehatan, 2022 report. 2 Residual value, derived from the difference between the catastrophic total and the itemized disease figures.

A system built to pay for disease

When the Minister of Health laid out the structure of national health insurance spending before Commission IX of the House of Representatives, the picture was hard to misread.



Structure of national health insurance spending. Source: Ministry of Health briefing to Commission IX, March 2021.¹

Of roughly Rp112.1 trillion in total national health insurance spending, about Rp102.3 trillion went to curative care. Around Rp5.3 trillion was left for promotion and prevention.¹

That ratio is more than an allocation problem. It explains why incentives across the whole delivery chain point downstream. When money follows treatment, treatment capacity is what grows. Prevention stays a moral recommendation with no funding line behind it.

Money leaving the country

In March 2023 the President of Indonesia stated that almost two million Indonesians still travel abroad for medical treatment each year: about one million to Malaysia, roughly 750,000 to Singapore, the rest elsewhere. He put the foreign exchange leaving the country at Rp165 trillion, around USD 11 billion.²

This figure is presented as stated publicly and is not a Plebo calculation.

¹ Ministry of Health, ministerial briefing to Commission IX, 17 March 2021. ² Statement by the President of Indonesia at a hospital opening in Bandung, 6 March 2023.

But the problem is not that too few get tested

The usual explanation is low public awareness. Indonesians, the argument goes, will not get checked until they feel ill. The fix then looks simple: more education, more screening, more service points.

That explanation is not entirely wrong, but it hides a larger and less comfortable problem.

In practice, health testing in Indonesia already happens at enormous scale. Every year hundreds of thousands of workers go through employer-funded medical check-ups, some required by regulation, some offered as a benefit. BPJS Kesehatan's health history screening program has reached millions of members. The national health survey directly measures blood pressure, blood glucose, and ot-

her indicators across hundreds of thousands of respondents.

Blood has been drawn. Blood pressure has been taken. The numbers exist.

The question nobody asks is what actually happens after those numbers come out.

This is where the paper turns. In our view, the biggest failure in Indonesian preventive health happens after the sample is drawn. That stage belongs to nobody, is measured by nobody, and is funded by nobody.

The next part shows that this is not a hunch. It can be read straight off official government data, in the two conditions Indonesians are tested for most often.

If a third of all adults measure as hypertensive, the measurement clearly works. What does not work is everything that happens after the number is read.

02

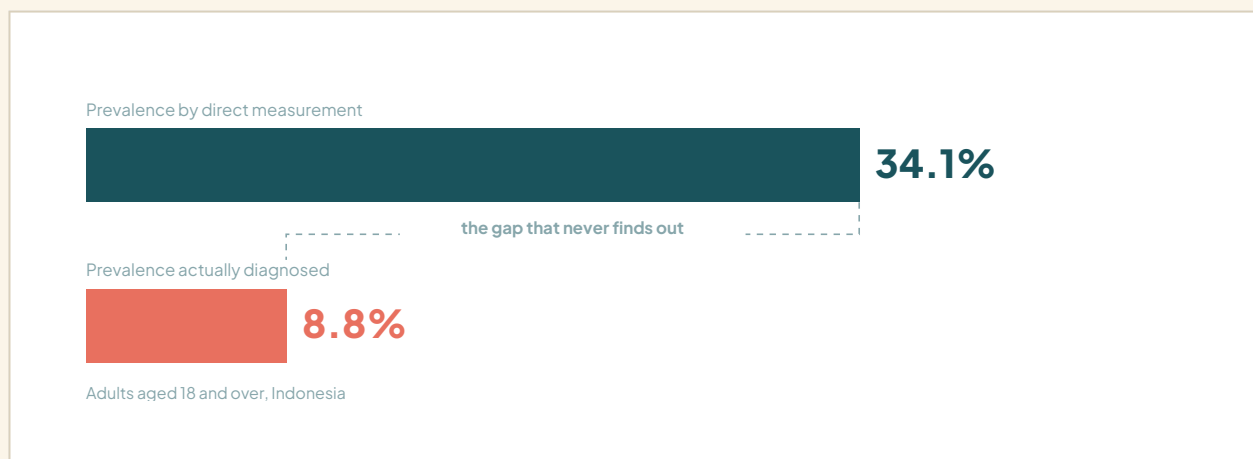
PART TWO

Anatomy of a Leak

Two diseases, two sets of official data, and the same pattern in both: results that never reach the person they belong to.

Measured in one third. Known by almost none.

Riskesdas, Indonesia's national basic health survey, measures blood pressure directly rather than asking about medical history. The result: 34.1 percent of adults fall into the hypertensive range. In the same population, only 8.8 percent had ever been diagnosed.¹



Roughly three in four people with high blood pressure do not know it. These are not people who refuse testing; most of them have been tested. The number came out, went onto a sheet of paper, and turned into nothing.

The leak continues even after diagnosis. Among those already diagnosed, 13.3 percent take no medication at all and 32.3 percent do not take it consistently.¹

Why hypertension is the honest test case

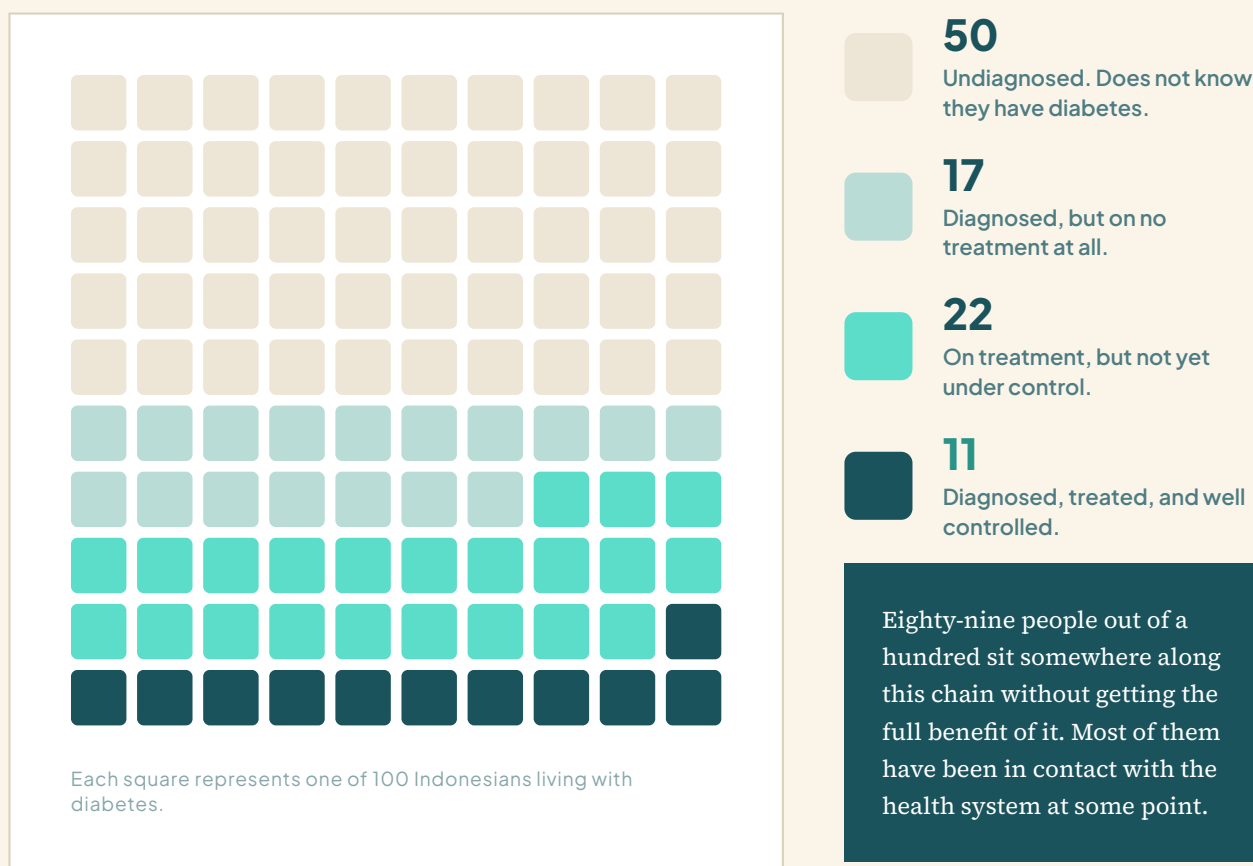
Blood pressure is the cheapest and most widely available measurement in health care. No laboratory, no fasting, no referral. If a result this easy to produce still does not reach the person it belongs to, there is little reason to expect more complex testing to do better.

If a blood pressure reading cannot reach the person it belongs to, no amount of advanced diagnostics will fix this on its own.

¹ Riskesdas 2018, Ministry of Health of the Republic of Indonesia.

Out of a hundred people, eleven are actually treated

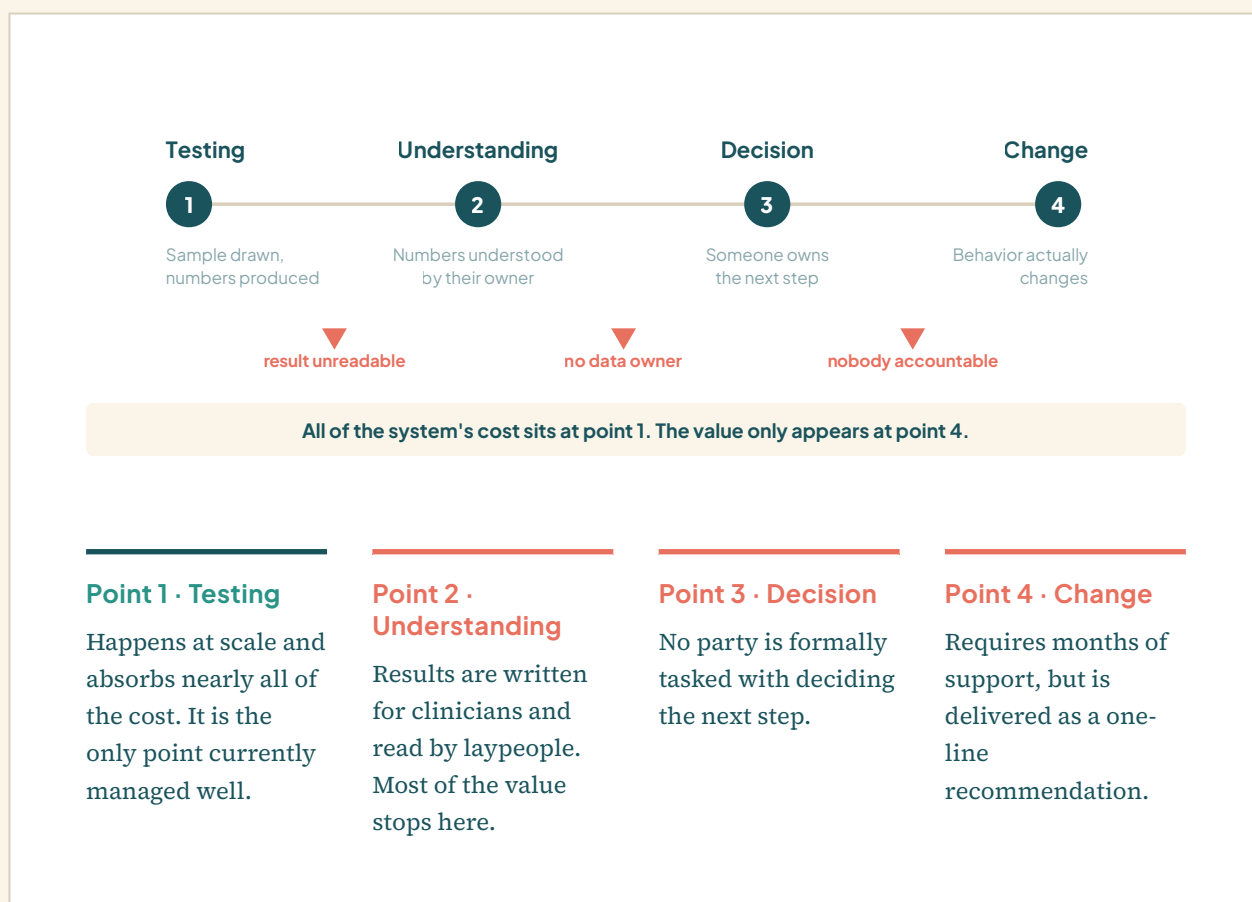
With diabetes the leak can be traced layer by layer. About half of Indonesians living with diabetes have never been diagnosed. Of those diagnosed, only about two-thirds are on treatment. Of those on treatment, only about a third are genuinely well controlled.^{1,2}



¹IDF Diabetes Atlas, 2021: undiagnosed diabetes in Southeast Asia, including Indonesia. ²PERKENI, guidelines for the management and prevention of type 2 diabetes, 2021. The chart restates those proportions on a base of 100 people and is illustrative.

Four points where the value evaporates

The same pattern shows up in hypertension and diabetes, and in our own experience also in dyslipidemia, impaired kidney function, and liver dysfunction. The chain breaks into four points. At each one, some value is lost. Not one of them is anybody's formal responsibility.



These four points are not a theoretical breakdown. They are the sequence every tested person passes through, in the same order, every time.

What makes it hard to fix is not technical complexity. Nobody formally owns the last three points, so nobody registers a failure when they do not happen.

Three of the four points have no owner. Fixing this does not start with more testing. It starts with deciding who is accountable for what happens next.

The first two leaks

One · A result its owner cannot read

A lab report is written for clinicians, not for the person tested. It shows parameter names, units, values, and reference ranges. Nothing explains what any of it means, how serious it is, or what matters most.

The person holding that sheet has three questions it does not answer: is this serious, what caused it, and what should I do now. Without those answers, a lab report is an administrative document.

It gets worse when more than one value is off. Elevated fasting glucose, high triglycerides, and excess waist circumference together mean something very different from any of them alone. The report never conveys the combination, only line after line.

In our experience this is where the largest leak happens, and also the cheapest point to fix.

Two · Data nobody owns

A person's testing history is usually scattered: one file at the company clinic, one at a hospital where they were once admitted, another at a lab they walked into themselves. No single place holds the path those values took from year to year.

That path is the most valuable information there is. Creatinine climbing slowly over five years matters far more than a single creatinine reading still inside the normal range.

At the institutional level the problem takes another shape. A company funds medical check-ups for hundreds or thousands of employees and receives the results as a pile of individual documents. No aggregate view of the workforce, no comparison between units, no direction of travel from year to year.

The spending can never be evaluated. The company pays every year with no way of knowing whether anything improved.

The first two leaks happen before anyone gets to make a decision. Neither is a medical problem. Both are about format, data ownership, and who is reading.

The third and fourth leaks

Three · A decision that is nobody's job

Once the result is out, who decides what happens next? The laboratory is responsible for test quality, not for follow-up. The physician signing off the check-up writes a conclusion but usually has no continuing relationship with the participant. HR receives the documents but has no clinical authority.

The participant is told to see a doctor if needed. That instruction hands the entire decision to the one person least equipped with the information to make it.

When a step is everyone's responsibility, in practice it is no one's.

Four · Change with nobody alongside

Most recommendations attached to a test result read the same way: eat better, move more, lose weight, manage stress. All of it is true, and almost none of it can be acted on simply by reading it.

Behavior change needs a specific target, repeated feedback, and re-measurement to find out whether the effort worked. A one-line note on a lab report provides none of those.

This is why the hypertension data shows that even a third of diagnosed patients do not take their medication consistently. The failure is not knowledge. It is the absence of support.

All four points share one thing: none of them requires new medical technology. What is required is a connecting layer that currently belongs to nobody.

These four leaks have one thing in common: not one of them needs new medical technology to fix.

What Indonesia is actually buying

When a company funds medical check-ups for a thousand employees, what it is buying is not the testing. It is the chance to know something early, and the chance to act on that knowledge.

If that knowledge stops at the printed sheet, what was bought is a blood draw. The cost is paid in full; only a fraction of the benefit is collected.

The same applies at the national level. Screening programs, health surveys, and primary care visits all generate large volumes of data,

paid for out of public budgets. As long as that data does not turn into action at the level of the individual, it is a statistical record of a problem that keeps getting bigger.

Indonesia has already paid to detect. What has not been built is the mechanism to use what detection found.

The next part is what we see ourselves. Not a study, but notes from a party that sits every day between the laboratory and the person being tested.

The question is not how many people have been tested. It is how many are better off because they were.

03

PART THREE

Notes from the Field

What we observe from a position between the laboratory and the person being tested. This part is qualitative and is not offered as population-level evidence.

Patterns that repeat in corporate check-ups

These are the patterns we run into most often when running group health testing. We offer them as operational observations, not research findings.

Testing is treated as an obligation, not as information

Schedules are built to process a set number of participants within a set window. Success is measured by completion rates and on-time delivery of documents. No indicator measures whether any participant ended up better off.

Results are handed over, and the chain stops

The documents reach the participant and HR. After that there is rarely any mechanism setting out who follows up on what, within what timeframe, and to what standard.

The most common findings are not rare diseases

What we see most is disordered lipids, blood glucose above the optimal range, high blood pressure, and elevated body mass index. They often appear together in the same person, and almost always in working age.

Most participants are finding out for the first time

Many say they have never felt any symptoms. That matches the national data: the conditions found most often are precisely the ones that cause no complaints for years.

Companies want the whole picture and rarely get it

The question employers ask most is simple: how healthy is our workforce, and what needs fixing first. Conventional per-individual reporting is not built to answer it.

The next round starts from zero

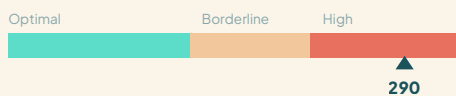
A year later the cycle repeats with nothing to compare against. Without a clean history, there is no way to tell whether someone's numbers improved, worsened, or held.

What this page describes is not the failure of one company or one laboratory. It is the industry's default, and the default is what has to change.

One profile, built from the most common patterns

The profile below is a composite illustration. It does not describe a specific individual; it combines the characteristics we most often see in working-age participants.

Participant “Y”	
Age	25 years
Occupation	Office worker
Body mass index	Obese range
Total cholesterol	290 mg/dL
Symptoms	Fatigue only
Prior testing	None



Total cholesterol against common reference ranges.

What usually happens

The result arrives as a sheet with a dozen or more parameters. The cholesterol value is printed with a “high” flag. At the bottom sits a note about diet and exercise, and a line about seeing a doctor if needed.

He skims it, files it, and gets on with his life. Nobody follows up. A year later the test is repeated, and the number is usually worse.

What was already known that day

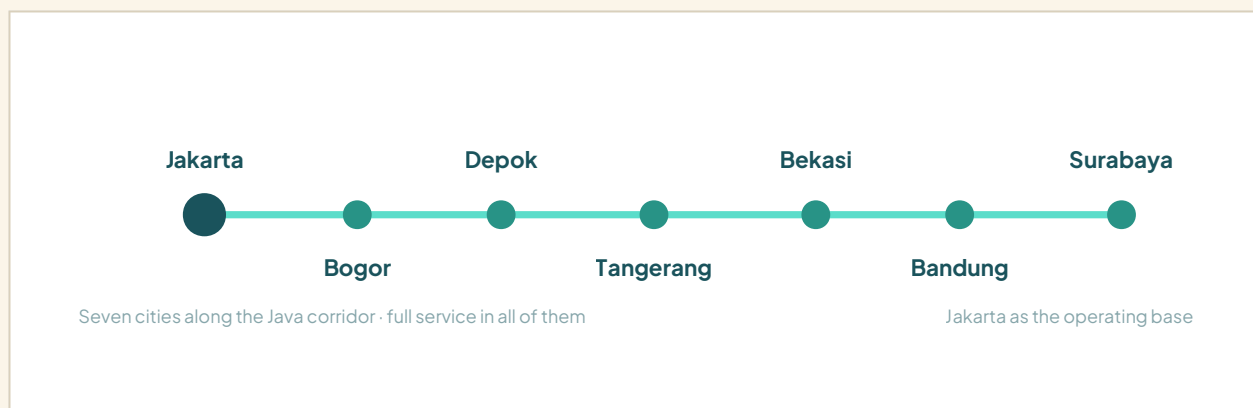
Young age, elevated body mass index, total cholesterol far above the optimal range, and a low-activity lifestyle together describe long-term cardiovascular risk that was readable that same day, two to three decades before it might surface as a hospital diagnosis.

The information needed was already in hand. What was missing is anything that makes it mean something to the person holding it.

Someone like “Y” is the best case a preventive system can hope for: young, already tested, and with findings that are still entirely correctable. If the chain breaks even here, the failure is structural rather than individual.

Where we operate

The observations in this part come from home and workplace sample collection, run together with a network of partner laboratories.



How the chain runs

01 · Request

Testing is booked through the app, with no prior clinic visit.

02 · Collection

Done at home or at the office by certified phlebotomists who have passed background checks.

03 · Laboratory processing

Samples are processed at partner laboratories through a supply chain held to defined quality standards.

04 · Delivery of results

Results appear in the app with prior values and an explanation for each parameter.

05 · Clinical validation

Explanations generated by the system are validated by clinical pathologists before they are shown.

Why coverage decides everything

Coverage determines who can be tested without taking leave, traveling, or queueing. Those three things are what most often delay testing until symptoms appear.

Why the chain has to stay whole

Moving sample collection out of the clinic only helps if quality does not move down with it. The five steps here are treated as one chain, not five separate services.

Convenience bought at the cost of reliability is not progress. It just moves the error to the next stage.

04

PART FOUR

A Four-Layer Framework

Four points of leakage call for four layers of response. This part sets out the framework, then shows how we try to run it.

From access to action

This is written as an industry framework, not a product description. Each layer can be run by a different party. What matters is that all four connect, and that someone is accountable for the joins.

1**Access: making testing happen**

Removing the barriers of time, distance, and queueing. Testing that has to be fought for will always wait until symptoms arrive.

2**Interpretation: making results legible**

Turning a column of parameters into an explanation that answers the owner's three questions: how serious is this, what might be causing it, and what happens next.

3**Aggregation: making patterns visible**

Keeping history at the individual level so direction of travel is readable, and building a whole-population view at the institutional level so decisions rest on evidence.

4**Action: making change stick**

Translating findings into specific targets, supporting the work of getting there, and re-measuring to find out whether it worked.

Without the fourth layer, the first three only produce tidier knowledge about the same problem. Without the first, the other three have nothing to work with.

Access

The biggest barrier to testing in a large city is not the price of the test. It is the cost that never appears on the price list.

Travel time, queueing, half a day of leave, and juggling a family schedule make an affordable test feel expensive. For someone with no symptoms, the smallest friction is enough to postpone. The postponement then runs year after year.

Our approach moves the collection point to the home and the workplace. Booking happens in the app, a phlebotomist comes to the participant, and the sample travels to the laboratory through a controlled supply chain.

For employers this changes another calculation: testing on site does not cut deeply into productive hours, which makes higher participation far easier to reach.

Quality conditions for this layer

Moving collection out of the clinic only helps if quality does not travel down with it. Three conditions apply: certified and trained phlebotomists, standardized sample handling and transport, and processing laboratories that meet quality requirements.

Convenience bought at the cost of reliability is not progress; it just moves the error downstream.

What this layer is measured on

Participation rate, turnaround time, and the share of participants who complete the full scheduled panel.

Access is the only layer Indonesia has taken seriously so far. The next three are almost entirely empty.

Interpretation

A lab result only becomes information once its owner understands what it says.

In this layer, every parameter is translated into language that works without medical training: what the parameter does, what an out-of-range value means, what might be causing it, and what step makes sense next.

That translation is drafted with the help of an AI system so it can be done consistently for every participant, then validated by a clinical pathologist before it is shown. The order matters: the system drafts, the clinician validates. Not the reverse, and never without the clinician.

The limits need stating plainly too. This layer exists to make results understandable and to signal when someone should see a doctor. It does not replace clinical examination and it does not diagnose.

Three questions it has to answer

How much does this matter to me?

Findings are ranked by priority instead of every parameter carrying equal weight.

What might be causing it?

Plausible causes are named, including the ones that are not disease.

What do I do now?

The next action is stated specifically, including when to see a doctor.

What this layer is measured on

The share of participants who open and read their results, and the share of meaningful findings that lead to a consultation or further testing.

Fixing this layer adds no new tests at all. The only thing that changes is the shape of what the person receives.

Aggregation

One value describes today. A series of values describes the direction someone is heading.

At the individual level, this layer keeps the whole testing history in one place, including results from other laboratories or hospitals that the participant uploads. What is shown is not just the latest number but how it has moved.

The difference is large. A value still inside the normal range but moving steadily in one direction over several years is a warning that a single reading will never reveal.

At the institutional level, this layer builds the picture employers have never had: findings by age group and business unit, the conditions that appear most often, and how all of it has shifted since the last cycle.

With that picture, decisions about health programs stop being guesswork. A company can choose interventions matched to what its workforce actually has, then judge the results at the next cycle.

Principles we hold to

Health data belongs to the person.

Participants have full access to their own history and can take it anywhere.

Institutions receive patterns, not individual sheets. Company-level reporting is aggregate only.

Aggregate data must never become a selection tool. A workforce health picture exists to design interventions, not to judge individuals.

What this layer is measured on

History completeness per participant, and the shift in findings between testing cycles at the institutional level.

Without history, every test starts from zero. With history, the same test becomes a direction. A direction is something you can act on.

Action

This is the layer that goes missing most often, and the only one that decides whether everything before it meant anything.

Knowing that someone's cholesterol is high does not lower it. What lowers it is a run of small changes sustained over months, with clear targets and repeated feedback.

So the fourth layer runs as support rather than advice. Findings are translated into specific targets across the four things that move the needle most: nutrition, physical activity, sleep, and mental health. Progress is then tracked day to day.

What closes the loop is re-measurement. Without the next test there is no way to know whether the effort worked, and without that, motivation runs out on its own.

This role is run through Livewell, a physician-built lifestyle support platform that works on top of the same test results.

livewell

Four areas of support

Nutrition. Intake targets are built from individual requirements and test findings, referenced against a catalogue of food Indonesians actually eat.

Physical activity. Realistic daily movement targets that step up gradually from where the participant starts.

Sleep. Duration and consistency, both closely tied to blood pressure and blood glucose control.

Mental health. Mood tracking as part of the whole health picture, not as an add-on.

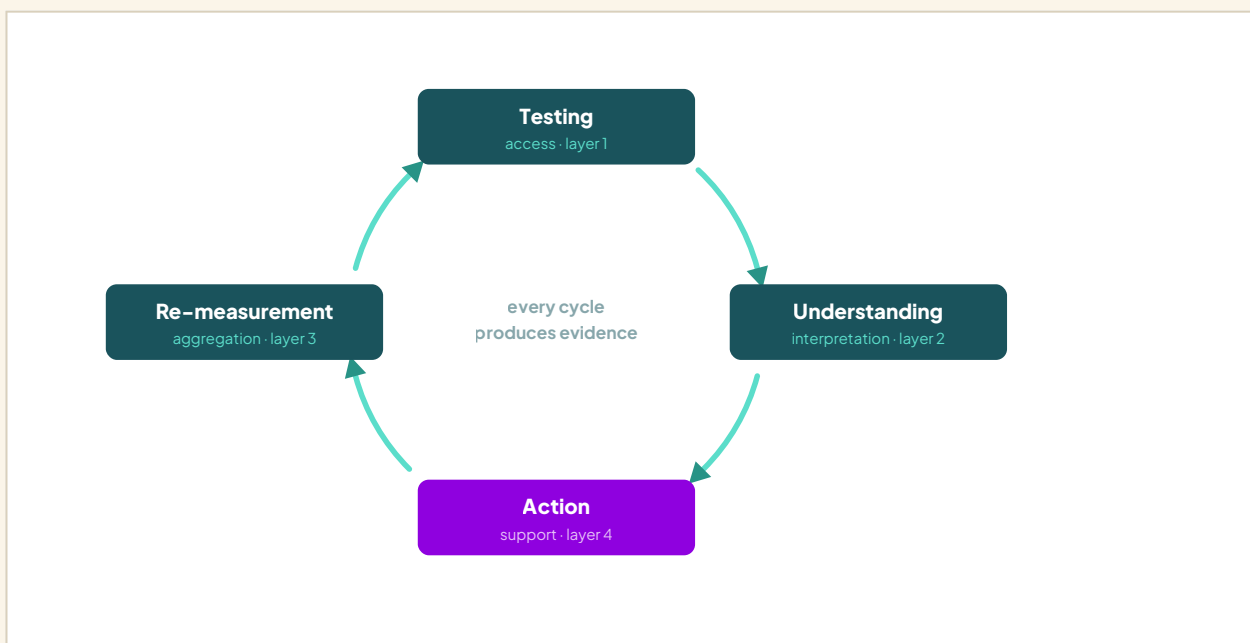
What this layer is measured on

The change in lab values at the next test. Not the number of recommendations sent, and not participant satisfaction.

The success measure here is brutal and simple: the next set of numbers. If they have not moved, the support is not working.

Closing the loop

The difference between an annual check-up and preventive health comes down to one thing: whether the chain returns to its starting point. As long as testing ends when results are handed over, it stays an event. Once results produce action that is then measured again, it becomes a process.



Once the loop closes, each cycle produces something the previous one did not have: evidence about what worked. The employer learns which interventions moved anything. The participant sees their own numbers change, which is the strongest source of motivation available.

We do not claim this loop can only be run by one party. What we do hold is that as long as nobody is accountable for connecting the four layers, the outcome will keep looking exactly like the national data does today.

**Testing without follow-up is a cost.
Testing with follow-up is an investment.**

05

PART FIVE

Implications

What the parties able to change this can actually do, starting with the ones closest to the problem.

For employers

Employers fund more adult health testing in Indonesia than anyone else. That also makes them the party losing the most value when the chain breaks.

Change what counts as success

As long as a check-up is judged on completion rates, the output will always be paperwork. More useful measures: the share of meaningful findings that lead to follow-up, and how findings shift by the next cycle.

Budget for follow-up, not just for testing

If the entire budget is consumed at the collection stage, the stage that determines the outcome has no resources at all. Some of it has to go to support and re-testing.

Keep health separate from performance

Participant trust is a precondition for any program working. Health data that feels like it could affect someone's position produces avoidance, not participation.

Ask for an aggregate report, not a stack of files

A whole-workforce picture is the basis for designing a program that hits the right target. Without it, the employee health budget is spent on assumptions.

Make sure participants can read their results

A result format that works without medical training is a requirement, not a feature. Results nobody understands are never acted on.

Measure on the right horizon

Catastrophic disease takes fifteen to thirty years to form. A prevention program judged inside one budget year is almost always declared a failure before it has had a chance to show anything.

How much of the medical check-up your company funded last year actually turned into action? Most HR teams have no way to answer that.

For financial institutions and policymakers

Financial institutions and risk carriers

Banks, insurers, and BPJS carry the financial consequences of disease that was never caught early. Yet nearly every instrument available to them works after the fact: claims, treatment financing, coverage.

There is unworked ground upstream. Financing periodic testing for worker populations, products that tie benefits to testing compliance, and risk assessment built on aggregate health indicators rather than individual records. All of it operates before the large costs appear.

One principle has to hold from the start: health data must never inform a credit decision or individual selection. Its value lies in product design and portfolio-level risk, not in screening people one by one.

For anyone carrying long-horizon risk, each year of delayed detection means another cohort entering expensive care. The arithmetic is not complicated; what has been missing is data clean enough to run it.

Policymakers

Indonesian health policy has already made promotion and prevention the stated direction. What has not caught up is the financing structure: as long as most of the money follows treatment, incentives across the delivery chain will keep pointing downstream.

A few things seem worth considering. First, treating follow-up on screening results as a funded part of the service rather than a recommendation. Second, pushing for testing histories that connect across facilities, since without history there is no way to detect direction. Third, defining success for prevention programs by change in participant condition rather than by the number of tests completed.

Fourth, making use of workplace health testing, which already runs at scale and is privately funded. It is existing detection infrastructure that has never been used as a source of health information on the working-age population.

Most of the bridge is already built

Indonesia has laboratories, health workers, national screening programs, an insurance system with broad coverage, and tens of thousands of companies funding testing for their staff every year. Most of the material for a working preventive system is already here.

What is not connected is the final span: the distance between a test result and the action that should follow it. That span is not long, not expensive, and needs no new medical technology. But while it stays empty, everything spent on the other side never delivers what it promised.

We did not write this to claim one company can solve it. One company cannot. What we are proposing is a shift in how it is judged:

stop measuring preventive health by how many people were tested, and start measuring it by how many people ended up better off.

That sounds like a small change. It changes what gets funded, what gets reported, and what counts as done. In the end it decides whether a country grows old sick or grows old well.

Indonesia's most productive period is happening right now, in the bodies of people currently in their twenties and thirties. Most of them have already been tested. Most of those results are already sitting somewhere. What is left is deciding to do something with them.

**Let's build a healthier,
more productive Indonesia.**



Sources

All data in this paper comes from government publications, international bodies, and statements by public officials, with research closing at the end of 2023.

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Ministry of Health, Riskesdas 2018 national basic health survey: hypertension prevalence by measurement and by diagnosis among adults aged 18 and over, plus treatment adherence data.

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Indonesian Society of Endocrinology (PERKENI), guidelines for the management and prevention of type 2 diabetes in Indonesia, 2021, on the proportions undiagnosed, on treatment, and well controlled.

Public statements

Statement by the President of the Republic of Indonesia at a hospital opening in Bandung, 6 March 2023, on the number of citizens seeking treatment abroad and the estimated foreign exchange outflow.

Methodological notes

The chart on page 17 restates the proportions above on a base of 100 people and is illustrative; it is not a direct measurement of a single cohort.

The cost figure for leukemia and cirrhosis on page 12 is a residual, derived from the difference between the catastrophic total and the itemized disease figures.

The observations in Part Three are qualitative and drawn from Plebo's operations. The participant profile is a composite illustration, not a specific individual.

Early Detection and Continuity of Care

Bridging Indonesia's Preventive Health Gap · 2023 Edition · Volume I



Published by Plebo · plebo.id