

In partnership with  
Sanofi and KPMG



# UHC 2.0: Charting a Course to Sustainable Healthcare and Finance in the Asia-Pacific

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# Executive summary

It is time to begin the journey from UHC 1.0 to UHC 2.0 in the Asia-Pacific.

The Asia-Pacific (APAC), home to about 60% of the world's population, faces multiple factors that challenge the sustainability of the delivery and finance models behind existing healthcare systems – an ageing population, the rise in communicable and non-communicable diseases, and the urgency of achieving universal health coverage (UHC) over the next 10 years, to name just a few. The recent Coronavirus disease (COVID-19) pandemic has further revealed the fragility of regional healthcare systems and the opportunity to transform them using more sustainable healthcare finance and delivery models.

Against such a backdrop, Sanofi and KPMG, with the support of the World Economic Forum, are producing a position paper, themed *UHC 2.0: Charting a Course to Sustainable Healthcare and*

*Finance in the Asia-Pacific*, which identifies finance and delivery models in APAC to achieve better health outcomes twinned with more efficient use of resources. This report will inform programming and high-level discussions on global health system resiliency at relevant World Economic Forum-hosted events. To ensure the report offers insightful and practical solutions, Sanofi and KPMG are organizing co-creation workshops to collaborate with stakeholders throughout the public and private sectors in several countries in the APAC region.

*This paper focuses on the major challenges of the day: life-course immunization, diabetes management and rare diseases. Detailed calls-to-action for policy-makers, at the regional and country-specific level, including opportunities for public-private collaborations, are included in order to achieve UHC 2.0.*



# Introduction

There is a need to address an evolving demographic and socioeconomic make-up in the region, along three disease pathways, on the march towards health-for-all.

There is much to be proud of in the Asia-Pacific (APAC) region. Longer life expectancy, access to quality essential services, and increased levels of investment have helped boost the socioeconomic development of the region. Despite this, it is important not to be complacent. With many governments facing heavy criticism over the design of their healthcare systems and the COVID-19

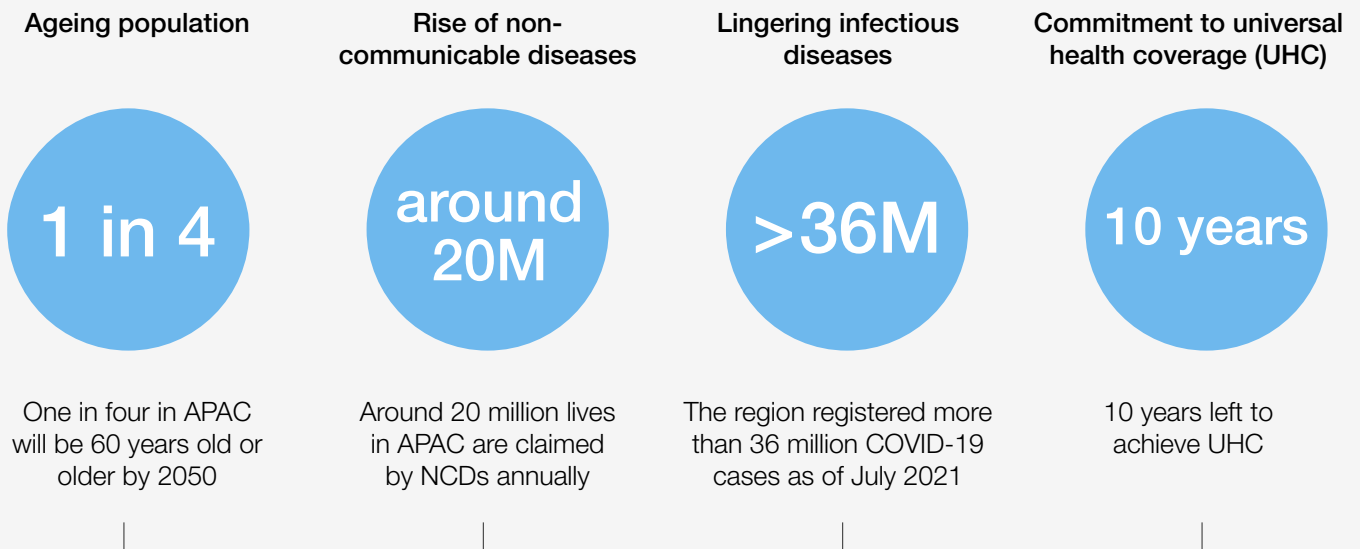
pandemic exposing their underlying weaknesses, there remains room for improvement.<sup>1</sup>

We are all aware that the population demographics are changing and, quite simply, the models of universal health coverage 1.0 (UHC 1.0),<sup>2</sup> which are nearly 100 years old, are no longer fit for purpose in APAC, whether for developing or developed countries.

FIGURE 1 An overview of the healthcare landscape in Asia-Pacific

## Healthcare landscape in Asia-Pacific

Asia-Pacific's healthcare system is facing unprecedented pressures:



The need to enhance the “sustainability” of healthcare systems

FIGURE 2 An overview of current health expenditure in Singapore, Australia, Japan, India and Viet Nam

Health expenditure as a % of GDP <sup>3</sup>				
High-income			Low-middle income	
Singapore	Australia	Japan	India	Viet Nam
4.5%	9.3%	11.0%	3.5%	5.9%

FIGURE 3 An overview of life expectancy at birth in Singapore, Australia, Japan, India and Viet Nam

Life expectancy at birth <sup>4</sup>				
High-income		Low-middle income		
Singapore	Australia	Japan	India	Viet Nam
83.5	82.9	84.0	69.7	75.4

FIGURE 4 An overview of the population aged 65 and over in Singapore, Australia, Japan, India and Viet Nam

Population aged 65 and over as a % of total population <sup>5</sup>				
High-income		Low-middle income		
Singapore	Australia	Japan	India	Viet Nam
13.4%	16.2%	28.4%	6.6%	7.9%

In this report, we call on policy-makers in the region to consider more creative strategies that maximize precious resources and achieve what we have termed “universal health coverage 2.0” (UHC2.0): a model designed for generational impact, and which ensures that healthcare delivery and finance models in APAC can sustain themselves. For example, rather than relying purely on tax- or employer-funded schemes for investment in social services such as healthcare – neither of which are suitable for APAC, given the low levels of taxation and formal employment, not to mention rapidly shifting demographics – we advocate plans based on innovative principles, such as making use of capital market surpluses (e.g. debt financing for social impact bonds), consumer-level incentive frameworks that share the accountability load, and even crowdfunding.

In making our conclusions, the core research team, comprising the World Economic Forum, Sanofi and KPMG set out to hear from stakeholders in APAC about their desires for a more sustainable UHC future. After researching existing global literature and running a virtual ideation exercise, we conducted a series of co-creation sessions throughout low-income, middle-income and high-income countries in the region. These sessions involved representatives from government, healthcare practitioners, academia, private insurers, patient groups, tech firms (large and small), financiers – including banks, investors, insurance and development agencies – as well as other private-sector constituents such as pharmaceutical and medical device companies and distributors. We are grateful for these valuable contributions, which are listed under Contributors and Acknowledgements.



In addition to the innovation in research approach, this report goes beyond typical sustainable healthcare white papers by delving into the details of care pathways at a granular level. It is structured around three thematic areas, which reflect the most pressing needs:

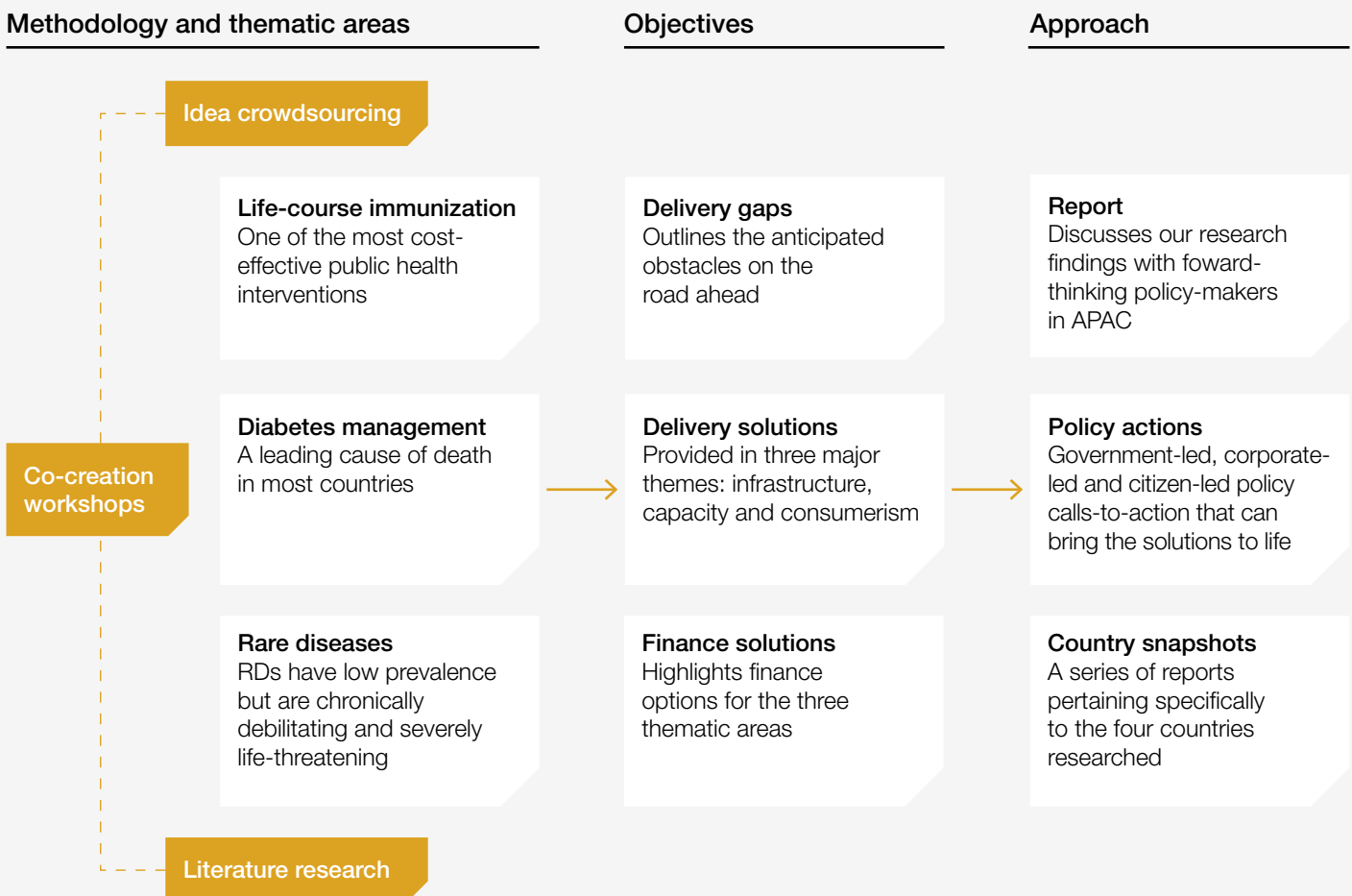
1. **Life-course immunization (LCI):** This is vaccination throughout life, which not only helps individuals maintain good health, but can bring public health and socioeconomic benefits.<sup>6</sup> Life-course immunization is one of the most cost-effective public health interventions, and can save millions of lives, yet is largely taken up only by children in APAC, particularly in India and Viet Nam.<sup>7</sup>
2. **Diabetes management (DM):** Diabetes can affect almost every part of the body and managing the disease effectively can help prevent ancillary health problems.<sup>8</sup> The rapidly rising number of diabetes patients throughout the APAC raises concerns about effective management.

However, the rising tide may be irreversible, as many cases remain undiagnosed. People need access to screening, diagnostics and finance for proper self-care. To control the rising numbers, personal responsibility, better access to self-management tools, and finance for proper self-care are vital to prevent type 2 diabetes.<sup>9</sup>

3. **Rare diseases (RD):** These are also known as orphan diseases, because previously drug companies were not interested in adopting them to develop treatments.<sup>10</sup> Crucially, they are not rare at all – 10% of populations suffer from some form of these illnesses,<sup>11</sup> with more than 300 million people worldwide affected by them.<sup>12</sup>

Health-for-all and health-for-wealth are old mantras. UHC 2.0 raises the standards by embedding care and well-being as standard operating procedures at all levels of society. Delivery and finance models must be reformed to unlock the potential that our future populations deserve. The time for change with generational impact is now.

FIGURE 5 An overview on our research findings



1

# Remaining gaps in healthcare delivery and financing

More efficient use of resources, greater creativity in capacity development, and empowerment at all levels are the needs of the hour.



This section identifies the gaps created by adhering to UHC 1.0, allowing us to reorient towards UHC 2.0. Hence, the co-creation sessions (as well as the pre/post activities such as surveys, crowdsourcing, debrief discussions) entailed devoting much time to outlining the anticipated obstacles on the road ahead. Results from the solutions, shown in Section 2, are aligned more closely to UHC 2.0 thinking.

Taxation is a traditional form of finance for healthcare activities, but with the increasing ageing population and the growing informal workforce,

in particular in the low-middle-income countries, whose employment is not captured by the tax system, it is proving to be challenging to sustain these finance methods.

The remaining healthcare gaps are broken down throughout the three thematic areas (life-course immunization, diabetes management and rare diseases) and encompass both the delivery as well as the finance needs shown in Figures 6 and 7. More details from the co-creation sessions are available publicly on the World Economic Forum website.<sup>13</sup>

FIGURE 6 Top challenges in terms of health system finance in APAC<sup>14</sup>

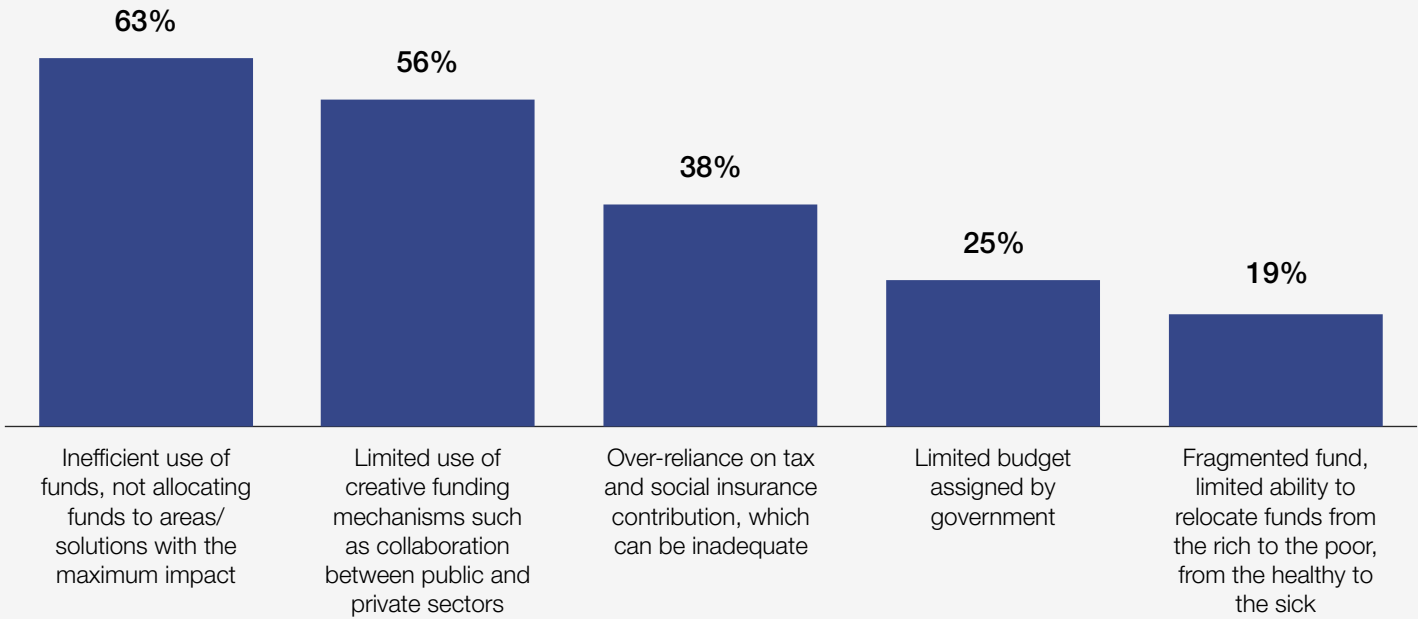
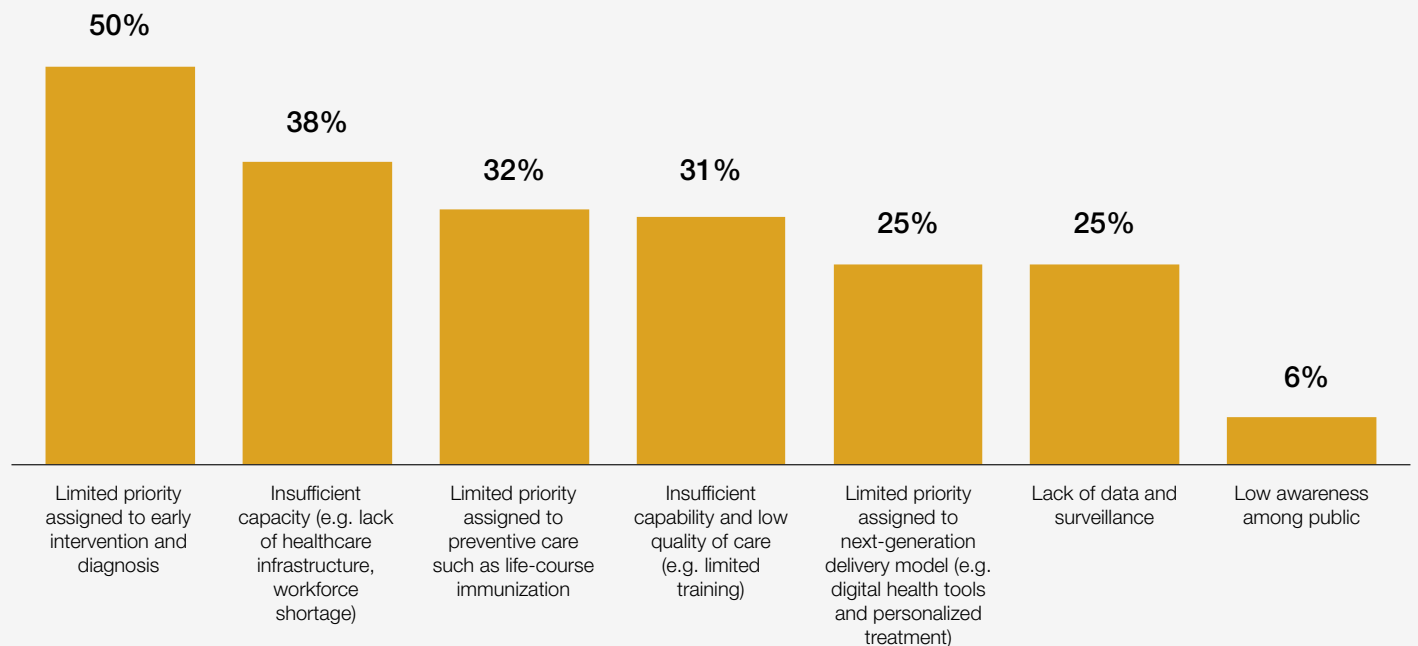


FIGURE 7 Top challenges in terms of health system delivery in APAC<sup>15</sup>



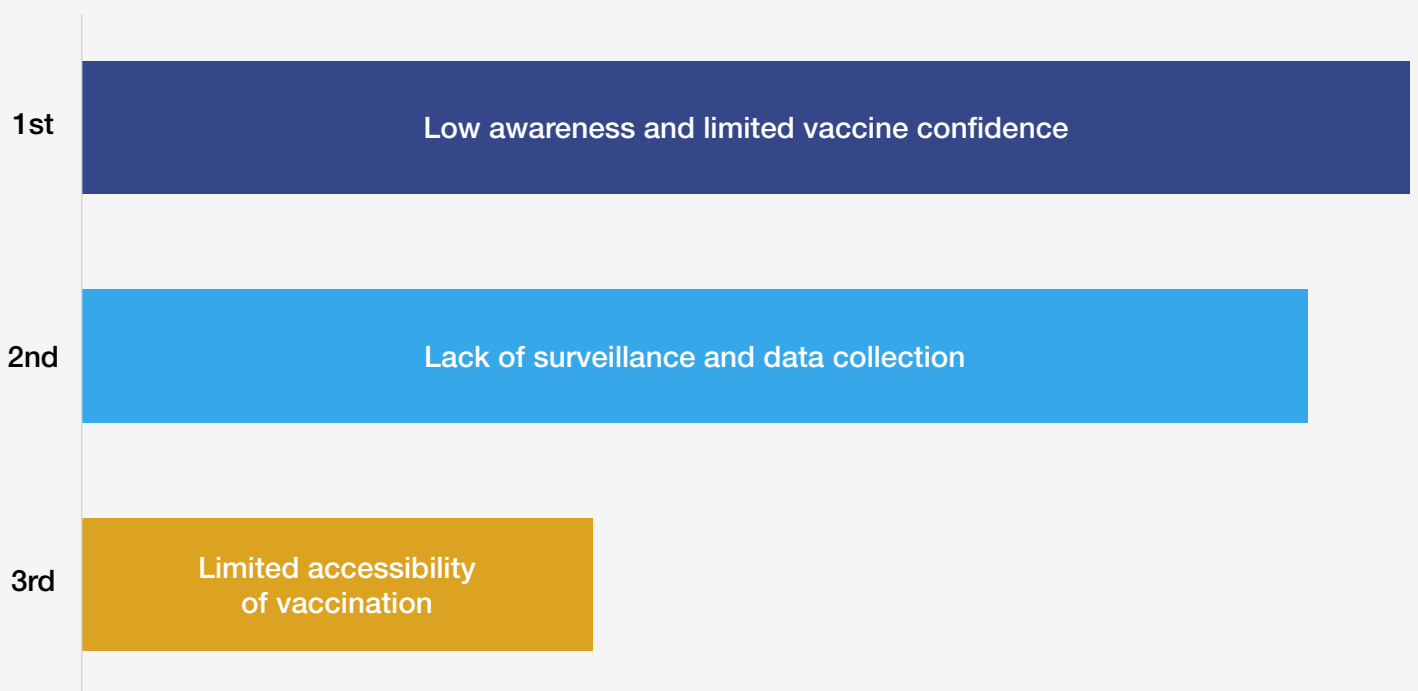


## Life-course immunization: the tools are at our fingertips, so why are more policies not activated?

Immunization can prevent up to three million deaths resulting from infectious diseases per year and is widely recognized as one of the most cost-effective solutions available.<sup>16</sup> Yet life-course immunization uptake rates that extend beyond paediatrics and into later adulthood are shockingly low in APAC. For example, despite a World Health Organization (WHO) target of 75%, fewer than 20% of people over the age of 50 get influenza vaccines in Singapore.<sup>17</sup> Other countries in South-East Asia have even lower rates.

Awareness, which translates into vaccine confidence, is perhaps the greatest barrier to widespread adoption of life-course immunization, according to stakeholder discussions during the co-creation sessions. Most adults are not even aware of the importance of a continued immunization schedule. For example, in India, the National Vaccine Policy focuses almost exclusively on children.<sup>18</sup> In Viet Nam, studies show that the number of adults getting booster shots is declining. The situation is made worse by misinformation. In Australia, stakeholders noted that media and social platforms are promoting the rapid spread of anti-vaccination sentiments.

FIGURE 8 Virtual poll of delivery gaps in life-course immunization in APAC



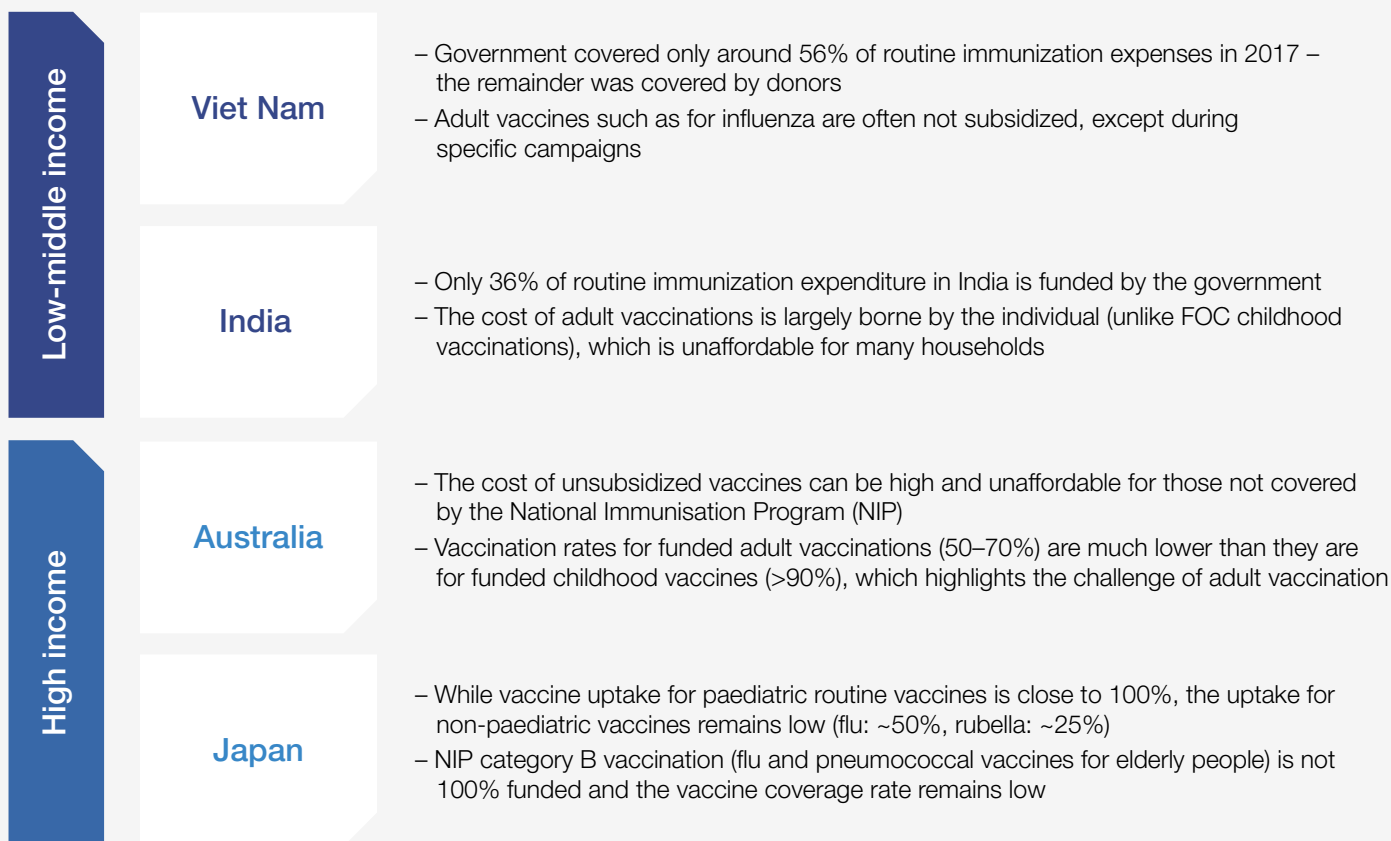
“When vaccinations are not included as part of a compulsory schedule, expecting voluntary action will likely lead the majority of populations to think that life-course immunization is non-essential.”

Vaccine confidence issues are not limited to the public. Healthcare practitioners, many of whom are themselves unvaccinated, may be reluctant to properly educate patients about life-course immunization. This was discussed extensively during our co-creation session in Japan, where the rate of vaccine scepticism regarding safety among practitioners is 31%, much higher than the global average of 13%.<sup>19</sup> The trend in APAC was partly due to the rate of substandard, or otherwise adverse event, product scenarios that occur from time to time. The sceptical attitude to vaccines in Japan stemmed from the early 1990s, with the measles, mumps and rubella (MMR) immunization that some suspected of leading to higher rates of aseptic meningitis. Historically, there have been issues about potential side effects, leading to the Japanese population’s high level of caution.<sup>20</sup>

To make matters worse, insufficient priority and finance are accorded to life-course immunization. Access to adequate vaccine supplies is also a problem in APAC. In Viet Nam, for example, subsidized immunization services are provided only at community health centres, and for only 1–3 days per month. For its largely rural population, the cost and inconvenience create a barrier to more widespread adoption of life-course immunization.

From a monetary perspective, taxation is a traditional financing method for life-course immunization. But with a limited and unstable tax base – in most of APAC, the tax-to-GDP ratio is below 15%, and the workforce is shrinking as populations age – taxation is an unstable source of funding.

Limited immunization coverage and funding



“When vaccinations are not included as part of a compulsory schedule, expecting voluntary action will likely lead the majority of populations to think that life-course immunization is non-essential,” said Daniel Laverick, Head of SAP and IT Solutions at Zuellig Pharma. “A lack of vaccine confidence in APAC undermines the potential for achieving stronger coverage rates.”<sup>21</sup> COVID-19 provides an opportunity to accelerate the push for life-course immunization, as understanding and awareness of

the benefits of vaccinations have risen significantly. The pandemic has also updated our knowledge of vaccinations and can be used to improve other forms of immunization. Life-course immunization plays a significant role in the prevention of illnesses and is recognized as the most cost-effective means of doing so. Inaction will likely lead to dire health conditions and negative social and economic consequences, burdening already-stressed healthcare systems further.

**Diabetes management: holding on to an ideological vision of pure prevention is understating the reality**

There is little doubt that diabetes, particularly the type 2 variant, is a pressing issue for APAC governments. The disease is a leading cause of death in many countries, and has a disproportionately large impact on the health,

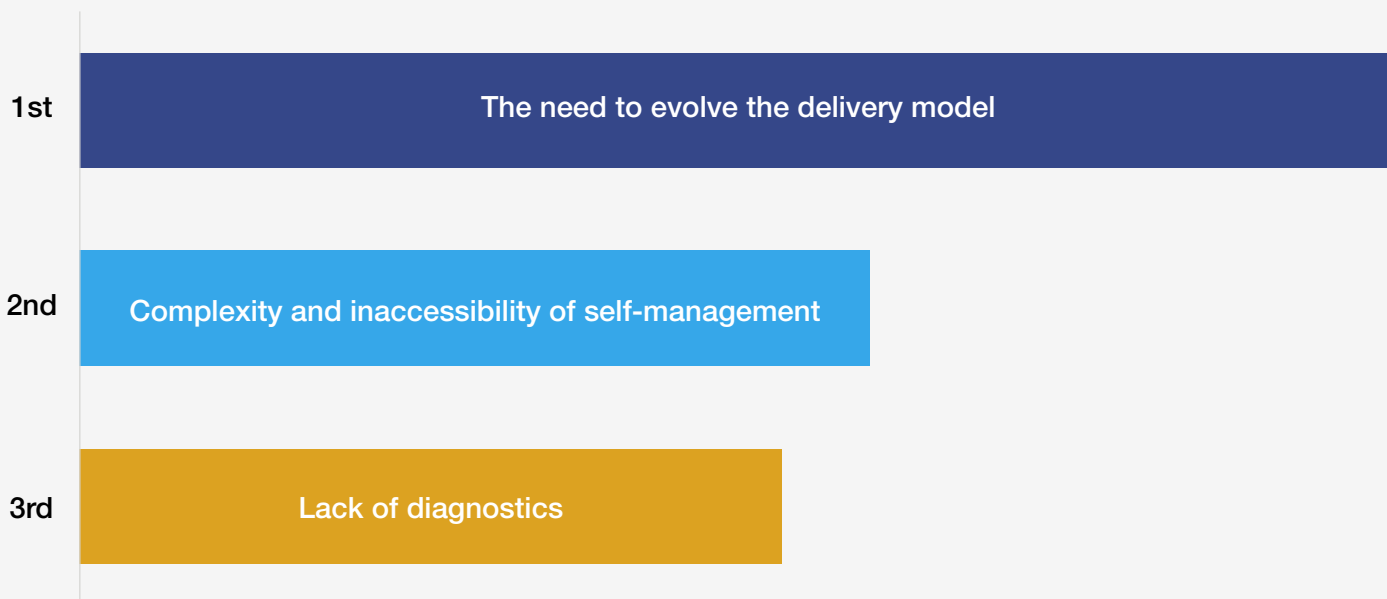
social and economic burdens of the region. Despite the rising trend towards self-care, which is core to UHC 2.0, UHC 1.0 designs for diabetes management are currently below par.



**When vaccinations are not included as part of a compulsory schedule, expecting voluntary action will likely lead the majority of populations to think that life-course immunization is non-essential.**

Daniel Laverick, Head of SAP and IT Solutions, Zuellig Pharma

FIGURE 10 | Virtual poll of delivery gaps of diabetes management in APAC



Over 90% of tasks required to manage diabetes are performed at home by patients. In India, as revealed by the co-creation sessions – and supported by empirical evidence – individuals living with type 2 diabetes lack self-management education, which causes even greater harm through poor insulin injection technique and glucose control confusion. In Australia, while the National Diabetes Services Scheme (NDSS) provides resources to help patients manage their conditions, stakeholders are calling for more targeted support in the form of more holistic, tailored and funded packages offered throughout the country. Patients often cite their primary care physicians as a main source of diabetes education, yet such place-based care settings require better diabetes management training and improved coordination, with dietitians, for example.<sup>22</sup> “We can look at examples like the Netherlands or Denmark in adopting an integrated

diabetes management approach in terms of a range of practitioners (generalists as well as specialists) working more directly with individuals to deliver the care,” said Sofiat Akinola, Global Health Lead at the World Economic Forum. “The staggered care levels not only serve to reduce the complications of diabetes management, they further support a wider community-based ambition, such as by looking after the mental well-being of diabetics.”

Another diabetes management gap revealed by stakeholder contributors to this report is the lack of diagnostics, including screening and early detection mechanisms. It is estimated that as many as 50% of diabetics in APAC remain undiagnosed, a figure that ranges from around 30% in Australia to as high as 70% in Viet Nam. Diagnoses that occur too late also lead to unnecessary misuse of finite intervention resources.



FIGURE 11 | Challenges in diabetes management coverage and funding in Viet Nam, India, Australia and Japan

## Limited diabetes management coverage and funding

Low-middle income	Viet Nam	<ul style="list-style-type: none"> <li>– On average, a low-income household in Viet Nam living with diabetes spends around 50% of its total income on diabetes</li> <li>– Limited/late diagnostics and treatment increases chances of incapacitation among working adults</li> </ul>
	India	<ul style="list-style-type: none"> <li>– Nearly half of diabetic patients who make use of outpatient diabetic care in a major government tertiary hospital incur OOP expenses for anti-diabetic medications</li> <li>– The average patient’s OOP expenditure on diabetes-related medicines was \$1 a month</li> </ul>
High income	Australia	<ul style="list-style-type: none"> <li>– Medicare is funded by a payroll tax, which means that a sustainable model needs to be adopted to factor in the demographic changes that arise with an ageing population</li> <li>– The current healthcare funding model is unsustainable. There is a growing move towards models of care in service delivery, in which new approaches to funding promote seamless long-term care of people with diabetes</li> </ul>
	Japan	<ul style="list-style-type: none"> <li>– Medical expenses for diabetes amounted to around \$11 billion as of 2018, and cardiovascular diseases (around \$18 billion), cerebrovascular diseases (around \$16.5 billion) and hypertensive diseases (around \$15.5 billion)</li> <li>– Complications that arise from diabetes, such as dialysis (around \$14.6 billion), blindness and amputation of lower limbs, further contribute to higher medical expenses.</li> </ul>

“ Collaborating across insurers, care providers, tech firms and important public/private-sector players can shine a light on the size of true intervention required, as well as better inform policy decisions.

From a monetary perspective, there are additional challenges. Consequently, there is also limited participation from the informal workforce in social health insurance contribution (another traditional source of funding). There is a need to enrol and pay premiums manually, which the informal workforce is excluded from. Moreover, there is selective enrolment from such workers when they are sick.

From a financial standpoint, private insurance and external aid are again common methods of financing. However, private insurance is often inaccessible – specifically in developing countries, where only high-income households can afford it – and the penetration rate is less than 5%. The phasing out of foreign aid to countries such as Viet Nam and India exacerbates the problem.

“We need to better understand the current situation through improved data collection mechanisms,”

said Charles Bark, Founder of HiNounou, a connected healthcare and intelligent data platform company. “For example, collaborating across insurers, care providers, tech firms and important public/private-sector players can shine a light on the size of true intervention required, as well as better inform policy decisions.”

While this report does not suggest that primary prevention of diabetes is unimportant, UHC 2.0 is in some sense about coming to grips with the realities of endemic diseases within populations. In other words, if we don’t see self-care such as diet, exercise, self-monitoring with devices including meters, insulin pumps and continuous glucose monitoring devices,<sup>23</sup> and insulin dose adjustment as part of the interventions for diabetes management, we risk leaving an entire generational cohort (diagnosed and undiagnosed alike) without the necessary tools and finance to turn the tide.

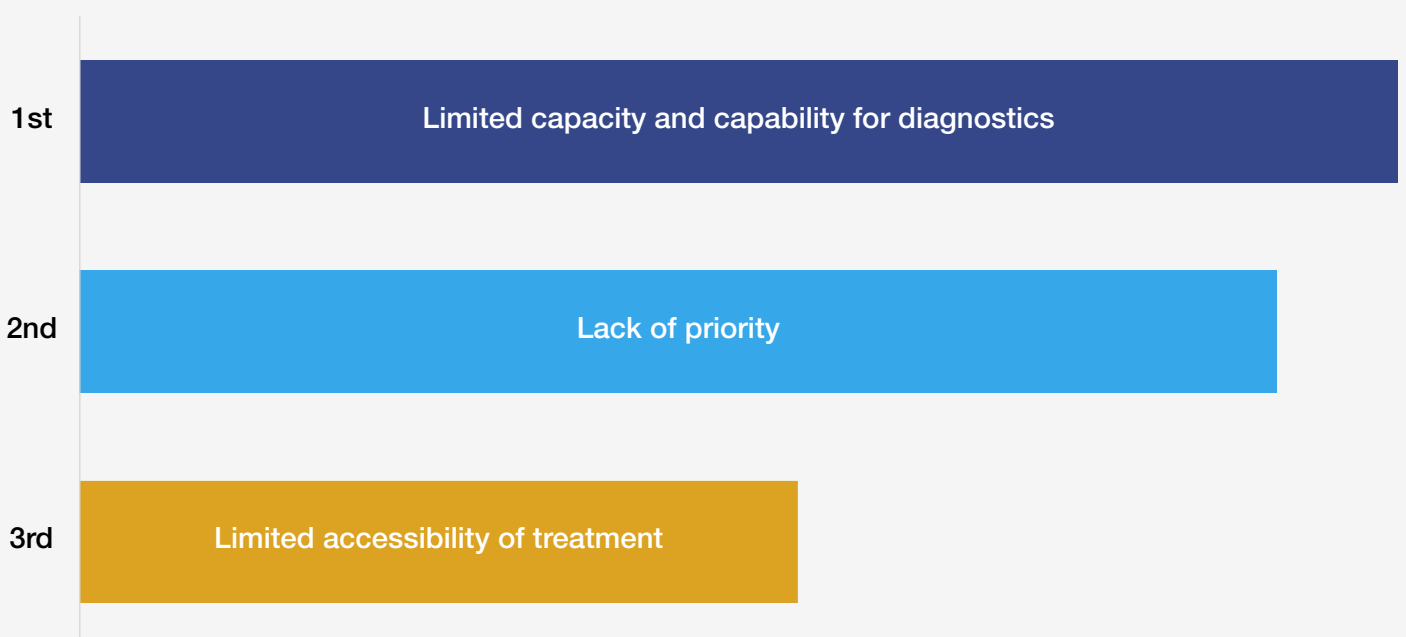


### Rare diseases: a classic UHC 1.0–2.0 paradoxical mindset that must be shifted

Perhaps a way to think about life-course immunization and diabetes management is the cost-effectiveness of addressing the size of unmet needs. But applying the same mentality to rare diseases (RDs) is a very UHC 1.0 thing to do; instead, in UHC 2.0, it involves the realization that, as our social and biological understanding of healthcare needs advances, the level of specificity in the disease states and required interventions will also become more targeted.

Rare diseases, also referred to as orphan diseases, are characterized as having low prevalence (typically one in 2,000 people) but are chronically debilitating and severely life-threatening.<sup>24</sup> Because of the inherent gaps in UHC 1.0 models in APAC, rare disease patients may take up to seven years to be diagnosed correctly, and even then they endure a lifetime of unprioritized care support. Collectively, there are more than 200 million rare disease sufferers in the region.<sup>25</sup> The gap between need and action is unacceptable.

FIGURE 12 Virtual poll of delivery gaps of rare diseases in APAC



The legacy perspectives of rare diseases by policy-makers have essentially led to such illnesses being allocated lower levels of priority compared to others. India, which has one-third of the world's rare disease population, has no policy to address such diseases at all. While a rare disease committee has been formed in Viet Nam, the country still lacks a coherent national strategy that encompasses patient registries, clinical guidelines and a conducive regulatory environment for access to breakthrough treatments. The number of rare diseases studies published in APAC is three times lower than that in Europe.

Policy inaction has a trickle-down effect on the practitioner community. In Australia, a survey of paediatricians found that only 40% had received adequate training in rare disease diagnostics and management. Countries in APAC generally lack tools such as genetic counselling, prenatal screening and advanced monitoring systems for newborns, which then affects diagnosis as well as population surveillance to properly inform intervention and policy. Rare diseases require coordinated and specialized care, which is proving difficult in the current low-resource APAC environment. For example, there is only one hospital that provides treatment for lysosomal storage disorders in Viet Nam.

FIGURE 13 Challenges in rare disease coverage and funding in Viet Nam, India, Australia and Japan

### Limited rare disease coverage and funding

Low-middle income	Viet Nam	<ul style="list-style-type: none"> <li>– More than 90% of rare disease global patients surveyed are not able to make a sustainable family living</li> <li>– Public reimbursement of orphan drugs is limited in Viet Nam (e.g. 30% reimbursement rate for Myozyme)</li> </ul>
	India	<ul style="list-style-type: none"> <li>– Funding allocation and support for Groups 1, 2 and 3 rare diseases for which approved treatments are available in India are limited and unsustainable</li> <li>– Medical expenses of patients with rare diseases either exceed 3x their own income or mean they are not able to make a sustainable family living</li> </ul>
High income	Australia	<ul style="list-style-type: none"> <li>– Only 16 medicines are included in the Life Saving Drugs Program (LSDP) listing, which treat 10 rare disease conditions</li> <li>– In a recent survey, 82% of those with rare diseases reported having non-medical care needs arising from disability. Of these, 70% said they did not have those needs fully met under the country's National Disability Insurance Scheme (NDIS)</li> </ul>
	Japan	<ul style="list-style-type: none"> <li>– The scale of risk money raised to strengthen R&amp;D is relatively small compared to Europe and the United States due to the higher investment risks associated with clinical development. It is important to both enhance and improve the fund-raising environment, as well as strengthen the R&amp;D infrastructure within Japan</li> </ul>

Rare disease treatments are often costly. Due to the low prevalence of the disease, funds are typically not allocated for the research and development of specific rare diseases, especially in APAC. Early detection is thus a more cost-effective solution, from both the individual and societal perspectives, with shortened diagnostic times and less work disturbances for parents and caregivers etc.

“Alone, we can do so little, together we can do so much” is the proper approach to rare diseases and for UHC 2.0 in APAC. We should retain the ambition of leaving no one behind in bridging these gaps, including those who are highly marginalized because of their rare disease situation. Assigning a level of priority to react would be a pivotal step forward.

2

# Solution set A: Sustainable healthcare delivery

Stratifying UHC 2.0 healthcare delivery innovations across infrastructure, capacity, consumerism and virtualization is the way forward.



The good news is that the gaps identified in Section 1 are all surmountable. In this section, we provide solutions within pathways and countries, rather than providing solutions on a disease-by-disease basis. The multidisciplinary lessons are insightful, especially as we pivot to a UHC 2.0 world of comorbidity management. Section 3 then explains how such delivery innovations can be financed,

and we break down the solution clusters further by disease archetype in Appendix A.

The major themes covered in this section are infrastructure, capacity and consumerism. We mention each briefly, and then visualize how the solutions can be clustered and prioritized.

## Infrastructure: less on the physical, more on the virtual

When UHC 1.0 was being designed, centralization of medical care activities was crucial. In UHC 2.0, however, much has shifted in the demographic and epidemiological make-up of societies. The UHC 2.0 infrastructure should focus on patient experience, effective allocation of precious resources and sustainable access to safe, equitable intervention. In short, UHC 2.0 infrastructure requires technology and data, and non-tech innovations, to reach a better way of doing things .

Government leaders in APAC should draw on the rapid expansion of network access in their countries to address the rising demand for healthcare needs.<sup>26</sup> Mobile devices, wearables and apps

can revolutionize disease awareness, diagnosis and management. Patient–patient, patient–doctor and doctor–doctor delivery flows all stand to be enhanced via the use of advanced platforms. On the flip side, there is a danger of a digital divide opening up, particularly among older people who may be less tech-literate.

While the potential of better data analytics in healthcare is well-known, it remains untapped. Data capture and quality rates must be rapidly expanded, and investment in such platforms should be raised so the insights gathered can inform cost-benefit decisions.<sup>27 28</sup>

## Capacity: beyond development, UHC 2.0 requires us to operate at our upper-limit thresholds

Building infrastructure and increasing capacity go hand in hand. For one thing, it is important to take advantage of rapid technological advancements and improvements in data-sharing platforms. As mentioned, data capture rates must be expanded, and quality must be improved.<sup>29</sup> Data maximization can be achieved through various methods, including multi-agency or centralized data repositories, creating an active surveillance system, or designing registries for each rare disease.

Similarly, upskilling general practitioners via increasing training and knowledge, including training stints between countries and regions, or even (more specifically) search optimization for rare disease identification, would benefit current healthcare models. GPs play a significant role in the influence of immunization uptake and the management of diseases in patients. Various countries within APAC have plans for GPs to undergo specialist training

courses to increase their knowledge base about diabetes management and treatment. Likewise, training courses in Australia are being organized to provide GPs with awareness and knowledge about common types of rare diseases.

Another way to increase capacity is through public-private partnerships (PPPs). One form of PPPs includes partnerships between rare disease organizations, such as the Global Peak Advocacy Group (Rare Diseases International), the UN, the World Bank and Asian Development Bank. Other than partnerships, PPPs also include schemes and plans, such as social insurance, or legislative change, such as Rare Diseases Acts, and support for implementation of initiatives under acts and national plans for rare diseases. PPPs can be seen as methods to fast-track a move towards universal health coverage (UHC), as set out by the World Health Organization and the UN.<sup>30</sup>



**If properly managed, strong private-sector engagement can also pursue the transfer of knowledge to benefit employees in the government and healthcare structures, ensuring that workers share in the benefits of technological advancement.**

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“Tracking medication history and sharing blood pressure reports are fully possible in the modern age and will drastically increase the way people take responsibility within the systems.”

## Consumerism: if we do not change behaviours now, nothing much else will matter

This solution is less about the “what” and more about the “how”. Most governments understand the imperative to decentralize care models and distribute responsibility. Yet the policies, budgets and general moves towards consumer-driven healthcare remain more theory than practice. COVID-19, however, has boosted health literacy and capabilities, so there is cause for optimism.

“Even basic access to our own individual patient records is much more in line with consumer-style expectations,” said Sophie McGough, General Manager of Diabetes Western Australia. “Tracking medication history and sharing blood pressure reports are fully possible in the modern age and will drastically increase the way people take responsibility within the systems.”

Closer collaboration among APAC countries is key to approaching the delivery gaps by streamlining resources and enabling patients through wider care access. For instance, countries with insufficient healthcare infrastructure could send patients’ test

results to regional centres of excellence (COEs) for further diagnostics. Such initiatives, however, require hefty initial investments before countries can reap significant savings in the long run. One way to make this feasible is to employ medical tourism to attract non-Asian patients to offset finance needs in other areas.<sup>31 32</sup> Countries in Asia can attract more visitors than other destinations due to the overall lower prices than in the Unites States or European countries. Most Asian countries have lower labour costs, with medical travellers or international customers saving up to 40–60% of their medical expenses.<sup>33</sup>

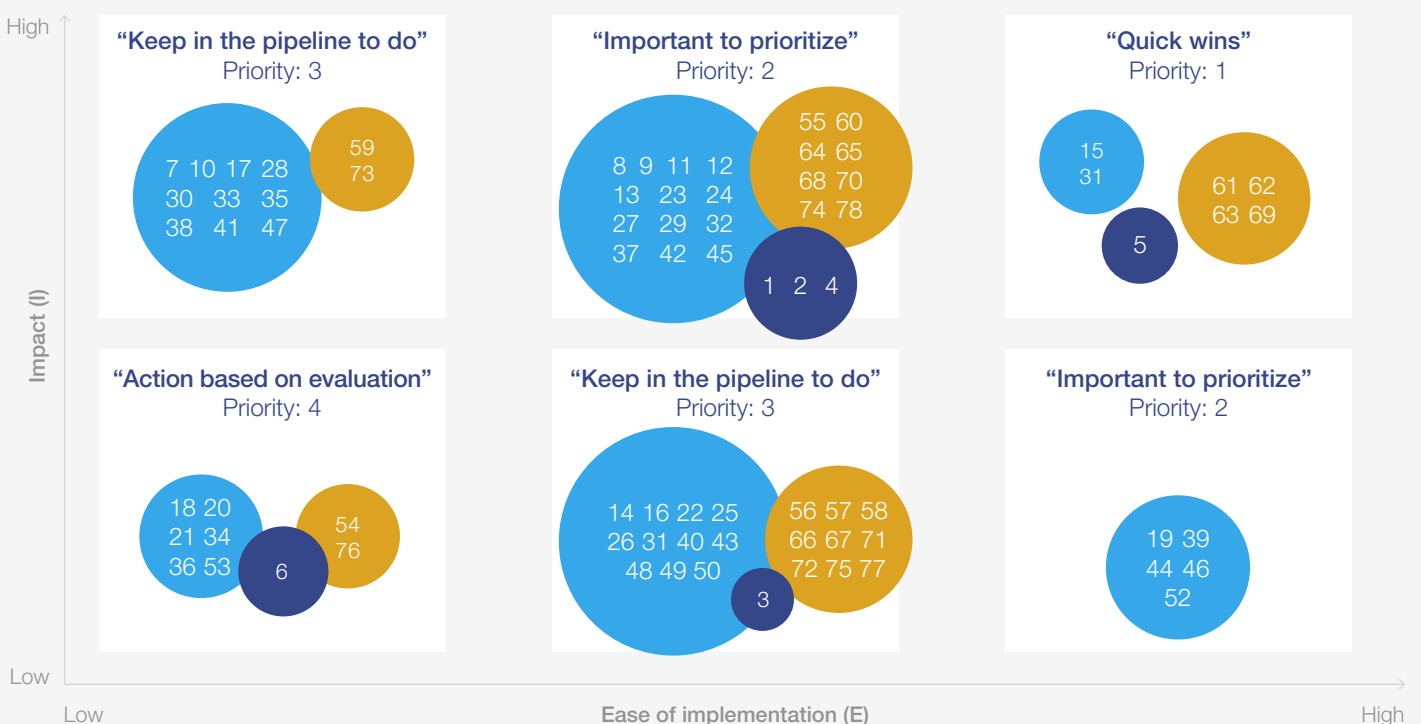
For such initiatives to succeed, a series of carrot-and-stick policies will be required. Adequate information empowerment will be vital to influencing behaviours in the right way.<sup>34</sup> According to Harvard, providing more equitable access to longitudinal care information (which has by now been collected) and making smarter policy decisions based on population healthcare informatics will go a long way towards benefiting from, rather than reeling from, consumerism.<sup>35</sup>

## Visualization of the impact and ease of implication of solutions

In order to illustrate this, an indicative ranking based on an evaluation of the solution clusters has been identified. Solutions were graded based on their ease of implementation (E) and impact (I), on a rising score of 1–3, with 1 being the lowest

score for the most difficult to implement and least impactful solution. The solutions were then plotted in the matrix below, with the respective priorities ranked based on these two aspects.

FIGURE 14 Strategic prioritization – ease of implementation/impact matrix



### Infrastructure

#### Digital or tech-enabled services

1. AI-powered glucose monitoring/w chatbots
2. App-based vaccine coordination
3. Blockchain verification
4. Digital vaccine passport
5. Tech-enabled real-time monitoring; self-managed tools
6. Virtual symptom checker

### Capacity

#### Delivery innovation

7. Third party partners for less developed areas
8. Clear points-of-contact for public
9. Early diagnostic testing measures
10. Expanded vaccine access points
11. Facilitate knowledge transfer from central to district hospital
12. Facilitate training transfer from central to district hospital
13. Increase knowledge training for practitioners
14. Patient journey mapping and collaboration
15. Proactive diabetes screenings
16. Reduce wastage in diagnosis of rare diseases
17. Remote GP care and coordination
18. Search optimization for rare disease identification
19. Simplify testing and results receipt
20. Supply-chain waste reduction
21. Supply-chain streamlining
22. Telemedicine or self-management support
23. Upskill GPs for diabetes care

#### Data maximization

24. Active surveillance system
25. Chart and identify disproportionate allocation to rare diseases
26. Collect and aggregate data for a value story
27. Data-backed health technology assessments (HTA)
28. Enable data-sharing among stakeholders
29. Use international registries to create national one

30. Multi-agency or centralized data repository
31. Quantify the impact of failed treatment
32. Registry for each rare disease
33. Unified, integrated customer relationship management (CRM) for registered patients

#### Public-private partnerships synergy

34. Capture ROI from R&D models
35. Create and implement treatment protocols
36. Crowdfunding and gamification platforms for financing
37. Ease restrictions on commercialization
38. Expand insurance coverage to telemedicine
39. Funding partnerships
40. Health insurance and private insurance coverage
41. Incentives for employers to provide programmes
42. Join consortiums and alliances for treatment
43. Private insurers in the screening phase
44. Private investors to fund initiatives
45. Private programmes and reimbursement for end-to-end finance
46. Public health insurance coverage
47. Regional COEs to drive research and map resources
48. Self-funded instalment plan
49. Shared value model
50. Social impact bonds
51. Standardized framework for grouping of diseases
52. Tax exemption for employers with private insurance
53. Tax incentives

### Consumerism

#### Carrot-and-stick policies

54. Cash-based or insurance-based incentives
55. Government subsidies for digital tools
56. Integrate vaccinations into routine healthcare
57. Non-compliance penalties
58. Pay for performance screening incentives
59. Performance-based discounts on monitoring apps
60. Sugar tax

#### Consumer perception

61. Celebrity endorsements.
62. Comprehensive educational outreach
63. Consolidated information platform
64. Draft a consumer rare disease compendium document.

65. General practitioners as promoters
66. Increase study of rare diseases in medical school curriculum.
67. Influencers and ambassador-based outreach.
68. Map information touch points
69. Negate diabetes in communications
70. Patient advocacy groups and support groups.
71. Patient groups and online communities for unity.
72. Practitioners directing patients to global programmes.
73. Raise minority patient voices
74. Rally for legislation change to increase priority.
75. Re-evaluate medical advertising guidelines.
76. Segmentation, targeting and positioning (STP).
77. Social media promotions.
78. Strengthen specialist networks

3

# Solution set B: Sustainable healthcare financing

UHC 2.0 healthcare delivery concepts require creative financing mechanisms, taking public-private partnership opportunities to new levels.



It is all well and good to propose a set of healthcare delivery innovations, as was done in Section 2. Theoretically, there are many potential solutions for improving our healthcare system, but financing

these interventions is another matter. In this section, we explore sustainable finance options for specific disease areas. Of course, there are lessons to be shared throughout disease archetypes too.

## Life-course immunization: the UHC 2.0 intervention solution that pays for itself

As stakeholder contributors to this report said, we know that governments want to shift the emphasis towards prevention. However, only 10% of most government healthcare budgets are allocated to prevention activities.<sup>36</sup> Life-course immunization, for example, is a preventive approach that will pay for itself and provides both direct and indirect benefits.

In the short term, life-course immunization will prevent further illness arising later; this is already a major source of cost savings and is a core strategy in emerging from the COVID-19 pandemic. It also reduces the strain of ongoing illnesses, including endemic infectious diseases. If APAC countries can move to a more smartly financed life-course

immunization programme, even the surveillance data gathered will allow for more long-term contracting models and subpopulation targeting.

Another financing model for life-course immunization programmes that APAC governments could consider is increased collaboration with the private sector. Corporate taxes that are reinvested in immunization activities, tax benefits for individuals who opt for life-course immunization, and even public-private matching or donation channels, all stand to raise the level of vaccine access. Indeed, some private insurers have expressed an interest in understanding how life-course immunization packages can be designed and implemented.

FIGURE 15 Case study: Viet Nam

The government collaborated with the private sector to offer HPV vaccines at a discount in certain provinces to encourage greater uptake volume. Health workers were provided with the information and skills needed for the HPV vaccination programme, and these skills proved useful for their other, routine activities.

### Outcome:

High vaccine acceptability within communities was achieved through targeted messages developed from formative research conducted prior to vaccine implementation.

Feasibility	Cost	Coverage	Acceptability
The HPV vaccine programme applied a training-of-trainers model with mixed groups of participants	The total economic cost per dose of delivering HPV vaccine was \$2.08 in the school-based strategy and \$1.92 in the health centre-based strategy (in US\$ 2009)	6,358 of 7,016 eligible girls were vaccinated with three doses of HPV vaccine	High vaccine coverage indicated that acceptability of the vaccine was high

In Hanoi,<sup>37</sup> the healthcare insurance law is being reformed to drive stronger consolidation of public- and private-sector coverage capabilities. Such initiatives can be better studied through a UHC 2.0 lens, then rolled out to more infectious disease areas and APAC countries.

Finally, capital market surpluses are available to finance life-course immunization needs. Bonds, which by their nature promote ecosystem collaboration and are a good vehicle to drive a rise

in preventive healthcare (i.e. cost savings), can be generated over the longer term and are a very hot topic. Social impact bonds (SIBs), for example, are already being piloted by the International Finance Facility for Immunisation to fund the GAVI alliance.<sup>38</sup> Interest in SIBs has soared as a result of growing emphasis on more sustainable, ethical investments from governments, NGOs and the private sector alike.<sup>39</sup> Potential projects are not limited to physical vaccination, but could be used to fund better educational campaigns too.

## Diabetes management: a virtuous prevention-treatment cycle that makes for a productive investment

Although this report focuses more on those predisposed to diabetes or already diagnosed with it, prevention still has a significant role. Certainly, increased investment in routine screening, primary care and healthcare literacy will provide benefits, even if the number of those with the disease

rises sharply. Co-creation session stakeholders expressed an interest in diabetic management financing through more extensive pooling of corporate philanthropic efforts (which are already required in some countries, such as India) as well as SIBs (being piloted for diabetes needs in Japan<sup>40</sup>).

FIGURE 16 Social impact bonds framework

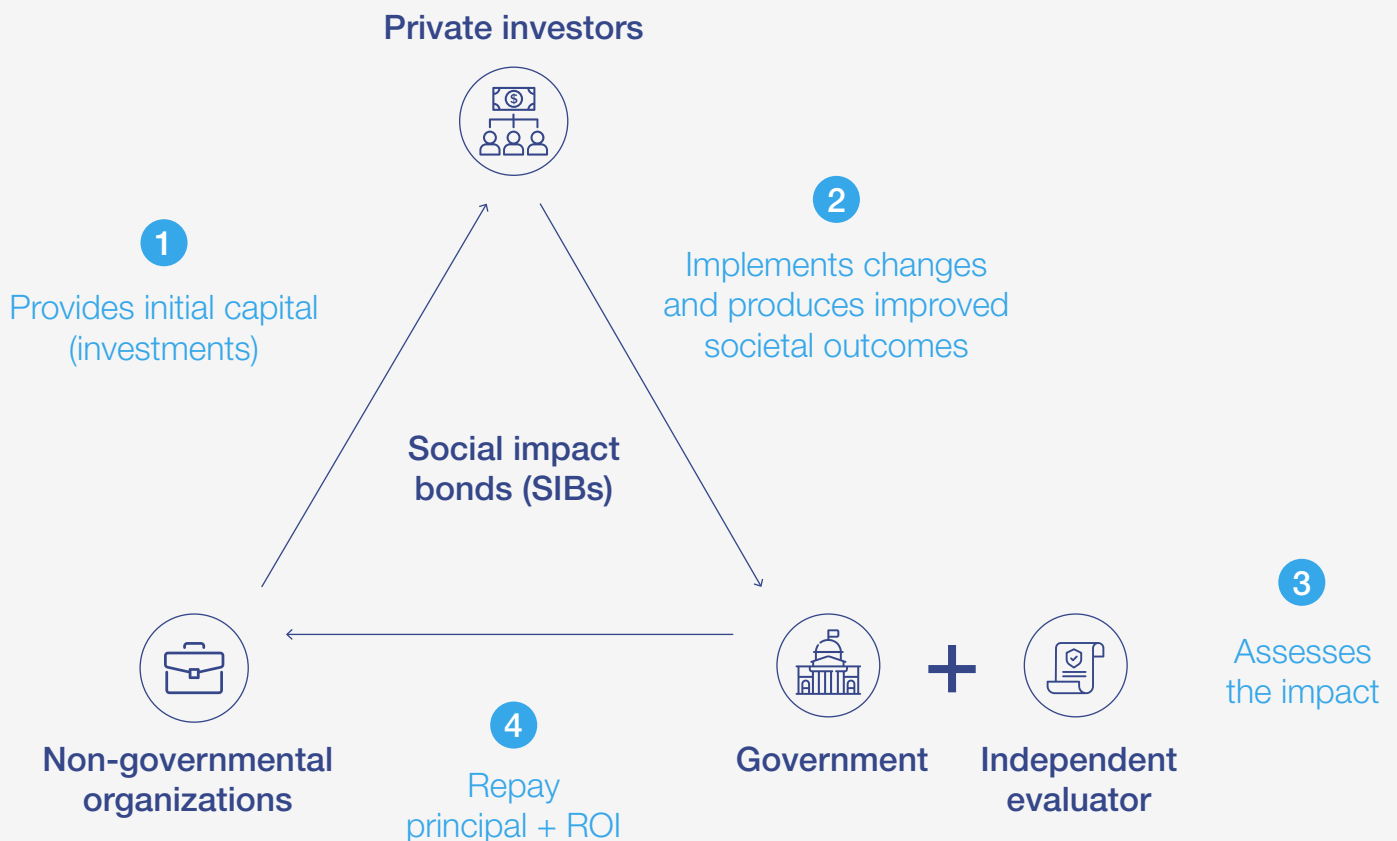


FIGURE 17 Case study: Japan

The focus of SIB programmes in Japan has been healthcare.

In 2015, the Ministry of Economy, Trade and Industry started a pilot programme for healthcare SIBs focusing on dementia prevention as its first theme. The Ministry of Health, Labor and Welfare followed this in 2017 by launching a grant programme for the research and development of Japanese SIBs.

The first batch of SIBs in Japan was launched in three municipalities during 2017 and 2018 following the themes of severe diabetes prevention in the city of Kobe and colorectal cancer screening in the city of Hachioji and in Hiroshima Prefecture. Although the funds were relatively small – ¥24 million and ¥9.7 million, respectively – the involvement of major banks as investors, such as SMBC and Mizuho Bank, indicated that this could be another social investment product for mainstream investors.

A significant deciding factor in diabetic management is influencing behaviours. A mix of system and individual-level incentives must be deployed urgently. Accountability, an essential tactic for UHC 2.0, is then repaid via the spin-off benefits accrued to

each stakeholder as a result. For example, private insurers may offer reduced premium payments for policyholders who go for their annual check-ups, including for tangential examination pathways such as vision screenings. As an example, AIA, an insurance

company, offers comprehensive digital wellness programmes, using rewards points and wearable trackers as motivators to adopt healthy lifestyles.

Once preventive behaviours take root, financial capacity can be shifted towards more appropriate treatment patterns, such as adherence to insulin intake and glucose monitoring. Patients could

see reduced subscription fees for diabetic management-related apps if they are able to maintain their HbA1C at consistent levels, for example. Governments could roll out a sandbox platform to encourage experimentation with novel diabetic management tools: Germany, for example, offers digital solution providers one-year's approval and reimbursement to prove themselves.

FIGURE 18 **Encouraging employers to step up and provide more holistic diabetes management programmes**

**More proactive screening** – benefits employers through better identification and management of the condition

- ✓ Minimizes time spent away from work

#### Case study 1

IBM provided a financial reward to diabetic employees who were able to maintain their treatment regimen over a 12-month period

#### Case study 2

In Australia, employers tend to offer cash gifts closely associated with wellness expectations

Earlier identification of illness, better management support and an upgraded level of accountability all round are tenets of UHC 2.0 that very much apply to the financing of the DM space.

### Rare diseases: investment in a few spells a positive return for the masses

Rare disease is perhaps the most difficult category for APAC governments to understand from a financial contribution perspective. The niche disease patterns, coupled with very expensive courses of treatment, appear an unattractive venture on the surface. However, the hidden ongoing costs of lack of rare disease priority and proper intervention cause even greater harm.

One finance option being explored for rare disease is the adoption of instalment-style schemes that

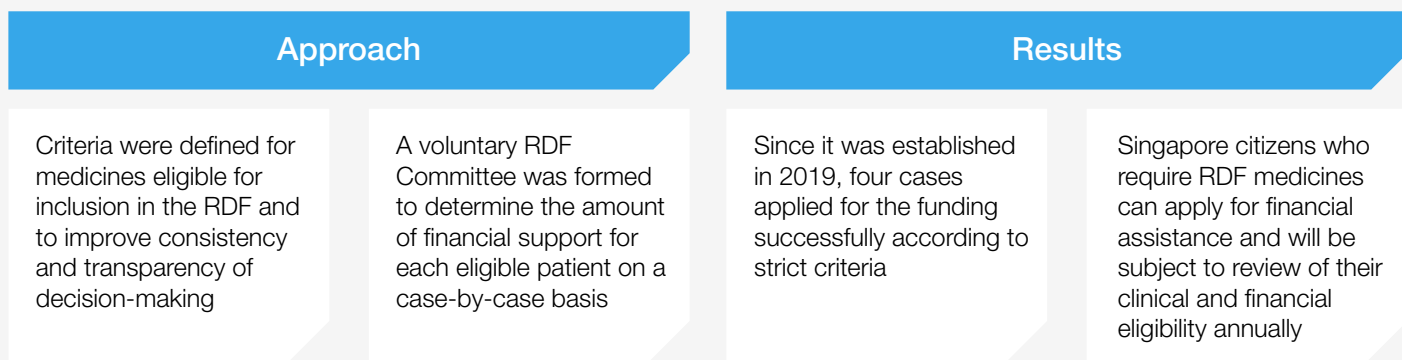
involve a number of stakeholders throughout the public- and private-sector value chain. Regional banks such as Singapore's DBS have developed dedicated rare diseases units to study how finance mechanisms can work, and are willing to look at schemes with pay-outs over the longer-term, and where the rates of return are more or less fixed. These funds could be used to finance existing schemes, such as the Rare Disease Fund (RDF) in Singapore.<sup>41</sup>



The Rare Disease Fund (RDF) was established in Singapore in July 2019 to provide long-term financial support to patients with rare genetic diseases who require high-cost treatments.

It is a multistakeholder charity fund that combines community donations with three-for-one government matching, intending to be a last line of support after government subsidies, insurance and other financial assistance.

**Outcome:**



**Question:**

What can be done to expand the funding (donations) to allow this charity fund to be expanded to cover more rare diseases?

**Case study: Canada**

There is also the possibility of a pan-regional model for financing rare disease schemes. For example, the APEC Rare Disease Network and Action Plan<sup>42</sup> is already in place. The suggestion from co-creation session stakeholders is to standardize the rare

disease matrix to define the types of illnesses by focusing on their respective treatment needs, and establishing a more consistent package of care. Such a vision would include legal frameworks for sharing resources and data among countries.

The Canadian Drug Insurance Pooling Corporation (CDIPC), established in 2012, is a not-for-profit corporation whose mission is to help maintain sustainable drug coverage for Canadians and their employers. CDIPC pools claims affected by recurring high-cost drugs among claimants who belong to fully insured drug plans from Canadian life and health insurance companies.

By sharing the insured cost of reimbursing repeating high- and very high-cost drugs of employees whose employers have fully insured drug coverage plans, the member companies help maintain the viability of the insurance programmes they belong to.

In 2019, the CDIPC high-cost drug sharing framework provided coverage to 27,000 Canadians whose annual drug costs exceed \$10,000, an increase of 17% from 2018.

As shown above in the example of the Canadian Drug Insurance Pooling Corporation (CDIPC),<sup>43</sup> we see that crowdfunding is another legitimate financing channel and is already being used in a three-for-one matching scheme in relation to rare diseases by the Singapore government, while India is considering a potential pilot scheme. In Viet Nam, discussions are oriented towards connecting the dots between SIBs and green energy sin taxes as alternative sources to reinvest in rare disease needs.

financing of rare disease needs. Sin taxes can be imposed on the consumption of goods such as sugar and tobacco, which are known to have negative impacts on the population's health. However, it is worth noting that relying purely on sin taxes from a specific good for funding is not sustainable. Taking dedicated tobacco tax for immunization in Taiwan as an example, revenue for tobacco tax depends on high rates of smoking – which ironically is what the taxes discourage.<sup>44</sup> This highlights that sin-tax funding should come from multiple sources rather than a single source.

In addition, tax incentives and sin taxes can serve as an alternative source of funds for

4

# The path forward

How to get engaged – government, corporate and citizen roles across the UHC 2.0 ecosystem.





In this report, we have outlined UHC 2.0 delivery and financing solutions that span a targeted set of disease pathways and exposed the gaps in UHC 1.0. Further details at country level, both developed and developing, are provided in Appendix A.

In Section 4, we frame the policy calls-to-action that can animate the solutions. We look forward to the opportunity to discuss this further.

FIGURE 21 Policy action checklist

Operating model	Government-led policy actions	Corporate-led policy actions	Public-led policy actions
<b>Life-course immunization</b>	<ul style="list-style-type: none"> <li>– Adopt behavioural sciences to reposition LCI as a social norm</li> <li>– Increase immunization access points and set up national surveillance databases</li> <li>– Draw on influencers to share their stories and encourage better LCI uptake rates</li> </ul>	<ul style="list-style-type: none"> <li>– Work with practitioners to advocate vaccination during pre-employment checks</li> <li>– Mandate certain vaccinations for continued employment</li> <li>– Participate with pharma companies during seasonal campaigns to raise awareness</li> </ul>	<ul style="list-style-type: none"> <li>– Create a promotional platform on social media to increase awareness of LCI</li> <li>– Use celebrity endorsements in dialects to encourage the uptake of LCI</li> <li>– Endorse mobile vaccination teams to bring facilities closer to citizens</li> </ul>
<b>Diabetes management</b>	<ul style="list-style-type: none"> <li>– Roll out wider-scale screening efforts, including through employers</li> <li>– Continue with, but also evolve, the use of “sin taxes” to influence behaviour</li> <li>– Subsidize technologies, both in medical interventions and digital tooling</li> </ul>	<ul style="list-style-type: none"> <li>– Conduct more regular screenings at employment sites</li> <li>– Collaborate with community healthcare centres to identify high-risk individuals</li> <li>– Use more digital means to spread information and provide teleconsultations</li> </ul>	<ul style="list-style-type: none"> <li>– Promote a culture of grassroots organization to support the DM cause</li> <li>– Emphasize holistic self-management for disease control, including mental well-being</li> <li>– Encourage more proactive screening to catch undiagnosed cases early</li> </ul>
<b>Rare diseases</b>	<ul style="list-style-type: none"> <li>– Provide the same level of policy priority for RD as for other leading disease themes</li> <li>– Drive greater education about RD at the primary care and neonatal levels</li> <li>– Increase data efforts through genetic counselling and cross-border registries</li> </ul>	<ul style="list-style-type: none"> <li>– Integrate data across public and private sectors for a comprehensive repository</li> <li>– Collaborate with specialist practitioners to offer genetic counselling services</li> <li>– Pilot the use of instalment plans to relieve the financial burden on individuals</li> </ul>	<ul style="list-style-type: none"> <li>– Build bespoke patient advocacy groups, including across the APAC region</li> <li>– Consider techniques such as crowdfunding to spread the resourcing load</li> <li>– Localize annual celebration days on specific RDs to create a buzz and increase awareness, and channel funding to specific groups</li> </ul>

# Appendix A: Country snapshots

## Australia

FIGURE 22 Australia's healthcare system<sup>45</sup>

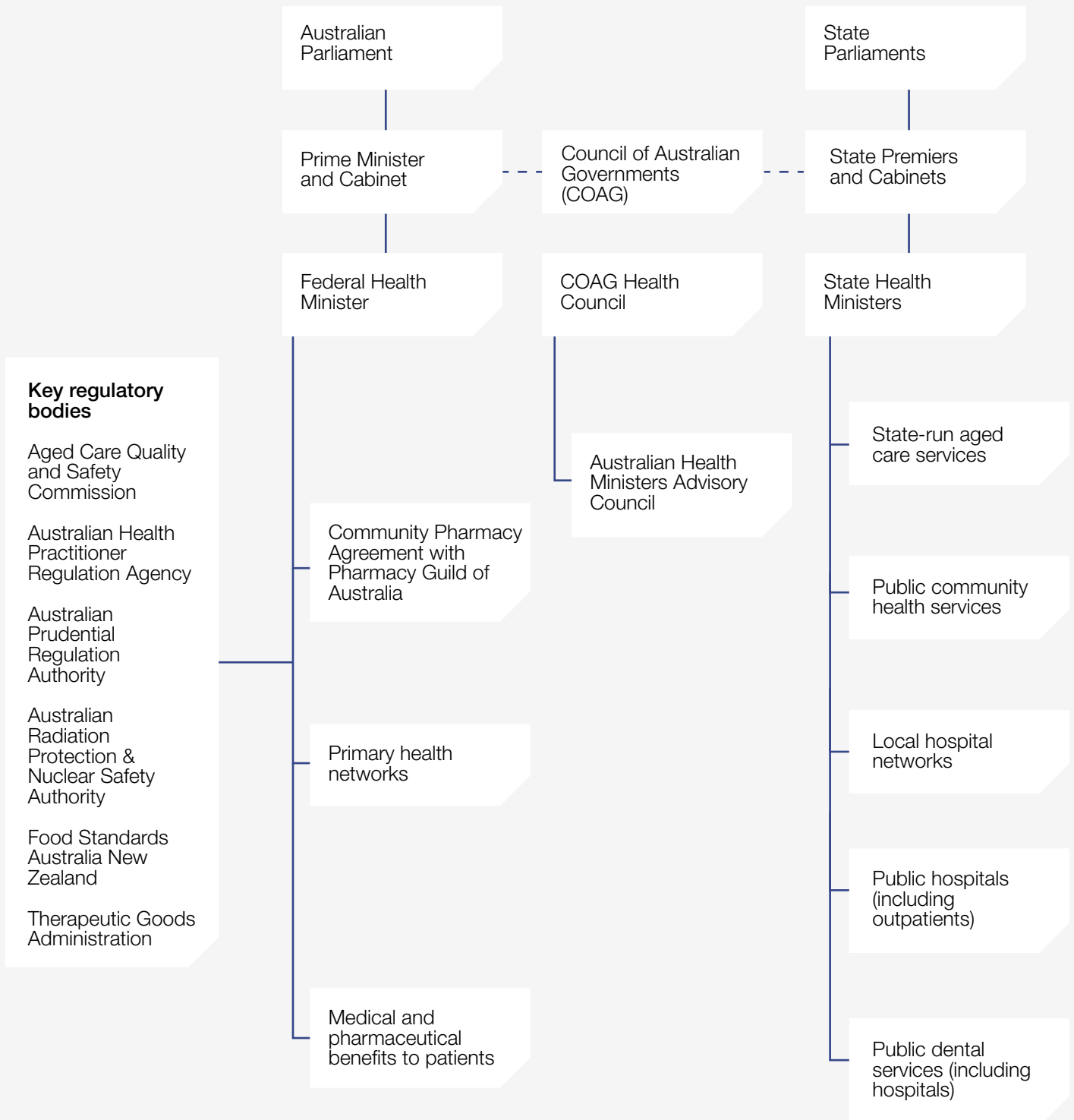


FIGURE 23 | Demographics: Australia

Year	2015	2016	2017	2018	2019	2020	2021
Population (m) <sup>46</sup>	24.0	24.4	24.8	25.2	25.6	25.7	25.8
Population growth (%) <sup>47</sup>	1.40%	1.60%	1.70%	1.50%	1.50%	1.18%	1.13%
Population aged 65 and above (% of total) <sup>48</sup>	14.9	15.1	15.4	15.7	15.9	16.2	16.5
Life expectancy <sup>49</sup>	82.70	82.86	83.03	83.20	83.35	83.50	83.64

## How the system is designed

The Morrison government is committed to tackling diabetes and is reportedly investing AUD\$2.8 million (around \$2 million) in 2019 to help prevent and treat diabetes-related complications.<sup>50</sup> There are also several programmes and initiatives put in place to

support the treatment and management of rare diseases<sup>51</sup> (such as the Life Saving Drugs Program (LSDP), which funds 14 different medicines for nine very rare diseases).

## Financing

### Challenges in supporting the current tax policy

The current tax policy is proving to be an unsustainable source of funding. Australia has a limited tax base, with a tax-to-GDP ratio of 28.7% in 2018, much lower than the OECD average of 33.9%. It also has an unsustainable tax base, with a shrinking stable workforce due to its ageing population, and more than 26% of the population working as contractors or self-employed, positions that contribute less in taxes.

over four years on aged care. While leading advocates recognize this as a substantial investment, they recommend that more funding is needed to transform the aged-care system properly. In addition, part of the taxation is used to fund private insurance rebates, instead of expanding coverage for the underprivileged.

### Challenges in supporting the social health insurance system

Insufficient aged care funding is another problem. The Morrison government plans to spend AUD\$17.7 billion (around \$13 billion)

### Lack of affordability of private insurance

Some 71% of people without private health insurance reported that the primary reason for this was because premiums were too expensive.<sup>52</sup> Furthermore, price sensitivity research shows that private insurance may become unaffordable for up to one in five current hospital policyholders within the next one to two years.

## Life-course immunization

### Delivery

#### Low awareness and limited vaccine confidence

In 2020, against the backdrop of COVID-19, there was a record surge of 18 million flu vaccine shipments to Australia, up from 13.2 million in 2019, along with an increase in administered doses, from 4.5 million to 7.3 million. However, in 2021, there has been an almost 40% decline in flu vaccination uptake in Queensland, possibly because of complacency arising from a drop in flu cases because of social distancing measures. More can be done to reduce potential misconceptions among the public. Research published in 2020 highlighted

widespread misconceptions regarding eligibility for free vaccines and concerns about effectiveness among the Indigenous population – the average coverage for this group was just 30% that year.

#### Lack of surveillance and data collection

A 2018 study by the National Centre for Immunisation Research and Surveillance (NCIRS) notes an overall 14% error rate in the Australian Immunisation Register (AIR), which records all vaccinations given in Australia. Much of this is because of incorrect transfer of information from practice management software to AIR, as well as duplicate record-keeping.

### **Limited accessibility of vaccination**

Australia has set up the National Immunisation Programme (NIP), which provides free vaccinations to eligible people. However, a commonly cited barrier is an inconvenient vaccination pathway, where vaccinations centres are often difficult or inconvenient to access.

## **Recommendations**

These challenges could be overcome in various ways, including:

### **1. Encouraging and incentivizing general practitioners (GPs) to promote vaccinations**

This would help raise awareness of vaccinations on the part of patients, and GPs could receive incentives for their efforts. Australia currently fares well in encouraging childhood vaccinations, but more can be done to increase adult rates. GPs promoting vaccinations would be likely to help ease patients' concerns about them – as studies have shown that doctor-patient communication plays a crucial role in promoting positive attitudes about immunization.

### **2. Capturing vaccination information in a “digital passport”**

The Australian Immunisation Register (AIR) records all vaccinations given to the population. The data from these records could be used to create individual “digital vaccine passports”, raising the standard of surveillance and data collection in Australia.

## **Diabetes**

### **Delivery**

#### **Improvements in the delivery model required**

The annual cycle of care (ACC) is a checklist used by GPs to review diabetics management and the general health of those diagnosed. In a 2018 study, ACC completion rates ranged from 0.9% (Indigenous population) to 37% over a 12–18-month period. Incomplete checks result in late detection of potential complications and potentially delay the course of treatment.

#### **Complexity and inaccessibility of self-management**

Diabetes self-management is highly complex. Patients surveyed in a 2019 study cited their main type 2 diabetes education source as their GP and dietician, who provided limited advice on ways to manage their diet through healthy meal planning and snack guidance. Some 70% of such patients believe that taking insulin is an indication that their conditions are worsening. The general sentiment surrounding injecting insulin is reluctance, and there are psychological and practical concerns.

### **3. Employing blockchain technology for the storage of immunization documents**

Blockchain technology can store vaccination records securely. The essential advantage of blockchain is that a decentralized ledger would be anonymous, immutable and transparent, making it easier to manage data-sharing among different entities. After putting in place pilot programmes, governments can then devise a national roadmap to provide guidance and techniques for building the necessary capabilities for these blockchain applications to be implemented.

## **Financing**

Australia may be facing multiple challenges in financing its life-course immunization effort, but there are solutions available:

### **1. Easing some restrictions for commercialization by commoditizing vaccines**

Australia can allow consumers to shop for vaccines online by putting in place regulatory clearance, potentially allowing for some profit margin to be created in private-sector sales, to be redeployed towards creating funding capacity for life-course immunization efforts.

### **2. Sharing the burden of cost among stakeholders**

The cost could be shared among different stakeholders – consumers, private-sector stakeholders (such as travel insurers, health insurers) and the government.

### **Lack of diagnostics**

There remains a lack of diagnostics, with at least three in 10 adults with diabetes in Australia still undiagnosed.

## **Recommendations**

These challenges could be overcome in various ways, including:

### **1. Creating a patient-centred primary care collaborative (PCPCC)**

Healthcare providers (HCPs) could refer their patients to other HCPs (which may possess deeper expertise) for more specific aspects of treatment. To reduce travel time to clinics, digital and telehealth solutions could also be implemented. A specialized diabetes telemedicine system could be devised and built into this service, which would ideally offer a user-friendly interface that advises patients of their required dosage of medication, as well as diet and lifestyle advice. It is also important for HCPs

to check their patients' mental and physical well-being. Check-up and testing processes could also be simplified by allowing for results to be released online through a secure system.

## 2. Implementing data-collection mechanisms that provide useful data points to the right target audience

It would also be worthwhile exploring ways to connect important data points from stakeholders within the patient's healthcare value chain to derive purposeful analytics for the end user. There are numerous sources of diabetes treatment guidance – to combat this, patients should be encouraged to use a single source of information. However, it could be argued that it is the government's duty of care to ensure that people are being guided towards the right information sources. Australia's National Diabetes Services Scheme (NDSS) hosts a centralized customer relationship

## Rare diseases

### Delivery

#### Limited capacity and diagnostic capabilities

A 2016 study found that the healthcare needs of people living with rare diseases may fail to be met. A lack of screening tests and health professionals' limited knowledge of diagnosing rare diseases could lead to diagnostic delays of seven years or more. A 2017 study led by the Australian Paediatric Surveillance Unit uncovered a lack of clinical guidelines, treatment options and ability to access drugs available overseas but not licensed in Australia.

#### Low level of priority

Australia needs a national rare diseases registry alliance to replace the fragmented network used currently, which makes it difficult to research and track rare diseases efficiently. That said, while the Australian government has committed various programmes to increase funding, more can be done to use the rare disease registries for translational research to improve care. Physicians' awareness of rare diseases could be improved as well – only 40% of Australian paediatricians said rare diseases were adequately covered in their medical education in a 2017 survey.

#### Low level of access to treatments

Drugs and treatments specifically targeted at rare diseases are often expensive – if they are even available. Pharmaceutical companies cite their reluctance to invest in the development and clinical trials of these drugs because of the relatively small market. The Life Saving Drugs Program (LSDP) pays for specific essential medications to treat patients with rare diseases. However, the criteria for LSDP funding are highly ambiguous: they require proof that the drug will extend a patient's lifespan substantially.

management (CRM) database that contains all details of registered diabetes patients. It would be beneficial to use it as a starting point with a view to integrating this with the national health system.

## Financing

Australia may be facing multiple challenges in financing its healthcare sector in relation to diabetes, but there are solutions available, including:

### 1. Using employer-led incentives

Employers can play a part in helping employees who are diagnosed with the condition to keep healthy and feel well-supported by providing employee perks. Employers may wish to incentivize their employees with cash or health and wellness gifts, such as gym passes or health-food store benefits.

## Recommendations

These challenges could be overcome in various ways, including:

### 1. Implementing early diagnosis testing measures, offering mental health support, and using data to acquire more knowledge

Delayed diagnosis means treatment also comes later, but for many rare diseases, there are cost and societal benefits in starting as soon as possible. It is also important to establish steps for generic counselling with patients and their families once a positive diagnosis is confirmed. Healthcare professionals and midwives can encourage parents to have their newborns tested. Recognizing the importance of offering mental health support to diagnosed patients and their families is another positive step; following the diagnosis of a rare disease, many patients would benefit from having peer support and access to mental health support services. Lastly, while there is a plentiful amount of data available, there need to be improvements in how it is used. Employing tools such as AI and blockchain can help to aggregate data, enabling experts to perform analytics and derive useful insights.

### 2. Improving the mechanism for care coordination

Rare diseases could be given higher priority by improving care coordination mechanisms for patients. There is no single source of end-to-end guidance or support for patients with rare diseases. Patients must visit various specialists for their conditions, and information is not automatically shared among specialists. Much of patients' time is spent trying to find the right platforms or being rerouted to the right stakeholder. Telehealth or virtual consultations could bring them greater convenience.

3. **Skills training for GPs and creation of a virtual symptom checker**  
There are few specialists around the world for each rare disease; consolidating resources and creating an international registry to benefit patients should be considered. It may also be beneficial to train GPs by providing them with some guidance on diagnosis and next steps for managing patients with rare diseases.

## Financing

Australia may be facing multiple challenges in the financing of its healthcare sector for rare diseases, but there are solutions available:

## Policy action checklist

### Government-led policies

#### Life-course immunization

- Relevant media agencies that have been engaged by government stakeholders should be cognizant of vaccine hesitancy, and drive the messaging
  - Seeing key opinion leaders (KOLs) (such as celebrities and athletes) sharing their narratives on their personal vaccination journeys – that they are doing this not only to protect themselves, but to keep their families safe
- Investing resources to develop better digital platforms using blockchain technology for storage of data to be accessible by the Australian population (data could potentially come from the Australian Immunisation Register [AIR])

#### Diabetes management

- Public and private healthcare practitioners can work together to better manage the course of treatment for diabetes in their patients
- Using “MyDesmond”, a support system within Australia’s National Diabetes Services Scheme (NDSS), and looking to integrate this within the national health system

#### Rare diseases

- Early diagnosis testing measures to be implemented, along with steps for generic counselling with the patients and their families once a positive diagnosis is confirmed.
- Collaboration with disease experts, researchers, genetic counsellors and patient advocates to build centres of excellence
- Working with specialists around the world for each rare disease to consolidate resources and create an international registry to benefit rare disease communities around the globe

1. **Organizing a fundraising campaign with the support of patient advocacy groups**  
With social distancing measures in place, these campaigns could be broadcast on national television to raise funds for and awareness of the rare disease.
2. **Putting in place a self-funded instalment plan**  
This could help alleviate treatment costs for patients with rare diseases. An example is Rare Diseases Hong Kong, which has partnered with a non-profit pharmacy to introduce an easy payment mechanism.

- Training courses can be organized to provide GPs with awareness and knowledge of common types of rare diseases

### Corporate-led initiatives

#### Life-course immunization

- GPs could actively advocate vaccinations for patients in conjunction with the GP vertical, an integrated training approach, to raise vaccine awareness
- Pharmaceutical companies could create campaigns and advertisements specifically directed at consumers to inform them of the different vaccines available to them, identifying suitable candidates and highlighting the benefits of vaccines
- Enabling customers to shop for vaccines online, allowing for some profit to be earned in the private sector and redeployed towards creating funding capacity

#### Diabetes management

- A user-friendly specialized diabetes telemedicine system could be devised and built to increase convenience for patients
- Testing process could be simplified by allowing results to be released online through a secure system, increasing efficiency and patient convenience
- Employers could play a part in helping employees diagnosed with diabetes to maintain health and feel well-supported, through providing perks

#### Rare diseases

- HCPs could play a more active role in advocating the importance of holistic healthcare (both mental and physical health), offering patients support and resources they can benefit from

- Analytics tools and AI could help reveal important insights that may not have been picked up by humans to improve knowledge and understand more about rare diseases
- Collaboration between private and public hospitals could consolidate medical records in one place to raise efficiency and reduce confusion among patients

## Citizen-led initiatives

### Life-course immunization

- Create a promotional platform on social media to increase awareness of life-course immunization

### Diabetes management

- Collaboration with medical professionals to launch patient support programmes, including

mental health support and guidance on simple self-management

### Rare diseases

- Patient advocacy groups could provide peer support and access to support services for patients suffering from a rare disease
- Patient advocacy groups dedicated to a rare disease could collectively organize fundraising campaigns, simultaneously increasing funds and awareness
- Self-funded instalment plans could be created to help alleviate the cost burden for patients with rare diseases

FIGURE 24 India's healthcare system<sup>53</sup>

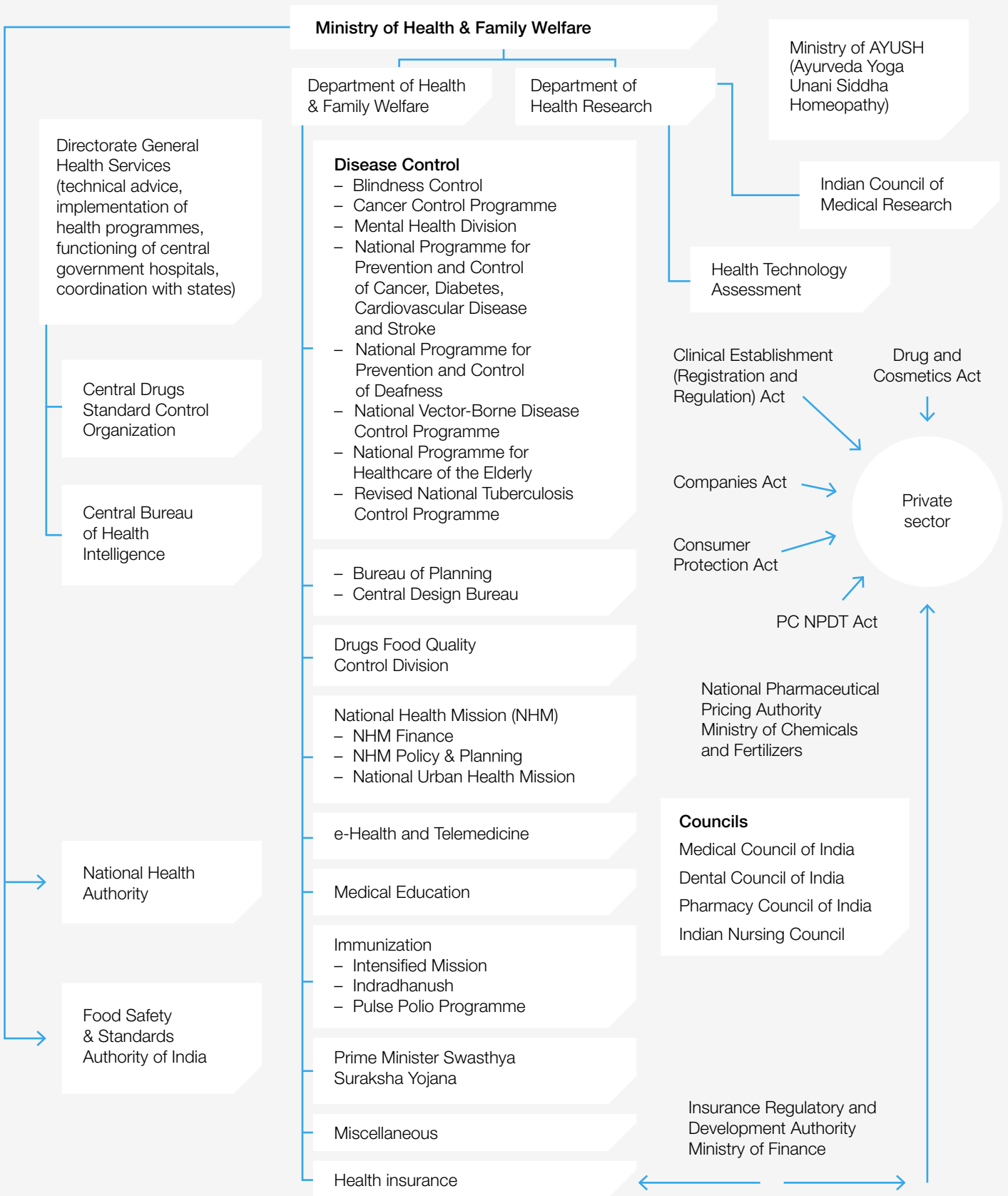




FIGURE 25 | Demographics: India

Year	2015	2016	2017	2018	2019	2020	2021
Population (m) <sup>54</sup>	1,310	1,320	1,340	1,350	1,370	1,380	1,390
Population growth (%) <sup>55</sup>	–	0.76	1.52	0.75	1.48	0.73	0.72
Population aged 65 and above (% of total) <sup>56</sup>	5.62	5.79	5.98	6.18	6.38	6.60	6.69
Life expectancy <sup>57</sup>	68.61	68.90	69.71	69.42	69.66	69.73	69.96

## How the system is designed

A report on India's eight most urbanized cities<sup>58</sup> – Ahmedabad, Bengaluru, Chennai, Delhi-NCR, Hyderabad, Kolkata, Mumbai Metropolitan Region (MMR) and Pune – ranked them according to health infrastructure (such as number of

hospital beds per 1,000 people). Pune was the most equipped city in India, with 3.5 beds per 1,000 people, compared to the national average of 1.4. Delhi-NCR was ranked last.

## Financing situation

The current tax policy is proving to be an unsustainable source of finance. The taxable workforce has shrunk and continues to shrink due to an ageing population, coupled with a large informal workforce, which is not captured by the tax system, of around 80%.

### Challenges in supporting the social health insurance system

India's social health insurance (SHI)<sup>59</sup> pools both the health risks of the people on one hand, and the contributions of individuals, households, enterprises and the government on the other, and is a form of financing and way to manage healthcare based on risk-pooling. It serves to protect people against financial and health burdens and is a relatively fair method of healthcare financing. However, there is limited participation from members of the informal workforce, who selectively enrol only when they are sick and generally struggle to enrol and pay premiums manually. The financial burden on the

national health system has risen in recent decades, with spiralling health costs aggravated by the increasing burden of new and emerging diseases and the rising demand for healthcare.

### Lack of affordability of private insurance

Currently, only high-income households (less than 3% of the population) can afford private insurance in India. This reduces the affordability of healthcare in India.

### Phasing out of external aid

In 2021, India is reportedly phasing out funding from Gavi, a vaccine alliance that collaborates with numerous global donors who contribute to the programme. Gavi has provided large amounts of support in India, with more than \$900 million in approvals between 2001 and 2023. The termination would result in India facing more challenges in financing its healthcare resources.

## Life-course immunization

### Delivery

#### Low awareness and limited vaccine confidence

Currently, there is limited focus on adult vaccination in India, with the National Vaccine Policy focusing more on immunization for children. Over two-thirds of the adult population in India are not aware of booster shot requirements and adult vaccination, perceiving them to be

just for children. Vaccine confidence levels are low, with less than 5% of healthcare workers receiving influenza vaccinations due to scepticism about its usefulness and fear of side effects.

#### Limited accessibility of vaccination

Vaccines are not readily available in India, stemming from logistical difficulties (such as regular electricity blackouts and storage challenges). The lack of

access points is particularly acute in rural areas, where vaccines are not delivered because of a lack of healthcare facilities.

### **Lack of surveillance and data collection**

Data collection is also limited in India (for instance, there is a lack of quality data on disease burden and limited epidemiological studies); this hinders the assessment of vaccine importance and impact. There is also a lack of data on vaccine efficacy, meaning that decision-makers lack evidence on the safety and effectiveness of vaccines in the population.

## **Recommendations**

These challenges could be overcome in various ways, including:

### **1. Providing incentives for vaccinations**

Direct benefit transfers (such as cash incentives) or insurance-linked incentives (such as collaborations with insurers to link benefits on earmarked insurance premiums tied to individuals' vaccination status) could be provided to increase vaccination uptake.

### **2. Enhancing the ecosystem of vaccinators**

The ecosystem of vaccinators could also be enhanced, with more dedicated adult immunization centres and points-of-contact for the public to increase accessibility.

### **3. Setting up vaccine registries and tracking data**

Patients' birth and immunization data could be reflected in the same digital health record, providing physicians with a more comprehensive overview and helping to tackle the lack of data

## **Diabetes**

### **Delivery**

#### **Limited diagnostic capabilities**

The largest issue is the low awareness and limited priority given to early detection: Around half of people with diabetes are undiagnosed, with only around 40% of the Indian population even aware of the disease. Cost-effective tools are also lacking, with many primary care facilities, especially in rural areas, being without diagnosis capacity.

#### **Need for improvement of the delivery model**

In India, the quality of diabetes care varies largely depending on awareness levels and expertise available among care providers. This has led to half of all patients having poor HbA1c control. Another problem prevalent in India is barriers to accessing treatment. Most patients miss appointments due to high transport costs and long waits in queues resulting from health facility congestion.

collection. Introducing data-tracking could also provide insights that may lead to more effective policy decision-making.

## **Financing**

India may face multiple challenges in financing its healthcare sector for life-course immunization, but there are solutions available:

### **1. Consolidation of corporate social responsibility (CSR) funds**

Corporates are required to allocate a percentage of their revenues towards CSR, with the funds being pooled together and earmarked for building and supporting the necessary infrastructure and capabilities required to facilitate adult vaccinations, such as training medical personnel to administer the vaccine, and procurement, storage and promotional activities to encourage adult vaccination. Gavi donors include members of the private sector (such as TikTok, Mastercard and Unilever) and foundations (such as The Bill & Melinda Gates Foundation) as well as various countries. However, relying purely on Gavi funding is unsustainable. It would be ideal to encourage self-reliance at a national level instead.

### **2. Encouraging partnerships between insurers and employers**

An employer-led healthcare initiative carried out in partnership with insurers could help employees cover the cost of vaccinations, increasing affordability. Flu vaccinations are known to be a simple and cost-effective way to keep employees healthy and productive at work, making it a win-win solution.

#### **Lack of support for self-management**

Diabetic patients spend much of their time self-managing their ailments. The lack of support for self-management has led to many issues, with patients uncertain of injection methods or tools and many exhibiting poor plasma glucose control. India also faces a problem of limited accessibility – only 44% of New Delhi pharmacies carry human insulin, far lower than the WHO availability target of 80%.

## **Recommendations**

These challenges could be overcome in various ways, including:

### **1. Employing digital platforms for information sharing and teleconsultation**

India's increasing use of AI and cloud technology can bring better diabetes care to

patients, allowing them to access electronic health records immediately, thus keeping them clearly informed of the status of their condition.

## 2. **Government-led promotion of an open innovation concept**

Likewise, it would be meaningful for government health bodies to advocate an open innovation concept, which leans towards an integrated point-of-care system. This would provide a holistic approach to the whole customer journey – pre-visit, in-clinic and post-visit. A strong patient journey mapping structure can help ensure better communication between patients and healthcare professionals, providing them with an improved experience and greater clarity of their healthcare regimen.

## 3. **Creating a more organized treatment protocol**

The care delivery model can also be evolved by creating a more organized treatment protocol, whereby government and patient advocacy or community groups can collaborate with medical professionals to help with the implementation of treatment protocols.

## Financing

India may be facing multiple challenges in financing its healthcare sector for diabetes management, but there are solutions available:

## Rare diseases

### Delivery

#### **Low awareness and limited vaccine confidence**

Rare diseases are generally given low priority. There are conflicting priorities at the public health level due to larger numbers in other disease areas and extremely limited information available on rare diseases, with over 95% of the population unaware of them.

#### **Lack of capacity and diagnostic capabilities**

There are also limited screening resources for rare diseases. It is economically challenging to set up a lab for rare disease diagnosis because of high set-up costs. The high unit cost per test adds to the problem. In addition, there are only 70–80 trained geneticists in the country, with around 80% of practising medical professionals having no awareness of how to diagnose rare diseases. Hence, many patients with rare diseases suffering from multiple symptoms are diagnosed only according to their symptoms, instead of with the underlying disease.

#### **Limited access to treatments**

Less than 5% of rare diseases have approved treatments globally, and only 15–20 rare diseases in India have Drug Controller General of India (DCGI)-approved treatments. There

## 1. **Creating multisectoral funding pools**

Besides the government, it is important to consider other relevant stakeholder groups that would be most likely to sponsor a cause close to their purpose – for example, corporates. Another option is to develop a shared-value model that intersects corporate purpose and societal impact; that is, the result of policies and practices that contribute to competitive advantage while simultaneously strengthening the communities in which a company operates.

## 2. **Developing more inclusive insurance policies**

The government can look to explore the prospect of providing composite social insurance, while considering ways to link insurance as an extension of telemedicine and e-pharmacies to increase the affordability of diabetes medicines and out-of-pocket expenses for patients.

## 3. **Imposing sin tax**

“Sin taxes” are an excise tax levied on products that are known to elevate the risk of diabetes, such as sugar-sweetened drinks or tobacco. While helping to lower patients’ risk of diabetes and obesity, sin taxes can work to raise revenue available to the government to support public health measures dedicated to diabetes management.

are also unclear reimbursement and support mechanisms in India, where the inclusion/exclusion criteria for patient identification and treatment support are highly unclear.

## Recommendations

These challenges can be overcome in various ways, including:

### 1. **Raising awareness by encouraging multistakeholder collaboration**

Multistakeholder collaboration should be encouraged to garner support and pave the way for discussing practical solutions that can be implemented to promote access to rare disease therapies, such as through multistakeholder forums. Patient advocacy groups should also be empowered, so that they have the resources they need to support their respective communities.

### 2. **Improving diagnostics**

Tertiary care hospitals that have been identified as centres of excellence (COEs) by the Ministry of Health (MoH) can help to provide short-term training programmes to educate doctors about rare diseases. Medical schools can also look

to include the study of rare diseases in their curricula, as well as including a proper protocol to guide doctors in diagnosis and treatment.

**3. Improving the usability of the Indian Rare Disease Registry (IRDR)**

It would be ideal to improve the existing registry, allowing healthcare practitioners to input the relevant data points – this would aid in the creation of longitudinal data and identifying disease causality and cures.

**4. Drafting a common compendium document**

This would allow people to become better educated and more aware of their options should they or their loved ones have a rare disease. Healthcare professionals can collaborate with research industries to create a common compendium document to better inform patients.

## Financing

India may be facing multiple challenges in the financing of its healthcare sector for rare diseases, but there are solutions available:

**1. Ensuring better use of the existing government budget through earmarking funds, supplemented with private-sector contributions**

An option is to evolve existing policy towards state-level financing by first setting KPIs to

use funds at a state level, then carrying out a “horizon scan” throughout the pipeline at a governmental level, in order to allocate funds towards specific rare disease budgets. It would also be helpful to supplement the existing government budget with “top-ups” from the private sector through crowdfunding.

**2. Encouraging the private sector to contribute funds towards screening for research benefits**

By funding the screening stages of rare diseases, private-sector players could gain critical insights and data points from these screening results. They can then benefit from this data by using it for research and development towards potential future innovations.

**3. Creating opportunities for private insurers to support funding in the screening phase**

Private insurers could play a useful role by investing in the screening phase to derive better analytics for the claims process. In doing so, insurers can help to improve efficiency in the existing system and improve affordability for patients.

**4. Implementing risk-pooling mechanisms to improve affordability of treatment for new and innovative therapeutics**

High-cost drugs can be made more affordable through a concerted effort by health insurance providers.

## Policy action checklist

### Government-led policies

#### Life-course immunization

- Working with private and public hospitals to facilitate data collection on patient immunization records and build up a National Immunization Registry
- Investing in infrastructure to develop more immunization centres to provide better access to those in rural and urban communities

#### Diabetes management

- Endorsing an open innovation concept to spur health-tech innovations that support people with diabetes, and potentially map this with India’s National Health Stack (NHS) 2022 digital framework
- Collaborating with medical professionals to organize programmes that support pre-diabetes and diabetes patients (e.g. opening a mobile testing drive, or creating an online medication dispensary)
- Developing composite social insurance mechanisms, and linking insurance with

telemedicine and e-pharmacy for diabetes medication and accessories

- Imposing a sin tax on sugar-sweetened drinks

#### Rare diseases

- Working with both public and private hospitals to empower patient advocacy groups with adequate support and resources for their community efforts
- Learning from healthcare professionals and creating an official definition for rare diseases in India and categorization based on treatment potential
- Collaborating with private and public hospitals to organize short-term training programmes to educate doctors about rare diseases
- Working with the Ministry of Education to formally include courses on rare diseases as part of the medical school curriculum
- Earmarking rare disease efforts at a national level in the government health budget

## Corporate-led initiatives

### Life-course immunization

- Private insurers to link benefits/subsidies on earmarked insurance premiums to an individual's vaccination status
- Contributing part of businesses' corporate social responsibility (CSR) funding budget to a pool of funds earmarked to support life-course immunization efforts in India
- Private insurers could collaborate with employers to organize vaccination programmes at a company level

### Diabetes management

- Creating digital health platforms that feature a patient-centric interface, making it easier for those with diabetes to obtain vital information and carry out teleconsultation with their doctors
- Opportunities to develop a shared-value model whereby corporates can collaborate with patient beneficiary organizations or hospitals to donate or subsidize their products (such as insulin and blood glucose monitors), especially for the lower-income patients

### Rare diseases

- As part of their CSR initiatives, corporates could display their support for those afflicted with rare diseases at multistakeholder forums and pledge solutions to support these efforts
  - They could also contribute funds towards screening purposes as part of their CSR initiatives

- Research institutes could collaborate with healthcare professions to create a common compendium document to better inform patients about their treatment options for rare diseases
- Private insurers could contribute funds towards the screening phase in exchange for better analytics for the claims process
- Private insurers could take part in risk-pooling mechanisms for new and innovative therapeutics

## Citizen-led initiatives

### Life-course immunization

- Endorse mobile vaccination teams to bring facilities closer to citizens
- Use celebrity endorsements in dialects to encourage the uptake of life-course immunization

### Diabetes management

- Collaborating with medical specialties to launch patient support programmes, including mental health support and guidance on simple self-management

### Rare diseases

- Crowdfunding to support patients with rare diseases

# Japan

FIGURE 26 Japan's healthcare system<sup>60</sup>

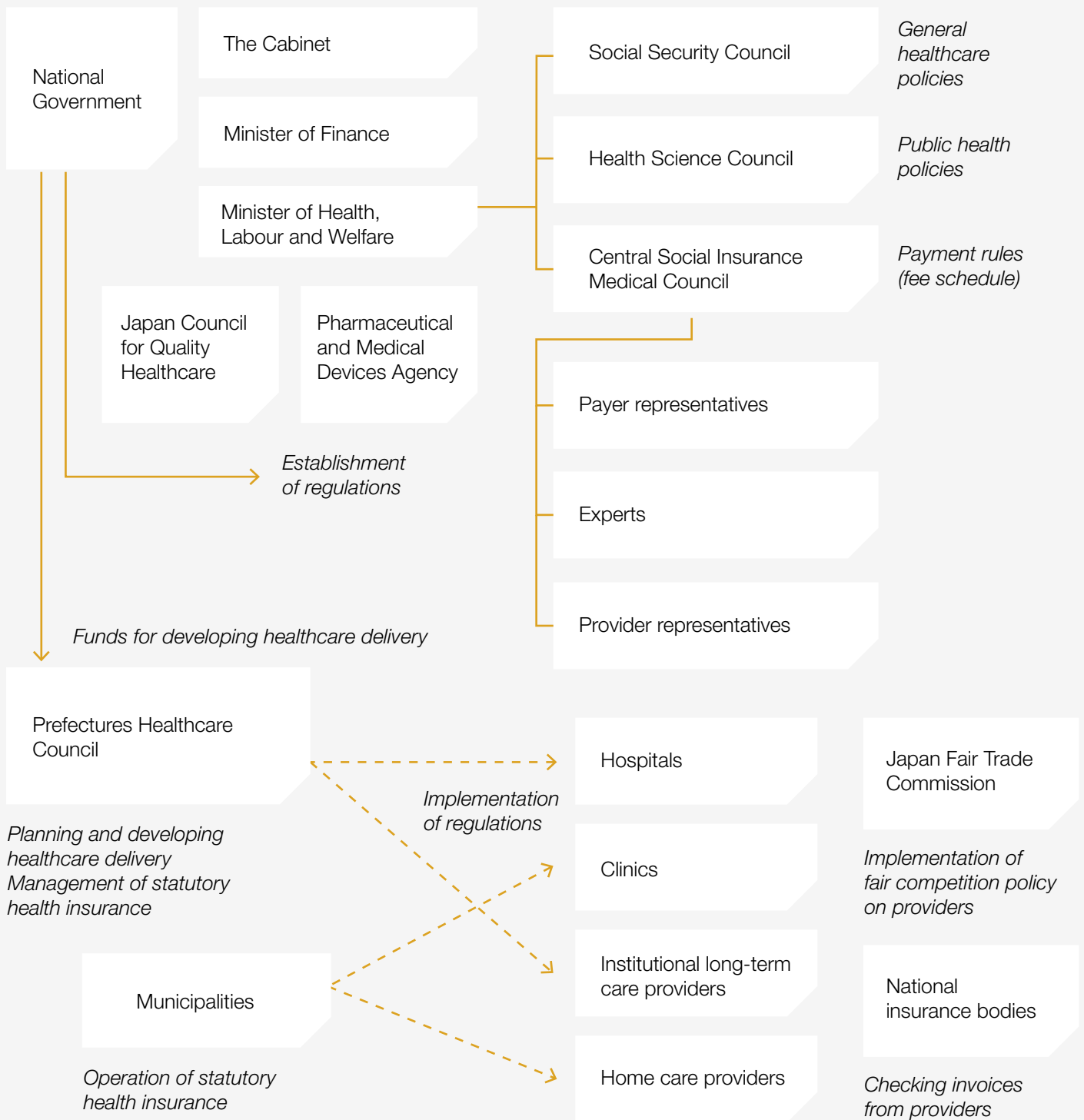


FIGURE 27 | Demographics: Japan

Year	2015	2016	2017	2018	2019	2020	2021
Population (m) <sup>61</sup>	126.98	126.96	126.75	126.50	126.19	125.76	125.28
Population growth (%) <sup>62</sup>	-0.11	-0.12	-0.16	-0.20	-0.21	-0.34	-0.27
Population aged 65 and above (% of total) <sup>63</sup>	26.02	26.59	27.11	27.58	28.00	28.40	28.80
Life expectancy <sup>64</sup>	83.79	83.99	84.10	84.21	84.36	84.77	84.79

## How the system is designed

Japan's healthcare system is considered one of the best in the world, given that Japan has been pursuing universal health coverage and free access to healthcare. Almost everyone came to be insured in 1961 through the establishment of employee-based and community-based social health insurance. Patients basically have full freedom to choose their own healthcare providers and all approved drugs are covered by insurance. The Japanese population has the longest life expectancy among all OECD countries, and healthcare expenditure, as a share of gross domestic product (GDP), is above most of the developed countries in the organization.

The regional medical care initiative was announced by the government in 2014, with baby boomers expected to turn 75 in 2025 and maximize demand for medical and nursing care. Since this policy, the distribution of medical functions has effectively and efficiently allocated medical resources, and the construction of a better medical care supply system has been promoted.

However, the sustainability of the healthcare system is now under threat due to an ageing population, rising healthcare costs and a decrease in the working population.

## Financing

### Challenges in supporting the current tax policy

The current tax policy is proving to be an unsustainable source of funding. Japan has a shrinking taxable workforce because of

its ageing population, and is also known as a “super-aged” country. Currently, 28% of the population is aged over 65, and this is anticipated to increase to 40% by 2060.

## Life-course immunization

### Delivery

#### Low awareness and limited vaccine confidence

In the early 1990s, the health hazards associated with vaccination became a social problem in Japan. Later in 1994, the revised Immunization Act changed the routine vaccination programme from compulsory to voluntary; this could be partially attributed to there being insufficient information on vaccination available to the public. While the vaccination uptake for routine paediatric vaccines is close to 100%, it remains low for non-paediatric vaccinations. This could lead to minimized protection for adults.

and the vaccination record is neither centralized nor useful for scientific research. It is worth considering whether this should be revised to keep track of data more accurately throughout an individual's life-course immunization.

A framework for the digitization of vaccination records using “My Number” (the ID system in Japan) has been introduced. It is hoped that digitizing records will result in: (1) accurate monitoring of vaccination rates; (2) a better understanding of individual vaccination histories; and (3) using them to recommend vaccinations to those who have not undertaken them.

#### Lack of management of vaccination data and digitization

The current storage period for vaccination records of routine immunizations in Japan is set at five years

#### Self-payment and impacts on vaccination rates

In Japan, for Category A vaccines (all routine vaccinations for children are Category A),

almost 100% of the cost is covered by public funding, hence the vaccination rate is close to 100%. However, for Category B vaccines (such as the influenza vaccine for those aged 65 and above), there is a lower subsidy rate. Rates for Category B thus remain low.

## Recommendations

These challenges could be overcome in various ways, including:

### 1. Improving education using proper information platforms

A targeted education approach can improve awareness of and confidence in vaccinations in the population, reducing hesitancy and misinformation that may be conveyed by the media. At a minimum, children in schools, medical students at college, parents of school-age children, and parents of newborns should be targeted.

It is equally important to educate the population on the stigmas surrounding vaccination, and to ease concerns about side effects. This would increase confidence in vaccination.

### 2. Digitizing and storing data

Some medical institutions in Japan have begun working on digitizing data storage. This step is vital and should be continued to create a centralized, integrated data storage system in order to track immunization records for the Japanese population. One essential use case for digitized data would be a vaccination passport, which can be used for international travel.

While it is true that the private sector currently carries out some of the data collection for patient immunization records, it is important that the government also participates by maintaining

## Diabetes

### Delivery

#### Prevention of onset of diabetes (primary prevention)

The government had set a target of limiting the total number of diabetes patients to 10 million by 2022. As the number had reached 10 million by 2018, however, it has become necessary to control future increases. The target now is to reduce the number of people with metabolic syndrome by 25% (to 10.5 million) by 2022, down from 14 million in 2008. However, there were still 14.85 million people with metabolic syndrome in 2018, indicating that it may be hard to achieve the 2022 target number.

#### Early detection and treatment through health check-ups (primary prevention)

Japan's national health insurance requires

an active surveillance system and providing support for the integration of data. One filtering tool that can be incorporated is the use of specific barcodes, which can be assigned to each vaccine, making it easier to access and track relevant data points.

## Financing

Japan may be facing multiple challenges in financing its healthcare sector for life-course immunization, but there are possible solutions available:

### 1. Incentive mechanisms through insurance premiums

This solution is already used in various countries, where incentives are awarded to those who choose to take vaccines, through easy access to public spaces such as restaurants and sports grounds. Such incentive can be extended to insurance premiums, whereby insurers may lower premiums for those who choose to be vaccinated. It is important to remember, though, that some people may suffer allergic reactions to vaccinations and thus are not doing this by choice.

### 2. Social impact bonds (SIBs)

SIBs are a type of innovative finance instrument used in impact investment; essentially, they are sustainability bonds that can be used for vaccination efforts. In this process, donor countries and organizations may make pledges to the Ministry of Finance Japan/ Ministry of Health, Labour and Welfare, and the funds can then be used for vaccinations. SIB insurance soared in 2020, largely because of growing interest in sustainable finance, ethical investments and the interest from governments and agencies to fund socially beneficial projects. It would be a potentially useful model for Japan to consider.

specific health check-ups for insured people and dependents aged 40 and over, as well as guidance on visceral fat obesity. The implementation rate for these health examinations is targeted at 70% by 2023, while the actual rate in 2018 was 55%. Also, the implementation rate for specific health guidance is aimed at 45% by 2023, while the actual rate in 2018 was 23%.

#### Prevention of aggravation (secondary and tertiary prevention)

In terms of secondary prevention, the government's target – for the percentage of patients continuing treatment to be 75% – has not yet been reached – standing at 66% as of 2019. The percentage of patients with poor blood glucose control (HbA1c) was 0.94% in 2017, close to the target of 1%, but further action is considered necessary.



As for tertiary prevention, the government's target of reducing the number of new patients on dialysis due to diabetic nephropathy to 15,000 per year by 2028 has not yet been achieved, with 16,000 patients still on dialysis as of 2019.

There is room for greater adoption in the usage of telemedicine, as well as the monitoring of treatment and lifestyle habits through health-related apps so as to mitigate/prevent the onset of disease and prevention aggravation.

### **Release from the stigma of diabetes**

Prejudices based on outdated information may lead to disadvantages, including an inability to obtain necessary services such as life insurance or a mortgage or achieve employment or promotion. The stigma regarding diabetes needs to be addressed to ensure that patients are well-supported in their mental health needs. Otherwise, patients may hide the fact that they have diabetes from those around them, potentially affecting their ability and willingness to seek treatment options. One way to tackle this issue is to promote a better understanding of the condition by ensuring accurate and relevant dissemination of information to the general public (this could be through health education platforms and other public health campaigns, for example).

## **Recommendations**

These challenges could be overcome in various ways, including:

### **1. Promoting importance and spreading awareness**

One way to motivate doctors to promote diabetes prevention is through consultation fees, prompting them to encourage patients to attend more regular check-ups and screening. HCPs and doctors could more actively educate their patients on the importance of a healthy lifestyle for diabetes prevention and management by providing resources in the form of online educational platforms or information booklets at clinics.

It is vital to note that unlike type 1 diabetes, public figures are often hesitant to share their type 2 diabetes status (since it is related to lifestyle). It would hence be beneficial to create a culture of openness whereby public figures are encouraged to disclose their condition and how they manage it. This would help increase awareness.

### **2. Preventing the aggravation of diabetes**

It would be useful to draw on health-tech tools that can help people with diabetes track their fitness and sleep cycles (considering diabetes is a lifestyle-related disease). Self-management tools can be used at home and data points can

be sent to patients' GPs. Should patients allow their data to be collected for research purposes, this will aid healthcare data science experts, who can analyse the metadata/lifestyle data and understand links with metabolic, genomic and behavioural statistics.

Empowering GPs with knowledge of diabetes management and the recommended lifestyle changes may also be beneficial for their patients. Interested GPs may undergo specialist training courses organized by the Ministry of Health, Labour and Welfare to increase their knowledge of diabetes management and treatment.

### **3. Digital monitoring of conditions**

Digital tools (such as wearables or apps) can be promoted by healthcare providers (HCPs). These tools use certain algorithms to determine an individual's risk factors for diabetes, such as weight, blood pressure and heart rate. Data points can also be extracted and shared with an individual's HCP to help them better understand the individual's medical profile and analyse vital data points.

That said, HCPs play an important role in educating patients on the options they have available when it comes to early diabetes detection. The Ministry of Health, Labour and Welfare should lead the messaging about highlighting the importance of early detection and screening for diabetes.

## **Financing**

Japan may be facing multiple challenges in financing its healthcare sector for diabetes, but there are options available, in addition to preventing the onset and aggravation of diabetes:

### **1. Control over medical expenses related to diabetes**

Medical costs for diabetes in Japan amounted to JPY 1.2 trillion as of 2018, and together with other lifestyle-related diseases – e.g. cardiovascular diseases (JPY 2 trillion), cerebrovascular diseases (JPY 1.8 trillion) and hypertensive diseases (JPY 1.7 trillion) – these contribute to an overall rise in medical expenses. In addition, complications that arise from diabetes, such as dialysis, blindness and amputation of lower limbs, further contribute to higher medical expenses. Dialysis treatment (typically used for more severe cases of diabetes) adds up to a total amount of JPY 1.6 trillion. Therefore, early treatment of the disease and prevention of its severity itself will help control medical expenses related to diabetes. In this regard, many local governments are implementing projects to prevent the aggravation of diabetic nephropathy, but the depth and scope of these projects vary depending on the municipalities.

2. **Control of out-of-pocket medical expenses**  
Japan's public insurance system is generous by international standards, and out-of-pocket medical expenses are not significantly excessive due to the coverage of medical benefits. However, while there is a system to subsidize childhood medical expenses through the research and development project of the Child Welfare Act (Treatment of Specific Pediatric Chronic Diseases), the subsidies are no longer applicable from adulthood. As such, a question arises about affordability with regards to the availability and accessibility of treatment options.
3. **Pooled philanthropic funds for diabetes patients**  
Pooled philanthropic funds from corporates can be used to support diabetes management improvement efforts in Japan. This could be

tied to the corporate social responsibility (CSR) efforts of large companies. In mid-2021, a pooled fund expected to raise over \$1 million was launched in Asia and intended to support healthcare systems in the region, with donors from a diverse range of backgrounds (such as venture capitalists and shipping conglomerates). Japan could adopt a similar model to this, with funds earmarked for diabetes management.

4. **Social impact bonds (SIBs)**  
SIBs related to diabetes management can be sold to investors in Japan, with funds directly channelled to initiatives geared towards helping patients manage diabetes in the country. Traditionally, the focus of SIB programmes in Japan has been on healthcare, so this would closely align with the ongoing theme of SIBs in the country.

## Rare disease

### Delivery

#### Necessity to strengthen medical systems

Medical institutions and specialists trained to provide specialized diagnosis and treatment are unevenly distributed, both across prefectures as well as disease areas. The rare diseases covered by the core hospitals are mainly “designated intractable diseases” (which can be funded by public subsidies; there are 333 of these at present). In addition, the network of specialists and non-specialists is not sufficiently established, and digital usage, including online medical care, is still developing. As a result, diagnosis is delayed in many regions, and the burden on patients and the medical costs associated with unnecessary tests and treatments have increased.

#### Insufficient treatment options

Many of the orphan drugs that have been approved in Europe and the United States are currently unapproved in Japan. Furthermore, there are fewer pipelines in the R&D space in Japan for orphan drugs as compared to Europe and the US (orphan drug lag).

For some diseases, the pathophysiology has not yet been elucidated and there are no diagnostic criteria assigned to these diseases. It is said that less than 5% of all rare diseases have specific treatments in place for them.

#### A big hurdle in clinical development for new drugs/devices

The government promotes the development of drugs and medical devices for rare diseases through the subsidy grant system and priority review system, and supports the establishment of diagnoses of rare diseases through the deployment of core hospitals, the introduction of innovative tests (e.g. next-generation sequencing [NGS]) and the establishment of clinical information databases that

can be linked internationally. However, Japan is still in the process of discussing the development of an infrastructure for the collection and accumulation of disease data, and the use of digital technology in clinical trials is also still in the development stage. Additionally, Japan has its own regulatory framework in place for the approval of new drugs and devices. Finally, clinical development costs are considered to be higher in Japan compared to Europe and the US.

## Recommendations

These challenges could be overcome in various ways, including:

1. **Strengthening medical systems**  
Generalist doctors have often found it difficult to identify and connect with specialist doctors to whom they can refer patients. This limited awareness and knowledge base about rare diseases may also make it difficult to provide sufficient support to patients and their caregivers. In addition, patients often consult different doctors, meaning that data storage becomes siloed, with no consistent data points collected throughout a patient's journey. This can be countered by carrying out data integration into a single database. Ideally, horizontal integration of all patient data points could be used among hospitals, allowing data to be captured in a centralized, single database, making it easier for HCPs to access a patient's information.

A comprehensive and single data repository connecting data points between institutions should be considered. In addition, pharmaceutical companies can be required to carry out post-marketing surveys, whereby the data of patients who had received their diagnoses online could be integrated in the database. It is important to check that patients

are willing and open to sharing their data, explaining that this benefits them and other patients as well as the data will be used for future research and development.

## 2. **Upgrading the infrastructure for rare diseases**

Currently, it takes many years to diagnose rare diseases. There are also several issues surrounding misdiagnoses. These issues can be tackled using upgraded infrastructure. Local health-tech innovators and pharmaceuticals could collaborate to develop new medicines and treatment options. It would also be useful to expand the scope of genetic testing. Currently, screening of newborns is available only in certain regions, and this does not cover testing for all specialty diseases. It may be worthwhile expanding testing coverage, especially for babies born into families with prior diagnoses of rare diseases.

In cases where patients may not require a face-to-face consultation with their doctors for routine check-ups, medication home delivery and teleconsulting functions should be considered. This simplifies access to treatment and may raise medication adherence.

## 3. **Promoting more inclusivity**

It is important that people with rare diseases are empowered and given a voice to ensure their concerns are heard. The government budget that goes towards their treatment efforts is small, so more priority needs to be placed on supporting people with rare diseases.

Currently, there is a very small number of specialists for rare diseases. It would be useful to create a specialist-to-specialist network to build a data-collection ecosystem, enabling information about a disease to be accumulated. Specialist networks can also gather useful learning from other networks, to see where

possible treatment plans and approaches may be adapted for that disease.

It is vital to note that subsidies for some rare disease treatments for children are typically provided only to those up to the age of 20 unless they meet the criteria of “designated intractable disease”. Given the high costs of such treatments, the government may need to provide greater financial support to adults aged 20 and above, who no longer qualify for subsidies.

## Financing

Japan may be facing multiple challenges in financing its healthcare sector for rare diseases, but there are solutions available:

### 1. **Improving medical insurance coverage or subsidies for rare disease patients**

In Japan, patients with rare diseases other than the 333 “designated intractable diseases” and those with a “designated intractable disease” but who are mildly symptomatic and thus do not meet the criteria for subsidy, are not covered by the medical expense subsidy. This means that their burden of long-term medical treatment and diagnostics costs can still be heavy. Given the situation, there is a need to work with Japan’s statutory health insurers to develop mechanisms that can be used to fund associated medical costs for patients with rare diseases who are not covered by the medical expense subsidy. A dedicated healthcare insurance programme can be created for them, with funding from both the state and national governments.

### 2. **Private Finance Initiative (PFI)**

The government can consider introducing a PFI scheme to solicit initial costs from investors in order to build a database on rare diseases, with the government subsequently purchasing the developed database.

## Policy action checklist

### Government-led policies

#### Life-course immunization

- Improve vaccine communication among all stakeholders
- Deeper collaboration between the Ministry of Health, Labour and Welfare and the Ministry of Education on vaccines and vaccinations, to ensure people are educated
- Monitoring and digitalization of the vaccination record and integration to medical data is vital; the database development should be promoted by the national government. Data usage could be enhanced

by disclosing data to the private sectors and encouraging competition in the market

- Consider alternative financing mechanisms; for example, SIBs and incentive mechanism through insurance premiums

#### Diabetes management

- Encourage interactions among different stakeholders
- GPs to undergo specialist training courses organized by the Ministry of Health, Labour and Welfare and municipalities to increase their knowledge base about diabetes management and treatment

- Improve access to wearables:
  - Subsidies may be considered, as wearables may not be affordable for all
  - Sufficient resources on self-learning material regarding how to use these wearables should be made available on the Ministry of Health, Labour and Welfare website, to help those who are less tech-savvy

#### **Rare diseases**

- The testing coverage for newborn screening could be expanded, especially for babies born into families with rare diseases
- A specialist-to-specialist network to build a data collection ecosystem should be created, enabling information about a disease area to be accumulated
- Greater financial support (in the form of subsidies for some rare disease treatment) to adults aged 20 and above with rare diseases that do not meet the criteria of “designated intractable disease” should be provided, preventing costs from being a barrier to access to treatment
- The government could consider introducing a PFI scheme to solicit initial costs from investors to build a database on rare diseases

### **Corporate-led initiatives**

#### **Life-course immunization**

- Collaborations between the private sector and the government to integrate immunization data for analysis should be encouraged

- Incentives for those who are vaccinated (such as reductions in insurance premiums, easy access to restaurants and other public spaces, etc.) can promote vaccination uptake

#### **Diabetes management**

- Digital fitness wearables or apps on patients’ smartphones that use algorithms to determine their risk factors for diabetes can be employed
- Investors could buy SIBs, with the funds supporting initiatives geared towards helping patients manage diabetes

#### **Rare diseases**

- Collaboration between institutions to integrate data points, forming a comprehensive and single data repository
- Output of pharmaceutical companies’ post-marketing surveys could be used and integrated with data from patients who received diagnoses online in the database
- Local health-tech innovators and pharmaceutical companies could collaborate to develop new medicines and treatment options

### **Citizen-led initiatives**

#### **Diabetes management**

- Using celebrity influence on spreading awareness of type 2 diabetes could educate the public and raise awareness

#### **Rare diseases**

- People with rare diseases should be empowered to speak up, making their voices heard

FIGURE 28 Viet Nam's healthcare system

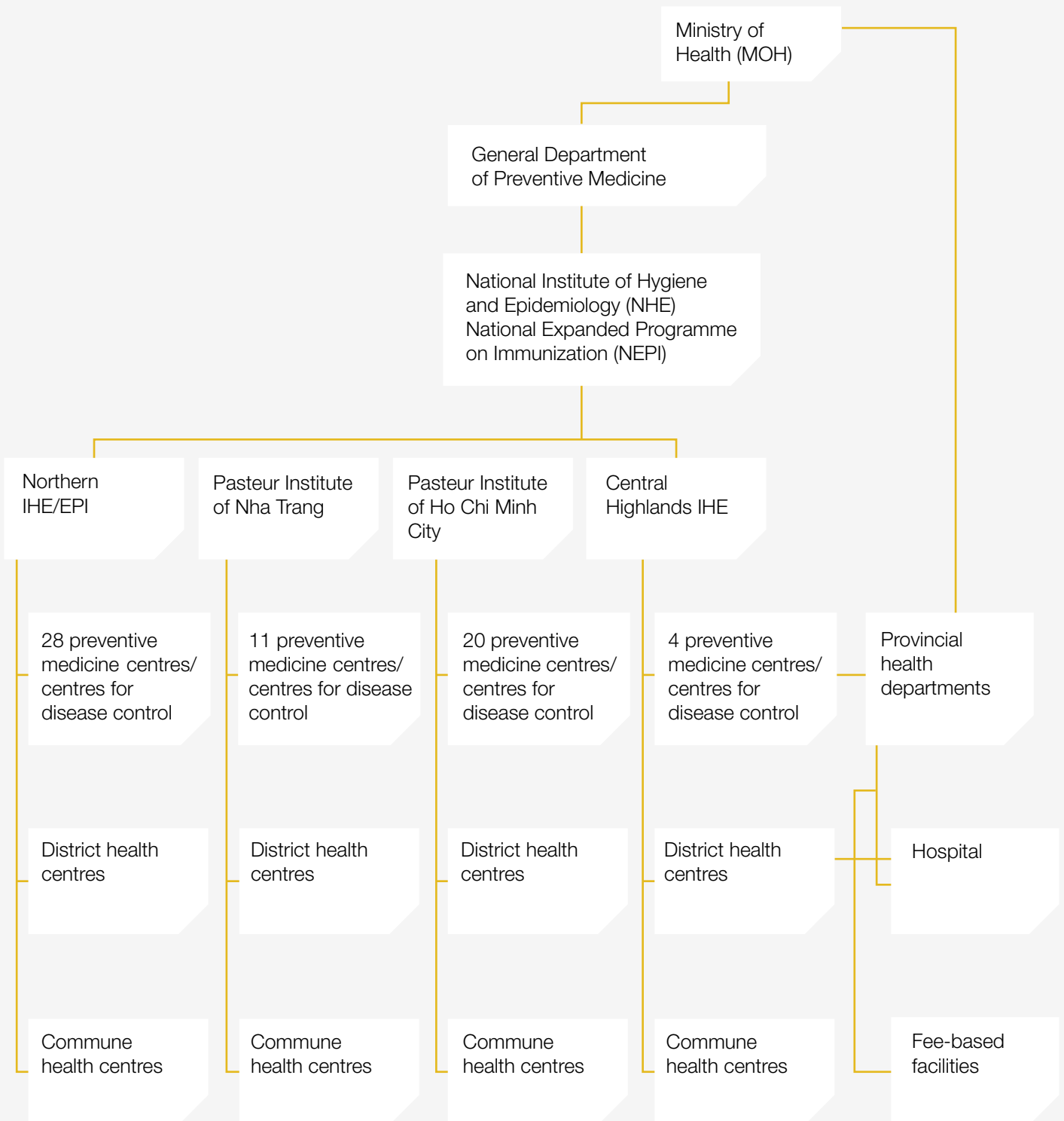


FIGURE 29 | Demographics: Viet Nam

Year	2015	2016	2017	2018	2019	2020	2021
Population (m) <sup>65</sup>	92.68	93.64	94.60	95.55	96.46	97.34	98.17
Population growth (%) <sup>66</sup>	1.05	1.03	1.02	0.99	0.96	0.91	0.85
Population aged 65 and above (% of total) <sup>67</sup>	6.66	6.83	7.03	7.28	7.55	7.87	–
Life expectancy <sup>68</sup>	75.11	75.12	75.24	75.32	75.40	75.47	75.57

## Demographics

Viet Nam is the 15th most populous country in the world,<sup>69</sup> with a total population of 97.4 million people. By 2050, 20.4% of Viet Nam’s population will be above the age of 65.<sup>70</sup> With the larger proportion of the population growing older and surviving longer, combined with a declining birth rate, we can expect a shortage of supply in the workforce, eventually resulting in a decline in productivity. As such, Viet Nam should be concerned about the possible socioeconomic problems associated with ageing populations in the years to come.<sup>71</sup>

Viet Nam is divided into eight major regions. Hanoi is situated in the north, with a population of 7.3 million, and Ho Chi Minh City is situated in the south, with a population of 7.9 million.<sup>72</sup> Its administration is divided into 58 provinces, which are governed by five municipalities (Hanoi, Ho Chi Minh City, Can Tho, Da Nang and Hai Phong).<sup>73</sup>

Looking at Viet Nam’s healthcare system, its National Immunization Information System (NIIS) was launched in 2017.<sup>74</sup> To register more people in the system, a review was conducted in 2019 to understand the determinants.<sup>75</sup> As of 2020, the NIIS has captured more than 20 million client records. However, its success has been mixed, with inconsistent data quality among the problems. Figure 28 depicts Viet Nam’s public healthcare management structure. Approximately 94% of Viet Nam’s healthcare facilities are under the management of individual local health authorities. This means that the individual local health authorities will have to manage and reach out to clients to register them. As people travel between districts, information asymmetry may occur, and information that is not updated can result in inconsistent data quality.

## Financing situation

The current tax policy is proving to be increasingly unstable, with the taxable workforce shrinking more and more as the population ages, coupled with a large informal workforce, which is not captured by the tax system, of around 80%.

### Limited coverage and funding for immunizations

The government covered only slightly more than half of routine immunization expenses in 2017, with the rest covered by donors. Adult vaccines such as influenza vaccines are also often not subsidized, except during some specific campaigns.

### Limited coverage and funding for diabetes management

On average, a low-income household in Viet Nam living with diabetes spends around half of its total

income on diabetes, with the highest spending related to medications such as insulin. However, limited, and late, diagnostics and treatment increase the chances of incapacitation among working adults, often resulting in income loss and further reduced financial capacity for treatment.

### Limited coverage and funding for rare diseases

More than 90% of global rare disease patients surveyed are not able to make a sustainable family living, with the residual medical expenses of patients with rare diseases exceeding three times their own income. Public reimbursement of orphan drugs is also limited in Viet Nam, such as a 30% reimbursement rate for Myozyme, a treatment drug for Pompe disease. This is partly due to the lack of earmarked funding for rare disease treatments stemming from low perceived cost-effectiveness.

## Life-course immunization

### Delivery

#### **Low awareness and limited vaccine confidence**

Awareness of boosters for required vaccinations for preschool children, adolescents and adults is shrinking. While Viet Nam has achieved high vaccination coverage for children, this is not the case for adults. There is also low vaccine confidence in Viet Nam; for example, hepatitis B vaccination coverage fell to 30% because of increased fear of side effects caused by media representation.

#### **Limited accessibility of vaccination**

Subsidized immunization services are often provided at commune health centres for one to three days per month, often resulting in long queues and requiring parents to take leave from work.

#### **Lack of surveillance and data collection**

There is also a limited use of data to drive efficiency. A recent Expanded Programme on Immunization (EPI) review stated that local data was not systematically used for forecasting and planning within the programme. Additionally, there is a lack of data collection for adult vaccination. Presently, there are very limited statistics about adult vaccination rates.

### Recommendations

These challenges could be overcome in various ways, including:

#### **1. Increasing multistakeholder awareness and implementing an adult vaccination schedule**

Policy-makers and healthcare practitioners play an important role in raising the general population's awareness and vaccination confidence. Through the strategic use of behaviour change communication (BCC), they could change the public's attitude towards life-course immunization.

Vaccination is made a priority for children in Viet Nam, but not for adults. Both carrot-and-stick approaches can be applied to promote the uptake of adult vaccination. For example, employers could include vaccination as part of employees' annual health check-ups. Some corporates such as Honda and Emirates have mandated that their employees receive vaccinations such as flu shots, while covering the cost.

For this measure to be scalable, an important enabler would be to establish a centralized platform that allows individuals to opt in to have their vaccination history recorded, enabling relevant stakeholders such as healthcare practitioners to assess and give recommendations accordingly.

#### **2. Expanded access points and a streamlined supply chain**

The administration of vaccines needs to be expanded beyond health centres and into other touchpoints such as vaccination centres and pharmacies to enhance accessibility.

Close conversations between industry players (for example, in the form of vaccine alliances) and policy-makers would be instrumental in bridging the gaps in understanding the challenges faced by multiple stakeholders in the ecosystems, thereby helping to streamline the processes and reduce unnecessary barriers.

Another element required to streamline the supply chain is the availability of data for demand forecasting. Presently, the lack of centralized immunization data has made it challenging for manufacturers to forecast demand, which could result in supply-chain disruption or wastages. Accessibility is both a function of availability and affordability. Unfortunately, while vaccines are widely available, lack of affordability will lead to limited adoption.

### Financing

Viet Nam may be facing multiple challenges in financing its healthcare sector for life-course immunization, but there are solutions available:

#### **1. Tax creativity**

There is room to further maximize the use and efficiency of existing financing mechanisms. Taxation has been a traditional source of funding but often is not fully used for healthcare purposes. Viet Nam could refer to countries such as Taiwan and the Philippines, which earmark sin taxes, such as taxes on tobacco or alcohol, for healthcare purposes, to aid in the financing of the national immunization programme.

#### **2. Collaboration with the private sector**

Collaboration between the public and private sectors can open up more creative possibilities. Presently, the Viet Nam government has collaborated with private players to offer discounted HPV vaccines in certain provinces to encourage uptake. Such a programme could be further expanded to cover a wider range of vaccines, including influenza vaccines.

In addition, the Viet Nam government is in the midst of revising health insurance law to strengthen the collaboration between public and private health insurers to expand coverage. Capitalizing on this trend, one idea worth exploring is that of partnering with private insurers to offer insurance coverage specifically for vaccination, which in the long run can help insurers achieve lower insurance claims – a win-win solution.

# Diabetes management

## Delivery

### Lack of diagnostics

There is low awareness of, and limited priority assigned to, early detection of diabetes. Around 70% of Vietnamese people with diabetes were undiagnosed and very few had heard of the condition. There is also a lack of cost-effective tools. Many primary care facilities do not possess the capacity to diagnose, especially in mountainous areas.

### The need to evolve the delivery model

There is currently limited confidence in insulin: patients have reservations about it, with some being afraid of “insulin addiction”, some having a fear of injections and others lacking confidence in HCPs in remote provinces to provide insulin treatment. Limited numbers of patients seek treatment as many are required to travel to district-, provincial- or national-level hospitals for treatment. The late initiation of insulin in turn leads to complications, such as 35% amputation of a diabetic foot.

### Complexity and inaccessibility of self-management

Diabetic patients also spend the large majority of their time self-managing, with many confused about injection methods and tools. Vietnamese diabetic patients exhibited poor plasma glucose control in a study. Low-income households and those living in hard-to-reach areas also have limited access to diabetes products at the communal level.

## Recommendations

These challenges could be overcome in various ways, including:

### 1. Increasing the role of district hospitals and community health centres

The healthcare services provided by Viet Nam district hospitals and community health centres are excellent, but many lack the necessary capability to detect and treat populations living with diabetes. To tackle this, policy-makers and private players could facilitate knowledge transfer and training from central hospitals down into district hospitals and community health centres.

Private players could also run initiatives with community health centres to educate healthcare workers in identifying high-risk populations and sharing the importance of regular check-ups and screenings.

### 2. Using proactive and innovative diagnostics

To uncover undiagnosed diabetes cases, both “pull” and “push” strategies are required. Instead of waiting for the public to seek diagnosis, policy-makers and healthcare practitioners could proactively screen populations who are at risk. For instance, interviewing patients or

mandating them to fill out details about family history to identify high-risk cohorts.

In addition, creative tools could be adopted to digitize diabetes screening to save manpower and time and alleviate strain on the overloaded healthcare system. Solving the issue of access to diagnostics is the very first part of the journey; next is to pair it with the appropriate delivery model in order to provide the necessary treatment.

### 3. Using digital tools and high human touch with increased reach

Adherence to treatment is vital in managing diabetes. Digital apps could be used to enable patients to monitor their blood sugar level and enforce proper nutritional intake etc. However, digital tools should serve only to complement human interactions, not replace them. The role of human touch in enforcing compliance is indispensable. For example, digital tools (existing or new players) could be used to collect data about patients, which in turn enables personalized care from healthcare practitioners – nurses could call non-compliant patients daily to remind them about their insulin intake based on the data captured.

Equity is one important pillar of healthcare; however, access to treatment is often inequitable between urban and rural areas in Viet Nam. Policy-makers could partner with third parties such as reach52, an “offline-first” health tech platform that enables access to a full range of accessible health services, even in low-connectivity markets, to access less developed or mountainous areas to deliver treatment.

## Financing

Viet Nam may be facing multiple challenges in financing its healthcare sector for life-course immunization, but there are solutions available:

### 1. Personal incentives

One vital enabler in monitoring users’ behaviour in order to provide necessary incentives is to digitize healthcare records and enable data-sharing among stakeholders such as private insurers. This is because diabetes is associated with many comorbidities, with varying implications. Doing so would help form holistic benchmarks or baselines to monitor users’ health improvements. Taiwan, for instance, has adopted such an approach; the integrated information collected there enabled healthcare practitioners to detect diabetes, initiate insulin treatment and coordinate care early, resulting in better management of the condition and significant cost savings in the long run.



## 2. System-wide incentives

Policy-makers could approach private investors to fund diabetes management initiatives and repay diverse stakeholders in the ecosystem with principal and a rate of return only once the measurable social outcomes or cost savings are achieved collectively.

Another system-wide change that government could implement is to encourage employers to provide holistic programmes and annual health screenings to their employees to help detect and manage diabetes early. Early diagnostics and intervention could delay the onset of the condition, resulting in less productivity loss at work, which is another win-win solution.

## 3. Disease-specific private insurance

Another financing mechanism worth exploring to plug the funding gap is for policy-makers such as the Ministry of Health and Ministry of Finance to devise diabetes-specific insurance, which is currently not available in the country. In line with the government's existing initiatives to strengthen the collaboration between public and private health insurers to expand coverage, policy-makers could partner with local insurance companies and private players to execute the plan.

Alternatively, a bottom-up approach could be considered – private players could collaborate with government-owned entities in the healthcare system such as state-owned hospitals and pharmacies to devise a plan for policy-makers' consideration.

# Rare diseases

## Delivery

### Lack of priority

A Rare Disease Committee has been formed in Viet Nam, but the country still lacks a national strategy, such as patient registries and national guidelines for specific rare disease and a conducive regulatory environment. Asia-Pacific also publishes three times fewer studies on rare diseases than Europe.

### Limited accessibility of treatment

Highly specialized and coordinated medical care can be challenging for hospitals with lower-resource settings; for example, there is only one hospital that provides treatment for lysosomal storage disorders in north Viet Nam. Some provinces also face challenges in accessing treatment due to restrictions such as unavailability of home infusion therapy.

### Limited capacity and capability for diagnostics

A lack of generic counselling, prenatal screening and advanced newborn monitoring (<30% in Viet Nam) has contributed to late-stage diagnosis of rare diseases. Healthcare professionals also have limited capability to diagnose rare diseases, with less than half of haemophilia patients being detected.

## Recommendations

These challenges could be overcome in various ways, including:

### 1. Enhancing awareness at all levels

Policy-makers need to recognize that while the prevalence of a single rare disease might seem low if viewed in isolation, when combined, the collective economic and societal impact of the cohort of rare disease types is significant. They consume a disproportionate amount of healthcare resources relative to their prevalence and detecting and treating them earlier would result in significant savings.

On the healthcare practitioners' front, awareness and knowledge of rare diseases could be enhanced via training in medical school, which in turn could be funded by the private sector. This approach has been adopted in countries such as the UK, where rare diseases are covered in undergraduate and postgraduate medical training.

In addition, awareness among the population could be elevated via a network of champions and friends. Enhanced awareness among the population and patient groups would effect a change in attitude towards such diseases at the national level.

### 2. Strengthening patient advocacy programmes

The existence of rare disease patient groups is limited in Viet Nam as they are legally required to be linked to hospitals or associations that are considered as legal entities. One way to broaden their use is to actively engage policy-makers, healthcare practitioners and key opinion leaders to raise awareness and rally for change in legislation. This would allow for greater independence in forming bigger patient advocacy groups.

Viet Nam could also employ the expertise and resources of other established networks in the region, such as the Asia-Pacific Alliance of Rare Disease Organisations (APARDO), to strengthen its patient advocacy programmes. The lack of national priority is the greatest hurdle to overcome for rare diseases. Once this is resolved, efforts could be trickled down to enhance the accessibility of treatment.

### 3. Employing cross-functional therapeutic expertise

Viet Nam leads the way in certain therapeutic areas and plays a major role in various international studies. One such area is in-vitro fertilization (IVF). As most rare diseases have

a genetic cause and could be detected or treated using prenatal screening and advanced newborn monitoring, Viet Nam could potentially employ its expertise in IVF to expand into rare diseases and develop pathways to adopt more advanced diagnostic and treatment options.

Another aspect in terms of the accessibility of treatment is the affordability of orphan drugs. However, the residual medical expenses of patients with rare diseases often exceeds three times their household incomes. This could potentially be combatted using the financing solutions offered below.

## Financing

Viet Nam may be facing multiple challenges in financing its healthcare sector for rare diseases, but there are solutions available:

### 1. Shaping reimbursement policy

Unlike other countries that have established a defined “Rare Disease Act”, Viet Nam still lacks a proper policy detailing the definition of rare disease, its care pathway and, importantly, the end-to-end finance needs of specific rare diseases and the associated reimbursement frameworks. One way to gather inputs to shape such a policy is to pilot privately funded small-scale programmes such as early assessment frameworks to generate epidemiology data and establish reimbursement needs in certain provinces that could be extrapolated to other regions. Another way is to use the established reimbursement frameworks of organizations such as the APEC Rare Disease Network.

Establishing a “Rare Disease Act” is futile if it does not translate into actual actions backed by a commensurate level of investment. The private sector and government bodies, such as health authorities, need to work hand in hand on all initiatives.

### 2. Raising funds via innovative financing mechanisms

Another way to achieve financial sustainability in healthcare is to establish new sources of

funding. Novel financing mechanisms such as crowdfunding at the community level (a tactic deployed by the Singapore government), using gamification platforms to drive donations for rare diseases, transferring the social impact bond concept driven by banks in Viet Nam’s green energy space to the healthcare sector, and reallocating sin taxes or taxes extracted from mature drug products to rare diseases could be further explored in order to create additional financial capacity for the mission ahead.

One thing to note is that while sin taxes on tobacco, alcohol and sugar could be an additional source of funding for healthcare, they lack sustainability as the desired behavioural changes would eventually be achieved, resulting in gradual tax revenue decline. Instead, new taxes could be targeted at more sustainable areas such as green energy initiatives

### 3. Minimizing wastage

There are two ways to look at future-proofed health system financing: one is to minimize wastage of existing resource allocation; the second is to establish new sources of funding. For the former, there is still room to further streamline the existing care packages for Viet Nam so as to minimize wastage. One idea is to learn from prostate cancer programmes – establishing a COE that serves to consolidate expertise across hospitals and streamline provision of care (i.e. resource allocation). On average, it takes a rare disease patient seven years to be diagnosed correctly; the level of ineffective resource consumption that occurs should be a financial driver in and of itself to take rapid action on this cause

A disease may be rare, but hope should not be. Rare diseases are often not treated as a priority in resource-constrained countries such as Viet Nam. We need to rethink how we perceive rare diseases. The cost of diagnostics and treatments is high but the cost of neglecting rare diseases is even higher. What’s more, developing countries such as Viet Nam have the privilege of standing on the shoulders of giants to learn from developed countries, and leapfrog forward. There are no excuses not to do so.

## Policy action checklist

### Government-led policies

#### Life-course immunization

- Centralized government media could be used to disseminate positive stories to promote life-course vaccination
- Policy-makers and healthcare practitioners could adopt behavioural sciences to understand patient biases, repositioning life-course immunization as a social norm

- Collaborations between industry players (such as vaccine alliances) and policy-makers could streamline the processes and reduce unnecessary barriers
- Enabling data-sharing among multiple agencies (such as the Ministry of Health and Ministry of Education) to demonstrate the costs and benefits of life-course immunization initiatives to garner more resource allocation

### **Diabetes management**

- Policy-makers and healthcare practitioners could proactively screen populations who are at risk
- Central or provincial hospitals could equip district hospitals and community health centres with the know-how to treat diabetes (such as measuring insulin sensitivity for prescription and providing the appropriate insulin dosage to avoid addiction)
- Policy-makers could collaborate with third parties (such as reach52) to contact less developed or mountainous areas to deliver treatment
- The government could encourage employers to provide holistic programmes and annual health screenings to their employees to help detect and manage diabetes early
- Policy-makers could devise diabetes-specific insurance, in line with the government's existing initiatives, to strengthen the collaboration between public and private health insurers to complement coverage. Policy-makers could partner with local insurance companies and private players to execute the plan

### **Rare diseases**

- Viet Nam could draw on WHO initiatives as an alternative to creating national registries, or collaborate with countries with established rare disease patient registries to glean insights
- Using the expertise and resources of other established networks in the region (such as APARDO) to strengthen its patient advocacy programmes
- Joining consortiums looking at facilitated regulatory models and alliances to bring treatments into markets without the high HTA costs being borne by each market independently
- Learning from prostate cancer programmes that wastage should be minimized in the diagnosis of rare diseases

## **Corporate-led initiatives**

### **Life-course immunization**

- Listing important vaccinations as one of the prerequisites for employment and necessary to attend large-scale events
- The private sector could partner with the provinces to pilot programmes to gather data
- Collaboration between public and private sectors could open more creative possibilities

- Current programmes could be expanded, such as the government's collaboration with private players to offer discounted HPV vaccines

### **Diabetes management**

- Private players and policy-makers could facilitate knowledge transfer and training from central hospitals down into district hospitals and community health centres
- Private players could run initiatives with community health centres to educate healthcare workers to identify high-risk populations, and share the importance of regular check-ups and screenings
- Private insurers and policy-makers could offer incentives for long-term behavioural change
- Policy-makers could tap into private investors to fund diabetes management initiatives and repay diverse stakeholders in the ecosystem with principal and a rate of return only once measurable social outcomes or cost savings are achieved collectively

### **Rare diseases**

- Awareness and knowledge of rare diseases in healthcare practitioners could be enhanced via training in medical school, which in turn could be funded by the private sector
- Collaborations with private players such as pharmaceutical companies and various important opinion leaders to form privately funded registries and to drive national studies
- Privately funded small-scale programmes (such as early assessment frameworks) could be piloted to generate epidemiology data and establish reimbursement needs in certain provinces and extrapolated to other regions

## **Citizen-led initiatives**

### **Life-course immunization**

- Use celebrity endorsements in dialects to encourage the uptake of life-course immunization
- Endorse mobile vaccination teams to bring facilities closer to citizens, especially those who live further from the commune vaccine centres

### **Diabetes management**

- Grassroots and federal initiatives should be encouraged to raise awareness of diabetes management

### **Rare diseases**

- Patient advocacy groups could provide peer support and access to support services for patients suffering from rare diseases

# Appendix B: Solution clustering details and crowdsourcing inputs

## Thematic area: Life-course immunization (Submission 1)

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To help governments, pharmaceutical companies and healthcare providers combat the trade in fake and substandard medicines, Zuellig Pharma launched eZTracker in APAC last year. This is the first smartphone application in Asia to be powered by blockchain technology; it ensures product traceability by allowing healthcare practitioners and patients to verify the authenticity, provenance and correct storage conditions of a medical product by

scanning its barcode. The essential success factors for a mass vaccination programme are speed, security, efficiency and cost management. [eZVax](#) is a vaccine management solution that enables governments and private clients to manage all aspects of vaccine distribution and administration. The solution is made up of four pillars: a data aggregation solution, eZTracker, a citizen services app and provider services.

In the absence of robust supply-chain solutions, governments will continue to face challenges in forecasting, negotiating and procuring vaccines. The equitable distribution of vaccines to local populations will emerge as the biggest challenge in the absence of “through-chain” visibility of the vaccination process.

## Thematic area: Life-course immunization (Submission 2)

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While the APAC community continues to harness the power of AI algorithms to increase our diagnostic capacity, improve the therapeutic

efficacy of chemical agents and gain meaningful insights in the context of public health, significant data surveillance challenges remain. It is of paramount importance to enable the creation of a universal framework for ethics, standards and operating principles for AI-enabled healthcare systems, in order to minimize the potential risks associated with privacy protection, algorithm discrimination and model interpretability.

**Supporting document:**<sup>76</sup>

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reach52 is a social enterprise delivering healthcare for the 52% of the world who cannot access it, using offline-first mobile apps and tech platforms. reach52 is working to address common implementation

challenges through proactive cooperation and innovation. Among these are government regulatory environments that discourage digital approaches to healthcare in lower-resource settings through ambiguous or prohibitive laws. In response, reach52 has worked with subnational governments to obtain special permission to operate pilot projects, although the organization still frequently encounters government bureaucracy that moves slowly and lacks agility.

For more information on the model:<sup>77</sup>

**Supporting document:**<sup>78 79</sup>

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# Endnotes

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