STRATEGIC PUBLIC PRIVATE PARTNERSHIPS TO TRANSFORM CARDIOVASCULAR HEALTH

PREPARED BY

HEALTH SYSTEMS INNOVATION LAB
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About the Report

The study, *Strategic Public-Private Partnerships to Transform Cardiovascular Health*, was developed under the guidance of Professor Rifat Atun, Professor of Global Health Systems at Harvard University and Director of the Health Systems Innovation Lab and implemented by a team consisting of Dr Ché L. Reddy, Associate Director *Health Systems Innovation Lab, Harvard University,* Dr Lindsay M. Murphy and Dr Carlo Ross, Research Assistants at *Health Systems Innovation Lab, Harvard University*. The ideas, insights and frameworks in the report are drawn from earlier research at the Health System Innovation Lab combined with a systematic literature review and interviews with leaders involved in the development and implementation of strategic Public-Private Partnerships to transform Cardiovascular Health.

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Executive Summary & Key Messages

[Section 1] Introduction

Cardiovascular Disease (CVD) is the number one cause of death globally. In 2019 CVD led to 18.6 million deaths worldwide.[1] Many of these are premature and preventable through cost-effective prevention and treatment interventions that are currently available.[2–4]

The health and economic burden of CVD is very high and rising. From 1990 to 2019, the worldwide prevalence of CVD increased from 271 million people to reach a staggering 523 million. Worldwide, the CVD burden in 2019 was 393 million disability-adjusted life years (DALYs).[1]

CVD places a huge economic burden on countries and societies due to direct healthcare costs plus the indirect cost of illness, e.g., those due to loss in productivity and human capital, with economic costs amounting to an estimated US$1 trillion in 2025.[5]

The Coronavirus 2019 (COVID-19) pandemic created unprecedented challenges for health systems worldwide and had a sweeping impact on the state of cardiovascular health globally, leading to the abandonment of care, delays in access to care, and foregone care. Patients with CVD who could access health care services during the pandemic were unable to receive optimal care due to the pressures faced by health systems. CVD emerged as one of the most important risk factors for hospitalisation and death from COVID-19. The delays in accessing health services and interruption of care meant individuals with CVD presenting to health systems did so with greater morbidity, requiring more intensive and complex care.

The delays faced by CVD patients during the COVID-19 pandemic mean that health systems worldwide are likely to experience a major increase in CVD burden and face huge backlogs in care.

COVID-19 has also exposed major fault lines in health systems, which need to be fixed to improve health system performance to deliver effective, equitable, efficient, and responsive services to manage CVD for entire populations. These fault lines include, among others, (i) inefficient use of available resources, (ii) an inability to respond and show resilience to major health threats, (iii) poor diffusion of innovations that could help improve system functioning and health outcomes (iv) inadequate availability and use of data to develop targeted policies and interventions, and (v) an inability to meet changing citizen expectations. While these fault lines present a formidable threat to improved health outcomes for CVD in all countries, they also provide opportunities for change and transformation.

However, solving the worldwide societal challenge of CVD requires concerted efforts by all stakeholders in both the public and private sectors—CVD affects all societies and citizens and effectively addressing it will benefit everyone. The current 'transactional model' of the relationship between payers and providers and the public and private sectors has reached its limits—it is not benefiting all those involved in health systems and is failing to address the worsening health and economic burden of CVD worldwide. Governments, health care providers, the pharmaceutical, medical device and health technology industries, civil society, patient groups, academic institutions and professional associations all have a critically important role in effectively fighting this silent pandemic which leads to millions of unnecessary deaths each year. Novel Public-Private Partnerships are needed to address global health challenges, such as the CVD

pandemic, to enable rapid scale-up of innovations to reach populations to improve health outcomes, enhance efficiency, ensure equity and achieve greater responsiveness to citizens' needs and expectations to develop high-value health systems[6] – thereby achieving more 'value for money and value for many' to benefit everyone involved in health systems.[7]

The response to the COVID-19 pandemic provides a recent example of concerted efforts by all stakeholders to establish Public-Private Partnerships to fight a global health threat. Financial commitments from governments encouraged many pharmaceutical firms to conduct research and development on promising vaccine candidates at unprecedented speed, while novel public-private collaborations helped to enhance manufacturing and supply chain management capabilities at speed [8–10] to enable rapid scale-up of vaccination programs worldwide. PPPs such as the Global Fund to Fight AIDS, Tuberculosis and Malaria have been instrumental in addressing other global health threats from HIV, tuberculosis and malaria with the use of innovative financing to successfully expand access to effective public health, diagnostic, prevention and treatment interventions at scale to save millions of lives.[11,12]

Public-Private Partnerships have been widely used in sectors beyond health, but they have not been uniformly effective, and numerous PPPs have produced unacceptable outcomes. These undesirable outcomes include increased government costs, inferior goods and services, and public dissatisfaction.[13] As a result, attitudes towards PPPs vary,[14–17] and are also shaped by ideological positions rather than rigorous evidence to help understand why certain PPPs 'succeed' while others 'fail' and what success or failure constitutes. While globally, most PPPs have been implemented in the transportation, energy and built environment sectors, there are also examples in the health sector where health-related PPPs have been implemented in high-income and low- and middle-

income countries in the financing, management and delivery of health services.[18] However, few PPPs are designed for scale to decisively address major societal challenges at the population level.[19]

Public-Private Partnerships provide the opportunity to design novel, ambitious initiatives capable of addressing global health challenges to achieve sustained improvements in health, economic, political, and social outcomes at the population level—and to create ecosystems that foster inclusive innovation, collective thinking, and shared values. However, there is a need to make PPPs less confusing, more transparent, and pragmatic to design novel approaches that can be implemented at scale to decisively improve population health and reduce the economic burden of CVD.

This report reviews published literature and prior approaches[20,21] on PPPs applied to CVD to provide a pragmatic framework for Strategic PPPs (sPPP) applied, designed, and implemented at large-scale to address the major challenge of CVD in health systems.

Strategic PPPs are highly targeted PPPs purposefully designed to achieve large-scale impact on the health, economic and social wellbeing of populations. Strategic PPPs contrast with the conventional PPP in that it is designed to create better value for the society at large with benefits for the citizens, civil society, health system, government, and the public and private sector stakeholders involved in the partnership.

This report is organised into four sections. The Introduction is followed by Section 2, where we discuss the imperative to adopt a systems approach to PPPs to address the most pressing challenges in health systems and achieve outcomes at scale. In Section 3, we present selected case studies of

large-scale PPPs that focus on CVD in varied contexts and examine their strengths and limitations in achieving system-wide impact and shared value creation. Section 4 provides a framework to guide the design, implementation, and scale-up of Strategic PPP for improved CVD health outcomes at the population level through a 10-steps.

[Section 2] Anchoring Public-Private Partnerships in Health Systems

Public-Private partnerships have been implemented widely across the world. The success of PPPs in the health care sector is a function of how they interact with the health system. For PPPs to produce population-level impact, they need to:

- ***Be guided by systems thinking:*** Health systems respond to changes in dynamic, complex and unpredictable ways.[22] The various facets of a health system must align to enable a new technology, program, policy or practice to produce desirable and intended effects.[23] *Systems thinking*[22] enables entities involved in the PPP to consider how changes in the context—for instance, a pandemic, political leadership, an economic recession, societal expectations or a new technology—create opportunities and threats for a health system and how a PPP can be designed and implemented to improve health system performance to manage emerging threats and capitalise on and harness opportunities.

- ***Create Value for all:*** A health systems lens presents the opportunity to rethink how PPPs create value for the citizens, health systems, governments, businesses, and the society at large and how each partner involved in a PPP can contribute to the achievement of greater value – in terms of better and more equitable health and economic outcomes. The aim of

PPPs should be to create more 'value for money', through greater effectiveness and efficiency of health systems and more 'value for many' by improving equitable access to health services and interventions that are more responsive to societal needs and expectations.

- ***Operate at Scale:*** PPPs provide a novel institutional arrangement to deliver ambitious health care services for large-scale impact. However, the degree to which these health care services and interventions produce population-level impact depends on the extent to which the health system can deliver the new interventions at scale.[24] When PPPs are not designed optimally for effective integration in the health system, they are likely to remain isolated projects and fail to reach scale to achieve desired population-level health system outputs, outcomes, and impact.

- ***Be championed by political leaders:*** Strong political leadership is needed from senior leadership of institutions involved in a PPP if large-scale change is to be achieved and sustained. This will involve designing incentive mechanisms that enable the respective partners to act in the partnership's interest, minimising risk and achieving more desirable outcomes for all, and not for some.

[Section 3] Public-Private Partnerships in Cardiovascular Health

PPPs applied to healthcare are relatively new compared to other sectors. PPPs have been used widely in major infrastructural projects in the energy, transportation, and built environment sectors. In the health care sector, PPPs have been developed to address service delivery gaps,

promote innovation, and attract private capital and expertise for investments in infrastructure, equipment and new services (Appendix Panel 1).[18,20]

While there is a tremendous interest worldwide in the greater application of PPPs to health care, there are differing views on PPPs. For example, there is no agreed definition of what constitutes a PPP and how it differs from conventional procurement, outsourcing or privatisation. There is, hence, an opportunity to use health care PPPs to develop conceptual clarity to inform their design and implementation in varied settings.

Several countries, such as Canada, Sweden and the UK, have experience with PPPs in selected areas of healthcare,[25–27] but virtually no country has substantial expertise in scaling up PPPs for population-wide benefit and large-scale shared value creation. Strategic PPPs are needed to achieve population-level impact and realise large-scale shared value creation—to achieve greater value for money and value for many. We draw on a literature review, case studies and interviews to establish characteristics of PPPs that have targeted the cardiovascular health of populations and have achieved scale to identify lessons learned and the steps needed to establish Strategic PPPs.

Case Studies of Public Partnerships to Improve Cardiovascular Health

We identify and present six case studies based on their potential to achieve large-scale population-level impact and transform CVD health care services in varied settings, and capture unique value for all involved partners. These include (I) Million Hearts; (II) the UK National Healthcare Service; (III) comHIP; (IV) Canadian Hypertension Impact Bond; (V) Cities Changing Diabetes, and; (VI) National Diabetes Prevention Programme. Each case study provides a unique lesson,

which could help inform the design, implementation, and scale-up of strategic PPPs to improve cardiovascular health in varied settings.

Case Study 1: Million Hearts

The Million Hearts Initiative, a nationwide PPP, was launched in 2011 by the US Department of Health and Human Services (HHS) to prevent one million heart attacks and strokes over five years.[28] The Million Hearts Initiative combines a core set of evidence-based secondary prevention interventions and strategies. These interventions are designed to empower US citizens to make healthier lifestyle choices (smoking cessation, reduced consumption of sodium and trans-fats, increasing physical activity) and improve CVD healthcare services through the use of the "ABCS" (aspirin, blood pressure [BP] control, cholesterol management and smoking cessation) approach to managing patients with pre-existing CVD.[29]

The Director of the Centre for Disease Control and Prevention (CDC) Director communicated the rationale and urgency of the PPP. High blood pressure contributes to more than 1,000 deaths per day in the U.S.[30], and the total annual cost (direct and indirect) of high blood pressure in the US is $70 billion compared to the CDC annual budget of less than $7 billion. Further, the 2012 Institute of Medicine Report identified CVD as a significant priority to address with substantial opportunities to create synergies between the public and private sectors.[29]

The Million Hearts network consists of an extensive network of public and private sector partners (payers, healthcare providers, employers, local and state health departments, communities), including more than 300 private sector organisations, 50 states, the District of Columbia, and 20 federal agencies, that participate in Million Hearts activities and align with the initiative

priorities.[31] Local partner activities focussed on delivering health care interventions targeting *ABCS* and developing and sharing resources. National level partners exchanged information, implemented new CVD prevention programs and provided training for using new guidelines. Several sub-initiatives comprise Million Hearts, including, among others: (i) the CDC 'Team Up, Pressure Down' campaign, which aimed to increase the number of pharmacists who provide advice about how to optimise blood pressure medication advice; (ii) the Commonwealth of Virginia 'Million Hearts VA', a state-wide approach which aimed to increase blood pressure screening; (iii) the Iowa Million Hearts Initiative, a state-wide programme leveraging partnerships focussed on improving quality of care and the use of *ABCS* for heart health; (iv) the Association of State and Territorial Health Officials convened webinars on CVD best practices from chronic disease directors and heart and stroke disease prevention leaders; (v) the National Consumers League 'Script Your Future', a national campaign to increase medication adherence that involved national communications that targeted outreach in six cities and team-based hypertension care programmes in rural areas of the US.[32,33]

In the first five-year cycle, Million Hearts prevented an estimated 135,000 heart attacks, strokes and related cardiovascular events (non-fatal and fatal events related to acute myocardial infarction), stroke, symptomatic precursor conditions (e.g., stable angina pectoris), and other cardiovascular disease conditions (e.g., heart failure). The initiative has helped save an estimated $5.6 billion in direct medical costs, a substantial proportion of which was saved by the public insurance programmes Medicare and Medicaid.[34]

The Million Hearts Initiative effectively catalysed and promoted partnerships to address heart disease and stroke. In a CDC evaluation, out of the 304 total partnerships assessed, a majority

(59%) directly attributed these relationships to Million Hearts, either as a new partnership initiated through participation in Million Hearts or as an existing relationship strengthened through Million Hearts. Organisations also reported that they trusted and valued these partnerships and viewed the relationships as positive. Organisations reported that partners primarily engaged in information sharing, representing 77% of all interactions.[31]

The evaluation of the first five-year cycle of the initiative has highlighted the initiative's success in aligning partners' efforts around national goals. Million Hearts cultivated stakeholder relationships between practitioners, policymakers, and patients, which generated a sense of shared experience, purpose, and responsibility. Partners reported that their participation in the initiative led to improved outcomes in controlling high blood pressure, improving processes for cardiovascular care, and increasing heart health knowledge and awareness among the populations they served.[31,34]

Partners involved in the initiative identified several factors that led to the adoption and assimilation of Million Hearts activities, including goal alignment among partners, buy-in from the senior leadership of participating organisations, effective communication between partners, diversity in partnerships based on trust, recognising, understanding and leveraging resources of other members, and sustainable funding.[31]

Case Study 2: UK National Health Service (NHS)

The recognition of CVD as a public health crisis by the UK government catalysed the partnership between the UK's NHS and the pharmaceutical company Novartis.

CVD accounts for around a quarter of deaths in England, with 140,000 people dying from the condition each year. Preventing thousands of heart attacks and strokes over the next ten years is a priority for the NHS as set out in its Long Term Plan, which also outlines how the health service will take a new population health approach over this decade. Long-term elevated LDL cholesterol (LDL-C) is a known cause of atherosclerotic cardiovascular disease (ASCVD) and a key modifiable risk factor in the prevention of cardiovascular disease.

In this context, Novartis and the NHS entered into a commercial collaborative agreement in 2021 to pioneer a first-of-its-kind population health management approach to address elevated LDL-C in eligible patients with ASCVD across England. The agreement provides for the use of a novel injectable cholesterol-lowering agent in primary care to treat adult patients within its licenced indication who also have persistently elevated LDL-C levels and a history of certain cardiovascular events.

Novartis is working with the NHS Accelerated Access Collaborative and the Academic Health Science Network (with the support of NHS Digital) to deliver the Programme. Novartis and NHS AAC meet regularly to discuss the progress of the Programme and agree on the next steps.

Case Study 3: Community-based Hypertension Improvement Programme

The Novartis Foundation's initiative 'Better Hearts Better Cities' focuses on hypertension, one of the leading cardiovascular disease risk factors. The initiative partners with local authorities utilising pioneering models to achieve impact at scale. Better Hearts Better Cities have included the 'Community-Based Hypertension Improvement Project' in Ghana; Communities for Healthy Hearts in Vietnam, and KaziBantu (Healthy Schools for Healthy Communities) in South Africa.

The Community-based Hypertension Improvement Programme (comHIP) partnered with the Ghana Health Service, Ghana's National NCD Control programme and FHI (Family Health International) 360, Novartis Foundation and the London School of Hygiene and Tropical Medicine (LSHTM) to reduce the proportion of people with uncontrolled hypertension in Ghana.[35] The rationale for the PPP was due to the increasing burden of NCDs, particularly hypertension, in Ghana. A Ministry of Health report identified hypertension as the second leading cause of morbidity in adults over 45 years,[36] with awareness of hypertension low and estimated to range between 16.4% and 54.1% and only 1.7-12.7% of hypertensive patients having controlled blood pressure.[37–39]

ComHIP was organised as a nurse-led programme encompassing six components: I) education on CVD risk factors and healthy lifestyle behaviours; II) screening and monitoring by licensed chemical sellers (LCS), who are typically community pharmacists and nurses; III) diagnosis, treatment, counselling, and referral by nurses; IV) telemedicine consultations; V) Information and Communications Technology (ICT) messages for healthy lifestyle behaviours, treatment adherence and refill, and; VI) cloud-based health records systems linked to SMS or voice message for reminders.[35] The partnership engaged with the community members and invited leaders to a stakeholder workshop. This ensured community members were made aware of the project and could help co-develop the initiative. The nurses, community health workers, and LCS were trained by FHI (Family Health International) 360, and the service was free at the point of service for patients. Patients were recruited into the project through free screening offered at local drug shops (LCS), community health planning service sites (CHPS), and community pharmacies. The

medications were provided by the Ghanaian health system and financed through the National Health Insurance Scheme (NHIS).

One year following implementation, an evaluation identified that 72% (95% CI: 67% to 77%) of participants had their hypertension under control. However, low retention was seen in the comHIP, and the study could not assess knowledge of risk factors. Most patients who remained in the programme were on treatment, with two-thirds taking at least two medications.[39] A study seeking the perspectives of the Ghanaian stakeholders identified that the partnership was deemed acceptable to patients and providers, with providers noting that the PPP had increased providers' knowledge of hypertension and patients' awareness.[40] However, drawbacks were also identified: policy-level challenges related to task-sharing bottlenecks, which precluded nurses and LCS from prescribing or dispensing antihypertensive medication, stocking medications, medication adherence and medical pluralism. Further, while the NHIS covers antihypertensive medication with all patients theoretically having access to the required medication, the precondition for enrolment in the NHIS scheme is to pay the subsidised annual premium of $6 US dollars. Stakeholders believed this expense created out-of-pocket costs. Another issue raised long delays in NHIS paying the vendors for supplying the medications, which also led to bottlenecks within the PPP.[40] While ComHIP presents an example of effective public and private sector involvement with successful adoption within the health system by engaging key stakeholders, policy level task-sharing bottlenecks precluded optimal implementation.

Through the Better Heart Better Cities initiative, the Novartis Foundation has established the CARDIO4Cities project with partner institutions in Dakar, Senegal, São Paulo, Brazil and Ulaanbaatar, Mongolia to develop and implement a population-based approach to managing

cardiovascular disease. CARDIO4Cities involves in each city networks of multi-sector partnerships, including community health care providers, digital and telecommunication organisations, food suppliers, employers, insurance funds, social enterprises and civil society. Initial results indicate three-fold increase in blood pressure control in Dakar and São Paulo and a sixfold improvement in Ulaanbaatar.

Case Study 4: Canadian Hypertension Impact Bond

The Canadian Hypertension Impact Bond is a partnership commissioned by the Public Health Agency of Canada (PHAC), which partners with the Heart and Stroke Foundation and MaRS Centre for Impact Investing. The PPP created the Community Hypertension Prevention Initiative, which invites Canadians who are pre-hypertensive to learn about the risks of hypertension.[41] The program is six months long and utilises technology, coaching, and community resources to provide health behaviour support for blood pressure control.[42] Heart and Stroke, the private investor, is paid by PHAC, the commissioner, upon achieving the predefined health outcomes such as the number of people enrolled, the number of people who complete the program, and number of patients with controlled blood pressure.[43] The role of the MaRS Center for Impact Investing is to attract socially-minded investors to contribute the upfront capital needed for the program.[43] Heart and Stroke raised the required upfront capital through investors, who expect a 6.7% return on investment if the program achieves its targets.[44] The program enables many non-profits contracted as delivery agencies for the social impact bond to receive needed funding to improve, replicate, and scale up their interventions.[43,44]

The program began in 2018. The initial target was to enrol 7000 pre-hypertensive patients aged 60 years or older and halt the increase in their blood pressure. However, approximately 4,500 patients

were enrolled before the COVID-19 pandemic, and the program pivoted from recruiting patients to focusing on current patients. They have not resumed enrolling, and therefore evaluating results of the initial stages has been delayed. No formal studies have been completed on the program's impact, but it is currently undergoing evaluation by the Social Research and Demonstration Corporation (SRDC), an independent evaluation firm.[45]

Case Study 5: Cities Changing Diabetes

Cities Changing Diabetes is a PPP launched in 2014 between Steno Diabetes Centre Copenhagen, University College London, and Novo Nordisk. The primary aim of the PPP is to encourage city municipal governments worldwide to set goals and initiate interventions to reduce the number of people living with Type 2 Diabetes in their cities. The programme is built upon three interconnected elements that aim to tackle the sociocultural factors that increase the risk of Type 2 Diabetes within urban environments using the Map, Share, and Act framework. The PPP enables cities to understand their diabetes burden more clearly and generate goals through collaborative partnerships across public and private sectors.

Partner cities commit to accelerating urban action to prevent Diabetes and its complications based on five principles: I) investing in the promotion of health and well-being; II) addressing sociocultural determinants of health; III) integrating health into all policies; IV) engaging communities, and; V) creating solutions in partnerships across sectors. Cities Changing Diabetes has established partnerships in more than 40 cities globally. It hopes to reach more than 150 million individuals to prevent and control Diabetes in urban environments.

Copenhagen was the second city to join the Cities Changing Diabetes programme. The Centre for Diabetes is part of the Cities Changing Diabetes Copenhagen Action Plan which involves interventions at the individual level and health promotion at the population level. The Center works from a set of principles including people-centred, evidence-based, data-driven, equity-seeking. With a team of nurses, physiotherapists, dieticians and close dialogue with primary and specialised care, the centre offers a positive health-oriented environment, daily activities, patient education, physical exercise and cooking classes. Also, a peer mentoring programme pairs up people with type 2 diabetes to support each other in adopting a healthy lifestyle.

Three-quarters of people newly diagnosed with diabetes in Copenhagen visit the Centre, which has proved to be so successful that a new centre with double capacity will be built in another part of the city to open in 2023. In addition, the Centre has begun to establish satellite offices in vulnerable areas of the city to engage citizens who could benefit from the centre's services.

Cities Changing Diabetes presents an example of effective public and private sector partnership leading to diffusion and assimilation into the health system by engaging key stakeholders and adopting a flexible approach to implementation.

Case Study 6: National Diabetes Prevention Program

In 2010, the US Centers for Disease Control (CDC) launched the National Diabetes Prevention Program (NDPP), a public-private partnership to deliver evidence-based lifestyle change programs to prevent or delay the onset of Type 2 Diabetes Mellitus. An estimated 88 million Americans have prediabetes, but approximately 80% are unaware of their diagnosis.[46]

Through the NDPP, the CDC financially and technically supports over 1700 partners to implement an approved lifestyle change curriculum complete with coaching and group-based peer support.

Their partners include community centres, state-run health departments, medical facilities, and pharmacies in 50 states, the District of Columbia, and some US territories. US Congress commissioned the NDPP after the CDC conducted the Diabetes Prevention Program research study, which showed lifestyle changes resulting in a 5-7% bodyweight reduction and reduced the risk of developing Type 2 Diabetes by 58% in those with prediabetes. Since its inception, the program has enrolled 425,000 participants who have lost an average of 5.5% of their body weight. The program has been very successful due to extensive research, monitoring and evaluation. The CDC and other independent bodies conducted several randomised control studies evaluating the curriculum and translational work to determine effectiveness before scaling. There were also studies related to cost-effectiveness. One study estimated the program would save US$5.7 billion in health care costs over 25 years,[47] with projections indicating high value of the program.[48]

The CDC established the Diabetes Prevention Recognition Program (DPRP) to maintain the program's standards. To be recognised by the CDC as a partner, the organisation must demonstrate the ability to implement the approved curriculum and offer the necessary peer support through in-person, distance learning, or online venues.[49] The partners submit participant data every six months, including demographics, body weights, and physical activity.[50] Recognition as an NDPP supplier is essential for financial support from the CDC, private and government payers. In 2016, the Centers for Medicare and Medicaid Services (CMS) approved payment coverage for enrolment in an approved program, and over 50 private insurers followed suit. The enabling legislative environment was essential for the scaling of the NDPP, where the federal government commissioned its inception, and CMS funding enabled enrolment to scale.

Continued cost-effectiveness studies show the program's value. A 2017 report demonstrated savings of US$1,112 per Medicare member enrolled in an NDPP program compared to Medicare members who were not.[51] From a health systems perspective, the NDPP has shown its partnerships are of high value in preventing chronic disease.

[Section 4] A Framework for Developing Strategic PPPs to Transform Cardiovascular Health

We define a strategic PPP as a partnership between public, private, and voluntary sector actors with the primary intent to improve health system performance by delivering innovations at scale based on the principles of trust, interdependence, and shared value creation. A strategic PPP differs from privatisation (transfer ownership of public assets), outsourcing (transfer delivery of public services), and traditional procurement (purchasing and financing of public assets from private entities) in several respects:

- **Shared purpose and value**: strategic PPPs involve a shared purpose of value for all the stakeholders involved in the partnership to solve a major societal challenge through collective action.
- **Shared know-how and capability**: all stakeholders involved work to harness all their capabilities brought to the strategic PPP.
- **Shared risk and reward:** strategic PPPs are designed to ensure the risks and benefits are shared and owned by all the stakeholders, and all work together to design solutions to mitigate risk and harness opportunities.

- **Improved System Performance**: strategic PPPs are designed to improve population health from a health systems perspective. Health system performance is intrinsically linked with expanding access to efficient and responsive health care services and prioritising those who have the greatest need.
- **Long-term collaboration ingrained with high-level of trust**: a long-term partnership of shared decision-making based on the principles of trust, integrity and interdependence, requisite preconditions to align interests and prevent moral hazard.
- **Inclusive and agile approach:** defined by a culture of collective problem definition, decision-making and management based on a flexible and agile approach to implementation, lean and inclusive teams, and an emphasis on ongoing learning and continuous improvement.

The lessons learned from the case studies and the interview findings indicate 10 critical success factors which need to be incorporated into the design, implementation and scale-up of Strategic PPPs in health systems.

The 10-Step process to design, implement and scale-up Strategic PPPs in health systems

The design of a Strategic PPP involves 10 steps (Diagram 1):

(I) ***Ensure Engagement and Support of High-level Leadership***

Leadership at the highest level of both the public (Minister, Governor or Premier) and private partners (Chief Executive Officer) is crucial at the outset of the Strategic PPP to enable shared vision and commitment, consistent high-level support and the authority to decide on strategic issues and resolve challenges affecting sPPP.

High-level leadership in each partner organisation is a prerequisite for the sPPP to guide shared values, strategy, the appropriate level of resourcing, and changes in regulations to empower those involved in managing the sPPP with the necessary confidence to agree on clear roles and responsibilities for each partner and make agile decisions.

Insights from distinguished PPP practitioners: PPPs necessitate leadership at the highest level

"For PPPs to be successful, there must be a cadre within the government who must know what PPPs are. There must be a core lead at the highest level of government… not only at the ministerial level, but there should also be PPP units within the governments who have chief oversight of the PPPs. The PPPs should be created with neutral terms which are not political so that the highest level of all governments understand what PPPs are and can support the project."

"The primary reason our PPP was successful was due to having the highest-level executive buy-in from both the pharmaceutical company and the academic/government institution."

(II) Define a Shared Problem

Public entities or private sector partners must define and articulate a cogent problem. A detailed problem description—including an analysis of the root causes, consequences, urgency, and the assumptions underpinning causation and consequences of inaction—will help to inform engagement with potential private and voluntary sector stakeholders. The more knowledgeable a government is about the problem of interest, the more likely they are to enter negotiation with their partners from an informed position and agree on the design features that will underpin the sPPP.

The healthcare solution should be designed to address the problem the sPPP seeks to address. Designing an appropriate solution will require substantial research and engagement with

specialists with relevant knowledge and experience about the problem of interest. It must be clear how the solution, and each of its components and features, address specific facets of the problem.

Insights from distinguished PPP practitioners: There must be a clear problem that all partners want to solve

"In designing the PPP, both sides must articulate their priorities. The health system priorities should be clearly defined, such as the NHS Long Term Plan, and the private sector must be outcome-focused to help the system achieve this priority. Within our PPP with the NHS, our problem is clearly defined together at the top of all our white papers: reduce 150,000 cardiovascular events over the next 10 years."

"There is a great misunderstanding of what PPPs are. PPPs are formal contractual relationships to provide infrastructure and services over a period of 20-25 years where risk is shared, and the private sector is rewarded based on performance. Both sides must first clearly determine the problem that the PPP seeks to address to be successful and sustainable."

(III) Agree on the Shared Value to be Achieved

A high-value health system delivers both value for money and value for many. Its purpose is to enhance the efficiency, effectiveness, and responsiveness of personal and public healthcare services, extending access to entire societies and preferencing those with the most health care needs. Transitioning an existing underperforming health system to a high-value system creates major opportunities for each sPPP stakeholder.

Stakeholders should collaboratively discuss the transformative potential of the proposed health care solution and how it could enable value creation for all partners in achieving this collective purpose. Each partner should use the value creation matrix to determine how it will contribute and create value by improving health system outputs and outcomes (Table 1).

Table 1: sPPP Value Creation Matrix

	Health System Outputs				Health system Outcomes		
	Equity	Efficiency	Effectiveness	Responsiveness	Population health outcomes	Financial risk protection	User satisfaction
Partner 1							
Partner 2							
Partner 3							
Partner 4							
Partner n							

(IV) Define the scope of the solution to reduce complexity and align with the health system

The scope of the solution and the level of complexity is influenced by the number of components, the number of levels and institutions where the solution is implemented, the number of required care episodes, the number of users involved (healthcare workers and the patients and population segments benefiting), and the extent to which the solution is behaviour or technology-dependent in achieving outcomes.[24]

Complex health care solutions, which have multiple components that operate at various levels, require multiple episodes of care, involve many users and depend on behaviour change in achieving outcomes, are more challenging to implement in health systems. Therefore, it is critically important that the proposed solution is compatible with the health system and that the system is receptive to the changes that will be introduced. Understanding compatibility and receptivity will help promote alignment between the solution and the health system. Health system compatibility refers to the interaction between the sPPP, the institutional mechanism that delivers the health care solution, and the health system.

Impact in health care is not simply a product of an effective health intervention; it requires integration of the intervention within the health system to deliver optimally at scale to ensure it reaches as many people. Health system receptivity refers to the dominant stakeholders, which include those individuals and institutions that pay, regulate, provide or use the healthcare solution delivered via the sPPP. The institutional arrangement refers to the regulatory and social environment that poses barriers to the sPPP, including policies, regulatory processes, institutional logic, and sociocultural acceptance of the sPPP within contextual norms.

By co-defining the scope of the healthcare solution, the partners engage in a collaborative and trust-building process that will inform the development of a highly targeted healthcare solution capable of delivering value for each partner.

(V) Design the Partnership to Deliver Innovation and Results at Scale

The sPPP must be designed to introduce the proposed solution at scale and support the achievement of intended outputs and outcomes and create value at the population level (Table 1). Achievement of value at the population level requires the introduction of innovations at scale to benefit all population groups.

Designing the optimal configuration for the sPPP from a health systems perspective requires identifying and engaging the right partners with relevant capabilities and influence to achieve the collective outputs and outcomes of the sPPP (Table 1). The institutional arrangements for the partnership should be designed to resolve disputes swiftly, involving senior officials with the necessary authority to make decisions on behalf of the partnership and insulate the partners from conflicting interests.

(VI) Build Trust and Transparency

Trust is the most important ingredient of a Strategic PPP, and trust is achieved through transparency, openness and respect.

Insights from distinguished PPP practitioners: Without trusted partners, there is no basis for the partnership

"For any collaboration to work, there must be communication and trust, and that takes time. But if we do not have trust between the partners, we cannot do anything."

"The stakeholders must be involved from the beginning, and early buy-in must be obtained with full transparency."

"Having a "north star" or our aligned goals builds trust between our organisations and allows us to address problems and adjustments with the recognition that we want the same thing. This is a critical success factor."

(VII) *Balance Opportunity with Risk*

The level of risk that each partner consents to relative to the reward and value they could potentially gain from the sPPP will vary. Partners that seek the most to gain from an sPPP should carry a more significant proportion of the risk.

By exploring mechanisms to link risk with performance, it is possible to negotiate and allocate risk across partners based on their potential to gain from the sPPP. It is crucial to quantify the magnitude and rate of the opportunity and examine the assumptions that underpin revenue projections and value creation to inform measures that mitigate and allocate risk across the partners.

Insights from distinguished PPP practitioners: PPPs provide a pathway to capture shared value and renewed purpose

"We were interested in not just a funding partner, but a thought partner. How do we shape this [partnership] differently?"

"When we were discussing the top priorities we wanted to address, it became clear that we needed to engage our clients in a fundamentally different way. We wanted to think fundamentally differently. We had to ask ourselves, how do we engage with clients in a way that starts with the needs of the patients and the health system? We had to think of ourselves as an overall entity, not just a product. Patients don't experience their health through just a product, and it's not how health systems think about supporting the clinicians to enable their patients to live better lives."

"When [the PPP] is driven by the public sector calling [the private sector], the PPP is not a true partnership. We need more initiatives where different sectors come together in a more neutral way."

"It's not just about aligning the top levels of management in the academic, public, or private entities. You also must align every level of the entities to the same goals."

(VIII) *Establish the Financing Model*

It is important to articulate how the sPPP (or Special Purpose Vehicle that owns the concession permitted by the government) is funded. Financing might come from multiple sources, including public (governments via permits and subsidies) and private (business and users via fees, equity or debt). Performance-based innovative financing instruments should be used to create incentives to achieve results and create value and not just fund inputs that may not translate to outcomes.

Multilateral entities have an important role in promoting private sector involvement in low- and middle-income countries by using their credit ratings and access to capital markets.

(IX) *Define Targets for Outputs and Outcomes, Establish Reliable Measurement Systems, Regularly Measure Performance and Refine Targets as Needed*

The success of the sPPP will depend on defining and agreeing to targets for outputs and outcomes that are ambitious yet achievable, determining suitable indicators and metrics for these targets, establishing transparent measurement systems, regularly measuring progress to identify achievement against targets and addressing bottlenecks that hinder performance, and refining targets as needed.

Achievement of performance targets will require establishing incentive measures to ensure optimal benefits for all the partners and to offset the risk that partners will behave in their interests against those of the partnership as a whole.

Insights from distinguished PPP practitioners: clear metrics and flexible management are critical ingredients to PPP sustainability

"For me, the beauty of what I do is that different stakeholders have different priorities, but that means we must navigate that tension to harness their potential."
"As we hit our targets, we would work with the vendors to create new targets that were more relevant as the project evolved."

"The RFP was clear, and the remuneration was laid out from the start. Value was identified through payment, publicity, and opportunity."

"It was challenging to align our incentives, but it was a team effort to come together and prioritise what the overall needs of the program were. We looked at the impact of factors such as volume and feasibility and then ranked them to determine our priorities together."

"We created an objective to achieve a 5% reduction in cardiovascular mortality over the next five years. It is intentionally not tied to any specific therapeutic area. From this, we decided to focus on health inequities and became partners."

(X) *Adopt an Agile Management Approach*

At the outset of the sPPP, the partners should establish clear roles and responsibilities and adopt a lean management approach that enables each partner entity to function flexibly and adapt to contextual changes. Individuals across the partner entities need to understand who in their corresponding entities does what, and when to approach them for specific issues. While establishing an indicator framework is essential to monitor sPPP progress, it is critical that an open and flexible approach is taken to manage problems or changes as they emerge and explore alternative solutions to achieve sPPP outcomes.

Insights from distinguished PPP practitioners: PPPs must have clearly defined roles and responsibilities

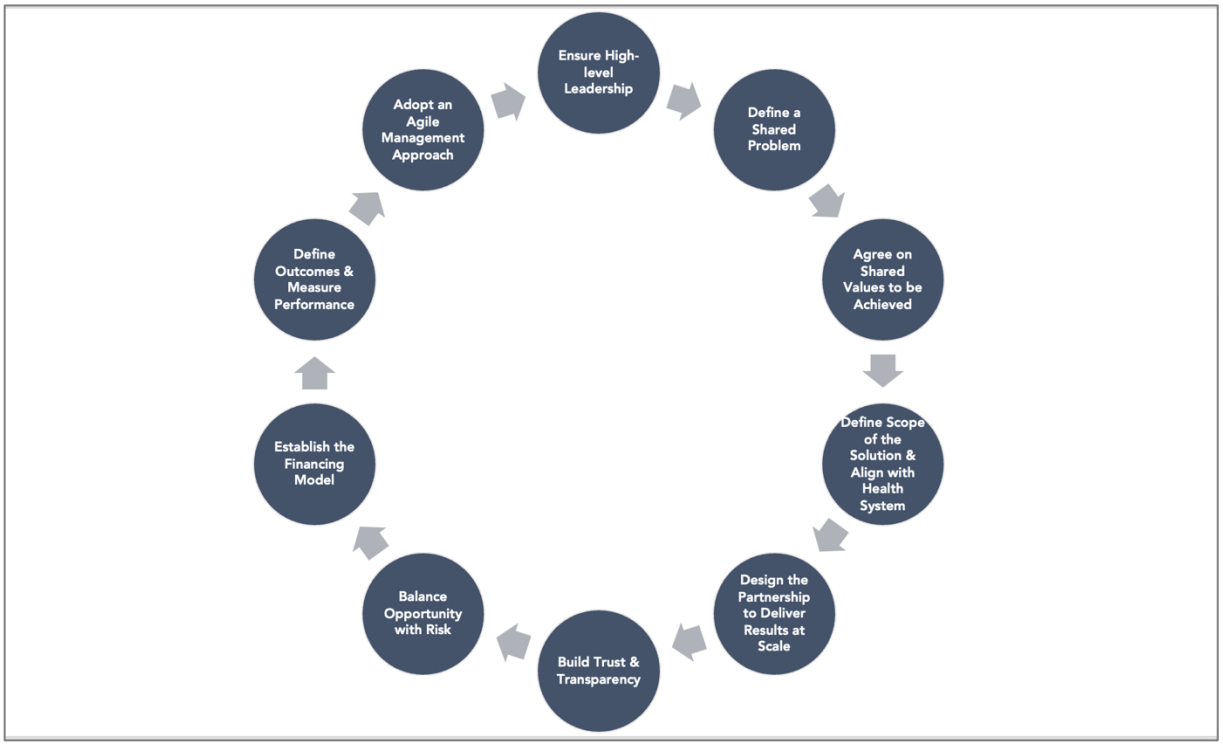
"We had managers from both sectors addressing different aspects of the project that would communicate frequently."

"A pharma company isn't the one best positioned to be on the ground in a community. That's where our partner [comes in], because of the existing network that they have, uses their strengths of understanding the needs and logistics needed to engage the community. We follow their lead, enable their vision, and bring in supporting resources. We acknowledge in humility our limitations."

"We recognise that we may have a vision, but the people we need to listen to about engaging the communities are those who are in the communities."

Developing consensus in each of these 10 steps (Diagram 1) is necessary to design an sPPP with higher success chances. However, it will require research, negotiation, flexibility, trust, and, more importantly, a commitment to the vision and values of the sPPP. Through a collaborative process and effective negotiation, partners may arrive at an optimum arrangement that creates value for all partners and ensures cooperation throughout the sPPP.

Diagram 1: The 10-Step Process to Design, Implement and Scale-up Strategic PPP in Health Systems



Source: Authors

Appendix

Appendix Panel 1: Primer on healthcare PPPs: Types of PPPs applied in the health sector

Two overarching types of PPP are described. Economic PPPs, with a clear profit motive, and social PPPs, in which the government subsidises the PPP heavily and private sector gains, are less about profit, but often long-term and strategic. In the latter arrangement, private sector benefits are not negligible; tangible benefits may accrue in market expansion, strategic partners, public relations, brand image and new opportunities to capture shared value. PPPs in healthcare are more often social than economic. Three sub-types of PPPs are typically described when applied to the health sector.

Infrastructure-based model

The infrastructure-based model is the most common form of healthcare PPPs globally.[52] This model became predominant in the 1990s when the UK utilised this model to upgrade and expand facilities within the National Health Service (NHS).[27] The infrastructure-based model is most appropriately chosen when the public entity needs to build or upgrade infrastructure but cannot make the initial investment and lacks sufficient capability to manage the project. This model entails contracting the private sector to build, rebuild, or replace a public asset. The private partner is responsible for maintaining the infrastructure for the contract duration (typically 25-30 years).

In the infrastructure-based model, the private sector is responsible for all stages of the project: design, build, finance, maintenance, and operation. Common among all infrastructure-based PPPs, the government retains full responsibility for managing and providing clinical services. However,

the management of the land and facilities is transferred to the private partner for the contract duration; all facilities revert to government control at the end of the contract.

Risk is transferred to the private partner for the design, construction, financing of the PPP and any delay in completion. In this model, payments are made from the government on completion of construction, which provides the private entity with the incentive to complete the project efficiently and effectively. As private capital is at risk, the private partner is further incentivised to maintain this efficiency and effectiveness throughout the life cycle of the PPP. Payments from the government to the private party are made annually over the life of the contract. This payment covers the initial construction costs and includes an ongoing maintenance and operations agreement stipulating the payment amount. Regular payments from the public sector enable the private entity to utilise long-term debt financing options, making the project more affordable for the government partner and more predictable and reliable for the private partner, which will receive fixed income payments as detailed in the contract.

Discrete Clinical Services model

In the Discrete Clinical Services model, the private partner is contracted to deliver clinical services in public healthcare facilities. The Discrete Clinical Services model is often referred to as an "operation and management" contract. This model aims to improve the efficiency, effectiveness, equity and responsiveness to specific or high demand clinical services by leveraging private sector capability and assets to deliver these services.[53] Discrete Clinical Service PPPs are most commonly implemented in countries that lack the capacity for specific clinical services**,** such as India**,** which utilise this model for diagnostic imaging (CT and MRI) and Romania for dialysis services.[53,54]

Often, medical devices manufacturers contract with clinical service providers to deliver these PPP models.

The Discrete Clinical Services model may be an advantageous mechanism for countries that lack adequate public sector service delivery capacity in healthcare priority areas or where there may be evolving governance and regulatory agencies required for more complex PPP models; this relatively straightforward model can build government PPP expertise and pave the way for more sophisticated PPPs in the future. In this model, the private sector is responsible for the finance, maintenance, operation and delivery elements of the PPP.[53] Discrete Clinical Services PPPs can be implemented for various services such as laboratory, diagnostic, therapeutic and rehabilitative healthcare services. This model usually has short-medium terms (<10 years) and is influenced by the number of services provided, the number of patients reached, and the life cycle of the clinical equipment.

Integrated model

The integrated model is the most complex PPP model. This model leverages the strengths and incorporates elements of the infrastructure-based discrete clinical services models. The model aims to align the responsibility of delivering clinical services with the private sector, encouraging financial efficiency from the private partner through improved management systems and practices and benefiting patients who get improved services at a similar or reduced price to a public hospital.

In the integrated model, the private sector is responsible for the design, build, finance, maintenance, operation, and delivery elements of the PPP. The private sector is responsible for

managing and delivering clinical services, including building, upgrading, and managing all infrastructure on which these services depend, including ancillary support services, medical equipment, information systems and human resources. This requires complex contractual agreements, though these contracts must retain the flexibility to address demographic and service delivery transitions over the contract's lifetime.

Like the other PPP models, the private sector assumes responsibility for the cost and any ensuing delays in the project. It assumes the risk for clinical service delivery, managing fluctuating service demand, and maintaining high standards and human resources.[53] Due to the different skills and experience required to design and build healthcare infrastructure, manage and operate clinical services, this PPP model typically includes two private partners: one similar to the infrastructure based PPP model in the short term and another private partner to oversee the delivery and maintenance of the clinical services over the long-term.

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