

# **CARDIO**4Cities **Playbook**



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**CARDIO4Cities is an urban population health approach** to address cardiovascular disease (CVD), the world's leading cause of death and disability. The Novartis Foundation designed, co-developed and validated the approach in collaboration with the health authorities in three pioneering cities: São Paulo, Brazil; Dakar, Senegal; and Ulaanbaatar, Mongolia. This approach is currently being replicated in over twenty cities globally.

**CARDIO4Cities is built on six key principles:** improve quality and coordination of **C**are, early **A**ccess to health and care, **R**eform policies with proven health benefit, leverage **D**ata and Digital technology, create **I**ntersectoral collaboration, and ensure local **O**wnership (**CARDIO**). The holistic interlacing of these principles aims to improve the diagnosis, treatment, and control of risk factors that lead to cardiovascular disease (referred to as the “cascade of care”), and thereby decrease cardiovascular events.

**Evidence supports the benefit of the CARDIO4Cities approach**, and cities that adopted the principles saw dramatic improvements in the heart health of their populations. Within 1–2 years of implementation, blood pressure control levels were at least 3 times greater than baseline, which translated to a reduction of up to 12% of strokes and 13% of heart attacks and favorable cost-effectiveness in quality-adjusted life years gained.<sup>1</sup>

**The objective of the CARDIO4Cities Playbook** is to outline this evidence-based approach to improving cardiovascular population health, allowing new cities to take action. CARDIO4Cities is not a one-size-fits-all approach, but a validated process which incorporates a set of interventions that should be adjusted to local needs. The playbook provides a process to set ambitious yet realistic targets, developing a population health roadmap with concrete interventions, responsibilities and timelines, and tracking progress to adjust interventions as needed.

In addition to framing this approach, **the CARDIO4Cities Playbook incorporates** → **CARDIO4Cities in Practice** which describes prior successful interventions that future cities can consider while developing their population health roadmap. These interventions have been developed, tested and validated in CARDIO4Cities cities and their description is intended to serve as guidance and inspiration for new cities. However, every city should consider the most relevant interventions in its context, and design or adapt interventions to address priorities in its specific population health roadmap (→ see step 5).



<sup>1</sup> Population health impact and economic evaluation of the CARDIO4Cities approach to improve urban hypertension management | PLOS Global Public Health



# The value in prioritizing urban cardiovascular health

**Cities are home to an increasing majority of the world’s population** and carry a disproportionate burden of cardiovascular disease (CVD).<sup>1</sup> As a result, cities are critical in fighting CVD. Implementing focused interventions can significantly reduce mortality, enhance quality of life, and address health disparities of varying income levels across cities. In 2023, CVD accounted for over 19.2 million deaths globally<sup>2</sup>, making it the leading cause of mortality. This burden is not limited to high-income countries; low and middle-income countries (LMICs) are increasingly affected, with 4 out of 5 cardiovascular deaths occurring in these regions. Notably, many of these deaths are premature, occurring before the age of 60.<sup>3</sup>

**Improving cardiovascular health** can yield substantial financial benefits for urban societies by preventing heart-related complications. A key component to preventing life threatening cardiovascular events is effectively diagnosing and addressing the most common risk factors for CVD, including high blood pressure, high cholesterol, and diabetes.

Globally, 10% of healthcare spending is attributed to high blood pressure and its complications, including strokes and heart attacks. Effective blood pressure management could lead to global healthcare savings of approximately USD 100 billion annually, providing an estimated return of USD 18 for every USD 1 invested in cardiovascular risk management<sup>4</sup>.

**Addressing hypertension, diabetes, and high cholesterol early** is key to improving urban health and development. Improving a city’s heart health reduces the burden of strokes, heart attacks, and other cardiovascular events that put a strain on health systems and economies. As a result, a healthier population can contribute to resilient communities, support educational attainment and social stability, increase productivity of the workforce, and decrease overall healthcare expenditure. For city authorities, investing in population health is foundational for sustainable urban growth and equitable development.

1 [Urban Development Overview](#)

2 [GBD 2023 via GBD Compare, VizHub - GBD Compare](#), accessed 28 November 2025

3 [Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: a systematic analysis for the Global Burden of Disease Study 2017](#) – PubMed

4 [First WHO report details devastating impact of hypertension and ways to stop it](#)

## The value in the CARDIO4Cities approach

CARDIO4Cities is an approach designed and validated by the Novartis Foundation, to help cities rapidly reduce overall CV risk and improve the heart health of their populations. It is based on data-driven population health roadmaps that implement multisectoral, city-wide interventions. CARDIO4Cities has the following strengths when incorporated into a city’s CV health strategy:

- 

**Proven impact**

CARDIO4Cities has led to 3–6x improvements in blood pressure control rates, resulting in an estimated 12–13% reduction in heart attacks and strokes<sup>1</sup>. The approach has been developed and validated across continents and is currently being implemented in more than 20 cities, both in high- and low-income countries.<sup>2</sup>
- 

**Rapid results**

CARDIO4Cities focuses on early detection and adequate management of the 3 main cardiovascular risk factors (hypertension, high cholesterol and diabetes) that account for the majority of the cardiovascular complications (and organ damage). Improvements in risk factor control rates can be seen within 12–18 months of program implementation.<sup>3</sup>
- 

**Proven cost-effectiveness**

The initiative is highly cost-effective, achieving a 76% lower cost per Quality-Adjusted Life Year (QALY) than the costing benchmark.
- 

**Advanced CV risk factor detection**

Within and outside the health system, followed by strict referral to the health system for people screening positive, through strengthened referral pathways and continuity of care.

- 

**Broad, intersectoral collaboration**

The CARDIO4Cities approach takes a holistic view of health in cities and encourages collaboration across disciplines and sectors, building public private partnerships (PPPs) that enhance healthy lifestyles and early detection.
- 

**Data-driven decision making**

CARDIO4Cities leverages existing data to inform target setting and intervention planning, collects additional insights proactively to identify opportunities for improvement, and uses predictions to inform population health roadmaps where possible. It also recommends a minimal set of essential data to monitor progress and outcomes via intuitive data dashboards.
- 

**Sustainability**

From the design phase onward, partners ensure that CARDIO4Cities interventions leverage and augment current activities. As local ownership of CARDIO4Cities is a key condition for success and sustainability, local operational budgets must support the population health roadmaps to ensure financial sustainability. In certain cities, the PPP supporting the initiative can provide short term seed funding for innovations that require validation before they can be integrated within local budgets.
- 

**User centricity**

the CARDIO4Cities approach emphasizes inclusion of community representatives and end-users of the innovations and interventions from the very beginning of the implementation.

1

Population health impact and economic evaluation of the CARDIO4Cities approach to improve urban hypertension management - PMC

2

CARDIO4Cities – The whole-of-city approach to improve urban heart health.

3

Population health impact and economic evaluation of the CARDIO4Cities approach to improve urban hypertension management | PLOS Global Public Health

## The six pillars of CARDIO4Cities

The Novartis Foundation defined six pillars of primary importance in the CARDIO4Cities strategy, each focusing on a specific aspect of improving cardiovascular health. They were chosen through a deliberate, evidence-based process to fundamentally shift how cardiovascular disease (CVD) is managed in urban settings. The approach prioritizes the early detection and prompt, effective management of all individuals at cardiovascular risk, with continuous monitoring and adaptation of interventions based on cascade of care (CoC) data. Unlike traditional strategies that focus heavily on awareness and advocacy – which have shown limited success over decades – the CARDIO4Cities model adopts a data-driven methodology to maximize impact and resource efficiency.

The core pillars (Care, Access, Data) directly address patient identification and management, while the enabling pillars (Ownership, Intersectoral collaboration, Reform policies) ensure sustainability, multisectoral engagement, and the integration of proven policy measures. These enablers are grounded in lessons from previous programs, emphasizing that lasting results require local ownership, cross-sector partnerships, and supportive policy environments.

Collectively, they improve the availability of quality health and care for cardiovascular conditions, leading to heart-healthy cities. By addressing key facets of cardiovascular health, the six pillars provide a holistic approach to combating cardiovascular disease and promoting overall well-being:



**Improve quality and coordination of Care:**

Streamline cardiovascular risk factor management and train the health workforce on consistent use of guidelines, algorithms and clinical decision support tools.

Introduce task shifting for improved performance, access and quality of care.

Engage patients in self-management to ensure adherence and follow-up to achieve risk factor control.



**Early Access to health and care:**

Accelerate early detection, bring cardiovascular health closer to where people live, work and play by optimizing cardiovascular risk factor measurements throughout the city, within and outside health facilities, ensure strict/automated referral for diagnosis confirmation, treatment and follow-up, and ensure medication availability for all.



**Reform policies with proven health benefit:**

Implement policies to support health system reforms and those with proven population health benefits, including lifestyle policies that encourage healthier living and policies that make health services more accessible for all.



**Leverage Data and Digital technology:**

Set ambitious targets for people with CV risk factors diagnosed, treated and controlled and define a set of minimal essential data to track progress and outcomes.

Facilitate periodic data reviews by the governance boards, with simple dashboards. Leverage technology to support patients and health workers, and to overcome bottlenecks in health service delivery.



**Create Intersectoral collaboration:**

Partner with schools, workplaces (large and small employers), community organizations, food associations, transport and housing authorities, and others to promote healthy lifestyle (“health in all policies”) and early detection of CV risk.

Engage payers and/or ministries of finance to optimize budgets for population health.



**Ensure local Ownership:**

City and health authorities, health system managers, local communities, patient associations and civil society organizations must co-own the initiative at every stage, including design, implementation, progress, and outcome monitoring.

# The Logical Framework of CARDIO4Cities

| Impact                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                               |                                                                                                |                                                                                                                                                                            |                                                                                                                                                                 |                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A city where intersectoral partners work together <sup>1</sup> to reduce strokes by 30% and heart attacks by 15% |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                               |                                                                                                |                                                                                                                                                                            |                                                                                                                                                                 |                                                                                                                                                                               |
| Outcomes                                                                                                         | 80% of patients <sup>2</sup> treated and 70% controlled                                                                                                                                                                                               | 90% of patients <sup>2</sup> diagnosed                                                                                                                                                                        | Policies reviewed and updated where necessary                                                  | Progress towards targets measured and reviewed                                                                                                                             | Intersectoral players engaged                                                                                                                                   | Program owned by local Stakeholders                                                                                                                                           |
| Output                                                                                                           | <div>C</div> Improve quality and coordination of <b>C</b> are <sup>3</sup>                                                                                                                                                                            | <div>A</div> Early <b>A</b> ccess to health and care                                                                                                                                                          | <div>R</div> <b>R</b> eform policies with proven health benefit                                | <div>D</div> Leverage <b>D</b> ata and <b>D</b> igital technology                                                                                                          | <div>I</div> Create <b>I</b> ntersectoral collaboration                                                                                                         | <div>O</div> Ensure local <b>O</b> wnership                                                                                                                                   |
| Activities (examples)                                                                                            | <ul style="list-style-type: none"><li>– Simplify clinical guidelines</li><li>– Continuous medical education</li><li>– Access to medicine</li><li>– Tracking in Primary care</li><li>– Treatment adherence</li><li>– Patient self-management</li></ul> | <ul style="list-style-type: none"><li>– Screening Corners</li><li>– Mobile Screening</li><li>– Self-Screening</li><li>– Referral Pathways</li><li>– Health literacy</li><li>– High-risk populations</li></ul> | <ul style="list-style-type: none"><li>– Health policy review</li><li>– Task shifting</li></ul> | <ul style="list-style-type: none"><li>– Continuously progress monitoring</li><li>– Health Tech Innovation</li><li>– Simulation tools</li><li>– Barrier detection</li></ul> | <ul style="list-style-type: none"><li>– Intersectoral Steering Committee</li><li>– Employers/private sector engagement</li><li>– Education engagement</li></ul> | <ul style="list-style-type: none"><li>– Stakeholder mapping</li><li>– Local governance model</li><li>– Local context analysis</li><li>– Intervention identification</li></ul> |

1 With local health authorities and/or health system managers  
2 CV risk factors: high BP, high LDL, diabetes  
3 Cardiovascular (disease)

The Novartis Foundation has refined a Logical Framework that characterizes the translation of CARDIO4Cities interventions into immediate and long-term outcomes. This framework can be a foundational component for a city to use when developing their specific CV health strategy.

The CARDIO4Cities pillars “Improve quality and coordination of **C**are” and “Early **A**ccess to health and care” directly address the patient journey through an improvement in knowledge, engagement, diagnosis, and follow-up management.

The other four CARDIO4Cities pillars: “**R**eform policies with proven health benefit”, “Leverage **D**ata and **D**igital technology”, “Create **I**ntersectoral collaboration”, and “Ensure local **O**wnership” address the supporting environment and infrastructure for better CV health.

 Introduction

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**4** Predict & refine

**5** Test

**6** Scale & sustain

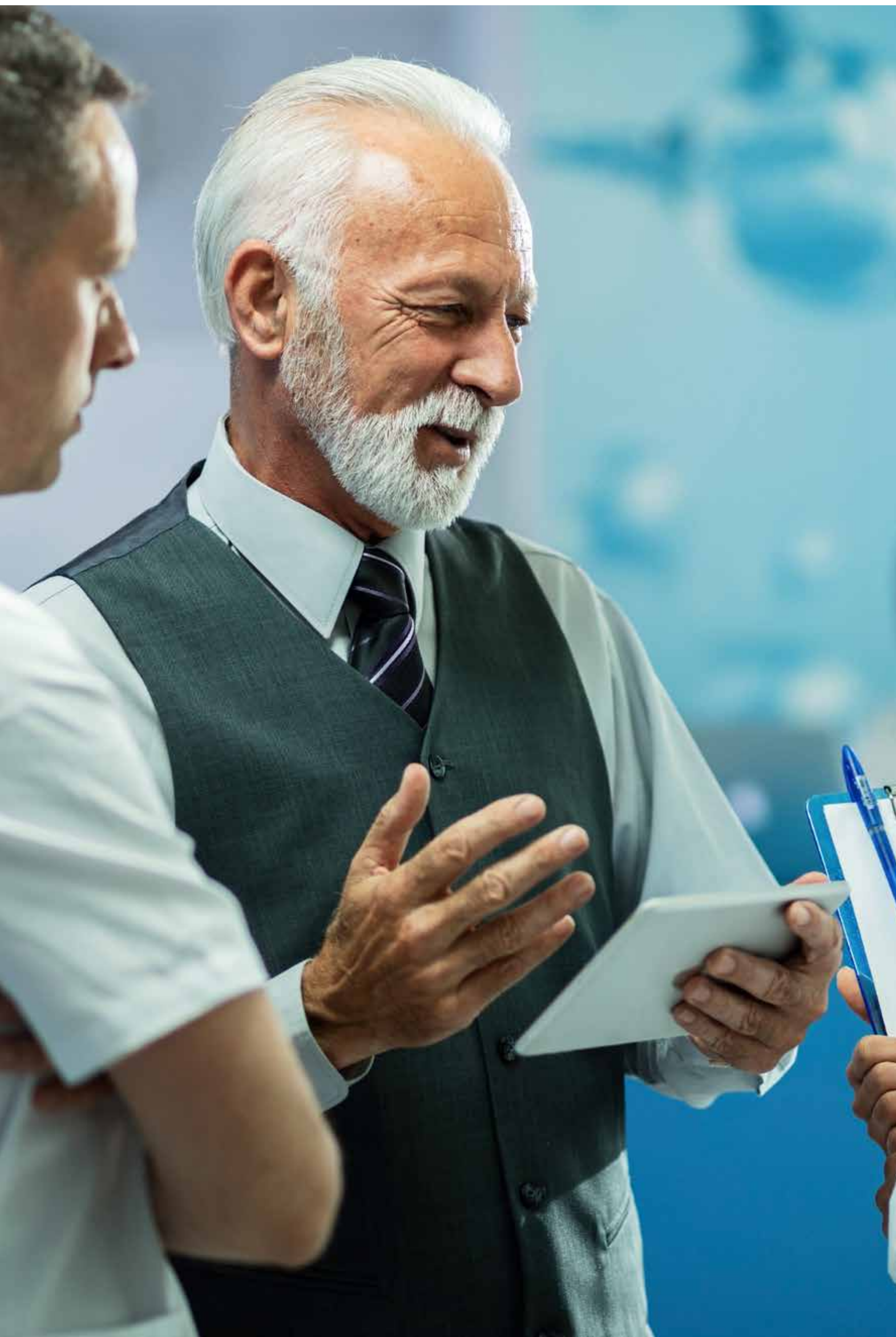




There are six steps to implement CARDIO4Cities:

- 1** **Set up:** Strengthen political will, set up the governance structure and secure funding.
- 2** **Set targets:** Set ambitious but realistic targets to improve on the current cascades of care for the three main CV risk factors (hypertension, diabetes, and hypercholesterolemia).
- 3** **Co-design the CV population health roadmap:** Identify opportunities to improve existing strategies for CV health, prioritize interventions, and agree on a stepwise implementation roadmap.
- 4** **Predict & refine:** Use simulations to predict the outcomes and financial impact of interventions and refine the population health roadmap.
- 5** **Test:** Test priority interventions in sub-populations or city areas to assess their effectiveness and refine the approach for scaling.
- 6** **Scale & sustain:** Scale tested and refined interventions to the entire city, measure KPIs systematically, invest in areas where results are lagging, and update the roadmap as needed.

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## Strengthen political will, set up governance structure and identify funding.

### Obtain senior stakeholder and decision maker commitments

**The first and essential step in launching CARDIO4Cities is to get strong buy in from key local decision makers.**

This will help create broader support, unlock funding, get people assigned to support the approach, and ultimately implement interventions that make a difference for the city's population. To get there, identify the relevant senior stakeholders in city government and health systems and introduce them to CARDIO4Cities, ideally at in-person meetings. Use the existing evidence supporting CARDIO4Cities and high-level information about the current risk factor control situation in the city to convince them of the importance of acting on heart health. Ask for their support.

### Identify funding opportunities

**The immediate need is to secure resources for implementing steps 1–4**, including coordination, governance, stakeholder engagement, workshops, communication, and community outreach. Time-limited investment may also be required for initial implementation and value demonstration of newly designed interventions.

Allocating resources (people or money) ensures that stakeholders have a vested interest in the initiative's success. However, consider using catalytic funding from foundations or impact investors who are willing to provide time-limited support to get the initiative off the ground.

It is worth mentioning that implementation and governance of the interventions (→ [step 5](#) & → [step 6](#)) would ideally be funded from city or health system operational budgets. For stepwise implementation, consider performance-based or stage-gated funding models in which funding increases as interventions are scaled successfully.

## Map & engage the broader stakeholder landscape

**To ensure successful CARDIO implementation, it's crucial to engage all relevant stakeholders.** This includes not only those already involved in heart health management, but also those who should become more actively engaged. Stakeholders will be involved in CARDIO4Cities in multiple ways, including providing input to the rapid assessment, participating in workshops, and supporting – or even managing – the implementation of interventions. Therefore, a comprehensive stakeholder map provides the basis for outreach. Stakeholders include city government and health department representatives, primary and specialist health providers, community health workers, pharmacists, patient advocacy groups, civil society organizations, health insurers, data and technical experts, potential funders and others.

Consider a meeting to engage a broader set of stakeholders early. A key principle of CARDIO4Cities is intersectoral collaboration, and early engagement will generate support and increase the likelihood of success. A webinar can be useful to introduce CARDIO4Cities, answer questions, and allow time for networking and follow-up conversations. However, many key stakeholders may not be aware of other groups with potential synergistic roles and activities in improving heart health, and an in-person meeting can foster new intersectoral opportunities.





## Establish the governance structure

With commitment secured, it is time to establish a more formal governance structure.

The city **Steering Committee** creates a formal setting for initiating CARDIO4Cities, reviewing progress, providing advice, and engaging additional stakeholders as needed. The committee sets targets and approves priorities, monitors progress by periodically reviewing data collected in the measurement system, provides broad strategic direction, and represents the city program to outside stakeholders. It should include senior stakeholders, e.g., the city health commissioner and senior health system executives.

The **Operational Committee** orchestrates the initiative and creates the operational roadmap, prepares and conducts workshops, manages analyses and planning activities, and ensures that stakeholder needs are met. It requests feedback and support from senior stakeholders and advisors in the Steering Committee. It may also create Implementation Working Groups to carry out specific tasks with the right group of collaborators.

Potential members of the Operational Committee include representatives from the city authority's noncommunicable disease unit, medical directors, primary care operations, pharmacists, community stakeholders, and data or technical experts.

**Implementation Working Groups** can be created to plan and roll out specific interventions. They complement the work of the Operational Committee and include members with expertise specific to the task at hand. These groups are very hands-on and could include city authority program leads, health practitioners, medical and patient association representatives, data specialists, community representatives, and researchers. It is important to identify the working group leads early on.

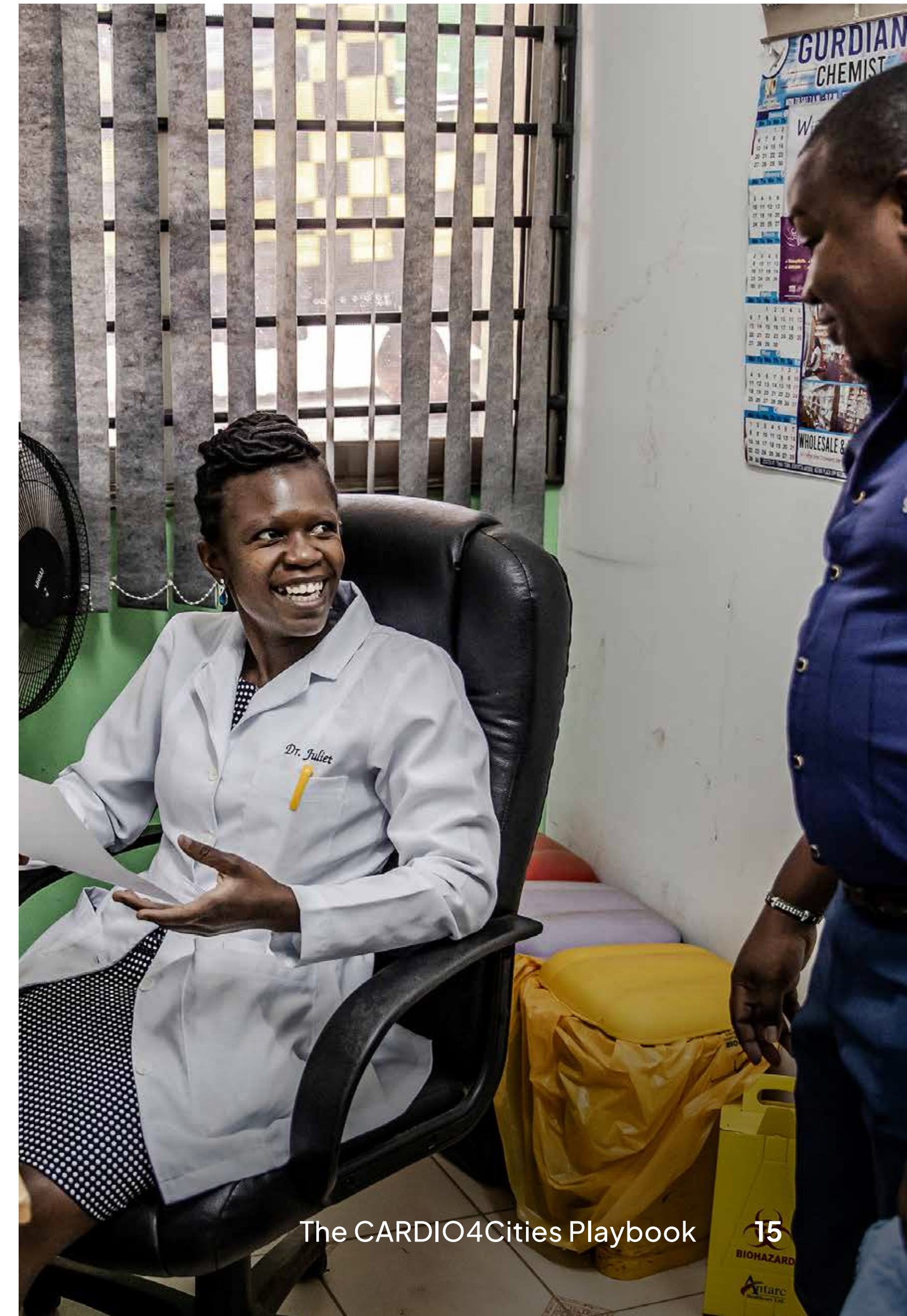
## Collect evidence for target setting & designing the roadmap

**Setting targets in the next step requires an overview of the current status of CV risk factor management.**

Assemble relevant data on the current cascade of care (prevalence, and diagnosis, treatment and control rates) for each risk factor, and on major adverse cardiac event (MACE) incidence. In addition, identify current CV disease area strategies and interventions that are already being implemented; map them against the → [CARDIO4Cities Logical Framework](#). The Workshop Preparation file under Resources recommends additional evidence that can help inform and accelerate discussions in subsequent workshops.

**Visualize the data where possible:** a visual representation of the cascade of care, showing the percentage of patients screened, diagnosed, treated, and controlled, helps stakeholders quickly grasp the magnitude of the problem and where the system is underperforming. Comparing data across districts or clinics can also help identify patterns and areas for targeted improvement.

**Time and resources permitting, consider implementing additional analyses in a very focused manner.** CARDIO4Cities in Practice provides details on using quantitative (→ [Intervention “Targeting of high-risk populations”](#)) and qualitative (→ [Intervention “Detecting barriers to care”](#)) analysis to provide additional insights for target setting and co-design of the population health roadmap.





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## Set ambitious but realistic targets to improve care cascades for key CV risk factors.

The next two steps (Set targets and Co-design the population health roadmap) can be implemented in a 1–2-day workshop with the Steering Committee and Operational Committee.

**Setting ambitious yet realistic targets for CV risk factor detection, treatment and control is of vital importance for multiple reasons.** It can motivate stakeholders to think outside the box, it creates alignment across stakeholders, and it can lead to transformative results. The Davos Declaration on Urban Health calls for 90% of the city’s population with a risk factor being diagnosed, 80% of the diagnosed population to be treated adequately, and 70% of the diagnosed population to be controlled<sup>1</sup>. Make sure to adjust the targets based on the current situation and the city’s expert assessment to ensure the targets are both ambitious and realistic. Targets should be set by the Steering Committee.

Targets for outputs and activities (→ [see CARDIO4Cities Logical Framework](#)) should be set once the population health roadmap has been developed, e.g., number of reform policies introduced or adoption rates of streamlined treatment protocols. At that point, it may also be useful to pressure test whether the outcome targets are indeed realistic and adjust if needed (→ [see step 4](#)).

**Setting targets in a workshop rather than a series of individual discussions provides an opportunity for key stakeholders to provide input and discuss underlying assumptions.** It also creates buy-in for collaboration to develop the population health roadmap. Combining target setting and co-design of the population health roadmap (→ [see step 4](#)) into a one-to-two-day workshop creates a natural flow of discussion from reviewing the initially collected data insights, to setting targets, to identifying interventions that lead towards achieving the targets, to defining the roadmap.

<sup>1</sup> [Urban Heart Health - World Heart Federation](#)



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**3 Co-design the CV population health roadmap**



## Co-design a clear, prioritized roadmap to advance cardiovascular population health.

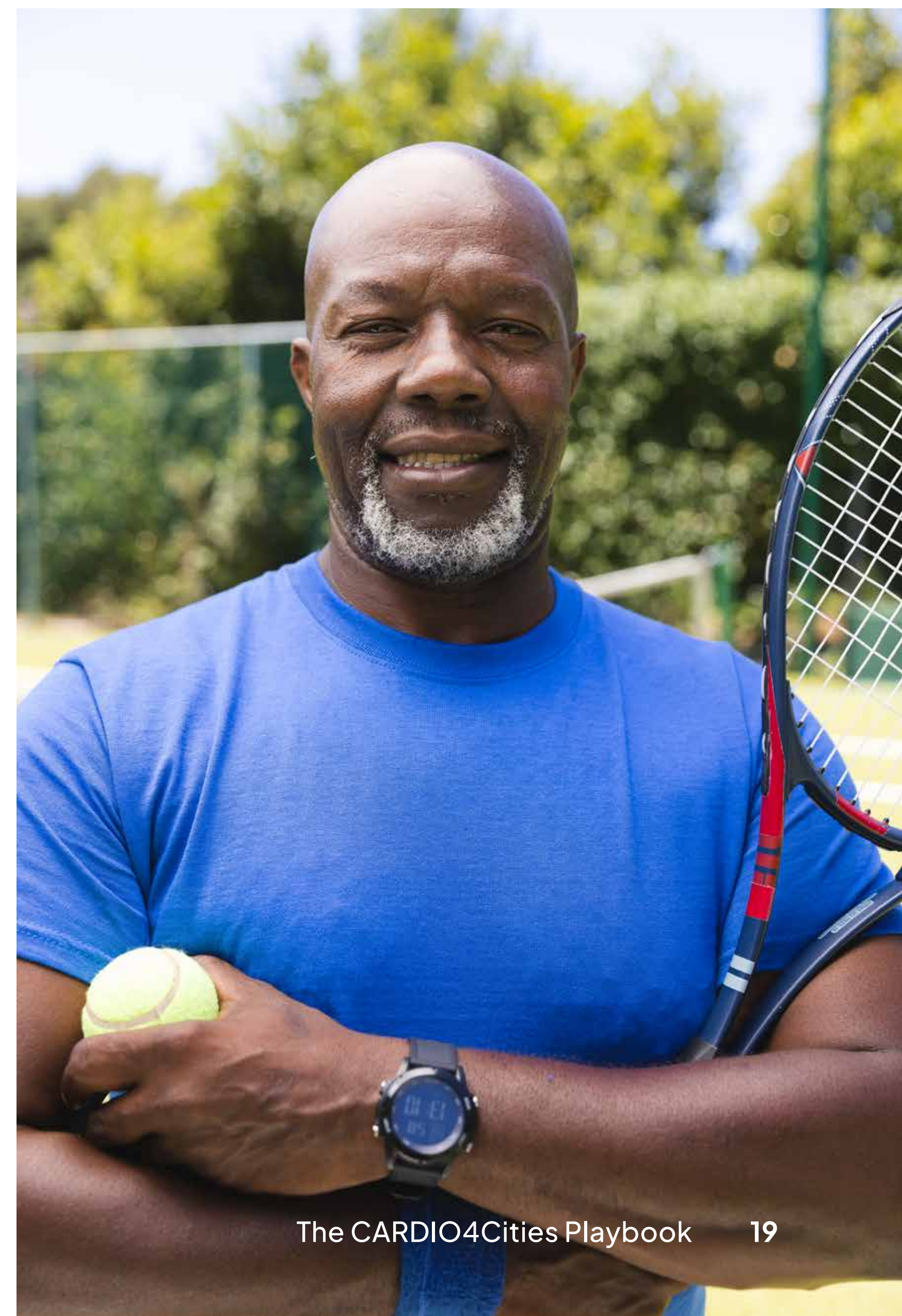
The CARDIO4Cities population health roadmap is a strategic plan designed to improve CV risk factor control in city populations by guiding early detection and access, improving healthcare quality, and strengthening the key enablers. It is co-designed with relevant stakeholders and guided by a data-driven approach.

**During this co-design step, participants should review the current situation** in the cascade of care (→ [step 1](#)), add their own perspective on barriers and opportunities, and agree on the most important and urgent interventions. This can then be turned into a roadmap with timelines, responsibilities and required resources, either during the same workshop, or subsequently.

**The workshop should be structured with plenary components** (to create a common understanding of the task at hand) and potentially break-out groups (to maximize opportunities for tapping into participants' expertise and creativity). Depending on local needs and the profiles of stakeholders attending the

workshop, the break-out groups could be focused on individual risk factors, stages of the cascade of care, or perspectives of different stakeholder groups (health system, healthcare providers, civil society). Be sure to capture broad sets of ideas in brainstorming or design-thinking approaches. Interventions should include those validated as part of CARDIO4Cities (→ [CARDIO4Cities in Practice](#)), as well as other or even newly designed interventions, technologies or partnerships that fit the city context.

After identifying a broad set of interventions, assess their feasibility, cost, expected impact, and sustainability by embedding them into existing systems with long-term funding. Use an intervention evaluation framework or the CARDIO4Cities simulator to prioritize interventions and converge on a specific set of interventions to be included in the population health roadmap.





**To turn a list of prioritized interventions into a population health roadmap, create a detailed implementation plan for each intervention** that includes clearly defined objectives, assigned responsibilities across lead and supporting organizations, estimated budgets with identified funding sources, and realistic timelines with key milestones. Develop a phased rollout schedule that prioritizes high-impact, feasible actions while allowing room for iterative learning. Secure cross-sector partnerships – healthcare providers, community organizations, urban planners, and policymakers – by formalizing roles and commitments.

**Keep the roadmap practical and focused. Identify key high-impact interventions rather than trying to fix everything at once.** Plan for regular review and adaptation based on progress, data and feedback. By combining data with information from the communities (on lived experience), and by involving all relevant

stakeholders from the start, the roadmap will not only be technically sound but also widely supported and ready for implementation.

**The roadmap will provide essential information to the Operational Committee to support and coordinate implementation** (→ [step 5](#)). Identify ways to collect the minimum essential set of data to measure progress and outcomes by reviewing possible sources for these indicators. Review baseline data, and establish feedback loops to track outcomes and impact, adapt to emerging challenges, and ensure accountability. Use of data can be enhanced significantly by using intuitive dashboards. A structured roadmap will transform strategic priorities into actionable steps that drive measurable improvements in population health.

The final approval of the population health roadmap should come from the Steering Committee.

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## Use data and simulations to forecast outcomes and refine the roadmap for impact.

Evaluate the potential impact of the set of interventions described in the population health roadmap by predicting outputs and outcomes and forecasting costs. The Novartis Foundation has developed **the CARDIO4Cities intervention simulator** based on systems dynamics modeling, which can be used during the planning phase, to pressure test interventions and further refine the CV population health roadmap accordingly.

### Use additional evidence

Consider implementing additional qualitative and quantitative analysis to inform the roadmap planning and implementation approach. → Intervention “Targeting of high-risk populations” in CARDIO4Cities in Practice provides details on leveraging advanced analytics to identify drivers of CV risk factors and inform the targeting of interventions. → Intervention “Detecting barriers to care” in CARDIO4Cities in Practice provides an overview of qualitative research that helps understand barriers and opportunities for better CV risk factor control.

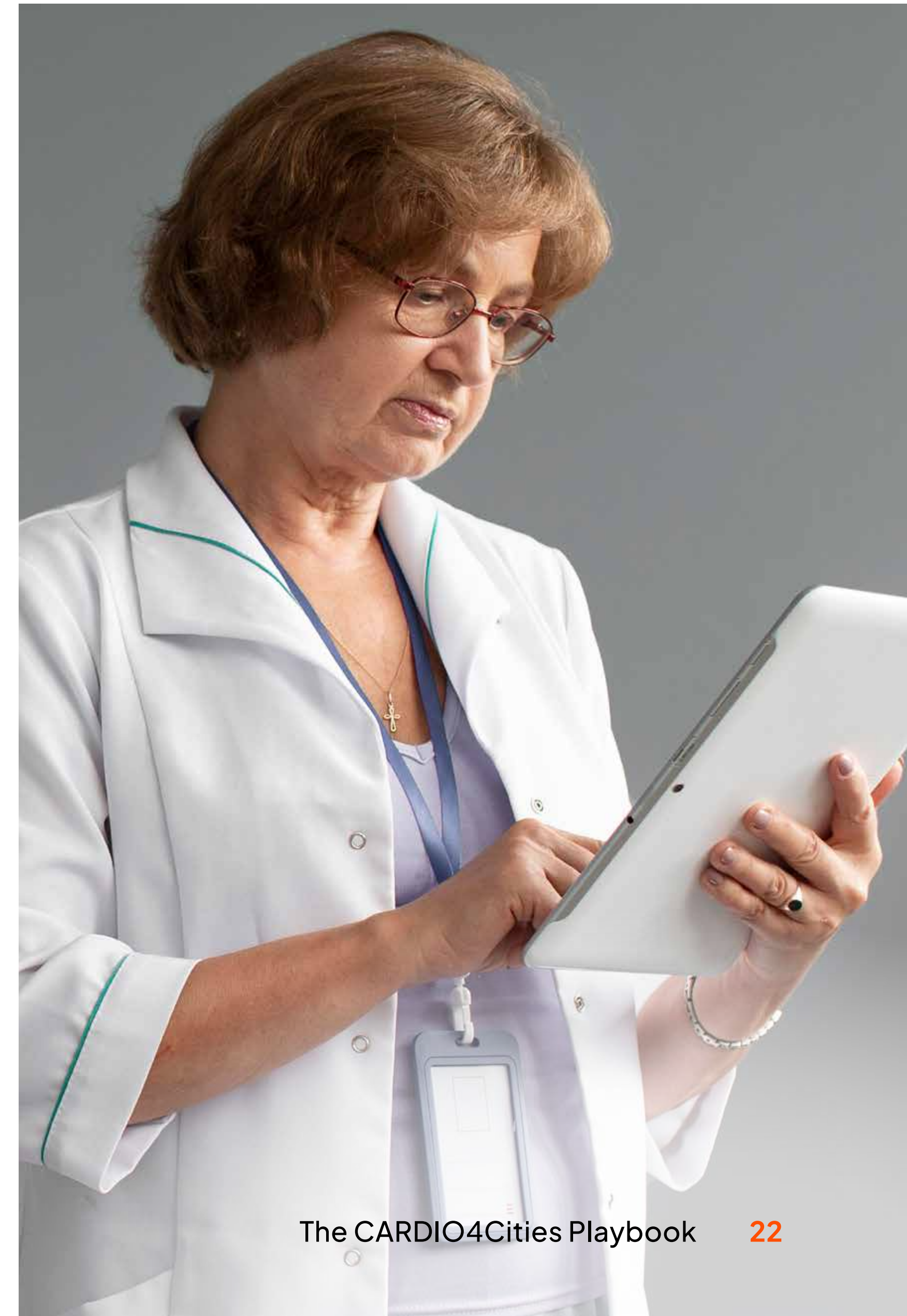
### Use simulation models

Simulation models can inform intervention selection by forecasting the outcomes of a specific set of interventions and estimating the health benefit prior

to implementation. The Novartis Foundation and its technical partners run a CARDIO4Cities intervention simulator which can be adapted to each urban environment, using local data. The simulator forecasts a city’s CV disease burden if CARDIO4Cities interventions are planned and demonstrates the expected health benefits and costs of CARDIO4Cities interventions. By leveraging simulations, the initiative can make more informed decisions on the best interventions according to the specific needs of the city.

### Communicate widely

Once the population health roadmap has been reviewed and refined, be sure to share the insights from the workshop, and the final roadmap, with all stakeholders involved in the process. If you include a broader group of stakeholders in Step 1, circle back to them with an update. Create accessible summaries for the public, stakeholders, and funders, emphasizing the expected benefits and how success will be measured. Build momentum through community engagement, aligning the plan with local values and needs. **This is not just a plan – it’s a commitment to healthier lives, and it must be treated with the urgency and care that such a commitment deserves.**





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## Pilot priority interventions, measure effectiveness, and fine-tune the approach for scale.

Once the roadmap is defined and approved by the Steering Committee, the Operational Committee – potentially supported by Implementation Working Groups (→ [step 2](#)) – can start with implementation. The interventions in → [CARDIO4Cities in Practice](#) have been validated in other CARDIO cities and could be considered for immediate city-wide roll-out. However, to ensure the best possible implementation in a new city, a **stepwise approach** may be preferable:

- Initial implementation should target high-priority areas with the highest potential impact to demonstrate value and evaluate interventions in a subset of health facilities and their catchment areas, or in a certain subpopulation.
- Assess the effectiveness, feasibility, and impact of the interventions through continuous monitoring and data collection of the set of minimum essential data.
- If needed, conduct additional rounds of stakeholder consultations and workshops to refine the interventions. Host “pause and reflect” sessions to evaluate large-scale impact and make necessary adjustments. Use the insights gained to iterate and develop an optimal final solution package.

When selecting pilot health facilities for cardiovascular intervention implementation, factors such as cardiovascular disease-specific services, catchment area, patient volume, patient eligibility criteria, and availability of an on-site pharmacy should be considered. As importantly, commitment of local stakeholders can significantly enhance the success of interventions.

**Engage the community through listening and outreach to foster participation and support.** Ensure efficient resource allocation and budget management to maximize impact. Lastly, maintain flexibility to adapt to unforeseen challenges and continuously improve strategies based on feedback and outcomes.

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## Expand proven solutions citywide, monitor progress, and ensure lasting success.

### Scale to the whole city

Testing can then be expanded in waves to target additional populations or health facilities, and ultimately extend across the city. Begin with expanding the interventions to all (primary) health facilities or the selected population groups within a given district. Gradually extend the rollout, ensuring that each phase builds on the success and learnings of the previous one. This methodical approach ensures that interventions are effectively scaled up while maintaining or even improving their impact and feasibility.

**Commit to continuous refinement and improvement of the interventions** based on ongoing data review, assessments and feedback. Regularly host “pause and reflect” sessions to evaluate the impact of the overall roadmap and its individual interventions, and to make necessary adjustments. Loop back with stakeholders previously engaged in the process to gather diverse perspectives and insights. Use the collected data to update the solution packages, ensuring they remain effective and relevant. This commitment to continuous improvement will help sustain the positive outcomes of the interventions over time.





### Track KPIs

Throughout the process, tracking a minimum core set of KPIs is essential. The logical framework (→ [see CARDIO4Cities Logical Framework](#)) guides a KPI Framework that has proven useful across CARDIO4Cities, with measures falling into three categories:

- **Tracking impact:** incidence of AMI, stroke, and – if possible – incidence of heart failure and CV death
- **Tracking outcomes:** prevalence (estimated), patients diagnosed, patients treated pharmacologically, patients controlled (track separately for each risk factor)
- **Tracking outputs:** % of facilities using simplified guidelines, implementation status for different interventions (e.g., task-shifting of hypertension diagnosis to nurses and/or pharmacists), roll-out of workplace health interventions, etc.)

Depending on the local population health roadmap, additional indicators may be required to document and reflect the specific local CARDIO intervention mix (→ [see CARDIO4Cities Logical Framework](#)). Note that well-formulated and consistently measured indicators are more valuable than a broad range of only

partially available data. Ideally, data are displayed in a central population health management dashboard to facilitate regular review by the steering committee, accountability to donors/funders and evidence-based decision making. Measure improvements across the input, output and impact metrics, review progress regularly, and adjust the population health roadmap (→ [step 4](#)) as needed to further accelerate impact.

### Consider implementing impact evaluations

Consider conducting a full impact evaluation of the population health roadmap to comprehensively assess the overall effectiveness and long-term outcomes of the interventions. Unlike tracking KPIs, which provides ongoing, specific metrics, a full impact evaluation offers a holistic view of the initiative's success, including unintended consequences and broader societal impacts. Such a thorough analysis can inform future policy decisions, optimize resource allocation, and enhance the credibility of the program. However, it requires significant time, resources, and expertise to conduct a rigorous evaluation, and also presents potential difficulties in isolating the effects of the interventions from other external factors.