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Sustaining population health initiatives: how Australian policymakers and practitioners respond to real-world challenges, a qualitative study

Carly Gardner

carly.gardner@newcastle.edu.au

National Centre of Implementation Science

Cassandra Lane

National Centre of Implementation Science

Luke Wolfenden

National Centre of Implementation Science

Alix Hall

National Centre of Implementation Science

Will Pascoe

National Centre of Implementation Science

Belinda Peden

National Centre of Implementation Science

Rachel Sutherland

National Centre of Implementation Science

Nicole Nathan

National Centre of Implementation Science

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Title: Sustaining population health initiatives: how Australian policymakers and practitioners respond to real-world challenges, a qualitative study

Authors: Carly Gardner[a,b,c*], Cassandra Lane [a,b,c], Luke Wolfenden[a,b,c], Alix Hall[a,b,c], Will Pascoe[a,b,c], Belinda Peden[a,b,c], Rachel Sutherland[a,b,c], & Nicole Nathan[a,b,c]

a. National Centre of Implementation Science, The University of Newcastle, Newcastle NSW; Australia

b. School of Medicine and Public Health, The University of Newcastle, University Drive, Callaghan, NSW, Australia

c. Hunter Medical Research Institute, New Lambton Heights, NSW, Australia

*** Corresponding Author:**

Carly Gardner, Carly.gardner@newcastle.edu.au

ABSTRACT

Background

Sustaining prevention initiatives in real-world settings is complex, requiring planned, feasible responses to challenges to enable long-term delivery. In this study we centered the perspectives of those navigating challenges and supporting sustainment at the systems level – policymakers (decision makers in government agencies) and practitioners (implementation decision makers). The study aims were to (1) explore how Australian policymakers and practitioners view sustainment of chronic disease prevention initiatives and (2a) assess the challenges they experience when sustaining chronic disease prevention initiatives, and (2b) how they respond to these challenges.

Methods

We employed a pragmatic exploratory qualitative approach. We purposefully sampled policymakers to ensure participation across all Australian jurisdictions (states and territories) and then used snowball sampling to identify practitioners. Data were collected in one-on-one online interviews or small group interviews, following a semi-structured discussion guide. Transcripts were analysed in Nvivo using Framework Analysis, inductively coding content with the research objectives and collaboratively developing final themes. As a final step, themes for challenges were mapped to the themes for responses used to address them.

Results

We interviewed 35 participants encompassing every state and territory of Australia. Aim (1): Policymakers and practitioners conceptualised sustainment across multiple outcomes including initiative and behaviour maintenance and the need to benefit populations. Aim (2a): Challenges to sustaining initiatives included: *funding and resource constraints*, *political* landscape (e.g., shifting agenda), *demonstrating impact* (e.g., insufficient data systems), and *implementation*

context constraints (e.g., staff turnover). Aim (2b): Policymakers and practitioners employed a range of strategies to respond to sustainment challenges including: *adapt* (e.g., less intensive delivery strategies), *harness implementing context* (e.g, embedding in existing systems), *evaluate and monitor* (e.g., data reporting systems), *navigate the decision point* (e.g., innovative funding options), and *early intentional efforts* (e.g., planning). When responses were mapped to challenges, we found most targeted funding challenges, fewest addressed demonstrating impact challenges.

Conclusion

Our findings highlight how policymakers and practitioners navigate challenges to sustaining initiatives with real-world responses. Future research is needed to categorise and test policy sustainment strategies used in practice. Such evidence can support decision-making and guide resource allocation to improve prevention initiative sustainment.

Key words

Sustainment, chronic disease prevention, Australian policymakers, policy implementation, policy strategies, policy response.

Key points/contributions to literature

- Existing sustainment frameworks have largely been applied to conceptualise determinants at organisational or service-delivery levels. Our findings demonstrate how sustainment is shaped through policy-level decision making and governance processes.

- Findings add empirical evidence to the scant sustainment literature, synthesising responses to address key sustain challenges from practice
- Population health policymakers and practitioners are key actors, shaping initiative sustainment through ongoing adaptation, relationship-building, strategic alignment and decision-making within changing political and organisational environments.

BACKGROUND

Maximising the financial, health and social benefits of effective chronic disease prevention innovations requires that they are implemented and sustained over time (1). Sustainment has been defined as "the extent the innovation is in place or being delivered over the long-term" (2). However, once successfully implemented, the impacts of prevention initiatives often diminish (3). It has been suggested this occurs as use, quality and completeness of innovations tends to decline over time (4–6). It may also occur as the setting priorities or innovation focus changes, a process known as initiative drift (7).

To understand these issues and improve real world health impacts of prevention initiatives, greater investment in sustainment research has been recommended (8). Much of the small but growing research on sustainment has been descriptive (9), often focused on identifying determinants. Determinants are the factors that influence sustainment outcomes, including whether an evidence-based initiative continues to be delivered or not (2,5). Much of the evidence on determinants has been generated by surveying and interviewing organisation leaders and staff delivering initiatives in their settings (10–14). However, many of the determinants impacting initiative sustainment (financial stability, level of ongoing support or program fit) are influenced by system level constraints and decisions rather than by frontline implementers (5,15). Understanding how these determinants influence practice requires exploration of system level perspectives, from those responsible for designing, selecting and funding prevention initiatives over time.

Population health policymakers (those responsible for strategic planning, funding and oversight of prevention initiatives in state/jurisdictional government agencies e.g., state health department) and practitioners (those responsible for supporting initiative implementation to frontline implementers e.g., non-government organisations) play a key role in shaping the

conditions that influence long term initiative sustainment. They make decisions regarding funding and workforce allocation, oversee strategic planning, initiative selection and monitor initiative impact. Despite this, little empirical research has investigated how policymakers or practitioners navigate the challenges of sustainment within complex real-world systems (13,16). To date, the research undertaken from a policy perspective has largely focused on perceived barriers or determinants of sustainment, typically of single initiatives or policies (17–21). These studies have identified uncertain funding, low capacity in implementation organisations and competing priorities as consistent barriers (17–19,21). More recently, a qualitative study by Crane and colleagues explored chronic disease prevention form a broader systems level perspective in Australia (22). In this study of 13 prevention policymakers or practitioners, they reported strong leadership, flexible initiative delivery, planning for long-term resource allocation and supportive systems were enablers for prevention sustainment (22).

While perspectives of determinants to sustainment are helpful, there is a need to understand how prevention policymakers and practitioners view sustainment and what strategies they use to sustain initiatives. Research linking sustainment challenges to the strategies used to address them in practice is an important step in building the limited evidence-base available on policy-level strategies. In this context, this study examined how Australian prevention policymakers and practitioners understand sustainment and respond to the challenges of sustaining chronic disease prevention programs. Specifically, this study aimed to:

Aim 1: Explore how Australian policymakers and practitioners view sustainment of chronic disease prevention initiatives and what outcomes they consider when supporting initiatives to sustain.

Aim 2: (a) Examine the challenges experienced by policymakers and practitioners in sustaining chronic disease prevention initiatives, and (b) how they respond to these challenges.

METHODS

Study Design and Ethical considerations

We employed a pragmatic qualitative research design (23) following the Standards for Reporting Qualitative Research (SRQR; (24), Supplementary file 1. Ethical approval was obtained through Hunter New England Local Health District, 2023/ETH01124 and registered with the University of Newcastle, H-2023-0243 and conducted in accordance with the with the Declaration of Helsinki.

Reflexivity Statement

We are a team of population health practitioners and researchers with extensive experience implementing, scaling and sustaining chronic disease prevention initiatives in clinical community settings. We focus on translating and sustaining evidence-based practice to improve population health. As such our philosophical approach is informed by pragmatism. We draw on this perspective and our practical experience with health services to engage with participants, collect and analyse data, and interpret findings.

Sampling and recruitment

We used a purposeful sampling approach to recruit policymakers and practitioners with responsibility for delivering health prevention initiatives across Australia. We aimed to include participants from all jurisdictions (states and territories) and a range of organisational contexts. Policymakers were identified through existing professional networks and targeted searches of relevant state and territory health departments and equivalent organisations; i.e., ministries of health, or health and wellbeing units. Practitioners were recruited using snowball sampling with

participating policymakers nominating relevant contacts from organisations implementing prevention initiatives. All identified participants were emailed a participant information statement and invitation to participate. Nonresponders were followed at two- and four-weeks post initial contact.

Data collection

Participants were provided the option of either an individual interview or group interview (2-5 participants working for the same organisation, typically across teams or portfolios) lasting approximately one hour. Interviews were conducted online via MS teams (25) between July-November 2023 and facilitated by a member of the research team (NN or CG) with a second team member providing technical support and note taking (CG or WP). Participant consent was gained verbally at the start of the interview. A semi-structured interview guide consisting of open-ended questions was followed. It first explored participants' policy or practice context, including types of health issues targeted, how they select and support the initiatives in their portfolio, what they view sustainment to be and the outcomes they work towards. The interviewer then shared a definition for sustainment as initiative continuation, and questions explored challenges to sustaining initiatives, ways they offer ongoing initiative support, what happens when their support for an initiative ends, and what influences these decisions. All data were recorded using the MS team's (25) video record function and on a handheld audio-recording device and stored securely.

Data analysis

Interviews were transcribed by a professional transcription organisation (26) and a sample (n=5) was cross-checked to confirm accuracy by members of the research team (CG, WP, BP). All transcripts were de-identified for analysis, extending to the roles, organisations, initiatives,

and jurisdictions due to the specificity of the sample and data, and uploaded into QSR NVivo (27) for analysis.

The primary analyst (CG) used Framework Analysis (28) with a pre-set codebook consisting of three categories aligned with the research aims: understand (views and outcomes), challenges, response. Transcripts were read line-by-line and data relevant to the codebook categories were inductively assigned a code, or to an existing code, within the categories. A subset of transcripts (50%) were coded following this same approach by an experienced qualitative researcher (CL) to confirm consistency with the codebook and contribute to conceptual development of themes. Final coded data were charted in a summary spreadsheet. The two analysts (CG, CL) then collaboratively developed themes based on observed patterns across codes. As a final step, the analysts met with a third member of the research team (NN) – lead interviewer and a sustainability expert – to discuss, reach consensus, and name the final themes. The primary analyst (CG) practiced reflexivity during coding and theme development and discussed reflections with the second analyst (CL).

Following final themes, a secondary analytic step was undertaken to explore connections between challenges and responses. The primary analyst (CG) reviewed the themes, summarised data and relevant transcripts to identify instances where participants described a challenge and a subsequent response, and these were mapped to examine how reported challenges were addressed in practice.

RESULTS

Participants

In total 35 individuals participated in the study. The sample included 23 policymakers from government departments or statutory bodies (representing an 88% response rate) and 12

practitioners from organisations responsible for implementing prevention initiatives (70% response rate). 11 individual and nine group interviews were conducted. Participants represented all eight Australian states and territories, with an average of five participants per jurisdiction (Table 1). Participants worked in a range of preventative health areas including obesity prevention, nutrition, physical activity, falls prevention, dental health, maternal health, water safety, and smoking cessation. Initiatives were delivered across multiple settings including hospitals, workplaces, schools, correctional facilities, early childcare facilities and community organisations.

Initiative delivery structures varied across the jurisdictions. Some departments delivered initiatives directly to the jurisdiction population, while others partnered with, or contracted external organisations to deliver initiatives. In several jurisdictions initiatives were delivered consistently across the jurisdiction, while others adapted to regional contexts or targeted initiatives to priority populations (for example migrant or Aboriginal and Torres Strait Islander populations).

Table 1: Participant distribution across jurisdictions and organisations

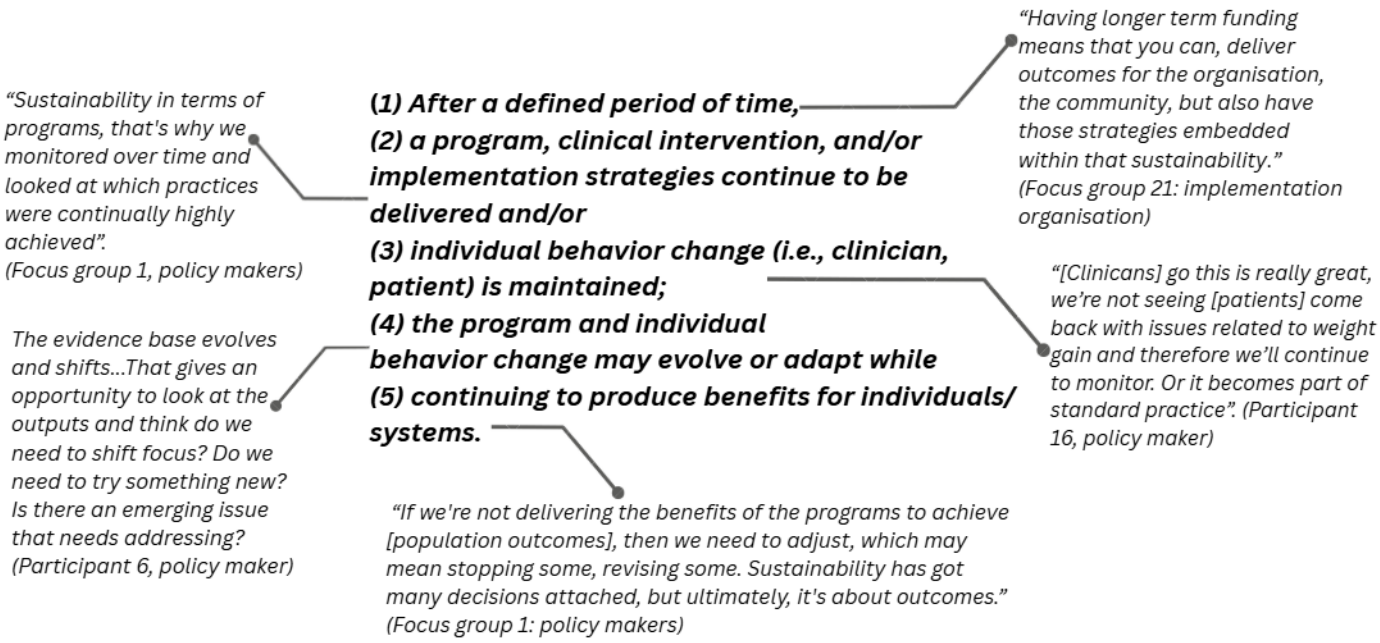
Jurisdiction (population)	**Policymakers: From Government department or statutory body**	**Practitioners: From implementation organisations (e.g. Non-government organisation)**	**Total participants**
New South Wales	5	4	9
Australian Capital Territory	4	0	4
Western Australia	2	5	7
Victoria	2	1	3
Queensland	4	0	4
South Australia	1	0	1
Tasmania	2	2	4
Northern Territory	3	0	3
Total (Average/ jurisdiction)	23 (2.9)	12 (1.5)	35 (5)

Aim 1. Australian policymakers and practitioners' views of sustainment of chronic disease prevention initiatives and what outcomes they consider important

Participants described various views of sustainment and outcomes they work towards, which were beyond the sustainment definition we provided. Through the coding process, the analysts observed how reflections mapped across the five components of Moore et al's definition of sustainability (29), thus, providing an ideal structure to represent the data for Aim 1 (Figure 1). Sustainment was broadly viewed as the continued use of an initiative and/or its direct benefits, e.g., changing individual behaviours. Timelines were generally considered in relation to funding and/or political cycles. Initiative sustainment was also seen to enable longer-term prevention outcomes. Some participants held multi-dimensional views of sustainment describing initiative sustainment, sustained impact, continued quality improvement and environmental restructure as necessary to achieve population health prevention outcomes. A participant in Focus Group 1 exemplifies such a multidimensional view:

> *"It's the partnerships, it's the support, it's the ability to use data and continually adapt a program so that it remains relevant. It's having smart implementation. It's a bunch of things that work together to create this notion called sustainability."*

Figure 1: Illustrative participant quotes aligned with Moore et al.'s sustainability definition



Aim 2: What are the sustainment challenges experienced by policymakers and practitioners? How do they respond to these challenges?

Four themes were identified relating to challenges to sustain initiatives: (1) *Funding and Resources*, (2) *Political Landscape*, (3) *Demonstrating Continued Need and Impact*, and (4) *Implementation Context*. Participants described a range of strategies and approaches used to respond to these challenges, captured across five themes: (5) *Adapt*, (6) *Harness Implementing Context*, (7) *Evaluate and Monitor*, (8) *Navigate the Decision Point*, and (9) *Early Intentional Efforts*. Table 2 (Supplementary file 2) details themes and corresponding subthemes with supporting quotes.

Table 2: Challenge and response themes, descriptions and Illustrative quotes

2 (a) Challenges

Theme 1: Funding and Resourcing

Funding and resourcing were a persistent sustainment challenge for policymakers and practitioners across all jurisdictions and contexts. This was characterised by fragmented and short-term funding cycles which limited the capacity for long term planning and sustained delivery (*subtheme 1A*). This was compounded by the withdrawal or reduction of funds (*subtheme 1B*) after an initial funding period, rendering some initiatives unable to continue. Even when funding was sufficient for initiative delivery, it rarely covered the development of other supportive infrastructure or pillars such as data collection and surveillance, seen to enable initiative sustainment (*subtheme 1C*).

> *It's really hard to make programs sustainable on small budgets in short timeframes* (Group interview 21, policymaker).

Theme 2: Political Landscape

The political landscape and its alignment with an initiatives' health topic, population, or setting, had a strong influence on the long-term delivery of individual initiatives, serving as a facilitator (when aligned) or barrier (when misaligned). Challenges in the political landscape primarily related to shifting political agendas *(subtheme 2A)* and tensions between policy and practice (i.e., misalignment between higher level decisions and practice-level delivery) (*subtheme 2B*). Policymakers in particular, described the challenge in balancing the mandates of government and ministers etc. with the needs and circumstances of the practitioners responsible for delivery. Finally, some policymakers and practitioners described policy change as an elusive goal, influenced by complex policy processes and timeframes *(subtheme 2C)*.

> *The only thing that makes a difference is if you can get some policy change or legislative change, which is even better, because then it can't be easily undone. Whereas policies can easily be undone by the next government, and that's the other*

problem too, that political cycle can really impact sustainability. (Group interview 18, practitioners NGO)

Theme 3: Demonstrating (a) continued need and (b) impact

Policymakers and practitioners voiced a tension in the slow translation of prevention efforts and the need for short term impact to justify initiative sustainment. This was in part an issue of prevention and the length of time required to demonstrate population level changes (*subtheme 3A*). In contrast one interview included a water safety initiative, where participants shared the initiative had shown direct impact on drowning mortality rates. In many cases there was a lack of infrastructure available to access timely data at both the population and initiative outcome levels (*subthemes 3B*). Underlying evidence challenges, was the range of capacity across jurisdictions to generate, interpret and/or apply the data most knew would support initiative sustainment (*subtheme 3C*).

"It would be great if we had some ability to collect higher quality data across the board. I can see that [jurisdictions] where they have that data have been able to make the case for that higher level of investment." (Group interview 10, policymakers).

Theme 4: Implementation Context

Constraints within the implementation context were reported as key challenges to the sustainment of initiatives. Staff turnover at both implementation and partner organisations threatened consistent support and continued delivery *(subtheme 4A)*. Other organisational and system constraints such as competing priorities or low capacity, put pressure on the ongoing delivery of some initiatives (*subtheme 4B*). Initiatives that were less aligned to an organisation or required more resource to maintain were particularly challenging to sustain *(subtheme 4C)*.

Sustainment of initiatives was also impacted if there was not time or capacity to engage and collaborate with the implementation context effectively at the start.

> *"It's always an issue for them [community-based organizations] because we are trying to partner with them because they are best place to deliver those programs. They have the relationships, they know what's going on in their communities, but they are completely under resourced…different agencies that could be supporting this work just don't make it a priority or don't commit long term to it*." (Group interview 22, practitioners)

2 (b) Responses

Theme 5: Adapt

Adapting was a common response to sustain an initiative beyond the initial implementation period. The initiative strategies or modes of delivery were adapted to accommodate continued delivery within the same or a different setting. Shifting what was delivered to be 'lighter touch' strategies enabled an initiative to continue with less ongoing support (*subtheme 5A*). Ensuring resources developed were able to be accessed beyond the lifecycle of an initiative or as part of an initiative transition to another organisation allowed some part of an initiative to sustain (*subtheme 5B*). For example, housing resources on a partner website. And in some cases, initiatives were pivoted to another population group or target setting to make the most out of a discontinued initiative (*subtheme C*).

> *"Light touch is the word which has been used quite often with the programs which are wrapping up…to have mechanisms in place to do some ongoing, but not overly exhaustive and time-consuming, strategies to drive the traffic to the courses, to the content."* (Group interview 4, policymakers)

Theme 6: Implementation context

There was a consistent perception that strengthening the capacity and connectivity within the implementation context enabled initiative sustainment. Many policymakers and practitioners responded to challenges by seeking to embed practices as 'business as usual' or to hand over an initiative to another organisation to sustain the delivery (*subthemes 6A*). This often relied on strong partnerships, which were seen as a key part of imitative sustainment (*subthemes 6B*). Genuine engagement and collaboration with both implementation organisations and target communities was seen to underpin partnerships (*subtheme 6C*). Trust was spoken of as an important facilitator for sustainment and as being at risk if a successful initiative ended. Another key response was to work with an individual to champion an initiative and in some cases connect champions across organisations to support one another (*subtheme 6D*). Finally multi-directional advocacy ensured focus was retained on initiatives, mitigating challenges to their sustainment (*subtheme 6E*).

> *"It's probably more intense at the beginning and that's around that relational work, building relationships, helping people feel comfortable using [the initiative], but also it's literally walking alongside them. And that might not translate into hard outcomes, but that is the stuff that will get the results, that is what will get them sustainable."*
> (Group interview 20, practitioners)

Theme 7: Evaluate and monitor

Policymakers and practitioners expressed the importance of generating timely, easy-to-interpret, relevant evidence. They worked within their capacities to collect and monitor outcomes to ensure there was evidence to support the need and impact for an initiative to sustain (*subtheme 7A*). Evidence could be applied across system levels from ministerial briefing to participant recruitment and so it was important to collect appropriate, meaningful outcomes (*subtheme 7B*). It was leveraged as a key response when funding challenges presented.

Evaluation or monitoring data was also used to inform initiative improvements. Continuous quality improvements were used by some to adapt initiatives (*subtheme 7C*) and in some cases user feedback was collected to refine initiatives and increase relevance for recipient communities (*subtheme 7D*).

> *"The data is really powerful. It's why we continue to be funded. The authorisation and sustainability of funding was never more obvious than when [key initiatives] were defunded and [ours] was the only [initiative] that retained funding and that was because we had data."* (Group interview 1, policymakers).

Theme 8: Navigate the decision point

In most response themes we present, policymakers and practitioners were actively navigating initiative decisions, weighing up constraints and context to get the most out of an effort and deliver outcomes long-term. At times this included creative responses, working flexibly within the existing structures to support partners and initiatives (*subtheme 8A*). When initiatives were unable to be sustained by the policymakers or practitioners directly, some transitioned delivery to other organisations better positioned to sustain them (*subtheme 8B*). However sometimes this required difficult decisions such as ending funding for an initiative (*subtheme 8C*).

> *"We are looking at pooling grants funding where we've got aligned purposes and sequencing. For example, there are some funders that have much more money than we do, and they have indicated that if we work with a community first for three years, they will come in with a larger amount of money for a further seven years."* (Group interview 10, policymakers)

Theme 9: Early intentional efforts

Some policymakers and practitioners shared that in order to support initiatives to sustain it was important to consider the life of the initiative from the start. In practice this could present in

different ways. Starting small, for example, a pilot or seed funding, was used to garner interest from partners or demonstrate success enabling access to more substantial funding (subtheme 9A). Collaborating to design initiatives from the start that fit well within that context was another response utilised (subtheme 9B). Another approach was to pre-develop an effort waiting for the right political window or funding opportunity which may enable sustainment – for example policy change (subtheme 9C). Finally in some cases policymakers and practitioners planned for sustainment from the start, considering what actions were needed to support sustainment, for example building a supportive environment around the initiative (subtheme 9D). These efforts were intentional with an understanding of the policy level environment and the diverse relationships needed to support an initiative to sustain.

> *"With [setting], we made sure that every activity we did within that program could be embedded and just be used as business as usual within [setting]…we develop a lot of professional development courses for [staff] and we make sure that they're accredited, that they actually align with the [guidelines in setting], so everything that we do, we aim to not be an add on to a particular setting."* (Group interview 4, policymakers).

Mapping responses to challenges

Table 3 displays the mapping of responses to challenges, as described by participants. Funding and resourcing challenges were associated with the broadest range of responses, followed by challenges related to the policy landscape and implementation context. Challenges related to demonstrating need and impact were associated with the fewest responses.

Table 3. Mapping of responses to challenges, as described by participants

Challenge	Response to the challenge
Theme 1. Funding and resources	
1A. Fragmented and short-term funding	5A Simplify with 'light touch' models 5B resources live on

	5C Retrofit and align with new priority 6A. Embed within existing systems 6B. Build and maintain partnerships 6E. Advocacy maintains agenda 8A. Work creatively within constraints 9A. Small success to build momentum
1B. Withdrawal or reduction of funds	5A Simplify with 'light touch' models 5B resources live on 5C Retrofit and align with new priority 6A. Embed within existing systems 6B. Build and maintain partnerships 6E. Advocacy maintains agenda 7A. Produce essential evidence 8A. Work creatively within constraints 8B. Handover responsibility 8C. Discontinue the initiative
1C. Insufficient funding for essential prevention pillars	5A Simplify with 'light touch' models 6A. Embed within existing systems 6B. Build and maintain partnerships 6D. Champions keep up the good work 9A. Small success to build momentum
Theme 2 Policy Landscape	
2A. Shifting policy agendas	5A Simplify with 'light touch' models 5B resources live on 5C Retrofit and align with new priority 6D. Champions keep up the good work 6E. Advocacy maintains agenda 7A. Produce essential evidence 8B. Handover responsibility 8C. Discontinue the initiative 9C. Anticipate windows of opportunity
2B. Tension between policy and practice	6A. Embed within existing systems 6C. Engage communities and foster trust 8C. Discontinue the initiative
2C. Policy change is an elusive goal	6E. Advocacy maintains agenda, 7A. Produce essential evidence 9C. Anticipate windows of opportunity
Theme 3 Demonstrating (a) continued need and (b) impact	
3A. Difficult to measure prevention	7A. Produce essential evidence 7B. Use appropriate indicators 8A. Work creatively within constraints
3B. Limited or inadequate monitoring systems	7A. Produce essential evidence 7B. Use appropriate indicators 7C. Continuous Quality Improvement
3C. Gaps in capability to generate and apply evidence	7B. Use appropriate indicators

Theme 4 Implementation context	
4A. Staff turnover	5B resources live on 6B. Build and maintain partnerships 6D. Champions keep up the good work
4B. Organisational and system constraints	5A Simplify with 'light touch' models 6B. Build and maintain partnerships 6C. Engage communities and foster trust 6E. Advocacy maintains agenda 7B. Use appropriate indicators 9A. Small success to build momentum
4C. Initiative misalignment	5C Retrofit and align with new priority 7C. Continuous Quality Improvement 7D. Respond to user feedback to optimise fit 8C. Discontinue the program 9B. Design for feasibility and fit
Note: Number and lettering matches to themes and subthemes reported in results and listed in Table 2.	

DISCUSSION

This study examined how Australian policymakers and practitioners understand and support the sustainment of chronic disease prevention initiatives. Although many of the sustainment challenges identified were consistent with previous literature (13,30), we found policymakers and practitioners actively employed a range of approaches to overcome challenges and support initiatives long-term. By linking commonly encountered sustainment challenges with the strategies used to address them in practice, this study provides a practical foundation for advancing the currently limited evidence on policy-level strategies to support sustainment and for future research to evaluate which strategies are most effective under which circumstances. Definitions and understandings of sustainability vary across public health and implementation science (2,4,5,7,13,31). Participants' in this study conceptualised sustainment across multiple outcomes consistent with Moore et al's multidimensional definition, including ongoing initiative delivery, maintenance of behaviour change, adaptation over time and the continuation of benefits for individuals and systems (29). However, outcomes of interest varied person-to-person and between some organisations. These findings suggest efforts to improve long-term

initiative delivery may need to integrate multi-dimensional understandings of sustainment and explore sustainment outcomes relevant to policy settings across the prevention system. For example, future evaluations of sustainment may benefit from employing innovative methods to explore population impact, for example considering a range of sustainment outcomes in simulation models (32).

The identified challenges are broadly consistent with previous qualitative research (22) and established sustainability determinant frameworks including the Integrated Sustainability Framework (5) and the Dynamic Sustainability Framework (7). While unstable funding is a common determinant of sustainment (10,13,33,34), our findings distinguished between funding initiative delivery and adequately funding the infrastructure required to sustain initiatives. In practice, initiatives may have been implemented well but were unable to be embedded into existing systems and structures sufficiently to support sustainment. For example, inadequate funding contributed to some of the capacity challenges within the implementation context such as insufficient resourcing to develop partnerships or access to ongoing staff training. Furthermore, funding rarely extended to support the data systems needed to generate population relevant impact or to meaningfully evaluate initiatives long-term. Collectively, these challenges suggest, that funding models focused solely on initiative delivery may inadvertently undermine sustainment by limiting investment in the systems required to support ongoing delivery. Future funding approaches may benefit from ensuring the infrastructure, e.g., monitoring systems, evaluation capacity, workforce development, and partnerships required to support initiative sustainment are also resourced (35).

Consistent with previous studies (20,22) changes in political priorities or government agendas were described as a major challenge to the long-term sustainment of prevention initiatives. However, our participants emphasised that embedding initiatives within policy was a key mechanism for supporting long-term sustainment but recognised that this was difficult for them

445 to achieve and often beyond their direct influence. Similar observations have been made in
446 other areas such as healthy food retail, where a recent Australian qualitative study of 17
447 practitioners or retailers, found formal policies governing foodservice outlets supported
448 sustainment by embedding practices (36). These findings suggest that despite being viewed as
449 critical to sustainment, and our participants being actors within the system, their ability to
450 influence policy decisions is often constrained by broader structures such as political systems
451 and competing government priorities. Future research should therefore explore approaches that
452 strengthen the capacity of policymakers and practitioners to influence policy change (20).

453 Our study synthesised diverse practical responses used by policymakers and practitioners to
454 support initiatives to sustain. While research examining sustainment strategies is emerging (37–
455 41), few have explored how policymakers and practitioners employ strategies to sustain
456 initiatives at the prevention system level. The challenge-response mapping generated in this
457 study provides an initial basis for understanding how and in what circumstances responses are
458 employed in real-world settings and may help inform future efforts to tailor sustainment
459 support to context-specific challenges. Next, we discuss three common responses and consider
460 their implications.

461 Adapting an initiative was used to respond to funding, political and implementation context
462 challenges. Specifically, adaptations enabled a transition to less resource intensive delivery or
463 'lighter touch' sustainment. Adapting or reducing initiative components during sustainment is
464 common. A review of the sustainment of school-based health initiatives found none of the 18
465 included studies sustained all initiative components (6). While such responses may enable
466 initiatives to continue when conditions change, they also raise important questions regarding
467 initiative drift and the extent to which adaptations impact effectiveness over time (5,7). Further,
468 it was recognised that not all initiatives should be sustained indefinitely. Decisions to
469 discontinue initiatives were often difficult but necessary responses to resource constraints,

duplication with other initiatives or changing priorities. Supporting prevention agencies to make evidence-informed decisions regarding continuing, adapting, or discontinuing initiatives may help ensure finite prevention resources are allocated to initiatives most likely to achieve meaningful impact (42). Future research should identify which adaptations support sustainment without undermining initiative effectiveness and how to best support this decision-making process (5).

Maintaining partnerships and engaging communities were central responses to challenges across funding, policy/ practice tensions and the implementation context. Policymakers and practitioners leveraged the strengths of diverse actors, across levels of government (state/territory or national), advocacy leaders, sector partners (other departments, large organisations, research bodies) and community or end users, to support sustainment efforts. They also employed various collaboration/engagement processes such as formal partnerships, contractual agreements (16), network weaving (build on networks and collaboration within and between organisations)(43), communities of practice, governance boards, consumer panels, and co-creation with grassroots organisations and communities (44). These findings align with previous conceptual work suggesting that policy agencies influence implementation not only through direct strategies, but by identifying, selecting and coordinating partnerships capable of delivering the support required across the lifecycle of an initiative (39). The nature of these partnerships and engagement processes may also represent unmapped, policy relevant sustainment strategies which require further exploration. A recent systematic review exploring the sustainability of 22 health interventions in Africa identified eight unique strategies unable to be mapped to the existing taxonomies (43). Some of these may align to our findings including *adaptation*, *multi-sectorial partnership*, *active stakeholder engagement, and collaboration and co-creation* (45). Categorising strategies used by policymakers and practitioners such as those in our findings to implementation strategy taxonomies and then

testing these in policy settings may inform the design of support that is appropriate for policy implementation in real-world delivery contexts.

Finally, when initiative sustainment was planned for in this current study it included considering the type and duration of ongoing support policymakers or practitioners would provide as well as designing for this outcome. For example, building evidence to secure future investment or engagement, embedding activities into routine systems and collaborating with organisations capable of assuming responsibility for ongoing delivery. However, across the sample, sustainment decisions were frequently reactive to address challenges as they arose, rather than being planned. In a previous survey of Australian prevention policymakers and practitioners, sustainability was ranked as fourth out of 17 outcomes that inform initiative decisions (46), indicating that while sustainability is valued, there may be a gap in how to operationalise it. This is consistent with the lack of empirical guidance on how to plan for sustainment during initiative development and implementation, despite longstanding recommendations to consider sustainment early in an initiative lifecycle (8). Our findings suggest translating this to practice may require moving beyond broad recommendations to "plan early" towards practical guidance and tools that help policymakers and practitioners anticipate challenges and align initiative design with their capacity for ongoing support. A recent typology of sustainment approaches similarly suggests that organisations consider the level of sustainment support they are willing and able to provide when designing and implementing initiatives (47). Strengthening sustainment planning practices may improve the longevity and impact of prevention investments and maximise long-term population health benefits.

Strengths and limitations

A strength of this study was the inclusion of policymakers and practitioners from every Australian jurisdiction, providing insight into sustainment across a range of prevention contexts and organisational structures. We maintained high Information Power through a specific sample, rich dialogue, and in-depth analysis (48). We also triangulated the study with data from both policymakers and practitioners. Several limitations should be acknowledged. Planning for sustainment was not explicitly explored within the interview guide and emerged inductively through analysis. Future studies could investigate sustainment planning more directly to better understand how policymakers and practitioners anticipate and prepare for sustainment challenges. In addition, the challenge-response mapping was generated through secondary analysis and should therefore be considered hypothesis generating rather than causal. Finally, as this study was conducted within the Australian public health context the transferability to other contexts is unknown, although findings may be relevant to other high-income countries with publicly funded health systems.

CONCLUSION

Translating and sustaining effective health initiatives requires understanding how policymakers and practitioners support prevention. They play an active role in the long-term delivery of initiatives, navigating dynamic environments with competing priorities. Sustaining initiatives in this real-world context necessitates two areas of consideration and future research. Firstly, that evidence-based initiatives are designed for implementation and delivery within real-world contexts. This requires anticipating the long-term support required to sustain the initiative and the potential ongoing context constraints. And secondly, that policymakers need access to practical guidance and evidence-based tools to support sustainment planning in their contexts. Wrapping such support around evidence translation efforts will encourage initiatives to sustain at scale and enable population impacts to be realised.

DECLARATIONS

Ethics approval and consent to participate and publish

This study was approved by the University of Newcastle's Human Research Ethics Committee [H-2023-0147]. Participants were supplied with an information statement covering the intent to publish findings from the study. Consent was sort and recorded verbally at the start of data collection from all participants

Availability of data and materials

Data used in this study have been de-identified and have been synthesised for analysis. De-identified transcript excerpts are included in this published article and its supplementary information files. Additional information can be made available upon reasonable request to the corresponding author.

Competing interests

We declare no competing interests.

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Authors contributions

CG supported study development, conducted data collection, led data de-identification, was the primary analysist, led interpretation and drafting the manuscript. CL supported study development, guided data collection methods, supported analysis and interpretation. LW supported study conceptualization and interpretation. AH supported study conceptualization and interpretation. WP conducted data collection, supported data cleaning and reflexivity. BP coordinated ethics applications, participant recruitment, data collection and supported reflexivity during data collection. RS supported study conceptualization and interpretation. NN, lead study conceptualization, was primary interviewer, supported analysis of final findings and manuscript drafting. All authors critically reviewed and revised the final manuscript.

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