Transforming towards sustainable health and wellbeing systems

van Vooren, N. J. E.; Steenkamer, B. M.; Baan, C. A.; Drewes, H. W.

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Transforming towards sustainable health and wellbeing systems: Eight guiding principles based on the experiences of nine Dutch Population Health Management initiatives

N.J.E van Vooren[a,b,*], B.M. Steenkamer[b], C.A. Baan[a,b], H.W. Drewes[a]

[a] Centre for Nutrition, Prevention and Health Services, Department of Quality of Care and Health Economics, National Institute for Public Health and the Environment (RIVM), P.O. Box 1, 3720 BA Bilthoven, the Netherlands
[b] Tilburg University, Tranzo, Tilburg School of Social and Behavioural Sciences, PO Box 90153, 5000 LE Tilburg, the Netherlands

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ABSTRACT

Introduction: Population Health Management initiatives are increasingly introduced, aiming to develop towards sustainable health and wellbeing systems. Yet, little is known about which strategies to implement during this development. This study provides insights into which strategies are used, why, and when, based on the experiences of nine Dutch Population Health Management initiatives.
Methods: The realist evaluation approach was used to gain an understanding of the relationships between context, mechanisms and outcomes when Population Health Management strategies were implemented. Data were retrieved from three interview rounds (n = 207) in 2014, 2016 and 2017. Data was clustered into guiding principles, underpinned with strategy-context-mechanism-outcome configurations.
Results: The Dutch initiatives experienced different developments, varying between immediate large-scale collaborations with eventual relapse, and incremental growth towards cross-sector collaboration. Eight guiding principles for development towards health and wellbeing systems were identified, focusing on: 1. Shared commitment for a Population Health Management-vision; 2. Mutual understanding and trust; 3. Accountability; 4. Aligning politics and policy; 5. Financial incentives; 6. A learning cycle based on a data-infrastructure; 7. Community input and involvement; and 8. Stakeholder representation and leadership.
Conclusion: Development towards a sustainable health and wellbeing system is complex and time-consuming. Its success not only depends on the implementation of all eight guiding principles, but is also influenced by applying the right strategies at the right moment in the development.

1. Introduction

Most western countries experience the effects of an ageing population with a changing demand for healthcare, coupled with technological innovation [1]. Due to these developments, healthcare expenditures are rising and the challenge of maintaining a high quality of care, which is still affordable, increases. One way to address this challenge is to develop Population Health Management (PHM) initiatives, which are cross-sector partnerships that aim to reorganise and integrate services across public health, healthcare, social care, and community services, in order to improve population health and quality of care, and to reduce costs growth, the Triple Aim (TA) [2–5]. The PHM initiatives aim to develop from healthcare systems (focused on healthcare) towards health and wellbeing systems.

Over the years, many PHM initiatives have been introduced. For example, Gesundes Kinzigtal in Germany [6,7] is based on cross-sector collaboration between the health sector and care sector (e.g. hospitals, social care and nursing staff), other stakeholders in the region and the participation of its patients. The Accountable Health Communities in the US [8,9] is an initiative funded by the Centre for Medicare & Medicaid Services (CMS) to test whether systematically identifying the health-related social needs of the population will impact healthcare costs and healthcare utilization. Also in England a wide variety of regional stakeholders are implementing sustainability and transformation partnerships (STPs) in an effort to make better use of resources and improve the health and wellbeing of its population [10,11]. Similarly, in the Netherlands, PHM initiatives

* Corresponding author.
E-mail addresses: natascha.van.vooren@rivm.nl (N.J.E van Vooren), betty.steenkamer@rivm.nl (B.M. Steenkamer), caroline.baan@rivm.nl (C.A. Baan), hanneke.drewes@rivm.nl (H.W. Drewes).

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Table 1
Definitions of main concepts of the SCMO configurations.

Strategy	Refers to intended plans of action [21]. In this study the strategies are aimed at the reorganisation and integration of public health, health care, social care and community services including 'partner' sectors (e.g. housing, transport), to promote the TA and develop into a health and wellbeing system.
Context	Pertains to the 'backdrop' of programmes, which can be understood as any condition that triggers or modifies the mechanism [21]. In this study the contextual conditions can be the different multilevel sociocultural, relational, economic, political or historical conditions in which the strategies are implemented, which in turn causes certain mechanisms to be triggered.
Mechanism	Refers to the generative force that leads to outcomes [21]. Mechanisms should not be mistaken for strategies, as strategies are seen as intended plans of action, whereas mechanisms are the responses to the intentional resources that are offered [21].
Outcome	Refers to the intended or unintended process outcomes [21]. This study focuses on the outcomes of strategies of PHM initiatives regarding the process of reorganizing and integrating services across sectors to improve the TA and develop to a health and wellbeing system.

are being implemented [12]. In 2013, nine of these initiatives were assigned by the Dutch Ministry of Health, Welfare and Sports as 'pioneer sites' with the aim of developing better healthcare with lower costs [13].

Although the number of regional cross-sector partnerships for health is growing [14], the initiatives are struggling to initiate transformation towards a health and wellbeing system [15,16]. In order to understand how to act upon the complexity of such system change, answering the question about which strategies work or not, how and why would be valuable [17,18].

The development of the Dutch pioneer sites towards PHM, and the strategies that were implemented have been monitored by the National Institute for Public Health and the Environment (RIVM) in the National Monitor Pioneer sites (NMP) from 2013 until 2018 [19]. The Dutch NMP provided in-depth information regarding the strategies, which were implemented in different contexts and within different developmental phases. This article therefore aimed to add new insights to the current literature by providing guiding principles, specifically which strategies to use, and when and why these may or may not work, in the development to a health and wellbeing system. The following research question will be answered:

Given the development of the Dutch PHM initiatives, what are the guiding principles, and underlying strategy-context-mechanism-outcome relationships, for the development towards a health and wellbeing system?

2. Methods

2.1. Study design

This study applied the realist evaluation approach to gain an understanding of what works for whom, in which context and with which outcomes, based on the argument that interventions work differently in different contexts [20,21]. In this approach, the relationships between the context (C), the mechanism (M) and the outcome (O) are identified (Table 1). These CMO configurations are heuristics that help to explain why an intervention or strategy is successful in context A, but not in context B [20,21]. This study aimed to understand which strategies were implemented within the pioneer sites to develop towards health and wellbeing systems, and why some of these strategies were successful while others were not. For this reason, the strategies (S) were explicitly identified, along with the context (C) in which they were implemented, the mechanism (M) that was triggered and which outcome was consequently generated (O) [22,23]. In this research these relationships are named SCMO configurations. The definition of each SCMO component is described in Table 1.

2.2. Theoretical framework

In order to gain more understanding of the processes and components that play a role in collaboration between multiple sectors, the theoretical framework for PHM, named the Collaborative Adaptive Health Network (CAHN), has been used for data collection and analysis [24]. CAHN is based on an international literature review describing the components (e.g. leadership, social forces, relations, accountability and regulation) and their underlying theories for the successful development of PHM [24].

2.3. Data collection

The data for this research was gathered as part of the NMP project during 2013-2018. During these five years, the NMP focused on the experiences of stakeholders of the pioneer sites, the development of these pioneer sites, and its results regarding the TA [25]. This research is based on stakeholders' experiences, identified through quarterly updates with pioneer sites' program managers and three semi-structured interview rounds with multiple stakeholders of the pioneer sites (see Appendix I for more information about the design of the nine Dutch pioneer sites).

2.4. Semi-structured interviews

The study's results are based on three face-to-face interview rounds (2014, 2016, 2017–2018). For each pioneer site, the sites' program managers and the stakeholders in the development, namely representatives (mostly CEO level) from the involved hospitals, physician care groups, healthcare insurance companies, other healthcare organisations, and patient representative organisations were interviewed. Furthermore, municipalities' representatives (e.g. local councillors), healthcare professionals, business sector stakeholders, and educational institutes' representatives were selected for interviews if applicable for the pioneer site. The interview guide focused on stakeholders' experiences with the development of the pioneer sites, specifically focussing on the SCMOs. Furthermore, the CAHN framework [24] was used as a tool to make sure all different aspects that could influence PHM development were addressed.

2.5. Quarterly updates

As the process of PHM development is dynamic, in addition to the interview rounds two to four times a year updates were conducted by telephone with the pioneer sites' program managers. In these updates the program managers were interviewed about their recent experiences, changes in governance, and developments in activities of the pioneer sites. These updates were used as a form of triangulation for the data we gathered from the interviews.

2.6. Analysis

The analysis of the three interview rounds and the quarterly updates can be divided into four iterative steps:

2.6.1. Identification of SCMO configurations

The semi-structured interviews of interview rounds 1 and 2 (2014, 2016) were transcribed and, together with the notes from the quarterly updates until July 2017, analysed in MaxQDA 2018 by two researchers. The researchers both identified half of the SCMO

configurations within each interview and cross-checked the other half of the data. These SCMO configurations were coded by a coding scheme based on the components of the CAHN framework. Each researcher coded half of the data and cross-checked the coding of the other half of the SCMO configurations.

2.6.2. Clustering the SCMO configurations into concept-guiding principles

The coded SCMO configurations from step 1 were merged to larger overarching configurations and were then thematically clustered by one researcher and cross-checked by the research team. The clustering was based on the intended outcomes for PHM development, identified from the interviews, e.g. creating commitment for a PHM vision, or creating a learning infrastructure. Based on these themes, eight initial-guiding principles were constructed.

2.6.3. Refinement of the initial-guiding principles

The data from interview round 2017 has been used to refine the initial-guiding principles. Based on the data from the interviews and the quarterly updates from the final half of 2017 and early 2018, new SCMO configurations were made and coded by the research team. Clustering the SCMO configurations within the initial-guiding principles helped refine the initial guiding principles. No new guiding principles were identified.

2.6.4. SCMO configurations related to PHM development

In addition to forming the guiding principles, the researchers tried to gain more understanding of the development of PHM initiatives. Based on the ReThink Health Pathway [26] development phases fitting the context of the Dutch PHM initiatives were defined (see Table 2). The SCMO configurations within each guiding principle were placed in one of the development phases in an iterative process by the research team.

3. Results

The nine pioneer sites developed differently towards a health and wellbeing system, due to the sites' contextual differences and the different strategies that were implemented. Four of the initiatives immediately made big steps towards cross-sector collaboration (phase 3, see Table 2), without first building a collaborative foundation by creating commitment and working together on a small-scale level. These initiatives experienced a relapse to phase 1. Two initiatives have developed their collaboration, but remained working within the healthcare sector (phase 2). Three initiatives developed a step-by-step approach to small-scale cross-sectoral collaboration, and after several years are now starting with small transformations of the system at neighbourhood-level (phase 4).

Based on the experiences retrieved from 207 interviews between 2014–2017 from the nine pioneer sites, multiple strategies for PHM development were identified, along with the contexts and mechanisms that led to positive or negative outcomes (see Appendix II for more information about the interviewees). These SCMO configurations were clustered into eight guiding principles for the development of PHM.

Each one of these guiding principles will be described below, followed by an example of the strategies that can be implemented, according the stakeholders' experiences, and the way the strategies' outcomes are affected by different contexts and mechanisms. A more detailed overview of a selection of the SCMO configurations per guiding principle, throughout the developmental phases, is provided in Appendix III.

Table 2
Definitions of development phases of the Dutch PHM initiatives, based on Rethink Health Pathway [26].

Phase 1: Willingness to participate in the PHM initiative
A joint vision is underpinned by the willingness to jointly shape healthcare, social care and prevention.
Phase 2: Participation in PHM interventions within sector boundaries
Interventions are being developed and stakeholders cooperate within the current sector boundaries, mainly within the field of healthcare.
Phase 3: Broadening and deepening of cross-sector collaboration
The current collaboration is expanding with stakeholders from new sectors in order to achieve the TA for the population. The network's focus changes from healthcare system towards a health and wellbeing system, including an increasing amount of cross-sector interventions and corresponding financial arrangements.
Phase 4: Transition towards a health and wellbeing system
The stakeholders reorganize and integrate their services in order to transform towards a health and wellbeing system.
Phase 5: Institutionalization
The new structures become the norm, and TA results are visible for the population.

3.1. Guiding principle 1: create and maintain commitment between organisations while working towards a health and wellbeing system

Stakeholders from different participating organisations of the pioneer sites experienced working within a PHM initiative as complex. These stakeholders had to balance their own organisational interests with the interests of the PHM initiative (e.g. balancing financial growth of the hospital with substitution of care from the hospital to general practitioners). The level of commitment to the PHM initiatives' aim was therefore always balanced with the organisational one.

Within the pioneer sites, two types of strategies were applied in order to address this trade-off between interests; 1) creating a shared vision, and 2) addressing the organisational motivations that play a role in their commitment towards a PHM vision (see Appendix III for more detailed examples which strategies are used during which phase of the development).

The strategy 'create a shared vision' (S) varied in success, depending on the context in which it was implemented and the mechanisms that were triggered. For example, creating a mutually supported vision (S) was according to the stakeholders from different pioneer sites more successful in pioneer sites that leveraged a visionary leader, whom originated from an organisation that was not perceived as a threat for being in the lead of the development, and was supported by funders (C). Communication of the relevance of a shared vision by the visionary leader created a higher sense of urgency for change (M), and for commitment towards a mutual PHM vision (O). On the contrary, according to a program manager, when a more threatening organisation took a leading role of the initiative (C), this created distrust among the stakeholders (M), resulting in less commitment with the ideas of this leader (O).

> "*Professionals were put under pressure and so were institutions; and I think that has been counterproductive. I firmly believe this has led to certain preconceptions, which I still suffer from every day*." (I50R2)

3.2. Guiding principle 2: achieve mutual understanding of norms, values and roles, and create trust

When working within a PHM initiative with multiple different stakeholders, the stakeholders addressed the relevance to understand the differences in norms, values and roles as a basis for building mutual understanding and trust. This was mentioned for working both within the healthcare sector (e.g. differences in working standards between specialists and general practitioners) and

between sectors (e.g. different jargon and values between the managers of healthcare insurers and municipalities). The Dutch pioneer sites have invested in two types of strategies to achieve mutual understanding and trust; 1) creating awareness of the differences in norms, values and roles between the stakeholders; 2) investing in interaction between the stakeholders to build relationships and create mutual trust.

Investing in interaction between the stakeholders from different organizations (S) could in turn also influence the awareness of differences between stakeholders. For example, when primary and secondary care started working together (e.g. in PHM development phase 2, see Appendix III) (C), the increased interaction between professionals was said to create awareness of differences in working standards and working habits (M), and resulted in mutual understanding and trust (O).

> "*General practitioners and specialists have their own standards. These differences need to be discussed [. . .]. Only by first discussing these, can you reach a consensus. Which in turn makes collaborating easier*." (I54R3)

3.3. Guiding principle 3: define preconditions for accountability to be able to share both successes and risks

After agreeing upon working in a PHM initiative, stakeholders have mentioned their responsibility for their individual organisations expands with a shared responsibility for the PHM initiative. To deal with the uncertainty that results from this shared responsibility, pioneer sites' stakeholders focused their strategies on defining preconditions for shared accountability between the organizations, dividing tasks and roles, and sharing successes and risks. The issue of accountability is mainly mentioned by healthcare insurers, hospitals, health care groups and program managers.

One way in which the stakeholders tried to define the preconditions for shared accountability was by signing governance agreements (S). Governance agreements alone were not a guarantee for success however; this success depended on the context in which the agreement was signed. For example, in some pioneer sites the differences in accountability of the individual organisations (e.g. the healthcare insurers and the municipality) (C) created the urgency among the stakeholders to gain insight in each organisation's responsibilities within the PHM initiative (M). This made the stakeholders create a mutually supported agreement (O). However, the pioneer sites that experienced multiple personnel changes, were prone to changes of perspective on the relevance of this agreement (C). The stakeholders experienced a decrease in trust when partners were not working according to the agreed upon governance agreement anymore, (M) which resulted in uncertainty of the usefulness of the agreement (O).

> "*You know, I have two governance agreements with this [mentions one of the stakholders] [. . .] but to date it's all just talk. [. . .] then you get trust, distrust, believes*" (I3R3)

3.4. Guiding principle 4: Ensure regional agreements are underpinned by political support in order to influence policy development

According to the stakeholders, working towards PHM comes with several uncertainties about what is possible within the regulations. Political support was seen as essential to create trust and certainty among pioneer sites' stakeholders in their development towards a new health and wellbeing system. Furthermore, communicating the barriers that these stakeholders experience during their development can provide an opportunity for politicians and policymakers to react and provide support when perceived necessary.

For example, communicating the constraints around the current finance framework (S) is relevant when PHM sites are reorganizing and integrating services across sectors, aiming to find a solution for new ways of payment e.g. structurally financing a program manager for the initiative (C). In such a situation, healthcare insurers felt restrained by the regulations of the Health Insurance Act, implemented since 2006, and experienced insufficient support within the current policy for finding structural solutions (M). This caused the insurers to choose short-term solutions for financing (O).

> "*The biggest problem is that when you come up with new ideas, our finance framework is not set for this*." (I48R3)

3.5. Guiding principle 5: make sure that the financial incentives align with overarching system goals

In the Netherlands, the dominant payment method is fee-for-service. The volume-based fee-for-service incentive is misaligned with the overarching system goals. Even though stakeholders acknowledged that the use of alternative payment methods (e.g. bundled payment) was possible within the current financing system in the Netherlands, stakeholders of most sites were hesitant to use these methods (especially across sectors e.g. healthcare and social care) as a consequence of uncertainties and possible risks that were difficult to foresee. However, two pioneer sites have started in phase 4 by using lumpsum budgets from multiple funding partners (e.g. healthcare insurer and municipality) to improve health in selected neighborhoods. While more knowledge on implementing alternative payment methods is needed, the pioneer sites searched for other ways to facilitate their development, e.g. by long-term contracts and the use of (small scaled) shared savings agreements.

In the regions where the healthcare insurers were mainly focused on a transition within the healthcare systems (not yet in the health and wellbeing system), they were looking for ways to substitute care from hospitals (acute care) to primary care (C). The long-term contracts with the hospitals created a sense of security for hospitals to invest in this transition without the risks of immediately losing funding (M). Several hospitals and healthcare insurers agreed upon this method of contracting (O). This strategy appeared useful in the above-mentioned context. However, when aiming to work with stakeholders from additional organisations, and eventually across multiple sectors (C), the long-term contracts between hospitals and healthcare insurers created displeasure among the organisations of the PHM initiative (e.g. primary care groups) that were not involved in the contract and that did not know the details of the contract and the possible repercussions (M). This started to create a barrier for collaboration with these organizations (O).

> *"[Hospital and healthcare insurer] ask us "why don't those general practitioners cooperate with us?" And then I say, "have you even asked us*?" (I10R3)

3.6. Guiding principle 6: ensure a learning cycle by developing a data and knowledge infrastructure on both the organizational and the regional level

In order to know what interventions should be implemented to achieve the Triple Aim and to evaluate the ongoing development towards PHM, more knowledge is needed about the current health rates, healthcare costs and quality of care (TA) of the population. The stakeholders across the initiatives and across organisations experienced a lack of sufficient data and knowledge infrastructure to provide the necessary information of the TA of the population. The pioneer sites mentioned the relevance of a decent data and knowledge infrastructure as a basis of a continuous learning cycle for the implementation of interventions in the region.

The strategy 'create understanding of the needed budget and expertise to achieve a data infrastructure' (S) was not always implemented at the start of the PHM initiative (C), which caused the stakeholders to underestimate the amount of budget and knowledge that is necessary for developing a sufficient data-infrastructure (M). This was one of the reasons the development of data-infrastructure was delayed in multiple pioneer sites (O).

"*And they [another pioneer site] had thought beforehand; what do we need and how should we connect the data. We had thought too little about that, we thought we would get around to it sometime. But we had underestimated the time, money and energy this [connecting data and systems] takes*." (I42R3)

3.7. Guiding principle 7: enable community involvement and gain insight in communities' needs

The sites struggled to find ways to gain input from the communities and to involve them in the initiatives. However, the relevance of understanding communities' needs and facilitating their involvement in the PHM initiatives was mentioned by the pioneer sites, and the stakeholders within the pioneer sites worked together to gain community input.

Community input was for example used as a way to create an overarching focus (S) in a context where multiple stakeholders across different sectors worked together, but kept seeing barriers to work across domains (C). The idea was posed to focus on 'what the citizen wants', the overarching aim of the stakeholders, to help the stakeholders realise the necessity to work together to address the needs of the community (M). However, in this case funding was still needed to create such a role for the community (O).

"*I think [. . .] it's an issue [patient empowerment] which you cannot be against as a health institution and which has nothing to do with substitution or competition. So stakeholders can participate without being confronted with conflicting interests*." (I22R3)

3.8. Guiding principle 8: provide suitable stakeholder representation and suitable leadership to promote the development towards a health and wellbeing system

The transition towards a new health and wellbeing system was experienced as complex and time-consuming across the initiatives. The pioneer sites have applied two types of strategies to positively influence the development towards a health and wellbeing system; 1) using the right form of leadership at the right moments of development, 2) creating suitable stakeholder representation within the initiative.

Using the right form of leadership (S) depends on the context within the pioneer sites. In pioneer sites that needed more commitment of the stakeholders to the PHM vision (C), visionary leadership was experienced as useful, as the visionary stakeholder had the expertise and the charisma to create a sense of urgency among the stakeholders (M), for their commitment with the PHM initiative (O). However, in initiatives with conflicts or distrust between stakeholders (C), according to these stakeholders facilitating leadership was needed to bridge the gap between the stakeholders (M) and to stimulate collaboration between the stakeholders.

"*Leadership is really important, and especially perseverance is really important. The start of the project is really good and you get lots of inspiration. However, especially when things get tough, leadership is so important, more so than during the start. Because you will need leadership to get you through resistance*." (I36R3)

4. Discussion

Based on the experiences of nine Dutch PHM initiatives, this study provided eight guiding principles for the development towards a health and wellbeing system. The guiding principles give insights in how to develop PHM by using the richness of the strategies, contexts, mechanisms and outcomes.

The themes that are addressed in the guiding principles are in line with the international literature about cross-sector collaboration and PHM [5,16,24]. In addition to this literature, this study provides insight into which strategies can be used to act upon these guiding principles (such as implementing the right type of leadership related to certain contexts and creating a shared PHM vision) from a comprehensive perspective, when these strategies can be successfully used and why. This study is the first to connect the guiding principles for PHM development with the phases of development. The pioneer sites that developed towards phase 3 (broadening and deepening cross-sector collaboration), were able to invest more successfully than the other sites in three guiding principles: (1) mutual commitment for the PHM vision, (2) realising mutual trust and understanding, and appointing the right leadership to direct their development (8). Focusing on these three guiding principles does not mean that the other principles do not play a role during the earlier developmental phases towards PHM. Nonetheless, based on the experiences of the Dutch sites, we hypothesize that the focus on commitment, trust and understanding and leadership and representation is most relevant when starting the development. The relevance of these three principles for PHM aligns with international literature [14,16]. However, after observing the development of the nine PHM initiatives for five years, sufficiently addressing these factors appears not evident.

The development towards a health and wellbeing system was experienced as time-consuming and complex. This was in line with other Dutch PHM initiatives [12] and with literature about societal transitions, explaining that these take about 20–30 years [27,28]. The pioneer sites were not (yet) able to fully develop towards phase 4 and 5 of the transition, therefore SCMO configurations for phase 4 and 5 of are missing in Appendix III. This includes for example configurations in guiding principle 5, focusing on financial alignment to the overarching system goals. While pioneer sites have worked on the engagement for new payment methods in phase 1–3, there is yet little experience of actual alignment of the financial incentives across sectors [29].

Apart from the complexity of the development, stakeholders mentioned the lack of urgency as an important factor for the pace of their development. Only a few pioneer sites experienced any urgency in their region due to a rapidly ageing population. Comparing the pioneer sites with international examples indicates that in addition to the earlier mentioned commitment, trust and leadership, the pace of development of the PHM initiatives would benefit from a greater sense of urgency [8,11]. This could be stimulated by national or regional governments. For instance in the US, eligible initiatives were provided additional funding by CMS. In the UK in light of devolution-city deals, initiatives were provided the control over (transformation) funds for regional population health plans [8,11,30]. In addition, the role of governmental stewardship for e.g. new payment models is addressed in international literature [16,29] as is addressing the economic and social urgency [11].

5. Study limitations

Due to the focus on stakeholders from the managerial level, who were more directly involved with the development of the PHM initiatives, most of the experiences in PHM development are from CEO level representatives. Little insights have been retrieved from

healthcare and care professionals or citizens themselves. Based on the experiences in this study and international literature [14,18,24], delegated leadership and thus additional understanding of the experiences of the health and care professionals and citizens will be valuable.

The Dutch pioneer sites did not yet fully develop towards a new health and wellbeing system, which caused a lack of information about the further development towards phase 4 and 5. Nonetheless, this research is one of the few in which PHM sites are followed during their development for five years, and provides relevant information with regard to their first developmental phases.

6. Future research

The guiding principles and their underlying SCMO's are created in the Dutch context of the nine pioneer sites based on experiences with the first phases of development towards PHM. Future studies evaluating the development of PHM initiatives in other countries and including further development phases can enrich the insights in relevant strategies and mechanisms in these contexts and across further development phases of PHM.

7. Conclusion

The development towards a sustainable health and wellbeing system is complex and time-consuming. The eight guiding principles developed in this study, supported by multiple SCMO configurations, provide new knowledge on how to develop to this health and wellbeing system. In addition, based on the experiences of the nine Dutch pioneer sites that followed different paths of development, insight in the use of these guiding principles during PHM development was gained. The success of the development towards a health and wellbeing system does not only depend on the implementation of all eight guiding principles presented in this study, but is also influenced by the focus on applying the right guiding principles at the right phase of development.

Author statement

All research steps were designed and discussed with the research team (HD, CB, BS & NvV). NvV, BS and HD collected the qualitative data among the nine Dutch PHM initiatives. NvV and BS analysed the data; which was iteratively discussed and further developed within the research team (HD, CB, BS & NvV). NvV drafted the manuscript and BS, CB and HD critically revised the manuscript. All authors read and approved the final manuscript.

Declaration of Competing Interest

None.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.healthpol.2019.11.003.

References

[1] OECD. Fiscal sustainability of health systems: bridging health and finance perspectives. Paris: OECD Publishing; 2015.
[2] Berwick DM, Nolan TW, Whittington J. The Triple Aim: care, health and cost. Health Affairs 2008;27(3):759–69.
[3] Steenkamer BM, Drewes HW, Heijink R, Baan CA, Struijs JN. Defining population health management: a scoping review of the literature. Journal of Population Health Management 2017;20(1):74–85.
[4] Kindig DA, Isham G. Population health improvement: a community health business model that engages partners in all sectors. Frontiers of Health Services Management 2014;30(4):3–20.
[5] Alderwick H, Ham C, Buck D. Population health systems: going beyond integrated care. London: The King's Fund.; 2015.
[6] Pimperl A, Hildebrandt H, Groene O, Schulte T, Meyer I, Wetzel M. Case study: Gesundes Kinzigtal Germany. In: Accountable Care in Practice: Global Perspectives. Durham Duke-Margolis Center for Health Policy; 2017.
[7] Hildebrandt H, Hermann C, Knittel R, Richter-Reichhelm M, Siegel A, Witzenrath W. Gesundes Kinzigtal Integrated Care: improving population health by a shared health gain approach and a shared savings contract. International Journal of Integrated Care 2010;10(e046):1–15.
[8] Alley DE, Asomugha CN, Conway PH, Sanghavi DM. Accountable health communities: addressing social needs through Medicare and Medicaid. The New England Journal of Medicine 2016;374(1):8–11.
[9] Fisher ES, Corrigan J. Accountable health communities: getting there from here. JAMA 2014;312(20):2093–4.
[10] Charles A, Available from: www.kingsfund.org.uk/publication/accountable-care-explained [accessed 2018 22 November] Accountable care explained; 2018.
[11] Steenkamer, B.M., De Weger, E., Drewes, H.W., Putters, K., Van Oers, H., Baan, C.A., Implementing Population Health Management: An international comparative study. Submitted.
[12] Lemmens LC, Drewes HD, Lette M, Baan CA. Populatiegerichte aanpak voor verbinding van preventie, zorg en welzijn. Nederlands Tijdschrift voor Geneeskunde 2017;161(D849).
[13] VWS. Kamerbrief Proeftuinen en pilots' betere zorg met minder kosten'. Den Haag: VWS (Ministerie van Volksgezondheid Welzijn en Sport); 2013.
[14] Erickson J, Milstein B, Schafer L, Evans Pritchard K, Levitz C, Miller C. Progress along the pathway for transforming regional health: a pulse check on multisector partnerships. ReThink Health 2017.
[15] Lewis VA, Colla CH, Tiernay K, Van Citters AD, Fisher ES, Meara E. Few ACOs pursue innovative models that integrate care for mental illness and substance abuse with primary care. Health Affairs 2014;33(10):1808–16.
[16] Siegel B, Erickson J, Milstein B, Evans Pritchard K. Multisector partnerships need further development to fulfill aspirations for transforming regional health and well-being. Health Affairs 2018;37(1):30–7.
[17] Lamont T, Barber N, De Pury J, Fulop N, Garfield-Barbeck S, Lilford R. New approaches to evaluating complex health and care systems. BMJ 2016;352:i154.
[18] Best A, Greenhalgh T, Lewis S, Saul JE, Caroll S, Bitz J. Large-system transformation in health care: a realist review. Milbank Quarterly 2012;90(3):421–56.
[19] Drewes, H.W., Struijs, J.N., C.A. Baan, How the Netherlands is integrating health and community services. Available from: https://catalyst.nejm.org/netherlands-integrating-health-community-services/ [accessed 2019 28 February].
[20] Pawson R. Evidence-based policy: a realist perspective. London: SAGE Publications Ltd.; 2006.
[21] Jagosh J, Macaulay AC, Pluye P, Salsberg J, Bush PL, Henderson J. Uncovering the benefits of participatory research: implications of a realist review for health research and practice. Millbank Quarterly 2012;90(2):311–46.
[22] Willis CD, Saul J, Bevan H, Scheirer MA, Best A, Greenhalgh T. Sustaining organizational culture change in health systems. Journal of Health Organization and Management 2016;30(1):2–30.
[23] Haynes A, Rowbotham SJ, Redman S, Brennan S, Williamson A, Moore G. What can we learn from interventions that aim to increase policy-makers' capacity to use research? A realist scoping review. Health Research Policy and Systems 2018;16(31):27.
[24] Steenkamer, B.M., Drewes, H.W., Putters, K., Van Oers, H., Baan, C.A., Reorganizing and integrating public health, health care, social care and community services: a theory-based framework for Collaborative Adaptive Health Networks to achieve the Triple Aim. Provisionally accepted.
[25] Drewes HW, Van Vooren NJE, Steenkamer B, Kemper PF, Hendrikx RJ, Baan CA. Regio's in beweging naar een toekomstbestendig gezondheidssysteem:

Landelijke Monitor Proeftuinen, reflectie op 5 jaar proeftuinen. Bilthoven: Rijkstinstituut voor Volksgezondheid en Milieu; 2018.
[26] ReThinkHealth Regional practices in each pathway phase; 2018.
[27] Geels FW, Schot J. Typology of sociotechnical transition pathways. Research policy 2007;36(3):399–417.
[28] Rotmans J, Kemp R, van Asselt M. More evolution than revolution: transition management in public policy. Foresight 2001;3(1):15–31.
[29] De Vries EF, Drewes HW, Struijs JN, Heijink R, Baan CA. Barriers to payment reform: experiences from nine Dutch population health management sites. Health Policy 2019;123(11):1100–7.
[30] Naylor C, Buck D. The role of cities in improving population health - international insights; 2019. Available from: https://www.kingsfund.org.uk/publications/cities-population-health [accessed 2019 24 October].