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title **The Value Based Health Care landscape**

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background

A growing number of healthcare organisations are embarking on a Value-Based Healthcare (VBHC) journey (1), and research exploring success factors to implementation provides encouraging insights (2-5). As Australia considers the potential of VBHC as a new direction in the delivery of its healthcare and funding, understanding the implementation landscape is a critical step (1).

As a precursor to VBHC, in the 1990s, clinical champions in the Australian Capital Territory (ACT) showed interest in scaling health-outcomes infrastructure across the public health system (6, 7). However, implementation failed, mainly due to political and bureaucratic doubt over the benefits, and the lack of a clear overarching strategic framework. For example, the health outcomes infrastructure of the time required significant investment in information technology, but was unable to attract investment against competing priorities, such as the quality-improvement movement (8).

In contrast, clinical engagement was secured through key champions, and the belief of the clinical specialist colleges that prioritising health outcomes would advance clinical practice.

Government pilot projects trialling care coordination demonstrated mostly null results, suggesting long segments of integrated care packages and patient outcomes had a complex relationship (9). This finding subsequently led researchers to use shorter segmented care pathways and treatment models in the hope of identifying better outcomes (10).

So how does this landscape look today?

There is now political and bureaucratic interest in establishing VBHC in Australia; with several state jurisdictions developing ICT infrastructure and trial projects to support the advancement of VBHC. Broad implementation of VBHC is seen as the 'long game' (11).

The momentum in 'traditional' health outcomes studies has waned and shifted towards collaborative trial networks and registries, both nationally and internationally (12, 13). However, pessimism among some clinicians around the motives of governments and healthcare organisations for this shift remains, particularly in regards to cost components (14-16).

By consulting with key opinion leaders from seven countries (Table 1), including Australia, this paper attempts to understand the factors that are likely to contribute to the success of VBHC implementation in this country.

Through examining national and international success stories, we hope to highlight the lessons of the 1990s, where the implementation of the health outcomes model was expected to succeed simply because of the benefits accrued to patients.

The current complex landscape of stakeholders, and adaptive care models, suggests that many factors will need to 'line up' for VBHC to be successfully implemented at a large-scale (17).

the VBHC implementation landscape

In Australia, VBHC is being conceptualised and implemented through state-based projects. For example, the New South Wales (NSW) Health Ministry has developed an outcomes framework, built to scale up and transition into a value-based model [11].

The Department of Health and Human Services Victoria (Vic), has leveraged clinical interest in trials and registries, and its strength in health economics, to initiate a move towards VBHC [18].

Other states in Australia are taking a less direct approach, implementing VBHC through their strengths in clinical fields such as cancer, stroke, diabetes or technology [19].

Internationally, health system transformation towards VBHC is regarded as a dynamic process involving a clear overarching strategy [17, 20].

success factors for VBHC implementation

The key success factors, based on literature, to implementing VBHC have been identified as typically falling into the following themes (Figure 1):

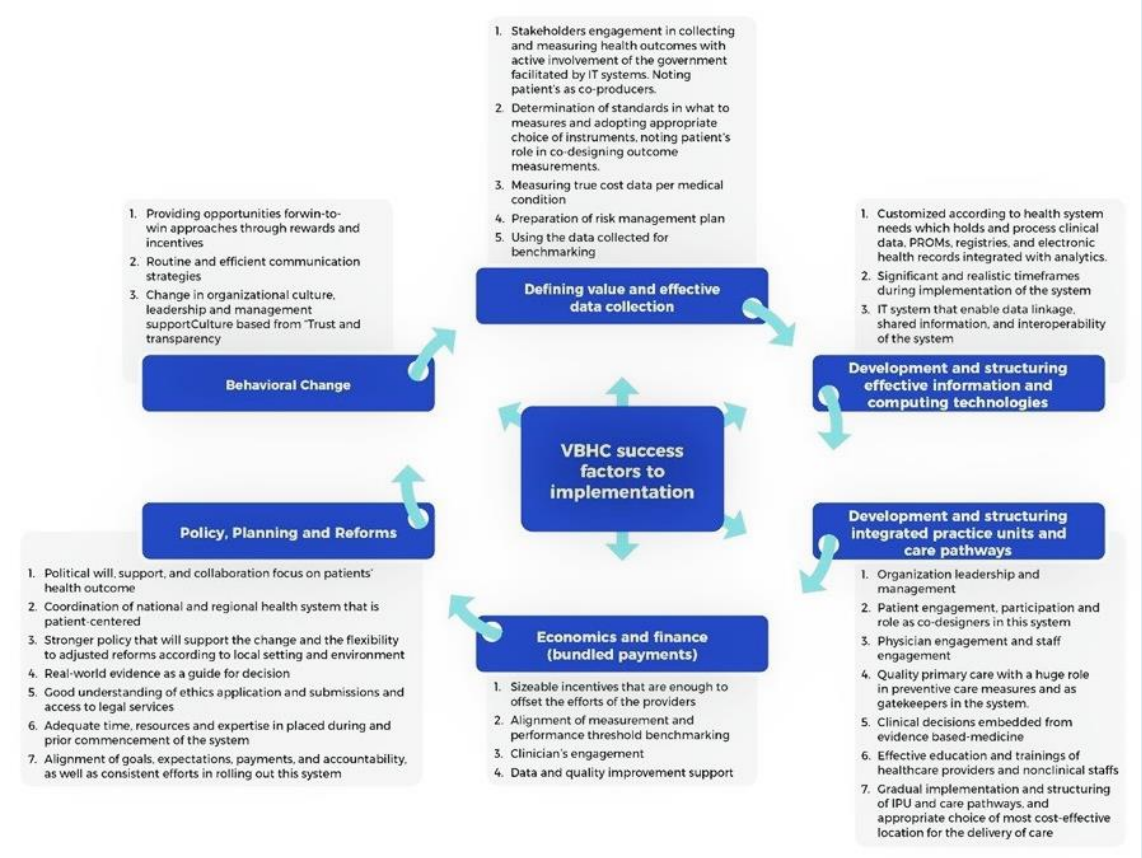

Figure 1: Success factors to VBHC implementation.

- value, health outcome measurement and data,
- information technology (IT) and information system (IS),
- care pathways and integrated practice units (IPU),
- economics, finance and bundling payments,
- policy, planning, and reforms and

- behavioural change, including areas of clinical leadership, team-based care and consumer engagement in co-design.

In order to further understand the factors that led to the success of (VBHC) implementation, between December 2019 and February 2020, we consulted 16 key opinion leaders representing diverse health service organisations, universities and international experiences[1] (Table 1).

Table 1. Description of opinion leaders in the study.

Organisation Type	Position of Opinion Leader	Speciality
American Private Enterprise	Consultant in the health industry	Health Economics and Finance
Australian University	Professor at a Group of Eight Australian university with expertise in Health Economics	
Australian University	Professor with extensive experience in Australian healthcare system and policy	Policy, Health System and Change
Dutch Private Association	Managing director of a cooperative association of 7 teaching hospitals across The Netherlands established in 2010	
British University	Key player in the reform of the United Kingdom's healthcare system	
Australian Government Organisation	Health secretary of an Australian jurisdiction implementing VBHC	
Australian Government Organisation	Chief Executive Officer in Australian oral healthcare	
Australian University – Group of Eight (Go8)	Research Program Manager	
Swedish University Hospital	A Professor from a teaching hospital in Sweden	
Australian Government Organisation	Representatives of an Australian jurisdiction refocusing towards VBHC	
Australian University	Associate Professor with expertise in health outcomes research and consulting	Patient Outcomes
Australian University	Director of a benchmarking organisation	
Australian Government Organisation	Manager for Clinical Information and Decision Support	
German University	Founder of a clinic implementing VBHC	Implementations in Practice
Swedish Institute	Director of a University Hospital implementing VBHC	
American Private Company	Co-founder of benchmarking and data set company	
Japanese University	Expert in health care system reform in Japan	

[1] 56% (n=9) were Australian based and 44% (n=7) were from overseas. Semi-structured interviews ranged in duration from 24 to 101 minutes (mean = 46 mins, SD = 19.5 mins). Interviews were recorded, and audio amounted to 730 minutes, which was transcribed verbatim. Transcribed data yielded 158 pages of single-spaced text.

The complexity of these factors has been identified as one of the most significant hurdles to implementation [20, 21].

From among the six thematic codes identified in Figure 1, opinion leaders further identified and agreed on eight global success themes (Figure 2), with each theme containing a number of organising themes. Themes were focussed across macro, meso and micro levels, with defining VBHC placed at the centre of a dynamic relationship with:

- transformation of care,
- improving practice,
- politics, policies and legislation; and
- health system resourcing.

The success of these relationships is moderated by:

- clinical
- engagement
- communication and
- strategy.

All of these thematic dimensions are shaped more broadly by the implementation strategy (influencing resource, risk and process management, and the strength of the leadership).

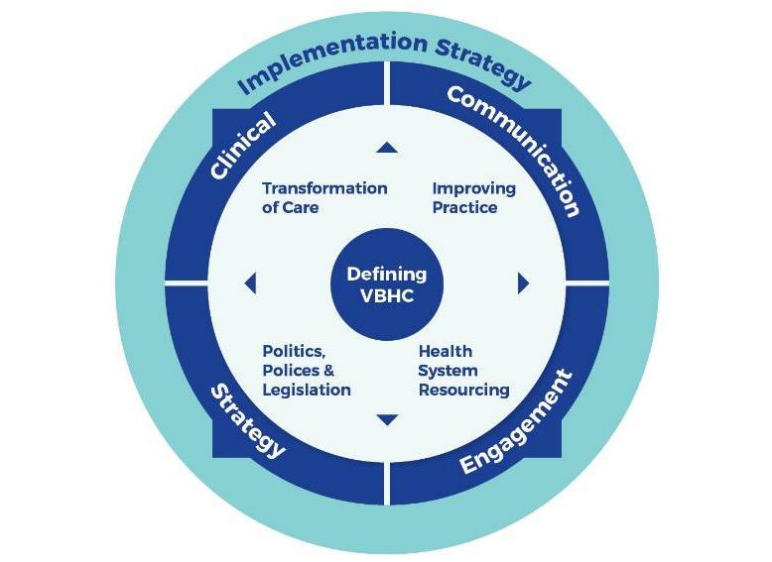

Figure 2: Eight Themes associated with VBHC implementation, as identified by healthcare opinion leaders

Themes were found to be more theoretically focused, rather than the activity or topic type themes identified in the literature (Figure 1).

defining VBHC

Defining VBHC (Figure 2) was identified by key opinion leaders as comprising of two organising themes, *interpretation* and *continuous evolution*, with the definition of VBHC at the heart of successful implementation.

Responses generally related to the interpretation of the Porter's definition of VHBC (Figure 3) [29].

$$Value = \frac{Outcomes}{Cost}$$

Figure 3: Porter's definition of VBHC (Value equals the delivery of health outcomes that matter to the patient, over the cost of carrying these out).

For those leaders focused on a particular aspect of the equation, and/or who were influenced by their professional background, interpretation of this definition, the Porter definition, was a major challenge. For example:

> *"…resistance came from doctors who looked at this equation: value equals quality over cost, and they said, "well, we think that this is just another way of saying that we should reduce costs to promote value."*

Nevertheless, continuous evolution of the meaning, and lessons, of VBHC were identified was a major success factor to implementation.

Australian participants felt there was a clear need to stipulate the separation between VBHC and cost containment. Similarly, they identified the need for more flexible measures and continuous improvement to strengthen the definition beyond Porter's more static equation, particularly given the fact that patient-reported measures vary by health condition.

Being adaptable and learning were also seen more generally, as key to success.

transformation of care

Transformation of care (Figure 2) emerged prominently as the need for culture change to allow a smooth transition process to VBHC. Concepts such as:

- paradigm shift,
- teamwork and integration, and
- continuous learning,

were consistently mentioned as organising themes.

Opinion leaders voiced the need for a *paradigm shift* within healthcare, away from the current focus many countries have on cost-cutting within activity-based funding models. A paradigm shift within the structure of the health system towards prioritising and incentivising the delivery of value will cultivate a positive culture change towards the same priorities.

Transparency and accountability were identified as key drivers of this behavioural change.

Teamwork and integration were seen as being driven by transformational agents, since they require action from a committed group. For example, one opinion leader described their organisation choosing individuals who show the greatest existing interest in the VBHC approach to form a pilot study care team (from administrative staff to clinicians). These individuals trained and worked together, building a strong team culture and a highly cohesive group which facilitated successful implementation of VBHC.

Continuous learning, improvement and adaptation was considered a foundation to implementation,

> *".. the idea is that we run a continuous improvement cycle...basically in the end, I see this as a culture change program"*

where the culture being referred to is a learning culture spreading throughout the organisation.

Other opinion leaders mentioned initiatives including commissioning partners and assist health care professionals with the interpretation and implementation of VBHC.

improving practice

Improving practice (Figure 2) had three organising themes around:

- measurement,
- collection and storage, and
- using data to improve practice.

Opinion leaders identified the selection of measurement tools as being paramount to success, highlighting the importance of using appropriate and validated measurement instruments. They also discussed the benefits of having comparative data available for standardisation purposes and benchmarking.

There was also dissatisfaction with rigid processes not tailored to local jurisdictions. For example, the International Consortium on Health Outcomes Measures (ICHOM),

> *"…it just would be such a shame if every jurisdiction ended up using different measures and there was no way of benchmarking or comparing"*

> *" [ICHOM] is a step in the right direction…but not sufficient. There's more that needs to be done to actually define the outcomes that matter to individuals"*

Efficient data collection methods and ICT systems were considered necessary to VBHC success, especially at the clinical level.

> *"there's currently twenty-three questions in that dataset. [Our plan] is bring it down to maybe five or six questions rather than twenty-three... Because currently it takes us about 8 minutes a patient to actually collect all that data, which is quite a long time. It's quite resource intensive."*

Opinion leaders conveyed the importance of establishing an ICT system that is fast, user-friendly and adaptable. It was generally agreed that the ICT system must also be dynamic and allow for continuous growth.

Another key factor raised by opinion leaders was around the need to invest adequate money, time and resources into an ICT system able to facilitate data collection from patients and minimise data errors. An interoperable ICT platform allows clinicians to view treatment and patient outcomes. It also provides different clinicians and administrators from across the healthcare system with access to information to support better integration of care.

Several opinion leaders also expressed the necessity of allowing patients to be able to view some outcomes data and making aggregate data available to policy makers to generate better, evidence-informed guiding policies.

> *"…ICT systems that are interoperable that allow clinicians to collect data in real time, use it in real time to inform care and clinical variation…your patients could provide direct and timely feedback to you around the outcomes or experiences of care that matter to them."*

The potential of VBHC to reduce uncertainty in the healthcare system was a selling point for many of the opinion leaders.

Several opinion leaders discussed the importance of delivering high value and standardised care to every patient. It was also acknowledged that maintaining a standard level of care is difficult, but a pragmatic approach is required. With regard to the Managing Director of seven teaching hospitals across the Netherlands discussed the way in which '*real world outcomes'* can be used as a "*continuous learning and improving*" tool. By doing so, "*we are able to define* [their] *standard of care and practice*". This point was emphasised by several other opinion leaders.

Opinion leaders considered VBHC's potential to improve health literacy in patients, as well as fostering more open conversations between patients and clinicians. It was thought that clinicians and patients could "*work through* [outcome data] *together*" as patients are able to "*discuss their concerns*" with clinicians more openly. Open conversations foster a relationship of trust between the clinician and patient, allowing patients to make better-informed decisions regarding their treatment.

> *"....how can we use data outcomes, data and also decision-support tools to improve the conversation that doctors have with their patients and to make patients able to basically have better-informed decision making together with their doctor, to have a bigger influence on what kind of treatment they will receive?"*

political, policy and legislative environment

The theme of ***Political, Policy and Legislative Environment*** (Figure 2) encompasses the complexities of authority and autonomy between political structures and the associated health systems and bureaucracy.

This global theme covers the organising themes of:

- Policy making and Legislation,
- Political Incentives and Politicisation,
- Funding Models, and Autonomy.

Among the opinion leaders, *Policy making* was viewed as important for forming a coherent approach to VBHC. It provides momentum, as well as bringing together aspects of the health system to drive change.

> *"[When you have] a more overarching policy intent or something that sort of brings the organisation together, everyone will find something to put their hand on and say, that's what we're doing in terms of Value-Based Healthcare."*

Engaging politicians is an important step to overcome political scepticism or disinterest. An opinion leader working as a Chief Executive Officer in healthcare described the role of politicians in providing interest and support for pilot projects as paramount to health system reform.

An Australian academic with extensive experience in health systems described the inevitability of politicisation of winners and losers in the reform process.

> *"What's inevitably going to happen is that some people in the system are going to get paid less when you make that change. There's going to be winners and losers. And so that becomes then a political process."*

However, political 'buy-in' to VBHC is far from guaranteed.

An opinion leader of a pioneering overseas clinic implementing VBHC reflected on their visits to politicians who seemed theoretically interested but did not make national changes because introducing VBHC policy was not "appealing".

Opinion leaders highlighted that ministers would not want to take on the responsibility of risky changes affecting areas like elective surgery or emergency departments. They also cite this as a reason behind the popularity among politicians for VBHC programs to be conducted in small or non-contentious areas.

A more efficient method of political engagement may be an evidence-informed process, whereby the proven benefits of VBHC are included in planning processes. This will be crucial in the initial stages of gaining support for VBHC. As a Chief Executive Officer in an Australian healthcare organisation describes:

> *"We've been talking to [politicians] in relation to what this might look like and really what most governments are saying at the moment is show us the proof that this works."*

Opinion leaders described their ongoing process of reporting indicators of VBHC's short and long-term gains to their funders. They believed this provided a useful tool in ensuring they are able to continue to deliver the highest value program possible.

Funding models emerged as an important organising theme. Different funding systems create different incentives embedded into the system.

A Chief Executive Officer in an Australian healthcare organisation described the need for a funding policy framework in line with the objectives of a VBHC system. An opinion leader from a Swedish clinic implementing VBHC spoke about the motivation to deliver and document better outcomes induced by payments based on value achieved.

Another opinion leader, a key player in the reform of the United Kingdom's healthcare system, summarised the mechanism by which payments can create health system change:

> *"The first thing you have to do to change the payment mechanisms would be change the payment… then you will change all of the behaviours. And people won't have a choice. Then you're not looking at culture change. Then it becomes just a business decision."*

A Professor from a VBHC teaching hospital in Sweden described that paying for value presents significant and unavoidable challenges.

Other opinion leaders described the necessary period of data collection before payment for value can occur; but that even before this, how investing into areas of the system doing VBHC well is an excellent strategy to foster change in the whole system.

Changing existing bureaucratic reform agendas can prove arduous. An Australian opinion leader described the difficulties they encountered implementing a bundled payments system because of the National Health Reform Agreement committing states and territories to activity-based funding. This is despite the fact that a blended model may be possible even when working within the framework of activity-based funding. (*Note.* the 2020-25 Addendum to this Agreement authorises the Independent Hospital Pricing Authority to work with states and territories to implement two-year trials of innovative funding models including bundled payments).

The managing director of seven teaching hospitals across the Netherlands indicated a blended payment system could provide a midway point between activity-based and bundled systems. They describe their use of a bonus system as an experiment in the direction of a more comprehensive bundled system, while still operating within an activity-based model.

These experiences show that between distinct payment systems, there can exist a number of blended funding methods.

Autonomy was an organising theme that emerged as a subtext in the interviews. It became obvious that in many of the cases where VBHC implementation had been rapid, for example in a public oral health program, there was some degree of autonomy embedded within the area of implementation.

health system structure and resourcing

Health system structure and resourcing (Figure 2) encompasses balance between individual demands and population needs.

The term 'cost avoidance' was highlighted as important to the structure of VBHC.

The idea of cost avoidance was well-summarised by an opinion leader from NSW Health who outlined the intent of VBHC as achievement of greater efficiency from health budgets, rather than saving funds to return to their state treasury. They expressed the danger of approaching VBHC as a cost-cutting measure.

An opinion leader from a teaching hospital in Sweden described the ongoing process of benchmarking outcomes and evaluating processes to achieve true value. They promoted the idea of rigorous and ongoing assessments of "the value of every intervention in the market", in order to reduce costs and achieve efficiency. In order to achieve this, it was considered that an authority is required defining best practice for critical conditions with reference to evidence-based literature, as well as consultation with clinicians.

Within the broader process of evaluation, disinvestment from low value care and investment into higher value care play crucial roles. Opinion leaders describe the need to disinvest from services which exhibit unwarranted clinical variation, poor quality care or low volume of services.

Accountability is closely linked to efficiency. The importance of accountability is in both disinvesting from low value activities but also in creating culture change where actors are aware of their resource use and possible wastage in the context of a health system with limited resources. When appropriate and informed, disinvestment allows for a more significant investment into higher value care.

An opinion leader, a consultant with over 20 years' experience in the health industry, described the cost-efficient, high-value opportunities presented by restructuring the system to allow for higher-value care as critical to unlocking the full potential of VBHC.

> *"…if you're saying that we should have fewer diabetes patients in hospitals because they should be treated in primary care, primary care may say we're overloaded. We can't take more of these patients, so we sent them to the hospital. There's literally very little cooperation and that doesn't make the system very efficient and doesn't help the patients. So, we need to make sure that we can reconfigure the healthcare system so that we treat the patient at the right place."*

A transition to VBHC involves a shift in the health system towards preventative care and precision medicine.

> *"…ultimately, you can say the match between the individual and the treatment is what we often call precision medicine. We're trying to be more and more precise. And the measurement of outcomes determines whether we have been precise or not.*

Because if we're really good at matching an individual with the right treatment, we get good outcomes…… So that's a very central [aspect of] Value-Based Healthcare."

communication

Communication (Figure 2) that is clear, effective and consistent stimulates support of VBHC implementation. Within the theme of communication, the language used to convey messages to clinicians and to the public, and the importance of maintaining visibility, were reiterated by opinion leaders.

Clinician resistance to VBHC was often observed to stem from inappropriate terminology. Opinion leaders indicated that clinicians regularly misunderstood the term 'value' to solely represent cost-cutting. This misinterpretation can significantly hinder VBHC acceptance.

Some resolutions include producing a communication model that focuses on patient-centred care, while promoting the need to understand the financial benefits of efficient delivery of outcomes.

Public interest was identified as another factor driving change. An Australian opinion leader emphasised the importance of euphemism during communication. Careful use of clear language may reduce resistance and scepticism among the general public, especially if the language and meaning are careful and considered. Resistance and scepticism among the general public may be lessened when careful consideration is given to messaging.

clinician engagement

Clinician Engagement (Figure 2) was clearly perceived as one of the moderating factors in the success of VBHC. Two organising themes emerged from the interviews:

- activated interests and,
- cultivated interests.

Activating interest is defined as the process of using pre-existing interest in continuous improvement and transparency to engage clinicians. Cultivating interest covers the deliberate steps to engage clinicians without pre-existing engagement enough for implementation. These two strategies are often closely intertwined.

Opinion leaders indicated that where clinicians were already interested in the idea of improving the outcomes for their patients using data, VBHC implementation was significantly less arduous. It emerged that often in pilots or initial stages of VBHC implementation, clinicians enthusiastic about data-driven improvements to care were sought out. It was also clear that the enthusiasm of clinicians needed to be consciously maintained for the program to be successful.

Cultivating interest can be done in several ways. One of the more intuitive ways mentioned was through financial incentives. Opinion leaders suggest there are other simpler ways, including providing information and the opportunity to be a part of a co-designed system. This engagement of clinicians in the design process is important:

"It's really about getting [clinicians] to understand how this is not only improving outcomes for patients, but how it's actually going to make their life more fulfilling. That it's actually going to make their day much better... So that's the work that we do with a lot of clinicians to get them engaged."

implementation strategy

Implementation strategy (Figure 2) requires strong leadership supported by patients, carers, clinicians, policymakers and governing bodies.

Several opinion leaders emphasised the importance of being aware and being prepared for resistance to change, failures, delays, and unforeseen circumstances. The management of risk makes VBHC a cyclical and dynamic process.

"...having permission to fail. So saying that it may not be right the first time, we may not have the clinical workflows right. We may not have the data right. But if we don't have it right, let's refine and assess what that may be to go forward with and then let's redesign and implement and test it again."

Opinion leaders recommended starting with the reporting of patient outcomes and a focus on the engagement of clinicians to start the movement. Communication engagement was one of the moderating strategies that was adopted by champions early, who stated that the key determinants of success for VBHC are to appropriately message the goals of projects and to engage clinicians and patients.

"If you want to start, I would start with … outcome measurement…
…I would say that that's the first thing, is getting the people on board, changing their mindset and then starting small pilot projects central to actually get it implemented."

Adequate resources such as time, funds, expertise and workforce prior to the implementation were identified as factors for success, and opinion leaders emphasised the need for realistic timelines.

Two different views from Australian opinion leaders were around determining the scalability of the project according to its local setting. One opinion leader described the adoption of a large-scale approach considering if they have access to enough resources, in particularly access to an efficient IT system. Others believed that VBHC works better in a smaller-context approach and that implementing VBHC at a strategic level works best for a localised setting.

The completion of preplanning steps including ethics approval, legal documents, strategic planning, research protocols, short and long-term goals were pointed out by several key opinion leaders as tools to drive VBHC.

Collaborative commissioning was mentioned as an important part of the planning and delivery processes, as well as developing strong partnerships not shackled by voluminous transactional contracts. Using strategies based on evidence-based or scientific findings was reported as important for success:

"We've been using implementation science methodology, Plan Do Check Act Cycles to be able to go: is this working yet?"

"In terms of being pragmatic about it, we looked at where the evidence was strongest"

Opinion leaders from an Australian jurisdiction refocusing towards VBHC indicated that a mix of top-down and bottom-up approaches are needed in the process. They clarified that the bottom-up approach has a role in message dispersal and buy-ins, but the top-down approach has a role in team engagement by demonstrating that upper management supports participants' goals in VBHC and can act as an enabler of VBHC by aligning policies, reforms, and payments into the VBHC system.

"If I don't set aside this time, if the leader doesn't say that it's an important meeting, then it will be probably [be] very difficult because people will feel that, oh, I should rather be taking care of patients and not focussing on [system approaches for] improving patients' [outcomes]"

strategies for successful VBHC implementation

The interviews with key health leaders suggest that successful VBHC implementation require a well-planned map lining up the various components to pull together towards a stepped implementation across a health system, allowing stakeholders the opportunity to appreciate the need for a significant change to existing systems.

This strategy includes the development of appropriate data and ICT systems that support new methods and innovations embedding real-time co-designed and co-produced individual patient care journeys, payment packaging and outcome assessment. Opinion leaders highlighted the significant limitations of current evidence-informed decision support methods.

The goal is a dynamic-learning system of care that draws on the journeys of previous patients to improve practice for those starting new journeys. Such an improvement in the value equation (Figure 3) brings prediction, adaptation and care bundling choice into the elements driving optimised and high value.

These advances in thinking around VBHC requires patients, clinicians, researchers, policymakers, planners and funders working together with a common purpose and vision; creating a collaborative approach that addresses diversity in packaging care between individuals and over time. It is much more than co-ordinating or integrating care – it is a whole of system shift shaped by patients.

Practical steps and actions for implementing VBHC should include creating networks or communities of practice to encourage solidification of approaches and testing of frameworks and methods.

Stakeholders have the power to stimulate interest, but it is up to health leaders to manage risk and provide adequate resources. This involves potentially investing in areas fully engaged in the vision early on, to bring 'the whole system along with them' [11,32].

The role of communication was not prominent in the literature but was a clear moderating success factor.

Key opinion leaders shed light on the complexities of communication both with the general public, clinicians and with different levels of the health system, suggesting that communication should be conducted with its own comprehensive strategy.

The principle of dynamic learning with informed prediction and choice drives the transformation of culture, while innovation supports advancing practice improvement and funding models leading to co-designed health outcomes. Success is going to take trialling of ideas with the expectation that some approaches will fail before finding a way forward.

Consequently, political, bureaucratic, patient and clinical 'buy-in' have the best chance of aligning through demonstration and targeted implementation enhanced by a clear communication strategy and clinical leadership engagement.

Scaling to a whole-health-system implementation requires establishing extensive governance and risk management processes, as well as collaborative commissioning arrangements which empower stakeholders to deliver based on well-defined needs, inputs, activities, outputs and outcomes [19, 26].

Based on the opinions of the key health leaders interviewed for this study, a strategic roadmap to support VBHC success was developed, and is outlined below (Figure 4).

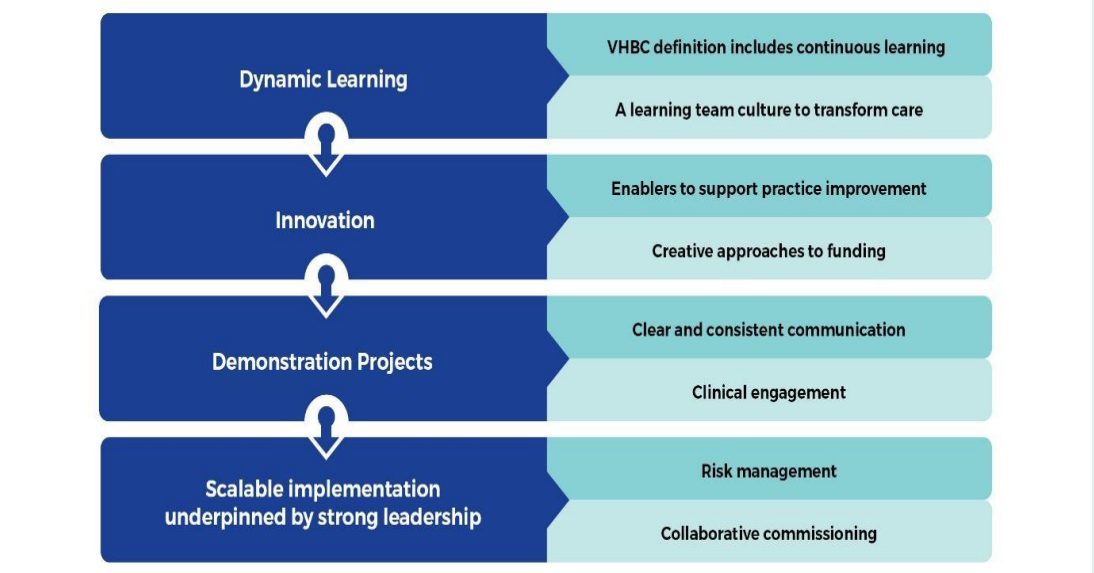

Figure 4: Strategic Roadmap to VBHC implementation

For completeness, organisational, strategic and service plans and their associated policies should consider incorporating these themes into their VBHC roadmap.

acknowledgments

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