



Original research

Barriers and facilitators to adopting horizon scanning to identify novel integrated care models: a qualitative interview study

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ABSTRACT

Objectives Horizon scanning methodologies are employed in healthcare to identify and prioritise innovations at the early stages of development processes. To date, horizon scanning has been predominantly applied to early awareness systems of health technologies to facilitate healthcare planning. Still, horizon scanning methodologies may also be relevant for identifying novel healthcare delivery models and interventions. This study aimed to examine perceptions of determinants for adopting horizon scanning in the context of the development of integrated care models.

Methods Qualitative semistructured interviews were conducted between March and May 2021. The interviewees (n=10) were participants in innovation projects in the South-Eastern Norway Regional Health Authority. Data were analysed thematically with the aid of a predefined framework adapted from behavioural change theory.

Results Determinants of adopting horizon scanning were reported at the individual, organisational and wider institutional levels. Seven domains were perceived to enable or hinder stakeholders' potential use of horizon scanning: knowledge of structured reviews, skills to perform horizon scanning, beliefs about consequences (validity and reliability of information, outcomes of filtering and priority setting, stakeholder involvement), beliefs about capabilities (technical skills, knowledge of roles and professional identities, organisational regulations), emotions (positivity, engagement, change fatigue), organisational resources (professional library, time, management support), context (complexity of 'integrated care', professional hierarchies, legal and political regulations).

Summary box

What are the new findings?

- Horizon scanning methodologies can be useful for identifying, assessing and prioritising innovations in healthcare delivery models at an early stage.
- We identified determinants to the adoption of horizon scanning in the context of health services delivery innovation as perceived by stakeholders

How might it impact on healthcare in the future?

- This study may inform organisations considering using horizon scanning to identify novel health services models and contribute to developing interventions that target potential barriers and promote facilitators.

Conclusions This study provides novel insights into potential determinants for adopting horizon scanning to identify, assess and prioritise innovative integrated care models. The findings may assist organisations considering using horizon scanning and inform strategies to mitigate barriers and promote facilitators.

INTRODUCTION

It is widely believed that developing and implementing novel products, services and processes in the healthcare sector has the potential to improve population health and promote a more efficient use of resources. Healthcare organisations worldwide strive to improve their healthcare delivery models.¹ To manage the rapid emergence of innovations and to promote promising technological development, horizon scanning methodologies

are increasingly employed in the healthcare and biomedical fields and, in particular, in early awareness systems of health technologies such as pharmaceuticals and medical devices.^{2,3} Horizon scanning follows a standardised stepwise process to yield a systematic detection and assessment of early signs of important developments, assessing their potential impact and, in this way, prioritising resources and investment in innovation. Thus, horizon scanning holds promise for informing and preparing decision-makers for change.

However, less attention has been given to the application of horizon scanning for identifying innovative healthcare delivery models, for example, integrated care models. Alerting policy-makers and other stakeholders to emerging issues and providing options for the development of integrated care may be challenging due to the lack of common definitions and conceptual frameworks of integrated care, the complexity and intersectional nature of integrated care and the variety of perspectives stemming from various stakeholders in the health system. Nonetheless, horizon scanning offers a structured approach to addressing weak signals of future trends and may aid innovation in healthcare delivery. Adopting horizon scanning for the purpose of detecting early signals of innovation in the context of integrated care delivery models may potentially be informative and useful. However, its value depends not only on the efficacy of the methodologies of scanning they provide but also on their acceptance and uptake by stakeholders.

The aim of this study was to explore potential enabling and constraining factors for the use of horizon scanning methodologies in the early phases of identifying innovative integrated care delivery models, as perceived by healthcare personnel with experience in project development. To aid the analysis, we utilised a theory-based behaviour change framework, the Capability, Opportunity and Motivation model of Behaviour (COM-B) and the Theoretical Domains Framework (TDF).

SCANNING THE HORIZON FOR NOVEL INTEGRATED CARE MODELS

There is no common definition of integrated care.⁴ 'Integrated care' is used to denote both the process by which professionals and organisations become integrated and the outcome experienced by service users, such as patients and carers. The WHO (Europe) has offered a system-based understanding of integrated care:

(Integrated care is) an approach to strengthen people-centred health systems through the promotion of comprehensive delivery of quality services across the life-course, designed according to the multidimensional needs of the population and the individual and delivered by a coordinated multidisciplinary team of providers working across settings and levels of care.⁴

Table 1 Typologies of integration, adapted from Lewis *et al*⁵

Types of integration	Examples
Organisational	Integrations of organisations by mergers or collectives, or coordinated networks
Functional	Integrations of non-clinical support, for example, electronic patient records.
Service	Integration of clinical services, through teams of multidisciplinary professionals.
Clinical	Integration of care delivered by professionals and providers to patients into a coherent process within or across professions.

This understanding encompasses different types of integration (organisational, functional, service, and clinical, [table 1](#)), as well as the horizontal and vertical dimension of integration, and the breadth and levels at which integration may be pursued. We follow this multifaceted definition of integrated care in this paper.⁵⁻⁷

Horizon scanning is a systematic approach for detecting early signals of potentially important developments, opportunities and threats that could impact areas of interest.⁸ Although there is not yet a standardised terminology regarding methodologies, tools, techniques and processes involved in horizon scanning, it generally follows a six-step approach of signal detection, filtration, prioritisation, assessment, dissemination and updating information ([figure 1](#)). Horizon scanning often begins with mapping signals of innovation with the use of various sources for information and techniques to search for signals of potential value. Preset filtration and prioritisation criteria are used to

Stages involved in early awareness and alert systems

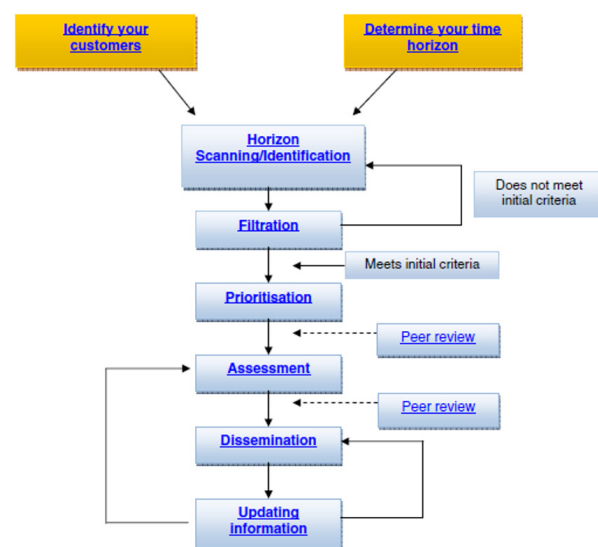


Figure 1 Common stages of horizon scanning from the Euroscan network (Euroscan). This figure is licensed under the creative commons Attribution-NonCommercial-ShareAlike 4.0 international licence (CC BY-NC-SA 4.0).

discard irrelevant signals. Assessment methods include the participation of experts, users and policy-makers and peer reviews. The results of the horizon scanning are then disseminated and evaluated.²

Horizon scanning should be differentiated from foresight.⁹ A foresight process may be understood broadly to address the full cycle of policy on ‘complex futures’, involving a range of stakeholders, long-term considerations and different scenarios. It is a rather comprehensive set of activities which includes a horizon scanning phase at the beginning of the process. Thus, compared with foresight, horizon scanning has a narrower scope, a shorter time horizon and a more specific thematic focus. Moreover, horizon scanning can be a stand-alone approach for identifying ‘things to come’.

Neither should horizon scanning be regarded as a systematic literature review. Signals of ‘things to come’ are detected from manifold information sources in addition to, or even instead of, reviews of scientific literature. These sources include targeted literature searches and input from expert groups, committees, surveys, government bodies, conferences, associations, media and more.² Thus, horizon scanning can lack a clear weighting of evidence and should not be misinterpreted to give an exhaustive summary of current evidence. The aim of horizon scanning is rather to inform decision-makers about signs of innovation at an early stage, at which point available information is limited.

Furthermore, experts and other stakeholders with diverse views, experiences and roles may be brought together to systematically discuss signals as part of the horizon scanning process. The aim can be to build consensus on emerging issues and to assess signals. Stakeholder participation is often organised as workshops, focus group activities or variations of Delphi studies in which relevant issues are ranked, discussed and reranked. Methods and criteria used for assessment vary. Nonetheless, expert consensus is thought to add weight to horizon scanning conclusions.²

METHODS

This study used a prospective theory-driven qualitative design. The study was regarded as health services research. Data management and protection was notified to the Norwegian Centre for Research Data (NSD; project number 967152). It was reported according to the Consolidated Criteria for Reporting Qualitative Research.

Setting

The Norwegian healthcare system is universal, tax-financed and semidecentralised.¹⁰ The responsibility for primary care lies with the municipalities. The central state is responsible for secondary and specialist care, which is administrated by four Regional Health Authorities (RHAs). The South-Eastern Norway RHA

is the largest RHA and provides care to approximately three million people living in 44 municipalities.

Participants and recruitment

Purposive sampling¹¹ was employed as we wanted participants with knowledge and insights into how to develop integrated care innovation projects. The research team established contact with the project management of two ongoing innovation projects carried out in the South-Eastern Norway RHA. The projects aimed to develop integrated care delivery models to meet the complex needs of (1) children and youth at risk of developing mental health problems and (2) multimorbid and older people with frailty. We asked the project management to inform the staff about our study. The first author (MNW-S) sent a formal invitation by email to all 16 participants in the two innovation projects.

Data collection

Individual qualitative interviews were conducted from March to May 2021. Participants received written information about the study and signed a consent form before the interviews were undertaken. Participants were given the opportunity to review the illustrative quotes from their interviews.

A semistructured interview guide was developed covering questions about their experiences with prior innovation projects and beliefs about horizon scanning (see online supplemental file 1) for a description of the guide). Horizon scanning was presented with a flow-chart, and the interviewer (MNW-S) presented the different steps (as illustrated in figure 1) in detail. Two pilot interviews were carried out, and the interview guide was slightly amended according to feedback.¹²

Interviews were conducted face-to-face and digitally. Interviews lasted from 50 to 60 min. All interviews were conducted by MNW-S in Norwegian and audio-recorded. Field notes were taken during the interviews. The interview transcripts were de-identified. All data were stored on a password-protected computer connected to a university server.

After eight interviews, information began to be repetitive. Two more interviews were carried out and we concluded that there was no need to recruit more participants for the study. We assessed saturation to be achieved after 10 interviews. No additional information was produced by new incoming data.¹³

Data analysis

To aid analysis, the COM-B was used. The model hypothesises that three key components interact to shape behaviour, including individual capability and motivation and the social and contextual opportunities that prompt behaviour.¹⁴ The three components may be further specified with the aid of the TDF, which is a simplification of a range of theories into 14 domains underpinned by psychological theory.^{14 15}

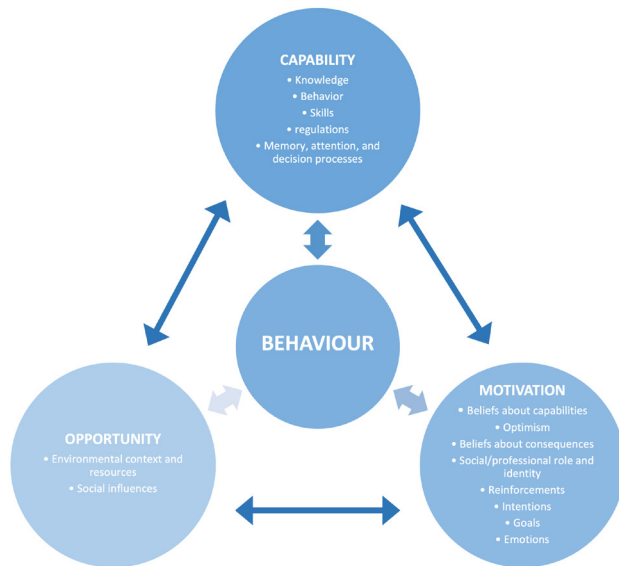


Figure 2 COM-B/TDF. Determinants through COM-B elements and TDF domains (adapted from Michie *et al* and Atkins *et al*).^{14 15} The arrows illustrate the potential impacts of the components on each other. COM-B, Capability, Opportunity and Motivation model of Behaviour; TDF, Theoretical Domains Framework.

These domains include individual-level factors, such as knowledge and skills, beliefs about consequences and capabilities, intentions and emotions, and contextual and resource factors, such as time constraints and organisational and legal regulations. We used this combined COM-B/TDF approach to map responses onto the categories of the predefined framework (figure 2).

Data were analysed thematically, following a stepwise approach described by Braun and Clarke¹⁶ (reading, coding, collecting codes, reviewing and refining analysis, reporting). Data were transcribed and coded with the aid of NVivo V.12.

First, we coded and organised data according to the COM-B model. Then, fragments of the text were categorised and then recategorised into subthemes that were deemed relevant to the study according to the TDF. MNW-S did the first round of coding; all the authors were involved in subsequent refinement of coding and organising of data. In cases of discrepancies in interpretation, these were discussed among the authors until agreement was reached. Quotes used for illustration were translated from Norwegian to English by the authors.

RESULTS

Out of the 16 persons invited to participate in the study, 10 were included in the study (1 declined the invitation and 5 did not reply). Eight of the participants were females, and two were males. The participants had different educational backgrounds (including medicine, physiotherapy and psychology) and various roles in the health and social care sector at both specialist

and primary care levels (including managers, advisors, coordinators, hospital doctors, GPs, psychologists and physiotherapists).

Barriers and facilitators

Determinants to adopting horizon scanning methodologies in the early phases of detecting novel integrated care models were identified at the individual, organisational and wider contextual levels (ie, factors embedded in the broader healthcare system). Following the combined COM-B and TDF framework, the determinants are reported under the headings Individual capabilities, Organisational and contextual opportunities and Individual motivation and further categorised under relevant TDF domains. Table 2 provides an overview of the results, with illustrative quotes for each domain.

Individual capabilities

Knowledge of literature reviews and structured frameworks

The participants reported knowledge of literature reviews and structured frameworks as a determinant for perceived acceptance among project participants and organisation management, of endorsing the use of horizon scanning. Participants with prior experience in research could draw parallels between horizon scanning and literature review methodologies and comment on similarities and differences. Knowledge of scientific methods was seen as a facilitator to the potential use of horizon scanning.

Skills to perform horizon scanning

None of the participants was familiar with horizon scanning. Participants with knowledge of different approaches to literature reviews reported lack of skills for successfully carrying out necessary searches to identify and filtrate relevant literature. This was perceived to be a barrier to the adoption of horizon scanning.

Organisational and contextual opportunities

Organisational resources

A major theme, and the most frequent factor mentioned by the participants, was time constraints. Participants described the daily work as hectic and demanding, and there were concerns about spending too much time on planning and conducting horizon scanning. Participants believed that lack of management support for spending time on project participation was a potential barrier.

Skills-based education and training in horizon scanning methodologies was perceived as an organisational responsibility. The participants reported that management support in increasing knowledge, awareness and engagement was necessary to enable the use of horizon scanning. Moreover, the involvement of professional librarians was seen as a facilitating factor.

Complexity of 'integrated care'

Some of the participants identified the lack of a common definition of integrated care as a barrier.

Table 2 Factors perceived to determine adoption of horizon scanning methodologies

COM-B components	TDF domains	Illustrative quotes
Capability Individual capability	Knowledge of structured reviews	
	Research methods	Those who work in research, they're used to... that way of thinking (1)
	Skills to perform a horizon scanning	
Motivation Individual motivation	Technical skills	It is an extensive job to do this kind of (literature) search... I don't feel comfortable enough to be able to say that I want to do it myself (1)
	Beliefs about consequences of using a horizon scanning framework	
	Validity and reliability of information	Having a structured process (is) a very good tool, I think. (6)
	Outcomes of filtering and priority setting	I like the idea of being systematic...and to have a common understanding of the choice of method. (8)
	Stakeholder involvement	We are far too unaware about frameworks and systems, that is, the process. (7) If the selection criteria (of models) are specific, the job will be easier because there are frameworks to deal with. But there will be less freedom of action. (1) You'd imagine you'd taken a few 'short-cuts'. (6)
	Beliefs about capabilities to do horizon scanning	
	Technical skills	The (HS) method requires good knowledge and common understanding...and an agreement on the goal. (6)
	Knowledge of stakeholders' roles and professional identities	There are some that are not very familiar with literature searches. (3)
	Knowledge of organisational regulations	There are challenges, such as different (professional) 'languages' (...) it is important not to take prior knowledge for granted. (3)
	Emotions	
Positivity, engagement	People are tired of new projects ...You need people that are committed. (3)	
Change fatigue	I have a feeling that the vast majority... have neither the energy nor the desire (to participate in innovation projects). (4)	
Opportunity Organisational and contextual opportunity	Organisational resources	
	Professional library	We are happy to ask the librarians... about help. (1)
	Time	We have very little time to collect the necessary, and good enough, information. (8)
	Management support	The management (must) understand that things take time, and that one must implement all these processes...and bring in new people because it was not the right ones that were included. (4)
	Context	
	Organisational, legal, political regulations	(There are) political guidelines and regulations. (3)
	Professional hierarchies	We must be able to make local adaptations. The different municipalities have different needs. (9)
Complexity of 'integrated care'	It's like two groups, the municipal staff and the hospital staff. (8) There is a huge number of questions that the RHA wants us to answer. We think that it's really quite impossible. (8)	

COM-B, Capability, Opportunity and Motivation model of Behaviour; HS, horizon scanning; RHA, Regional Health Authorities; TDF, Theoretical Domains Framework.

They mentioned how different stakeholders, such as healthcare professionals, service users, managers, health authorities and policy-makers, had different expectations and views of the definition of integrative care models, which potentially may hinder the horizon scanning process.

Professional hierarchies

Some participants further discussed how organisational culture and professional hierarchies would influence discussions at various steps in the horizon scanning process. They worried that specialist healthcare would dominate discussions and perceived this as a barrier.

Organisational and regulative context

The participants worried that the different organisational, legal and political regulations regarding primary and specialist care were a potential barrier. Horizon scanning, aiming at identifying promising models from

different countries, with different healthcare systems, may yield results that are not easily translatable to the present context. Furthermore, the different regulatory contexts of primary and specialist care in the Norwegian healthcare system were perceived to be a potential barrier.

Individual motivation

Beliefs about consequences of using a horizon scanning framework
The participants identified various consequences as determinants. The systematic and structured approach characterising horizon scanning was perceived to be both a facilitator and a barrier to its use. On the one hand, the stepwise process of horizon scanning was reported to potentially enable better information, more targeted discussions about goals, priorities, limitations and opportunities, and inclusion of relevant stakeholders at different stages of the process. On the other hand, questions were raised about employing

predetermined criteria such as the potential cost-utility ratio at the filtration stage, and further, using too strict criteria to prioritise and assess novel care models. Furthermore, concerns about disagreement on criteria and methods within horizon scanning were expressed, as different stakeholders' preferences could lead to spending too much time agreeing on and planning the stages of horizon scanning.

Beliefs about capabilities to undertake horizon scanning

Several participants perceived the lack of skills among healthcare professionals in employing horizon scanning to be a potential barrier. This included lack of technical skills, such as familiarity with systematic literature search. Furthermore, the lack of knowledge about the different organisational structures at the primary and specialist healthcare levels and the lack of understanding of the different professional roles, knowledge bases, and professional terminology of stakeholders, were seen as barriers to use. Knowledgeable and committed professionals could act as facilitators.

Emotions

Participants believed that a positive culture of engagement among stakeholders would facilitate the use of horizon scanning. However, several participants reported that there was a kind of 'change fatigue' in the organisation and that people were tired of participating in new projects. There was some hesitation about using new methods due to previous experience in other projects. Questions were raised as to whether horizon scanning would lead to improved results, and whether putting in the effort to use horizon scanning made any difference compared with the current processes.

DISCUSSION

To the best of our knowledge, this is the first study of how stakeholders with experience in healthcare innovation projects perceive barriers to and facilitators of using horizon scanning methodologies to identify, prioritise and assess novel integrated care delivery models.

We used the COM-B model, which hypothesises an interactive relationship between three components; individual capability and organisational and contextual opportunity can influence individual motivation, while behaviour can alter capability, motivation and opportunity. For example, participants who had prior knowledge of research methods (capability (knowledge)), and had experience with literature reviews were more assertive of the perception that horizon scanning would yield favourable outcomes to innovation projects (motivation (beliefs about consequences)). Furthermore, these participants were less confident in their capabilities to perform horizon scanning themselves (motivation (beliefs about capabilities)).

Participants who discussed professional hierarchies (opportunity (environmental context)) as a contextual barrier to using horizon scanning were more prone to the view that knowledge of different stakeholders' roles, knowledge bases and professional terminology (capability (knowledge)) would enable horizon scanning. Complexity of integrated care (opportunity (environmental context)) related to discussions of 'change fatigue' (motivation (emotions)), while time constraints (opportunity (organisational resources)) were mediated by motivation through optimism and engagement (motivation (emotions)).

Identification of new healthcare delivery models in the context of integrated care is particularly challenging due to the lack of common definitions and conceptual frameworks. Furthermore, multiple stakeholders including health and social care professionals with different roles and professional identities, researchers, managers, health and social care authorities, patients and service users, may have different views about local needs and about which dimensions of integrated care are most important, which processes should be prioritised and which care models should be developed.

Stakeholder inputs are critical to the success of the horizon scanning process.¹⁷ Moreover, by including different perspectives as a part of the horizon scanning framework, one can potentially detect trends and connect real needs to the development of new service models.

In previous horizon scans, workshops have proven important for finding core issues, initiating the process of refining questions, sharing perspectives, and building trust and understanding.¹⁸ They can also provide a sense of ownership in the questions discussed.¹⁸ This study identified how participants were apprehensive about the experience they had had with other projects, including that different stakeholders had had different preferences regarding choices of service delivery models. Furthermore, professional hierarchies were seen as a potential barrier to horizon scanning, as influential and dominating stakeholders may use their authority to make decisions about criteria for identification, filtration, prioritisation and assessment. How to avoid such unintended consequences should be studied in future research.

Limitations

This study was small, and the findings may not be easily transferable to other settings. However, replication may be facilitated by this study's use of the systematic and theoretical basis for identifying potential determinants for acceptance and uptake among stakeholders. The use of a predetermined framework is at the same time a possible limitation, as we may have overlooked data that did not fit the pre-defined framework. This is a limitation inherent to deductive (concept-driven) thematic coding.

In horizon scanning of novel integrated care models, one major task is the definition of keywords and terminology to use for signal detection. We realise that 'integrated care' may take many forms and that the term may

be understood to involve different types of integration. For example, the concepts of service integration and clinical integration should be carefully defined to avoid a potential overlap. We cannot disregard the fact that the participants in this study may have understood the term ‘integrated care’ in different ways, which may have affected their views.

CONCLUSION

We investigated stakeholders’ perceptions of the potential use of horizon scanning methodologies to detect innovative integrated care models by using a theoretically informed behavioural approach, combining the COM-B and the TDF. The findings of this study might aid the development of interventions targeting barriers and promote enablers to adopt horizon scanning for identifying and assessing novel healthcare delivery models. Further studies should explore behaviour change techniques that would be suitable for addressing the determinants identified for the introduction of horizon scanning as a tool in complex processes and the piloting of horizon scanning for emerging integrated care models.

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