



Developing age-friendly approaches to comprehensive care planning with older people:

# The Indigo 4Ms tools



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Authorised by Mark Ashcroft, CEO Beechworth Health Service

### **Partner Agencies:**

- Albury Wodonga Aboriginal Health Service
  - Albury Wodonga Health
  - Beechworth Health Service
  - Corryong Health
  - Gateway Health
  - John Richards Centre for Rural Ageing Research, La Trobe University
  - Tallangatta Health Service
  - Yackandandah Health
- 

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The PCG extends its sincere appreciation to the project staff who contributed their expertise and drive during their tenure. Jan Lang established and led the project, with Elizabeth Ibrom and later Kim Wright as coordinators. Their efforts were instrumental in advancing this project. Kathleen Brasher led the project from July 2022 to its completion.

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# Contents

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<b>1. Summary</b>	<b>4</b>	<b>7. Developing Insights &amp; Ideas</b>	<b>30</b>
1.1 Method	5	7.1 Attitudes & Stigma	31
1.2 Findings	6	7.2 Goal Setting & Person Centered Care	32
1.3 Evaluation Outcomes	7	7.3 Barriers	32
<b>2. Introduction</b>	<b>8</b>	7.4 Conclusion	32
2.1 Indigo 4M (I4Ms) Framework	10	<b>8. Prototyping &amp; Testing the Model</b>	<b>33</b>
2.2 This Project	12	8.1 Prototyping	33
<b>3. Project Overview &amp; Governance</b>	<b>13</b>	8.2 From One Checklist to Two Tools	35
3.1 Project Control Group	14	8.3 Testing the Tools	36
3.2 Project Team	15	8.4 The Indigo 4M Tools	37
1.2 Findings	16	<b>9. Implementation Plan</b>	<b>39</b>
<b>4. Codesign Process</b>	<b>17</b>	9.1 Building Individual Functional Ability Using the I4Ms Tool	39
4.1 Recruitment	18	9.2 Improving Multi-disciplinary Care Planning Using the I4Ms Tool	40
4.2 Participants	18	9.3 Regional Implementation Plan	41
4.3 Setting	20	<b>10. Outcomes</b>	<b>47</b>
4.4 Design of Workshop	21	10.1 The Indigo 4M Tools	47
<b>5. Defining the Challenge</b>	<b>22</b>	10.2 Codesigning Healthcare Improvements	48
<b>6. Gathering Knowledge &amp; Ideas</b>	<b>24</b>	10.3 Impact of SARS-CoV-2	49
6.1 Experience of Current Care Through I4Ms	24	10.4 Initiating Change in Health Services	49
6.2 Health Outcomes & Access Data	27	<b>11. Next Steps</b>	<b>50</b>
6.3 What People do to Stay Healthy	28	<b>12. References</b>	<b>51</b>
6.4 Conclusion	29		

# 1. Summary

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Older people are integral to the social and economic wellbeing of rural communities. At the same time, many live with chronic illness and limited access to health professionals. There is also a dearth of health prevention activities that specifically target the common age-related difficulties of hearing, seeing, moving, and remembering that have the greatest impact on an older person's physical and mental capabilities.

In 2018, the Indigo Consortium received funding from Better Care Victoria to develop an innovative, systems approach to the care of older people. The project saw the codesign of the Indigo 4Ms Framework to provide evidence-based guidelines for integrated care of older people through four interconnected areas: what matter, medication, mobility, and mental health. While the elements of the Framework have been shown internationally to improve health outcomes and lower health costs, there is little guidance on how to implement a similar Framework in Australian rural and primary health settings.

In 2021, Beechworth Health Service received funding from the Commonwealth Government through the Primary care Rural Integrated Multidisciplinary Models (PRIMM) grant round to lead a consortium of older people and seven health services in the Upper Hume region—Albury Wodonga Aboriginal Health Service, Albury Wodonga Health, Beechworth Health, Corryong Health, Gateway Health, Tallangatta Health, and Yackandandah Health—to codesign a care model using the Indigo 4Ms Framework. The John Richards Centre for Rural Ageing Research at La Trobe University undertook a comprehensive monitoring and evaluation of the project.

## 1.1 Method

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**The project established sound governance and project management to ensure PRIMM grant funding objectives were met on time and within budget.**

Beechworth Health Service, as lead agency, employed a project team and the Project Control Group, comprising executive members of all partner agencies, met monthly to oversee the project.

Five codesign workshops were held from April to November 2022 based on design thinking. Throughout the codesign process, the work emphasised the strengths of older people, presenting a realistic, positive view of ageing and ensured that design techniques built on the strengths of older people.

## 1.2 Findings

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Across the workshops, through small group work and feedback between meetings, the codesign team developed a shared understanding of the Indigo 4Ms Framework, the current ways in which care for older people is provided, and how older people themselves maintain or improve their health and wellbeing.

### **Three essential factors that must be embedded in the care model were identified:**

- It must address negative attitudes and stigma associated with ageing and older people;
- Older people are recognised as experts in their care and need connection to be able to discuss issues of importance; and lastly,
- Existing structures and governance of health systems that hamper age-friendly care must be addressed.

In the final two workshops the codesign team created two tools, one for older people and one for healthcare providers as cognitive aids, written as a series of questions or prompts. The tools are designed to equip older people and primary healthcare workers develop a single personalised, comprehensive care plan that maintains or improves functional ability.

The Indigo 4Ms tool for older people will enhance the autonomy of older people. It will enable them to act with purpose to maintain or improve their capacity, creating the conditions for older people to do and be what they have reason to value. The Indigo 4Ms tool for primary healthcare workers will be instrumental in enabling health workers to navigate the complexity of integrated care for older people by its ability to structure the clinical encounter through the 4Ms. The tool guides health workers in conversations with older people to address the commonly missed, essential areas of care

A regional implementation plan for the I4Ms tool, grounded in implementation science and quality improvement, articulates a health systems approach. It identifies that while the use of the tool is a clinical intervention, implementation will require collective responses from every level of the health system. The plan contains a compendium of technical and human-factor strategies.

With further Commonwealth funding, six health services will draw on their existing quality improvement structures and processes using the regional plan as a roadmap or blueprint, to implement the tool for health workers. Implementing the I4Ms tool provides actions and evidence for two National Safety and Quality of Health Standards: Partnering with Consumers and Comprehensive Care Planning.

At the same time, the John Richards Centre for Rural Ageing Research at La Trobe University, with funding from State Trustees Australia Foundation will guide the implementation of the Indigo 4Ms tool for older people with older people and community organisations in four rural townships.

## 1.3 Evaluation Outcomes

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The John Richards Centre for Rural Ageing Research undertook the monitoring and evaluation of the project. Their evaluation demonstrated that using the Indigo 4Ms Framework within an experience-based codesign process enabled the development of two tools for integrated care and contributed to care integration for older people in the region.

Most codesign and Project Control Group members who participated in the evaluation believed that use of the Indigo 4Ms tools would support older people's needs to be met more comprehensively, improve communication between older people and health providers, and build a shared vision and ethos of age-friendly care. However, potential challenges associated with implementation of the Tool were also raised, notably, funding and resources for implementation, provider barriers to uptake, and older people's capacity and desire to use the tool.

The evaluation report noted that learning about the Indigo 4Ms Framework changed how some health care providers delivered, educated, or resourced care for older people in their respective organisations. Additionally, the evaluation found that it was a challenge to maintain continuity of project personnel (staff, project control group and codesign members) given COVID-19 and resource constrained rural health workforce environments.

The evaluation identified key factors that facilitated successful codesign of a 4Ms integrated approach to the care of older people:

- Investment in an experienced and skilled project manager and co design facilitators; with expertise in relation to age-friendly, 4Ms informed models of care
- Providing a clear structure to project activities, with clear aims and desired outcomes, with the provision of appropriate resources and guidelines to support 4Ms codesign activities
- Adaptability and flexibility within project activities, inputs, and outputs, to accommodate challenges to progress and the needs and preferences of activity participants
- Active support and prioritisation of connections between community members and service providers within codesign activities.

Funding has been secured to implement both tools in rural primary health teams and rural communities.

## 2. Introduction

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**Older people are integral to the social and economic prosperity of communities. This is more starkly evident in rural and regional settings.**

In small communities, older people play a crucial role in running and supporting farming and small businesses, maintaining and improving agricultural and natural environments, as emergency responders, carers for family, neighbours and friends, and as volunteers in a range of community organisations that enable those organisations to remain viable.

As we age, biological changes lead to a gradual decrease in physiological reserve. This decrease is not linear, consistent, or closely associated with age in years.<sup>(1)</sup> Maintaining and improving functional ability as we age—our mental and physical capacities—enables older people to live the lives they value independently and contribute to their communities.

The United Nations Decade of Healthy Ageing (2021–2030) is a global collaboration, aligned with the Sustainable Development Goals, to improve the lives of older people, their families, and the communities in which they live. The Decade addresses four interconnected areas of action: (i) to change how we think, feel and act toward age and ageing; (ii) ensure that communities foster the abilities of older people; (iii) deliver person-centred integrated care and primary health services that are responsive to older people and (iv) provide access to long-term care for older people who need it.<sup>(2)</sup>

Globally, people are living longer. In Australia, there has been a six-fold increase in the number of people aged eighty years and older since 1971 with a corresponding shift in the most common age of death from infancy to eighty-seven for males and ninety-one years for females.<sup>(3)</sup> In 2017–18, people aged sixty-five and over were more likely to have two or more chronic conditions compared with people aged 15–44 (51% compared with 12%),<sup>(4)</sup> a figure consistent with data from the Upper Hume region.<sup>(5)</sup>



Current management of a chronic condition is guided by an evidence-based clinical pathway: (6, 7)

(1) it is used to translate guidelines or evidence into local structures; (2) it details the steps in a course of treatment or care in a plan, pathway, algorithm, guideline, protocol or other 'inventory of actions'; and (3) it aims to standardize care for a specific clinical problem, procedure or episode of healthcare in a specific population.(8)

However, for older people who are more likely to have two or more chronic conditions, evidence shows that 'every individual recommendation made by a guideline may be rational and evidence-based, but the sum of all recommendations in an individual is not'.(9-11) Moreover, a focus on disease management alone neglects common age-related difficulties that have the most significant impact on an older person's physical and mental capabilities.(1)

Person-centred, primary healthcare that integrates all aspects of disease management and health promotion contributes to better outcomes for older people, health services and the health workforce while reducing healthcare costs.(12, 13) Health promotion activities have been shown to be beneficial to older people, including frail people over eighty years of age,(14) yet older people are often neglected in health promotion programs that might maintain or improve their functional ability.(15)

## 2.1 Indigo 4Ms (I4Ms) Framework

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Funded through an Innovation Grant by Better Care Victoria, the Indigo 4Ms framework was developed by the Indigo Consortium following the NHMRC Guidelines for Guideline development using a systematic, rigorous codesign process in collaboration with, partner agencies, clinicians and older people.(16)

It builds on two effective, evidence-based sets of guidelines that enhance the health and wellbeing of older people in hospitals, residential aged care and in the community:

- The Institute for Healthcare Improvement's (IHI) 4Ms Framework,(17) and
- the World Health Organization's (WHO) Integrated Care for Older People (ICOPE) guidelines.(18)

These were subjected to a further assessment through review of the Australian rural health literature (19) and clinical appraisal.

The resultant Indigo 4Ms Framework (Figure 1) structures the four essential elements of evidence-based care for rural older people in a way that is easy to remember:

- **what matters**
- **medications**
- **mobility**
- **mental wellbeing**

The framework provides a blueprint for staff, capturing in one place the interdependent elements that must be considered in every interaction with every older person to ensure care is person-centred, integrated and aims to maintain or improve functional ability.

The Indigo 4Ms Framework clarifies key actions for the each of four core elements. These actions provide foundational care that reduce hospital-acquired harm, prevents or limits functional decline in older people and underpins multidisciplinary care. This means the care provided using the framework will meet the needs of older people, irrespective of the setting or the level of functional ability of the person, reduce duplication and health costs, and supports multidisciplinary teamwork.

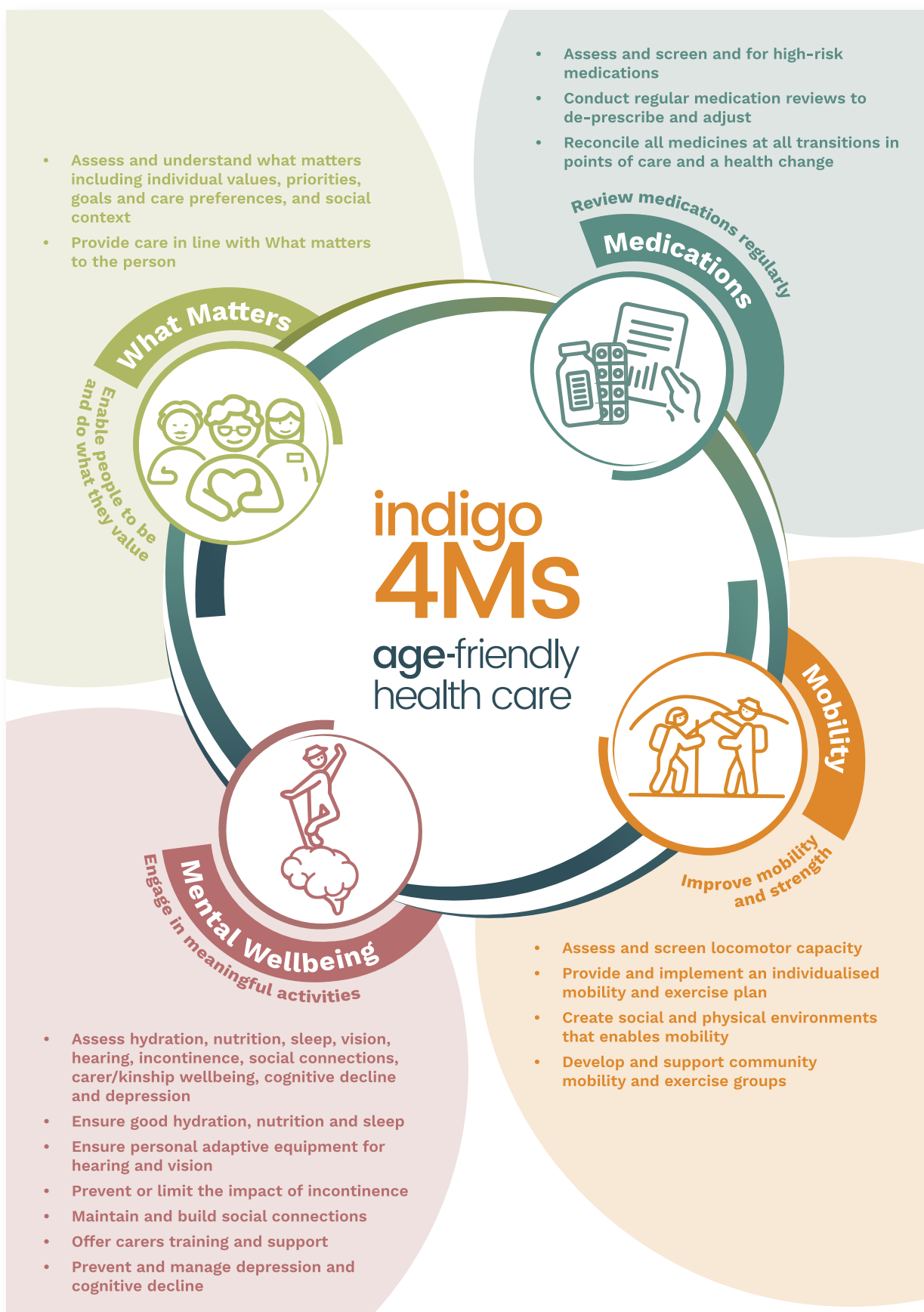


Figure 1: The Indigo 4Ms Framework

## 2.2 This Project

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The Australian Government established the Primary care Rural Integrated Multidisciplinary Models (PRIMM) grant scheme to find solutions to specific primary healthcare service issues in local rural communities and regions.

In 2021, Beechworth Health Service, in partnership with six health services in the Upper Hume region—Albury Wodonga Aboriginal Health Service, Albury Wodonga Health, Corryong Health, Gateway Health, Tallangatta Health and Yackandandah Health and the John Richards Centre for Rural Ageing Research—was successful in an application to codesign a model of care using the I4Ms framework.

This report describes the project, beginning with overall design and governance. It then presents the process of codesigning the I4Ms care model and ends with a description of the plan to implement the Indigo 4Ms tools. The evaluation, completed by John Richards Centre for Rural Ageing Research, is reported separately.

### 3. Project Overview & Governance

The Indigo 4Ms (I4Ms) PRIMM project was designed around the equal involvement of older people and healthcare professionals from rural communities in a codesign process to build and test a care model (see Figure 1).

At the outset, the project established sound governance and project management systems to ensure PRIMM grant funding objectives were met on time and within budget.

As the lead agency, Beechworth Health Service employed a project team to undertake the work. Beginning with raising awareness of the work, the team built a coalition of staff and older people to become part of the codesign team. Simultaneously, the team established sound project management processes.

The John Richards Centre for Rural Ageing Research (JRC) at La Trobe University was contracted to monitor and evaluate the project.

The steps to build and test the care model and to design the implementation plan are the substance of this report (see Figure 2).

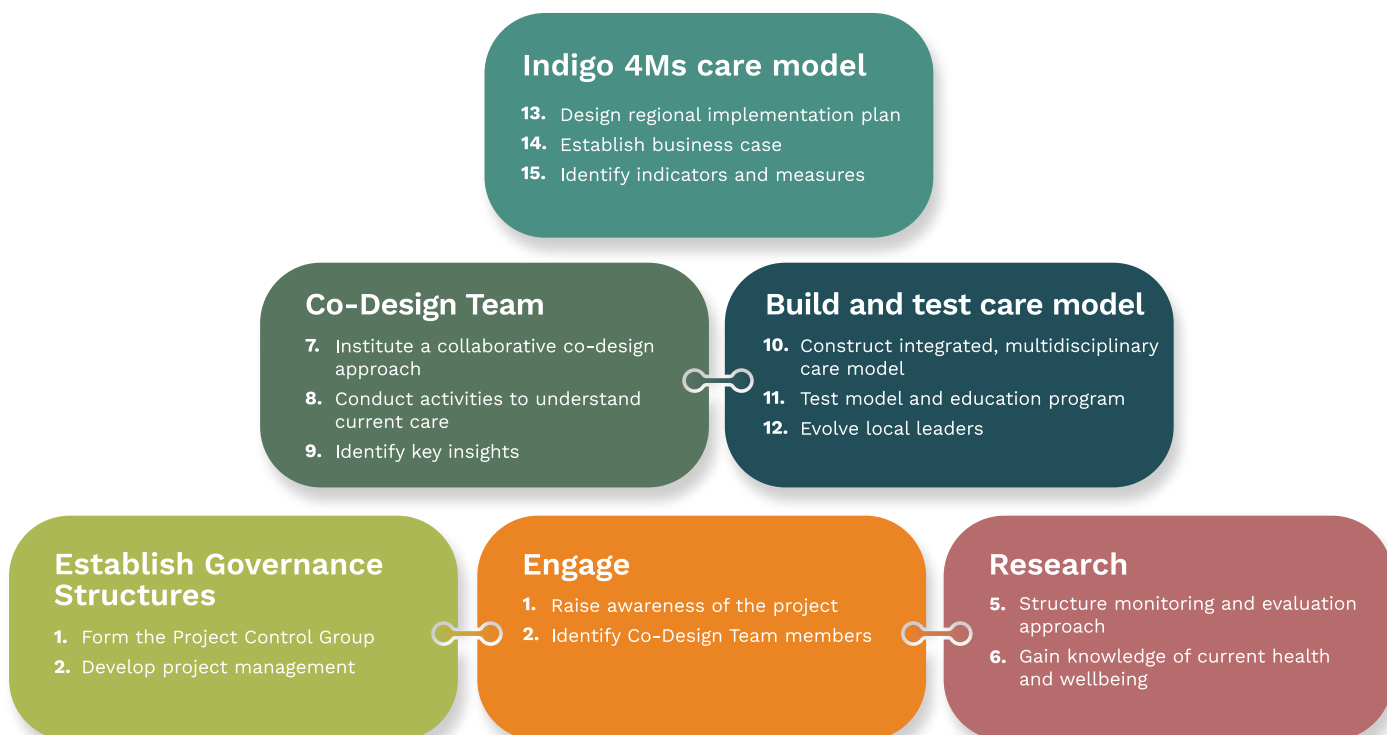


Figure 2: Overview of the I4Ms PRIMM project

## 3.1 Project Control Group



The Project Control Group (PCG) was established and chaired by **Mark Ashcroft** (Beechworth Health Service). It provided governance for the project (see Figure 3).

Membership comprised a CEO or delegate from each of the seven partner agencies. Across the project's life, several organisations' representatives changed. Members included:



Janet Chapman  
Lachlan McKinnon  
Lucie Shanahan  
Brett Pressnell  
Albury Wodonga Health



Irene Blackberry  
Rachel Winterton  
JRC



David Noonan  
Albury Wodonga Aboriginal  
Health Service



Vicki Pitcher  
Natalie Gower  
Juliana Sheridan  
Tallangatta Health Service



Dominic Sandilands  
Sharon Edmondson  
Nicole Martin  
Corryong Health



Andrea O'Neill  
Yackandandah Health



Jonelle Hill-Uebergang  
Isabel Patton  
Cat Mayhew  
Gateway Health

PCG members met every month, providing advice and feedback on the project's design, maintaining financial and risk oversight and a peer network for a regional approach to the I4Ms care model. This provided significant leadership of the project, connecting project staff directly to the health workforce and older people in their respective organisations and communities.

## 3.2 Project Team

The project team was recruited and employed by Beechworth Health Service. The team, sequentially led by the two project managers, ensured the PRIMM grant was managed to a high standard. The team was responsible for designing, implementing and reporting on the codesign workshops and relevant meetings, providing secretariat support to the PCG and liaising with La Trobe University for the seamless completion of the formal monitoring and evaluation of the project.

### Project managers

**Jan Lang**

*10 August 2021 to 29 July 2022*

**Dr Kathleen Brasher**

*18 July 2022 to the completion of the project in July 2023*

### Project officers

**Elizabeth Ibrom**

*20 September 2021 to 23 December 2021*

**Kim Wright**

*28 March 2022 to 15 July 2022*

Additional knowledge and practical support for recruitment and codesign came from James Dunne and Sophie Rhys (at the then Upper Hume Primary Care Partnership). James and Sophie met with the project team to discuss recruitment strategies, assisted in promoting the project, contributed to codesign planning meetings, and co-facilitated several codesign workshops.

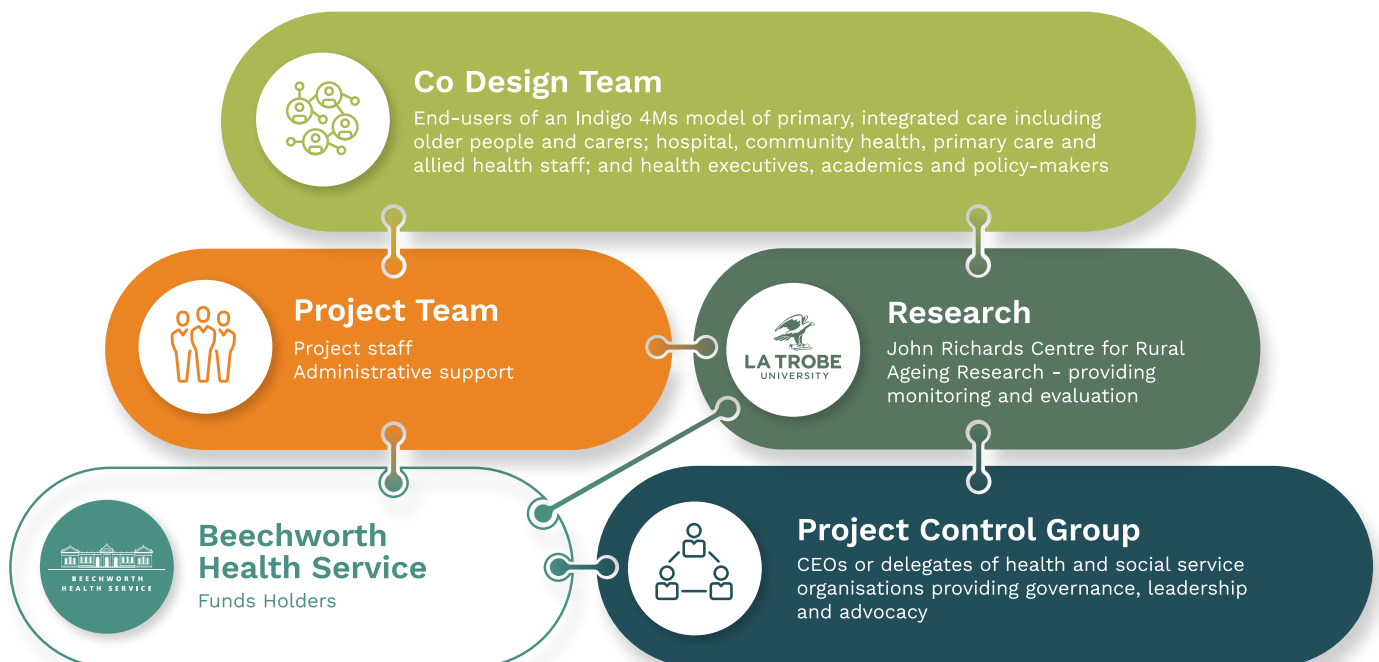


Figure3: I4Ms project governance structure

## 3.3 Research

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Dr Rachel Winterton from the John Richards Centre for Rural Ageing Research at La Trobe University led the monitoring and evaluation of the project. Albury Wodonga Health Human Research Ethics Committee provided oversight (HREC/77761/AWHEC-2021-273721v1).

The evaluation assessed whether using the I4Ms framework in a codesign process facilitated models of integrated care for rural older people within the Upper Hume region. Two questions guided the research:

1. What are the inputs, activities and outputs that facilitate or hinder the successful codesign of a 4Ms integrated approach to the care of older people? (process evaluation)?
2. How does using the I4Ms framework contribute to integrated working practices among multidisciplinary rural health and aged care workforce and community members? (outcome evaluation)

### Research Team

#### Lead Researcher & Co-investigator on the grant

**Dr Rachel Winterton**

*Dr Winterton was on parental leave from 1 January to 30 June 2022.*

#### Research Fellow & Co-investigator on the grant

**Dr Kathleen Brasher**

*(Co-investigator on the grant)  
1 January to 1 July 2022*

#### Research Officer

**Kayla Royals**

*Provided casual assistance with the scoping paper*

#### Research Fellow

**Dr Clare Wilding**

*Appointed to the project in July 2022.*

The full protocol for the research evaluation was published at the beginning of the project.[15] The final evaluation is reported separately.



## 4. Codesign Process

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**Basing the design of innovations on the priorities of patients, caregivers, clinicians and healthcare decision-makers leads to better patient outcomes and greater uptake of new approaches to care.(20, 21)**

While codesign is an established method for including end users in health design, there is little additional guidance on codesigning either for ageing or with older people. Instead, much of the literature focuses on specific, time-bound health concerns. Therefore, it was necessary across this project to consult a broad range of literature to inform the codesign process, and to work flexibly when conducting workshops.

Five codesign workshops were held from April to November 2022. The approach built on the definition of codesign from the New South Wales (NSW) Agency for Clinical Innovation:(22)

Co-design enables consumers to become equal partners in the improvement process for health services. ... Co-design typically uses a staged approach that adopts participatory and narrative methods to understand the experiences of people receiving and delivering particular services followed by consumers and health professionals co-designing and testing improvements collaboratively.

In addition, the project recognised that an explicit framing of ageing and older people was essential.(24) Older people are diverse, highly competent and able to fully contribute to their own and their communities' health and wellbeing. Throughout the codesign process, the work emphasised the strengths of older people, presenting a realistic, positive view of ageing. This was achieved by using person-centred language, as well as affirmative images reflecting the diversity of older people in rural settings in all communications and by taking actions that showed a respectful, open-minded curiosity about their experiences and knowledge of maintaining health and wellbeing in later life.

The principles that underpin codesign were the standards on which all actions were based:(23)

- **inclusive**
- **respectful**
- **participative**
- **iterative**
- **outcome-focused**

## 4.1 Recruitment

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**The research and project teams worked collectively to guide the recruitment process to ensure the codesign team reflected the end users of an I4Ms care model for primary, rural and integrated care.**

Health services' executive staff were asked to identified staff to attend. They were also asked to invited members of their community advisory groups to participate. Where staff did recruit community representatives, the health service staff also facilitated information sharing, completion of documents, and transport if required. This greatly enhanced the participation of people in isolated areas, or with mobility limitations or were reluctant initially to participate.

The project team contacted social care organisations and community groups in the Upper Hume region that provide services to older people or are places that older people frequent or contribute to assist with recruitment. Most community members were recruited this way.

## 4.2 Participants

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A total of forty-two people registered to attend workshops, with thirty-two participating regularly and five attending each of the five workshops. Most participants resided or worked in one of four local government areas: Indigo, Towong, Wangaratta and Wodonga. A small number were from Albury, NSW. Participants were diverse in age and predominantly women.

Twelve older people participated regularly; two identified themselves as consumer representatives attached to local health services. Several participants had significant professional experience in various primary health and social care settings.

Twenty-one staff members from rural and regional health and social care organisations and a major rural university participated (see Table 2). The organisations represent the continuum of healthcare services in rural settings. Due to work demands often linked to COVID-19, most staff members attended irregularly.

<b>State government</b>	<b>Department of Families, Fairness and Housing</b>
<b>Health services</b>	<b>Albury Wodonga Aboriginal Health Service</b> <b>Albury Wodonga Health</b> <b>Alpine Health</b> <b>Beechworth Health</b> <b>Corryong Health</b> <b>Gateway Health</b> <b>Hume Regional Palliative Care</b> <b>Tallangatta Health Service</b> <b>Yackandandah Health</b>
<b>Aged care services</b>	<b>Westmont Aged Care</b>
<b>Community services</b>	<b>Beechworth Pharmacy</b> <b>Kirinari Community Services</b>
<b>Education</b>	<b>Charles Sturt University</b>

Table 2: Health and social care organisations represented in the codesign team

Staff members held varied roles at management and operational levels, reflecting the end users of an integrated model of care (see Table 3).

<b>Managerial and strategic roles</b>	<b>Academics</b> <b>CEO</b> <b>Manager—Community Aged Care</b> <b>Practice managers</b> <b>Program officer/senior program officer</b>
<b>Clinical roles</b>	<b>Care coordinators</b> <b>Case managers</b> <b>Community nurse practitioner</b> <b>Diabetes educator</b> <b>Dietitians</b> <b>Geriatricians</b> <b>Nurse managers, nurse unit managers</b> <b>Podiatrists</b>

Table 3: Staff roles held by codesign participants

## 4.3 Setting

Codesign meetings were held at Birallee Park Function Centre in Wodonga, with catering provided by Andiamo, a local caterer.

The initial plan was for meetings to be held at Beechworth Health Service, however, the COVID-19 pandemic removed the availability of the hospital and aged care facility as a venue.

Instead, all workshops were held at Birallee Park Function Centre. Birallee is a community space, centrally located and accessible, with plenty of car parking and a large, light open room that overlooks the football oval permitting social distancing and natural ventilation. A benefit of the change of venue was that the community space reinforced the codesign team's inclusive, equal nature, which may not have been possible in a hospital venue.

A local caterer provided individually boxed meals with food that significantly differed from the refreshments commonly provided in hospital settings. The individual boxes allowed participants to sit comfortably wherever they chose to enjoy their morning tea and lunch or to take their lunch away if they needed to leave the workshop early.

All community members were remunerated with a gift voucher, and travel costs were reimbursed.



Pictured: Community members at Birallee Park Function Centre

## 4.4 Design of Workshops

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This project applied design thinking to the flow and activities of the five workshops. Design thinking is an iterative process that prioritises empathy for users, collaborative multidisciplinary teams and creative, generative techniques to bring about innovation.(25, 26)

The sequence of the workshops was as follows:

1. Define the challenge (Workshop 1)
2. Gather data, information and ideas (Workshops 1&2)
3. Develop insights and ideas (Workshops 3&4)
4. Test ideas through prototyping (Workshop 5)

Each workshop was structured to represent the project's guiding principles and advance the development of a care model using the I4Ms framework. Each workshop ensured all participants could contribute their knowledge equally, work collaboratively, recognise the uncomfortable, uncertain nature of divergent thinking in codesign, and generate new thinking.

The project team and their collaborators met to shape the agenda and activities for each workshop. The research team was consulted throughout this process. The sessions mixed highly interactive activities with more formal technical information sessions that provided shared background knowledge. The selected activities drew on the project team's prior experiences in facilitation and the broad codesign and group facilitation literature. Detailed facilitation plans were prepared for each session.(27) The workshops were dynamic and responsive to the needs and mood of the group.

Ground rules were discussed and agreed upon at the first workshop. Every workshop commenced with a reminder of the ground rules and an opportunity to reshape them as needed. These were:

- **Every person has the right to voice their opinion**
- **Respect all contributions —no interruptions, please**
- **Maintain confidentiality**
- **Everyone's input is equally valued**
- **Keep jargon to a minimum**
- **Be supportive rather than judgmental**
- **Share your experiences**
- **Job titles are left at the door**

## 5. Defining the Challenge

The activities in the first two workshops had three aims: to create a clear design brief, to build a cohesive codesign team and to gather data from multiple sources to understand the current care and needs of older people relevant to the I4Ms framework.

In design, 'great briefs drive great outcomes'. (26) The first workshop defined the purpose of the codesign process as: How might we guide older people and health professionals to provide care using the I4Ms framework? 'How might we questions' are used in design as the format 'suggests that a solution is possible and because they offer you the chance to answer them in a variety of ways'.(28)

As well as defining the question, the second component of the design brief was to develop a vision statement for the I4Ms care model. In health design, having both a service promise and a patient outcomes statement is crucial: 'improvement work can sometimes resolve system issues without improving patient experiences. Even when considered, patient experiences may still be overshadowed by other elements'.(29)

In the codesign meetings, the phrases 'vision statement', 'service promise' or 'patient outcomes statement' were not used; rather, two questions were asked in two separate activities to generate ideas for the vision statement:

- What does it feel like when you're receiving good care?
- What does providing good care look like?

Across the first three workshops, through small group work and feedback between meetings, the vision statement was developed and refined as follows:

**Age-friendly care is a partnership. It recognises individual choice and ability. The older person is actively involved and central to all interactions. The care provider is genuinely interested in delivering wellbeing-focused, timely, accessible and safe care in a respectful, comprehensive and coordinated way.**

Graphically, the determinants of age-friendly health care in the vision were represented as the Southern Cross (see Figure 4).

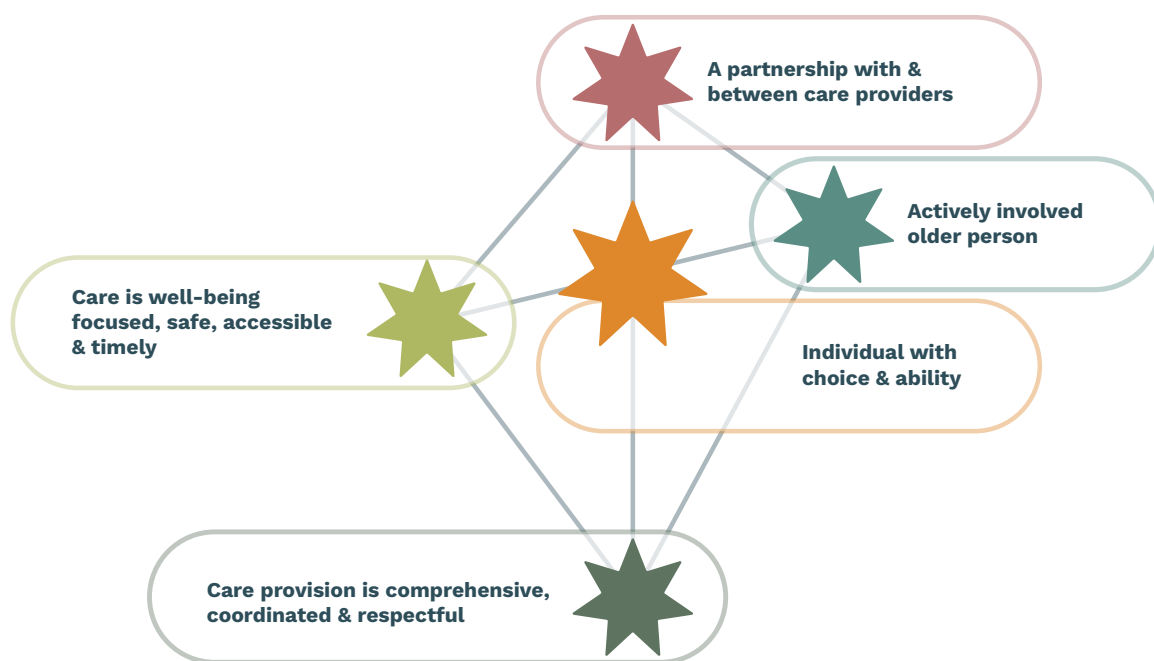


Figure 4: Determinants of age-friendly health care

The vision combines a service promise and patient outcomes. It recognises that, along with the widely referenced **pillars of high-quality care** (30, 31)

- **safety**
- **effectiveness**
- **patient-centredness**
- **timeliness**
- **efficiency**
- **equity**

**integrated older people and health workers seek a genuine, caring relationship between them.** Importantly, it also gives an older person two positions: at the centre as an individual with choice and ability and as an equal contributor in the multidisciplinary team.

The vision established the rationale for the work and formed a reference point against which future improvement ideas were assessed. The activities to develop the vision also served to create a feeling of openness and trust within the codesign team.

## 6. Gathering Knowledge & Ideas

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With the challenge defined (the design brief) and the basis for the vision established, the next step in the codesign sequence was to gather objective data and experiential knowledge on the health and wellbeing of older people and how care is currently provided

### 6.1 Experience of Current Care Through the I4Ms

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The first activity, to gather knowledge, also gave the codesign team a shared understanding of the I4Ms framework.

The session was planned to be active with four stations set up around the room—one for each M—with a large poster printed with the aim and actions for each M. A facilitator was to stand at one poster with small groups of participants rotate through each station. However, on the day, it was evident that some participants would struggle to move easily and stand for this activity. Instead, each facilitator took a poster and the codesign team members were divided into four groups at a table with the facilitators rotating every fifteen minutes.

The facilitators asked open-ended questions on how participants assessed and acted on each M, taking notes where possible. At the end of the session, facilitators wrote their reflections of this activity. The findings are summarised under each M:

#### 6.1.1 What matters

##### Provide person-centred assessment and care planning

- Assess & understand what matters to you including Individual values, priorities, goals, care preferences, and social context
- Act by providing current and future care in line with ‘What matters’, including end-of-life care

Older people reported that the assessment of ‘what matters’ is often good, although the ‘what matters’ question was unfamiliar. However, they recounted that action, the care received, was often not linked to the assessment. Indeed, people described feeling ‘over-assessed’ and undermined if practitioners requested that family members attend future appointments ‘to help’.

The health workers were very familiar with ‘person-centred assessment’. They noted that being able to assess and understand what matters develops over the course of a practitioner’s career. Others remarked that a busy workload often constrains practice and prevents engagement.



## 6.1.2 Medication

### Eliminate unnecessary, ineffective and duplicative medicines

- Assess & screen for high-risk medications
- Act by conducting regular medication reviews to de-prescribe and adjust, and to reconcile all medicines at all transitions in points of care and a health change

This M garnered a lot of discussion in all groups. The codesign team mostly perceived that too many medicines are prescribed, and there is very little review. One wry comment was that ‘scripts are like a subscription—it’s hard to opt out once you start’.

Health professionals recounted how deprescribing takes time and patience. There was agreement that reviews are not done often enough despite financial incentives. A lack of communication between prescribers, especially during discharge or specialist review, was also seen as a barrier to the reconciliation of medicines.

## 6.1.3 Mobility

### Improve mobility and muscle, bone and joint function

- Assess & screen locomotor capacity—a person’s physical capacity to move based on endurance, balance, muscle function, strength, power, and joint function.
- Act by providing and implementing an individualised mobility and exercise plan to build and maintain muscle strength, heart health, flexibility, and balance; create social and physical environments that enables mobility; and develop and support community mobility and exercise groups.

Mobility was rarely assessed in the absence of a physiotherapist. No older person reported having an exercise plan, although many related different ways of staying active in community settings, noting the link between activity, social connection and mental health.

Older people discussed the negative perceptions of mobility aids and ageist attitudes that create a barrier to walking. Strong messages from family to reduce the risk of falls also added to a fear of physical activity.

Health professionals identified the strong focus on fall risk assessments through referrals to physiotherapists noting, however, the perennial problems in rural areas of transport and wait times. They listed community exercise and activity groups and spoke about the benefits of everyday activities, particularly walking.

## 6.1.4 Mental wellbeing

### Promote psychological wellbeing and cognitive health

#### Assess

- Hydration, nutrition, and sleep
- Vision and hearing
- Continence
- Social connections, and wellbeing of carers/ family
- Cognitive decline and depression

#### Act to

- Ensure good hydration, nutrition, and sleep
- Ensure personal hearing and vision adaptive equipment
- Prevent or limit the impact of incontinence
- Support, maintain, train, build connections with family, kin, supporters, caregivers, and community
- Prevent and manage depression, delirium, and cognitive decline

Unsurprisingly, COVID-19 isolation was observed to be a period of reduced social connection and led to a decline in cognitive ability.

Older people stated that hearing and continence problems significantly affected daily life. Incontinence, or the fear of being incontinent, curtailed travel in rural areas. Despite this, health professionals seldom assess hearing and continence. Older people linked ageist attitudes, shame and stigma to the limited discussion on these issues.

Depression was often managed solely with medication without any support or links to social support in the community.

Health professionals described how they feel pressured to bring in social care services as a risk mitigation strategy without assessing the person's social situation. Medication was routinely prescribed for depression rather than social prescribing or counselling.

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The 4Ms 'walking tour' generated a great deal of animated discussion. Tables were reluctant to finish talking when time was called to rotate facilitators. Several participants continued to discuss the importance of the Indigo 4Ms Framework over their lunch. One community member on arrival described feeling anxious and unsure about whether he was 'of any use to something like this'. By the end of the session, he was chatting easily with people around him and contributing to the discussions.

The findings highlighted that the elements of the framework are central to maintaining functional ability and are already incorporated in some form in current care. However, there are significant gaps in service delivery, and a need to link these elements through a health promotion.

## 6.2 Health Outcomes & Health Access Data

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### La Trobe University analysed and reported on health and health service data relevant to the project.(5)

Their report was provided to all participants prior to the workshop. Selected data were presented in a formal session divided into four sections - social determinants of health, health status, access to services and hospitalisation - as graphs under the headings below.

At the end of each section, participants were given a period of quiet reflection and then asked to discuss their responses to the findings in small groups. General reflections were then given in a whole group session.

### Social determinants of healthy ageing

- population older than the rest of Victoria
- older people a significant proportion of the population
- number of Aboriginal and Torres Strait people higher than the state average
- relatively lower numbers of people born overseas
- more people living alone compared to the rest of Victoria
- half of all older people having low-income levels
- low internet access at home
- low access to a car
- a small group of older people live with significant disadvantage
- strong rates of volunteering

### Mental and physical health

- significant numbers with multiple chronic illnesses
- significant numbers with low life satisfaction
- a small number of people need assistance with core activities.

### Access to health services

- Wodonga having more medical practitioners than other parts
- slightly below average for quality of care by General Practitioner
- aged care services at a lower level of care required.

### Hospitalisation

- life expectancy comparable with the rest of Victoria
- Wodonga having a higher avoidable mortality rate than the rest of the state
- heart and lung disease being common causes of admission

Participants, especially several health professionals, were struck by the significant pockets of older people living at a disadvantage in the region. The group mentioned the low internet connection levels, which are now essential for health access.

There was also discussion on the lack of available specific, local data segmented by meaningful age cohorts and gender, especially given the high levels of demographic and geographic variation across local government areas and regions.

## 6.3 What People Do To Stay Healthy

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The final activity in the ‘gather knowledge’ process was to gain a fuller understanding of the actual behaviours of older people to maintain or improve health and wellbeing. Participatory mapping was used for this purpose. Mapping is relational by design. It allows participants to map their local knowledge, and in discussion, produce rich understandings of people, place and action.(32, 33)

The geographical boundaries for the maps matched communities where codesign team members lived or worked. The number of maps was determined by the need to have at least four participants together on a map. Participants were asked to nominate which map they wanted to work on and all groups had a mix of healthcare staff and older people. Maps of the townships were printed on A0 paper. A range of stationery was provided to mark the maps.

Three questions guided the session:(34)

1. What are the actual behaviours, steps, activities or services you/older people participate in for health and wellbeing?
2. Where is it provided?
3. Who provides it?

Facilitators used open-ended questions to elicit contributions and encouraged participants to mark or note these on the map.

Data generated from mapping was plentiful and highly localised, showing the connection between older people and place. Many of the actions older people took to maintain their health and wellbeing were strongly focused on the built and natural environment. For example, walking and rail trails were noted frequently with their even paths, wide enough for mobility aids and provided opportunities for contact and conversations. Similarly, parks and open spaces where seating, shade, toilets and water are available were repeatedly marked on the maps.

Public buildings and spaces provided the venues for community group activities such as singing, live music or story-time at the library with grandchildren and great-grandchildren. Interestingly, it was often the health professionals who identified the location of health services on the maps.

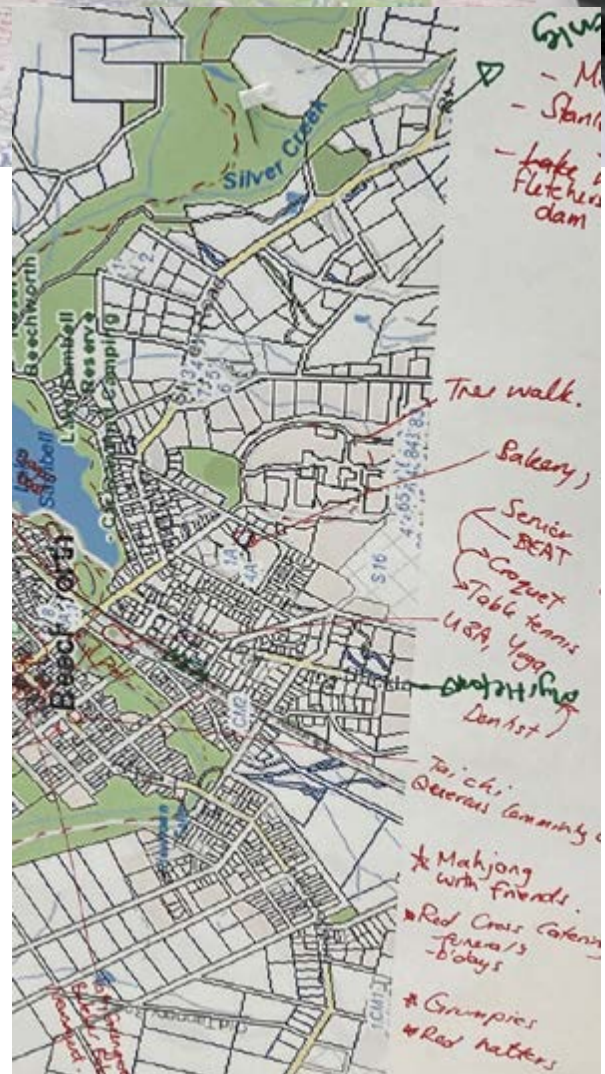
Using participatory mapping provided a neutral, shared space where everyone in the group had equal knowledge. All members of the design team contributed ideas.



## 6.4 Conclusion

The purpose of this step in the codesign process was to gather objective data and experiential knowledge on the health and wellbeing of older people and how care is currently provided.

This was achieved across two workshops through different activities. The codesign team heard together about the ways in which current service delivery has significant limitations in the provision of age-friendly health care.



Pictured: Beechworth group in action

# 7. Developing Insights & Ideas

With the codesign brief clear, and a broad understanding of current healthcare for older people, the next phase in the sequence of codesign was to develop ideas and insights to guide the development of an appropriate care model.

Design thinking literature recommends generating insight statements to ‘succinctly articulate the most valuable learning or ‘aha’ moments’(28) that are then used to generate new ideas.(26, 28, 35, 36) Insight statements are informed by the design brief and the knowledge gained on the current state, joining theoretical knowledge with experience, behaviours and feelings

This approach was used in preference to the health codesign literature where the advice is generally map the patient journey or use persona profiling.(37-39) However, in this project, patient journeying was unhelpful given the heterogeneity of ageing. Ageing does not follow the classic, time-bound illness narrative of presenting symptoms, diagnosis, treatment and recovery.(40, 41) Persona profiling risked reinforcing ageist stereotypes further stigmatising older people.(24, 42)

Prior to the workshop, the project team summarised the data from all the activities undertaken in workshops one and two, creating three documents that were printed for each participant:

## Current use of the core elements of the Indigo 4Ms Framework

This document contained twenty-nine numbered statements synthesising data collected through the ‘Indigo 4Ms tour’ (described above). The statements were loosely collated into themes and phrased as close to the original data as possible.

## Current health and wellbeing data

The headline data from the health and health service data paper described above was listed on a page. Participants were asked to review this list, noting any key insights.

## Current health and wellbeing activities

This sheet listed a collation of the main activities identified in the mapping exercise. Participants were asked to read through these, noting any insights.

## 7.1 Attitudes & Stigma

Participants were asked to read through each document individually first, then, in their small groups, discussing what stood out for them. Each table was provided with a plain A2 sheet of cardboard that had been folded into six to record their key insights. The results from each table were then discussed in the larger group.

The tables independently identified several of the same statements giving ten final statements. Interestingly, one group generated insights from their discussion rather than the material before them. This group had a greater percentage of people who had only attended one previous session. This may reflect a loss of trust in the synthesised findings provided to each table, and the necessary iterative nature of co-design that benefits from a consistent group of participants. This remained a tension in the project given the on-going COVID demands on our health system.

The ten statements were reviewed by the project team and clustered into three themes: attitudes and stigma, goal setting and person-centred care, and barriers. The statements were refined into 'how might we' statements for the prototyping session.

The first theme, 'attitudes and stigma', spoke to the pervasive institutional and interpersonal stereotypes (how we think), prejudice (how we feel) and discrimination (how we act) directed towards older people that damages health.<sup>(43)</sup> The benefits of inclusive community attitudes that support healthy ageing were identified as critical to the I4Ms care model.

Reframed as 'how might we' statements, these statements consider:

- How might we build a care model that incorporates older people's skills and strengths?
- How might our model prioritise older people remaining active, independent participants in our community?
- How might we structure a 4Ms care model that promotes a positive approach to ageing and growing old?

## 7.2 Goal Setting & Person Centred Care

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‘Goal setting and person-centred care’ theme drew together five insight statements that spoke directly to the importance of person-centred care that ‘respects and responds to the preferences, needs and values of patients and consumers’.(44)

Reframed as ‘how might we’ statements, this theme requires the 4Ms care model to place the older person at the centre of care. The statements are as follows:

- How might we build a 4Ms care model that fosters older people as the experts in their care?
- How might our 4Ms care model promote social connection and engagement?
- How might we keep learning and connecting at the centre of 4Ms care?

## 7.3 Barriers

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The third theme was ‘barriers’, drawing together four insight statements recognising the challenges in the existing health system to age-friendly care.

The codesign team discerned the critical role of structure and governance of health systems in providing integrated care for older people in rural settings. As ‘how might we’ statements, these insights ask for a model to take a different approach to healthcare:

- How might health providers be given space to focus on the big picture of the lives of older people?
- How might we break the rules that get in the way of delivering integrated 4Ms care?
- How might we make waiting time to receive services that support 4Ms care more productive?

## 7.4 Conclusion

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The purpose of this stage of the codesign process was to bring together the theoretical knowledge gained in earlier sessions with experience, behaviours and feelings relevant to the care for older people.

The codesign team worked with a substantial amount of material, engaging in deep conversations to agree on statements that reflect their key insights. Significantly, there was general agreement across the team that attitudes, connections and addressing barriers were essential to consider in the prototyping phase.



# 8. Prototyping & Testing the Model

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The final process in the sequence of design thinking was to prototype and test the model under development.

The codesign team was, at this point, working effectively as a team. They were familiar with the structure of each workshop and at ease in contributing to the group's collective effort. There were changes in health staff attending in the last two sessions with the new participants less comfortable accepting the data from the early sessions which necessitated careful navigation.

## 8.1 Prototyping

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Prototyping requires an interaction with material leading to the physical building of an artifact that can then be field tested.(45) To prototype the Indigo 4Ms care model, the activity needed to build something tangible that facilitated collaborative work. The project team suggested designing a checklist given the ubiquitous nature of checklists. In the introduction to the session, a recipe and a packing list were presented as examples to the codesign team.

In health settings, checklists have been shown to provide two main benefits that are essential to this project. First, they assist with memory recall of 'mundane matters' easily overlooked in the care of patients with multiple conditions and second, they 'make explicit the minimum, expected steps in complex processes' by aiding judgement (46).

Prototyping commonly draws on elements of brainstorming (47, 48), favouring rapid or speedy activities (49). Older people, instead, have great strength and wisdom that comes with time given to develop ideas. For that reason the project team employed an adapted version of Conversation Café (50) to generate a list of potential items for a checklist.

Conversation Cafés were designed by Susan Partnow, Habib Rose and Vicki Robin as informal, hosted, drop-in discussions in cafes, bookshops or other public places (50). Using a simple format, a host guides a group of up to eight people through a conversation on a topic. Each participant is given a talking object, speaking briefly, without interruption, to the topic, before passing the talking object to the next person. At the end of two turn-taking rounds, the host opens the conversation.

For this co-design session, the ‘conversation’ topic was each of the 4Ms. Participants worked in small groups, with one person acting as host at each table. Each participant was provided with the documents from the previous workshop (described above) and the insight statements. The groups were asked to spend 25 minutes on each M to answer, ‘What items on a checklist might guide older people and health care providers to...?’

- 1. Provide person-centred assessment and care planning (What matters)**
- 2. Eliminate unnecessary, ineffective, and duplicative medicines (Medication)**
- 3. Improve mobility and muscle, bone, and joint function (Mobility)**
- 4. Promote psychological wellbeing and cognitive health (Mental Wellbeing)**

The conversations focused on creating items drawing on the knowledge and insights acquired in the previous three workshops. The vision was revisited as it is the outcome sought. Data from the conversations were collected using an adapted ‘knowledge template’.(27)

Overall, the group produced 279 items  
What matters n=81  
Medication n=65  
Mobility n=66, and  
Mental wellbeing n=63  
Four additional items were recorded under ‘general’.

In the concluding group discussion, the codesign team made three recommendations:

- **There needs to be two checklists, one for older people and providers**
- **The checklists need to build rapport; to act as a series of conversation prompts**
- **The checklists must be of value to both older people and providers. They need to balance specific and general information and not act as an assessment tool that can revert to a tick-box exercise**

## 8.2 From One Checklist to Two Tools

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The purpose of the PRIMM grant was to co-design a trial-ready, community-supported model of primary care that is local, integrated, and multidisciplinary. The design brief was to develop an innovation that would guide older people and health workers to use the Indigo 4Ms Framework. The iterative nature of codesign changed the shape and sharpened the focus of the model to a checklist retaining the local integrated, multidisciplinary nature of the model.

Older people and their health providers, who are the centre and end-users of this work, come from different backgrounds, experiences, professional knowledge, world views and social norms. The range of health and social care providers involved in the care of an older person is considerable, and they work in complex systems with their own structures and processes. Words are flexible. Terms are used interchangeably, and within disciplines assume different meanings.

A checklist is ‘a list of actions arranged systematically that allow the user to consistently perform each action, record the completion, and minimize errors’ (51). In health care, checklists have been shown to provide three main benefits. First, they assist with memory recall of ‘mundane matters’ that are easily overlooked in patients, second, they ‘make explicit the minimum, expected steps in complex processes’, and third, they provide an equal, standardised framework for communication (46). In designing a checklist, best-practice advice recommends the checklist has clear pause points, ‘a particular point in time when you know you need to pause and complete the checklist’ (46). It must be quick to complete, comprising five to nine items for relevant sections, and written in precise language (46, 52).

In synthesising the checklist items from workshop four, with the clear recommendations from the codesign team that the final products must act as conversation prompts and not a ‘tick-box’, the limitations of the choice of checklist became apparent. It is also important that the innovation maintain its ‘hard core’ of the 4Ms and have a ‘fuzzy boundary’ that permits its use by older people, across health disciplines, institutions, and settings.(53)

A cognitive aid is ‘any external representation that supports a mental process. Examples are reminders, checklists, and other prompts designed to prevent forgetting of critical tasks’.(54) It is the overarching term used for a range of documents in health care. In quality improvement, tools refer to process-improvement techniques such as graphs, charts, diagrams, or standalone strategies, processes, successful protocols, forms, instructions and guidelines.(55-57) They are also everyday items to get a job done.

In discussion with the Project Control Group and codesign team, the decision was made to refer to the innovation developed through codesign as the Indigo 4Ms tools.

## 8.3 Testing the Tools

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Between the two sessions, the project and research teams prepared two tools with all the items recommended by the codesign team. Items were synthesised, phrased as questions with a series of relevant prompts and actions, and two sections were added to both checklists, ‘before the appointment’ and ‘finalising’.

The health literacy research and grey literature were consulted for general information on writing health advice for patients/clients/consumers (58, 59) for the older persons’ checklist while the wording of the health workers’ version was informed by the WHO’s Integrated Care of Older People’ (ICOPE) Handbook.(18)

The participatory approach of Troika consulting (48) was employed to test the tools, informed by cognitive interviewing (60, 61). Troika Consulting is a simple ‘peer support’ participation format. Participants form groups of three rotating through roles of ‘client’ and ‘helpers’. The process generates conversations between the two helpers that encourages new insights. Whereas cognitive interviewing is a qualitative method specifically designed to investigate whether a survey question fulfils its intended purpose (61). In this activity, a cognitive interviewing approach informed the troika consulting process, with co-design team members asked to assess the comprehension of items and the degree of difficulty in answering the question.(60)

Participants were asked to have one person take the role of an older person and another the role of health professional and read each item out loud. They were then asked to discuss their interpretation of the item with the third person acted as the prompter and note-taker.

While there was some uncertainty in some groups regarding the activity, all groups were highly engaged in conversation and debate about items. Notes taken by codesign participants were collected at the end of the session. Overall, 121 comments were made on the items with 68 on the older person’s tool, and 53 on the health provider’s tool.


Using this data, the project team finalised the content of the two I4Ms tools. The penultimate drafts went to the Project Control Group and codesign team via email or hard copy for feedback. Comments and adjustments were made and the PCG approved the final versions.

## 8.4 The Indigo 4Ms Tools

The codesign team has developed two Indigo 4Ms tools as practical devices to implement the Indigo 4Ms framework (figures 5 and 6). The tools are designed to equip older people and primary healthcare workers develop a single personalised, comprehensive care plan that maintains or improves functional ability.(62)

### 8.4.1 The Indigo 4Ms tool for older people


The Indigo 4Ms tool will enhance the autonomy of older people. It will enable them to act with purpose to maintain or improve their capacity, creating the conditions for older people to do and be what they have reason to value.(1) By using the tool, older people will be better equipped to participate fully in conversations with the healthcare team



## Older Persons' Tool

**Before an appointment**

- What does a good day look like for me
- In an average day, what brings me happiness
- What are some of the things that matter most to me
- What are some of the things I want to do in my life
- How confident am I that I can solve problems I might face
- What do I want from my health care
- Do I have an advanced care plan
- Have I got a list of the things I do to stay healthy and well, including my medications
- Have I written down any questions I want answered
- I will have someone with me if that's helpful to me




**What Matters**

- What is my biggest concern today
- Has this stopped me from doing the things I want to do




**Medication**

- What medicines do I take and why
- Am I reluctant to take any medicines
- When were my medicines last reviewed
- Has there been any changes in my life since that review



**Mobility**

- Do I have any trouble doing things around the house, garden, or neighbourhood
- Do I have people or aids to support me
- What do I do for exercise



**Mental Wellbeing**

- Have I lost weight or not felt like eating
- Have I had my vision and hearing tested this year
- Have I had any problems with my bladder or bowel (wee or poo)
- Is there anything or anyone that gets in my way of being who I want to be
- Do I speak with people regularly
- Are there any clubs or activities I am interested in being part of
- Am I worried about my concentration, memory or thinking
- Have I been feeling down or out of sorts lately, or not wanting to get out of bed

**At the end of this session**

- Have I got an updated, or written, legible list of actions to help me live well
- Do I know what to do next
- Do I know what my health provider is going to do next, and by when
- Do I know how to get information or help

Figure 5: Indigo 4Ms tool for use by older people

## 8.4.2 The Indigo 4Ms tool for primary healthcare workers

The Indigo 4Ms tool will be instrumental in enabling health workers to navigate the complexity of integrated care for older people by its ability to structure the clinical encounter through the 4Ms. The tool guides health workers in conversations with older people to address the commonly missed, essential areas of care that are fundamental to an older person's health and wellbeing.

The tool will enhance to ability of health workers to work effectively as a multidisciplinary team through a shared language in team meetings and case conferences, and by recognising the diversity of skills needed to provide person-centred integrated care.

Use of the tool will provide action and evidence for two national safety and quality standards: Partnering with Consumers and Comprehensive Care Planning.(63)

**indigo 4Ms** age-friendly health care

### Health Workers' Tool

**Before an appointment**

- Should anyone else be included in this session
- What current background information do you have

**What Matters**

- Do you know what is important to this Person right now
- Do you know this person's goals and priorities
- Have you discussed an advanced care plan

**Medication**

- Have you got an up-to-date medication list
- Is this person taking any other medications or supplements
- Are all medications required
- Are you confident this person understands what they are taking, and why
- Do you know how this person manages their medications
- When was the last medication review and by whom
- Has there been a change in this person's health and/or personal circumstances since the review

**Mobility**

- What daily activities is this person doing
- Is there anything this person wants to do but can't
- Have you noticed any difficulty with moving
- Have you considered a simple mobility assessment
- Does this person require further assessment and review of their home and social environment

**Mental Wellbeing**

- Has this person had any unintentional weight loss or poor appetite recently
- Has this person had a vision and hearing check in the last twelve months
- Does this person have any incontinence issues
- Does this person have regular social contact
- Do you know this person's housing and financial arrangements
- Is there a risk of elder abuse
- Does this person have any concerns about their concentration, memory or thinking
- Has this person recently been feeling depressed or anxious

**Plan and Communicate**

- Have you developed or updated this person's comprehensive care plan based on all the information you now have
- Have the priorities been set by this person
- Does the plan include doable actions to develop and maintain their physical and mental capacity
- Is the plan written clearly, in plain language, with clear next steps and accountability
- Have you given this person a written copy
- Does this person know what to do next
- How will you record and share the plan with others in this person's health team
- Are referrals needed and to whom
- When and who will review the plan

Figure 6: Indigo 4Ms tool for use by healthcare workers'

# 9. Implementation Plan

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The PRIMM grant scheme has enabled the development of two I4Ms tool to personalise comprehensive care planning to maintain and improve older people’s physical and mental capabilities. The grant further required the development of a regional implementation plan.

As two tools have been developed, implementation planning has correspondingly been separated into two processes: one for older people and one for health services.

## 9.1 Building Individual Functional Ability Using the I4Ms Tool

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Maintaining functional ability requires older people to make individual decisions that reflect their needs and preferences, their current ability, and the context in which they live.

Their decisions, in turn, need to be supported by their local health system, an age-friendly environment and local government and community built and social infrastructure.

While there remains a lack of high-quality evidence for the effectiveness of health promotion strategies for older people,<sup>(15)</sup> there is evidence that peer-to-peer health promotion strategies, and multifactorial, multidisciplinary programs are more effective than singular approaches.<sup>(64)</sup>

With funding from State Trustees Foundation Australia, the John Richards Centre for Rural Ageing Research will lead a collaborative project with older people and community-based organisations to codesign programs, resources or services to assist older people use the Indigo 4Ms tool in their local setting. The implementation will employ a collective impact approach in four rural communities.

## 9.2 Improving Multi-disciplinary Care Planning Using the I4Ms Tool

After the completion of the codesign workshops, a meeting was facilitated with the CEOs of six health services to answer the question, ‘How might we guide primary health teams use the Indigo 4Ms tool in comprehensive care planning?’ An adapted Business Model Canvas (65) was used to structure the conversation.

- Components 1–5 address the question ‘Is it desirable to implement the tool?’
- Components 6–9 address the question ‘Is it feasible?’
- Components 10–11 address the question ‘Is it viable?’

There was universal agreement on the value of implementing the I4Ms tool into primary care settings, recognising that changes will need to occur in several areas, including multidisciplinary team planning and data utilisation. Importantly, the use of the tool must provide data and evidence for outcomes relevant to Commonwealth and state government funding agreements.

It was also agreed that relevant staff from all primary care settings would meet to codesign the regional implementation plan. However, further COVID-19 waves combined with reduced availability of staff prevented this from occurring. The following plan was developed through individual meetings with staff and a review of the quality improvement and implementation science literature.

### How might we implement comprehensive care planning using the Indigo 4Ms tool?

1. Value Proposition
  - Who will benefit?
  - What problem is being solved?
  - What need is being met?
2. Participant Segments
  - Who are our ‘participants’?
3. Outcome Measures
  - How will we know if participants are better off?
4. Participant Relationships
  - What type of relationship will we have with our groups of participants?
  - How will we recruit participants?
  - How can we keep participants involved in the implementation?
5. Channels
  - How will we communicate with and reach participants?
6. Structure
  - How will we govern the implementation?
  - What corporate/management/clinical governance/quality improvement structure will you use?
  - Who owns the implementation in your site?
  - How do you collect and monitor data?
7. Key Activities
  - What are the most important things that need to happen?
8. Key Resources
  - What resources do we need to make this work?
  - Financial, physical, intellectual, human, technological
9. Key Partners
  - Who are they?
  - What resources do they provide?



## 9.3 Regional Implementation Plan

### The regional implementation plan for the I4Ms tool in health services is grounded in implementation science and quality improvement.(66, 67)

It consists of two parts: (i) a framework that provides the components health services need to consider, and (ii) a pathway that maps the sequence of actions. Together, these two documents operate as a roadmap or blueprint for individual health services who will draw on their existing quality improvement structures and processes to operationalise the regional plan.

‘One assessment, one goal, one plan’ (62) is the overall aim of implementing the I4Ms tool. This is consistent with, and will provide actions and evidence for, two national safety and quality standards: Partnering with Consumers and Comprehensive Care Planning.

#### 9.3.1 Implementation Framework

The overarching implementation framework for the I4Ms tool (see Table 4) articulates a systems approach. While the use of the tool is a clinical intervention, it requires collective responses from every level of the health system. Each component of the framework is described below.

##### People

Cross-cutting every level of the health system is the people that drive it. People interact in relationships with each other and with objects, tangible or intangible. These multiple interactions and relationships within and between people in ‘building blocks’ and their interdependencies create the health system itself. This is particularly relevant to rural health services, where people may have multiple roles within the service and be part of community organisations that also shape its functions.

Importantly, for this work, older people have two roles: they are at the centre of age-friendly care and are active members of the care team.

##### Levels of implementation

A systems approach is at the heart of the implementation framework. WHO identifies six building blocks as ‘a convenient device’ (68) for describing the functions of a health system. Using this device encourages an awareness that ‘every health intervention, from the simplest to the most complex, has an effect on the overall system’.(68) That effect may be positive or negative, planned or unexpected, or counterintuitive.

##### Service delivery

The delivery of safe, effective and comprehensive multidisciplinary, integrated care to improve functional ability is at the heart of the I4Ms tool. It delivers age-friendly care as defined by the codesign team:

Age-friendly care is a partnership. It recognises individual choice and ability. The older person is actively involved and central to all interactions. There is genuine interest by the care provider to deliver wellbeing-focussed, timely, accessible, safe care in a respectful, comprehensive and coordinated way.

## 4Ms Framework Implementation










	 <b>People</b>	 <b>Communication</b>	 <b>Engagement</b>
<b>Level of Implementation</b>	<b>Implementation Strategies Technical</b>		<b>Implementation Strategies Human-centred</b>
 <b>Service Delivery</b>	Start where people are Integrate the I4Ms tool into the workflow Test and refine I4Ms integrated care Link with communities		Adapt to ease workload Build a coalition of change agents Provide interactive assistance Identify and share positive deviance
 <b>Health Workforce</b>	Enhance multidisciplinary teams (MDT) Deliver joint education and training		Build respectful, collaborative MDT Engage the head and heart Foster a positive view of ageing
 <b>Leadership &amp; Governance</b>	Provide strategic direction & commitment for I4Ms Ensure quality project management Identify clear roles and governance Measure progress		Invite people in through a culture of co-design Build the will and urgency for change Publicly commit to I4Ms and staff development Measure emotional change
 <b>Information</b>	Benchmark and report on the functional ability of older people Continual assessment and evaluation Integrate data and data-sharing processes Link with accreditation		Easy to access One source of information & reporting
 <b>Funding</b>	Time and resources for Quality Improvement (QI) and MDT Promotional material & communication resources		Celebrate and publicly mark achievements
 <b>Infrastructure &amp; Medical Technology</b>	Change infrastructure towards an age-friendly health service Access to aid		

Table 4: Implementation framework for of the Indigo 4Ms tool for health workers

## Service delivery

The delivery of safe, effective and comprehensive multidisciplinary, integrated care to improve functional ability is at the heart of the I4Ms tool. It delivers age-friendly care as defined above by the codesign team:

Age-friendly care is a partnership. It recognises individual choice and ability. The older person is actively involved and central to all interactions. There is genuine interest by the care provider to deliver wellbeing-focussed, timely, accessible, safe care in a respectful, comprehensive and coordinated way.

## Health workforce

The care of older people requires a multidisciplinary team, including social care workers. Workers must recognise one another's contributions and receive credit for their contributions to providing high-quality healthcare within and across health disciplines.

Education and training aim to provide staff with the skills, knowledge, motivation and attitudes to provide age-friendly care and undertake the changes needed to implement the I4Ms. An education program should include healthy ageing and prevention, common geriatric conditions, working in a multidisciplinary team, addressing ageism and quality improvement skills.

## Health and social care infrastructure and medical technologies

The physical infrastructure of health and community centres should be age-friendly to enable comprehensive assessments and care to be delivered in a manner that supports the full engagement of older people.[65] However, small rural health services operate with existing infrastructure, many in isolated communities. This is a potential barrier to full implementation.

## Information

Standardised assessment measures, shared data platforms and electronic health records structured to support comprehensive, coordinated care focused on monitoring older people's physical and mental capacities are necessary for the efficient functioning of multidisciplinary teams to achieve one assessment, one goal and one plan.

However, Australia's fragmented healthcare system currently lacks a well-functioning health information system. Therefore, this should be recognised as a barrier to implementation. Local strategies to 'work around' information systems may be necessary.

## Funding

Funding for implementation is critical. It must be separate from the funding and resources for delivery of usual care. Successful implementation requires needs assessments, workflow integration, education and training, quality improvement activities through pilot testing, data integration, communication and engagement and continuous monitoring and evaluation, all resource intensive.

## Leadership and governance

Implementation theory and practice underscores the crucial role of leadership in successful improvements in quality healthcare. Leaders need to ensure the implementation of the I4Ms tool is part of the strategic plan of the health service, build a strong coalition for its success and provide effective oversight of the quality improvement strategies.

Implementation of integrated care for older people has been limited in the past due in part to a lack of political commitment to significant reform to reorientate the health system to provide age-friendly healthcare.(12)

## Implementation strategies

The strategies identified in the implementation framework represent ‘high-leverage change’ strategies; those identified in the literature as ‘an intervention point within a system that has a high likelihood of causing a transformational change that improves outcomes.’[66] These loosely fall into two categories: technical and human-centred strategies.

### Technical strategies

Technical strategies are also known as process or performance strategies. These mirror the scientific, experimental method. (69) For the implementation of the I4Ms tool, where possible, they should align with the terms and definitions compiled by the Expert Recommendations for Implementing Change study.(70)

### Human-centred strategies

Equally important to technical strategies are strategies that create the conditions to enable people to advance and sustain improvements in health care.(71, 72) Human-centred strategies include those based on psychology, behavioural sciences, change management, design thinking, and leadership.

A compendium strategies is available to local health services derived from a variety of sources including evidence from successful implementation of integrated care,(73) integrated care for older people specifically,(74, 75) multidisciplinary care,(76) behavioural change (71) and quality improvement.(77-79)

## Communication and engagement

Communication and engagement are cross-cutting strategies. As noted above, people and their relationships with others and objects in their environment are the health system. These relationships are formed and shaped, for better or worse, through communication and engagement.

Working with older people to recognise the importance of their individual needs, preferences and goals ensures their active participation in care planning and treatment choices. Good communication shows respect for their autonomy and dignity and, with the consent of the older person, involves families and community members in conversations.

Within multidisciplinary teams, there needs to be a regular team meeting to monitor and analyse quality improvement data, discuss areas for improvement or pilot tests and track progress. This is in addition to the collaboration and communication among all involved in comprehensive care to discuss each discipline’s contribution, updates and any adjustments to the care plan.

The success of the implementation will be aided by raising awareness among employees and patients across the health service of the change to health workers using the I4Ms tool and why this change is required. Communication and promotion can garner support for those implementing the change, limit potential and real barriers, highlight the positive impacts of the tool and gain insight and other perspectives on the refinement of the tool.

The interaction with a variety of community organisations, local government, other departments of the health system, and other health services will strengthen the links between health and social care, which is crucial for older people’s ability to maintain and develop their physical and mental capacities in the community. Many of the actions in the comprehensive care plan will be undertaken at home or in the community.

### 9.3.2 Implementation Pathway for the of the I4Ms tool

Actions taken to implement the I4Ms tool will follow a sequential pathway (see Table 4). The pathway outlined below is based on implementation science (80) and quality improvement.(81) The steps are:

- **engage and explore**
- **plan and prepare**
- **initiate and refine**
- **sustain and spread**

The first two steps build a sound structure and narrative for change. There is wisdom in the phrase, ‘good structure increases the likelihood of good process, and good process increases the likelihood of good outcome.’(82) Equally, understanding context, culture, values and clarity of vision is essential in successful quality improvement in health.(83)

The next two steps—plan and prepare—focus on ensuring the organisation and staff are ready to use the I4Ms tool in comprehensive care planning. These two steps ensure that the implementation plan is appropriate for the service delivery setting, the tool is feasible for staff to use, that resources, training and processes are in place, and that everyone knows what needs to be done and by whom.

‘Initiate and refine’ are the steps of using the I4Ms tool, continually monitoring the quality of implementation and using this information to adapt the tool and to guide changes to the implementation strategies as needed. Meanwhile, ‘sustain and spread’ directs procedures for extending the tool’s use within the health service and its embedding into routine clinical practice.

Each step of the implementation pathway contains a list of technical and human-factor strategies clustered, where possible, in line with the Expert Recommendations for Implementing Change project[68] to provide consistency in language and conceptual clarity.

## 4Ms Pathway for Implementation

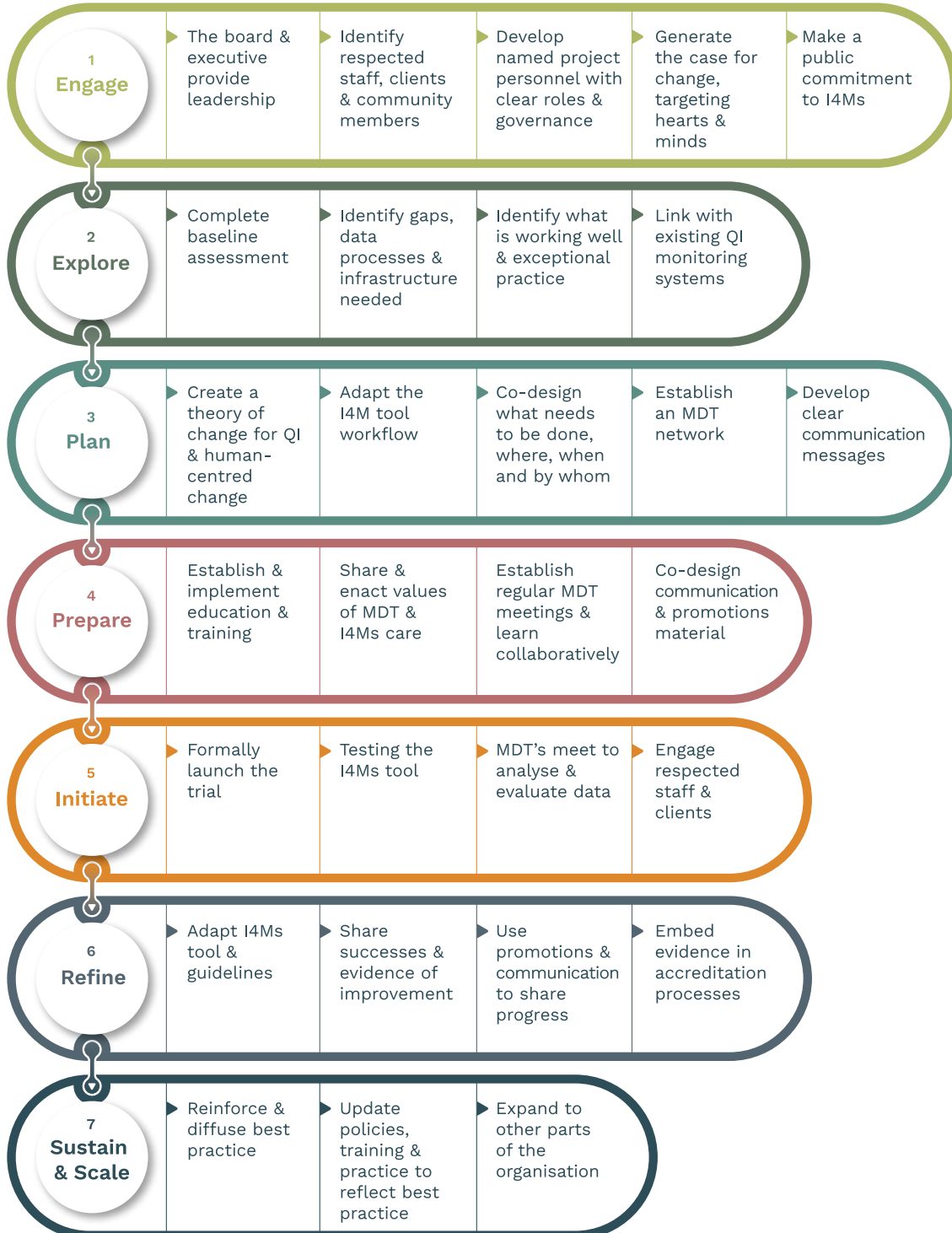


Table 4: Pathway for the implementation of the I4Ms tool in rural primary care

# 10. Outcomes

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In 2021, the Commonwealth Government funded Beechworth Health Service to work in partnership with older people, six health services in the Upper Hume region—Albury Wodonga Aboriginal Health Service, Albury Wodonga Health, Beechworth Health, Corryong Health, Gateway Health, Tallangatta Health and Yackandandah Health—and the John Richards Centre for Rural Ageing Research at La Trobe University to improve integrated primary healthcare for older people.

Previously, older people and health professionals in northeastern Victoria sought to address the disproportionate levels of chronic disease and hospital-acquired harm experienced by older people. To do so, they codesigned the I4Ms framework to provide evidence-based guidelines for integrated care of older people through four interconnected areas—what matters, medication, mobility and mental health.

This section concludes the report by reflecting on the project overall. In addition to the codesign of a tool to guide health workers and older people to use the Indigo 4Ms framework, three key features of the project are noteworthy: the central role of the codesign process and team, the impact of COVID-19 on the project and the challenges of working with health services to instigate significant change.

## 10.1 Indigo 4Ms tools

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**This PRIMM-funded project saw the codesign of two I4Ms tools as practical devices to implement the Indigo 4Ms framework. The tools are designed to equip older people and primary healthcare workers develop a single personalised, comprehensive care plan that maintains or improves functional ability.**

The Indigo 4Ms tool for older people will enhance the autonomy of older people. It will enable them to act with purpose to maintain or improve their capacity, creating the conditions for older people to do and be what they have reason to value. The Indigo 4Ms tool for primary healthcare workers will be instrumental in enabling health workers to navigate the complexity of integrated care for older people by its ability to structure the clinical encounter through the 4Ms. The tool guides health workers in conversations with older people to address the commonly missed, essential areas of care.

## 10.2 Codesigning healthcare improvements

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In healthcare, it is universally acknowledged that codesign enhances participation and partnerships, achieves better outcomes, creates innovative ideas to improve systems and services and solves complex problems.<sup>(84)</sup> However, there is little robust evidence for the effectiveness of activities to achieve these aims. In addition, there are few guidelines on codesign processes that build on the strengths of older people.

### 10.2.1 Establishing codesign

The establishment of the codesign process took considerable time. While COVID-19 affected this, there was also considerable work to be done in preparing participants for codesign work—a step often not discussed in health or design thinking. This is particularly relevant in healthcare, where staff need their managers' and executives' realistic and practical support to fully participate in codesign processes over several weeks or months.

Additionally, project staff and facilitators need time and training to meet the complex, multifaceted aspects of codesign, group facilitation, project management, collaborative research projects and a strengths-based approach to ageing and older people.

### 10.2.2 Codesign with and for older people

The establishment of the codesign process took considerable time. While COVID-19 affected this, there was also considerable work to be done in preparing participants for codesign work—a step often not discussed in health or design thinking. This is particularly relevant in healthcare, where staff need their managers' and executives' realistic and practical support

to fully participate in codesign processes over several weeks or months.

Additionally, project staff and facilitators need time and training to meet the complex, multifaceted aspects of codesign, group facilitation, project management, collaborative research projects and a strengths-based approach to ageing and older people.

### 10.2.3 Building a collaborative codesign team

The participants recruited to the codesign team had a strong, united interest in working collaboratively to improve the care of older people. The team reflected both the diversity of the Upper Hume health and social care workforce and older people from across the region.

The design of the sessions to facilitate the full involvement of older people was also welcomed by the health professionals, who reported valuing the slower pace of the workshops, enabling them to learn more from and with their codesign team members. Everyone was fully engaged; no one left sessions early or was distracted by phone calls. Notably, there was a great deal of lively, animated discussion and respectful listening between team members.



## 10.3 Impacts of SARS-CoV-2

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This project commenced in July 2021. In October, Victoria and NSW experienced an increase in COVID-19 infections, with the Victorian health system placed under Code Brown in January 2022. With support from the Commonwealth Government, the project was halted from October 2021 until March 2022 to protect the health of community members contributing to this work and enable health services to focus on managing the pandemic.

Throughout the project, COVID-19 waves continued to affect the availability of participants, particularly for healthcare staff. This understandable change in the codesign team interrupted the continuity of the codesign process.

## 10.4 Initiating change in health services

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This project sought to codesign a regional blueprint and local implementation plans for each health service committed to implementing the I4Ms.

CEOs attended an initial meeting to shape the business case for implementation. During that meeting, there was strong endorsement for implementation especially using existing quality improvement structures. However, attempts to organise meetings with relevant health services staff, including quality managers, proved extremely difficult. Changes to executive staff members, COVID-19 lockdowns and staff shortages contributed to repeatedly cancelled meetings.

The implementation science literature discusses capacity building and organisational readiness for change. The strategies outlined assume the engagement of the organisation at the outset. To date, this has been elusive.

# 11. Next steps

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In 1995, the Council of Australian Governments (COAG) identified the implementation of integrated, patient-centred care as a fundamental health system reform. (85) Integrated care has been trialled on population cohorts at the patient level through changes to Commonwealth funding arrangements and COAG health reform agreements. However, progress has been poor; impeded by the complexity of integrated care within a complex overall health system, by funding silos, by competition between services—public and private, health and social—and by a lack of long-term policy commitment, and strong leadership. (12, 85)

The UN Decade of Healthy Ageing (2021-2030) calls for action to ‘deliver person-centred integrated care and primary health services responsive to older people’. (2) At the same time, Covid-19 has escalated entrenched ageism, including age based discrimination and stigmatisation, and exposed existing inequalities in health access and outcomes for older people. (86)

Providing integrated care for older people requires transforming health and social systems and changing how care is delivered. Implementing the Indigo 4Ms tools is one step of that transformative journey.

In July 2023, the Australian Government committed A\$1.3 million to Beechworth Health Service to roll out and evaluate the I4Ms tool for health professionals to improve care planning for older people in six health services. The regional implementation plan for health services to implement the I4Ms tool in primary care settings is grounded in implementation science and quality improvement. Each health service will adapt the implementation plan based on its existing quality improvement structures and processes. The John Richards Centre for Rural Ageing Research, La Trobe University Wodonga, will provide research support and complete an evaluation of the work.

Concomitantly, the State Trustee Australia Foundation has awarded the John Richards Centre for Ageing Research a grant to work with older people in small rural communities to codesign their own approaches to using the I4Ms tool for older people.

## 12. References

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1. World Health Organization. World Report on Ageing and Health. Luxembourg; 2015.
2. World Health Organization. Decade of Healthy Ageing 2020: Proposal to the WHO Executive Board, 146th Session. 2020.
3. Australian Institute of Health and Welfare. How long can Australians live? : AIHW; 2023.
4. Australian Institute of Health and Welfare. Chronic conditions and multimorbidity 2023 [Available from: <https://www.aihw.gov.au/reports/australias-health/chronic-conditions-and-multimorbidity>].
5. Winterton R, Royals K, Brasher K. Health care determinants, access and outcomes for older people in the Upper Hume region: a scoping paper. John Richards Centre for Rural Ageing Research, La Trobe University, Wodonga.; 2021.
6. Kinsman L, Rotter T, James E, Snow P, Willis J. What is a clinical pathway? Development of a definition to inform the debate. *BMC Medicine*. 2010;8(1):31.
7. De Blesser L, Depreitere R, Waele KD, Vanhaecht K, Vlayen J, Sermeun W. Defining pathways. *Journal of Nursing Management*. 2006;14(7):553-63.
8. Rotter T, de Jong RB, Lacko SE, Ronellenfisch U, Kinsman L. Clinical pathways as a quality strategy. In: Busse R, Klazinga N, Panteli D, Quentin W, editors. *Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies*. Health Policy Series. Copenhagen: European Observatory on Health Systems and Policies.; 2019. p. 309-30.
9. Wallace E, Salisbury C, Guthrie B, Lewis C, Fahey T, Smith S. Managing patients with multimorbidity in primary care. *BMJ (Clinical research ed)*. 2015;350:h176.
10. Grimsmo A, Løhre A, Røsstad T, Gjerde I, Heiberg I, Steinsbekk A. Disease-specific clinical pathways – are they feasible in primary care? A mixed-methods study. *Scandinavian Journal of Primary Health Care*. 2018;36(2):152-60.
11. Røsstad T, Salvesen Ø, Steinsbekk A, Grimsmo A, Sletvold O, Garåsen H. Generic care pathway for elderly patients in need of home care services after discharge from hospital: a cluster randomised controlled trial. *BMC health services research [Internet]*. 2017 2017/04//; 17(1):[275 p.]. Available from: <https://doi.org/10.1186/s12913-017-2206-3>.
12. Araujo de Carvalho I, Epping-Jordan J, Pot AM, Kelley E, Toro N, Thiyagarajan JA, et al. Organizing integrated health-care services to meet older people's needs. *Bull World Health Organ*. 2017;95(11):756-63.
13. Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med*. 2014;12(6):573-6.
14. Liljas AEM, Walters K, Jovicic A, Iliffe S, Manthorpe J, Goodman C, et al. Strategies to improve engagement of 'hard to reach' older people in research on health promotion: a systematic review. *BMC Public Health*. 2017;17(1):349.

- 
15. Golinowska S, Groot W, Baji P, Pavlova M. Health promotion targeting older people. *BMC Health Serv Res.* 2016;16 Suppl 5(Suppl 5):345.
  16. Brasher K. Building a Age-Friendly Indigo Health System: Final report to Better Care Victoria. Beechworth Health Service; 2020.
  17. Fulmer T, Mate KS, Berman A. The Age-Friendly Health System Imperative. *Journal of the American Geriatrics Society.* 2017;66(1):22-4.
  18. World Health Organization. Integrated care for older people (ICOPE): Guidance for person-centred assessment and pathways in primary care: WHO; 2019.
  19. Winterton R, Hodgkin S, Clune SJ, Brasher K. Age-friendly care for older adults within rural Australian health systems: An integrative review. *Australasian journal on ageing.* 2021;40(1):16-34.
  20. Greenhalgh T, Hinton L, Finlay T, Macfarlane A, Fahy N, Clyde B, et al. Frameworks for supporting patient and public involvement in research: Systematic review and co-design pilot. *Health Expectations.* 2019;22(4):785-801.
  21. Canadian Institutes of Health Research. Canada's strategy for patient-oriented research: improving health outcomes through evidence-informed care. Ottawa: CIHR; 2011.
  22. Patient Experience and Consumer Engagement. A Guide to Build Co-design Capability: New South Wales Agency for Clinical Innovation, ; 2019.
  23. NSW Council of Social Services. Principles of Co-design. Sydney: NCOSS; 2017.
  24. Southern Melbourne Primary Care Partnership. Framing Age Message Guide: SMPCP; 2021.
  25. Altman M, Huang TTK, Breland JY. Design Thinking in Health Care. *Prev Chronic Dis.* 2018;15:E117.
  26. IDEO, Nesta. Designing for Public Services: Design for Europe; 2017.
  27. Robinson L. Online Facilitation Skills. 2021.
  28. IDEO. The Field Guide to Human Centred Design Design Kit: IDEO.com; 2015.
  29. Boyd H, McKernon S, Old A. Health Service Co-design: working with patients to improve healthcare services: Waitemata District Health Board; 2010.
  30. Institute of Medicine (IOM). Crossing the quality chasm: a new health system for the 21st century. Washington DC: National Academy Press; 2001.
  31. World Health Organization. Quality of care 2022 [Available from: [https://www.who.int/health-topics/quality-of-care#tab=tab\\_1](https://www.who.int/health-topics/quality-of-care#tab=tab_1)].
  32. Crouch D, Matless D. Refiguring Geography: Parish Maps of Common Ground. . *Transactions of the Institute of British Geographers.* 1996;21(1):236–55.
  33. Donnelly M, Gamsu S, Whewall S. Mapping the relational construction of people and places. *International Journal of Social Research Methodology.* 2020;23(1):91-108.

34. WA Health Network. Model of Care: Overview and guidelines. Perth Western Australia Department of Health
35. Centre for Collective Intelligence Design. The collective intelligence design playbook: Nesta and UNDP Accelerator Lab; nd.
36. dscout. 8 Workshop Ideas to Activate Insights & Align Stakeholders [Available from: <https://dscout.com/people-nerds/workshop-roundup>].
37. Agency for Clinical Innovation. Co-design Toolkit: NSW Agency for Clinical Innovation; 2022 [Available from: <https://aci.health.nsw.gov.au/projects/co-design/about-this-toolkit>].
38. NHS Improving Quality. First steps towards quality improvement: A simple guide to improving services. London: NHS Improving Quality; 2015.
39. Healthcare Quality Improvement Partnership. A guide to quality improvement. London: HQIP; 2020.
40. Frank AW. The Wounded Storyteller: Body, Illness and Ethics. Chicago: University of Chicago Press; 1995.
41. Kleinman A. The Illness Narratives: Suffering, Healing and the Human Condition: Basic Books; 1988.
42. McKercher KA. Beyond Sticky Notes: Doing Co-design for Real: Inscope Books; 2020.
43. World Health Organization. Global report on ageism. WHO, editor2021.
44. Australian Commission on Safety and Quality in Health Care. Person-centred care 2022 [Available from: <https://www.safetyandquality.gov.au/our-work/partnering-consumers/person-centred-care>].
45. Hasso Plattner Institute of Design. An introduction to design thinking: Process guide. Institute of Design at Stanford; 2010.
46. Gawande A. The Checklist Manifesto—How to Get Things Right: Metropolitan Books; 2009.
47. Boyd H, McKernon S, Mullin B, Old A. Improving healthcare through the use of co-design. The New Zealand medical journal. 2012;125:76-87.
48. Lipmanowicz H, McCandless K. The Surprising Power of Liberating Structures: Simple Rules to Unleash A Culture of Innovation. Seattle: Liberating Structures Press; 2014.
49. Domain7, Gilbert K. The Co-design Workshop: The Facilitator's Pocket Guide [Available from: <https://domain7.com/>].
50. National Coalition for Dialogue & Deliberation. Conversation Café 2022 [Available from: <https://www.conversationcafe.org/>].
51. Performance Health Partners. 2022 [Available from: <https://www.performancehealthus.com/blog/why-checklists-are-important-in-healthcare#:~:text=Checklists%20in%20healthcare%20are%20defined,staff%20achieve%20consistently%20improved%20outcomes>].
52. Winters BD, Gurses AP, Lehmann H, Sexton JB, Rampersad CJ, Pronovost PJ. Clinical review: checklists - translating evidence into practice. Crit Care. 2009;13(6):210.

- 
53. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion Of Innovations In Service Organizations: Systematic Review And Recommendations. *The Milbank quarterly*. 2004;82:581-629.
  54. American Psychological Association. APA Dictionary of Psychology [Available from: <https://dictionary.apa.org/cognitive-aid>].
  55. Clinical Excellence Commission. Quality Improvement Tools: NSW Health; [Available from: <https://www.cec.health.nsw.gov.au/CEC-Academy/quality-improvement-tools>].
  56. Institute for Healthcare Improvement. Tools 2023 [Available from: <https://www.ihl.org/resources/Pages/Tools/default.aspx>].
  57. American Academy of Family Physicians. Basics of Quality Improvement 2023 [Available from: <https://www.aafp.org/family-physician/practice-and-career/managing-your-practice/quality-improvement-basics.html>].
  58. National Health and Medical Research Council. How to present the evidence for consumers: preparation of consumer publications. In: NHMRC, editor.: Commonwealth of Australia; 2000.
  59. North Western Melbourne Primary Health Network. Health Literacy Checklist for Written Consumer Resources. NWMPHN.
  60. Ryan K, Gannon-Slater N, Culbertson MJ. Improving Survey Methods With Cognitive Interviews in Small- and Medium-Scale Evaluations. *American Journal of Evaluation*. 2012;33(3):414-30.
  61. Willis GB, Artino AR, Jr. What Do Our Respondents Think We're Asking? Using Cognitive Interviewing to Improve Medical Education Surveys. *J Grad Med Educ*. 2013;5(3):353-6.
  62. Briggs AM, Valentijn PP, Thiyagarajan JA, Araujo de Carvalho I. Elements of integrated care approaches for older people: a review of reviews. *BMJ Open*. 2018;8(4):e021194.
  63. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. 2nd ed ed: ACSQHC; 2021.
  64. Dow B, Renahan E, Lin X, Joosten M, Hendy S, Harper S, et al. Effective health promotion for older Victorians. Melbourne: COTA; 2012.
  65. Burkett I. Business Model Canvas for Social Enterprise 2013.
  66. Leeman J, Rohweder C, Lee M, Brenner A, Dwyer A, Ko LK, et al. Aligning implementation science with improvement practice: a call to action. *Implementation Science Communications*. 2021;2(1):99.
  67. Nilsen P, Thor J, Bender M, Leeman J, Andersson-Gäre B, Sevdalis N. Bridging the Silos: A Comparative Analysis of Implementation Science and Improvement Science. *Frontiers in Health Services*. 2022;1.
  68. de Savigny D, Adam T, editors. Systems thinking for health systems strengthening: Alliance for Health Policy and Systems Research, WHO; 2009.
  69. Reed JE, Card AJ. The problem with Plan-Do-Study-Act cycles. *BMJ Quality & Safety*. 2016;25(3):147-52.

70. Waltz TJ, Powell BJ, Matthieu MM, Damschroder LJ, Chinman MJ, Smith JL, et al. Use of concept mapping to characterize relationships among implementation strategies and assess their feasibility and importance: results from the Expert Recommendations for Implementing Change (ERIC) study. *Implementation Science*. 2015;10(1):109.
71. Hilton K, Anderson A. IHI Psychology of Change Framework to Advance and Sustain Improvement. IHI White Paper. Institute for Healthcare Improvement; 2018.
72. Mandel KE, Cady SH. Quality improvement as a primary approach to change in healthcare: a precarious, self-limiting choice? *BMJ Quality & Safety*. 2022;31(12):860.
73. Read D, Dalton H, Booth A, Goodwin N, Hendry A, Perkins D. Using the Project INTEGRATE Framework in Practice in Central Coast, Australia. *Int J Integr Care*. 2019;19.
74. Briggs AM, Araujo de Carvalho I. Actions required to implement integrated care for older people in the community using the World Health Organization's ICOPE approach: A global Delphi consensus study. *PLoS One*. 2018;13(10):e0205533-e.
75. Kirst M, Im J, Burns T, Baker GR, Goldhar J, O'Campo P, et al. What works in implementation of integrated care programs for older adults with complex needs? A realist review. *International Journal for Quality in Health Care*. 2017;29(5):612-24.
76. Ellis G, Sevdalis N. Understanding and improving multidisciplinary team working in geriatric medicine. *Age Ageing*. 2019;48(4):498-505.
77. Busse R, Klazinga N, Panteli D, Quentin W. Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies. *European Observatory on Health Systems and Policies & OECD*; 2019.
78. McCallum M, Luty S, Bowie P, McNab D, MacWalter G, McKay J. *Quality Improvement in Primary Care: What to do and how to do it*. Edinburgh: NHS Education for Scotland; 2018.
79. Institute for Healthcare Improvement. *QI Essentials Toolkit*. Boston: IHI; nd.
80. Hateley-Brown J, Hodge L, Polimeni M, Mildon R. *Implementation in action: A guide to implementing evidence-informed programs and practices*. Australian Institute of Family Studies; 2019.
81. Balding C. *Create a great quality system in six months: Cathy Balding/Qualityworks*; 2013.
82. Donabedian A. The Quality of Care: How Can It Be Assessed? *JAMA*. 1988;260(12):1743-8.
83. Dixon-Woods M. How to improve healthcare improvement—an essay by Mary Dixon-Woods. *BMJ*. 2019;367:l5514.
84. Safer Care Victoria. *Co-design* [Available from: <https://www.safercare.vic.gov.au/news/co-design-a-powerful-force-for-creativity-andcollaboration>]
85. Productivity Commission. *Integrated Care, Shifting the Dial: 5 year Productivity Review. Supporting Paper No. 5*. Canberra 2017.
86. United Nations. *Policy Brief: The Impact of COVID-19 on Older Persons*. 2020.



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**Decade**  
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