



NATIONAL FRAILTY STRATEGY POLICY REPORT



MINISTRY OF HEALTH
SINGAPORE

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EXECUTIVE SUMMARY



With the ageing of the population locally and across the globe, frailty prevalence is anticipated to increase. Frailty is associated with an increased likelihood of mortality, disability and poor quality of life, but it is preventable, treatable, and reversible. Hence, it is increasingly recognised as a concern to improve quality of life and promote longevity, where there is a need to review and enhance efforts to prevent, detect and manage frailty among seniors.

There are notable developments in frailty prevention, upstream detection, and intervention internationally.

World Health Organisation (WHO) recommended countries to implement evidence-based policies and programmes, integrate the health and social care, and adopt a whole-of-society response to optimise Intrinsic Capacity (IC) and Functional Ability (FA) which are the key to healthy ageing and a way of preventing frailty.

Following a review of the current frailty landscape and considering the learnings from international development, MOH Frailty Policy Workgroup has identified four key gaps and developed recommendations to address them. They are summarised in **Table 1**.

TABLE 1 Summary of the gaps identified and recommendations by the policy workgroup

Gaps:

Gap 1: There is a need to have a local consensus on the frailty definition to promote a common understanding of frailty among health and social care providers.

Recommendations:

Recommendation 1: The policy workgroup has proposed the following frailty definition for local adoption:

Frailty is a dynamic and evolving state of health which involves the gradual loss of physiological in-built reserves leading to losses in one or more domains of human function (physical, cognitive, psychological and/or social) and increases the vulnerability of older adults to adverse health-related outcomes. Frailty can be prevented, reversed, or delayed in the early stages and managed in the later stages, through early detection and interventions to optimise functional ability, activity participation and quality of life.

TABLE 1 Summary of the gaps identified and recommendations by the policy workgroup (continued)

Gap 2: There are varying levels of frailty awareness and measurement among the public, health and social care providers. At the individual level, seniors and caregivers usually associate frailty with normal ageing and may be unaware that frailty can be prevented, delayed, and reversed. At the care provider level, the frailty screening and assessment tools currently used are inconsistent across different settings and programmes.

Recommendation 2A: To raise awareness on the importance of adopting preventive measures such as engaging an active lifestyle coupled with balanced diet to maintain resilience and prevent, delay or reverse frailty, **public education campaigns on frailty can be held integrated with the campaigns for Healthier SG and the Refreshed Action Plan for Successful Ageing.**

Recommendation 2B: To address the varying levels of frailty awareness at the care provider level, and promote consistency in the tools used and continuity of frailty care across the health and social care settings, **a National Frailty Policy (NFP) that serves as a national guideline on frailty detection, management and care pathway will be developed by the implementation workgroup.**

Capability building among the health and social care providers is important to increase adoption of the NFP and encourage frailty care integration.

Gap 3: The existing frailty-related services and programmes are run mostly in silos and there is a need for multisectoral collaboration and integration to facilitate more seamless referrals across care providers and greater continuity of care for the seniors who are frail or at-risk of frailty.

Recommendation 3A: To set the foundation of the NFP, the policy workgroup proposed to adopt the following **3-tier approach for the NFP to guide follow-up actions** (refer to **Figure 4**):

- (a) Stage 1 on *Identification*: Initial segmentation/screening of the seniors to inform the required assessments in the next stage
- (b) Stage 2 on *Follow-up Assessment*: Problem identification
- (c) Stage 3 on *Management and Tracking*: Provision and coordination of comprehensive care

TABLE 1

Summary of the gaps identified and recommendations by the policy workgroup (continued)

Recommendation 3B: In terms of Stage 1 on *Identification* for the 3-tier framework, the policy workgroup has agreed on **Clinical Frailty Scale (CFS)** as the national frailty community screening and segmentation tool, and the following segmentation by CFS scores. CFS serves as a segmentation tool that provides an indication on whether further assessments should be offered to the senior.

(a) Robust – CFS 1 to 3

(b) Frail – CFS 4 to 6

(c) Severely frail – CFS 7 to 8

(d) Terminally ill – CFS 9

Factoring the significant number of seniors that will be identified as frail amidst active case finding, the policy workgroup suggested to do **secondary screening for the frail group (CFS 4-5) with WHO Integrated Care for Older People (ICOPE)** to identify seniors who will benefit from in-depth Comprehensive Geriatric Assessments (CGAs) or equivalent assessments, which are more resource intensive.

Recommendation 3C: As part of the NFP, the desired integrated frailty care pathway from frailty screening to management will be delineated for national adoption by the care providers (refer to **Figure 5**).

Given the large proportion of the healthy inactive group, the policy workgroup has also called for **proactive identification of the healthy inactive group of seniors in the community and primary care for early upstream lifestyle interventions at scale.**

TABLE 1 Summary of the gaps identified and recommendations by the policy workgroup (continued)

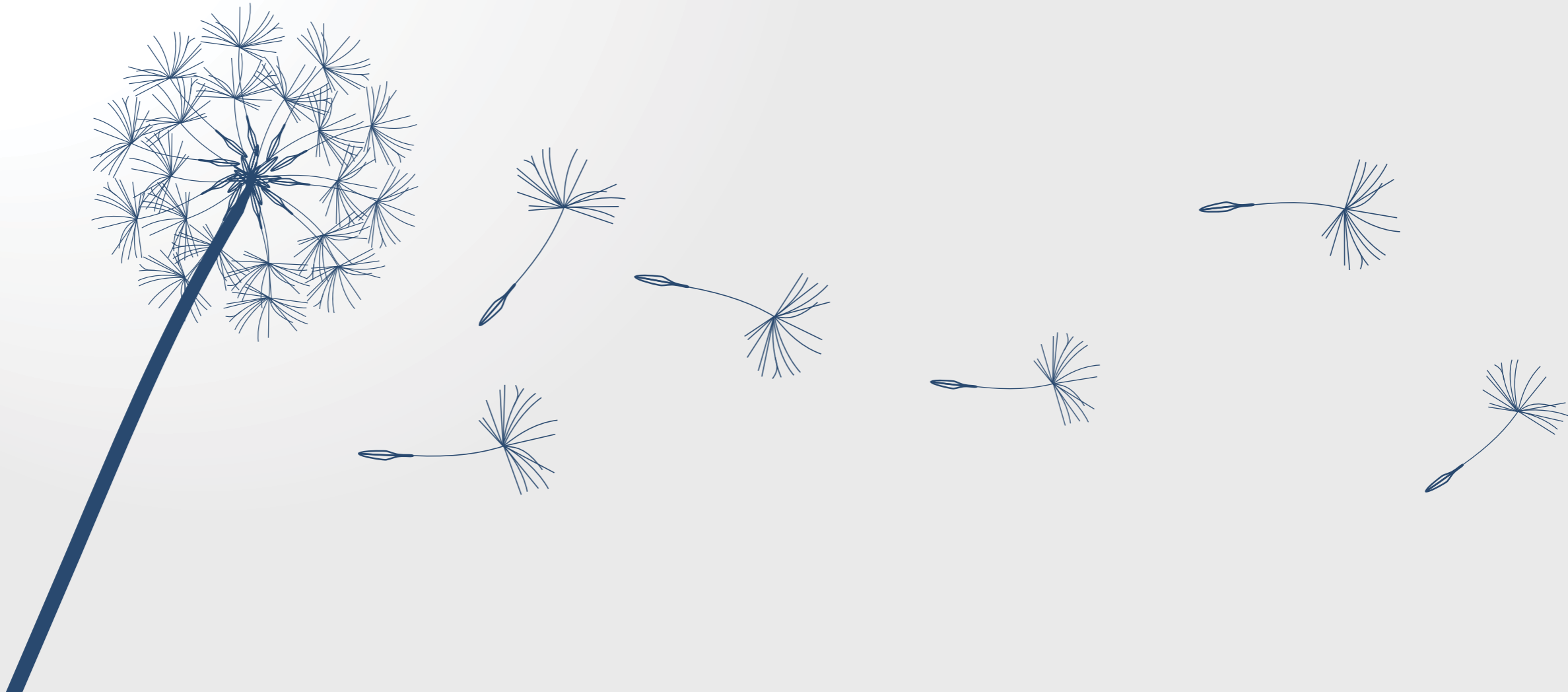
Gap 4: The scientific understanding of multi-dimensional frailty is still nascent in Singapore, and there is a need to understand which services and programmes to scale at the policy level and how to do so sustainably.

Recommendation 4: More research is required locally to respond to the frailty challenge and build an evidence base in the areas of (a) identification of pre-frailty and frailty, (b) frailty epidemiology (i.e. progression of frailty, transition from different stages of frailty), (c) understanding the effectiveness of existing and new intervention strategies, and (d) behavioural factors that promote positive mindset shifts (e.g. increased adherence to frailty interventions or lifestyle changes) among seniors.

This can be done through the National Innovation Challenge for Active and Confident Ageing and other platforms such as National Medical Research Council Grants. Besides addressing at least one of the three challenge statements, research teams were also required to provide detailed implementation and scale-up plans involving the clusters, technical and community implementation partners to achieve roll-out beyond the test-bedding phases.

The recommendations will be encapsulated in a 5-year National Frailty Strategy that will be implemented across the health and social system, with guidance from a separate implementation workgroup.

CHAPTER 1 INTRODUCTION



A Overview of Singapore's Current Frailty Landscape

According to World Health Organisation (WHO), frailty is conceptually defined as a clinically recognisable state in which the ability of older people to cope with everyday or acute stressors is compromised by an increased vulnerability brought by age-associated declines in physiological reserve and function across multiple organ systems¹.

As the number of seniors aged 65 years and above will increase from 510,000 in 2017 to over 900,000 in 2030 where one in four Singaporeans will be 65 and above, the prevalence of frailty in Singapore is anticipated to increase. Local studies found that at least 30% and 5% of our senior population were pre-frail and frail respectively², with frailty being more common in females³ and Indians⁴.

Frailty is associated with an increased likelihood of mortality, disability and poor quality of life⁵, and consequently higher healthcare utilisation. However, frailty is preventable, treatable, and reversible⁴, and several scientific studies have demonstrated that early detection of frailty and proactive care could prevent or delay functional decline, improve quality of life, and reduce healthcare costs⁶. **Therefore, there is an imperative need to review and enhance efforts to prevent, detect and manage frailty in our seniors.**

B Set Up of the MOH Frailty Policy Workgroup

To kick start the review, a multi-stakeholder workgroup was convened to (a) identify efforts-to-date and gaps in the prevention, detection, and intervention of frailty, (b) align frailty efforts and set out the vision for primary, community and acute care in reducing and addressing frailty in our ageing population, and (c) establish the foundation of the National Frailty Policy that would serve as a local guideline for frailty screening, assessment and management. The recommendations will be encapsulated in a 5-year National Frailty Strategy that will be implemented across the health and social system, with guidance from a separate implementation workgroup.

The policy workgroup was co-chaired by A/Prof Dan Yock Young, Deputy Director-General of Health (Health Services Group), and Ms Charlene Chang, Group Director (Ageing Planning Office) of MOH. It comprised representatives from Regional Health Systems (RHSes), research institutions and community care providers. The list of members is at [Annex A](#).

The reviewed research and recommendations are set out in this report.

CHAPTER 2
**LEARNINGS FROM
INTERNATIONAL STUDIES**



With the rising ageing population across the globe, frailty is increasingly recognised as a concern to improve quality of life and promote longevity. There are notable developments in frailty prevention, detection, and intervention internationally, which the policy workgroup has considered in the development of the recommendations for the National Frailty Strategy.

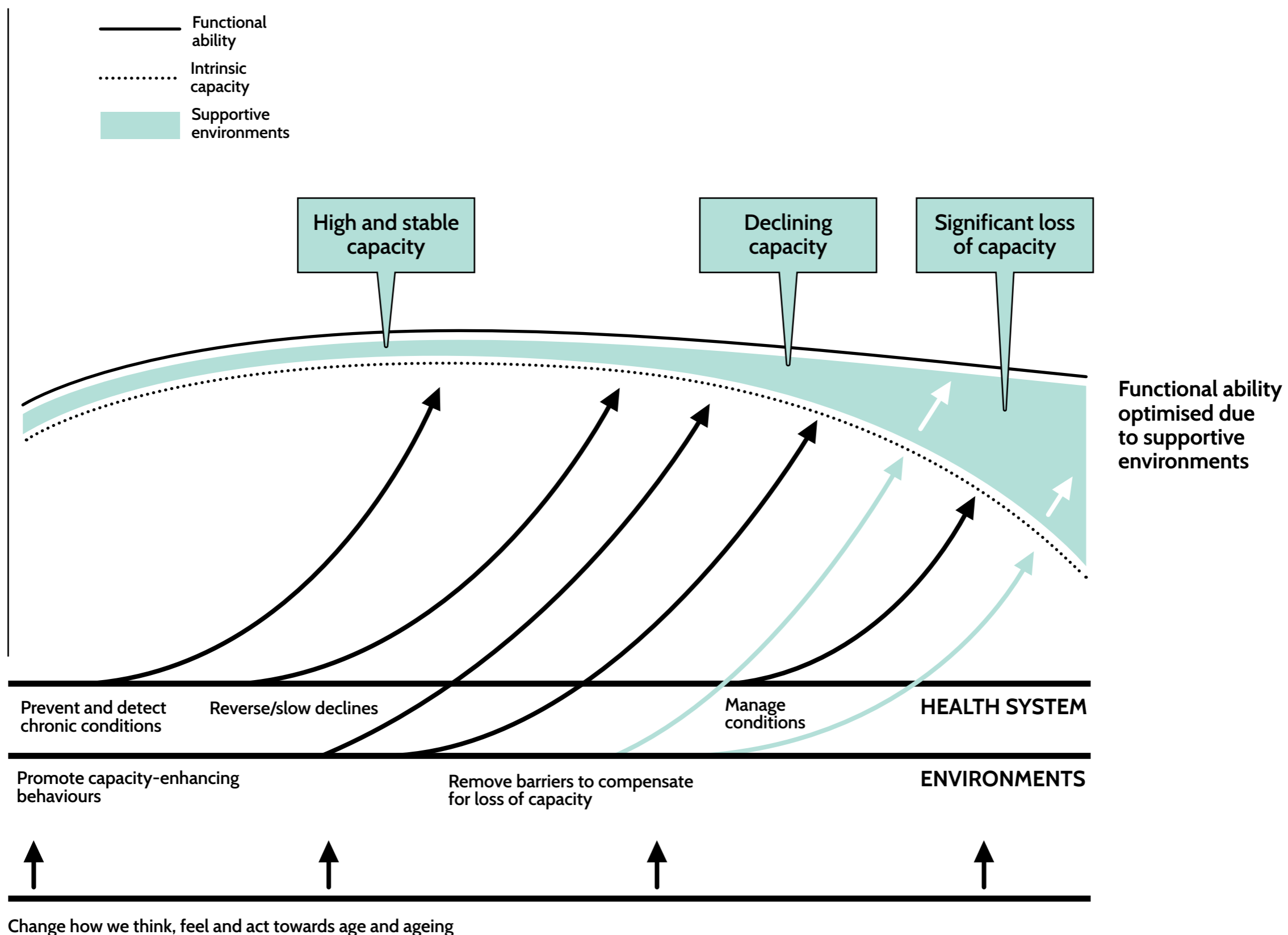


A Optimisation of Intrinsic Capacity (IC) and Functional Ability (FA)

Since 2015, WHO has recognised optimising IC and FA as the key to healthy ageing and a way of preventing frailty¹. IC is defined as the combination of an individual's physical and mental capacities, and the important domains include locomotor capacity (physical movement), sensory capacity (such as vision and hearing), vitality (energy and equilibrium), cognition and psychological capacity⁷. FA is

defined as the combination of the individual's IC, environment, and the interactions between them, providing the individual with the ability to meet the basic needs, be independent and maintain relationships⁷. The enhancement of an individual's FA aims to compensate for the decline in IC, allowing one to remain active and live with dignity (see [Figure 1](#)).

FIGURE 1 Trajectories of healthy ageing by WHO in the Singapore context⁷



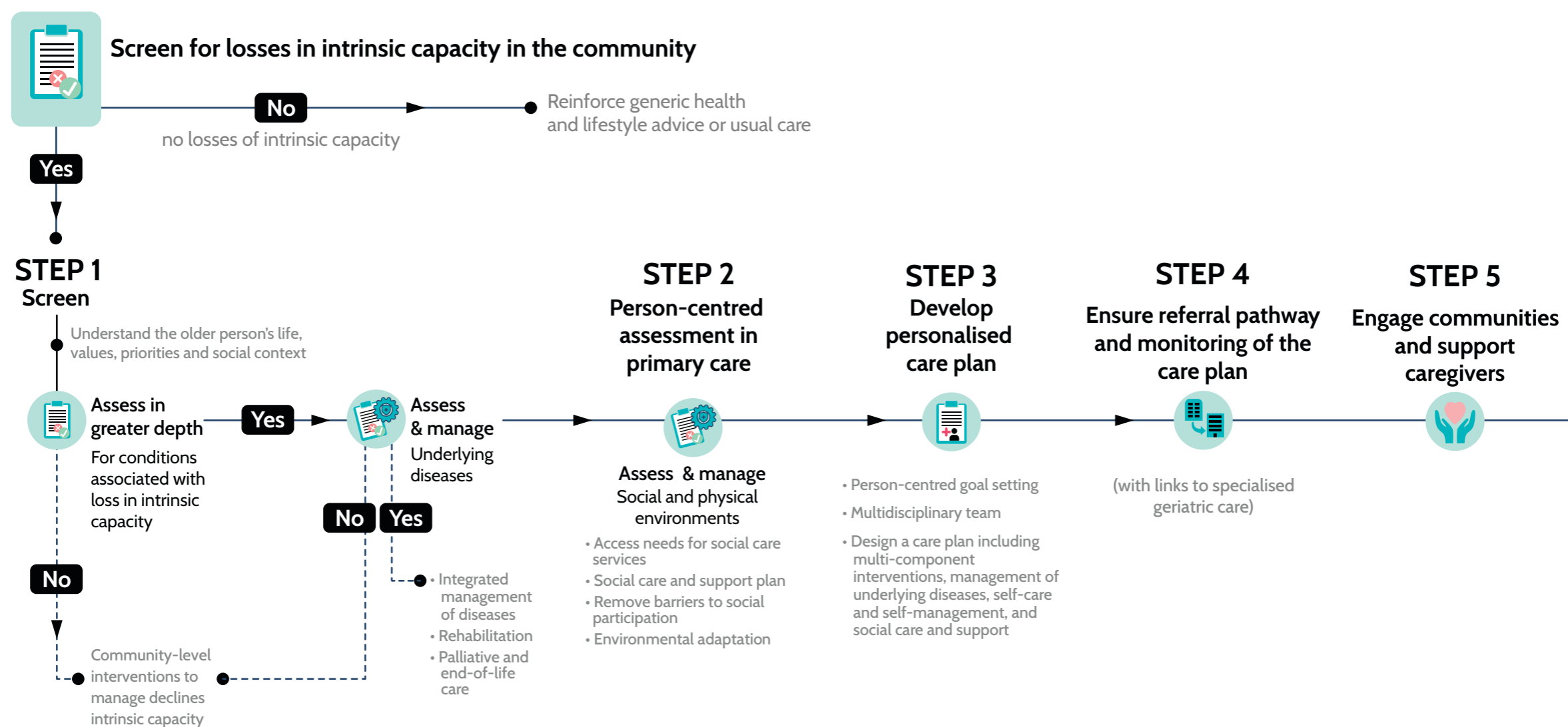
This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition.

Evidence-based policies and programmes, integration of the health and social care, and a whole-of-society response to provide access to inclusive environments, are recommended to build, maintain, or prevent decline in older people and improve FA. This included integrating person-centred assessments of IC (e.g. hand grip strength) and FA (e.g. Activities of Daily Living - ADLs) in primary care, General Practitioner (GP) clinics and geriatric care. The list of tools that can be used to measure IC and FA proposed by WHO is at [Annex B](#).

In 2017, WHO released evidence-based guidelines on Integrated Care for Older People (ICOPE). The ICOPE care pathway recommended the following five steps⁸ (refer to [Figure 2](#)):

- (a) screen for losses in IC;
- (b) person-centred assessment in primary care;
- (c) develop personalised care plan;
- (d) ensure referral pathway and monitor the care plan; and
- (e) engage communities and support caregivers.

FIGURE 2 WHO ICOPE Generic Care Pathway⁸



To screen for losses in IC at home and support case finding in the community or clinical settings, seniors and care providers can use the ICOPE screening tool which is also available as a mobile application (refer to **Figure 3**). For seniors who show signs of or report losses in IC, WHO recommended that they should be offered a full assessment done by trained professionals, preferably in the primary care.

The recommended adoption of ICOPE as a secondary frailty screening tool in the local context is set out in Chapter 4.

FIGURE 3 WHO ICOPE Screening Tool⁸

Priority conditions associated with declines in intrinsic capacity	Tests	Assess fully any domain with a checked circle
COGNITIVE DECLINE	1. Remember three words: flower, door, rice (for example) 2. Orientation in time and space: What is the full date today? Where are you now (home, clinic etc)? 3. Recalls the three words?	<input type="radio"/> Wrong to either question or does not know <input type="radio"/> Cannot recall all three words
LIMITED MOBILITY	Chair rise test: Rise from the chair five times without using arms. Did the person complete five chair rises within 14 seconds?	<input type="radio"/> No
MALNUTRITION	1. Weight loss: Have you unintentionally lost more than 3kg over the last three months? 2. Appetite loss: Have you experienced loss of appetite?	<input type="radio"/> Yes <input type="radio"/> Yes
VISUAL IMPAIRMENT	Do you have any problems with your eyes: Difficulties in seeing far, reading, eye diseases or currently under medical treatment (e.g. diabetes, high blood pressure)?	<input type="radio"/> Yes
HEARING LOSS	Hears whispers (whisper test) or Screening audiometry result is 35dB or less or Passes automated app-based digits-in-noise test	<input type="radio"/> Fail
DEPRESSIVE SYMPTOMS	Over the past two weeks, have you been bothered by - Feeling down, depressed or hopeless? - Little interest or pleasure in doing things?	<input type="radio"/> Yes <input type="radio"/> Yes

B International Trends

FRAILTY PREVENTION

Health promotion and social prescription are at the forefront of most ageing and frailty strategies, as countries turn to upstream population-based interventions as the long-term solution to promote healthy ageing and reduce healthcare utilisation. In particular, exercises consisting of strength, balance and flexibility aspects, and nutritional support have been increasingly proven to improve physical functions and frailty score, and reduce fall risks^{9,10,11,12,13}.



FRAILTY DETECTION

With increasing evidence that frailty is potentially reversible with early screening and intervention, detection is key. **Several international recommendations called for older adults to be opportunistically screened for frailty during all encounters with trained health and social care providers with a simple and validated measurement tool^{9,11,12}.**

Primary care physicians are a key partner in this aspect. They serve as the patient's entry point in healthcare, and family physicians who have a lifelong relationship with the patient can provide seniors with guidance on the next steps to better health in each visit. Hence, primary care physicians have been identified as the preferred personnel to conduct proactive frailty detection in various countries^{11,12}.

For instance, primary care physicians in the UK are mandated to use the Electronic Frailty Index (eFI) which is derived from existing information within the electronic primary health care record to identify patients aged 65 and above who may be living with varying degrees of frailty¹⁴. Clinical judgement and evidence-based protocols guide next steps which may include referral to other specialists where applicable. **Therefore, a primary care-approach to frailty in which primary care physicians play a key role in screening, monitoring, and managing frailty at the population level could be considered for local adoption.**



FRAILITY INTERVENTION

After identifying frail older adults via frailty screening, Comprehensive Geriatric Assessment (CGA) should be conducted to understand the individual's needs and develop a personalised and multidisciplinary care plan^{11,12,13}. CGA is a holistic, multi-dimensional, and interdisciplinary assessment done by healthcare professionals to determine the medical, functional, and psychosocial capabilities of a frail individual, which will guide the development and delivery of a targeted and person-centred care plan and follow-up actions.

Research suggests that CGAs with the subsequent tailored interdisciplinary interventions are associated with better outcomes such as improved independence and frailty status, and reduced hospital admission and mortality^{9,10,11}. However, as CGAs are resource intensive, frailty screening is imperative

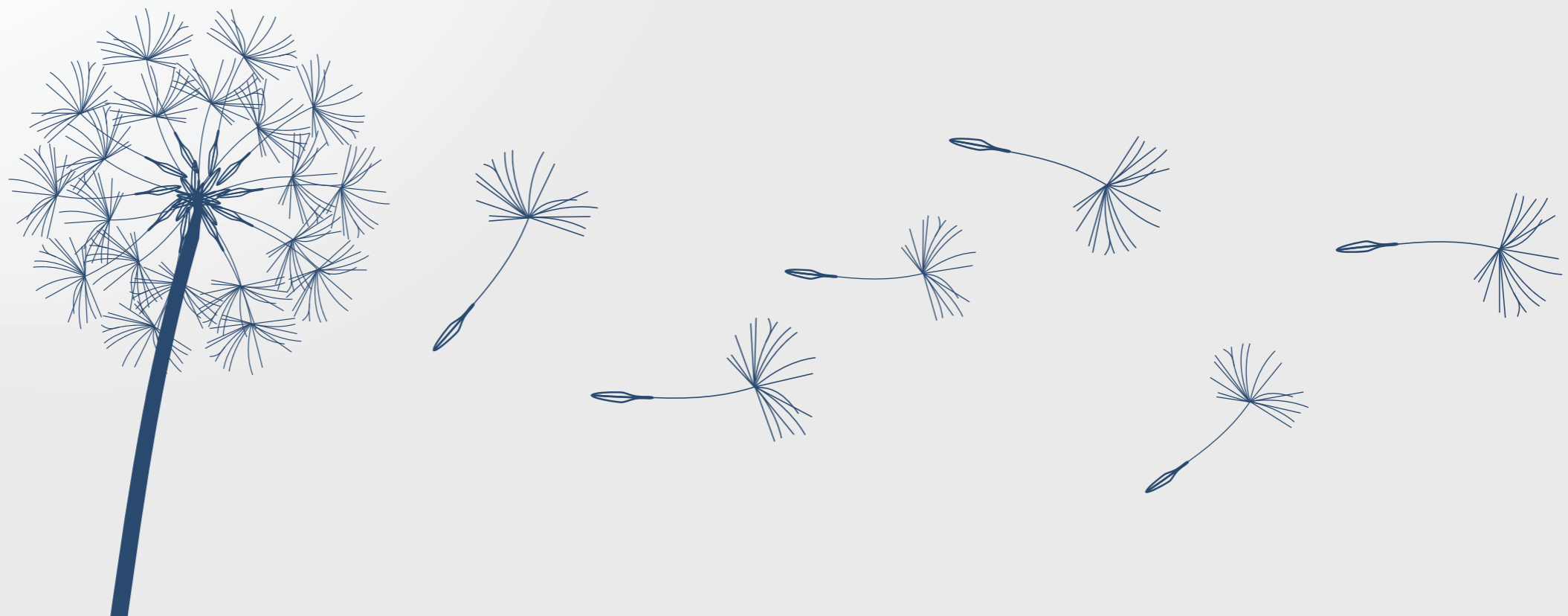
to identify the vulnerable and high risk group for further CGAs^{9,11}.

Consistent with WHO ICOPE guidelines, the personalised care plan should be supported by a well-integrated health and social care system that links the different providers in a collaborative network to facilitate referrals, care transition and continuity, providing seniors with better access to the full spectrum of health and social care services that address the various determinants of frailty^{12,15}. **To promote frailty care integration, key enablers identified include developing a set of guidelines that promote standardisation in frailty screening, assessment, and management, building capability among all health and social care staff, and establishing systems to share frailty status and deliver coordinated care plans across community, primary, acute care services^{11,12}.**



CHAPTER 3

GAPS IDENTIFIED AND RECOMMENDATIONS



Following a landscape review of existing initiatives to address frailty (refer to [Annex C](#)), the policy workgroup has identified four key gaps in the frailty landscape and developed recommendations to address them.



GAP 1:

There is a need to have a local consensus on the frailty definition to promote a common understanding of frailty among health and social care providers. Currently, there is a wide variation of frailty definitions internationally and they mostly focus on physical frailty although frailty is multi-dimensional in nature⁵.

RECOMMENDATION 1:

Considering the multi-dimensional and reversible nature of frailty, the policy workgroup proposed the following frailty definition for local adoption:

Frailty is a dynamic and evolving state of health which involves the gradual loss of physiological in-built reserves leading to losses in one or more domains of human function (physical, cognitive, psychological and/or social) and increases the vulnerability of older adults to adverse health-related outcomes. Frailty can be prevented, reversed, or delayed in the early stages and managed in the later stages, through early detection and interventions to optimise functional ability, activity participation and quality of life.



GAP 2:

There are varying levels of frailty awareness and measurement among the public, health and social care providers. At the individual level, seniors and caregivers usually associate frailty with normal ageing and may be unaware that frailty can be prevented, delayed, and reversed. This prevents the individual from being empowered to take charge of their health and adopt preventive measures such as having a balanced diet, regular physical activity, and health screening to facilitate early detection and management of chronic conditions, to maintain their IC and FA. At the care provider level, the frailty screening and assessment tools currently used are inconsistent across different settings and programmes, which does not foster management of pre-frail and frail individuals in a consistent and holistic manner across care settings.

**RECOMMENDATION 2A:**

It will be imperative to raise public awareness on the importance of adopting preventive measures such as engaging an active lifestyle coupled with balanced diet to maintain resilience and prevent, delay or reverse frailty, providing a behavioural nudge for self-empowerment and improve the take-up rates of and adherence to interventions. To raise awareness and address the misconception of frailty being part of normal ageing among seniors and caregivers, **public education campaigns on frailty can be held integrated with the campaigns for Healthier SG and the Refreshed Action Plan for Successful Ageing (i.e. I Feel Young SG campaigns).**

RECOMMENDATION 2B:

To address the varying levels of frailty awareness at the care provider level, and promote consistency in the tools used and continuity of frailty care across the health and social care settings, **a National Frailty Policy (NFP) that serves as a national guideline on frailty detection, management and care pathway will be developed by the implementation workgroup.** This can be disseminated to all health and social care providers to encourage adoption and care integration, streamlining frailty detection and management efforts on the ground. **Capability building among the health and social care providers can be done via geriatric training sessions and a journal article on the NFP could be published to increase adoption among clinicians, especially within GP settings.**

GAP 3:

The existing frailty-related services and programmes are run mostly in silos and there is a need for multisectoral collaboration and integration to facilitate more seamless referrals across care providers and greater continuity of care for the seniors who are frail or at-risk of frailty.

RECOMMENDATION 3A:

To set the foundation of the NFP, the policy workgroup proposed to adopt the following 3-tier approach for the NFP to guide follow-up actions. The detailed framework is at [Figure 4](#).

(a) Stage 1 on *Identification*: Initial segmentation/screening of the seniors to inform the required assessments in the next stage

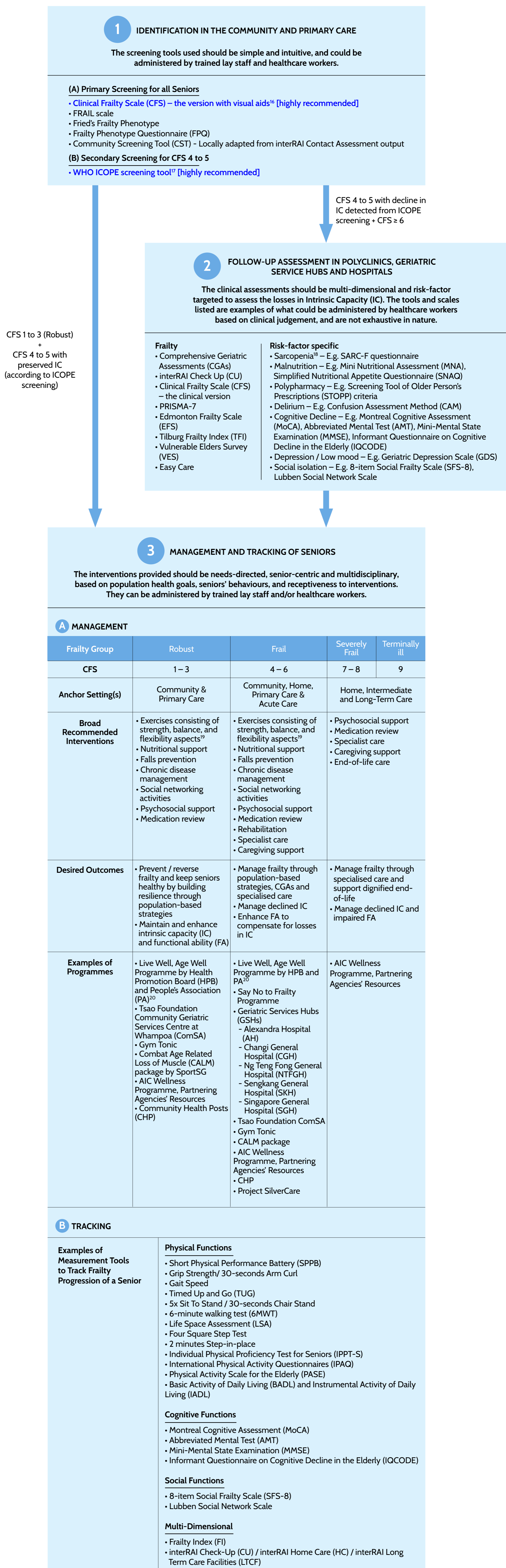
(b) Stage 2 on *Follow-up Assessment*: Problem identification

(c) Stage 3 on *Management and Tracking*: Provision and coordination of comprehensive care

Measurements from different stages and/or touchpoints should be archived to track the progression of frailty and facilitate timely interventions, especially for seniors with more complexity. Self-assessment tools and wearables could also be leveraged to empower seniors to take charge of their health and encourage proactive uptake of programmes that would improve their prevailing functional status.



FIGURE 4 3-Tier Framework for the NFP (Recommended for seniors aged 60 years and above)



RECOMMENDATION 3B:

In terms of Stage 1 on *Identification* for the 3-tier framework, the policy workgroup has agreed on **Clinical Frailty Scale (CFS)²¹** as the national frailty community screening and segmentation tool, and the following segmentation by CFS scores (refer to [Annex D](#)). CFS serves as a segmentation tool that provides an indication on whether further assessments should be offered to the senior²².

- (a) Robust – CFS 1 to 3
- (b) Frail – CFS 4 to 6
- (c) Severely frail – CFS 7 to 8
- (d) Terminally ill – CFS 9

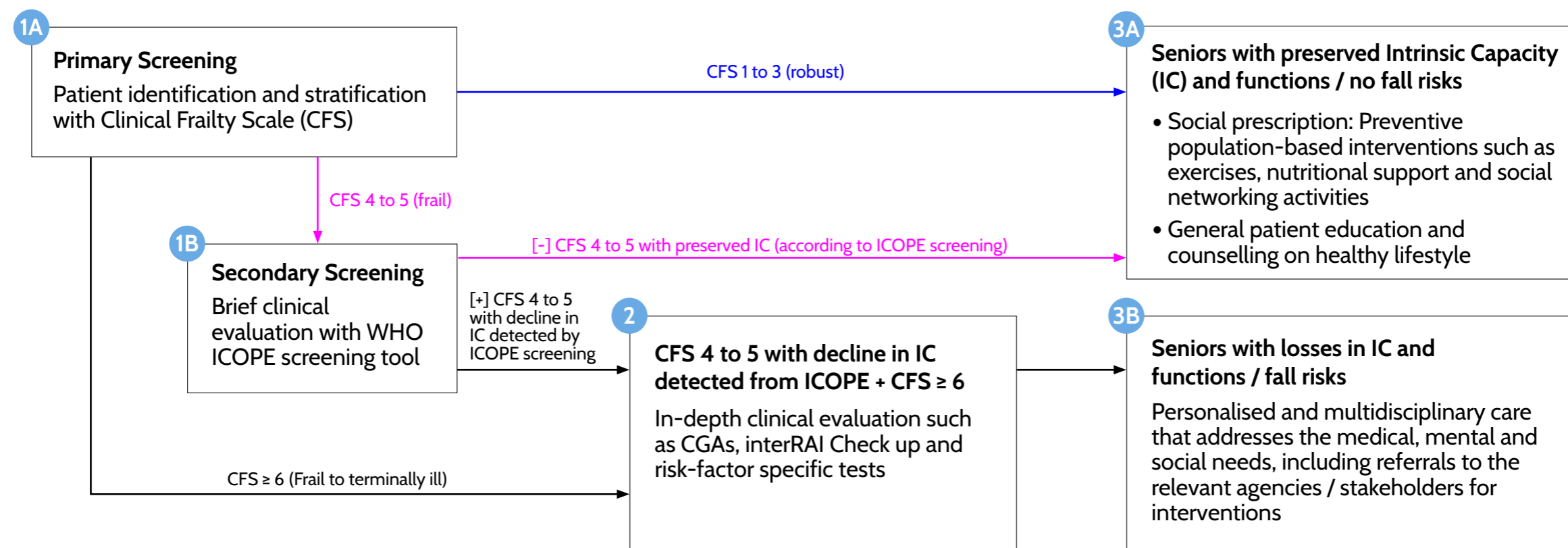
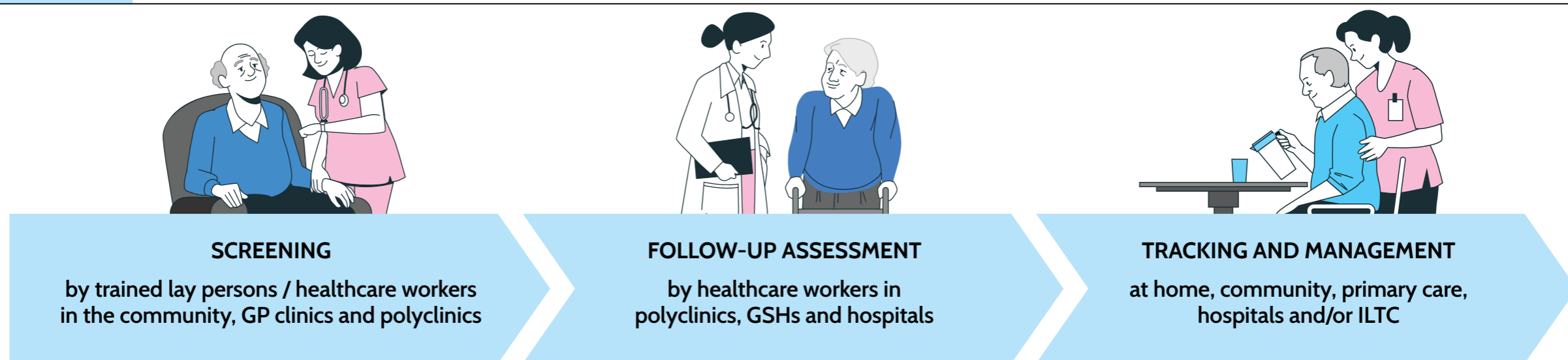
As part of the NFP, care providers are strongly encouraged to use CFS to screen for frailty in the community and primary care, and follow-up with the relevant secondary screening or in-depth assessments based on the senior's CFS score and frailty group. This will provide for a 'common language' to foster common understanding of the patients' needs in terms of screenings and assessments amongst service providers across settings, and support the monitoring of the patients' frailty status over time.

Factoring the significant number of seniors that will be identified as frail (CFS 4 – 6) through active case finding, there is a need to consider how screening can be done optimally to better target limited resources and allow individuals with the highest risk to undergo in-depth assessments and targeted interventions. Therefore, the policy workgroup suggested to do **secondary screening for CFS 4-5 with ICOPE** to identify seniors who will benefit from in-depth CGA or equivalent assessments, which are more resource intensive²³.

RECOMMENDATION 3C:

As part of the NFP, the desired integrated frailty care pathway from frailty screening to management will be delineated for national adoption by the care providers. In this regard, the policy workgroup has identified the key elements of a desired frailty care pathway based on the 3-tier approach (refer to **Figure 5**), which sets the base for the implementation workgroup to develop a detailed frailty care pathway.

FIGURE 5 Elements of a Desired Frailty Care Pathway



Specifically, the policy workgroup has called for proactive identification of the healthy but inactive group of non-frail seniors for early upstream lifestyle interventions, as one of the key focuses of the National Frailty Strategy. Given the potentially large proportion of the inactive seniors within CFS 3 (refer to [Table 2](#)), there is a need to actively identify them for early upstream interventions, preventing progression into frailty (i.e. CFS \geq 4). Inactive and/or socially isolated seniors can be referred to HPB’s pre-frail programmes and eldercare centres to prevent onset of health issues and slow down deterioration.

TABLE 2

Estimated breakdown of seniors in the community per CFS category, based on the data collected by Silver Generation Office (SGO) from 2019 to 2021²⁴

CFS score	Number of Seniors aged >60 years	Proportion
1	25,483	3.0%
2	206,175	24.3%
3	495,310	58.4%
4	62,016	7.3%
5	18,968	2.2%
6	16,476	1.9%
7	18,077	2.1%
8	5,120	0.6%
9	503	0.1%
	848,128	

GAP 4:

The scientific understanding of multi-dimensional frailty is still nascent in Singapore, and there is a need to understand which services and programmes to scale at the policy level and how to do so sustainably.

RECOMMENDATION 4:

More research is required locally to respond to the frailty challenge and build an evidence base in the areas of (a) identification of pre-frailty and frailty, (b) frailty epidemiology (i.e. progression of frailty, transition from different stages of frailty), (c) understanding the effectiveness of existing and new intervention strategies, and (d) behavioural factors that promote positive mindset shifts (e.g. increased adherence to frailty interventions or lifestyle changes) among seniors.

To advance research in frailty, MOH Ageing Planning Office launched a Grant Call on Frailty under the National Innovation Challenge for Active and Confident Ageing in April 2022, which called for proposals that support the following challenge statements. After the review of the proposals and award of the grants, the projects are expected to commence in January 2023.

- A** Leverage technology (e.g. artificial intelligence or wearables) to enhance the understanding of multi-dimensional frailty. The findings should further support the projection of trajectories and outcomes of the population across the frailty spectrum, as well as the development of interventions to improve/delay frailty conditions.
- B** Develop integrated detection and intervention strategies to delay or reverse the progression of frailty in various social and health

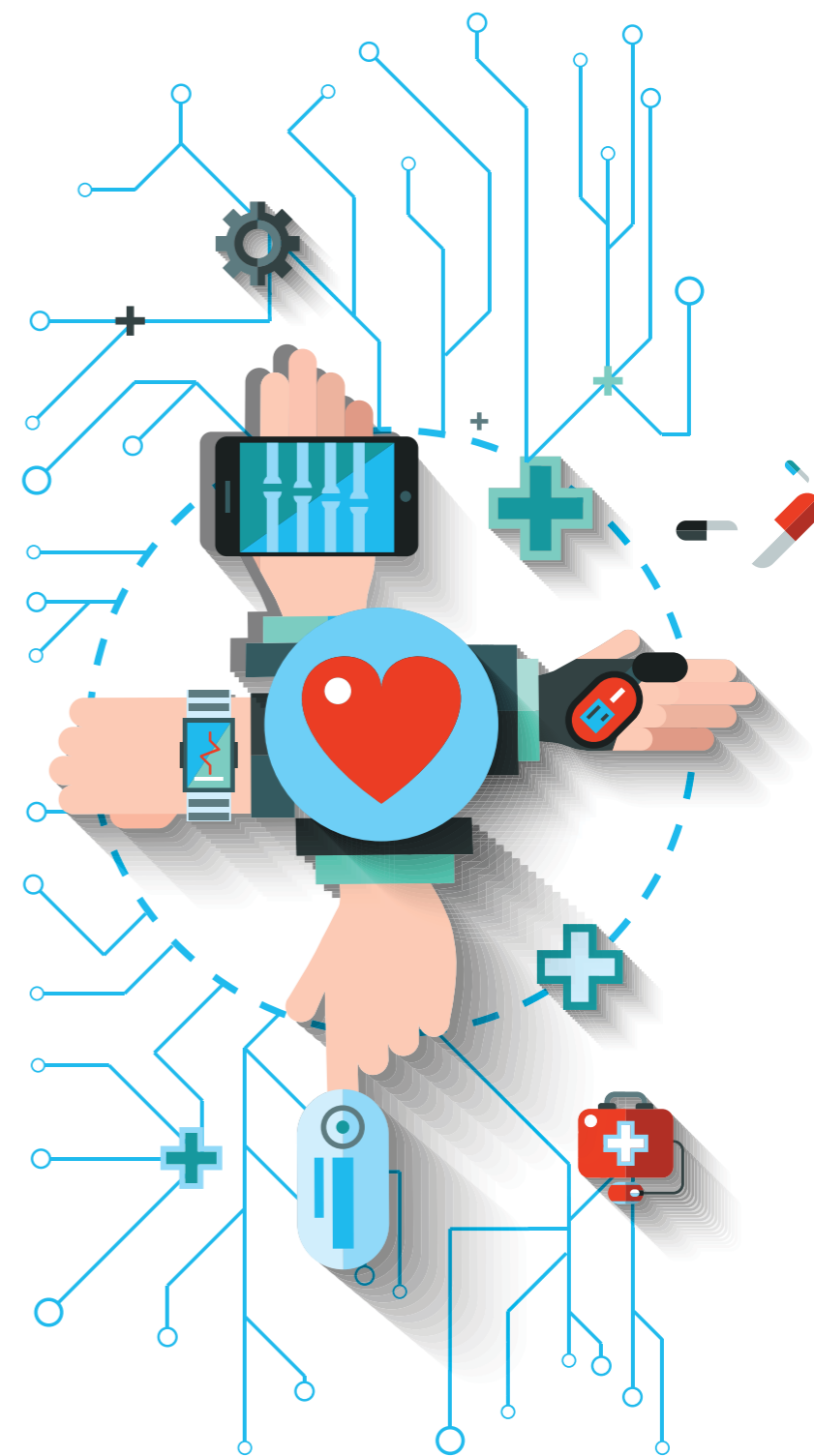


care settings, including the community and primary care. The solutions should achieve better outcomes as compared to current approaches, in terms of improving the well-being of seniors, better adherence to interventions and reducing disability, hospitalisations, healthcare utilisation or mortality rates by at least 25%.

- C** Leverage technology and/or behavioural science to improve awareness of pre-frailty and provide nudges which promote lifestyle modifications and improve adherence to interventions by at least 50%, in a sustainable and scalable manner. The findings should identify ideal assimilation processes for specific archetypes/target groups that inculcate adherence and help seniors recognise the value behind the recommended interventions in helping to maintain their capacity and independence.

In addition to addressing at least one of the three challenge statements, **research teams were also required to provide detailed implementation and scale-up plans involving the clusters, technical and community implementation partners to achieve roll-out beyond the test-bedding phases.** The plans could include the resources, key partnerships and care pathways that need to be developed.

To facilitate the translation and adoption of the research findings, partnerships within the sector will continue to be critical. Stakeholders can help by adopting evidence-based initiatives, and collaborating on enablers and pathways to achieve seamless care transition for the seniors as they transit between providers. Concurrently, it would be meaningful for the implementation parties to exchange best practices and work out care transitions challenges in a more holistic and potentially efficient manner.



CHAPTER 4

SCOPE OF THE 5-YEAR NATIONAL FRAILTY STRATEGY





Focus Areas

In summary, considering the gaps and recommendations shared in Chapter 3, the policy workgroup has identified five focus areas for the 5-Year National Frailty Strategy. Covering the three pillars of frailty prevention, detection and management, these focus areas aim to promote engagement with the public and care providers, social prescription, and consistency and continuity in frailty care.

Frailty Prevention	Frailty Detection	Frailty Prevention, Detection and Management		
<p>Focus Area 1: Raising public awareness on the importance of adopting preventive measures such as engaging an active lifestyle coupled with balanced diet to maintain resilience and prevent, delay or reverse frailty</p>	<p>Focus Area 2: Proactive identification of the healthy inactive group in the community and primary care for early upstream lifestyle interventions at scale</p>	<p>Focus Area 3: Development of a NFP that serves as a national guideline on frailty detection, management, and care pathway</p>	<p>Focus Area 4: Capability building among the health and social care providers to increase adoption of the NFP and encourage frailty care integration</p>	<p>Focus Area 5: Advancement of research in frailty under the National Innovation Challenge for Active and Confident Ageing and other platforms such as National Medical Research Council Grants</p>

B Desired Outcomes

At the end of the 5-Year National Frailty Strategy, the ministry aims to achieve the short, intermediate, and long-term outcomes delineated in **Table 3**. The tracking methodology for these outcomes will be developed by the implementation workgroup.

TABLE 3 Desired outcomes of the 5-Year National Frailty Strategy

	Short Term Outcomes (3 to 5 years)	Intermediate Outcomes (5 to 10 years)	Long term Outcomes (>10 years)
Seniors	<ul style="list-style-type: none"> ● Improved functional health (e.g. grip strength, gait speed) ● Increased awareness of importance of an active lifestyle to maintain resilience and delay, prevent or reverse frailty, and resources available ● Improved uptake of active ageing resources 	<ul style="list-style-type: none"> ● Improved adherence rate to the recommended interventions ● Improved care transitions across care settings 	<ul style="list-style-type: none"> ● Improved Quality of Life ● Reduction in the rate of increase in frailty prevalence
Health and social care providers	<ul style="list-style-type: none"> ● Increased awareness and adoption of NFP (e.g. usage of the recommended measurement tools across care settings) 	<ul style="list-style-type: none"> ● More seamless referrals across care settings 	
System			<ul style="list-style-type: none"> ● Reduction in Disability-Adjusted Life Year (DALY) ● Reduction in avoidable hospital admissions among seniors ● Reduction in average length of stay (ALOS) within hospitals and nursing homes among seniors

CHAPTER 5

CONCLUSION



With the ageing of the population, the prevalence of frailty in Singapore is anticipated to increase, and frailty is associated with an increased likelihood of mortality, disability, healthcare utilisation and poor quality of life. Since frailty is preventable, treatable, and reversible, there is an imperative need to review and enhance efforts to prevent, detect and manage frailty in our seniors.

This report which sets out the gaps in the current frailty landscape, the lessons learnt from international studies and developments, as well as the policy workgroup's recommendations to address existing gaps, will lay the foundation for the work of the new implementation workgroup that seeks to improve the frailty care landscape.

The implementation workgroup will be convened to:

- (a) Develop the NFP that serves as a national guideline on frailty detection, management, and care pathway
- (b) Implement the NFP across the health and social care system and build capability among care providers
- (c) Support the following focus areas identified by the policy workgroup:
 - (i) Raising public awareness on the importance of adopting preventive measures such as engaging an active lifestyle coupled with balanced diet to maintain resilience and prevent, delay or reverse frailty
 - (ii) Proactive identification of the healthy inactive group

in the community and primary care for early upstream lifestyle interventions at scale

(iii) Advancement of research in frailty under the National Innovation Challenge for Active and Confident Ageing and other platforms such as National Medical Research Council Grants

(d) Track the progression and outcomes of the 5-Year National Frailty Strategy



Concurrently, MOH is developing a Healthier SG strategy that takes a life-course approach to drive population health, with efforts upstream on preventive health and early intervention, while continuing to provide appropriate care to those with existing needs²⁵. The National Frailty Strategy will inform the development of the frailty protocols for Healthier SG. The subsumption of frailty care into population health will include the tracking of frailty-related outcome indicators and scaling up of initiatives that promote integrated frailty care at the population level.

To highlight, there remains debate over whether there should be a 'pre-frail' category to increase the precision of segmentation when the ageing population is categorised into different frailty groups. While consensus statements or guidelines on frailty have been published, similar

documents have not been developed for pre-frailty. Instead, most studies refer to pre-frailty in the context of operational definitions for frailty or imply its existences from scores on a frailty screening instrument not meeting the criteria for frailty²⁶. In this report, the recommended segmentation based on CFS scores encompasses the 'Robust', 'Frail', 'Severely Frail', and 'Terminally ill' only. However, we recognise that operationally, providers may find the need for further segmentation to further target efforts (e.g. more intensive outreach to attend frailty programmes for socially isolated seniors). In this regard, the implementation workgroup's views will be sought in the development of recommendations on the operationalisation of frailty programmes.



ANNEXES



Composition of the MOH Frailty Policy Workgroup

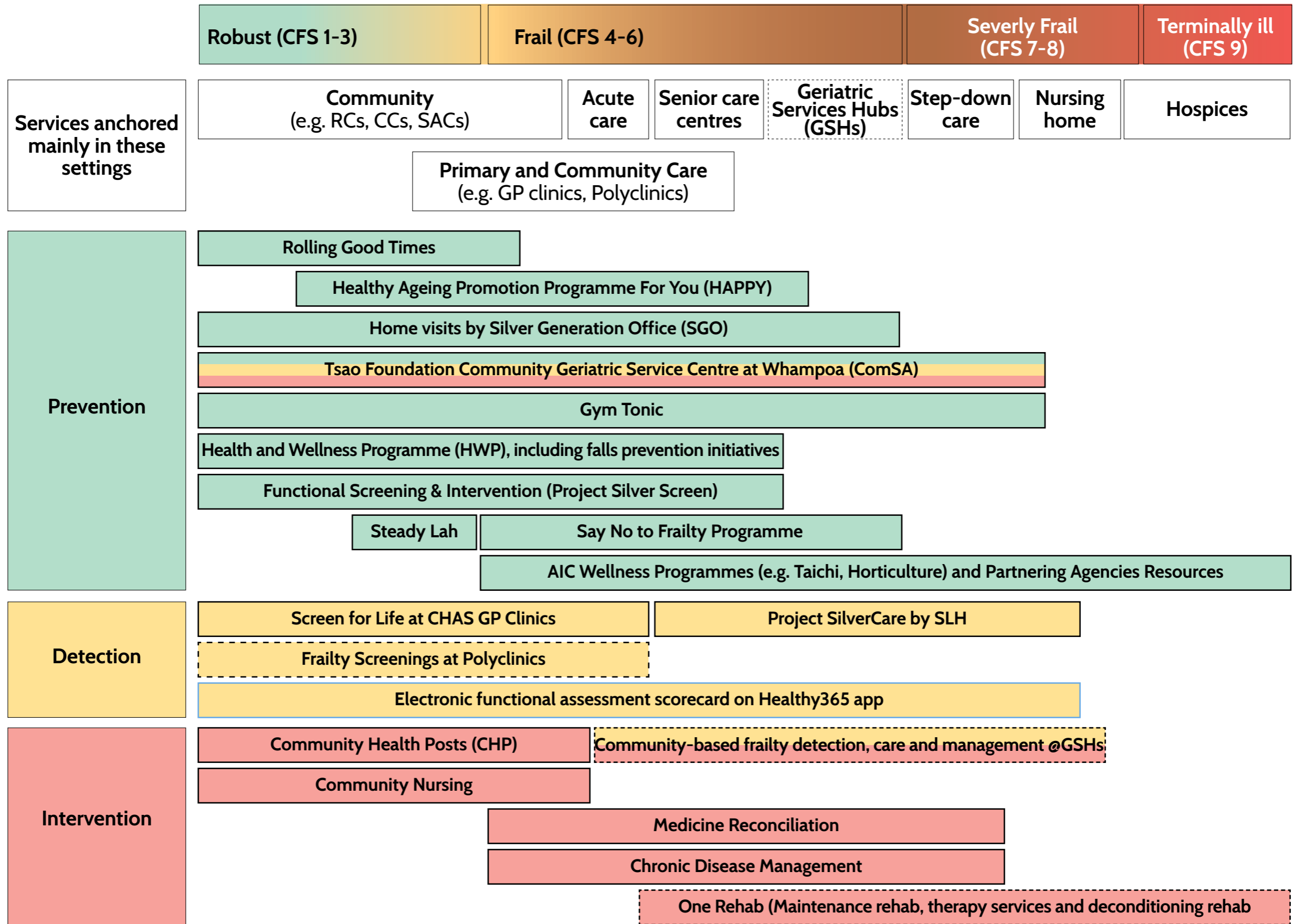
NAME	DESIGNATION
A/Prof Dan Yock Young (Co-Chairperson)	Deputy Director-General of Health (Health Services Group)
Ms Charlene Chang (Co-Chairperson)	Group Director (Ageing Planning Office)
Dr Jeannie Tey (Secretariat)	Director (Health Services Integration and Development)
Dr Christopher Lien	Director & Senior Consultant (Geriatric Medicine), Changi General Hospital
A/Prof Ding Yew Yoong	Executive Director, Geriatric Education and Research Institute
Dr Karen Ng	Deputy Chief Executive Officer, National Healthcare Group Polyclinics
Dr Lester Leong	Clinical Director, St Luke's ElderCare
A/Prof Lim Wee Shiong	Director & Senior Consultant (Geriatric Medicine), Tan Tock Seng Hospital
A/Prof Low Lian Leng	Director, Southeast, SingHealth Office of Regional Health; Medical Director & Senior Consultant, Outram Community Hospital; and Director, SingHealth Centre for Population Health Research & Implementation
Dr Lydia Au	Director & Senior Consultant (Geriatric Medicine), Ng Teng Fong General Hospital
Ms Rachel Ngo	Deputy Director (Healthy Ageing Division), Health Promotion Board
Dr Rahul Malhotra	Deputy Director and Head of Research, Centre for Ageing Research & Education
A/Prof Reshma A Merchant	Head & Senior Consultant (Geriatric Medicine), National University Hospital
Dr Richard Hui	Director, Primary Care Partnerships, National University Health System; and Senior Consultant & Lead, National University Polyclinics Geriatric Specialty Advisory Group
Dr Sinead Wang	Program Director (Memory Clinics), SingHealth Polyclinics
Adjunct Associate Prof Tan Tze Lee	President, College of Family Physicians Singapore
Dr Wong Loong Mun	Chief (Care Integration & Operations Division), Agency for Integrated Care
Dr Wong Sweet Fun	Deputy Chairman, Medical Board (Population Health & Community Care); and Senior Consultant (Geriatric Medicine), Yishun Health and Khoo Teck Puat Hospital

Items shortlisted to measure each domain of intrinsic capacity or functional ability, as proposed by WHO technical experts⁷ (Items in baseline analysis in bold)

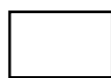
INTRINSIC CAPACITY			FUNCTIONAL ABILITY		
No.	Items	Domain	No.	Items	Domain
1	Memory: 10-word immediate recall	Cognitive	1	Difficulty or how much of problem is bathing	Basic needs
2	Memory: 10-word delayed recall	Cognitive	2	Difficulty or how much of problem is dressing	Basic needs
3	Orientation	Cognitive	3	Difficulty or how much of problem is toileting	Basic needs
4	Memory: 10-word delayed recall	Cognitive	4	Difficulty or how much of problem is eating	Basic needs
5	Orientation	Psychological	5	Difficulty or how much of problem is getting in or out of bed	Basic needs
6	Frequency wake-up during the night and then trouble falling asleep	Psychological	6	Difficulty or how much of problem is taking medication	Basic needs
7	Frequency waking up too early in the morning and not able to fall asleep again	Psychological	7	Difficulty or how much of problem is carrying out household work	Basic needs
8	Frequency feeling unrested during the day no matter hours of sleep	Psychological	8	Difficulty or how much of problem is preparing hot meal	Basic needs
9	All 10 items of the CES-D 10-item questionnaire in separate variables	Psychological	9	Difficulty or how much of problem do you have in managing money	Basic needs
10	All 12 items of the EURO-D questionnaire in separate variables	Psychological	10	Difficulty or how much of problem do you have in shopping for groceries	Basic needs
11	Distance vision	Sensory	11	Difficulty or how much of problem do you have in walking across the room	Mobility
12	Near vision	Sensory	12	Difficulty or how much of problem is walking short distance	Mobility
13	Hearing for participants who do not wear hearing aid	Sensory	13	Children: frequency meet up (arranged and chance)	Maintain relationships
14	Hearing for participants who do wear hearing aid	Sensory	14	Children: frequency speak on the phone	Maintain relationships

INTRINSIC CAPACITY			FUNCTIONAL ABILITY		
No.	Items	Domain	No.	Items	Domain
15	Gait speed	Locomotor	15	Children: write or email	Maintain relationships
16	Hand grip strength	Vitality	16	Children: communicate by skype, Facebook or other social media	Maintain relationships
17	Forced breath: forced vital capacity (FVC)	Vitality	17	Relatives: frequency meet up (arranged and chance)	Maintain relationships
18	Forced breath: forced expiratory volume (FEV)	Vitality	18	Relatives: frequency speak on the phone	Maintain relationships
19	Forced breath: peaked flow (PF)	Vitality	19	Relatives: write or email	Maintain relationships
20	Weight: measured	Vitality	20	Relatives: communicate by skype, Facebook or other social media	Maintain relationships
21	Weight: self-reported	Vitality	21	Friends: frequency meet up (arranged and chance)	Maintain relationships
22	Height: measured	Vitality	22	Friends: frequency speak on the phone	Maintain relationships
23	Height: self-reported	Vitality	23	Friends: write or email	Maintain relationships
24	BMI: measured	Vitality	24	Friends: communicate by skype, Facebook or other social media	Maintain relationships
25	BMI: self-reported	Vitality	25	Frequency care for sick or disabled adult or children	Contribution
			26	Employment status	Contribution
			27	Frequency attend meetings of non-religious organizations	Contribution

Current Frailty Landscape Map (Across CFS)



In pilot stage



Existing initiatives







Upcoming initiatives

The Clinical Frailty Scale (CFS) version 2.0²¹

CLINICAL FRAILTY SCALE

	1	VERY FIT	People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age.
	2	FIT	People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally , e.g., seasonally.
	3	MANAGING WELL	People whose medical problems are well controlled , even if occasionally symptomatic, but often are not regularly active beyond routine walking.
	4	LIVING WITH VERY MILD FRAILITY	Previously “vulnerable,” this category marks early transition from complete independence. While not dependent on others for daily help, often symptoms limit activities . A common complaint is being “slowed up” and/or being tired during the day.
	5	LIVING WITH MILD FRAILITY	People who often have more evident slowing , and need help with high order instrumental activities of daily living (finances, transportation, heavy housework). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation, medications and begins to restrict light housework.

	6	LIVING WITH MODERATE FRAILITY	People who need help with all outside activities and with keeping house . Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.
	7	LIVING WITH SEVERE FRAILITY	Completely dependent for personal care , from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~6 months).
	8	LIVING WITH VERY SEVERE FRAILITY	Completely dependent for personal care and approaching end of life. Typically, they could not recover even from a minor illness.
	9	TERMINALLY ILL	Approaching the end of life. This category applies to people with a life expectancy <6 months , who are not otherwise living with severe frailty . (Many terminally ill people can still exercise until very close to death.)

SCORING FRAILITY IN PEOPLE WITH DEMENTIA

The degree of frailty generally corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

In **very severe dementia** they are often bedfast. Many are virtually mute.



ACKNOWLEDGEMENTS

MOH Frailty Policy Workgroup

Secretariat

MOH Health Services Integration and Development Division

Other Supporting MOH Divisions

Ageing Planning Office

Primary & Community Care

Hospital Services

Epidemiology & Disease Control

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- ¹⁶ Refer to Annex D. The CFS version with visual aids is included within the Post Engagement Form (PEF) done by Silver Generation Ambassadors (SGAs). There is also a CFS app by Acute Frailty Network, available in both Apple and Android.
- ¹⁷ The WHO ICOPE screening questions can be found within WHO ICOPE handbook (<https://www.who.int/publications/i/item/WHO-FWC-ALC-19.1>). There is also a WHO ICOPE Handbook App by Universal Projects & Tools, SL, available in both Apple and Android.
- ¹⁸ Providers can take reference from Singapore Clinical Practice Guidelines For Sarcopenia: W.S. Lim, C.Y. Cheong, J.P. Lim, et al. Singapore Clinical Practice Guidelines For Sarcopenia: Screening, Diagnosis, Management and Prevention. *J Frailty Aging* 2022; <http://dx.doi.org/10.14283/jfa.2022.59>
- ¹⁹ Providers can take reference from Singapore Physical Activity Guidelines (SPAG) 2022 (https://www.healthhub.sg/sites/assets/Assets/Programs/pa-lit/pdfs/Singapore_Physical_Activity_Guidelines.pdf)
- ²⁰ The Live Well, Age Well programme features a wide range of Active Ageing Programmes such as Rolling Good Times, Healthy Ageing Promotion Programme for You (HAPPY), Steady Lah, Project Silver Screen and Screen for Life (SFL). More information can be found on <https://www.healthhub.sg/programmes/160/AAP>.
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- ²² CFS is not meant to be a tool that determines the specific interventions to be prescribed to the senior. The Implementation Workgroup will look into how care providers can determine the interventions required based on objective assessments such as 5X STS.
- ²³ There will be further discussions with the Frailty Implementation Workgroup on whether there is a need to expand ICOPE screening to all seniors as part of frailty identification (i.e. stage 1 of the 3-tier framework shown in Figure 4).
- ²⁴ Based on SGO Post Engagement Form 5 (PEF 5) data collected for 425,293 seniors (from 1 May 2019 to 31 Mar 2021, excluding 1 Feb 2020 to 31 Oct 2020 due to COVID-19 work) and Department of Statistics (DOS) 2019 senior population statistics, MOH Data Analytics Division (DAD) estimated the CFS scores for 848,128 community-dwelling seniors out of 860,508 seniors aged 60 years and above. The remaining 12,380 seniors were not captured as they were institutionalised in Nursing Homes.
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