SINGAPORE IN 2030

25% of population 65 years old and above
Living longer but are we living well?

2015 WHO Definition of Healthy Ageing:
Process of developing and maintaining the functional ability that enables well being in older age
FRAILTY AND DEMENTIA
Increased prevalence with ageing population

60 years old and above
1 in 10 have dementia (10%)
1 in 16 are frail (6%)

85 years old and above
1 in 4 have dementia (25%)
1 in 4 are frail (25%)

Frailty is a complex, **multidimensional**, and cyclical state of diminished physiologic reserve

- increase vulnerability to adverse clinical outcomes, such as disability, delirium, falls, and death

- Frailty is not a condition specific to older adults only
- Frailty is reversible
- 50% of frail older adults are still independent

Lang et al 2009
Clegg et al., 2013
Cesari et al., 2016
Michel et al., 2015
Fulop et al 2010
Ulrike Dapp et al 2014
Fig. 7.1 Potential steps leading to frailty.
FRAILTY IN A NUT SHELL

- FRAILTY PREVALENCE
- FRAILTY SCREENING
- MANAGEMENT PLAN
- MULTI-DOMAIN INTERVENTION
- NUTRITION
- SOCIAL SUPPORT
- GOAL SETTING eg ACP
FRAILTY: EPIDEMIOLOGY

Prevalence of frailty by age group (%)

- 65-69: 3.40%
- 70-74: 8.40%
- 75-79: 6.30%
- 80-84: 15.40%

Prevalence of frailty amongst ethnic groups

- Chinese: Robust 59.2%, Pre-frail 46.4%, Frail 10.1%
- Indian: Robust 43.5%, Pre-frail 43.4%, Frail 6.6%
- Malay: Robust 50.0%, Pre-frail 6.6%, Frail 8.8%
- Others: Robust 53.0%, Pre-frail 5.6%, Frail 8.8%

* Denotes statistically significant categorical differences.

Merchant et al. 2017
# Frailty: Epidemiology

<table>
<thead>
<tr>
<th>Authors and year of publication</th>
<th>Setting</th>
<th>Age (years)</th>
<th>Frailty assessment method</th>
<th>Effective sample</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wei K et al, 2017</td>
<td>Community dwelling older adults (SLAS cohort)</td>
<td>≥55</td>
<td>Fried phenotype</td>
<td>5,685</td>
<td>4.5</td>
</tr>
<tr>
<td>Vaingankar JA et al, 2017</td>
<td>Community dwelling older adults (WiSE cohort)</td>
<td>≥60</td>
<td>Fried phenotype</td>
<td>2,102</td>
<td>5.7</td>
</tr>
<tr>
<td>Merchant RA et al, 2017</td>
<td>Community dwelling older adults (HOPE cohort)</td>
<td>≥65</td>
<td>FRAIL</td>
<td>1,051</td>
<td>6.2</td>
</tr>
<tr>
<td>Ge L et al, 2017</td>
<td>Community dwelling older adults</td>
<td>≥60</td>
<td>Clinical Frailty Scale (CFS)</td>
<td>721</td>
<td>10.1</td>
</tr>
</tbody>
</table>

FRAILTY PREVALENCE IN DIFFERENT SETTINGS (Singapore data)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>6%</td>
</tr>
<tr>
<td>Outpatient</td>
<td>27%</td>
</tr>
<tr>
<td>Inpatient</td>
<td>50 - 87%</td>
</tr>
</tbody>
</table>

Edward Chong…Wee Shiong Lim et al JAMDA 2017
Li Feng Tan … R Merchant et al 2017
R Merchant et al 2017
FRAILTY AND CHRONIC DISEASE

>65 YEARS POPULATION PREVALENCE

- **Diabetes**: 24%
- **Hypertension**: 57%
- **Hyperlipidaemia**: 58%
- **Polypharmacy**: 30%

- Robust
- Prefrail
- Frail

R.A. Merchant et al. JAMDA 2017
**FRAILTY AND MENTAL HEALTH:**
Partners in Crime

<table>
<thead>
<tr>
<th></th>
<th>ROBUST</th>
<th>PREFRAIL</th>
<th>FRAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMSE &lt; 25</td>
<td>12.9%</td>
<td>19.8%</td>
<td>29.2%</td>
</tr>
<tr>
<td>DEPRESSION (GDS)**</td>
<td>5.4%</td>
<td>9.0%</td>
<td>18.2%</td>
</tr>
</tbody>
</table>

Cognitive frailty predicts:
1. Dementia (HR 3.43, 95% CI 2.37-4.97)
2. Mortality

**unpublished local data
R.A. Merchant et al. JAMDA 2017
Yunhwan Lee et al 2017
Shimada et al 2018**
FRAILTY SCREENING

- All adults >65 years old should be screened for frailty (cost-effective in primary care Bleijenberg N et al)

- Primary care is often the FIRST POINT OF CONTACT for many community dwelling older adult

- There needs to be dedicated clinical pathway once identified at risk, e.g.
  - Rapid Geriatric Assessment
  - Kihon Checklist

- Regular assessment and monitoring

John E Morley..RA Merchant, Jean Woo et al JAMDA 2017
Bleijenberg N et al JAMDA 2017
http://www.moh.gov.sg/COS2019
TOOLS TO SCREEN FOR FRAILTY

- No ONE gold standard
- 3 tools commonly used:

<table>
<thead>
<tr>
<th>FRAIL Scale</th>
<th>FRIED’s Frail Scale (Physical)</th>
<th>Rockwood’s Clinical Frailty Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you fatigued?</td>
<td>Yes = 1</td>
<td>1 Very Fit - People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.</td>
</tr>
<tr>
<td>Are you unable to climb 1 flight of stairs?</td>
<td>Yes = 1</td>
<td>2 Well - People who have no active disease symptoms but are less fit than category 1. Often, they retire or are less active occasionally, e.g. seasonally.</td>
</tr>
<tr>
<td>Are you unable to walk 1 block?</td>
<td>Yes = 1</td>
<td>3 Managing Well - People whose medical problems are well controlled, but are not regularly active beyond routine walking.</td>
</tr>
<tr>
<td>Do you have 5 or more illnesses?</td>
<td>Yes = 1</td>
<td>4 Vulnerable - 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.</td>
</tr>
<tr>
<td>Have you lost 5% or more of your weight in the last 6 months to 1 year?</td>
<td>Yes = 1</td>
<td>5 Mildly Frail - These people often have more evident slowing, and need help in high order ADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impacts shopping and walking outside home, meal preparation and housework.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Moderately Frail - People 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, standing) with dressing.</td>
</tr>
</tbody>
</table>

| | | 7 Severely Frail - 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 Very Severely Frail - Completely dependent, approaching the 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 evidently frail. |

Scoring frailty in people with dementia

The degree of frailty 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 past life events well. They can do personal care with prompting.

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

1-2 PRE-FRAIL 3-5 FRAIL

GAIT SPEED
LOCAL CONSENSUS ON SCREENING AND MANAGEMENT

Special Article
The Asia-Pacific Clinical Practice Guidelines for the Management of Frailty

Elsa Dent PhD, Christopher Lien MBBS, MPA, Wee Shiong Lim MBBS, MRCP, MHPed, Wei Chin Wong MBBS, Chek Hooi Wong MBBS, MPH, Tze Pin Ng MD, Jean Woo MD, Birong Dong MD, Shelley de la Vega MD, MSC, Philip Jun Hua Poi MB, ChB, Shahrul Bahyah Binti Kamaruzzaman MD, Chang Won MD, PhD, Liang-Kung Chen MD, PhD, Kenneth Rockwood MD, Hidenori Arai MD, PhD, Leocadio Rodriguez-Manias MD, PhD, Li Cao MD, Matteo Cesari MD, PhD, Piu Chan MD, PhD, Edward Leung FRCP, Francesco Landi MD, Linda P. Fried MD, John E. Morley MB, MCh, Bruno Vellas MD, PhD, Leon Flicker PhD, MBBS

Translating the Science of Frailty in Singapore: Results from the National Frailty Consensus Discussion

Wee Shiong Lim MBBS, MRCP, MHP, Chek Hooi Wong MBBS, FRCP, MPH, Yew Yoong Ding MBBS, FRCP, PhD, Kenneth Rockwood MD, FRCP, FRCP

Table 1
Clinical Practice Guidelines for the Management of Frailty

<table>
<thead>
<tr>
<th>Strong Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We strongly recommend that frailty be identified using a validated measurement tool.</td>
</tr>
<tr>
<td>2. We strongly recommend that older adults with frailty be referred to a progressive, individualized physical activity program that contains a resistance training component.</td>
</tr>
<tr>
<td>3. We strongly recommend that polypharmacy be addressed by reducing or deprescribing any inappropriate/superfluous medications.</td>
</tr>
</tbody>
</table>
SCREENING AND CASE FINDING FOR FRAILTY

**PROS**

1. diagnosing frailty or pre-frailty at the earliest possible stages of pathology before symptom
   a) Avoid treatment / meds which will accelerate decline
   b) Look for depression / cognition
   c) Dedicated clinical care pathway
   d) Person defined goals of care

2. seek out reasonable **adjustments for any disabilities** they may have to ease caregiver burden eg environment

3. Develop and **implement interventions to attenuate and/or prevent decline** earlier in the frailty development trajectory

**CONS**

1. Frailty maybe **perceived by the public as hopelessness and futility**

2. over-medicalised approach to frailty, we may neglect other aspects of a person’s health where there may be potential for improvement eg social / environment

Shannon Wu et al 2018
ASSESSMENT AND MANAGEMENT PLAN

• Assessment, depends on resources
  • Individualised assessment of strength, gait speed, falls risk, nutrition
  • Frailty is not disability
    • pathway based assessment eg Rapid Geriatric Assessment is feasible

<table>
<thead>
<tr>
<th>FRAIL</th>
<th>FRIED’s Frail Scale (Physical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you fatigued?</td>
<td>Exhaustion (self report)</td>
</tr>
<tr>
<td>No = 0</td>
<td>No = 0</td>
</tr>
<tr>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Are you unable to climb 1 flight of stairs?</td>
<td>Weakness (grip strength, lowest 20%)</td>
</tr>
<tr>
<td>No = 0</td>
<td>No = 0</td>
</tr>
<tr>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Are you unable to walk 1 block?</td>
<td>Walking speed 15ft (slowest 20%)</td>
</tr>
<tr>
<td>No = 0</td>
<td>No = 0</td>
</tr>
<tr>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Do you have 5 or more illnesses?</td>
<td>Low Physical Activity (Kcals/week, lowest 20%)</td>
</tr>
<tr>
<td>No = 0</td>
<td>No = 0</td>
</tr>
<tr>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Have you lost 5% or more of your weight in the last 6 months to 1 year?</td>
<td>Weight loss (10lbs in 1 year)</td>
</tr>
<tr>
<td>No = 0</td>
<td>No = 0</td>
</tr>
<tr>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
</tbody>
</table>

PREFRAIL = 1-2
FRAIL = 3-5

RAPID GERIATRIC ASSESSMENT

Saint Louis University
Rapid Geriatric Assessment*

*There is no copyright on these screening tools and they may be incorporated into the Electronic Health Record without permission and at no cost.

The Simple “FRAIL” Questionnaire Screening Tool
(3 or greater = frailty; 1 or 2 = prefrail)

Fatigue: Are you fatigued?
Resistance: Cannot walk up one flight of stairs?
Aerobic: Cannot walk one block?
Illnesses: Do you have more than 5 illnesses?
Loss of weight: Have you lost more than 5% of your weight in the last 6 months?


SNAQ (Simplified Nutritional Assessment Questionnaire)

<table>
<thead>
<tr>
<th>My appetite is</th>
<th>Food tastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. very poor</td>
<td>a. very bad</td>
</tr>
<tr>
<td>b. poor</td>
<td>b. bad</td>
</tr>
<tr>
<td>c. average</td>
<td>c. average</td>
</tr>
<tr>
<td>d. good</td>
<td>d. good</td>
</tr>
<tr>
<td>e. very good</td>
<td>e. very good</td>
</tr>
</tbody>
</table>

When I eat

<table>
<thead>
<tr>
<th>Normally I eat</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I feel full after eating only a few mouthfuls</td>
<td>a. less than one meal a day</td>
</tr>
<tr>
<td>b. I feel full after eating about a third of a meal</td>
<td>b. one meal a day</td>
</tr>
<tr>
<td>c. I feel full after eating over half a meal</td>
<td>c. two meals a day</td>
</tr>
<tr>
<td>d. I feel full after eating most of the meal</td>
<td>d. three meals a day</td>
</tr>
<tr>
<td>e. I hardly ever feel full</td>
<td>e. more than three meals a day</td>
</tr>
</tbody>
</table>


Table 1: SARC-F Screen for Sarcopenia

<table>
<thead>
<tr>
<th>Component</th>
<th>Question</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strength</td>
<td>How much difficulty do you have in lifting and carrying 10 pounds?</td>
<td>None = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some = 1</td>
</tr>
<tr>
<td>Assistance in</td>
<td>How much difficulty do you have walking across a room?</td>
<td>None = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some = 1</td>
</tr>
<tr>
<td>Walking</td>
<td>A lot, use aids, or unable = 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rise from a</td>
<td>How much difficulty do you have transferring from a chair or bed?</td>
<td>None = 0</td>
</tr>
<tr>
<td>chair</td>
<td></td>
<td>Some = 1</td>
</tr>
<tr>
<td></td>
<td>A lot, use aids, or unable = 2</td>
<td></td>
</tr>
<tr>
<td>Climb stairs</td>
<td>How much difficulty do you have climbing a flight of ten stairs?</td>
<td>None = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some = 1</td>
</tr>
<tr>
<td></td>
<td>A lot, use aids, or unable = 2</td>
<td></td>
</tr>
<tr>
<td>Falls</td>
<td>How many times have you fallen in the last year?</td>
<td>None = 0</td>
</tr>
<tr>
<td></td>
<td>1-3 falls = 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 or more falls = 2</td>
<td></td>
</tr>
</tbody>
</table>


Rapid Cognitive Screen (RCS)

1. Please remember these five objects. I will ask you what they are later. [Read each object to patient using approx. 1 second intervals.]

   Apple
   Pen
   Tie
   House
   Car

2. [Give patient pencil and the blank sheet with clock face.] This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o’clock. [2 pts/hr markers ok; 2 pts/time correct]

3. What were the five objects I asked you to remember? [1 pt/ea]

4. I’m going to tell you a story. Please listen carefully because afterwards, I’m going to ask you about it.

   Jill was a very successful stockbroker. She made a lot of money on the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Chicago. She then stopped work and stayed at home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after. What state did she live in? [1 pt]

Algorithm for Management of Frailty

**Fatigue**
- SLU “AM SAD” for depression
- Do you stop breathing while asleep? Sleep apnea
- TSH for hypothyroid
- Vitamin B12
- Hemoglobin for anemia
- Blood pressure for hypotension/orthostasis

**Resistance**
- SARCOPENIA
  - Resistance exercise
  - Aerobic exercise
  - Protein supplement daily
  - 1000 IU vitamin D daily

**Aerobic**

**Illnesses**
- Review medication list for unnecessary side effects and drugs whose side effects may be contributing to frailty, e.g., anticholinergic drugs

**Loss of Weight**
- Medications producing anorexia
- Emotional – depression
- Abuse, elderly, alcoholism
- Late life paranoia
- Swallowing problems
- Oral problems
- Nosocomial infections, eg, *H Pylori*
- Wandering and other dementia-related problems
- Hyperthyroidism, hypercalcemia, hyperglycemia, hypoadrenalism
- Enteral problems, eg, celiac disease
- Eating problems
- Low salt, sugar and cholesterol diets
- Stones - cholecystitis

Caloric Supplementation

John Morley et al 2015
ASSESSMENT AND MANAGEMENT PLAN

• Development of individualised comprehensive care plan
  • Treatment of sarcopenia
  • Assessment and management for causes of fatigue eg depression, anaemia, sleep apnoea
  • Evaluation of weight loss
  • Review of polypharmacy
  • Assessment of cognition
  • Assessment of vision, hearing impairment and falls

RAPID GERIATRIC ASSESSMENT APP

Welcome! To begin, please follow the instructions below

**Add Participant:**

**Select assessments (5):**
- Rapid Cognitive Assessment
- Rapid Caregiver Well-Being Scale (R-CWBS)
- Screen For Sarcopenia
- Simplified Nutritional Assessment Questionnaire
- FRAIL Questionnaire

**Begin Assessment**

**Frail Assessment Summary**
- Participant Score: 3 / 6
- Assessment completed! Please choose next assessment:
  - Geriatric
  - PHQ9
  - Commit and exit
  - Cancel

**Over the last 2 weeks, how often have you been bothered by any of the following problems?**

1. Little interest or pleasure doing things
   - A. Not at all
   - B. Several days
   - C. More than half of the days
   - D. Nearly every day
   - F. All of the time

2. This is a clock face. Please put in the hour markers and the time at ten past eleven
   - Select drawing type:
     - In App drawing
     - Camera capture
     - Cancel
   - Time score: 0

Choose the best answer for how you have felt over the past week

1. Are you basically satisfied with your life?
   - Yes
   - No

2. Have you dropped many of your activities and interests?
   - Yes
   - No

3. Do you feel that your life is empty?
   - Yes
   - No

4. Do you often get bored?
   - Yes
   - No

5. Are you in good spirits most of the time?
   - Yes
   - No

**Patient Health Questionnaire (PHQ - 9)**
Causes of sarcopenia

Alfonso et al. Age Ageing 2019

GUIDELINES

Sarcopenia: revised European consensus on definition and diagnosis

Figure 1. Sarcopenia: EWGSOP2 algorithm for case-finding, making a diagnosis and quantifying severity in practice. The steps of the pathway are represented as Find-Assess-Confirm-Severity or F-A-C-S. "Consider other reasons for low muscle strength (e.g. depression, stroke, balance disorders, peripheral vascular disorders).

Figure 4. Factors that cause and worsen muscle quantity and quality, sarcopenia, are categorised as primary (ageing) and secondary (disease, inactivity, and poor nutrition). Because a wide range of factors contribute to sarcopenia development, numerous muscle changes seem possible when these multiple factors interact.

Aging
- Age-associated muscle loss

Disease
- Inflammatory conditions (e.g., organ failure, malignancy)
- Osteoarthritis
- Neurological disorders

Inactivity
- Sedentary behavior (e.g., limited mobility or bedrest)
- Physical inactivity

Malnutrition
- Under-nutrition or malabsorption
- Medication-related anorexia
- Over-nutrition/obesity

Causes of sarcopenia

Alfonso et al Age Ageing 2019
Participant Score: 6 / 10

Your screening test results indicate that you may have sarcopenia. Sarcopenia is a loss of muscle and function that is common with aging. Sarcopenia can make it hard for you to do your daily activities and can cause health problems. Sarcopenia can sometimes cause weight loss, but muscle may be replaced by fat as you get older so that your weight might not have changed. There are ways to keep sarcopenia from getting worse through exercise and eating healthy foods.

Here is a list of things you can do to improve your health and reduce or reverse sarcopenia. Exercise is especially important, either using your body weight or with small hand weights.

• Stand up from a chair five times in a row

Use a 5 pound weight to exercise your arms. You can use objects from home such as a large bottle of soda

• Do aerobic workouts, such as 20 minutes of walking per day

• Try standing on one foot while holding onto something and closing your eyes

• Add more protein to your diet. Talk to your doctor about adding Vitamin D

• Eat some yogurt each night before going to bed

Please talk to your doctor or health provider about your sarcopenia test and if you have any questions.
MULTI-DOMAIN INTERVENTION

• A multi-component physical activity program should be prescribed for all persons who have frailty or prefrailty

- group physical activity programs improved in physical functioning (SMD = 0.37, 95% CI 0.07 to 0.68)

- improved Timed Up and Go (TUG), walking speed and balance. Multicomponent programs incorporating resistance training were most likely to improve functional capacity in those with frailty, although were unable to establish the optimal program type.

- multi-component exercise intervention composed by strength, endurance and balance training seems to be the best strategy to improve rate of falls, gait ability, balance, and strength performance in physically frail older adults.

SMD: Standardised mean difference
COUNTY PERRY, USA CASE STUDY
FRAILTY SCREENING AND INTERVENTION

The university just won a $2.5 million federal grant to implement the plan across Missouri, with hopes it can be replicated elsewhere. University researchers determined four main causes of disability, hospitalization and early death in older adults: frailty, muscle loss, weight loss and cognitive impairment. They developed a quick screening tool to catch the problems and trigger a list of the most effective interventions.

In 2010, there were only 3.6 geriatricians per 10,000 people over the age of 75. By 2030, the number is expected to drop to 2.5 per 10,000. “The question is, if less people are going into geriatrics, what are you going to do to take care of old people?” Morley said.

The assessment Morley and his team developed takes about five minutes and can be given by providers such as nurses, dietitians or physical therapists. Those who screen positive should share findings with their primary care doctor. If they don’t have a doctor, they are connected to one.
CASE STUDY 2
Community Aging in Place—Advancing Better Living for Elders (CAPABLE)

The approach teams a nurse, an occupational therapist and a handyman to address both the home environment and uses the strengths of the older adults themselves to improve safety and independence.

CAPABLE Improves Health Outcomes at Lowers Costs More Than 6X Return on Investment
Roughly $3,000 in program costs yielded more than $20,000 in savings in medical costs driven by reductions in both inpatient and outpatient expenditures.

https://nursing.jhu.edu/faculty_research/research/projects/capable/index.html
Deficit based approach can have a stigmatizing and disempowering effect.

Need to recognize health assets and resilience.

‘What makes us healthy?’ (as opposed to ‘What makes us ill?’)
OUTCOME WHICH MATTERS…

REDUCE DISABILITY
BETTER QUALITY OF LIFE

Screen and reduce frailty

Need to know factors which increase resilience
KEY CHARACTERISTICS OF RESILIENCE

MENTAL
1. Strong coping skills
2. Gratitude
3. Happiness
4. Good cognition
5. Mental health
6. Optimism / hopefulness
7. Positive emotions

SOCIAL
1. Community involvement
2. Contact with family and Friends
3. Sense of purpose
4. Social support & connectedness (before and during adversity)

PHYSICAL
1. ADL independent
2. Physically active
3. Better self-rated health

Chmitorz et al Clin psychology 2018
Stephanie Macleod et al 2016
RESILIENCE AND IMPACT OF MULTIDOMAIN INTERVENTIONS

Characteristics of resilience

1. Community involvement
2. ADL independent
3. Physically active
4. Better coping mechanism
5. Contact with family and friends
6. Better self-rated health

Outcomes:
1. Higher QoL
2. Successful aging
3. Lower depression
4. Longevity
5. Reduced mortality risk

Interventions to reduce depression

Interventions to improve physical health

Interventions to improve cognition

Plan
By priority

Chmitorz et al Clin psychology 2018
Stephanie Macleod et al 2016
Integrated care for older people
Guidelines on community-level interventions to manage declines in intrinsic capacity

Recommendation 1
Multimodal exercise, including progressive strength resistance training and other exercise components (balance, flexibility and aerobic training), should be recommended for older people with declining physical capacity, measured by low gait speed, grip strength and other physical performance measures.

Quality of the evidence: moderate
Strength of the recommendation: strong

Recommendation 2
Oral supplemental nutrition with dietary advice should be recommended for older people affected by undernutrition.

Quality of the evidence: moderate
Strength of the recommendation: strong
We can build a sustainable healthcare system together!

How do we keep healthcare affordable, accessible and of good value for Singaporeans, now and in the future? Here are some ways MOH is working with you and the healthcare family:

**TODAY**

- ‘The Frail Elderly’ (i.e. a label)
- Presentation late & in crisis (e.g. delirium, falls)
- Hospital-based: episodic, fragmented & disjointed

**TOMORROW**

- Use frailty measurement to advance health care delivery
- "An older person living with frailty" or “at risk”
- Timely identification for preventative, proactive care and shared decision making
- co-ordinated Person-centered care

By Community for Community
Primary Care
CONCLUSION

• frailty is a dynamic condition and reversible, hence early screening, assessment and optimisation is essential
• Frailty and resilience has multidimensional component to it
  • Interventions needs to be multi-domain
• Care and management need to be individualised
• Pro-active care for community by community

FOR HEALTHY AGEING, WE NEED TO:
• PREVENT 3’F’s (Frailty, Falls, Fractures)
• BUILD 1 ‘R’ (resilience)

Thank you