

Health Services Research: Linking Policy and Practice

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- How many people will have health/social needs and what will it take to meet those needs?
- Will the numbers be lower or higher with the coming generation of elders? Will the mix of needs be different?
- Are we building too fast? Fast enough?
- Can we promote prevention, early diagnosis, and chronic disease care, and what difference will it make?
 - What is a sustainable model?
 - How to engage the private sector in this process?
 - How to control costs?
 - Can we meet manpower needs?



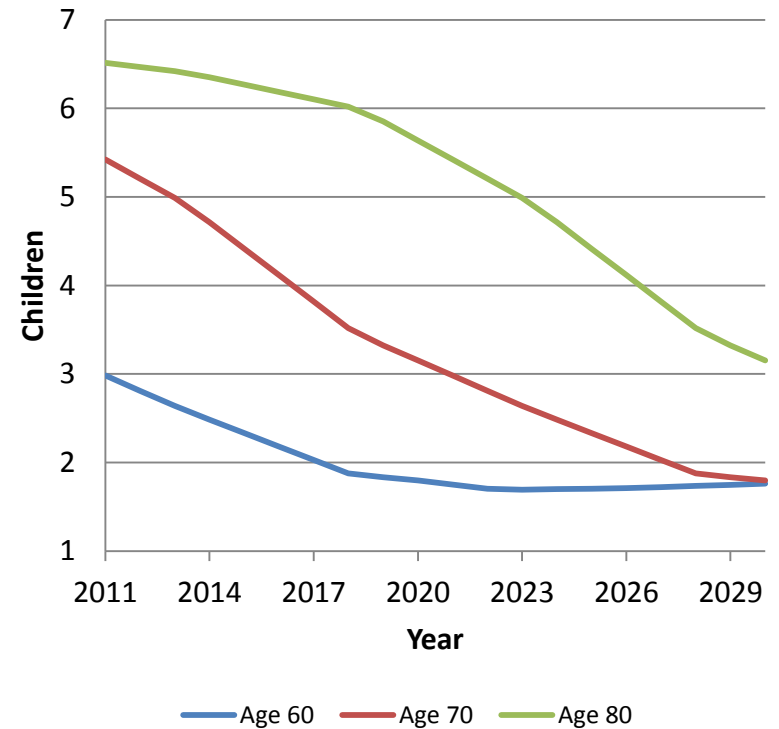
Difficult problems

- Complicated
- “Wicked”
 - Requirements are incomplete, contradictory, changing
 - Dynamic interdependencies: solving one problem reveals or creates other problems

Singapore's demographic reality

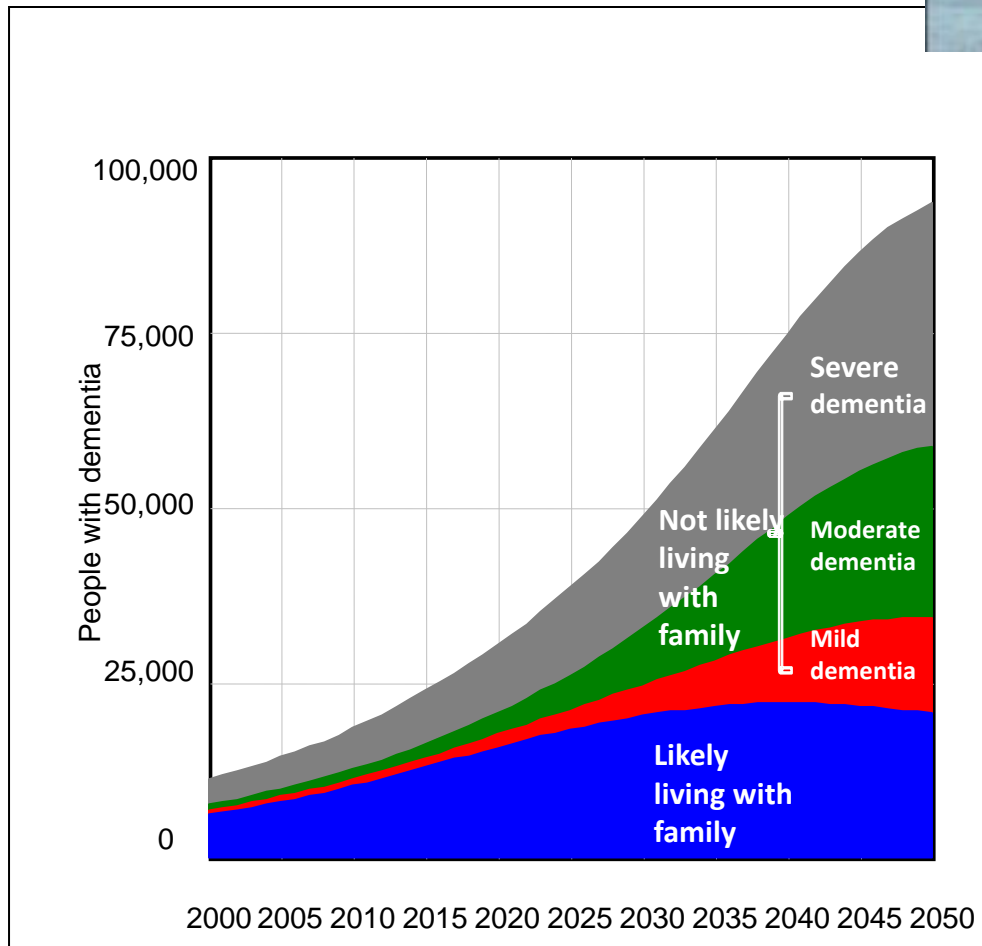
- The population is ageing

- Families are getting smaller



As the number of individuals with age-related conditions rises, how do we address their needs for health and social care?

Implications: dementia



Principles: linking theory and practice

1. Forum for multiple stakeholders/experts
2. Well formed questions
3. Common framework for visualizing and communicating causal hypotheses
4. Good data
5. The opportunity to learn and “iterate”

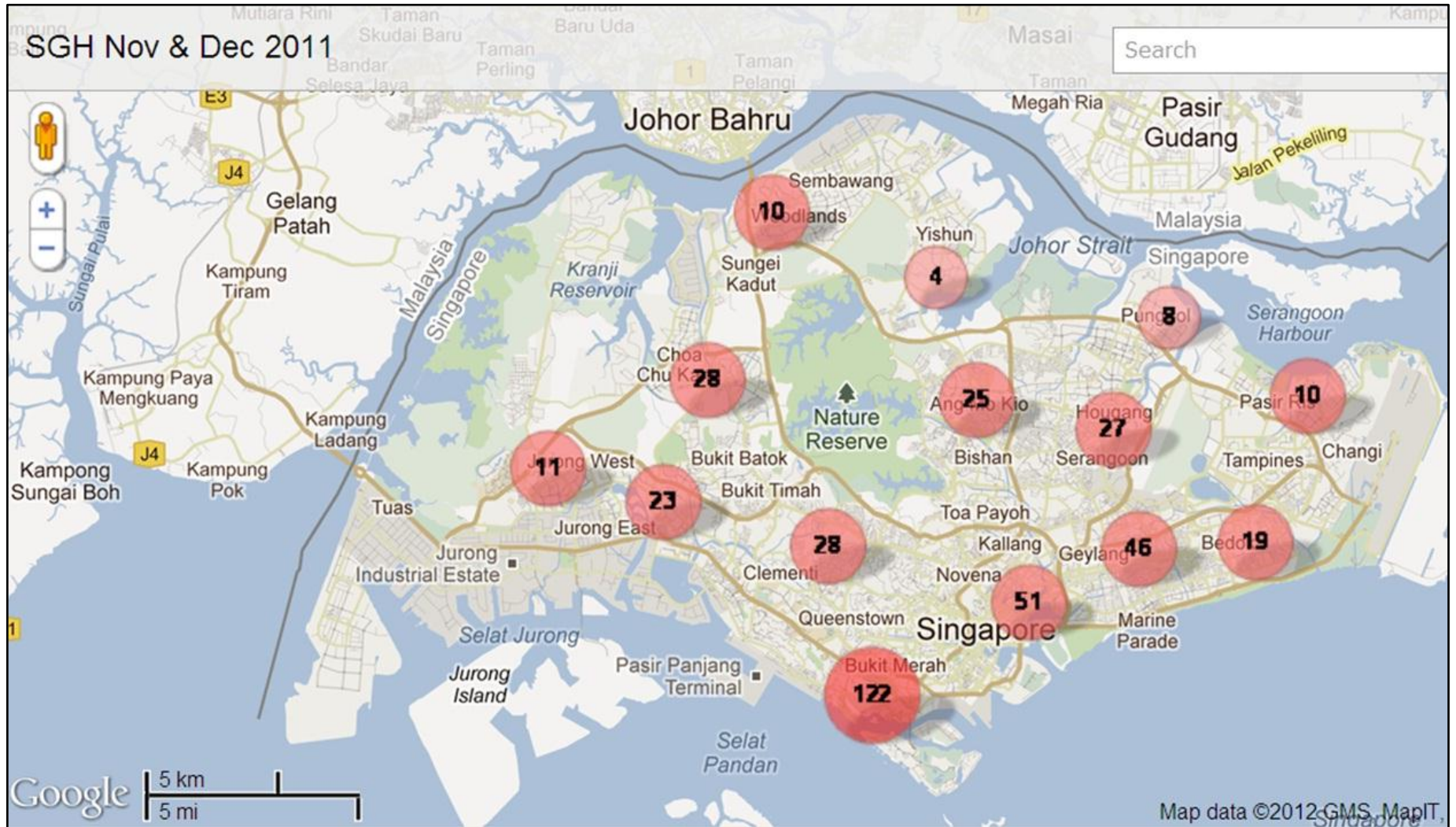
Illustration: Falls in the elderly

- Accidents are 6th leading cause of death in persons over 65
- Falls account for 2/3 of accidental deaths in persons over 65
- 83% of falls results in injury
 - Fracture of the hip: 12%

Exercise – Grade A Evidence

- Exercise should be included as a component of multifactorial interventions for fall prevention in community-residing older persons [A]
- An exercise program that targets strength, gait and balance, such as Tai Chi or physical therapy, is recommended as an effective intervention to reduce falls [A]
- Exercise may be performed in groups or as individual (home) exercises, as both are effective in preventing falls [B]

Patients discharged from SGH ED in 2 months



Total no of patients with history of falls aged 70 years & above: 228

Falls Prevention in Singapore

- Falls prevention services are located mostly in acute-care settings
- Few structured programmes to follow up with high-risk patients once they are discharged into the community
- Specialized falls clinics have limited reach and are underutilized due to cost, transportation, etc.

Well-formed questions

Is an aggressive falls prevention program that targets vulnerable elderly Singaporeans at high-risk of falls

- Feasible?
- Effective?
- Sustainable/Cost-effective?

Primary outcome: proportion of fallers over 9 month follow-up

Physical Therapy Evaluation

- LE motor control and sensation
- Endurance
- Balance self-efficacy
- Short Physical Performance Battery (SPPB)

Low risk for falls
SPPB > 6

High risk for falls
SPPB ≤ 6

Evidence-based exercise program

- Group setting
- Developed in partnership with HPB

Home Physical Therapy

- Individualized program until patient is safe for independent exercise
- Gait and balance training
- Therapy Exercise
- Orthotic / assistive device evaluation

Transition to exercise in group setting

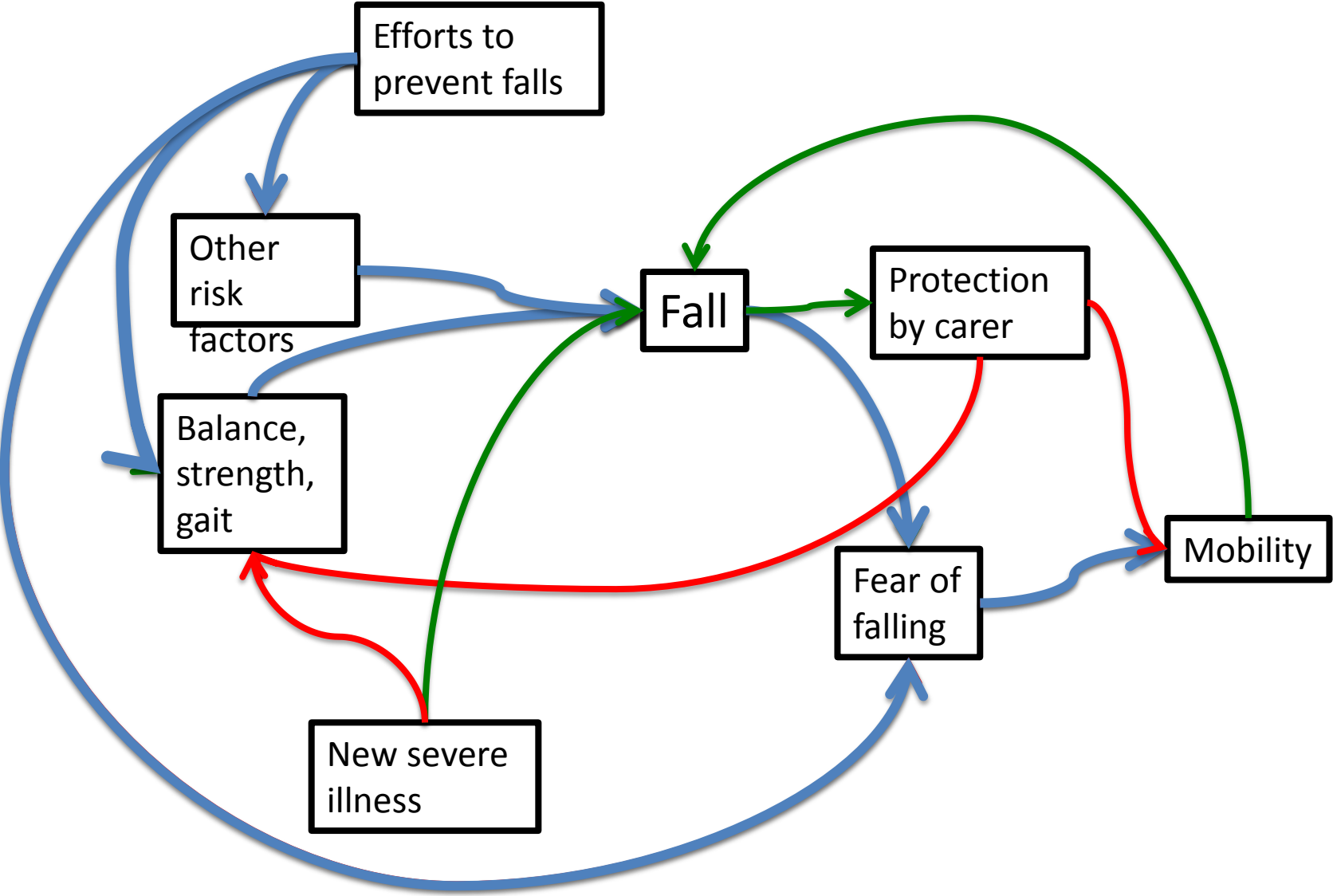
The SAFE team

SAFE Research Team

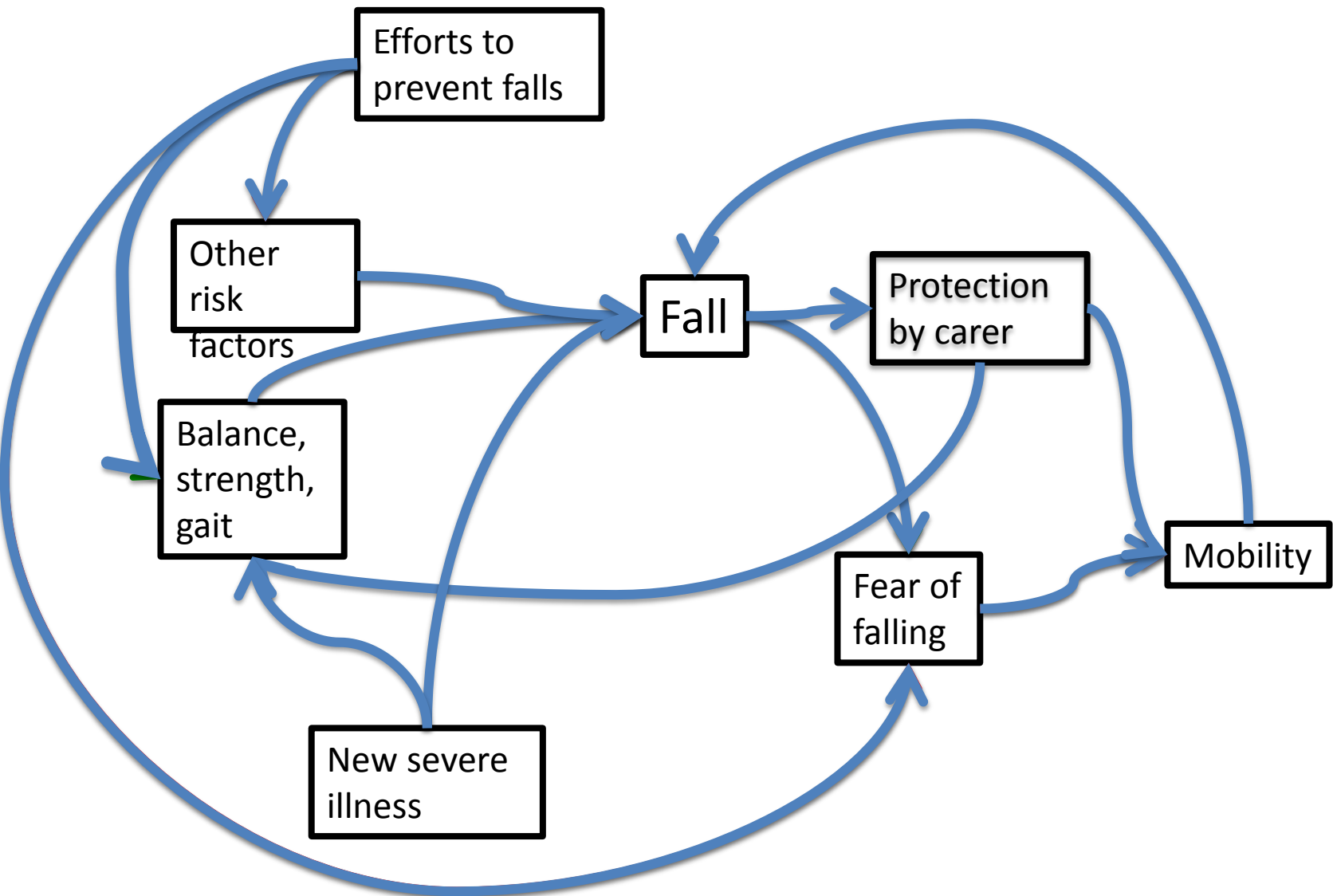
- Marcus Ong (Site PI, SingHealth and HSSR, Duke-NUS)
- Christopher Lien (Site PI, CGH)
- Pamela Duncan (Professor, Wake Medical Center)
- Mina Lim (Lead PT)
- Rita Sim (Research Associate, HSSR, Duke-NUS)
- Amudha Aravindhan (Research Associate, HSSR, Duke-NUS)
- Physiotherapists at SGH, CHG, and AH

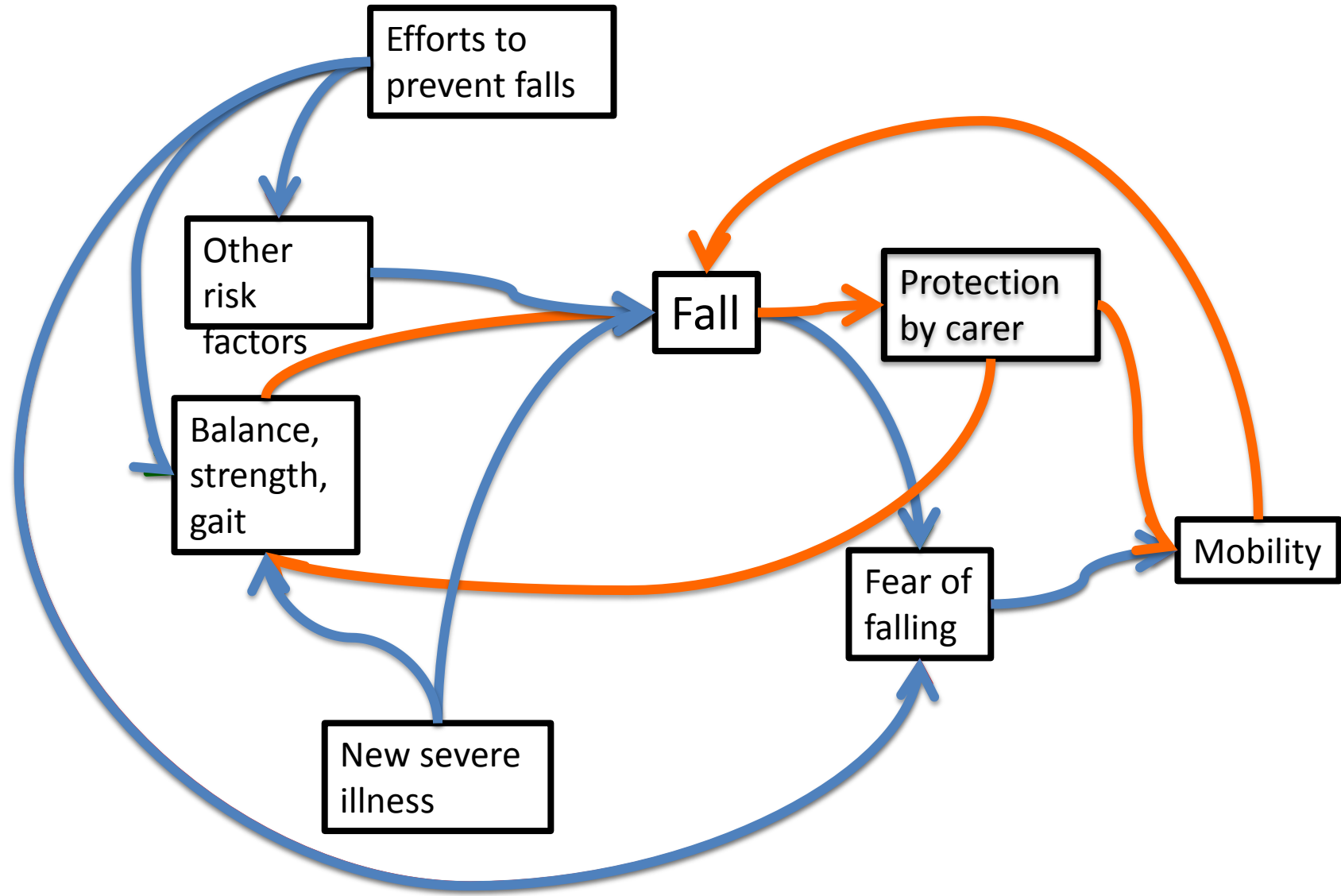
Advisory Committee

- Senior administrators CGH, SGH
- Health Promotion Board
- Agency for Integrated Care
- Voluntary Welfare Organizations

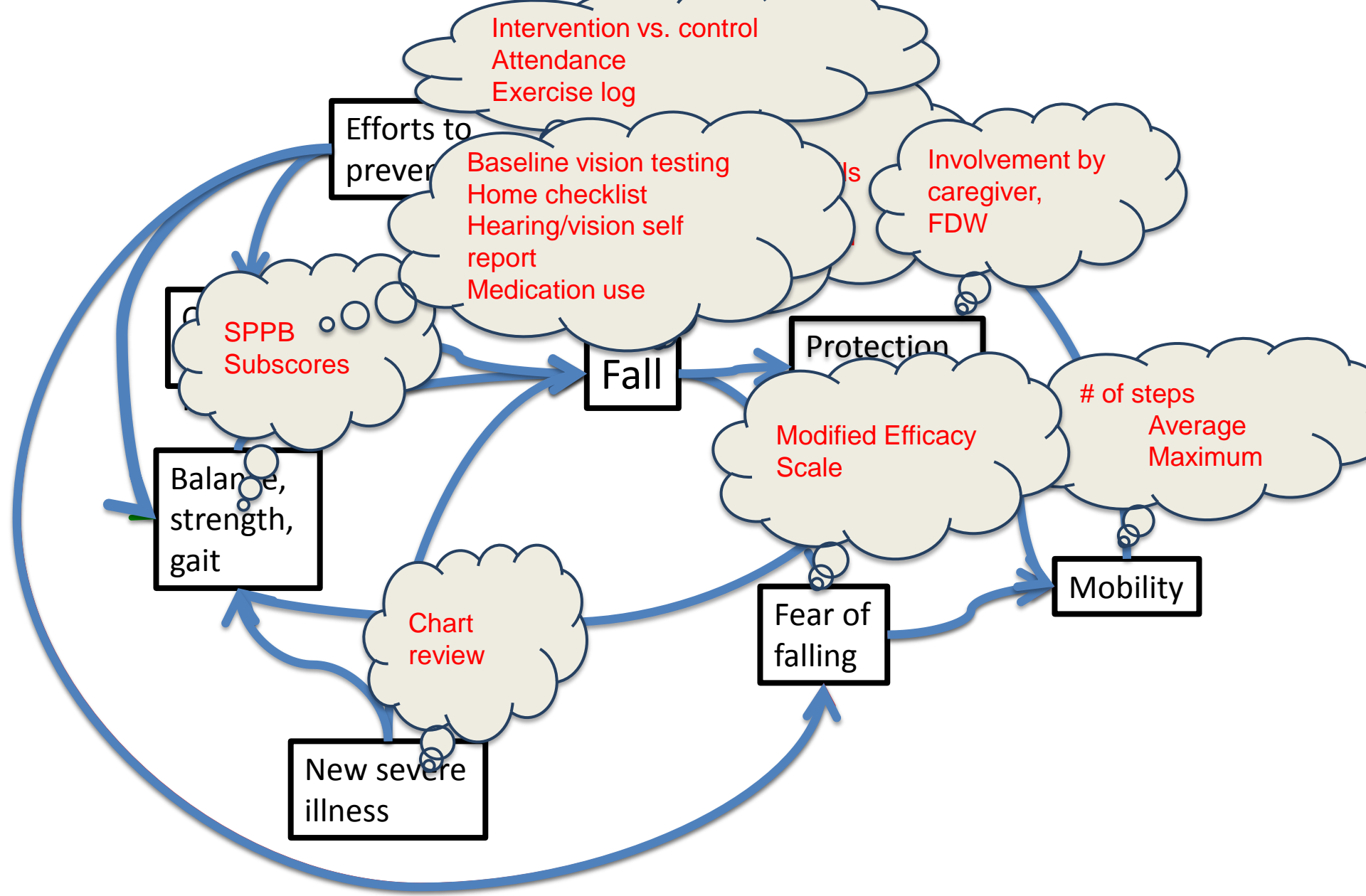


Causal Loop Diagram





Dynamic interdependencies



Role of data

Falls: Lessons Learned

- Context is crucial: we must consider the local factors that will enhance or inhibit success
- The value of a common framework
 - Imposes discipline (the value of an explicit hypothesis)
 - Promotes tracking of a complex story
 - Incorporate perspectives of multiple stakeholders and various relevant research perspectives

Ways forward

1. Forum for establishing understanding, especially of the local context: accommodates multiple stakeholders/experts
2. Well formed questions: answers will influence decision making
3. Common framework for visualizing and communicating
4. Good data
5. The opportunity to learn and “iterate”



Thank You

Partner in Academic Medicine



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