AUSTRALIAN REHABILITATION RESEARCH CENTRE

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Integrating pre-habilitation, prevention & maximizing function across the care continuum

Prof Fary Khan AM, MBBS, MD, FAFRM (RACP)

Department of Rehabilitation, Royal Melbourne Hospital,

Nossal Institute Global Health & Dept Of Medicine, The University of Melbourne &

The Peter MacCallum Cancer Centre, Australia

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Victoria Australia

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Overview

1. Disability & Aging - Asia Pacific
2. Healthy Aging: role Prehab & Rehab in the community
3. **Improve Rehab service delivery in the context of an aging population**
4. **Examples of Rehab services across the care continuum - enabler in the community**

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1. Aging & Disability -The Asia-Pacific region

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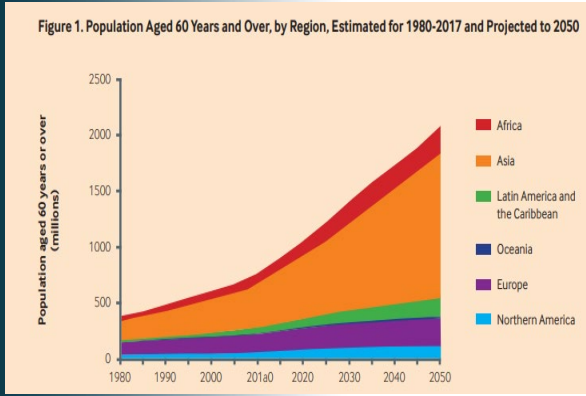

Globally older population growing faster in LMICs (by 2050, ≈ 8|10 older persons will live in less developed regions)

- In 2016, 12.4% of Asia-Pacific population ≥ 60 years, projected increase by >25% (or 1.3B people) by 2050
- **Asia-Pacific has 53% of the world population >80 years of age (projection in 2050: 59%)**
- 1 in every 6 Australian is aging, with 16% aged ≥65, **4.4 million live with a disability**
- **NDIS**

(Source: ESCAP 2017, AIHW & ABS 2022)

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2. Healthy Aging & Rehabilitation

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Healthy ageing is "the process of developing and maintaining the functional ability that enables wellbeing in older age."

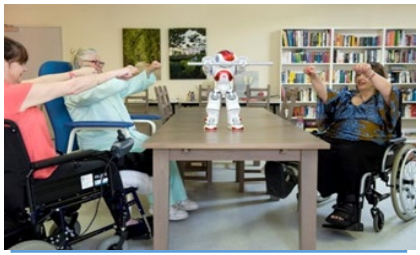
10 FACTS ON AGEING AND HEALTH

1. The world's population is rapidly ageing
2. There is little evidence that older people today are in better health than their parents
3. The most common health conditions in older age are non-communicable diseases
4. When it comes to health, there is no 'typical' older person
5. Health in older age is not random
6. Ageism may now be more pervasive than sexism or racism
7. Comprehensive public health action will require fundamental shifts in how we think about ageing and health
8. Health systems need to be realigned to the needs of older populations
9. In the 21st century, all countries need an integrated system of long-term care
10. Healthy Ageing involves all levels and sectors of government

REHABILITATE • REGENERATE • REINTEGRATE

Rehabilitation: **Key for Health**

Rehabilitation essential- prevention, promotion, treatment support health needs of a population to achieve SDG : Ensure healthy lives & promote well-being for all at all ages




WATTLE

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3. Rehab Service delivery - Enabler in the Community

Consider healthy aging, the PwD, & those aging with a disability
Health Promotion, Prevention, Treatment, Surveillance & Community supports

Lessons from IP - clinical workflow efficiencies & processes- **more challenging**!

- Reduce **variation**/standardisation of care process in the community
- Improve care, EB decision-making processes & patient functional **outcomes**
- **Post discharge follow-up**, linkage with NDIS & support services
- Appropriate & **timely referrals**, improve patient flow from hospital to community, reduce readmissions & care costs **(preventative booster rehab!)**
- Enhance coordination & collaboration with **primary care**
- Improve clinician & patient satisfaction **(PREMs & PROMs)**

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[Health Catalyst 2016]

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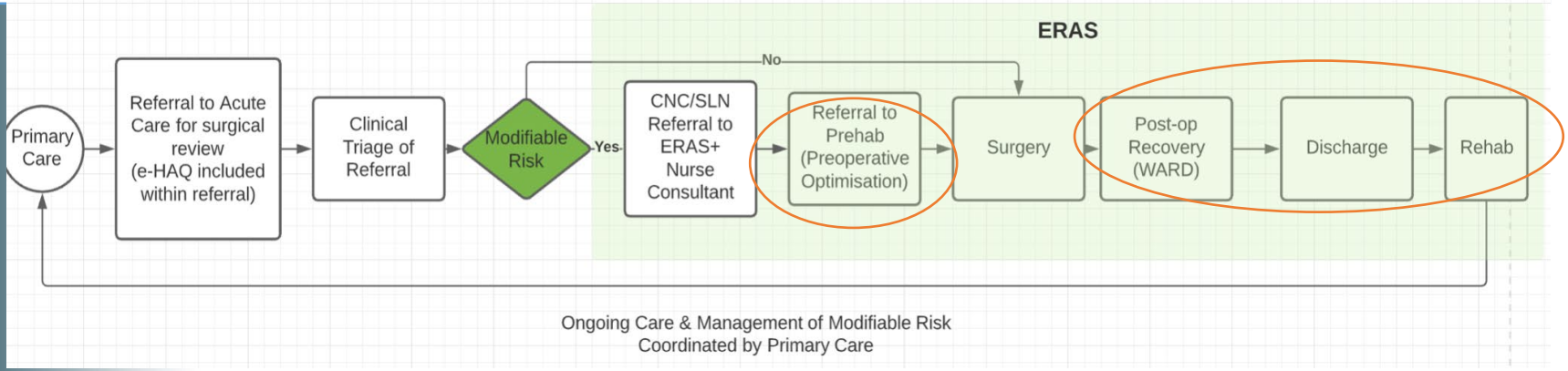
Reduce variation- standardize community care process (contd.)

- Develop **SOPs, protocols, clinical guidelines** (eg PDFU, 'action plans', **eg, 'MS**')
- **Indicators/KPIs** for best practice (readmissions/complications, **PREMS & PROMS**)
- Data**/analytics** drive best practice (eg, online surgery school for pts)
- Track the **decision-making processes, longer-term surveillance**
- Generate timely accessible actionable **information** (EMR, pt **journey boards**)
- Build cohesive team structures (GPs, community supports, NDIS)
- Implementing strategies for **gaps & barriers** (access, technology, **SCI gyms**)
- Communication & **knowledge sharing** (eg, upskilling GPs, use Apps, wellness programs, consumer forums)
- **Cybernetics** & 'machine learning'- in community settings

[Health Catalyst 2016]

4. Example A: Enhanced Recovery After Surgery+ Program

Improve Colorectal ERAS Pathway compliance to improve outcomes, target LOS & increase surgical throughput



Uplift to existing Allied Health FTE to improve access to Prehabilitation for colorectal & H&N patients

Mobilisation team to improve post-operative ERAS compliance

Clinical -Rehab Physician

- Manage postoperative rehabilitation on the ward, targeting patients with high risk of hospital acquired functional decline
- Coordinate early complex discharge planning
- **Develop & establish relationships & referral pathways into sub-acute care facilities & community**
- **Post discharge Rehab Med surveillance clinics in community for functional maintenance**

PMCC will play a key role in leading the HSP-wide ERAS+ Governance Structure & Research Practice Collaborative,

Training & Education & provision of specialist Prehabilitation & Rehab Services to support the HSP & Community

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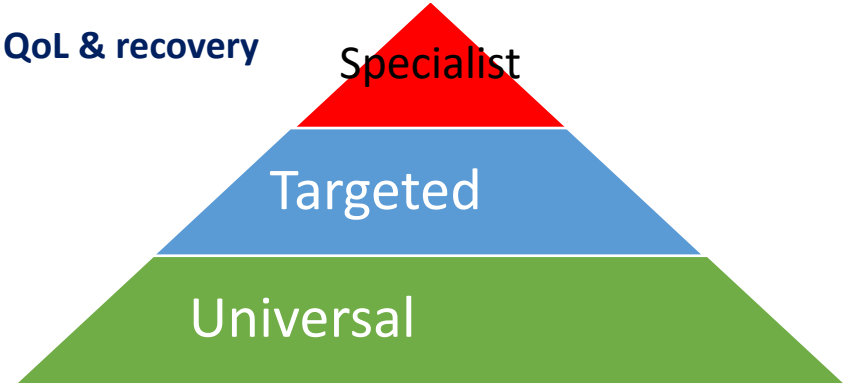
Pre-habilitation

Improve outcomes by targeted intervention for high risk patients

- **Medical**
- **Risk Stratification*:*** CPET, DASI, ARISCAT, ASA
- **Function:** AKPS, Sit to Stand, Sarcopenia
- **Exercise:** CPET, PA levels, 6WWT,
- **PRO:** HRQoL, PA (IPAQ), self efficacy,
- **Nutrition:** BMI, % Malnutrition (MST)
- **Frailty:** CFS
- **Gerontology**: CGA
- **Psychosocial**: PHQ
- **CLINFIT (risk stratification)**

- **Reduce complications**
- **Reduce LOS, readmissions, $**
- **Enhance Fitness, cognition, nutrition, wellness**
- **QoL & recovery**



https://www.macmillan.org.uk/assets/prehabilitation-guidance-for-people-with-cancer.pdf

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Prehabilitation- Evidence

Recent Systematic reviews

Assouline: Abdo, Lung, Oesoph, Cardiac Surg

Improves physical fitness and reduces the risk of postoperative pulmonary complications while minimizing hospital resources

29 trials
AnnalsATS (20)

Rosero: Lung Cancer

Improves ex capacity, dyspnoea; Reduces postoperative pulmonary complications and LOS

10 Trials
Cancers (19)

Lambert: Abdominal Surg

Prehab **reduced LOS** but **no effect** on function, complications, mortality

15 studies (9RCT)
Ann Surg (20)

Luther: Abdominal Surg

Reduced post-operative complication rate
A multimodal approach is likely to have better impact on **functional outcomes**

16 trials
World J Surg (18)

Waterland: Abdominal surgery

Multimodal Prehab improved 6 MWD postoperative complications and hospital LOS

21 trials
Frontiers in Surg Oncology (21)

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Slide with thanks from Prof Linda Denehy/ Jess Crowe

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Personalised Prehabilitation in High-risk Patients Undergoing Elective Major Abdominal Surgery

A Randomized Blinded Controlled Trial

Anael Barberan-Garcia, MSc, Marta Ubré, MD,† Josep Roca, Prof. PhD,* Antonio M. Lacy, Prof. PhD,‡ Felip Burgos, PhD,* Raquel Risco, MD,† Dulce Momblán, PhD,§ Jaume Balust, MD,† Isabel Blanco, PhD,* and Graciela Martínez-Pallí, PhD¶*

Annals of Surgery 2018

Personalised Prehabilitation in High Risk Patients undergoing Major Abbdominal Surgery

Graciela-Martinez et al JOS, 2017

		All COMPLICATIONS	Medical Complications (per patient)	Surgical Complications (per patient)
RCT ITT (n=144)	Intervention n=62 (Motivational Interview, Increased General Activity, Structured Interval Training)	31% p= 0.01	0.2 p= <0.01	0.3 p= <0.0119
	Control n= 62 (Usual Care)	62%	0.9	0.5

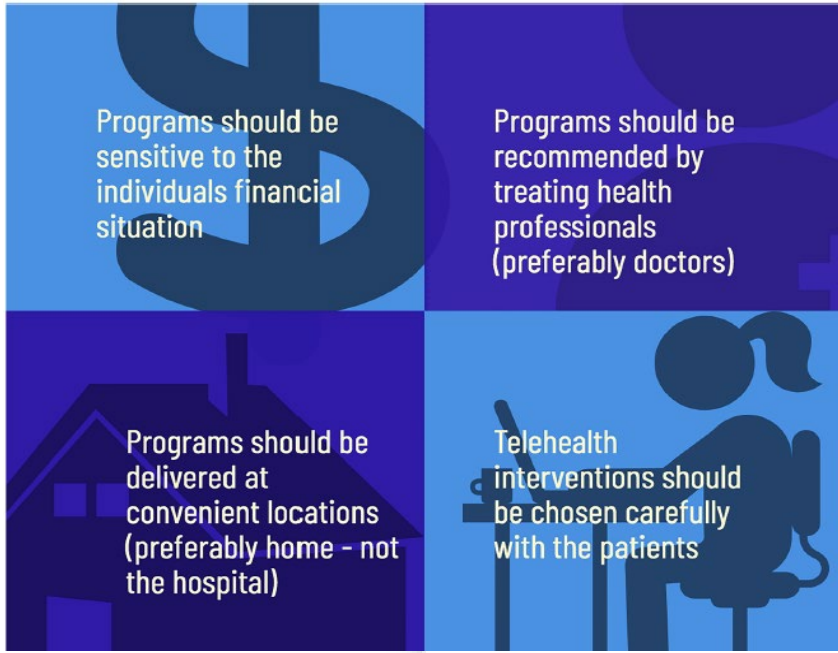
Motivational Interview
Increased General Activity
Structured Interval Training
→ PREHAB → Oesophagectomy =13, Major pancreatic surgery=7, T Gastrectomy=5, GBP=9, LGI=75, Liver=4 → **Reduced Complications by 51% (RR 0.5) (95%CI 0.3-0.8), (p=0.001)**

Supportive Care in Cancer
https://doi.org/10.1007/s00520-020-05547-1

ORIGINAL ARTICLE

Patient acceptance of prehabilitation for major surgery: an exploratory survey

Jamie L. Waterland[1,2,3] · Hilmy Ismail[1,4] · Babak Amin[1] · Catherine L. Granger[2,5] · Linda Denehy[2,3] · Bernhard Riedel[1,4]



Infographic courtesy of Hilmy Ismail/Jess Crowe

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Example B: Embedding rehabilitation in routine clinical practice, hospital to community

- Complexity/chronicity of cancer, NCDs - **transdisciplinary mx in the care continuum**

- **Current gaps in service provision**:
  - Limited **standardised method of assessing patient 'function' in the community**, need EMR &/or measurement system that provides a **functional 'snapshot'** for clinical decision making (e.g. discharge planning, services & community supports)
  - ? identify issues/barriers that require referral for appropriate treatment for improved function across care continuum
- **Cybernetics** & 'machine learning'- in community settings?

- **Patient issues**: personal costs/resources, health care utilization, readmission, work/family impact, wellness programs

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LHS Model- Hospital to Community

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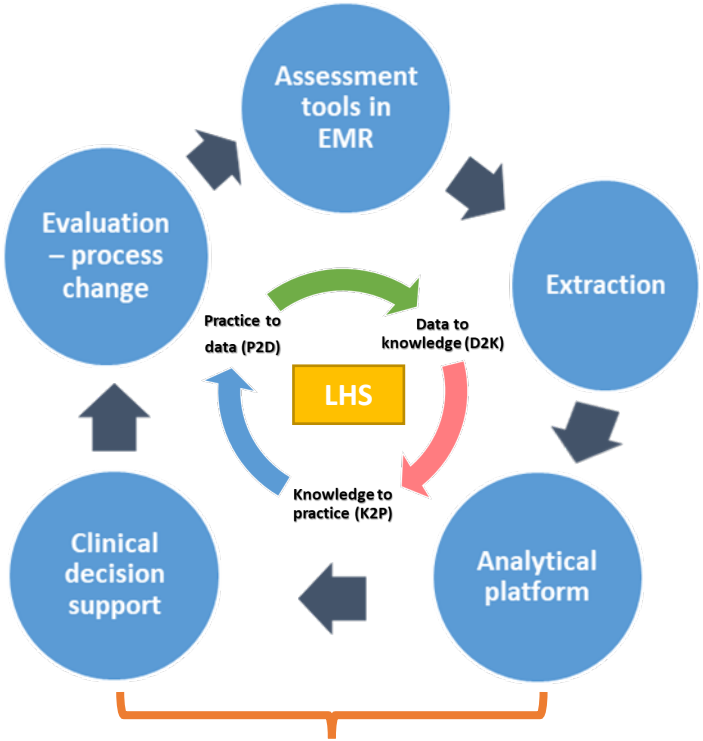
- QI priority areas: gaps in clinical care, discharge barriers, timely referrals, **community care requirements**, activity targets
- Clinician & patient experience
- Costs & resource evaluation
- **Identify & address barriers/enablers - sustainability**



- **Implement measurement battery (Rehab assessment form, ClinFIT, Eq-5D-5L) to assess patient function**
- Assess rehab needs & supportive services in community

- Data extraction, organisation & integration across services for centralized electronic interface
- Data safety & error minimisation

- Data linkage & analysis repository
- Data aggregation in EMR, **clinical 'dashboard' for real-time information**
- Analysis, data visualization & report

Clinically relevant report accessible at point of care:

- **Risk stratification (e.g. functional decline, falls, distress etc.)**
- EBM t/m plan
- Referral system
- Communication/Feedback loop
- Monitor patient status

Drive improvement in clinical process for safe, effective, patient-centred, timely, efficient equitable patient care (inc community)

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Integration Referral & Patient Care Pathways

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- Pre-habilitation
- ERAS
- MDR clinics
- Integrate with Palliative Care &
- Ambulatory Care

Primary care provider referrals

- Self-referrals
- Community wellness programs

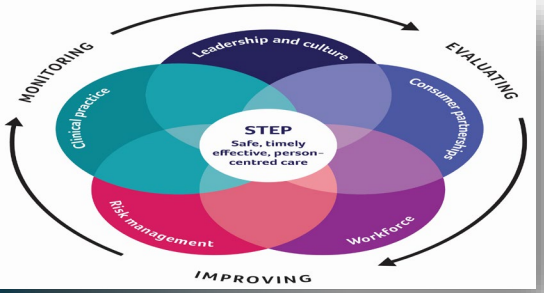
Diagnosis | **Treatment** | **Post operative period** | **Medically-directed treatments** | **Lifespan**

Rehabilitation

- **Functional assessment**
- **Impairment/complication management**
- **Disability prevention, CBR, education & patient empowerment strategies**
- **Palliative care, Supportive care, health maintenance**

In-system referrals | **Community referrals** | **Supportive service referrals**

Source: Cancer rehab Nation-wide guidelines, Version:2 2017



Example C: RMH@Home

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Medicine and Community Care Services

RMH@Home

Inpatient hospital care, in the patient's own home.

Centralised intake, triage & care coordination hub

Hospital In The Home (HITH) has become	Rehab/GEM In The Home (RITH) has become	HIP Programs (HARP, PAC, TCP-HB, SACS) becomes
RMH@Home acute	**RMH@Home subacute**	**RMH@Home community**
Acute care, in the patient's own home.	*Subacute care, in the patient's own home.*	*Community care, in the patient's own home.*

Vision

Provide better patient care @Home whenever possible

Better patient care

- Safe & effective care delivered at home
- Use technology & integrated model of care for home care delivery of services in patients' homes
- Develop better networks & collaboration

Better patient & carer experience

- Provide more choices for the patient
- Screen & treat patients in the community
- Reduce waitlists to improve patient transition & experience

More sustainable

- Preventing unnecessary patient readmissions
- Re-invest in better care for patients
- More capacity building for staff

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Medicine and Community Care Services

RMH@Home

Inpatient hospital care, in the patient's own home.

SWOT Analysis

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Orthopaedic

- Equivalent to IPR for hip #s, knee or hip arthroplasty[1]

Musculoskeletal

- Equal, or superior to, hospital-based rehab (functional ability, QoL, mortality)[2]

Acute stroke population

- No difference in mortality, readmission rates, or carer outcomes
- ? LOS hospital & risk of long-term dependency & institutionalisation lower, financial costs unclear[3]

1) [Buhagiar 2017, Crotty 2002, Naylor 2017 2) Stolee 2012 3) Langhorne 2017, Gonçalves-Bradley 2017

STRENGTHS	WEAKNESSES
• Medical led service • Location- metropolitan hospital • Good staff satisfaction • Experienced senior Staff • Strong links with community providers • Already delivering care at home • Current hospital@home model with shared governance across different units assists in engagement with other units	• Lack of marketing experience in the team • Working within financial health constraints • Staff not always in the right place for best patient care (program alignment) • Connectivity between programs • Staff training & education • IT issues • Wide range in clinical conditions treated at home – requires staff to be trained in a wide range of management of acute and subacute medical and surgical conditions • Small service size that decreases flexibility in delivery
OPPORTUNITIES	**THREATS**
• Increasing ageing population • Partnerships GP networks & community organizations • Support from hospital executive • Broad range of in-house skills • Integration of telehealth & technology • Engagement of the broader organization and departments • Rebranding the service to create a more cohesive 'brand' & structure	• Reduced consumer knowledge of service • Inappropriate referrals • Lack of GP engagement • Skills of community partners • Staff safety • Brokerage availability from preferred providers

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Example D: Younger Persons Transition Program Service Model in the community

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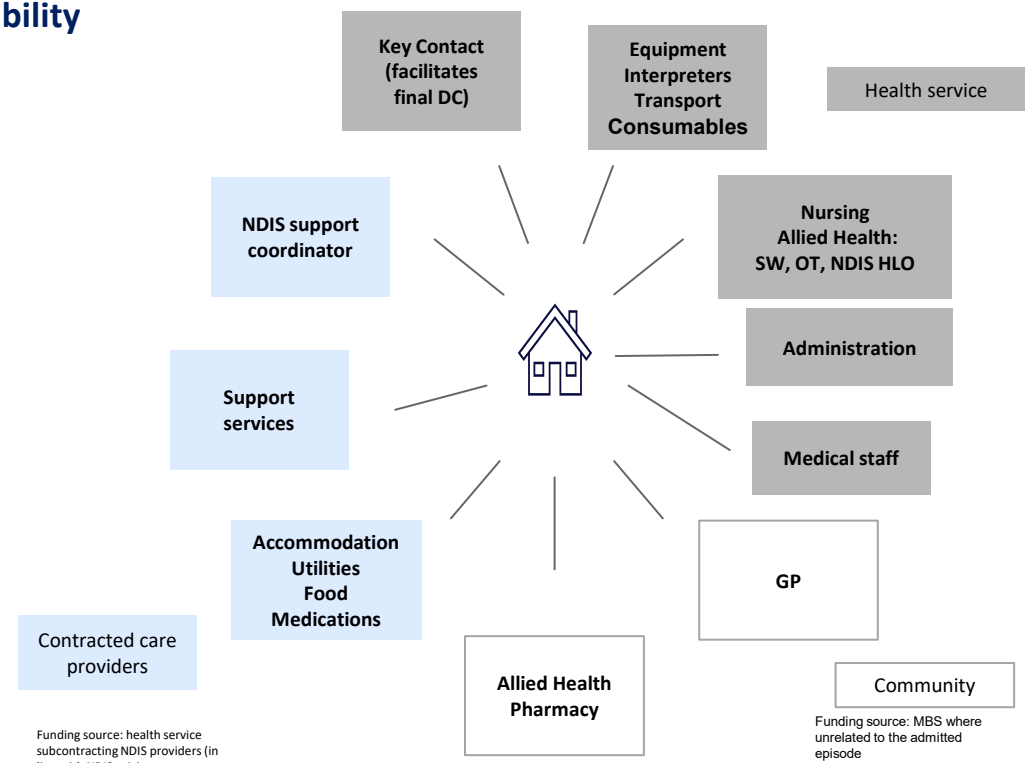
Pathways to Home Program - A transitional care program for people with disability

Provide short-term support & active management for people with a disability at the interface of the acute/subacute & disability sectors to support them to leave hospital

Time-limited & targeted medically fit patients with a disability who are waiting to access their longer-term care arrangements

Cared for in a more comfortable & person-centered transitional environment that most resembles their likely long term accommodation needs, and minimize inappropriate extended hospital stays



Funding source: health service subcontracting NDIS providers (in line with NDIS pricing arrangements)

Funding source: MBS where unrelated to the admitted episode

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Younger Persons Transition Program

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Successes

- Strong working relationships between the health service, community & disability providers
- Clear expectations & procedures for clinical escalation from community to hospital
- Provision of expert disability knowledge within a large metropolitan tertiary health service
- **Effective transitions of care from acute, subacute into community disability settings for highly complex people**

Challenges

- **Differing priorities between hospital, community & disability sectors**
- Governance in shared care model
- Staffing model, costs & responsibilities of complex admitted patients in the community
- **Coordinating care across multiple agencies**
- Complex processes to navigate between private, state & commonwealth agencies

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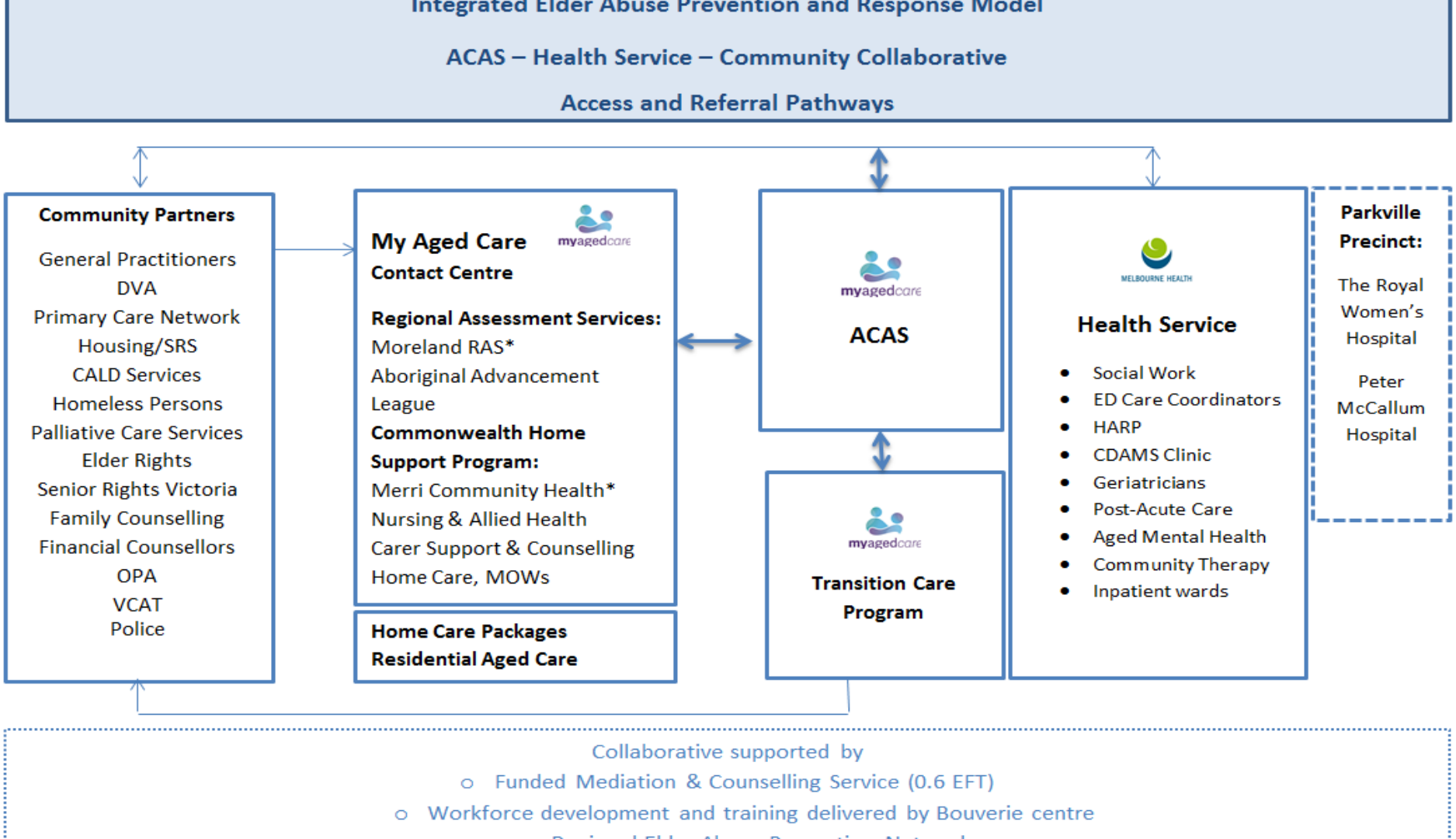
Integrated Elder Abuse Prevention and Response Model
ACAS – Health Service – Community Collaborative
Access and Referral Pathways
Community Partners
General Practitioners
DVA
Primary Care Network
Housing/SRS
CALD Services
Homeless Persons
Palliative Care Services
Elder Rights
Senior Rights Victoria
Family Counselling
Financial Counsellors
OPA
VCAT
Police
My Aged Care
Contact Centre
Regional Assessment Services:
Moreland RAS*
Aboriginal Advancement League
Commonwealth Home Support Program:
Merri Community Health*
Nursing & Allied Health
Carer Support & Counselling
Home Care, MOWs
Home Care Packages
Residential Aged Care
ACAS
Transition Care Program
Health Service
Social Work
ED Care Coordinators
HARP
CDAMS Clinic
Geriatricians
Post-Acute Care
Aged Mental Health
Community Therapy
Inpatient wards
Parkville Precinct:
The Royal Women's Hospital
Peter McCallum Hospital
Collaborative supported by
Funded Mediation & Counselling Service (0.6 EFT)
Workforce development and training delivered by Bouverie centre

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Example E: Partnership Model

Virtual hospital/Telehealth

- Established during the COVID-19 pandemic (request DoH)
- Management of 2000+ patients through clinical tiers in the community by **partnership with Cohealth & primary health network**
- **Evaluation –underway**
- Plan to build the model in a non-COVID environment
- Building resource capability/infrastructure (including remote monitoring)

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Challenges in Rehab Care Continnum

Knowledge barriers

Education

Awareness regarding rehabilitation programs, availability & issues/needs of survivors

Information

Lack of understanding of benefits/principles/value of rehabilitation programs

Clear definition of who makes referrals

Skilled workforce & leadership

EB Research

Access barriers

Policy & Planning, pre- hospital systems

Sustainable time, money, transportation, resources, **HIS**

Public health initiatives: promotion & prevention

Rehab clinicians/professionals

Suitable facilities, accessible funded programs

Clinician time to evaluate & refer

Fragmented & uncoordinated activities

Physician referral

Adherence barriers

Convenience of services/clinicians

Self-motivation

Ability to participate

Self-management skills

Fear of injury

Appointment fatigue

Illness, **stigma, discrimination**

Health insurance

Traditional & cultural beliefs- perception as an end-of-life situation

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Thank You

fary.khan@mh.org.au

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