interRAI New Zealand

Health New Zealand
Te Whatu Ora

Interpreting interRAI Assessment Outputs
Researchers and Data Analysts Edition

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Chapter 1: Introduction to interRAI

What this Chapter Covers

- Introducing interRAI
- Defining comprehensive clinical assessment
- The interRAI assessment process
- Benefits of interRAI assessments
- interRAI assessments used in Aotearoa New Zealand
- Selecting an interRAI assessment type
- interRAI Assessment Form and User's Manuals (coding manuals)
- Table of Abbreviations

What is interRAI?

- interRAI was originally named to reflect an international resident assessment instrument but the organisation goes far beyond this now, with multiple assessment tools available, spanning childhood to older adult. Now, interRAI refers to both the suite of comprehensive clinical assessment tools and the international organisation responsible for developing these.
- interRAI's goal is 'to promote the use of evidence-informed clinical decision-making' while supporting 'effective policy decision-making'. (interRAI.org, n.d.) It is a not-for-profit organisation consisting of a worldwide network of clinicians and researchers, from over 35 countries. Currently over 45 countries have a licence to use one or more interRAI assessment instruments over one or more states. New Zealand is one of the few countries in the world who utilises interRAI nationwide.
- The New Zealand *Best Practice Evidence-based Guideline Summary: Assessment Processes for Older People* (Group, Best Practice Evidence-based Guideline Summary: Assessment Processes for Older People, 2003) identified the interRAI assessment as the one best suited to improving the assessment and care of older adults in New Zealand. The fact sheet Selecting an interRAI Assessment Type explains how the different tools are best utilised in New Zealand.

Defining comprehensive clinical assessment

A comprehensive clinical assessment is a multidimensional, multidisciplinary, in-depth assessment of an older adult's situation and needs. It has a strong focus on their personal perspective and:

- covers the person's mental and physical health as well as their functional and social well-being (Group, Best Practice Evidence- based Guideline Summary: Assessment Processes for Older People, 2003)
- can be used as a single point for gathering a wide range of information, which can then be considered when making care decisions for the person.
- does more than identify the person's difficulties; it also recognises and records their abilities and preferences. This is important in ensuring that the person:
    i) receives care that targets their needs,
    ii) agrees with and is actively involved in their own care,
    iii) has the best opportunity to improve their quality of life.

Comprehensive clinical assessments also have a key role in detecting signs of decline among older adults. They can:

- predict when they are at risk of adverse events,
- enable interventions and resources to be targeted at minimising those risks,

- help in improving older adults' ability to avoid adverse events, increase their medical stability and robustness, and prolong and improve their quality of life.

Comprehensive Clinical Assessments: Supported by Research

Older adults make up a rapidly growing proportion of the world's population, so those responsible for health systems are investigating how they can use their resources most effectively to meet the needs of older adults and improve their care and quality of life.

Research has shown that validated comprehensive clinical assessments improve outcomes for older adults because:

- they use a common assessment process as part of planning older adults' care,
- that assessment process is based on international evidence-based, best-practice guidelines.

The interRAI Assessment Process

While there are many different tools now available in New Zealand the assessment process has commonalities.
The algorithms converting coded items in the assessment to measurements of function or risk are designed to support clinical decision making. Care planning isn't automated. Rather, the outputs should reflect the clinical picture of the person assessed and provide the evidence that guides clinical decision making. In any health setting, the plan of care will also be impacted by patient/client/resident preference, family/whanau support, availability of resources, degree of risk and anticipated wellbeing outcomes. In this respect the assessment process does support individualised care planning.

Benefits of interRAI assessments

Benefits for the older adult

An assessment is undertaken that:

- Meets current best practice.
- Provides a suite of assessments appropriate to the person's care setting.
- Reduces duplication in assessments as information can be shared electronically.
- Is holistic - focused on the older adult's perspective (preferences and abilities/disabilities), involves family/whānau, and is multidisciplinary. (Morris J. B. K.-S.)
- Provides evidence-based information to support and be involved in developing an individualised plan of care.
- Identifies what is important to the older adult.
- Has evidenced-based potential for improved older adult outcomes.

Benefits for assessors and health practitioners

- Confidence that the assessment methodology is based on current evidence-based best practice.
- Comprehensive individual focused information early in their health journey.
- Availability and ability to incorporate the knowledge from previous assessments.
- Uses a 'common language' (shared meaning of terminology) across all interRAI assessments by all interRAI users.
- Opportunity for development and application of clinical and focused care planning decision making skills.
- Embedded validated Outcome Scores created automatically for all older adults assessed.
- Ability to track the older adult's progress over time.
- Ability to measure and track the effect of care planning.
- Opportunity for the clinical assessor to make real contributions to the district, regional, national and global, research and development of care of the older adult.
- Relevant professional development and transferrable skills.

Benefits for managers

- Assurance that interRAI assessment and care planning methodology and processes meet the New Zealand Health and Disability Standards and are based on international best practice.
- Potential for focused care planning improvements for the assessed older adult.
- Sharing of a common language between clinical and management staff that strengthens understanding and communication.
- Ability to monitor the assessment status to ensure the service is meeting contractual obligations.
- Collection and availability of relevant and timely high-quality data for multiple uses by managers, at no extra expense.
- Understanding of the population cohort's needs for planning resources
- Easy access to relevant reports.
- Opportunity to learn to analyse their own service data.
- Opportunity to identify areas for potential service level quality improvement and track the impact of any changes implemented.
- Support for best practice management decision making.
- Potential for benchmarking across groups.
- Ongoing support provided for managers and assessors.

Extracting value from the interRAI Assessments

The value of the interRAI assessment extends well beyond the individual level (www.interRAI.org, n.d.). Assessment results that are primarily used for planning the care of an older adult can also be applied to other areas, for example, funding allocations and improving service delivery quality.

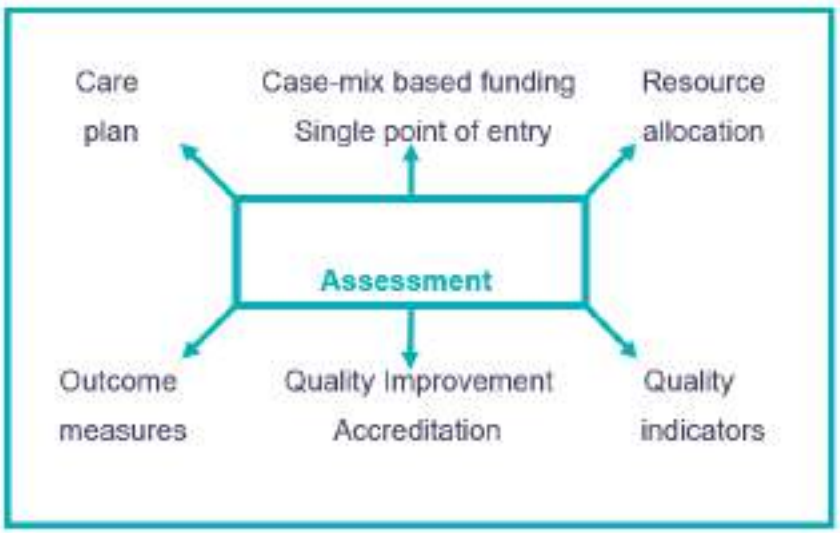


Figure 1 *interRAI value*

Note: while case mix is possible, the current case mix utilised in New Zealand community funded care is not produced or devised by interRAI.

interRAI assessments used in New Zealand

Table 1 *interRAI assessments in NZ*

Assessment Name	Assessment Purpose
Acute Care Assessment (AC)	Designed for use as the nursing assessment for all adults when they are admitted to an inpatient unit. Use the AC Assessment alongside other nursing assessments, including biometric measurement such as pulse and blood pressure. Also designed for use during the person's discharge from an inpatient unit to update the person's status and inform service providers that will care for the person after they are discharged. Currently mandated for assessing ACC funded Non-Acute Rehabilitation Path (NARP) patients.
Contact Assessment (CA)	A basic screening assessment that provides clinical information to support decision-making related to an older adult's need and urgency for a comprehensive assessment, support services and specialised rehabilitation services. It is used for continuing evaluations of those with non-complex needs living at home in the community and by ACC.
Community Health Assessment (CHA)	The CHA and its accompanying supplements are a modularised approach to comprehensive clinical assessment. Everyone is assessed using the core assessment (CHA), then only those older adults with specific problem areas receive additional module supplement assessments.
Home Care Assessment (HC)	Reliable, person-centered assessment that informs and guides comprehensive planning of care and services for complex clients in community-based settings. It focuses on the person's functioning and quality of life and helps support clinical decision-making when referring to aged residential care.
Long-Term Care Facilities Assessment (LTCF)	A comprehensive, standardised assessment for evaluating the needs, strengths, and preferences of an older adult in aged residential care. The assessment enables health care providers to assess the key issues that will help with individualised care planning.
Palliative Care Assessment	A comprehensive assessment of the strengths, preferences and needs of the older adult requiring a palliative care focus in community, hospice or aged residential care settings.

Selecting an interRAI Assessment Type (which assessment and when to use it)

General Guidelines and Policy

interRAI offers a suite of assessment instruments supporting continuity of care. The following are guidelines for the use of interRAI assessments.

- Ensure that you are currently competent to complete the assessment type selected.
- To access funded support services for older people the person must be a New Zealand citizen, be 65 years of age or older, (55 years of age or older for Māori) or deemed close in age and interest. An interRAI assessment is required to demonstrate the need for funded community services or entry to funded residential care.
- Home Care Assessment (HC) and Contact Assessment (CA) are mandated for use across New Zealand. In some districts, community care provision is based on a Case mix devised from both the CA and HC interRAI assessment outputs.
- The Contact Assessment (CA) is designed for use where a person is known to have non-complex needs or to screen for complexity. It does not provide sufficient information for planning long term care where complex needs exist. It is therefore unsuitable for the allocation of respite or entry to residential care, or end-of-life care needs.
- The Long-Term Care Facilities Assessment (LTCF) is mandated for informing care planning in aged residential care (ARC) facilities.
- Other assessments such as the Community Health Assessment (CHA) and Palliative Care Assessment (PC) have been adopted for use in some regions but not nationally and are currently not mandated.
- The Acute Care (AC) Assessment will be mandated for use in the acute hospital setting for all Accident Compensation Corporation (ACC) Non-Acute Rehabilitation Pathway (NAR) clients who will be managed with the ACC Case Mix, by December 2023. Some hospitals may also adopt this for other patient groups. The AC is not currently accepted as an assessment for entry to residential care.
- An interRAI assessment may also be appropriate for other individuals depending on the model of care. This may include, for example, people under 65 years of age who have a Long-term Support – Chronic Health Condition diagnosis, people who qualify for disability funding, privately funded individuals, or ACC clients. Te Whatu Ora - Health New Zealand, may use interRAI assessments for wider purposes.
- Population data derived from interRAI assessments is most useful to organisations for planning, research, and resourcing when the appropriate assessment type has been completed for the individual being assessed.
- Maintaining assessment information within the interRAI software is preferable for the person's journey across the health sector. If you are unable to determine the best course of action from reading this document, please contact interRAI Services and ask for advice from our team. interrai@tas.health.nz or phone 080010 80 44 option 3.
- Further information is available on the following sites:
    - https://www.interrai.co.nz/assets/Documents/Guideline-for-Completing-Community-based-interRAI-Assessments-via-Video-or-Telephone.pdf
    - https://www.interrai.co.nz/assets/Documents/Sequencing-interRAI-Community-Assessments-April-2023.pdf

For more information, please contact interRAI Services:

Email: interRAI@tas.health.nz **Phone:** 0800 10 80 44 option 3 **Web:** www.interrai.co.nz

Select the appropriate assessment from the scenarios provided below.

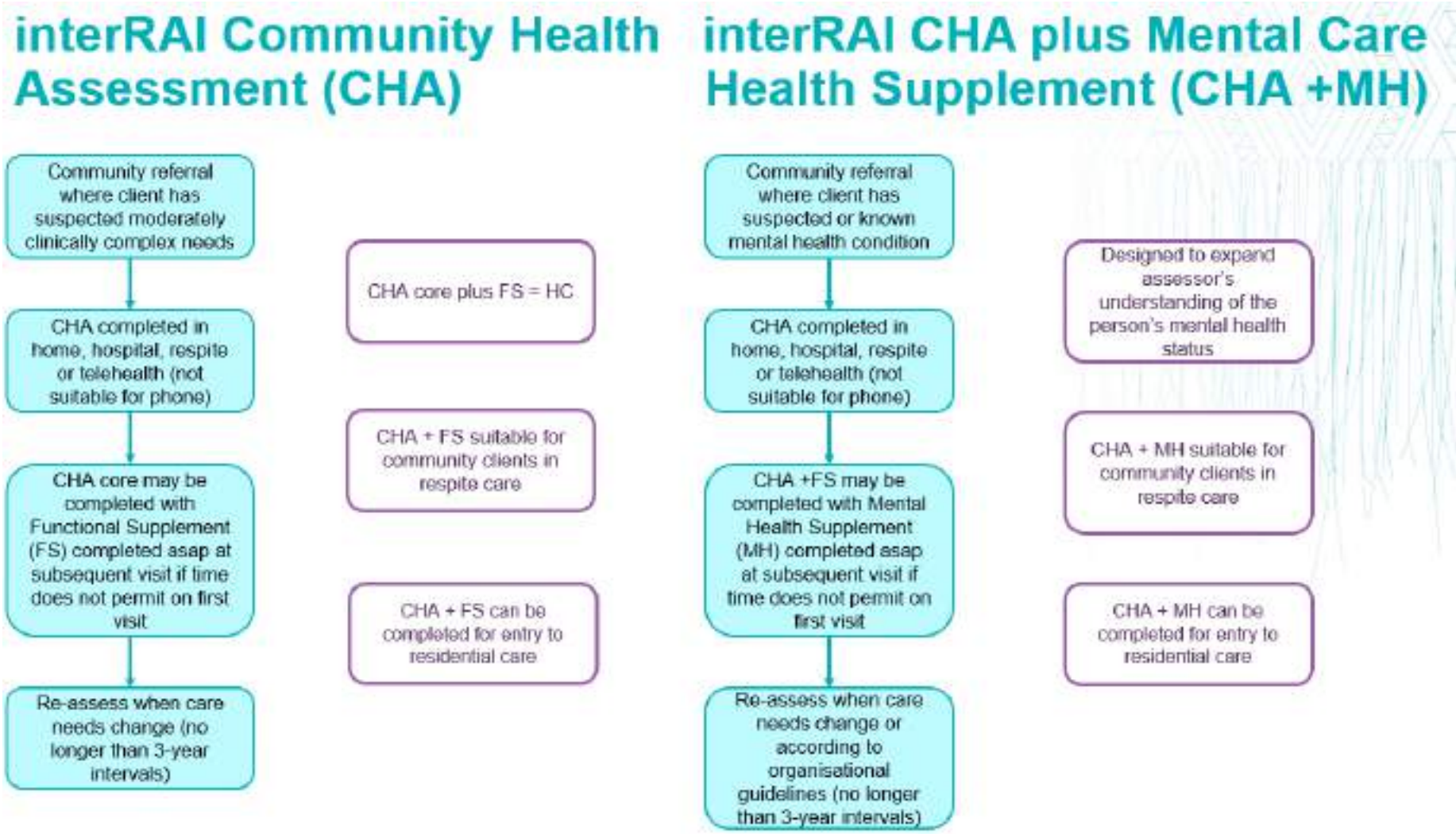


Figure 2 *CHA and CHA plus MH selection*

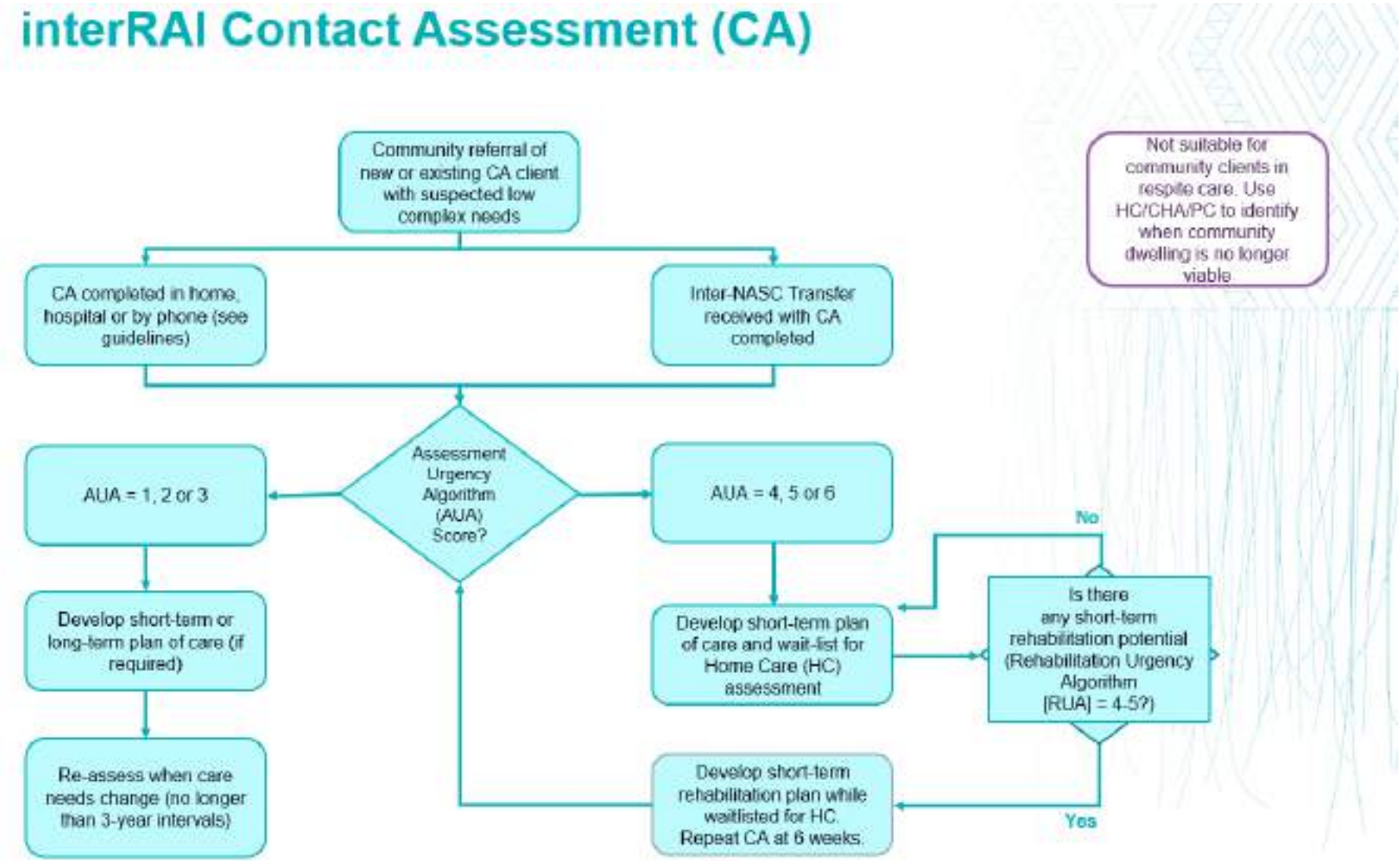


Figure 3 *CA selection*

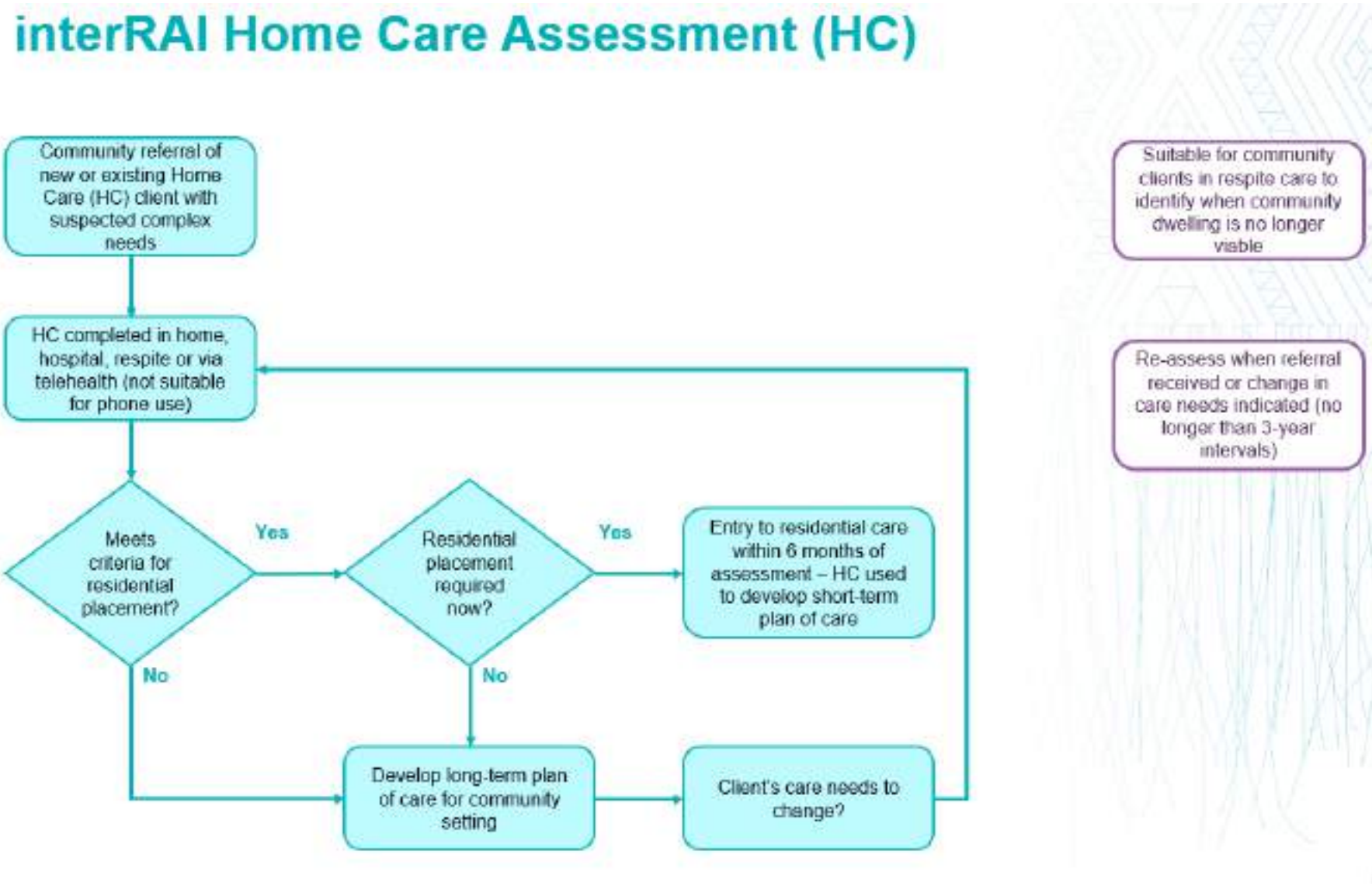


Figure 4 *HC selection*

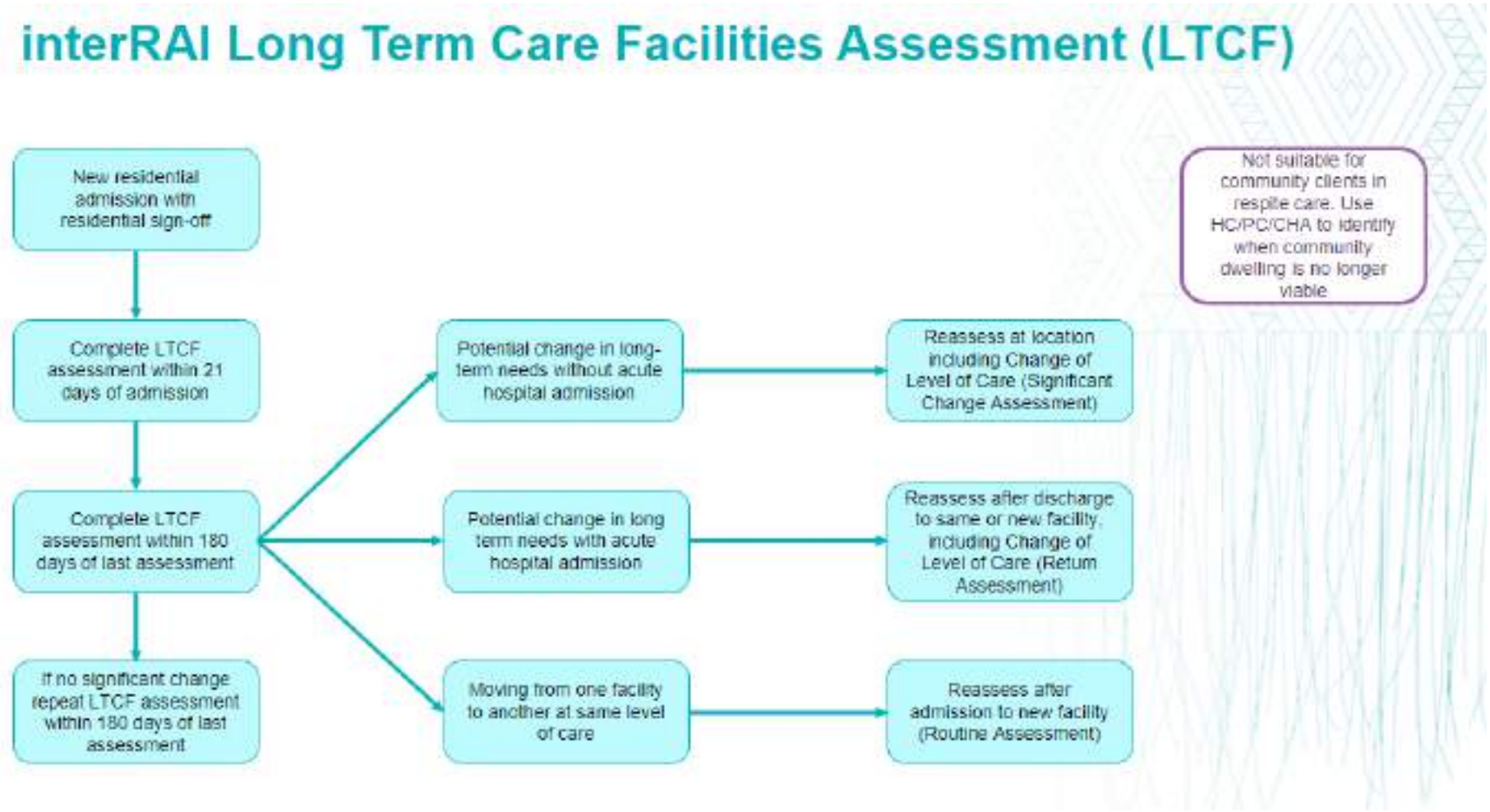


Figure 5 *LTCF selection*

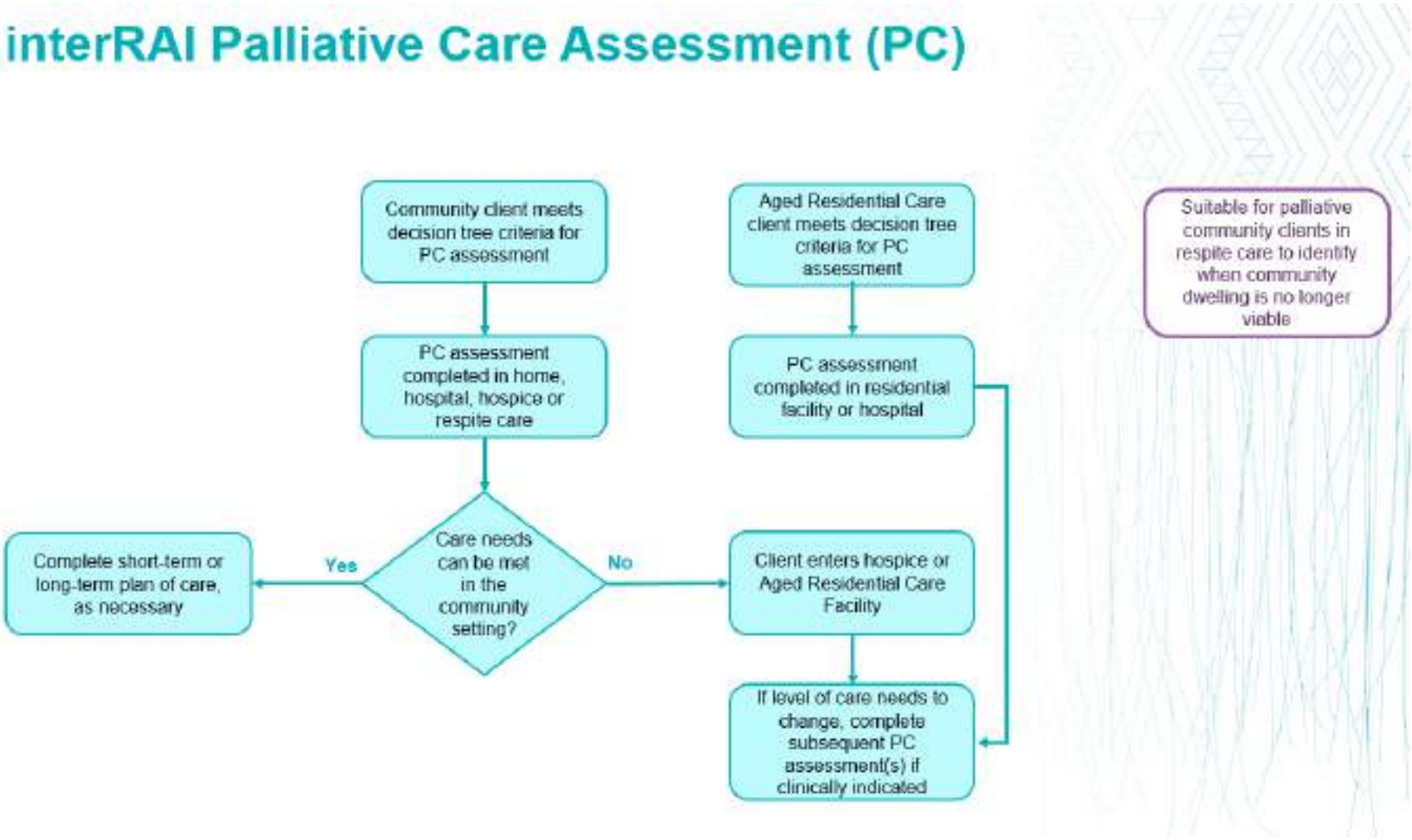


Figure 6 *PC selection*

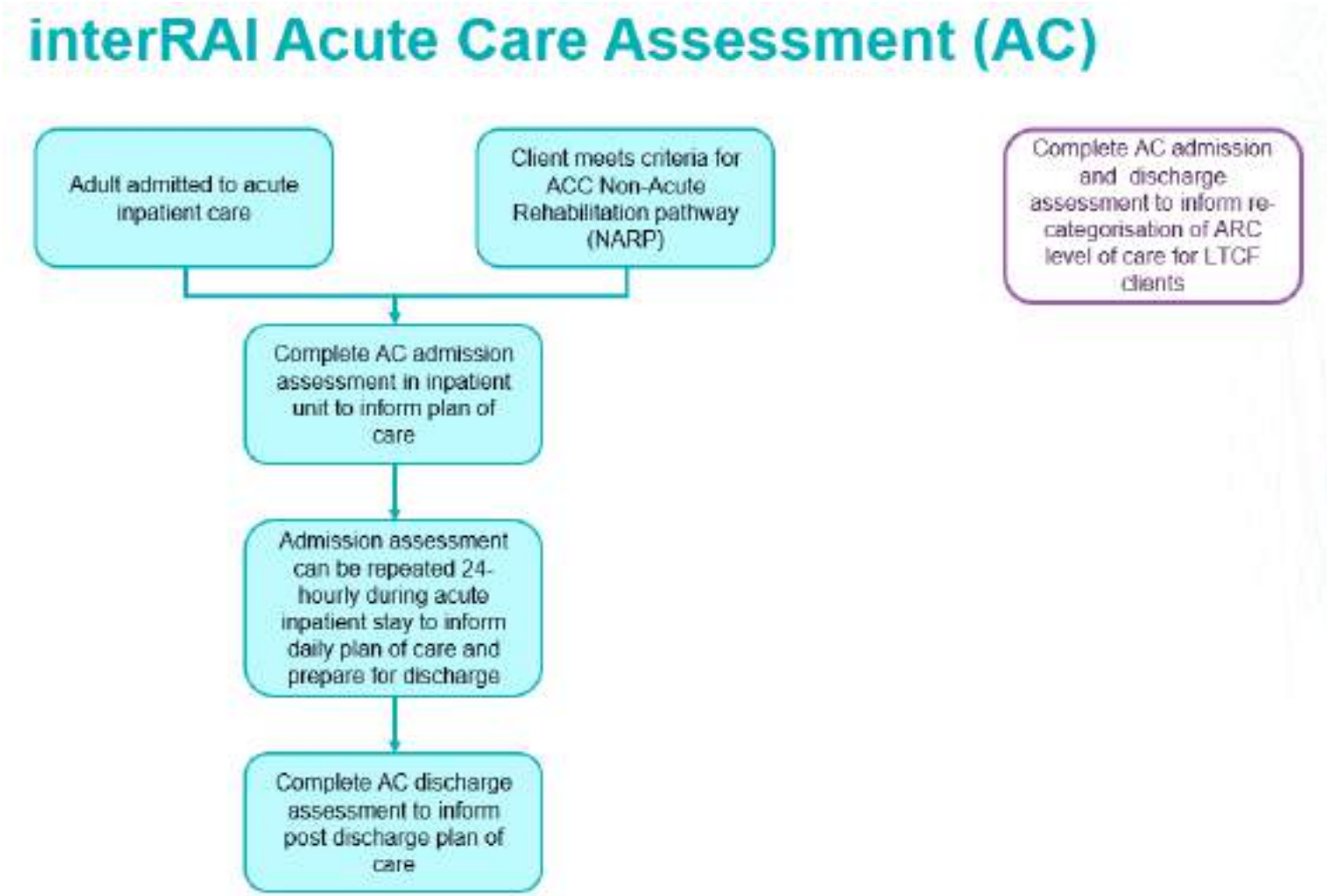


Figure 7 *AC selection*

interRAI Assessment Form and User's Manuals (coding manuals)

Each interRAI assessment has a coding manual that contains the relevant interRAI assessment form and user manual. These can be purchased from the interRAI website: www.interRAI.org or from interrai@tas.health.nz

Clinical Assessment Protocol (CAPs)manuals

There are four manuals that contain the clinical assessment protocols (CAPs) for interRAI assessments. These can be purchased from interrai@tas.health.nz

Abbreviations in interRAI

Table 2 *Table of Abbreviations*

Table of Abbreviations	
AAA	Abdominal Aortic Aneurysm
ABS	Aggressive Behaviour Scale
ACC	Accident Compensation Corporation
AC	Acute Care Assessment
ACP	Advance Care Plan
AD	Advance Directive
ADHD	Attention Deficit Hyperactivity Disorder
ADL	Activities of Daily Living
ADLH	Activities of Daily Living Hierarchy Scale
ADLL	Activities of Daily Living Long Form Scale
ADLS	Activities of Daily Living Short Form Scale
ADT	Admission Discharge Transfer
AF	Atrial fibrillation
AFL	Atrial flutter
AIDS	Acquired Immunodeficiency Syndrome
AL	Assisted Living
APC	Annual Practicing Certificate
ARC	Aged Residential Care
ARD	Assessment Reference Date
AS	Assessment Summary
ASD	Autism Spectrum Disorder
AT&R	Assessment, Treatment & Rehabilitation
AUA	Assessment Urgency Algorithm
BIPAP	Bilevel (or two-level) Positive Airway Pressure
BMI	Body Mass Index
BP	Blood Pressure
CA	Contact Assessment
CA	Cancer
CABG	Coronary Artery Bypass Graft
CAP	Clinical Assessment Protocol
CAP	Clinical Action Point (AC only)
CaRE	Caregiver Risk Evaluation Scale

CCU	Coronary Care Unit
CHA or iCHA	Community Health Assessment or interRAI CHA
CHD	Coronary Heart Disease
CHESS	Changes in Health, End-stage Disease and Signs and Symptoms Scale
CHF	Congestive Heart Failure
CMS	Composite Mood Scale
CNS	Clinical Nurse Specialist
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease 2019
CPAP	Continuous Positive Airway Pressure
CPR	Cardiopulmonary Resuscitation
CPS	Cognitive Performance Scale
CPS2	Cognitive Performance Scale 2
CRISIS	Crisis Identification and Situational Improvement Strategies Scale
CRMS	Clinician Rated Mood Scale
CS	Communication Scale
CSC	Community Services Card
CU-SR	Check-Up Self-Reported Assessment
CVA	Cerebrovascular Accident/Stroke
CVS	COVID-19 Vulnerability Screener
DBSI	Deaf/Blind Severity Index
DIVERT	Detection of Indicators and Vulnerabilities for Emergency Room Trips Scale
DMSR	Distressed Mood Scale Self Report
DNR	Do Not Resuscitate
DRS	Depression Rating Scale
ED	Emergency Department
EN	Enrolled Nurse
ENT	Ears, Nose and Throat
EPOA	Enduring Power of Attorney
ESBL	Extended Spectrum /beta-lactamase
FFRS	First Fall Risk Scale
FHS	Functional Hierarchy Scale
FRS	Fracture Risk Scale
FS	Frailty Scale
GI	Gastrointestinal

GNS	Gerontology Nurse Specialist
GORD	Gastro-Oesophageal Reflux Disease
GP	General Practitioner
GU	Genitourinary
HC	Home Care Assessment
HCA	Health Care Assistant (or equivalent)
HCSS	Home and Community Support Services
HM	Home Management
IADL	Instrumental Activities of Daily Living
IADLCHS	Instrumental Activities of Daily Living Capacity Hierarchy Scale
IADLPHS	Instrumental Activities of Daily Living Performance Hierarchy Scale
iAS	interRAI Assessment Software
ID	Intellectual Disability
IDDM	Insulin Dependent Diabetes Mellitus
IDDSI	International Dysphagia Diet Standardisation Initiative
IHD	Ischaemic Heart Disease
iL&D	interRAI Learning and Development
IM	Intramuscular
IV	Intravenous
LTCF	Long Term Care Facility
LTCF	Long Term Care Facilities Assessment
MAPLe	Method for Assigning Priority Levels
MDS	Minimum Data Set
MI	Myocardial Infarction
MOW	Meals on Wheels
MRSA	Methicillin-Resistant Staphylococcus Aureus
MS	Multiple Sclerosis
NASC	Needs Assessment Service Coordination
NHI	National Health Index
NKA	No known allergies
NOF	Neck of Femur
NP	Nurse Practitioner
NSAIDS	Non-steroidal anti-inflammatory drugs
OA	Osteoarthritis
OT	Occupational Therapist

PC	Palliative Care Assessment
PC	Personal Care
PI	Pressure Injury
PN	Practice Nurse
PRN	Pro re nata (“as needed”)
PT	Physiotherapist
PSA	Personal Support Algorithm
PS	Pain Scale
PURS	Pressure Ulcer Risk Scale
QI	Quality Indicators
RISE	Revised Index of Social Engagement
RN	Registered Nurse
RUA	Rehabilitation Urgency Algorithm
RUG	Resource Utilisation Group
SC	Subcutaneous
SDRS	Short Depression Rating Scale
SLT or SLP	Speech Language Therapist or Speech Language Pathologists
SMS	Self-Report Mood Scale
SOB	Shortness of Breath
SRI	Self-Reliance Index
SUA	Service Urgency Algorithm
SW	Social Worker
SW	Support Worker
TB	Tuberculosis
TIA	Transient Ischemic Attack
Type 2 DM	Type 2 Diabetes Mellitus
UTI	Urinary Tract Infection
VPR	Vulnerable Persons at Risk Scale
#	Fracture

Chapter 2: Clinical Assessment Protocols (CAPs)

What this Chapter Covers:

- What are CAPs?
- Using the interRAI Clinical Assessment Protocols (CAPs) manual
- How does CAP triggering work?
- Working with CAPs.
- Summary of CAPs found in Home Care (HC), Long Term Care Facilities (LTCF), and Community Health (CHA) assessments.
- Summary of CAPs found in PC assessments.
- Summary of CAPs found in CMH assessments.

What are CAPs?

Clinical Assessment Protocols (CAPs) uses the items coded in an individual's MDS (Minimum Data Set) assessment to identify risks and support the opportunity for targeted therapeutic interventions, comprehensive care, and service planning. CAPs are triggered by researched-based algorithms embedded in the assessment. Each one is linked to international best practice standards. They focus on a person's function and quality of life by assessing their needs, strengths, and preferences, and can also:

- highlight possible areas for referral to specialized services,
- be used to identify people who could benefit from further assessments of specific problems, because the:
    - risk of decline is higher than expected, or
    - potential to improve has increased, or
    - symptoms could be alleviated if the problem were addressed.

The Home Care, Community Health and Long-Term Care Facilities assessments share many common CAPs. The Palliative Care assessment has similar CAPs but has different care planning options.

The Acute Care assessment has a specific set of scales risks and screeners found in the AC interRAI Clinical and Management Applications Manual, version 9.1 It should be noted however, that the items currently available in the software in New Zealand are not the full suite found in the manual. This workbook, therefore, provides the current information necessary for interpreting acute care assessment outputs, until the software upgrade is implemented in 2024.

Using the interRAI Clinical Assessment Protocols (CAPs) Manual

The CAPs manual (orange or green manual) provides guidance when responding to CAPs, to identify opportunities to focus on clinical concerns and strategies, that have been *'…**empirically demonstrated to lead to positive outcomes.*** (Fries B.E., 2007) The consequential clinical management of the risk and/or utilisation of the opportunity are described to inform the foundation of the care plan. The advice in the manual is expert opinion and interRAI expects that official country specific Guidelines may supersede this advice where necessary. Some CAPs trigger across multiple interRAI assessments. Some will only trigger within a specific assessment for example, Physical Restraint will only trigger in the LTCF assessment.

CAPs are laid out in the CAPs Manual under the following broad headings, for example for HC or LTCF:

- Part 1 – Functional Performance
- Part 2 – Cognition/ Mental Health
- Part 3 – Social Life
- Part 4 – Clinical issues

Each CAP is structured in the following way:

- Problem
- Overall Goals of Care
- Triggers (items checked in the assessment)
- Guidelines (based on current best practice standards)

As a person may trigger multiple CAPs, it is helpful to consider if they are grouped under one of the broad headings above. For example, Cognitive/Mental Health may be relevant when considering the development of a person's care plan and the services/referrals they may require.

Manuals can be purchased through www.interrai.co.nz.

How does CAP triggering work?

The CAPs, at whatever level they are triggered, use specific coded MDS Assessment items to identify opportunities for clinical intervention. Each CAP has a dedicated chapter in the manual that provides evidence to support clinical decisions for care planning items.

A CAP that is not triggered indicates one of the following:

- The CAP is not associated to any decline in the person's function or well-being,
- The CAP is associated to a level of function and/or wellbeing where there is no longer opportunity to improve that function or prevent further decline.

Therefore, a clinical plan of care may need to address both triggered and non-triggered CAPs.

Working with CAPs

CAPs are designed to assist the assessor to interpret all the information coded in an interRAI assessment. They are not intended to automate care planning; rather, they help the clinician focus on key issues identified during the assessment process, so that decisions as to whether and how to intervene can be explored with the person. It is important to remember during this process that clinical judgement and individual person choice are important in deciding on any further evaluations or follow-up.

CAPs can be compared over time to see if clinical interventions have been effective in resolving issues, reducing risks, and improving quality of life. The assessor is aware of changes to the person's presentation that may create new reasons for the CAP to trigger once more. E.g., a person who has a new diagnosis that increases their fall risk. Also, an absence of triggered CAPs in the late stages of life can indicate the lack of reversibility as the person enters their palliative phase or last days of life.

The following table explains the CAPs found in the HC, CHA and LTCF assessments. Note that the bulk of these CAPS are shared across the three assessment types, with those found only in one type of assessment denoted as such. For each CAP it indicated the major issues to be considered for care Planning when the CAP is triggered.

Summary of CAPs found in Home Care (HC), Long-Term Care Facilities (LTCF), and Community Health Assessments (CHA)

Table 3 *Summary of CAPs found in HC, LTCF, CHA assessments.*

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
1	**CHA** **HC** **LTCF**	Physical Activities Promotion	To increase levels of exercise and physical activity.	Person does less than two hours activity over 3 days, but is mobile, goes up and down stairs without help and believes they can improve. Increased independence possible.	**CHA**: G3a and at least one of the following**:** G1fa, G2c, G8a, G8b **HC:** G4a and at least one of the following: G1fa**,** G2f, G5a, G5b **LTCF**: G3a and at least one of the following: G1f, G4a, G4b
2	**CHA** **HC**	Instrumental Activities of Daily Living (IADL)	To improve IADL self-performance and capacity.	Recent decline in IADL function. Increased independence possible.	Cognitive Performance Scale (CPS) ADL Hierarchy (ADLH) Scale and at least one of the following: **CHA**: G4, G8a, G8b and G1ab, G1bb, G1gb, G1hb, **HC**: G5a, G5b, G6 and G1ab, G1bb, G1gb, G1hb

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
3	**CHA** **HC** **LTCF**	Activities of Daily Living (ADL)	To improve ADL performance or prevent avoidable functional decline.	Receive some help with ADL. Potential to improve self-performance. Triggers at two levels relevant to number of additional triggers (2 or less or more) easily distracted, varying mental function, acute change in mental function, change in decision making, change in ADL, hip fracture, pneumonia, falls in last 30 days, falls 31 – 90 days, flare up, physiotherapy, overnight hospital stay, self-sufficiency change.	**CHA**: J10, CPS, ADLH and two or more of: C4a, C4c, C5, C2, G4, I1a, I3f, J1a, J1b, J6b, N4ea, N2a, R2 **HC**: J6c, CPS, ADLH and two or more of: C3a, C3c, C4, C5, G6, I1a, 1rf, J1a, J1b, J6b, N3ea, N4a, R2 **LTCF**: J6c, CPS, ADLH and two or more of: C3a, C3c, C4, C5, G5, I1a, I1r, J1a, J1b, J6b, O3ab, O4a
4	**CHA** **HC**	Home Environment Optimisation	To improve safety of environment.	Home environment in disrepair, squalid or poorly heated and person has psychological or functional impairment that places them at risk.	**CHA**: Q2a, Q2b, Q2c and two or more of: J2d, J2e, J2f, G1fb, G3a, J2b, J6a, J7, Q2e, DRS score ≥ 3 **HC:** Q1a, Q1b, Q1c and two or more of: J2g, J2h, J2i, G1fb, G4a, J2d, J6a, J7, Q1e, DRS score ≥ 3

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
5	**HC**	Institutional Risk	To avoid premature admission to Aged Residential Care (ARC).	Person has impaired functioning and is at high risk of institutional placement.	**CHA**: B4a, FS1, C1a, D1, D2, FS2b, G2c, G6a, FS3, G3b, G4, H1, I1c, J1a, J1b and one of more of: E4a, E4b, E4c, E2d, E4f, E4d **HC:** B4a, C1, C2a, D1, D2, G2b, G2f, G2g, G3a, G4b, G6, H1, I1c, J1a, J1b and one of more of: E3a, E3b, E3c, E3d, E3f, E3e
6	**LTCF**	Physical Restraints	Identify and treat symptoms related to use of physical restraint; identify alternative care approaches and evaluate alternatives.	Trunk restraint, chair preventing rising, daily decision-making, quadriplegia, ADL Hierarchy.	ADLH Scale **LTCF**: C1, I1i, O7b, O7c

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
7	**CHA** **HC** **LTCF**	Cognitive Loss	To maintain independence, prevent and monitor cognitive decline.	Person has CPS of 0, 1, or 2 and associated clinical-risk factors.	**CHA**: CPS C3a, C3b, C3c, C4, C5, D1, D2, E1e, E3a, E4a, I1c, I1d, J10, R2 **HC** CPS C3a, C3b, C3c, C4, C5, D1, D2, E1e, E1h, E3a, E3c, I1c, I1d, J6c, R2 **LTCF**: CPS C3a, C3b, C3c, C4, C5, D1, D2, E1e, E1h, E3a, E3c, I1c, I1d, J6c
8	**CHA** **HC** **LTCF**	Delirium	To identify persons with active symptoms of delirium.	Acute change in mental status, easily distracted, disorganised speech or mental function varies over day and behaviour appears different from usual functioning.	**CHA**: C4a, C4b, C4c, C5 **HC and LTCF**: C3a, C3b, C3c, C4
9	**CHA** **HC** **LTCF**	Communication	To improve communication ability and to prevent avoidable communication decline.	Better baseline communication than cognition leading to risk of decline. Moderate to severe communication issues in understanding or expression.	**CHA**: FS1, D1, D2 **HC and LTCF**: C1, D1, D2

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
10	**CHA** **HC** **LTCF**	Mood	To Identify, treat, and monitor mood issues.	Negative statements, persistent anger, expressions of unrealistic fears, repetitive health complaints, repetitive anxious complaints, sad, crying, tearfulness. DRS score medium to high risk.	**CHA. HC and LTCF**: DRS score >1
11	**CHA** **HC** **LTCF**	Behaviour	To prevent and manage behavioural problems.	Wandering, verbally abusing others, physically abusing others, socially inappropriate or disruptive behaviour, inappropriate disrobing, or public sexual behaviour, resisting care.	**HC and LTCF**: E3a, E3b, E3c, E3d, E3e, E3f **CHA**: E4a, E4b, E4c, E2d, E4d, E4f
12	**CHA** **HC**	Abusive Relationship	To identify potential abuse or neglect situations.	Fearful of family/whanau member, poor hygiene; neglected, abused, or mistreated. Triggers at two levels relevant to number of additional triggers (2 or less or more) Withdrawal, reduced social interaction, lonely, weight loss, fluid intake, unstable conditions, self-rated health, medication adherence, better living elsewhere, expressed conflict with family, informal-helper stress.	**CHA**: F1e, F1f, J9h plus Body Mass Index (BMI) DRS A12c, E1h, E1i, F1d, F2, K1a, K1c, J6a, J7, M1, P3b **HC**: A13c

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
13	**LTCF**	Activities	Identifying why the resident has withdrawn; address functional, medical, or psychological causes that affect participation; identify ways to increase activity and giving them an opportunity to succeed.	Decision making, time involved in activities, withdrawal, reduced social interactions, being at ease with others/planned activities, initiating interaction.	**LTCF**: C1, M1 and two or more of the following: E1i, E1j, F2a, F2b, F2e,
14	**CHA** **HC**	Informal Support	To identify where a person needs help.	Not independent with meals, housework, shopping, or transport and two or more of the following: alone for long periods, lives alone or no primary informal helper present.	**CHA**: G1ab, G1bb, G1gb, G1hb, and two or more of F4, A12a or P2a1 **HC**: G1ab, G1bb, G1gb, G1hb, and two or more of F4, A13a or P1a1
15	**CHA** **HC** **LTCF**	Social Relationship	To identify reduced social relationships and facilitate engagement.	Cognitively intact. Lonely, or spends time alone and has had a change in social activities in last 90 days.	**HC and LTCF**: CPS D2, F2d, F3e **CHA**: CPS, D2, F2, F3, F4
16	**CHA** **HC** **LTCF**	Falls	To identify and change any underlying risk factors for falls.	Falls in last 30 days, Falls 31 to 90 days ago.	**CHA, HC and LTCF**: J1a, J1b
17	**CHA** **HC** **LTCF**	Pain	To identify and treat underlying reasons for pain.	High risk trigger: severe, horrible, or excruciating pain Medium risk trigger daily mild or moderate pain.	**CHA**: J6a, J6b **HC & LTCF**: J5a, J5b

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
18	**CHA** **HC** **LTCF**	Pressure Ulcer	To prevent, identify and treat pressure ulcers.	Has, or is at risk of developing, a pressure injury.	**CHA**: L1 and at least one of the following: G6a, G6c, and one of the following: H2, L2, L3, N3k **HC**: L1 and at least one of the following: G2g, G2i, and one of the following: H2, L2, L3, N2k **LTCF**: L1 and at least one of the following: G1g, G1i, and one of the following: H2, L2, L3 O2k
19	**CHA** **HC** **LTCF**	Cardiorespiratory Conditions	To identify potential cardiovascular or cardiorespiratory conditions and refer on.	Has symptoms of chest pain, shortness of breath or dizziness.	**CHA**: J2a, J2c, J3 **HC and LTCF**: J2c, J2e, J3
20	**CHA** **HC** **LTCF**	Undernutrition	To address and manage under nutrition and contributing factors based on (Body Mass Index (BMI).	The person's/resident's BMI and no presence of end stage disease.	**CHA**: BMI and J10 **HC & LTCF**: BMI and J6c

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
21	**CHA** **HC** **LTCF**	Dehydration	To identify and treat underlying causes of dehydration.	Insufficient fluid intake and dehydration present. Level 2 includes at least one additional symptom of dehydration distress.	**CHA**: Level 1 = K1c, K1b and none of the following: C4a, C4b, C4c, C5, J2a, J2h, J2i, J2j, J9f, K1a. Level 2 = at least one of those items to be true. **HC and LTCF**: Level 1 = K2c, K2b and none of the following: C3a, C3b, C3c, C4, J2c, J2l, J2m, J2n, J2r, K2a. Level2 = at least one of those items to be true.
22	**CHA** **HC** **LTCF**	Feeding Tube	To identify and manage persons with a feeding tube. To monitor whether a feeding tube remains an appropriate intervention over time.	Presence of a feeding tube and cognitive functioning.	**CHA**: FS1, K3 **HC and LTCF**: C1, K3
23	**CHA** **HC** **LTCF**	Prevention	To prevent illness and disability.	GP visit in last 90 days, flu vaccination, pneumovax vaccine, mammogram, blood pressure, dental exam, hearing exam, colonoscopy.	**CHA**: N2c, N1f, N1h, N1a, N1c, N1e, N1d, N1b **HC**: N4c, N1f, N1h, N1g, N1a, N1c, N1e, N1d, N1b **LTCF**: O5, O1f, O1h, O1g, O1a, O1c, O1e, O1d, O1b

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
24	**CHA** **HC** **LTCF**	Appropriate Medications	To identify and promote appropriate medication management.	More than nine medications plus two of the following symptoms: chest pain, dizziness, oedema, shortness of breath, poor health, or recent deterioration.	**CHA**: Number of medications plus: J2a, J2c, J9i, J3, J7, R2 **HC**: Number of medications plus: J2c, J2e, J2u, J3, J7, R2 **LTCF**: Number of medications plus: J2c, J2e, J2u, J3, J7
25	**CHA** **HC** **LTCF**	Tobacco and Alcohol Use	To identify strategies to help people cease smoking or cut back on excessive drinking.	Daily smoker, alcohol intake.	**CHA, HC and LTCF**: J8a, J8b
26	**CHA** **HC** **LTCF**	Urinary Continence	To facilitate improvement and prevent decline in bladder function.	Triggers at two levels. Level 2 includes recurring episodes of incontinence, early cognitive issues. Level 3 there are mobility issues and may include change in ADL status, hip fracture, pneumonia, diarrhoea, urine collection device, scheduled toilet program no tin place.	**CHA**: FS1, H1, G2b and at least one of the following: G4, I1a, I3f, J2i, H2, N3i **HC**: C1, H1, G2e and at least one of the following: G6, I1a, I1r, J2m, H2, N2l **LTCF**: C1, H1, G1e and at least one of the following: G6, I1a, I1r, J2m, H2, O2l

CAP Number	Assessment Type	Name	CAP goals of care	MDS assessment coded issues	MDS assessment items and outcome scales that inform the CAP
27	**CHA** **HC** **LTCF**	Bowel Conditions	To facilitate improvement and prevent decline in bowel function.	Triggers at two levels. Bowel continence, cognition, easily distracted, disorganised speech, mental function varies over the day, acute change in mental status, bed mobility, eating performance and bladder continence.	**CHA**: H3 and two or more of the following: FS1, C4a, C4b, C4c, C5, G6c, G6d, H1. Level 2 =less that two of these are true. Plus two or more G6b, G8b, I1a, I3f, R2 **HC**: H3 and two or more of the following: C1, C3a, C3b, C3c, C4, G2i, G2j, H1. Level 2 =less that two of these are true. Plus two or more of G2h, G5b, I1a, I1r, R2. **LTCF**: H3 and two or more of the following: C1, C3a, C3b, C3c, C4, G1i, G1j, H1. Level 2 = less that two of these are true. Plus two or more of G1h, G4b, I1a, I1r

Summary of CAPs found in Palliative Care (PC) Assessments

Table 4 *CAPs found in PC assessments.*

CAP Number	Name	CAP Goals of Care	MDS Assessment Coded Issues	MDS Items and Outcome Scales that inform the CAP
1	Communication	To identify persons with active symptoms of delirium.	Daily decision making, making self-understood and the ability to understand others.	F1, G1, G2
2	Delirium	Monitor and address delirium symptoms and related issues, such as pulling tubes and unsafe activity.	The person is easily distracted, has episodes of disorganised speech, their mental function varies over the course of the day, or there has been an acute change in mental status.	F4a, F4b, F4c, F5
3	Dyspnoea	Determine the severity of the symptom and the need for emergency intervention. Determine the cause(s) and address them to the extent possible. Optimise the person's ability to be always comfortable and to perform ADLs.	The presence of dyspnoea at rest, when doing day to day activities or when performing moderate activities.	C2
4	Fatigue	Determine the degree to which fatigue is a burden to the person. Eliminate or reduce the causes of fatigue, such as pain, dyspnoea, depression, or severe anaemia.	Unable to commence some/all normal day to day activities, 6 months to live, fall in last 90 days, any of the following symptoms for more than two days: acid reflux, nausea, too much sleep, dry mouth, excessive sweating, thirst, short term memory problem, little interest daily, daily anxiety, sadness, depressive symptoms present.	DRS C3, A12a, F3a, H2a, H2b, H2c, C4a, C4b, C5b, C5g, C5j, D4a,

CAP Number	Name	CAP Goals of Care	MDS Assessment Coded Issues	MDS Items and Outcome Scales that inform the CAP
5	Mood	Identify and address any immediate threats to the person's wellbeing that are posed by depression or anxiety. Improve the person's psychological wellbeing to support engagement and participation in end-of-life decision -making.	Self-reported little interest, anxiety, sadness, wants to die now.	H2a, H2b, H2c, N3c
6	Nutrition	Ensure that the person and their caregivers understand the unique issues and conditions related to nutrition in palliative care. Reduce anxiety about not eating or eating to alleviate hunger. Optimise energy and protein intake.	BMI and weight loss.	BMI D2a
7	Pain	Relieve suffering to the maximum extent possible. Optimise the person's ability to be always comfortable and to perform ADLs. Monitor treatment efficacy and adverse effects and make appropriate adjustments to the therapeutic regime.	Pain intensity and breakthrough pain.	C1b, C1d
8	Pressure Ulcer	Determine the person's risk factors for developing a pressure injury. Prevent the development of a pressure ulcer and, if already present, prevent an increase in its size and severity, to the extent possible. Educate informal support members (if available) on preventative methods to reduce the risk of pressure ulcers, to the extent possible. Treat appropriately all existing pressure ulcers, including the management of drainage and the elimination of odour, we well as address any associated pain.	Most severe pressure ulcer, other skin ulcer, pain frequency, bowel continence, performance with personal hygiene, transfer toilet, and bed mobility.	C1a, E1, E3, J2b, J2e, J2g, K3

CAP Number	Name	CAP Goals of Care	MDS Assessment Coded Issues	MDS Items and Outcome Scales that inform the CAP
9	Sleep Disturbance	Identify and understand the nature of the sleep disturbance. Determine the underlying causes. Reduce the sleep disturbance. Maximise the person's comfort and function.	Difficulty falling asleep, dizziness, vomiting, nausea, one of fewer meals a day, sad facial expressions, crying, withdrawal, lack of pleasure, completion of responsibilities, accepting of situation	C5g, C5h, C5k, C5i, D2b, H1f, H1g, H1h, H1j, I1a, I1c

Acute Care Clinical Action Points

Clinical Action Points (CAPs) help identify patients who will benefit most from care interventions. While it's important to be aware of all problems, some issues cannot be prevented or treated. CAPs help focus on issues where intervention is likely to make a difference. They fall into two categories:

Prevention: The patient is at risk of an adverse event that can be prevented.

Treatment: The patient has a problem that can be effectively treated.

CAPs are identified through a process described as “triggering”. This is highlighted in bright yellow in the software. Responses to one or several items within the AC assessment are used to ‘trigger’ the CAP.

Table 5 *Clinical Action Points available in the Acute Care Assessment*

Clinical Action Points			
	Admission	**Review**	**Discharge**
Activities of Daily Living - Prevention	✓	✓	
Activities of Daily Living - Treatment	✓	✓	
Behaviour	✓	✓	
Delirium – Treatment	✓	✓	
Depression and Anxiety	✓	✓	
Falls	✓	✓	
Pressure Ulcer - Prevention	✓	✓	
Pressure Ulcer - Treatment	✓	✓	
Readmission	✓		
Undernutrition	✓		

Table 6 *Acute Care Assessment Clinical Action Points in detail*

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
ADL Prevention 	Patients in hospitals often need help with self-care, but most recover and regain independence by discharge. Conditions like stroke or hip fracture can significantly impact function, and previous functional or cognitive deficits increase the risk of further decline during hospitalisation. Mobility and ADL (Activities of Daily Living) deficits can lead to complications such as incontinence, poor communication, cognitive loss, depression, falls, postural hypotension, and pressure ulcers. It's crucial to address these issues promptly and plan appropriate discharge arrangements. Not all patients will return to their pre-admission status; some may need rehabilitation or more supervised living arrangements. Improving ADL can enhance quality of life and reduce the need for assistance. A patient's pre-hospitalisation status is a predictor of their recovery, and those with prior deficits need a restorative approach and well-planned post-hospital services to optimise recovery and prevent further decline. **Actions:** **Access to Interdisciplinary Team:** • Provide access to professionals such as physiotherapists and occupational therapists to identify aids and barriers to self-care and recommend specific interventions. **Prevention of Further Decline:** • Encourage patient independence in ADLs with aids, supervision, or assistance, aiming to reduce the level of help needed over time. • Ensure the environment is safe and accessible (e.g., proper bed height, aids within reach, uncluttered space). • Promote early mobilisation, minimise bed rest, and encourage walking with necessary aids or supervision.	To improve function among patients who have significant newly acquired ADL limitations. To prevent decline in ADL function in vulnerable patients.	Pre-morbid ADL self-performance is impaired. OR current cognition is impaired. (Not triggered if CPS = 6.)	ADL Short Form Scale Cognitive Performance Scale

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Educate and involve family members in supporting the patient's mobilisation and self-care, if safe to do so. **ADL Improvement:** • Implement early mobilisation. • Promote self-care activities. • Refer patients to relevant rehabilitation programs. **Preparation for Discharge:** • Assess the need for post-acute rehabilitation and refer appropriately, considering the potential for functional improvement, the patient's capacity to engage, and the desired discharge destination (after discussing with the patient and family). • Provide caregiver education to support ongoing maintenance or recovery at home. • Assess and arrange necessary continuing support, services, and a safe environment for the patient's return home.			
ADL Treatment 	**See above.**	Improve function among individual who have significant newly acquired ADL limitations	Cognitive function is borderline or normal (less than 3/6) AND Pre-morbid ADL deficits were 3 points or more less than at admission	Cognitive Performance Scale ADL Short Form Scale

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
Behaviour 	Behaviours of concern in hospital patients are often triggered by underlying medical or psychiatric issues. Factors like personality, brain damage, substance abuse, and psychiatric disorders can interact with medical problems, medications, and environmental factors to alter patient behaviour. Delirium is common in hospitalised older patients and is often linked to disturbed behaviour. It is frequently associated with dementia, which affects over 20% of general medical patients and is more common in geriatric services. Identifying signs of distress, assessing their frequency, and determining their modifiability is crucial. Documenting behavioural symptoms helps identify contributing factors. **Impact on Care:** These behaviours can hinder the management of the acute medical issue that led to hospitalisation. They may lead to inappropriate interventions, such as unnecessary restraints or antipsychotic medications, and can extend hospital stays due to discharge difficulties. Behavioural disturbances can also threaten patient and staff safety and strain relationships with informal caregivers, potentially reducing their willingness to support the patient. Addressing the issue: Understanding and addressing the underlying causes of behavioural disturbances can improve the quality of life for both the patient and those around them. **Actions:** **Further Evaluation:** **For all patients with behaviours of concern:** • Obtain a full history, including triggers, types of behaviours, and their consequences. • Identify and address contributing factors, such as:	Identify patients with behaviours of concern. Understand the history of these behaviours. Determine their causes, triggers, and effects. Find appropriate intervention strategies to reduce their frequency and prevent them from getting worse.	Behaviour symptoms = 1. Yes	E3 - Behaviour symptoms.

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Medical conditions (e.g., metabolic disturbances, sepsis, hypoxia, etc.) • Cognitive or communication impairment • Psychiatric or mental health conditions • Poorly controlled pain • Medications (prescribed and non-prescribed) • Substance abuse or withdrawal • Delirium & depression • Unmet emotional needs (e.g., boredom, frustration) • Language and cultural factors • Environmental factors (e.g., noise, lighting) • Assess if the behaviour is dangerous to the patient or others and create an immediate action plan if necessary. **During the hospital stay, ensure patient safety by:** • Addressing patient concerns and unmet needs (e.g., fear, pain, toileting) • Modifying the environment (e.g., reduce noise, eliminate hazards) • Maintaining adequate staffing levels and staff education • Reviewing medications • Referring to inpatient psychological services if needed • Identifying and treating underlying causes (e.g., infection, constipation) • Ensuring adequate nutrition and hydration • Implementing a behavioural management plan: • Using de-escalation techniques (non-pharmacological) • Developing care plan strategies for known situations • Cautiously using medications when necessary • Using physical restraints only as a last resort in emergencies • Documenting the patient's response to interventions			

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	Preparation for Discharge: • Train and educate families and caregivers in managing behaviours and effective communication techniques. • Engage community support for the patient and caregivers. • Schedule a follow-up medication review with clear guidelines for psychotropic medications. • Arrange a follow-up medical or GP review to monitor behaviours of concern.			
Delirium Treatment 	Delirium is a serious condition typically caused by acute health issues such as infections, dehydration, or drug reactions. It is linked to high mortality and morbidity, including pressure ulcers, functional decline, persistent behavioural symptoms, increased hospital stays, and premature institutionalisation. Delirium is not a normal part of aging and is often mistaken for dementia, particularly in its later stages. Unlike dementia, delirium has a rapid onset (hours to days) and typical signs include difficulty paying attention, fluctuating behaviour or cognitive function, restlessness, daytime sleepiness, rambling or nonsensical speech, and altered perceptions like illusions, hallucinations, or delusions. It is important to diagnose and classify the subtype of delirium to support management: • Hyperactive: Heightened arousal, restlessness, agitation, and aggression. • Hypoactive: Withdrawal, quietness, and sleepiness. • Mixed: Features of both hyperactive and hypoactive delirium. Up to 20% of older patients develop delirium during a hospital stay. Successful management requires accurate identification, diagnosis of specific causes, and prompt nursing and medical intervention.	Minimise the incidence of delirium in high-risk patients. Ensure early assessment and diagnosis to provide appropriate care, reducing the severity and duration of delirium.	Delirium Opportunity for Improvement (Treatment) is likely if either of the following are present in the current assessment: C3 – Periodic disordered thinking or awareness = 2. Behaviour present, appears different from usual functioning OR	C3 – Periodic disordered thinking or awareness OR C4 – Acute changes in mental status from patient's usual functioning.

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	Delirium may persist for weeks or months, but many cases can be prevented, and appropriate management can lead to improved outcomes. **Actions:** **During the Hospital Stay:** • Monitor for signs of delirium every nursing shift, noting changes in behaviour, alertness, attentiveness, or judgment. • Create a supportive environment with large clocks, natural daylight, familiar care providers, optimised hearing and visual aids, minimized relocations, reduced noise, and the presence of familiar family members or caregivers. • Encourage early and frequent mobilisation, at least three times daily (e.g., sitting up for meals), and minimise the use of immobilising equipment such as catheters and restraints. • Use non-pharmacologic approaches (e.g., sleep hygiene) to minimise psychoactive drug use. • Offer assistance with eating and drinking to ensure proper nutrition and hydration. • Monitor elimination, prevent constipation and urinary retention, and manage agitation and unsafe behaviours with non-pharmacologic measures. **Opportunity for Improvement:** • Chart delirium-associated behaviours and symptoms to track progress. • Use short-acting psychoactive agents only when necessary, starting with low doses. • Preserve or restore the normal sleep-wake cycle using natural lighting and noise management. • Consult a specialist if needed for diagnosis or management.		C4 – Acute changes in mental status from patient's usual functioning = 1. Yes	

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	Preparation for Discharge: • Consider follow-up cognitive evaluation if there's no pre-existing dementia diagnosis. • Develop an individualised care plan with the patient, family, and health care providers to avoid high-risk drugs and ensure preventive measures. Provide this plan to the patient and carer before discharge and to other clinical providers within 48 hours. • If pre-morbid cognitive status isn't likely to return, offer additional support after discharge, consider safety issues, and provide coping strategies for any frustration or behaviour problems associated with new cognitive issues.			
Depression and Anxiety 	Mood disorders like depression and anxiety are common in both community and hospital settings. Depression is often underdiagnosed and undertreated, and while most hospital patients with depressive symptoms do not have major depression, the issue still needs to be addressed. Untreated mood disorders can lead to high mortality, functional decline, and unnecessary suffering. In older adults, depressive symptoms may also indicate early dementia. **Actions:** **Further Evaluation:** • Assess the nature, duration, and severity of symptoms. • Check for medical conditions associated with depression, such as thyroid disease, and consider other mental health issues like bipolar disorder and psychotic depression. • Evaluate for Mild Cognitive Impairment or delirium that might mimic depression. • Consider the context of the patient's mood disturbance, including prognosis, major life events, and stressors.	Identify the causes and severity of mood disturbances and provide appropriate treatment.	E1 a, b and c = 1. Not in the last 24 hours but often feel that way 2. Yes, felt that way in the last 24 hours. Medium improvement potential: Total score of E1a, E1b and E1c = 1, 2 or 3 High improvement Potential: Total score of E1a,	E1a – Little interest or pleasure in things you normally enjoy? E1b – Anxious, restless or uneasy. E1c – Sad, depressed or hopeless?

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Assess for complications of low mood, such as sleep disturbances, appetite and nutritional deficits, functional deterioration, and suicide risk. • Review medications and non-pharmacological substance use that might contribute to symptoms. • Investigate long-standing symptoms to rule out treatable conditions or inappropriate treatments. Refer to Behaviour CAP if there are associated behaviour disturbances. **During the Hospital Stay:** • For new symptoms, start with non-pharmacological interventions such as counselling and reassurance, and ensure appropriate follow-up. • If symptoms persist, consider pharmacological therapy and monitor response. Use benzodiazepines for anxiety judiciously. • Monitor and document treatment response and adjust as needed. • For severe symptoms that interfere with treatment or pose safety risks, start active treatment or refer to a mental health specialist. • Consult a mental health specialist if psychotic symptoms or suicidal ideation are present. **Preparation for Discharge:** • Ensure close follow-up by the primary care physician and community mental health services if symptoms are likely to persist. • Assess the wellbeing and sustainability of primary caregivers. • Educate the patient and family about the mood disorder, symptoms, medications, and compliance strategies. • Arrange ongoing review and monitoring of medications, including compliance.		E1b and E1c = 4, 5 or 6	

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
Falls 	A fall is an unintentional change in position where the patient ends up on a lower level. This can lead to significant morbidity and mortality, particularly among older adults, and can result in loss of confidence and activity restriction. Addressing falls is crucial both for patients admitted due to falls and those at high risk of falling in the hospital. **Actions:** **At Admission:** For patients admitted due to a fall or with a recent fall: • Assess for major trauma (e.g., head trauma, fractures, spinal injury). • Consider cardiac arrhythmias, seizures, orthostatic hypotension, and hypoglycaemia if there was loss of consciousness. • Address potential complications of prolonged immobility, such as dehydration and skin breakdown. • Compare current ADL status with pre-morbid function to detect functional decline. • Conduct a functional mobility evaluation and refer to appropriate team members. **For all patients at risk of falling:** • Document history of previous falls and contributing circumstances. • Assess cognitive and memory impairment. • Evaluate balance and mobility problems; consider referrals to physical and occupational therapy. • Ensure a safe hospital environment by removing clutter, ensuring adequate lighting, and providing appropriate bed height and footwear.	Evaluate the cause and risk of falls and implement preventive strategies. This CAP often works alongside others, such as those focused on ADL decline, delirium, and appropriate medication use.	Medium risk: I1 Falls = 1. One or more falls in the last 90 days, AND one of the other indicators is present. High risk: I1 Falls = 1. One or more falls in the last 90 days AND two or more of the other indicators are present. Other indicators: F2 Balance – difficulty or unable to move to a standing position unassisted = 1. Present. D4 Vision – ability to see in adequate light (without visual appliance) = 2. Moderate difficulty, 3.	D4 - Vision I1 - Falls F2 - Balance Cognitive Performance Scale

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Assess continence status and implement measures to manage it. • Check for orthostatic hypotension by measuring lying and standing blood pressures. • Review medications affecting cognitive, cardiovascular, and autonomic functions. **During the Hospital Stay:** • Develop and implement a targeted fall prevention plan based on individual needs. **For high-risk patients, especially with cognitive impairment or delirium:** • Ensure staff accessibility and consider special nursing arrangements. • Orient the patient to their surroundings and explain the use of the call bell. • Use falls risk alert cards and consider motion sensors, alarms, and hip protectors. • Avoid physical restraints and ensure regular toileting. • Implement hourly rounds to check on pain, call bell availability, and bathroom needs. • Promote mobility with supervision or assistance. • Monitor progress in balance, mobility, and transfers. • Ensure personal belongings and visual aids are within reach. • Regularly reassess risks and interventions, and document outcomes. • Consider medications such as Vitamin D and calcium supplements. • Educate the patient, family, carers, and staff on falls risk and prevention strategies.		Severe difficulty or 4. No vision Cognitive Performance Scale score = 2 or greater	

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Conduct an interdisciplinary falls review if a fall occurs during the hospital stay. **Discharge and Post-discharge Preparation:** • For ongoing functional deficits, consider transfer to rehabilitation or post-acute programs. • If there is ongoing falls risk, arrange a home environment assessment and consider home monitoring systems. • Enrol in falls risk minimisation programs and discuss lifestyle modifications. • Coordinate with primary care physicians for ongoing evaluation and prevention. • Assess for osteopenia or osteoporosis and ensure appropriate treatments to minimise fracture risk.			
Pressure Ulcer Prevention 	Pressure injuries, or bedsores, occur when prolonged pressure cuts off blood supply to the skin and underlying tissues, commonly over bony areas. Patients with restricted mobility are especially at risk. These injuries are painful, difficult to treat, and significantly increase healthcare costs. They are common in patients in intensive care units and those on extended bed rest. **Actions:** **Further Evaluation:** • Do not rely solely on screening results; perform a full skin assessment and use clinical judgment to identify additional risk factors. • Consider factors contributing to the risk of pressure injury: mobility, activity status, nutritional status, sensory perception, age, skin moisture, body temperature, perfusion, oxygenation, general health status, medications, and underlying medical conditions.	Identify patients at risk for pressure injuries and implement prevention strategies. Identify the causes of existing pressure injuries and provide effective treatment.	Medium Risk: Pressure Ulcer Risk Scale = 2, 3, or 4 High Risk: Pressure Ulcer Risk Scale = 5, 6, 7, or 8	Pressure Ulcer Risk Scale (PURS)

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	For patients with pressure injuries: • Identify and treat contributing factors such as diabetes, peripheral vascular disease, immobility, excess moisture, and undernutrition. • Stage the pressure ulcer, record its size, location, and depth, and monitor progress using wound charts, photographs, and tracings. • Examine for signs of infection and document type of wound dressing and frequency of changes. • Assess and manage pain associated with the wound. **During the Hospital Stay:** • Perform frequent (at least 4-hourly) full skin inspections, especially in areas at risk. • Monitor and document skin status, including localized heat, delayed blanching response, oedema, and induration. • Inspect skin under and around medical devices for pressure injuries and consider using prophylactic dressings. • Use special mattresses, cushions, and pressure-relieving devices. • Reposition patients frequently (every 2 hours) to avoid sustained pressure, considering tissue tolerance, activity level, skin condition, and comfort. • Use procedures that minimize skin trauma when moving and handling patients. • Document repositioning schedules and evaluate their effectiveness. • Ensure adequate pain management, nutrition, and hydration. • Engage wound experts for complex or resistant wounds. • Document type of wound dressing and frequency of changes.			

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	Preparation for Discharge: • Ensure follow-up by medical and nursing professionals if an ulcer is still present. • Educate the patient and family on minimizing pressure injury risk (e.g., appropriate linen, mattress, continence aids). • Ensure adequate nutrition. • Continue medical review until the injury has fully healed.			
Pressure Ulcer Treatment 	**As above.**	Identify the causes of existing pressure injuries and provide effective treatment.	K1 – Most severe pressure ulcer = 2, 3, 4 or 5	K1 – Most severe pressure ulcer
Readmission 	Hospital readmissions are common among older patients, with about one-third occurring within a month of discharge. These readmissions often involve the progression or recurrence of the initial illness, particularly in patients with heart failure and COPD. Key risk factors include a recent prior admission, long or early discharge due to economic pressures, and being discharged home rather than to an institutional setting. Poor inpatient care and discharge planning can increase readmission rates. Studies suggest that 10% to 50% of readmissions might be preventable with proper interventions. **Actions:** **Further Evaluation:** • Review the reason for the previous hospital admission. Assess the discharge planning for that admission and consider if readmission could have been avoided:	To develop an effective discharge plan that reduces the risk of hospital readmission.	This CAP is triggered if the patient had a hospital admission within 30 days prior to the current admission. It applies to about 20% of general medical inpatients. B4 – Time since last hospital stay = 3, 4 or 5	B4 – Time since last hospital stay

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Medical and follow-up arrangements. • Support services provided. • Nature and commitment of informal support. • Medication prescription and compliance. • Review previous interRAI assessments (e.g., home care). **During the Hospital Stay:** • Evaluate and treat illnesses, comorbidities, and conditions (e.g., depression, cognition) that may increase the risk of readmission. **Preparation for Discharge:** • Implement disease-specific protocols relevant to the patient. • Harmonise management plans for multiple comorbidities and reconcile medications. • Ensure strategies to optimise medication compliance. • Review discharge destinations to maximise independence and ensure adequate support. • Assess the adequacy of informal supports available at home. **Arrange close follow-up, such as:** • Timely primary care. • Transitional care. • Specialised care. • Outpatient or home care rehabilitation. • Day hospital or day centre. • Arrange supportive care to maintain independence, including community support services and home care. • Liaise carefully with the primary care physician, other service providers, and the primary informal caregiver.			
Undernutrition	Undernutrition is common among hospital patients, particularly older adults. It may be due to long-standing issues or acute illness and	To confirm the presence of under-	BMI is less than 22 and	BMI

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	often goes unnoticed. Causes include medical conditions, pain, medications, poor dentition, psychosocial factors, and decreased appetite due to aging. Undernutrition can lead to muscle wasting, impaired immune function, prolonged hospital stays, and increased mortality. **Actions:** **Further Evaluation:** • Request appropriate laboratory investigations to identify undernutrition. • Determine if weight loss is due to volume depletion and monitor necessary fluids. • Assess dietary intake, intolerances, allergies, and knowledge. • Consider underlying illnesses, dysphagia, depression, pain, and medication side effects. • Check for dentition and oral hygiene issues. • Evaluate for malabsorption and catabolic states due to chronic or acute inflammation e.g. Rheumatoid arthritis, organ failure, major infection, recent surgery or stroke. • Assess physical (e.g. hemiplegia, arthritis, apraxia, or tremor) and cognitive deficits (e.g. delirium, lack of initiation or awareness) affecting eating. **During the Hospital Stay:** • Refer to a speech language therapist for dysphagia assessment. • Refer to a dietitian for a comprehensive nutritional evaluation. • Adjust diet composition and texture and monitor food intake and weight. • Ensure a suitable eating environment and menu options. • Monitor for pressure injuries and wound healing.	nutrition, evaluate its causes, and provide appropriate treatment.	J2 – Unintentional weight loss of 5% or more in the last 30 days, or 10% or more in last 180 days = 1. Yes.	J2 - Unintentional weight loss of 5% or more in the last 30 days, or 10% or more in last 180 days.

Clinical Action Point	Problem and Actions	Goals of Care	Triggers	Items that inform the CAP
	• Provide cueing and assistance for patients with cognitive impairments. • Consult a therapist for assistive devices for physical deficits. • Review and adjust medications impacting appetite. • Document diet modifications and manage dysphagia with appropriate interventions. **Preparation for Discharge:** • Educate the patient and family on malnutrition and dietary needs. • Refer to financial, social, and nutritional support services. • Ensure follow-up with a primary care physician and dietitian. • For enteral tube feeding, provide education and referrals for ongoing management.			

Chapter 3: Outcome Measures

What this chapter covers

- Understanding Outcome Scales
- Table of scales per assessment type
- Understanding outcome scales for Home Care (HC), Long Term Care Facilities (LTCF), Palliative Care (PC), and Community Health (CHA) assessments
- Understanding Acute Care (AC) Assessment Outputs – Clinical Action Points and Outcomes Scales
- Understanding Contact Assessment (CA) Algorithms.
- Understanding Resource Utilisation Groups (RUGs)

Understanding Outcome Scales

interRAI outcome scales have been benchmarked against industry 'gold standard' assessment outcomes to check their validity. For example, interRAI's Cognitive Performance Scale has been validated against the Mini Mental State Examination (Travers C., 2013). Benchmarking checks that outcome measures are:

- **valid** — they test a function in the way they claim to,
- **reliable** — their results are the same, or similar, regardless of who administers the test,
- **responsive** — they can test changes to a function over time.

An interRAI MDS assessment enables a clinician to obtain multiple outcome scales from one assessment, rather than having to complete several separate assessments.

You can easily determine a person's level of disability from their outcome scores; you do not need to review the coding of individual assessment items. The **AC Assessment**, **CHA**, **HC Assessment**, **LTCF Assessment** and **PC Assessment** share many of the same outcome scales, so you can keep track of a person's progress even when they move between healthcare services.

interRAI MDS assessments use many types of scales to measure outcomes.

Table of Outcome Scales per Assessment Type

Table 7 *Table of scales per assessment*

Outcome Scale	AC	CA	CHA	HC	LTCF	PC
ADL Hierarchy (ADLH) Scale	✓		✓	✓	✓	✓
ADL Short Form (ADLS) Scale	✓		✓	✓	✓	✓
ADL Long Form (ADLL) Scale			✓	✓	✓	
Aggressive Behaviour Scale (ABS)			✓	✓	✓	
Assessment Urgency Algorithm (AUA) Scale		✓				
Body Mass Index (BMI)	✓		✓	✓	✓	✓
Caregiver Risk Evaluation Scale (CaRE)				✓		✓
Changes in Health, End-Stage Disease and Signs and Symptoms (CHESS) Scale		✓	✓	✓	✓	✓
Clinician Rated Mood Scale (CRMS)				✓	✓	
Cognitive Performance Scale (CPS)	✓		✓	✓	✓	✓
Cognitive Performance Scale 2 (CPS2)			✓	✓		
Communication Scale (CS)	✓		✓	✓	✓	✓
Composite Mood Scale (CMS)				✓	✓	
Crisis Identification and Situational Improvement Strategies (CRISIS) Scale			✓	✓		
Deaf/Blind Severity Index (DBSI)			✓	✓		
Depression Rating Scale (DRS)			✓	✓	✓	✓
Detection of Indicators and Vulnerabilities for Emergency Room Trips (DIVERT) Scale			✓	✓		
Distressed Mood Scale Self Report (DMSR)		✓				
Falls Scale						✓
First Fall Risk Scale (FFRS)				✓	✓	
Fracture Risk Scale (FRS)				✓	✓	
Frailty Scale (FS)				✓		
Functional Hierarchy Scale (FHS)			✓	✓		✓
Instrumental Activities of Daily Living Capacity Hierarchy Scale (IADLCHS)			✓	✓		

Outcome Scale	AC	CA	CHA	HC	LTCF	PC
Instrumental Activities of Daily Living Performance Hierarchy Scale (IADLPHS)						✓
Method for Assigning Priority Levels (MAPLe)			✓	✓		
Pain Scale (PS)	✓	✓	✓	✓	✓	✓
Personal Support Algorithm (PSA)		✓	✓	✓		
Pressure Ulcer Risk (PURs) Scale	✓		✓	✓	✓	✓
Rehabilitation Urgency Algorithm (RUA) scale		✓				
Revised Index for Social Engagement (RISE)					✓	
Self-Rated Mood Scale (SMS)				✓	✓	
Self-Reliance Index (SRI)		✓	✓	✓		
Service Urgency Algorithm (SUA)		✓				
Short Depression Rating Scale (SDRS)	✓					
Vulnerable Persons at Risk Scale (VPR)			✓	✓		

Activities of Daily Living Hierarchy Scale (ADLH)

A person develops the skills of self-care from birth. Their ability to perform these skills may diminish as part of aging. This is referred to as the disablement process. This process indicates the general order in which research has shown that the person is most likely to seek assistance. The ADLH has a range of 0-6 and groups activities of daily living according to the stage of the disablement process in which they occur. Early loss ADLs (e.g., dressing) are assigned lower scores than late loss ADLs (e.g., eating).

When interpreting the ADLH scale it is helpful to remember this disablement process. This is not purely a sequential process, where the person experiences complete loss in one area before another, ADL function loss progressively moves across the self-care spectrum until the person is totally disabled. This measure of functional performance is particularly useful in grading the progression of a group of older/vulnerable adults' disability over a long period. It is based on four ADL short items and their levels of difficulty for the person.

The descriptions of the scores provide further insight to the reader about the functional capacity of the person assessed. It is worth noting that the four items from the assessment found in this scale represent ADLs that may occur any time over the 24-hour period. Therefore, as disablement increases the ability to live alone becomes impeded. The scores provide the reader with a quick glance of current capacity to self-care that with regular use provides insight into the degree of support they are likely to require. The ADLH therefore provides information about degrees of dependency across population groups.

Higher scores indicate greater dependence on others when performing ADLs

Table 8 *Items that inform the ADL Hierarchy scale*.

Assessment items					
CHA	**HC**	**LTCF**	**PC**	**Description**	**ADL Loss level**
FS2b	G2b	G1b	J2b	Personal Hygiene	Early
G2c	G2f	G1f	J2d	Mobility	Middle
G6b	G2h	G1h	J2f	Toilet Use	Middle
G6d	G2j	G1j	J2h	Eating	Late

Table 9 *ADLH algorithm conversion*

Item	Coding	Coding	Coding	Coding	Coding	Coding	Coding
Personal hygiene	0,1	2	3	4,5,6,8			6,8
Mobility	0,1	2	3		4,5	6,8	6,8
Toilet use	0,1	2	3	4,5,6,8			6,8
Eating	0,1	2	3		4,5	6,8	6,8
Conversion	**0**	**1**	**2**	**3**	**4**	**5**	**6**

Table 10 *ADLH scale descriptions*

ADLH score	Description
0	Independent
1	Supervision required
2	Limited impairment
3	Extensive assistance required - 1
4	Extensive assistance required - 2
5	Dependent
6	Total dependence

ADL Short Form (ADLS) Scale

The ADL Short Form (ADLS) Scale measures a person's ADL self-performance status based on items that reflect stages of loss (early, middle, and late loss) and is more sensitive to change over time than the ADLH. The scale ranges from 0 to 16: **high scores indicate greater impaired self-sufficiency in performing ADLs** (Morris J. F. B.).

Table 5 *Items that inform the ADL Short Scale*

Assessment items					
CHA	**HC**	**LTCF**	**PC**	**Description**	**Scale range**
FS2b	G2b	G1b	J2b	Personal Hygiene	0-4
G2c	G2f	G1f	J2d	Mobility	0-4
G6b	G2h	G1h	J2f	Toilet Use	0-4
G6d	G2j	G1j	J2h	Eating	0-4

Table 62 *ADL Short Form Algorithm conversion*

ADL Short Form score	Conversion
0 or 1	0
2	1
3	2
4 or 5	3
6 or 8	4

ADL Long Form (ADLL) Scale

The ADL Long Form has a range of 0 -28. It adds up the scores that indicate a person's ability to perform various daily activities.

The scale is based on seven ADL items the MDS assessment. Each of the seven items has a maximum score of 4. The scale ranges from 0 to 28: a **high score indicates greater difficulty with performing ADLs**. It is more sensitive to clinical change than the ADLS and can be useful

when evaluating the effectiveness of different treatment approaches. The scale has been shown to have very good intentional consistency by Morris, Fries and Morris (1999).

Table 73 *Items that inform the ADL Long Scale*

Assessment items				
CHA	**HC**	**LTCF**	**Description**	**Scale range**
FS2b	G2b	G1b	Personal Hygiene	0-4
G2a	G2c	G1c	Dressing upper body	0-4
FS2c	G2d	G1d	Dressing lower body	0-4
G2c	G2f	G1f	Mobility	0-4
G6b	G2h	G1h	Toilet Use	0-4
G6c	G2i	G1i	Bed Mobility	0-4
G6d	G2j	G1j	Eating	0-4

Aggressive Behaviour Scale (ABS)

The ABS has a range of 0-12 and combines information on the presence of aggressive behaviour from Mood and Behaviour Section of the assessment. Behaviours that impact on this scale can quickly escalate a carer's stress and impede a person's social connections. Therefore, care planning needs to include specific interventions.

The scale captures the frequency and number of aggressive behaviours coded but does not account for the severity of that behaviour. It also captures behaviour that may not have occurred in the 'lookback period' but does occur (present but not exhibited in the last 3 days).

This scale has been validated against the Cohen-Mansfield Agitation Inventory. (Perlman C.M.)

Table 84 *Items that inform the Aggressive Behaviour scale.*

Assessment items			
CHA	**HC**	**LTCF**	**Descriptions**
E4b	E3b	E3b	Verbal abuse
E4c	E3c	E3c	Physical abuse
E2d	E3d	E3d	Socially inappropriate or disruptive behaviour
E4f	E3f	E3f	Resisting care

Table 95 *Aggressive Behaviour scale description*

ABS score	Description
0	None
1-2	Moderate
3-5	Severe
6-12	Very severe

Body Mass Index (BMI)

The BMI measures the ratio between the height and weight of an individual. BMI does not distinguish between muscle weight/bone density and fat. It is only an indication of whether a person is in the healthy normative range or not. Other factors may affect a person's BMI such as physical make up or the presence of diseases processes or conditions.

interRAI MDS assessments use BMI to:

- identify people with clinical risks related to being underweight or overweight,
- compare a person's BMI over time.

BMI is calculated by dividing a person's weight in kilograms by the square of their height in metres $kg/m^{2.}$

For example, an adult who weights 70kgs and is 1.75 metres talk will have a BMI of 22.9

$$BMI = 70\,kg / 1.75\,m^2$$
$$= 70 / 3.06$$
$$= 22.9$$

interRAI assessments measure height and weight to calculate BMI.

Table 106 *Items that inform the BMI scale.*

Assessment items				
CHA	**HC**	**LTCF**	**PC**	**Description**
K2a	K1a	K1a	D1a	Height
K2b	K1b	K1b	D1b	Weight

The MDS assessment will calculate BMI only for people who weigh 27– 320 kg and measure 122–228 cm. Therefore, if a person weighs under 27 kg or over 320 kg, or measures less than 122 cm or more than 228 cm, their BMI value will display as '0'.

Table 117 *BMI scale*

Assessment item description	Frailty	Obesity
Height and weight	BMI $\leq$ 20	BMI $\geq$ 31

In the interRAI suite, BMI focuses on the risks associated with under-nutrition and obesity. Low BMI has been found to be linked to an increased risk of frailty, which puts the person at risk of adverse events and isa one of the triggers of the Under-Nutrition CAP.

If there is no clear indication of a person being near to death, a BMI score of less than or equal to 21 will trigger the Undernutrition CAP. However, the Undernutrition CAP will NOT be triggered if a person's BMI is less than or equal to 19 and the person has a life expectancy of six months or less (CHA item J10, HC Jc, or LTCF assessment item J6c, PC item A12a

Through understanding this risk, health professional can consider the individual risks for older/vulnerable adults and consider care plan strategies, wherever possible, to either reduce their occurrence or minimise the impacts of adverse events. BMI can also be used to monitor the risk of frailty or obesity over time.

The frailty phenotype is a clinical syndrome in which three or more of the following criteria are present:

- unintentional weight loss
- self-reported exhaustion
- weakness (grip strength)
- slow walking speed
- low physical activity (al, 2012)

The BMI ranges that New Zealand uses for adults are different to those used in MDS assessments, which are based on current best practice for older adults.

Table 128 *BMI by ethnicity*

Ethnicity	Underweight	Healthy	Overweight	Obese
NZ European	< 18.5	18.5 - 25	25-30	>30
Māori and Pacific people	<18.5	18.5 - 26	26-32	>32

If a person has a major amputation the assessor is advised to only record weight and compare weight loss overtime. BMI cannot be calculated.

Caregiver Risk Evaluation Scale (CaRE)

The CaRE scale utilises six items from the interRAI Palliative Care and Home Care assessment that inform the caregiver risk.

It can be used in conjunction with other scales that identify functional, clinical, and behavioural challenges that increase carer burden.

The scale acts as a “flag” to assessors and other professionals identifying those families who may be in need of additional formal support, education/training, respite support, or other services.

By quickly identifying the caregivers who are most at risk and linking them with the necessary supports and services, this could maximise the likelihood of the person remaining in their own home and reducing the need for admission to LTC.

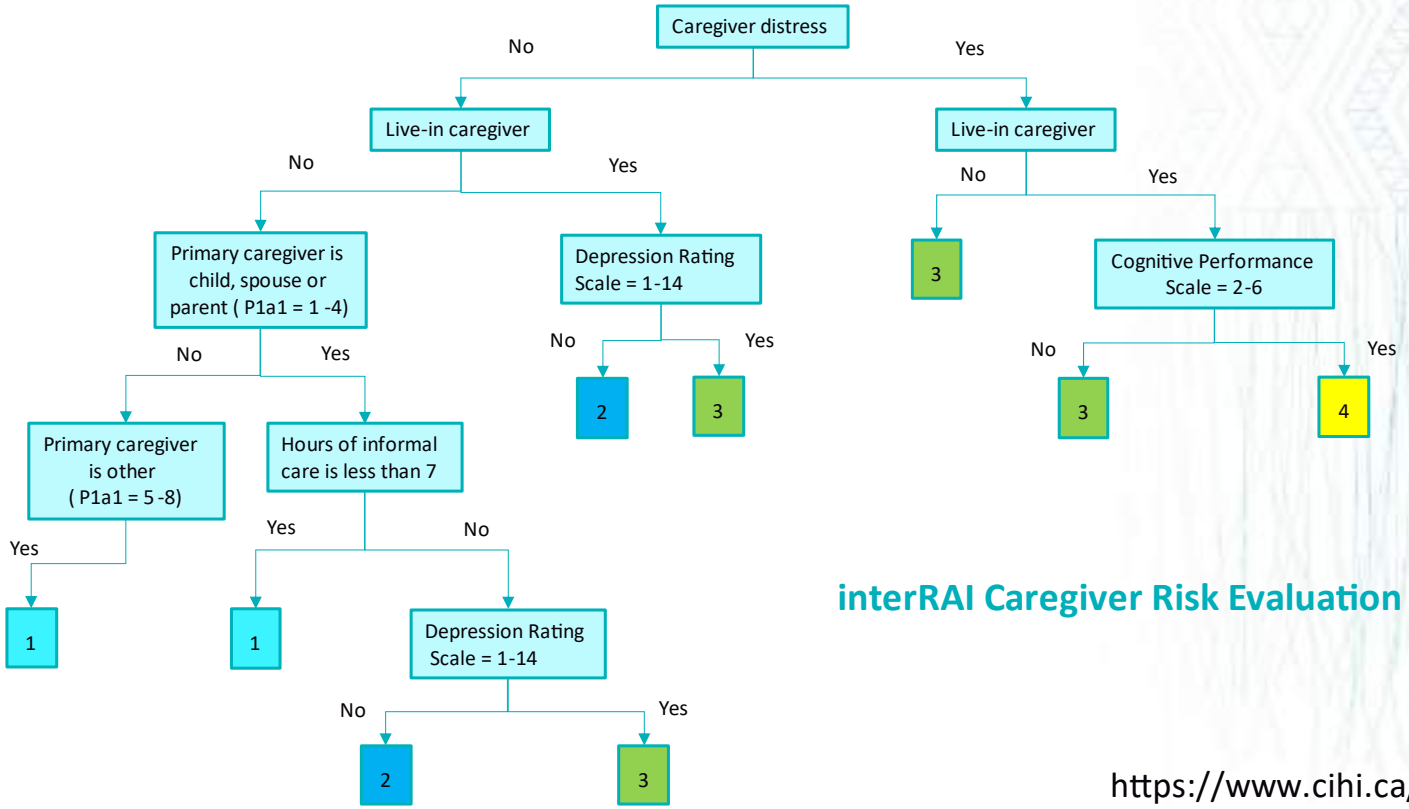
Higher scores indicate higher risk of experiencing caregiver burden[i].

Table 19 *Items that inform the CaRE Scale*

CaRE score	Description
1	Low Risk
2	Moderate Risk
3	High Risk
4	Very High Risk

Table 20 *Items that inform the CaRE Scale*

Assessment items		
HC	**PC**	**Description**
P1a1	O2a	Relationship to person (child, spouse or parent)
P1b1	O2b	Lives with person
P3	O3	Hours of informal care and active monitoring during last 3 days
P2b	O4c	Primary informal helper expresses feelings of distress, anger or depression
CPS		Cognitive Performance Scale
DRS		Depression Rating Scale



https://www.cihi.ca/sites/default/files/document/interrai-hc-care-job-aid-en.pdf

Figure 8 *interRAI Caregiver Risk Evaluation algorithm*

Changes in Health, End-stage disease and Signs and Symptoms Scale (CHESS)

(Note: the CHESS for Contact Assessment (CA) is found on page 120 Table 87)

The Changes in Health, End-Stage Disease and Signs and Symptoms (CHESS) scale was designed to identify people who are at risk of serious clinical instability and whose condition may decline. It is a useful outcome when the objective is to minimise problems related to decline in function or to identify people with unstable conditions.

The scale ranges from 0-5. **The higher scores are predictive of adverse outcomes such as mortality, hospitalisation, and caregiver stress**. The score is calculated by adding clinical indicators as follows:

- allocating one point each for the presence of these indicators — change in decision-making, change in ADL status and end-stage disease/estimated survival,
- allocating one point each for up to two clinical sign and symptom variables from a list of nine (Hirdes JP, 2003).

A CHESS score of 5 only occurs when the person and/or their family have been informed that the person has six or fewer months to live (CHA J10, HC J6c, LTCF J7c, PC A12a). However, there will be persons who have not had this specific conversation with a clinician. Therefore, when coupled with other scales and CAPs, you should consider that a CHESS of 4 or 5 may be a strong predictor of mortal risk.

Table 21 *Items that inform the CHESS*

Assessment items				
CHA	**HC**	**LTCF**	**PC**	**Description**
C2	C5	C5	F6	Change in decision making
G4	G6	G5	J5	Change in ADL status
J10	J6c	J6c	A12a	End-stage disease/estimated survival
Plus, one point for any two of these items				
J2j	J2n	J2n	C5h	Vomiting
J9i	J2u	J2u	C5s	Peripheral oedema
J3	J3	J3	C2	Dyspnoea
K1a	K2a	K2a	D2a	Weight loss
K1c	K2c	K2c	D2e	Fluid intake
K1b	K2b	K2b	D2d	Dehydrated
K1f	K2f	K2f	D2b	One or fewer meals a day
K1e	K2e	K2e	n/a	Decrease in food or fluid
K1d	K2d	K2d	D2f	Fluid output exceeds input

Table 22 *CHESS scale descriptions*

CHESS score	Description
0	No symptoms
1	Minimal health instability
2	Low health instability
3	Moderate health instability
4	High health instability
5	Highest level of instability

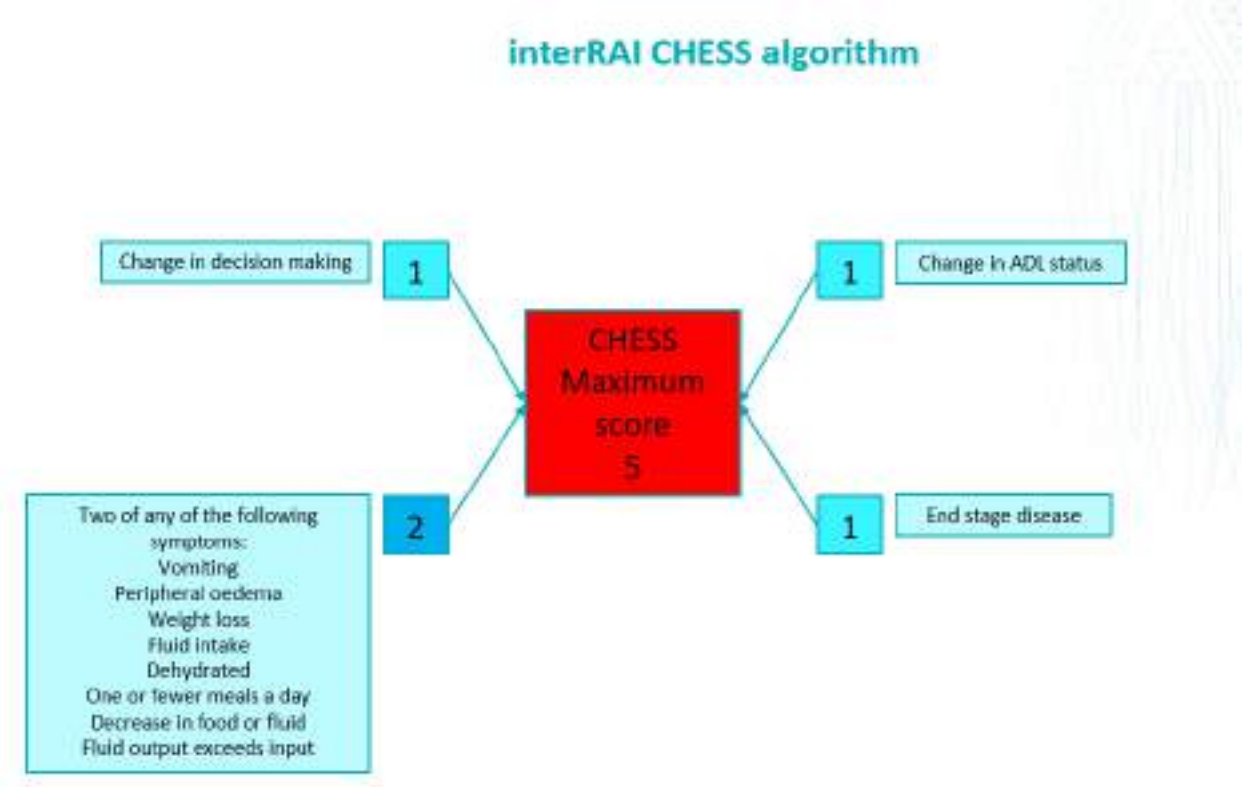


Figure 9 *CHESS algorithm*

Cognitive Performance Scale (CPS)

This scale has a range of 0 to 6 that measures a person's cognitive performance. A person's CPS score can be an important indicator of risk when planning care and can be a predictive indicator, depending on aetiology.

A higher score indicates worsening cognitive function and is related to the Cognition CAP no longer triggering.

Table 23 *Items that inform the Cognitive Performance scale.*

Assessment items				
CHA	**HC**	**LTCF**	**PC**	**Description**
FS1	C1	C1	F1	Daily decision making
C1a	C2a	C2a	F3a	Short term memory
D1	D1	D1	G1	Making self-understood
G6d	G2j	G1j	J2h	Eating performance

To calculate a person's score on the CPS the scale uses the process illustrated here.

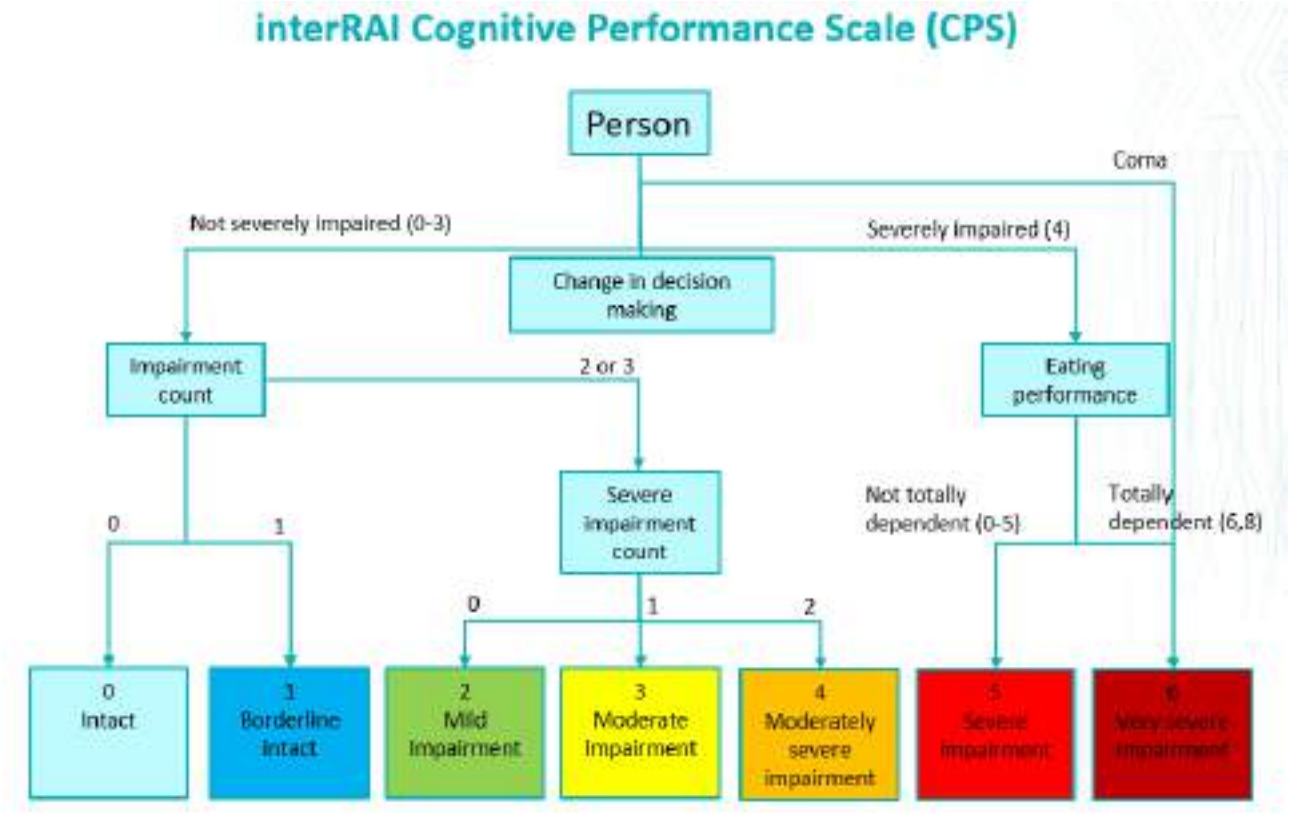


Figure 10 *Cognitive Performance scale*

When the CPS was developed it was cross validated against two other cognitive assessments used in New Zealand and internationally.

Table 24 *CPS and MMSE comparison*

CPS score	CPS score description	Mini Mental State Examination Approximate equivalent score	Modified Mini Mental State Examination approximate equivalent score
0	Intact	25	83
1	Borderline intact	22	73
2	Mild impairment	20	63
3	Moderate impairment	15	50
4	Moderately severe impairment	7	23
5	Severe impairment	5	17
6	Very severe impairment	1	3

Cognitive Performance Scale 2 (CPS2)

The CPS2 scales has a range of 0-8 and is a more sensitive measure than the CPS. It can detect changes particularly in early stages of cognitive decline. Scores for walking, managing finances and medications acknowledge additional challenges for a person living in the community with cognitive loss. The CPS2 is therefore useful for detecting early cognitive changes that, if left unchecked, could negatively impact a person's quality oof life and independence. It may also provide an early opportunity to review a person's clinical presentation and address any reversible conditions.

A higher score indicates worsening cognitive function.

Table 25 *Items that inform the Cognitive Performance scale 2.*

Assessment items			
CHA	**HC**	**Description**	**Items used in CPS**
FS1	C1	Daily decision making	Yes
C1a	C2a	Short term memory	Yes
D1	D1	Making self-understood	Yes
G1cb	G1cb	Managing finance (capacity)	No
G1db	G1db	Managing medications (capacity)	No
G2b	G2e	Walking	No

The CPS2 ranges from 0 to 8: a higher score indicates more severe cognitive decline.

Table 26 *CPS2 scale descriptions*

CPS2 score	Description
0	Intact 1
1	Intact 2
2	Borderline intact 1
3	Borderline intact 2
4	Moderate impairment 1
5	Moderate impairment 2
6	Severe impairment 1
7	Severe impairment 2
8	Very severe impairment

The CPS2 has been validated using external measures of self-reported dementia, ADL and IADL functional problems, living status and five measures of distress. The items on the Minimum Data Set (MDS) that indicate personal distress:

- Presence of unrealistic fears (E1c)
- Feeling of ill at ease with others (F2a in LTCF)
- Verbally abusive (E3b)
- Socially inappropriate behaviour (E3d)
- Wandering (E3a)

These items are largely not present for CPS2 score of 0-3; increase with increasing CPS2 scores until a noted drop with CPS2 score of 8.

The feeling of ill at ease with others continues to increase as CPS2 score increases. Unrealistic fears and mental discomfort are often displayed as comprehension impairments occur. Older/vulnerable adults with severe or very severe cognitive impairment are least likely to live alone. Increase dependence with IADL and ADL items correspond to increased CPS2 scores.

Communication Scale (CS)

The Communication Scale is a simple method to assess a person's communication abilities. It uses two MDS assessment items.

The ability to make oneself understood and understand others is not restricted to verbal communication, but measures comprehension of information communicated through speaking, reading, sign language, braille, or gesture.

The Communication Scale ranges from 0 to 8. **If a person scores 6 or more on the Communication Scale, their ability to process language is severely impaired.**

Table 27 *Items that inform the Communication scale.*

Assessment items	
CHA, HC and LTCF	**Description**
D1	Making self-understood
D2	Ability to understand others

Table 28 *Communication scale descriptions*

CS score	Description
0	Intact
1	Borderline intact
2	Mild impairment
3	Mild/moderate impairment
4	Moderate impairment
5	Moderate/severe impairment
6	Severe impairment
7	Severe/very severe impairment
8	Very severe impairment

Composite Mood Scale (CMS)

Mood disturbance in older adults can severely impact their day to day lives, worsening the experience of other clinical issues and negatively impacting socialisation. Other factors such as poverty, deprivation homelessness, loss of cultural connection and position can contribute to a loss of self-worth, anhedonia (the absence of pleasure from life) and poor health outcomes. Restorative care planning is very difficult to achieve if mood issues are not identified and addressed.

The interRAI mood scales provide reliable and valid mental health measures that can be applied across diverse populations and care settings. Incorporating a person-centred approach to assessment, the composite scale considers the person's perspective and clinician views to provide a sensitive and robust measure that considers mood disturbances related to dysphoria, anxiety, and anhedonia. (Hirdes J.P., May 2022)

Table 29 *Items that inform the Composite Mood Scale*

Assessment items	
HC	**Description**
E1e	Repetitive anxious complaints/concerns (non-health related)
E1f	Sad, pained or worried facial expressions
E1i	Withdrawal from activities of interest
E1k	Expressions, including non-verbal, of lack of pleasure (anhedonia)
E2a	Self-report: Little interest or pleasure in things you normally enjoy
E2b	Self-report: Anxious, restless, or uneasy
E2c	Self-report: Sad, depressed or hopeless

Note: Self-reported mood can have a value of '8' where the person could not or would not respond. The scale can still be calculated using the mean of 2/3 items coded 0 -3. If more than one item is not coded the scale cannot be calculated.

The Clinician-rated scale (CRMS) is used when:

- The Clinician rated scale has a higher value,
- The Self-reported scale (SMS) has more than 1 item missing.

Table 30 *The Self-reported mood scale*

Self-Reported Mood	Possible scores
E2a	0-3
E2b	0-3
E2c	0-3
Total	0-9

Table 31 *Clinician-rated mood scale*

Clinician-rated Mood	Possible scores
E1e	0-3
E1f	0-3
E1i **or** Eik (highest value used to score)	0-3
Total	0-9

To calculate the Composite Mood Scale[ii], use the decision tree on the next page.

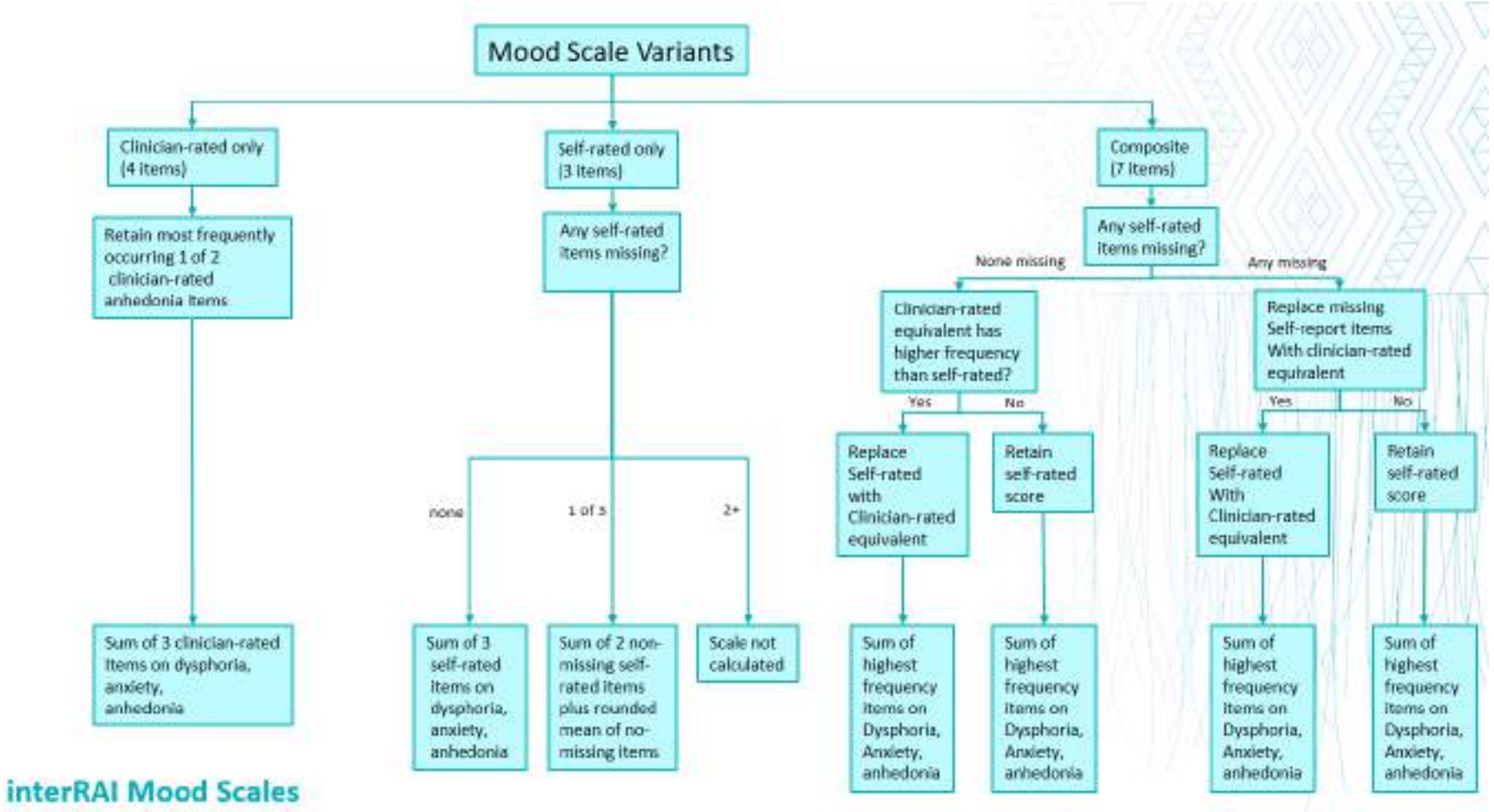


Figure 11 *interRAI Mood Scale*

Crisis Identification and Situational Improvement Strategies Scale (CRISIS)

The Crisis Identification and Situational Improvement Strategies (CRISIS) Scale categorises a person by their likelihood of being placed in a LTCF within 90 days of being assessed.

The algorithm for this scale uses a two-step process:

Drawing on attributes from the **CHA** or **HC Assessment** the person is categorised into one of seven distinct clinical categories:

- Abusive relationship CAP triggered
- ADLH Scale ≥ 4
- Wandering
- Behaviour, delusions, or hallucinations
- Daily decision-making ≥ 3
- ADLH Scale = 2 or 3
- ADLH Scale ≤ 1

Using the decision tree illustrated in Figure 12, the person is assigned a level of risk (between 1 and 5) that indicates their risk of being immediately placed in a long-term care facility.

After assessment, activities should include exploring reversibility of key factors that have informed a moderate to high score, as well as exploring the person's preferences, and those of their family or whānau, for ongoing care. **A high score indicates a great risk for the need of urgent placement.**

Table 32 *Items that inform the CRISIS scale.*

Assessment items		
CHA	**HC**	**Description**
FS1	C1	Cognitive skills for daily decision making
C5	C4	Acute change in mental status
E4a, E4b, E4c, E4d, E4f	E3a, E3b. E3c, E3d, E3f	Behaviour symptoms (wandering, verbal abuse, physical abuse, socially inappropriate or disruptive behaviour, or resists care)
F1e	F1e	Fearful of a family member or close acquaintance
F1f	F1f	Neglected, abused, or mistreated
J1a	J1a	Falls in last 30 days
J1b	J1b	Falls 31 to 90 days ago
J2e	J2h	Delusions
J2f	J2i	Hallucinations
J9h	J2t	Hygiene
P2b1	P1b1	Informal helper lives with person
P3a	P2a	Informal helper(s) is/are unable to continue in caring activities

P3b	P2b	Primary informal helper expresses feeling of distress, anger or depression
R2	R2	Overall self-sufficiency has changed significantly as compared to 90 days ago
ADLH	ADLH	Personal hygiene, mobility, toilet use, eating performance
DRS	DRS	DRS score ≥ 6

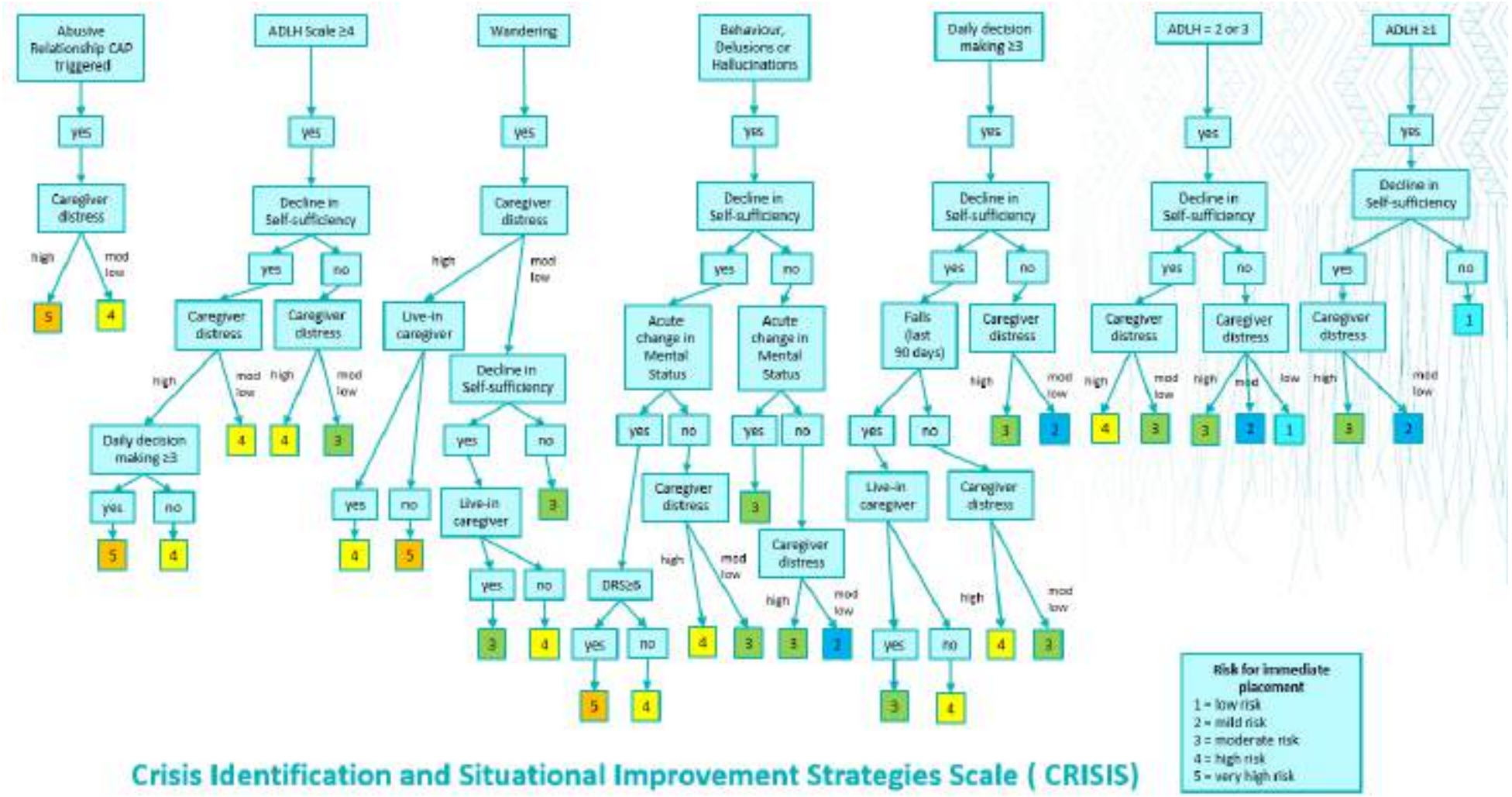


Figure 82 *Crisis Identification and Situational Improvement Strategies scale*

Deaf/Blind Severity Index (DBSI)

The Deaf/Bind Severity Index (DBSI) identifies people who may be adversely affected by dual sensory loss.

Dual sensory loss is similar to other illnesses (such as diabetes, depression, and Alzheimer's disease) but we have limited understanding of how it affects older /vulnerable adults. It is important to raise people's awareness of this unique disability, so that affected individuals receive the rehabilitation and support services they need to increase or maintain their independence and improve their quality of life. (Guthrie D. D.-S., 2016)

People with dual sensory loss (DBSI) are likely to be aged 85+, have a moderate/severe cognition impairment, have impairment in ADL function and have communication difficulties. If an older/vulnerable adult has a score of greater than 1 on the scale, consideration should be given to rehabilitation and support services to improve their independence and quality of life. These could include, for example, environmental alterations and/or the use of technology (Guthrie D. D.-S., 2016).

The DBSI uses two MDS assessment items to summarise a person's hearing and sight.

A score of 3 or higher indicates some level of dual sensory loss.

Table 33 *Items that inform the Deaf/Blind Severity Index*

Assessment items		
CHA and HC	**CMH**	**Description**
D3	I3	Hearing
D4	I4	Ability to see in adequate light

The Deaf/Blind Severity Index provides a simple summary of two senses. It assigns individuals to six easily understood ranked categories. A score of 3 or higher indicates some level of dual sensory loss.

Table 34 *Deaf/Blind Severity Index scale conversion and descriptions*

DBSI scale	Criterion	DSI definition
0	Hearing =0, Ability to see in adequate light = 0	Both senses intact
1	Hearing = 1,2 and Ability to see in adequate light =0 or Hearing = 0 and ability to see inadequate light = 1,2	One sense intact and the other mildly to moderately impaired
2	Hearing = 3,4 and Ability to see inadequate light = 0 or Hearing = 0 and Ability to see inadequate light = 3,4	One sense intact and the other severely impaired
3	Hearing = 1,2 and Ability to see in adequate light = 1,2	Both senses mildly to moderately impaired
4	Hearing = 3,4 and Ability to see in adequate light = 1,2 or	One sense mildly to moderately impaired and the other severely impaired

DBSI scale	Criterion	DSI definition
	Hearing = 1,2 and Ability to see in adequate light = 3,4	
5	Hearing = 3,4 and Ability to see in adequate light = 3,4	Both senses severely impaired or full loss

Depression Rating Scale (DRS)

Depression can significantly affect a person's quality of life. Among older adults, it is frequently under-diagnosed. The Depression Rating Scale (DRS) uses seven MDS assessment items to screen people for depression. A person's DRS score describes their mood during the three-day look-back period. It also considers a person's symptoms that are present but not exhibited during the observation period. The DRS is 'observer rated' (Martin L., 2008) which means it ignores the context or assumed cause of the behaviour.

Each assessment item used by the DRS is given a code of 0, 1 or 2 and then the seven items are totalled to give the person's DRS score.

The DRS ranges from 0 to 14: **the higher the score, the greater the likelihood that they will be clinically diagnosed as depressed within the next six months. A score of 3 or higher identifies that the person is at risk of clinical depression**. (Burrow, 2000)

Table 35 *Items that inform the Depression Rating scale.*

Assessment items		
CHA, HC and LTCF	**PC**	**Description**
E1a	H1a	Made negative statements
E1b	H1b	Persistent anger with self/others
E1c	H1c	Expression (including non-verbal) of what appear to be unrealistic fears
E1d	H1d	Repetitive health complaints
E1e	H1e	Repetitive anxious complaints/concerns (non-health related)
E1f	H1f	Sad, pained, or worried facial expressions
E1g	H1g	Crying, tearfulness

This scale is validated against the Hamilton Depression Scale, the Cornell Scale for Depression, and the Calgary Depression Scale (Burrows A. B., 2000).

Detection of Indicators and Vulnerabilities for Emergency Room Trips (DIVERT) Scale

The Detection of Indicators and Vulnerabilities for Emergency Room Trips (DIVERT) Scale is a validated scale that identifies the likelihood of emergency department use. Research shows the higher the score the greater the likelihood of ED presentation within six months of assessment. The table below lists the MDS assessment items used in the DIVERT Scale.

Because it includes a 90 day look back item, over time it is useful for determining if interventions have reduced the person's risk of presenting at the emergency room.

The higher the score, the greater the risk that a person will use an emergency department within the next six months.

Table 36 *Items that inform the DIVERT scale.*

Assessment items		
CHA	**HC**	**Description**
G8b	G5b	Carer believes the person can improve
G4	G6	Change in ADL status
H2	H2	Urinary collection device
I1e	I1j	Stroke/CVA
I1f	I1k	Coronary Heart Disease (CHD)
I1h	I1m	Congestive Heart Failure (CHF)
I1g	I1i	Chronic Obstructive Pulmonary Diseases (COPD)
I3f	I1r	Pneumonia
I3g	I1s	Urinary tract infection in last 30 days
I1n	I1u	Diabetes Mellitus
J1a, J1b	J1a. J1b	Falls
K1a	K2a	Weight loss
K1e	K2e	Decrease in amount of food or fluid usually consumed
L3	L3	Other skin ulcer
N3e	N2e	Oxygen therapy
N2a	N4a	Overnight hospital stays
N2b	N4b	Emergency department visit
CAP 19	CAP19	Cardio-respiratory CAP
Outcome scale	Outcome Scale	Depression Rating Scale DRS

Table 37 *DIVERT scale descriptions.*

DIVERT scale score	Description
1	Lowest risk for future use of emergency department
6	Highest risk for future use of emergency department

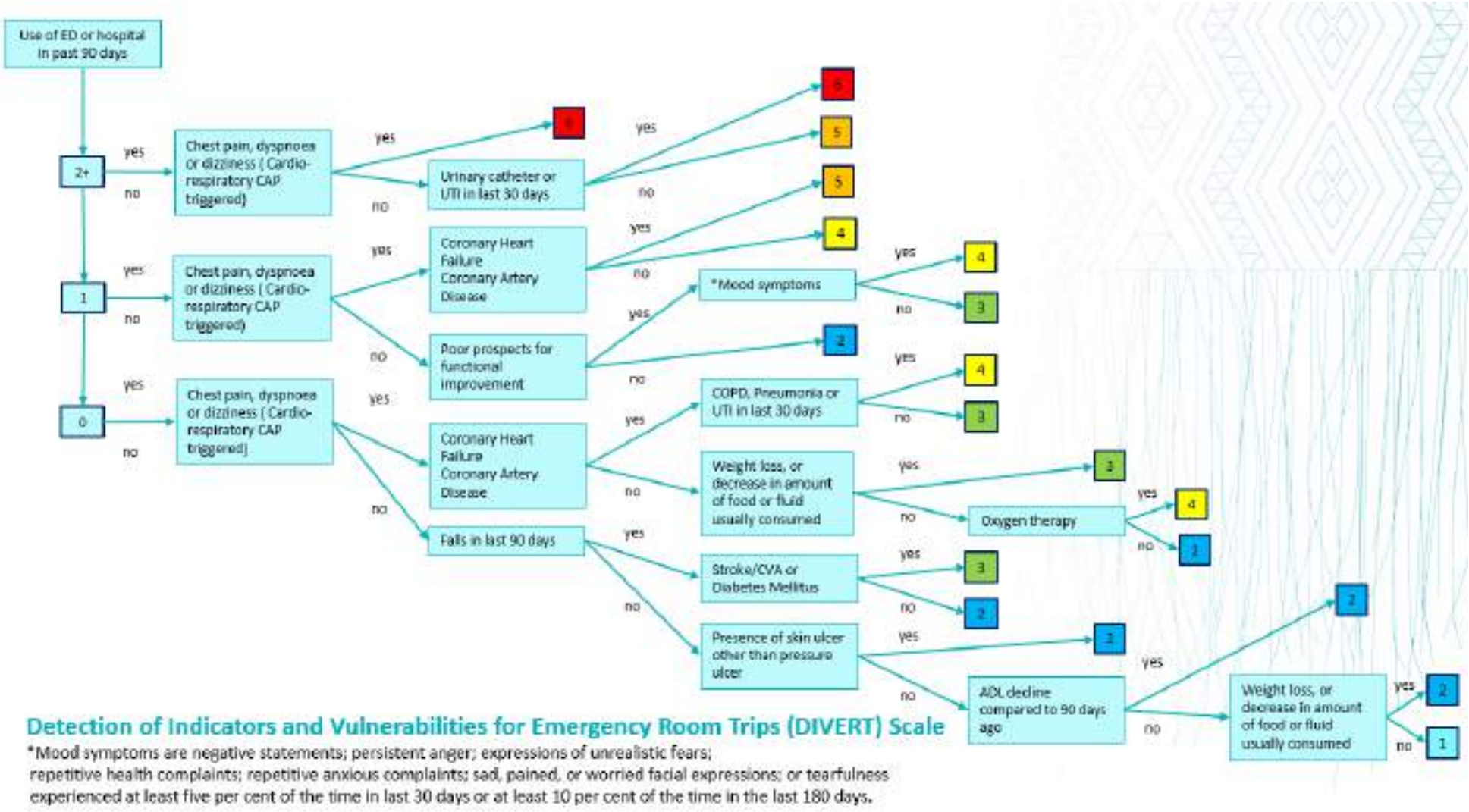


Figure 9 *Detection of Indicators and Vulnerabilities for Emergency Room Trips scale*

Falls

The score range here is 0-3 and is looking at falls in the last 90 days. With more recent falls having a higher weighting.

The higher the score, the higher the risk of another fall occurring.

Table 38 *Items that inform the Fall scale*

Assessment items	
PC	**Description**
C4a	Fall last 30 days
C4b	Fall 31-90 days ago

First Fall Risk Scale (FFRS)

Most aged related clinical assessment include a measurement of past falls to predict future falls risk. But prevention also requires an understanding of the risks for those who have not yet experienced a fall.

Identifying and intervening before the first fall may be an effective strategy for reducing the high personal and economic costs of falls among older adults. The first fall scale uses items from the assessment to predict future falls in persons who had not fallen in the past 90 days[iii].

Table 39 *Items that inform the First Fall scale*

Assessment items		
LTCF	**HC**	**Description**
Age	Age	(0-130)
A2	A2	Gender
n/a	G1da	Medication management
G1i	G2i	Bed mobility
G2	G3a	Primary mode of mobility
G5	G6	Change in ADL Status – Declined
H1	H1	Bladder Continence
I1h	I1h	Parkinson's Disease
J2d	J2d	Unsteady Gait
J6a	J6a	Conditions/disease make cognitive, ADL, mood or behaviour patterns unstable
Outcome Scale	Outcome Scale	Pain Scale
Outcome Scale	Outcome Scale	ADLH
Outcome Scale	Outcome Scale	CPS

The higher the score, the higher the risk for a fall occurring[iv]

Fracture Risk Scale (FRS)

The Fracture Risk Scale (FRS) identifies a person's risk of hip fractures within one year of being assessed. The FRS is different from existing fracture-risk-assessment tools. It does not use bone mineral density, and it includes fracture-risk factors that are relevant to people in LTCFs. To ensure the FRS was valid for LTCF residents and easily scalable, it was designed and validated using large population-based datasets that include routinely collected data from LTCFs. (Ioannidis G., 2017)

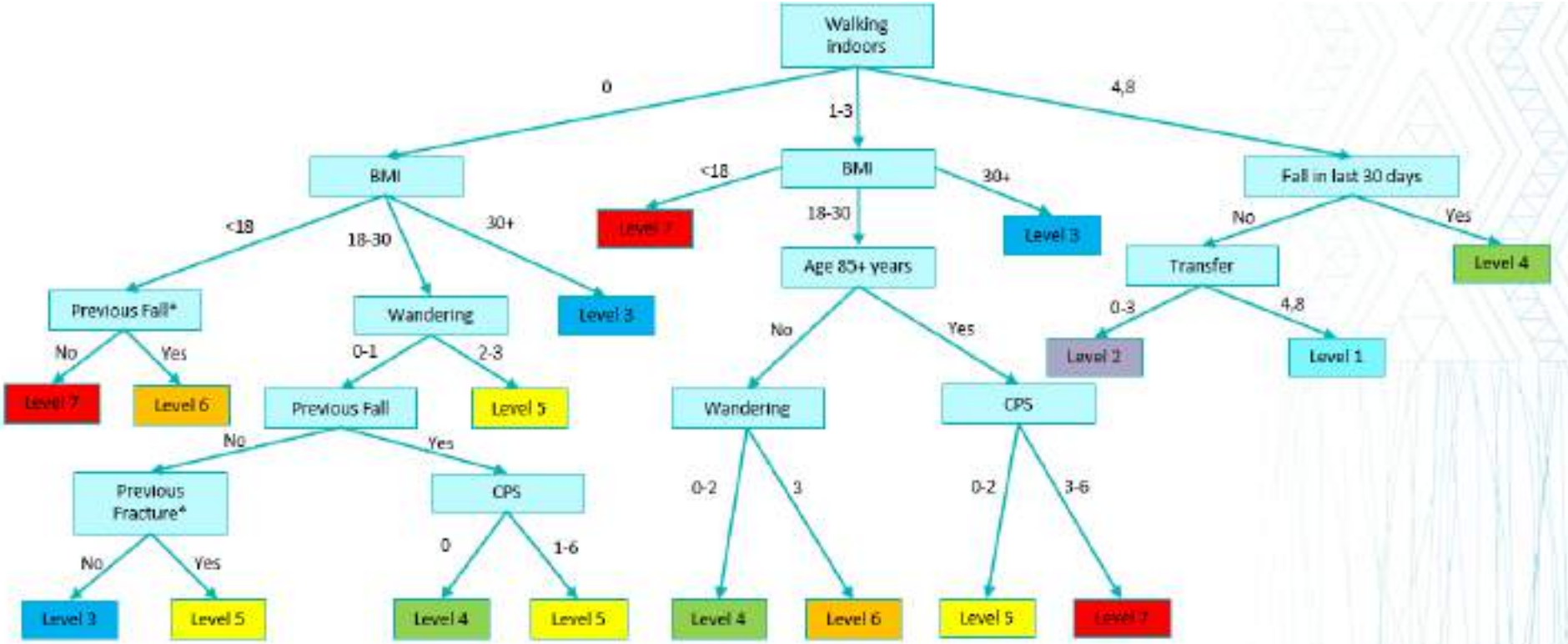
The FRS draws on the items listed in the table below. There are some variances in items drawn between the Home Care (HC) and the Long-Term Care Facilities (LTCF) assessments. These relate to the variation in factors often present in the respective settings that influence fracture risk.

Table 40 *Items that inform the Fracture Risk scale.*

Assessment items		
HC	**LTCF**	**Description**
A2	*n/a*	Gender
A3	A3	Age at assessment
E3a	E3a	Wandering
n/a	G1e	Walking
G2g	G1g	Transfer Toilet
G3a	*n/a*	Primary mode of mobility
I1a	I1a	Hip fracture
I1b	I1b	Other fracture
J1a	J1a	Falls in last 30 days
J1b	J1b	Falls 31 to 90 days ago
J2d	*n/a*	Unsteady gait
J8a	*n/a*	Tobacco Use
CPS	CPS	Cognitive Performance Scale
n/a	BMI	Body Mass Index

The FRS ranges from 1 to 8: **the higher the score, the higher the risk of a hip fracture**.

Both the HC and LTCF Fracture Risk scales use decision-tree analysis to determine a person's fracture risk (see Figure 12). The risk assessment process continues through the decision tree until it identifies a terminal risk level. Here are some examples in LTCF: A person can walk in a corridor independently (score = 0). Their BMI is more than 30. Their fracture risk level is 3. A person can walk in a corridor independently (score = 0). Their BMI is between 18 and 30. Their fracture risk depends on their history of wandering, falls and previous fractures, and on their cognitive performance, measured by their score on the CPS.



interRAI Fracture Risk Scale (FRS) Long Term Care Facilities Assessment

*Previous fall = any fall in the past 180 days
*Previous fracture = any hip or other fracture in the past 180 days

- BMI – Body Mass Index
- CPS - Cognitive Performance Scale

Figure 14 *Fracture Risk scale - LTCF*

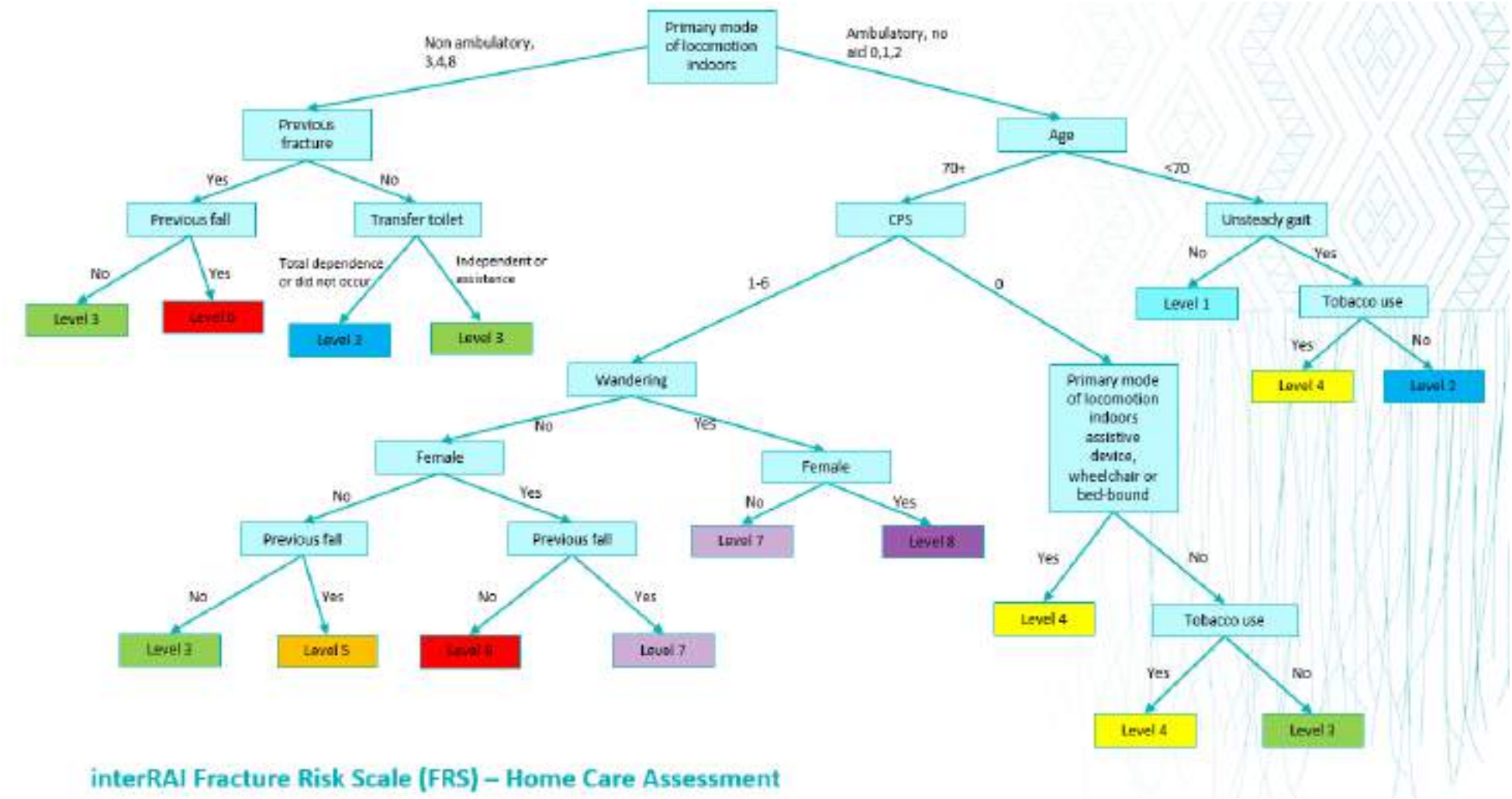


Figure 15 *Fracture Risk scale – HC*

Frailty Scale (FS)

The Frailty Scale provides a summary measure of personal characteristics impacting an individual's life course. Frailty in its early stages, may be reversible so early detection and intervention may prevent deterioration.

Because the interRAI Home Care assessment is a comprehensive geriatric assessment it provides measures to inform this scale including physical function, movement, cognition and communication, nutritional status, clinical symptoms, and diagnoses. The assessor and clinician therefore does not need to complete a separate assessment to determine this risk. There are 29 items that inform the scale.

In a 2016 study, approximately 3% of the home care clients had frailty scores between 15 and 23, indicating that with a high level of frailty, an individual would be less likely to remain at home. Conversely, the distribution of frailty scores clustered towards the lower end of the scale as one might expect given the overall health status of the sample was stable enough to reside in the community and receive support at home. The relationship between the frailty scores and weekly hours of care required further validates the measure. Notably, weekly formal care hours gradually increase with higher frailty scores. In contrast, the weekly informal care hours increase sharply with rising frailty scores. This outcome calls attention to the need to further examine the roles and responsibilities of the informal caregiver as well as the support available to assist these often unacknowledged and 'unofficial' health care providers. The increasing proportion of informal caregivers reporting an inability to continue with care activities provides a further imperative to address the needs of this group[v].

Table 41 *Items that inform the Frailty scale.*

Assessment items	
HC	**Description**
C1	Cognitive skills for daily decision making
D2	Ability to understand others
E1i	Withdrawal from activities of interest
E1j	Reduced social interactions
F3	Change in Social Activities in last 90 days
G1aa	Meal preparation
G1ba	Ordinary housework
G1ca	Managing finances
G1da	Managing medications
G1ea	Phone use
G1fa	Stairs
G2b	Personal hygiene
G2f	Locomotion/Mobility
G2g	Transfer toilet
G2h	Toilet use
G4a	Total hours of exercise or physical activity in last 3 days

Assessment items	
HC	**Description**
H3	Bowel continence
I1d	Dementia other than Alzheimer's Disease
I1l	Chronic Obstructive Pulmonary Disease
I1m	Congestive Heart Failure
I1r	Pneumonia
I1s	Urinary tract infection in last 30 days
J1a	Falls in last 30 days
J1b	Falls 31 – 90 days ago
J1c	Falls 91 – 180 days ago
J2c	Dizziness
K2a	Weight loss of 5% or more in last 30 days or 10% or more in last 180 days
K2e#	Decrease in amount of food or fluid usually consumed

Known issues with this scale for review by interRAI Software Services:

#Note: in the software K2e is replaced by icode K2f but description matches K2e in the screen report of this algorithm.

*Note: the algorithm converts to a binary scale of 0-1. The degree of frailty measured is found by opening the scale in the software to see how many items triggered of the 29 possible.

Functional Hierarchy Scale (FHS)

As a person ages, they accumulate physical, cognitive, and clinical problems and the pattern of loss follows a distinct progression. Supports are generally required with IADLs initially then with performing ADLs as decline progresses.

The Functional Hierarchy Scale (FHS) has a range of 0-11 and considers and combines both the IADL Hierarchy Capacity (IADLCHS) and the ADL Hierarchy (ADLH) scales. When the FHS is used throughout the health continuum, it allows an individual to be monitored from relative independence through to episodes of care.

The higher the score, the higher the person's dependence on others for all daily activities.

Table 42 *Functional Hierarchy scale algorithms*

FHS score	Description	Outcome Scale scores CHA, HC and PC
0	No issues	ADLH = 0 **and** IADLCHS = 0
1	IADL early 1	ADLH =0 **and** IADLCHS = 1 **or** ADLH = 1 **and** IADLCHS = 0 or 1
2	IADL early 2	ADLH = 0, 1 **and** IADLCHS = 2 **or** ADLH = 2 **and** IADLCHS = 0 or 1
3	Some IADL mid 1	ADLH = 0 and IADLCHS = 3 or 4
4	IADL mid 1	IADL Hierarchy = 5 and ADLH = 0

5	IADL dependent	ADLH = 1 **and** IADL Capacity Hierarchy = 3, 4, or 5 **or** ADLH = 0 **and** IADL Capacity Hierarchy =6
6	IADL-ADL Trans 1	ADLH = 2 **and** IADL Capacity Hierarchy = 2,3,4 or 5
7	IADL-ADL Trans 2	ADLH = 1,2 **and** IADL Capacity Hierarchy = 6
8	Early ADL	ADLH =3
9	1 mid-late ADL	ADLH = 4
10	2 mid-late ADL	ADLH = 5
11	ADL dependent	ADLH = 6

Instrumental Activities of Daily Living Capacity Hierarchy Scale (IADLCHS)

The Instrumental Activities of Daily Living Capacity Hierarchy Scale (IADLCHS) uses five IADL items. Similar to the ADLH Scale, it identifies daily living activities that people find too difficult to perform at the early, mid, and late stages of the disablement process. However, the pattern of losing IADL function, relative to a person's capacity, is less distinct than it is for losing ADLH function.

Table 43 *Items that inform the IADL Capacity Hierarchy scale.*

Assessment items		
CHA and HC	**Description**	**Stage where function is typically lost**
G1bb	Ordinary housework	Early loss
G1ab	Meal preparation	Early loss
G1gb	Shopping	Mid loss
G1cb	Managing finances	Late loss
G1db	Managing medications	Late loss

The IADLCHS Scale ranges from 0 to 6: **the higher the score, the greater dependence a person has on others for IADLs.**

Table 44 *IADL Capacity Hierarchy scale descriptions*

IADLCHS score	**Description**
0	No difficulty
1	Some difficulties with one item
2	Some difficulties with two or three items
3	Some difficulties with four or more items
4	Some dependence
5	Most dependence
6	All dependence

Instrumental Activities of Daily Living Performance Hierarchy Scale (IADLPHS)

The Instrumental Activities of Daily Living Performance Hierarchy Scale (IADLPHS) uses three items in the PC Assessment. It measures the person's actual performance of self-care IADL that are core activities for a person living at home in the community.

There is an important difference between the IADLCHS and the IADLPHS. The IADLCHS assesses the person's capacity to perform IADL; the IADLPHS assesses the person's actual performance of IADL during the observation period.

A person's IADLPHS score provides a measure of their dependency on others, which is helpful for people who live in the community. However, people who live in LTCF will always score 6, which means 'Total dependence'. Assessors are asked to code the three IADL items as 'Activity did not occur', because people in LTCF are not given the opportunity to perform these tasks independently in a residential setting.

Table 45 *Items that inform the IADL Performance Hierarchy scale*

Assessment items	
PC	**Description**
J1a	Meal preparation - performance
J1b	Housework - performance
J1c	Managing medications - performance

Table 46 *IADL Performance Hierarchy scale descriptions*

IADLPHS score	Description
0	Ok no difficulties
1	Some difficulties - 1
2	Some difficulties 2-3
3	Some difficulties 4 plus
4	Some dependence
5	Most dependence
6	All dependence

Method for Assigning Priority Levels (MAPLe)

The Method for Assigning Priority Levels (MAPLe) Version 1.6 classifies people based on their risk of experiencing adverse outcomes and the urgency to support them or review their current living situation. It also helps identify carer distress (research shows that higher MAPLe scores are a strong predictor of caregiver stress) and the risk that the person may need to be placed in a residential care facility. The table below lists the MDS assessment items used by the MAPLe.

The higher the score, the higher the priority for care.

Table 47 *Items that inform the MAPLe scale.*

Assessment items		
CHA	**HC**	**Description**
B4a	B4a	Residential history in the last five years – residential care facility
FS1	C1	Cognitive skills for daily decision making
C5	C4	Acute change in mental status from a person's usual functioning (delirium)
C2	C5	Change in decision-making compared to 90 days ago
E4a	E3a	Behaviour symptoms - wandering
E4b	E3b	Behaviour symptoms – verbal abuse
E4c	E3c	Behaviour symptoms – physical abuse
E2d	E3d	Behaviour symptoms – socially inappropriate or disruptive behaviours
E4d	E3e	Behaviour symptoms – inappropriate public sexual behaviour or public disrobing
E4f	E3f	Behaviour symptoms – resists care
G1aa	G1aa	Meal preparation - performance
G1ab	G1ab	Meal preparation - capacity
G1bb	G1bb	Ordinary housework - capacity
G1db	G1db	Managing medications - capacity
G1ga	G1ga	Shopping - performance
G1hb	G1hb	Transportation - capacity
FS2a	G2a	Bathing - performance
FS2b	G2b	Personal hygiene - performance
G2a	G2c	Dressing upper body - performance
FS2c	G2d	Dressing lower body - performance
G3a	G4a	Total hours of exercise or physical activity in the last three days
G3b	G4b	Number of days went out of the place where resides in last three days
H1	H1	Bladder continence

Assessment items		
CHA	**HC**	**Description**
I1c	I1c	Alzheimer's Disease
I1d	I1d	Dementia other than Alzheimer's Disease
I3b	I1f	Multiple Sclerosis
J1a	J1a	Falls in last 30 days
J1b	J1b	Falls 31 to 90 days ago
K1f	K2f	Ate one of fewer meals on at least two of the last three days
K3	K3	Mode of nutritional intake
L1	L1	Most severe pressure ulcer
Q2a	Q1a	Disrepair of the home
Q2b	Q1b	Squalid condition
Q2c	Q1c	Inadequate heating or cooling
Q2d	Q1d	Lack of personal safety
Q2e	Q1e	Limited access to home or rooms in home
R2	R2	Overall self-sufficiency has changed significantly compared with 90 days ago
ADLH Scale	ADLH Scale	Personal hygiene, mobility, toilet use, eating
CPS	CPS	Daily decision-making, short-term memory, making self understood, eating performance
Geriatric screener	Geriatric screener	See table below
Institutional Risk CAP count	Institutional Risk CAP count	Residential history, acute change in mental status, meal performance, shopping performance, bathing, personal hygiene, dressing upper body, number of days went outdoors, bladder continence, Alzheimer's disease, other dementia, Multiple sclerosis, change in self-sufficiency

The MAPLe draws on the Geriatric Screener, which uses seven items from the CHA and HC assessments.

Table 48 *Geriatric Screener*

Assessment items			
CHA	**HC**	**Description**	**Coding values**
FS1	C1	Daily decision-making	0-5
G1ab	G1ab	Meal preparation - capacity	0-8
G1bb	G1bb	Housework - capacity	0-8
G1hb	G1hb	Transportation - capacity	0-8

FS2a	G2a	Bathing - performance	0-8
FS2b	G2b	Hygiene - performance	0-8
G3a	G4a	Hours' exercise	0-4

The MAPLe uses a decision tree (see Figure 16) to allocate a score between 1 and 5: the higher the score, the higher the priority for care. The scores are based on a person's ability to perform ADL, their cognitive ability, wandering, behaviour and the outcome of the Institutional Risk CAP. A person in the lowest priority level has no major functional, cognitive, behavioural, or environmental problems; they are considered self-reliant.

Table 49 *MAPLe scale descriptions*

MAPLe score	Description
1	Low priority: no service or light home care services required
2	Mild priority: personal care and home care services required
3	Moderate priority: range of home care services required
4	High priority: risk of adverse outcomes; may need respite (such as respite at home, residential respite, or a day programme) due to reliance on an informal helper
5	Very high priority: 24-hour care or residential respite required

Without any intervention, older adults with a high MAPLe score are nearly nine times more likely to be admitted to aged residential care than those with a low score.

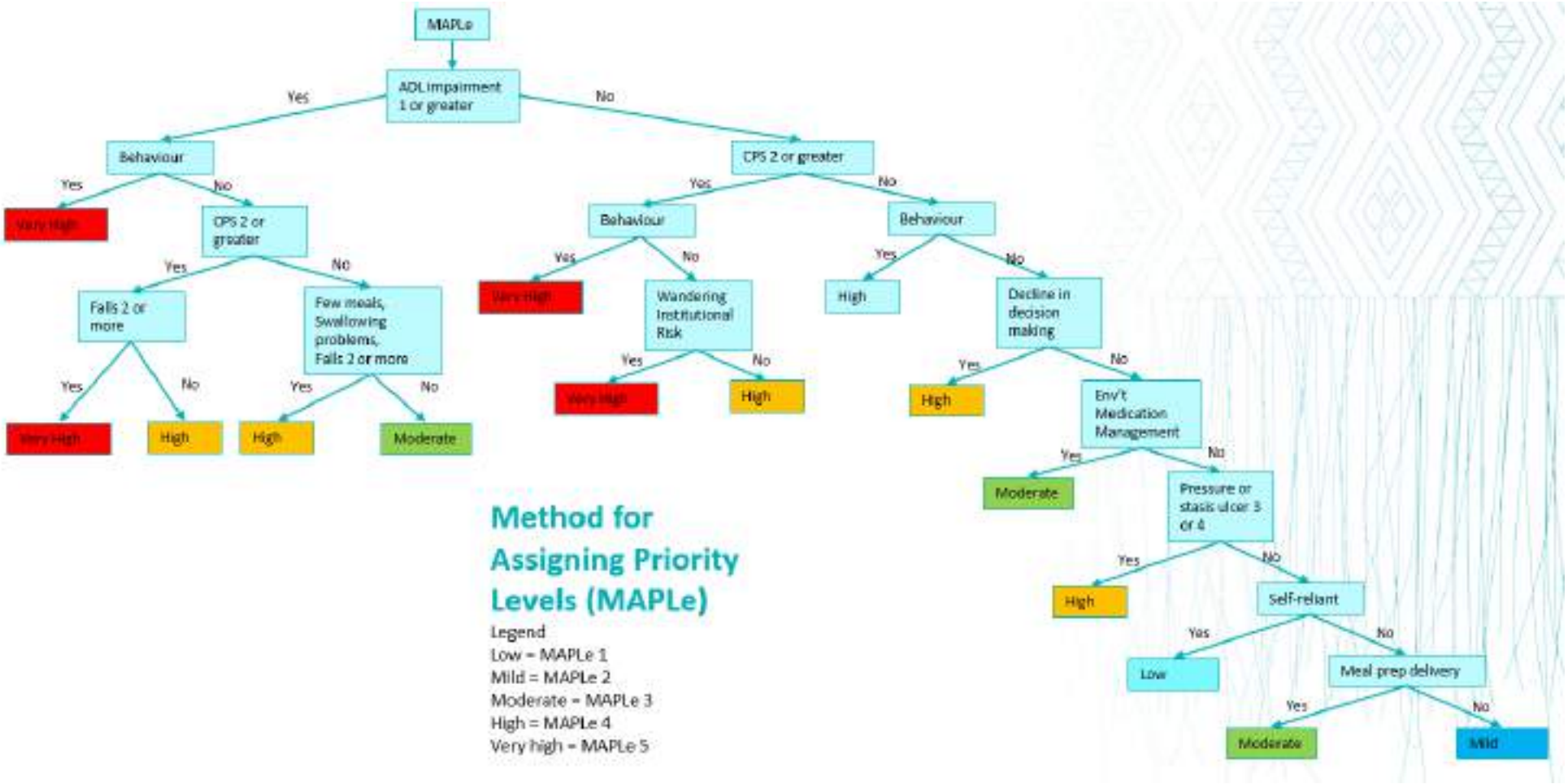


Figure 10 *MAPLe scale*

Pain Scale (PS)

The Pain Scale uses MDS assessment items pain frequency and pain intensity. The Pain Scale is validated against the Visual Analogue Scale. (Fries B. E. S. S., 2001)

The higher the score, the higher the person's level of pain

Table 50 *Items that inform the Pain Scale*

Assessment items			
CHA and HC	**LTCF**	**PC**	**Description**
J5a	J5a	C1a	Pain frequency
J5b	J5b	C1b	Pain intensity

Table 51 *Pain scale description*

Pain score	Description
0	No pain
1	Less than daily pain
2	Daily pain but not severe
3	Daily severe pain
4	Daily excruciating pain

The Pain Scale uses a decision tree (see Figure 17) to allocate a score between 0 and 4: the higher the score, the higher the person's level of pain. (Fries B.e., 2001)

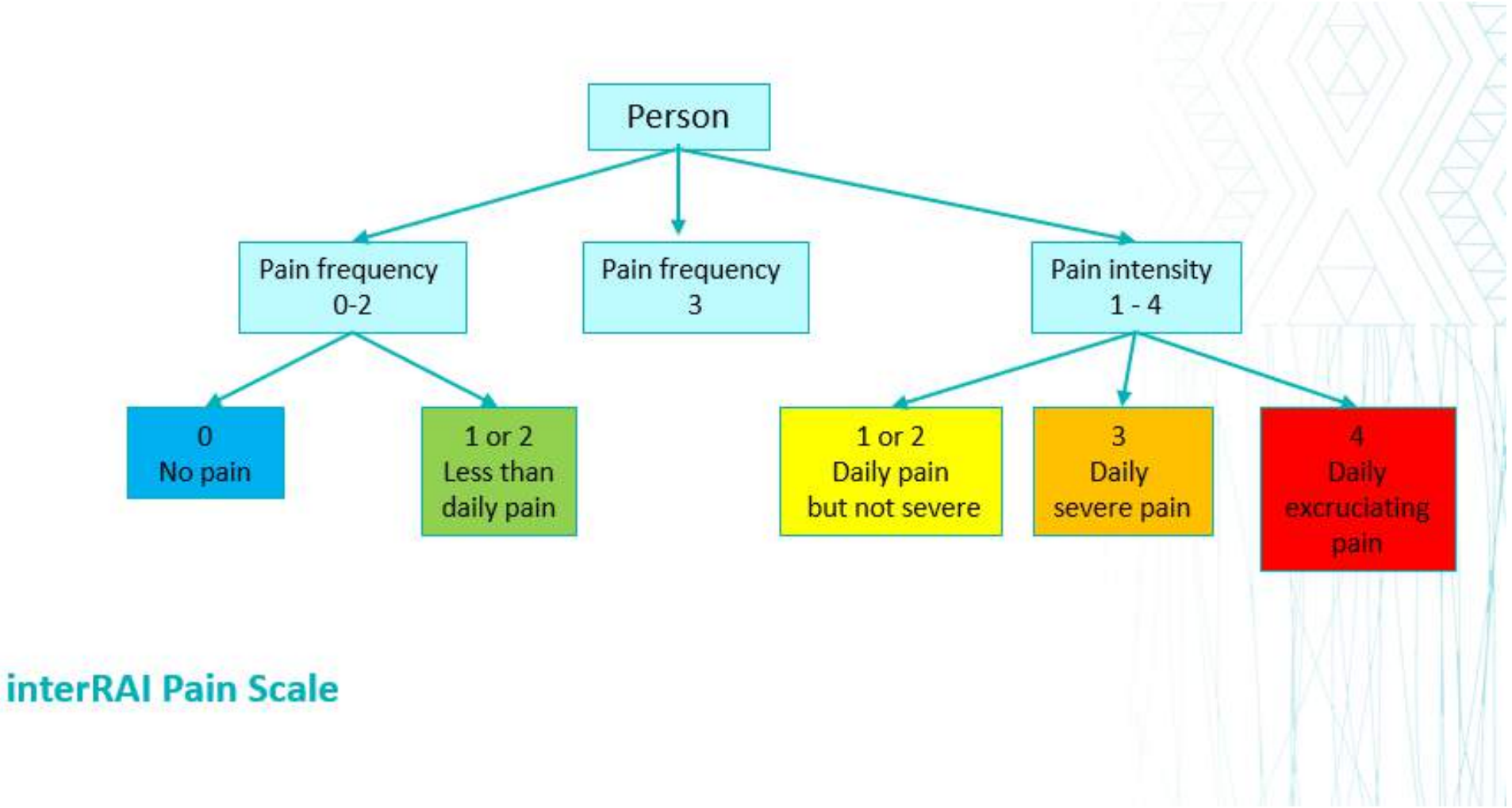


Figure 117 *Pain scale*

Personal Support Algorithm (PSA) Scale

The Personal Support Algorithm (PSA) Scale is designed to help make decisions about how to prioritise community-based support and how to allocate resources. The table below lists the MDS assessment items used in the PSA Scale.

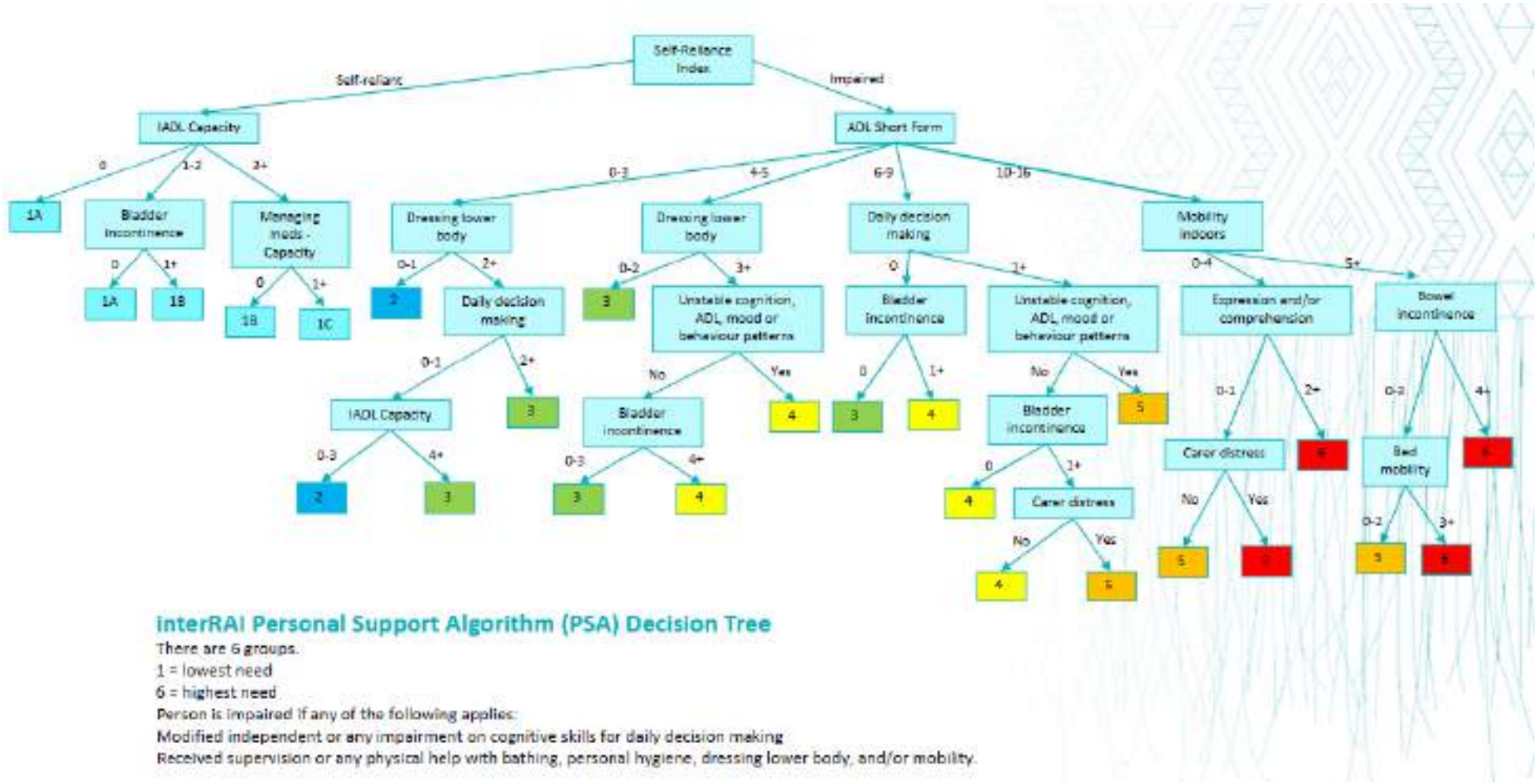
The PS Scale uses a decision tree (see Figure 18) to allocate a score between 1 and 6: the higher the score, the greater a person's need for personal support. A person's score on the PSA Scale informs what personal support they are allocated.

Research has found that, regardless of which MDS assessment items are used, everyone who falls into the same score group (1 to 6) needs similar support services.

The higher the score, the greater a person's need for personal support.

Table 52 *Items that inform the Personal Support scale.*

Assessment items		
CHA	**HC**	**Description**
FS1	C1	Cognitive skills for daily decision making
D1	D1	Making self-understood
D2	D2	Ability to understand others
G1ab	G1ab	Meal preparation – capacity
G1bb	G1bb	Ordinary housework - capacity
G1db	G1db	Managing medications – capacity
G1eb	G1eb	Phone use - capacity
FS2a	G2a	Bathing
FS2b	G2b	Personal hygiene
FS2c	G2d	Dressing lower body
G2c	G2f	Mobility
G6c	G2i	Bed mobility
H1	H1	Bladder continence
H3	H3	Bowel continence
J6a	J6a	Conditions/diseases make cognitive, ADL, mood, or behaviour patterns unstable
P3b	P2b	Primary informal helper expresses feelings of distress, anger or depression
ADL Short form	ADL Short form	Personal hygiene, mobility, toilet use, eating. Scale 0 -6. Higher scores indicate greater difficulty performing activity.



interRAI Personal Support Algorithm (PSA) Decision Tree

There are 6 groups.

1 = lowest need

6 = highest need

Person is impaired if any of the following applies:

Modified independent or any impairment on cognitive skills for daily decision making

Received supervision or any physical help with bathing, personal hygiene, dressing lower body, and/or mobility.

Figure 128 *Personal Support Algorithm scale*

Pressure Ulcer Risk Scale (PURS)

The Pressure Ulcer Risk Scale (PURS) complements the Pressure Ulcer CAP. When the Pressure Ulcer CAP is triggered, the assessor should review the PURS, as using the scale can minimise the need for separate assessments of pressure-ulcer risks. The PURS has been validated against the Braden Scale for pressure-ulcer risk. (Poss J. M. K.-T., 2010)

The coding of pressure ulcers aligns also to the described pressure injury domains developed by the Pressure Injury Advisory Group PIAG) of NZ enabling interRAI results to accurately align to guidelines for nurses in NZ.

Table 53 *Items that inform the Pressure Ulcer Risk Scale.*

Assessment items				
CHA assessment	**HC assessment**	**LTCF assessment**	**PC assessment**	**Description**
G2b	G2e	G1e	J2c	Walking performance
G6c	G2i	G1i	J2g	Bed mobility performance
H3	H3	H3	K3	Bowel continence
J3	J3	J3	C2	Dyspnoea
J5a	J5a	J5a	C1a	Pain frequency
K1a	K2a	K2a	D2a	Weight loss
L2	L2	L2	E2	Prior pressure ulcer

The PURS allocates scores between 0 and 8: **the higher the score, the greater their risk of developing pressure injuries.**

Table 54 *Pressure Ulcer Risk scale descriptions*

PURS score	Pressure ulcer risk
0	Very low risk
1 or 2	Low risk
3	Moderate risk
4 or 5	High risk
6-8	Very high risk

Revised Index for Social Engagement (RISE)

Social engagement refers to a person's ability to take advantage of opportunities to interact socially and engage in life at home (Gerritsen D.L., 2008) It is an important part of the quality of life of long-term care residents. (Street D., 2007)

When a person is admitted into aged residential care adapting to a lot of other people and other activities can take time, so it is common to see low social engagement among people who have been recently admitted into aged residential care. The Revised Index for Social Engagement (RISE) increases staff capacity to measure a resident's social engagement, as it provides a reliable and valid scale that they can use, during daily clinical practice, with residents of all cognitive abilities. The table below shows the MDS assessment items used in the RISE. The next table shows how the scores are converted to create the scale. The RISE allocate scores between 0 and 6: the higher the score, the more socially engaged the resident is, which conversely makes it a positive indicator compared to other scales.

The higher the score, the more socially engaged the resident is.

Table 55 *Items that inform the Revised Index for Social Engagement*

Assessment items	
LTCF assessment	**Description**
F2a	At ease interacting with others
F2b	At ease doing planned or structured activities
F2c	Accepts invitations into most group activities
F2d	Pursues involvement in life or facility
F2e	Initiates interaction(s) with others
F2f	Reacts positively to interactions initiated by others

The RISE is different to other outcome measures because the scale is inverse: the higher the score the ***more*** socially engaged the resident is.

Table 56 *RISE conversion*

Item score	RISE Conversion
0 or 1	0
2 or 3	1

Self-Reliance Index (SRI)

The SRI uses five MDS assessment items to determine if a person is self-reliant or not self-reliant.

Table 57 *Items that inform the Self-Reliance Index scale.*

Assessment Items		
CHA	**HC**	**Description**
FS1	C1	Daily decision-making
FS2a	G2a	Bathing – performance
FS2b	G2b	Personal Hygiene – performance
FS2c	G2d	Dressing lower body - performance
G2c	G2f	Mobility - performance

The SRI classifies a person as 'Not self-reliant' if:

- FS1 is coded *1-5 = not independent or any impairment* ***OR***
- FS2a, FS2b, FS2c or G2c is coded 2-6*. Supervision or above physical assistance required*

Vulnerable Persons at Risk Scale (VPR)

The Vulnerable Persons at Risk (VPR) Scale identifies which people receiving home-based support most need support during emergencies and disasters. A person's VPR Scale score (0-2) is calculated using MDS assessment items that measure impairment, social isolation, and caregiver situation (Hirdes J.P. R. I., Unleashing the Power of interRAI Accountable and Sustainable Care, 2019)

Higher scores indicate higher vulnerability.

Table 58 *Items that inform the Vulnerable Persons at Risk scale.*

Assessment items		
CHA	**HC**	**Description**
A12a	A13a	Living arrangement
D4	D4	Vision
E1h	E1i	Withdrawal from activities of interest
E1i	E1j	Reduced social interactions
F4	F4	Time alone
G1ab	G1ab	Meal preparation - capacity
G1db	G1db	Managing medications - capacity
G2c	G2f	Mobility
G6a	G2g	Toilet transfer
G6b	G2h	Toilet use
FS3	G3a	Primary mode of locomotion indoors
N3b	N2b	Dialysis
N3e	N2e	Oxygen therapy

Assessment items		
CHA	**HC**	**Description**
P2b1	P1b	Lives with person
P3a	P2a	Informal helper is unable to continue in caring activities
P3b	P2b	Primary informal helper expresses feelings of distress, anger, or depression
ADLH Scale	ADLH Scale	Personal hygiene, mobility, toilet use, eating
CPS	CPS	Cognitive skills for daily decision making, short-term memory loss, making self-understood, eating performance
CHESS	CHESS	Change in decision making, change in ADL status, end-stage disease, vomiting, peripheral oedema, dyspnoea, weight loss, fluid intake, dehydrated, one or fewer meals a day, decrease in food or fluid, fluid output exceeds input

Disability Risk Scale (informing the VPR)

The Disability Risk Scale is a mini scale that draws on the items in the VPR Scale. The scale consists of five criteria which each score one point if they are fulfilled. The maximum possible Disability Risk Scale score is 5.

Table 59 *Items that inform the Disability Risk scale.*

Score	Disability Risk Scale criterion
1	CPS score ≥ 2
1	CHESS scale score ≥ 3
1	ADLH scale score is ≥ 3 **or** items G2c/G2f (Locomotion) **or** G6a/G2g (Toilet transfer) **or** G6b/G2h (Toilet use) are coded 3,4,5,6,8
1	Items G1ab (Meal preparation – capacity) **or** G1db (Managing medications – capacity) are ≥ 5
1	Item D4 (Vision) is ≥ 3
5	Maximum possible score

The VPR Scale uses the outcome of the Disability Risk Scale and a decision tree (see Figure 19) to allocate a score between 0 and 2: the higher the score, the more vulnerable a person is. (Hirdes J.P. R. I., Unleashing the Power of interRAI Accountable and Sustainable Care, 2019)

Table 60 *Vulnerable Persons scale algorithm conversion*

VPR scale Score	Criterion
0	Disability Risk Scale = 0
1	Disability Risk Scale ≥ 3
2	FS3/G3a (primary mode of locomotion indoors) = 2 or 3 **or** N4e/N2e (Oxygen therapy) = 1-3 **or** N4b (Dialysis) =1-3

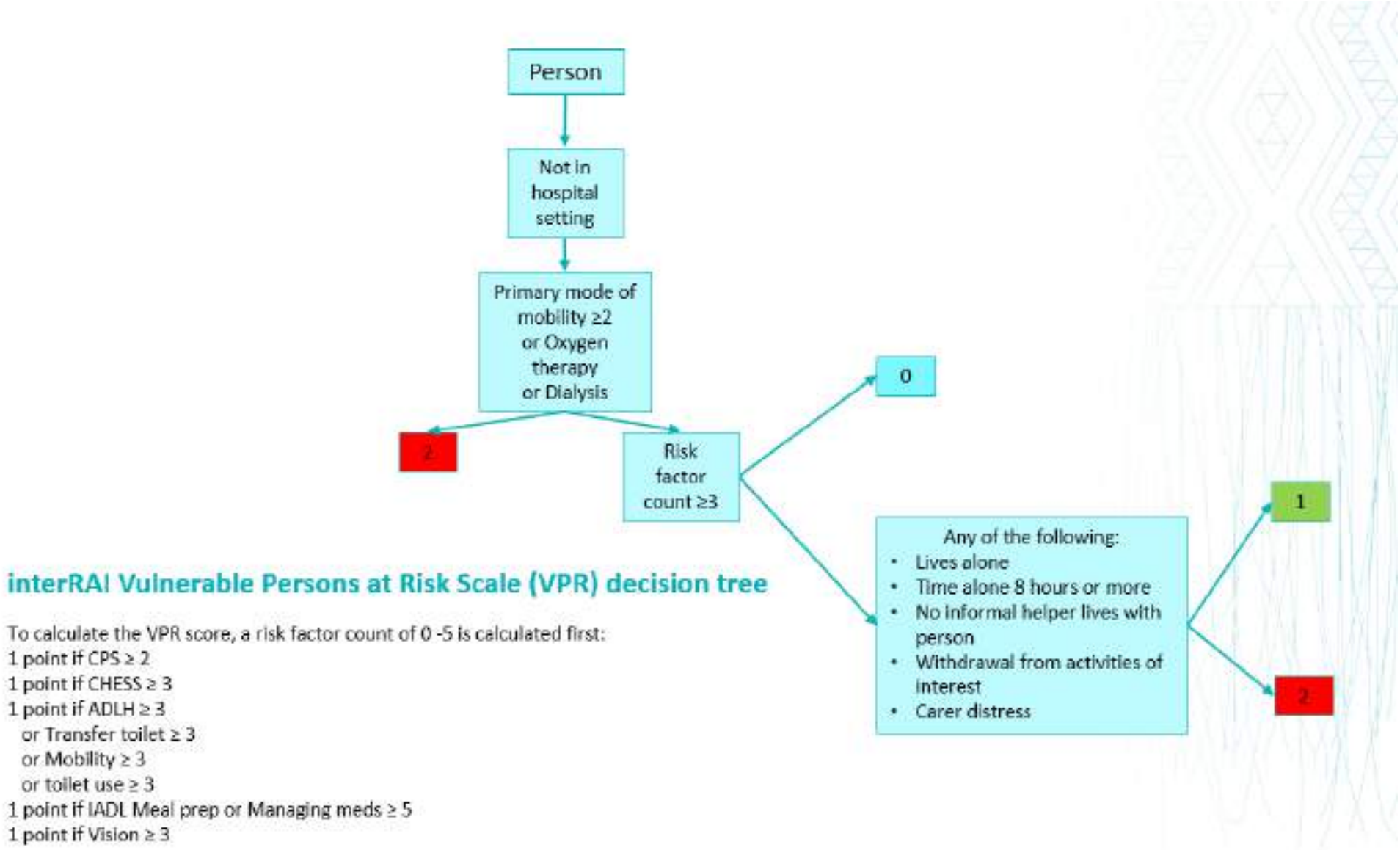


Figure 13 *Vulnerable Persons at Risk scale*

Understanding the AC Assessment Outputs

The interRAI Acute Care has been designed as a comprehensive and efficient system to assess functional and psychosocial needs of adult inpatients in acute care, thus addressing standards for quality inpatient care. This approach meets a set of challenging design criteria. The clinical observations and derivative applications have excellent psychometric properties. It is compatible with other interRAI systems designed for use across the hospital continuum of care and into the community. (Gray L. C., December 2018)

When an AC Assessment is coded, algorithms in the software use these assessment items to produce outputs. The outputs identify a person's potential problems, which may need to be included in their care plan. The problems identified at the admission assessment and discharge assessment may vary, reflecting what actions a person needs during their acute stay and what they need after being discharged. On completion of the person's admission assessment, the AC assessment currently produces eight functional outcome scales, four geriatric screeners and three risks for adverse outcomes. The discharge assessment updates seven of the outcome scales and three of the geriatric screeners.

Geriatric Screeners and Risks of Adverse Outcomes are listed under CAPs in the software but differ from CAPs found in other assessment instruments.

Table 61 *Outcome Scales found in the AC Assessment and other assessment instruments.*

	Assessment					
Outcome scale	**AC**	**CA**	**CHA**	**HC**	**LTCF**	**PC**
ADL Hierarchy (ADLH) Scale	✓		✓	✓	✓	✓
ADL Short Form (ADLS) Scale	✓		✓	✓	✓	✓
Body Mass Index (BMI)	✓		✓	✓	✓	✓
Cognitive Performance Scale (CPS)	✓		✓	✓	✓	✓
Communication Scale (CS)	✓		✓	✓	✓	
Pain Scale (PS)	✓	✓	✓	✓	✓	✓
Pressure Ulcer Risk Scale (PURS)	✓		✓	✓	✓	✓
Short Depression Rating Scale (SDRS)	✓					

Table 62 *Acute Care Assessment Outputs*

Outcome Scales for measuring the severity of the problem				
	Premorbid	**Admission**	**Review**	**Discharge**
ADL Hierarchy (ADLH) Scale	✓	✓	✓	✓
ADL Short Form (ADLS) Scale	✓	✓	✓	✓
BMI		✓	✓	
Cognitive Performance Scale (CPS)		✓	✓	✓
Communication Scale		✓	✓	✓
Pain Scale		✓	✓	✓
Pressure Ulcer Risk Scale (PURS)		✓		✓
Short Depression Rating Scale		✓	✓	

Geriatric Screeners (CAPs)				
	Premorbid	**Admission**	**Review**	**Discharge**
Delirium		✓	✓	✓
Dementia		✓	✓	✓
Undernutrition		✓	✓	
Depression		✓		✓
Risks of Adverse Outcomes (CAPs)				
	Premorbid	**Admission**	**Review**	**Discharge**
ADL decline		✓		
Falls		✓		
Pressure Ulcer		✓		

Outcome Scales for Measuring Severity of Problem

The Activities of Daily Living Hierarchy (ADLH) Scale

The ADL Hierarchy scale and the ADL short scale are measures of functional performance. The ADLH scale is particularly useful in grading the level of progression of a patient's disability over long time periods.

People's dependence on others for help with ADL typically follows this sequence: 'Early-loss' ADLs (such as dressing and personal hygiene) 'Middle-loss' ADLs (such as transfer, locomotion, and toilet use) 'Late-loss' ADLs (eating and being mobile in bed). (Doupe M., June 2012)

The ADLH can be calculated at every assessment period, including pre-morbid period.

Table 63 *Items that inform the AC assessment Activities of Daily Living Hierarchy Scale (ADLH)*

Assessment Items	
AC	**Description**
F1a1	Personal hygiene
F1b1	Eating
F1c1	Walking
F1d1	Toilet Use

This scale may be useful to group individuals for service review, as there are only 7 categories.

Higher scores indicate greater dependency. The aim of this scale is to reflect the disablement process rather than to simply sum reductions in function. It is a summary ADL measure that provides a single, functionally meaningful hierarchical ADL self-performance rating scale. This scale provides precise specification of discrete impairment levels.

Table 64 *Acute Care ADL Hierarchy descriptions*

ADLH score	Short description	Detailed description
0	Independent	Independent, or independent with setup help, with any of these activities: personal hygiene, mobility, toilet use or eating
1	Supervision required	Supervision needed with any of these activities: personal hygiene, mobility, toilet use or eating
2	Limited impairment	Limited assistance needed with any of these activities: personal hygiene, mobility, toilet use or eating
3	Extensive assistance required 1	Extensive, maximal, or total assistance needed with either personal hygiene or toilet use, or both or the activities did not occur
4	Extensive assistance required 2	Extensive or maximal assistance needed with either mobility or eating, or both
5	Dependent	Total dependence with mobility or eating, or both or activity did not occur
6	Total dependence	Total dependence with all these activities: personal hygiene, mobility, toilet use and eating; or activity did not occur

The Activities of Daily Living Short (ADLS) Form Scale

The ADL Short scale provides a measure of ADL status that is more sensitive to change over time than the ADL Hierarchy Scale and is useful for comparison when a patient moves between clinical settings. It is the preferred scale for monitoring ADL performance across the hospital episode.

The short ADLS scale can be calculated at every assessment period, including the pre-morbid period.

It uses the same four items as the ADLH and converts these as described in this table.

Table 65 *Items that inform the AC assessment ADL Short Form Scale*

ADLS score	Criterion
0	0 or 1
1	2
2	3
3	4 or 5
4	6 or 8

Patients with normal ADL function score zero. The Short Form is a 4-point scale in which higher scores reflect greater levels of dependency.

The short Form is a 16-point scale, higher scores reflect great levels of dependency.

Body Mass Index (BMI)

The BMI is an outcome measure that uses the ratio of a person's height to their weight. It is commonly used to identify low weight, healthy weight, and obesity adults. BMI does not distinguish between muscle weight, bone density and fat; it is only an indication of whether a person is in the healthy normative range. Other factors may affect a person's BMI, such as physical makeup, disease processes or conditions.

interRAI MDS assessments use BMI to:

- identify people with clinical risks related to being underweight or overweight,
- compare a person's BMI over time.

BMI is calculated by dividing a person's weight in kilograms by the square of their height in metres (kg/m2).
For example, an adult who weighs 70 kilograms and is 1.75 metres tall will have a BMI of 22.9:

BMI = 70 kg / 1.75 m2

= 70 / 3.06

= 22.9

interRAI MDS assessments measure height and weight to calculate BMI.

BMI is a major measure of geriatric nutrition.

A BMI of more than 35 represents obesity, while a BMI of less than 20 represents frailty.

Table 66 *Items that inform the AC assessment Acute Care assessment BMI scale.*

Assessment Items	
AC	**Description**
J1a	Height (metres)
J1b	Weight (kilograms)

The BMI is only calculated in the admission assessment.

The Cognitive Performance Scale (CPS)

The CPS ranges from 0 to 6: a higher score indicates more severe cognitive decline. If the person scores 2 or higher on the CPS it suggests dementia is present (the higher the score, the more certainty there is that dementia is present). Unless they have already received a dementia diagnosis, they should be referred for further evaluation.

If the person also screens positive for delirium the pre-morbid CPS score should also be reviewed. If this also **scored '2' or more, then is it likely that the high CPS score in hospital is attributable to a dementia.** (Costa A.P., April 2014)

The person's score in the **Cognitive Performance Scale (CPS)** is then calculated. Their score is a maximum of six points from four assessment items.

Table 67 *Items that inform the AC assessment Cognitive Performance Scale (CPS)*

Assessment Items	
AC	**Description**
C1	Daily decision-making
C2	Short-term memory
D1	Making self-understood
F1b1 (admission) F1b (discharge)	Eating

Table 68 *AC assessment Cognitive Performance scale descriptions*

Cognitive Performance Scale (CPS) score	Description
0	Intact
1	Borderline intact
2	Mild impairment
3	Moderate impairment
4	Moderate/severe impairment
5	Severe impairment
6	Very severe impairment

Communication Scale (CS)

The Communication Scale is a simple method to assess a person's communication abilities. It uses two MDS assessment items. The ability to make oneself understood and understand others is not restricted to verbal communication. It doesn't specifically focus on hearing and vision but rather dysphasia and other similar syndromes. **If a person scores 6 or more on the Communication Scale, their ability to process language (this may be verbal, written or signed) is severely impaired.**

Table 69 *Items that inform AC assessment Communication Scale*

Assessment Items	
AC	**Description**
D1	Making self-understood
D2	Ability to understand others

The Communication scale ranges from 0 to 8. A higher score indicates more impaired communication.

Table 70 *AC assessment Communication scale descriptions*

Communication score	Description
0	Intact
1	Borderline intact
2	Mild impairment
3	Mild/Moderate impairment
4	Moderate impairment
5	Moderate/Severe impairment
6	Severe impairment
7	Severe/very severe impairment
8	Very severe impairment

Pain Scale (PS)

The Pain Scale uses assessment items pain frequency and pain intensity to simply measure the person's experience of pain. The scale range is 0 to 4 with **higher values equating to increased pain experienced.** To see how this is calculated refer to Figure 17.

The Pain Scale is validated against the Visual Analogue Scale. (Fries B. E. S. S., 2001)

Table 71 *Items that inform the AC assessment Pain scale.*

Assessment Items	
AC	**Description**
I3a1	Pain frequency
I3b1	Pain intensity

Table 72 *AC assessment Pain scale descriptions*

Pain score	Description
0	No pain
1	Less than daily pain
2	Daily pain but not severe
3	Daily severe pain
4	Daily excruciating pain

The Pressure Ulcer Risk Scale (PURS)

Is informed by items coded in the MDS assessment that provide a measure of risk for development of a pressure injury. These can be used as areas to target interventions when planning care. The PURS has been validated against the Braden Scale for pressure-ulcer risk. (Poss J. M. K.-T., 2010)

The coding of pressure ulcers aligns also to the described pressure injury domains developed by the Pressure Injury Advisory Group (PIAG) of NZ enabling interRAI results to accurately align to guidelines for nurses in NZ.

Table 73 *Items that inform the AC assessment Pressure Ulcer Risk Scale*

Assessment Items	
AC	**Description**
F1c1	Walking
F1f	Bed mobility
H3	Bowel continence
I2	Dyspnoea
I3a1	Pain frequency
J2	Weight loss
K2	Prior pressure ulcer

The **Pressure Ulcer Risk Scale** has a score of 0 to 8 with **higher scores indicating greater risk of developing pressure injuries.**

Table 74 *AC assessment PUR Scale descriptions*

Pressure Ulcer Risk (PUR) score	Description
0	Very low risk
1 or 2	Low risk
3	Moderate risk
4 or 5	High risk
6 to 8	Very high risk

The Short Depression Scale (SDRS)

The Short Depression Scale is the only outcome scale that is specific to the AC Assessment. The **Short Depression Scale** is based on a person's self-reported depressed mood and anxiety, and the frequency and number of a person's symptoms.

The Short Depression Scale can be calculated on the Admission and Review periods. The Admission and Review assessments are based on the 24-hour period prior to assessment.

The person's score on the Short Depression Scale is based on three assessment items, all of which are self-reported.

Each question is scored from 0 to 2 and the maximum possible score is 6. A score of zero represents no symptoms of depression are present. A higher score indicates the presence of more symptoms.

The higher the score, the worse the person's mood is, from the person's perspective.

Table 75 *Items that inform the AC assessment Short Depression scale.*

AC	Description
E1a	Little interest or pleasure in things you normally enjoy
E1b	Anxious, restless, or uneasy
E1c	Sad, depressed, or hopeless

Geriatric Screeners

Screeners are used to assist in identification of a problem that is not easily detected with a single observation.

An elevated score may indicate a need for further assessment or referrals.

Table 76 *Acute Care Diagnostic Risk Screeners*

Diagnostic Risk Screeners			
	Admission	Review	Discharge
Delirium	✓	✓	✓
Dementia	✓	✓	✓
Undernutrition	✓	✓	
Depression	✓		✓

Delirium

The interRAI AC delirium screening strategy is a valid measure of delirium in older subjects in acute medical wards. (Salih S. A., August 2012)

Up to 20 percent of older people who present at hospital with an acute illness also have a delirium, while up to 20 percent of people who do not have a delirium when they are admitted, develop it subsequently. The Delirium Screener for Geriatric Syndromes is based on the score of two assessment items that identify the presence of delirium. Because these items look for unexplained changes, the screener can detect a delirium even in the person who has an underlying cognitive decline.

Table 77 *Items that inform the AC assessment Delirium Screener for Geriatric Syndromes scale.*

Assessment Items	
AC	**Description**
C3	Periodic disordered thinking or awareness – mental function varies over the course of the day
C4	Acute change in mental status from person's usual functioning

If the screen is positive (a score of 1) the person is highly likely to have a delirium.

Table 78 *AC assessment Delirium Screener for Geriatric Syndromes conversion*

Delirium Screener for Geriatric Syndromes Score	Criterion
0	C3 is 0 or 1 **and** C4 is 0
1	C3 is 2 **or** C4 is 1

Dementia

The Dementia screener utilises the **Cognitive Performance Scale (CPS)** to detect the presence of dementia at the time of assessment. The CPS ranges from 0 to 6: a higher score indicates more severe cognitive decline (see Table 68).

Dementia is present in about 20 per cent of people aged 70 years and older who are admitted to an acute-care hospital. This rate increases to approximately 50 per cent among people aged 90 years and older.

If the person scores 2 or higher on the CPS it suggests dementia is present (the higher the score, the more certainty there is that dementia is present). Unless they have already received a dementia diagnosis, they should be referred for further evaluation.

A person can score 0 (negative screen) or 1 (positive screen) (see Table 79). If the screen is positive, it is highly likely that a dementia is present.

Table 79 *Conversion of the AC assessment Cognitive Performance scale for the Dementia Screener for Geriatric Syndromes*

Dementia Screener for Geriatric Syndromes Score	Criterion
0	CPS = 0,1
1	CPS = 2 - 6

If a person scores 2 or more on the CPS and has a positive screen on the Delirium Screener for Geriatric Syndromes, review their CPS score before their illness if possible. If this CPS score was also 2 or higher, it is likely that their high CPS score in hospital is attributable to a dementia.

Undernutrition

Undernutrition is common in older general-medical inpatients. It may be present in as many as 50 to 60 percent. The Undernutrition Screener for Geriatric Syndromes is positive in about 25 percent of older general-medical inpatient. (Gray L. A.-B. S.)

The **Undernutrition Screener for Geriatric Syndromes** is based on two codable items in the MDS assessment.

If the patient's BMI is less than 22, the patient may be undernourished.
If the answer to Weight loss of 5% or more in LAST 30 DAYS or 10% or more in LAST 180 DAYS is 'yes', the patient may be undernourished.

A person's Undernutrition — Risk of Adverse Outcome can be 0 or 1

Table 80 *Items that inform the AC assessment Undernutrition Screener for Geriatric Syndromes*

Assessment Items		
AC	**Description**	**Notes**
J1	Height and weight	This item informs the person's BMI score
J2	Nutritional issues	This item is defined as at least 5% weight loss in the last 30 days of at least 10% in the lasty 180 days

The score is then converted as follows:

Table 81 *Conversion of the Ac assessment BMI score for the Undernutrition Screener for Geriatric Syndromes*

Undernutrition Screener for Geriatric Syndromes Outcomes score	Criterion
0	BMI is ≥ 22 **and** J2 = 0
1	BMI is ≤ 22 **or** J2 = 1

Depression

Anhedonia is the inability to feel pleasure in normally pleasurable activities. People who experience anhedonia report they have lost interest in activities they used to enjoy and are less able to feel pleasure. Older adults who present with anhedonia may be referred to outpatient mental-health services or inpatient geriatric psychiatry. (Costa A. P., April 2014)

In older adults, anhedonia is a prominent symptom of major depressive disorders. People's mood conditions have been known to prompt physical complaints, which people then seek care for. There is some evidence that mental illness is the most common diagnosis among older adults who frequently visit ED. Anhedonia, when combined with impaired ability to perform ADL and a history of admission to ED, is strongly associated with repeat use of ED and inpatient hospital admission within 28 days of being discharged from ED.

These items inform the **Depression Screener for Geriatric Syndromes** as follows.

If the screen is positive (score of 1) the person highly likely to be depressed.

The Depression Screener for Geriatric Syndromes screens for depressed mood and anxiety based on self-reported mood and symptom frequency and provides a positive or negative screen. It utilises three specific assessment mood self-reported items to determine a person's score via the Short Depression Rating Scale score.

Older adults presenting with anhedonia may be referred to outpatient mental-health services or inpatient geriatric psychiatry for further evaluation and treatment.

Table 82 *Items that inform the AC Depression Screener for Geriatric Syndromes*

Assessment Items	
AC	**Description**
E1a	Little interest or pleasure in things you normally would enjoy
E1b	Anxious, restless, or uneasy
E1c	Sad, depressed, or hopeless

Table 83 *Conversion of scores for the AC assessment Depression Screener for Geriatric Syndromes*

Depression Screener for Geriatric Syndromes Score	Criterion
0	E1a = 0 **and** E1b = 0 **and** E1c = 0
1	E1a ≥ 1 **and** E1b ≥ 1 **and** E1c ≥ 1

Risks of Adverse Outcomes

The following screeners help identify the likelihood that an adverse event will occur in the future.

Table 84 *Risk of Adverse Outcomes Screeners*

Risk of adverse outcomes			
	Admission	**Review**	**Discharge**
ADL decline	✓		
Falls	✓		
Pressure Ulcer	✓		
Readmission	✓		

ADL Decline

While they are in hospital, older people may experience a decline in their ability to perform ADLs. For many people, this functional decline is associated with the acute illness that brings them to

hospital; some of them will not fully recover the level of function they had before their illness. For others, such as stroke patients and patients with a hip fracture, long periods of bed rest and deconditioning may cause a long-term decline in their ability to perform ADL, which will affect their ability to live independently. The risk of a person's ability to perform ADL declining is likely to increase if they are also cognitively impaired.

People who already have impaired functional ability face a greater risk that their ability to perform ADL will decline further during their hospital stay. This risk of decline can be assessed using the ADLS Scale, using the period before their illness to score them.

The person's risk of ADL decline is scored by combining their score on the ADLS Scale and CPS. A persons' cognitive ability is a significant factor in rehabilitating after an acute hospital stay.

Table 85 *AC assessment ADL Decline - Risk of Adverse Outcome descriptions*

ADL Decline – Risk of Adverse Outcome	Criterion
Risk = 0	ADLS Scale score is 0,1, or 16 **or** CPS score is 0,1, or 6
Risk = 1	ADLS Scales score is 2-15 **or** CPA is 2-5

Falls

Falls can result in serious injuries. In acute-care settings, an older person's risk of falls can be increased due to acute illness or delirium. The reported prevalence rate of falls among older people in hospital ranges from 2 to 17 per cent. People face a greater risk of falls if they have a history of falling recently, mobility problems, cognitive impairment, or impaired vision.

A person's score on **Falls — Risk of Adverse Outcome** is based on their score on three assessment items and the CPS.

If the person has experienced a fall within the last 90 days, or since their last assessment, they have a medium risk of falling. The person has a high risk of falling if they have a cognitive impairment, problems with balance related to transfers, or at least moderately impaired vision.

The falls risk tool developed from interRAI AC is a valid measure to screen for in-hospital falls. Reduction in assessment burden without loss of fidelity can be achieved through integrating the risk screener within the interRAI hospital system, which automatically triggers protocols for falls prevention based on identified risk. (Peel N. M., December 2021)

Table 86 *AC assessment Items for the Falls – Risk of Adverse Outcome scale*

Assessment Items		
AC	**Description**	**Falls count**
D4	Vision	Score of 2,3,4 = 1
F2	Balance	Score of 1= 1
CPS (on admission)	Daily decision-making, short-term memory, making self-understood, and eating performance	Score of 2,3,4,5,6 = 1

Table 87 *Conversion of scores to inform the AC assessment Falls- Risk of Adverse Outcomes scale.*

Falls – Risk of Adverse Outcomes Score	Criterion
0	I1 Falls in last 90 days = 0
1	Falls in last 90 days = 1 or more **and** The Falls count is 0 or 1
2	Falls in last 90 days = 1 or more **and** The Falls count is 2 or 3

Pressure Ulcer

Older people, especially those with restricted mobility, risk developing a pressure injury while they are in hospital. Pressure ulcers can be difficult to treat, and they cause pain, discomfort, and increase morbidity. Therefore, it is essential to treat existing pressure ulcers and identify people who may be at risk of developing one.

When derived from the interRAI AC tool, the Pressure Ulcer Risk demonstrated good to strong ability to screen for Pressure Ulcer outcome in acute care. Assessment burden is reduced without loss of fidelity by integrating the risk scale into an existing assessment system. (Xie H., June 2016)

A person's **Pressure Ulcer — Risk of Adverse Outcome** can be 0, 1 or 2. The higher the score, the greater the risk of developing pressure injuries.

Table 88 *Conversion of scores for the AC assessment Pressure Ulcer- Risk of Adverse Outcomes scale*

Pressure Ulcer – Risk of Adverse Outcomes score	Criterion
0	PURS = 0,1, or 2
1	PURS = 3 or 4
2	PURS = 5,6,7 or 8

Readmission — Risk of Adverse Outcome

The risk of unplanned readmission can be screened for using the following item.

B4 Time since last hospital stay. The risk of unplanned readmission is increased if the patient had a hospital admission within the last 30 days of the current admission.

Table 89 *Readmission Screen*

Score	Criteria
0 – Negative screen	B4 Time since last hospital stay = 0, 1, 2 or 6
1 – Positive screen	B4 Time since last hospital stay = 3, 4 or 5

Understanding Contact Assessment (CA) Algorithms

The Contact Assessment (CA) is a screening tool used in New Zealand to determine the degree of complexity of a person's needs or to address non-complex need.

The outputs of the assessment are used to determine if a more comprehensive assessment (such as the Home Care) is required to address complex needs. It is also helpful in identifying persons with short term rehabilitative need.

Items coded in the assessment are added to algorithms to create assessment outputs, summarizing risks and needs of the person assessed.

Table 90 *Contact Assessment Urgency Algorithms*

Scale	Purpose	Details	Action
Assessment Urgency	To determine if a person has complex needs. To determine how urgently a person needs a comprehensive Home Care (HC) assessment.	The scale ranges from 1 to 6: the higher the score, the greater the urgency for a comprehensive assessment. The score is calculated from multiple elements in the CA related to physical health and mood; the family's ability to cope; and the person's dependence on others for personal hygiene.	If the person scores between 4 and 6, an HC Assessment is required. Services are started while awaiting HC assessment. If Rehabilitation Urgency score is 4 - 5 the person may benefit from a short-term rehabilitation plan with a repeat CA at 6 weeks to determine if complex needs persist.
Service Urgency	To prioritise which types of nursing or support services a person needs to be referred to	This scale ranges from 1 to 4: the higher the score, the more the person needs acute-care services — often nursing care — to start soon This score is calculated by whether the client has specialist nursing needs, is dependent on others for personal hygiene, has been in hospital recently, and is in daily pain.	The score is used to prioritise which support services or nursing services to refer the person for.

Scale	Purpose	Details	Action
Rehabilitation Urgency	To determine a person's potential for rehabilitation	This scale ranges from 1 to 5: the higher the score, the greater likelihood that the person needs specialised rehabilitation services — often occupational therapy and physiotherapy. The score is calculated by considering decline in performing ADL, impaired mobility, impaired use of stairs and impaired performance of any of four IADL. **Note: If B2c *Referral to initiate or continue palliative services* is coded *1. Yes*, the Algorithm will not calculate.**	Scores are considered when referring a person for therapy services or restorative packages. If the person's score is greater than 1, the assessor will identify rehabilitation needs such as home equipment (raised toilet seats, rails etc). If the person scores 2, it indicates they have a problem with IADL and may require occupational therapy input. If the person scores 3, it indicates they have difficulty with stairs and ADLs. This may require physiotherapy or cardiorespiratory services.

The Assessment Urgency algorithm scale, Service Urgency algorithm scale and Rehabilitation Urgency algorithm scale use the Self-Reliance Index (SRI), which assesses if a person is 'self-reliant' or 'not self-reliant'.

Self-Reliance Index (SRI)

Understanding the SRI as a stand-alone scale further explains the three urgency algorithm scales. The SRI uses five MDS assessment items to determine if a person is self-reliant or not self-reliant.

Table 91 *Items that inform the Self-Reliance Index scale.*

Assessment Items	
CA	**Description**
C1	Daily decision-making
C2a	Bathing – performance
C2b	Personal Hygiene – performance
C2c	Dressing lower body - performance
C2d	Mobility - performance

The SRI classifies a person as 'Not self-reliant' if:

- C1 is coded *1 =modified independent or any impairment or*
- C2a, C2b, C2c or C2d is coded *1. Supervision or any physical assistance*

Table 92 *Self-Reliance Index descriptions*

SRI score	Description
0	Self-reliant
1	Not self -reliant

Changes in Health, End-stage disease and Signs and Symptoms Scale (CHESS for CA)

The Changes in Health, End-Stage Disease and Signs and Symptoms (CHESS) Scale was designed to identify people who are at risk of serious clinical instability and whose condition may decline. It is a useful for identifying people with unstable conditions, or when your objective is to minimize problems related to a person's declining function. The algorithm behind the Contact Assessment of the CHESS Scale counts the presence of symptoms, changes to decision-making and ADL status, and a referral to palliative services to create a score between 0 and 5. **The higher a person's score, the greater their risk of adverse outcomes such as mortality, hospitalization, and caregiver stress.**

Table 93 *Items that inform the Contact assessment CHESS scale.*

Assessment Items	
CA	**Description**
B2c	Palliative referral
C3	Dyspnoea
D1	Change in decision-making
D5	Change in ADL status
D8c	Peripheral oedema
D11a	Decreased food and fluid consumption
D11b	Weight loss

The maximum score of 5 occurs only when item B2c is coded 1 or 'yes'. To code this item 1, the assessor must have evidence that a palliative referral was made before, or concurrently with, the CA. The assessor cannot code this item 1 if the palliative referral will be made as a result of the CA.

Table 94 *CHESS scale descriptions*

CHESS score	Description
0	No symptoms
1	Minimal health instability
2	Low health instability
3	Moderate health instability
4	High health instability
5	Highest level of instability

Distressed Mood Scale Self-Report (DMSR)

The Distressed Mood scale is a decision support tool to flag possible mood disorders that will require further evaluation by a mental health professional. The intention is to improve access to these services not to replace them. The scale has both psychological and somatic measures with the inclusion of an anhedonia item, which provides evidence that low mood may be more than transitory. (e.g., little interest or pleasure in things you normally enjoy).

The scale is particularly effective for persons living in the community who can self-rate without requiring assessor-rated measurement.

The SRM will not calculate if:

- The items have not been coded,
- More than one item is coded '8'.

The scale is rated 0-9 with scores of 6 or more suggesting a need for a referral to a mental health professional.

Table 95 *Items that inform the contact assessment Distressed Mood scale.*

Assessment Items	
CA	**Description**
C5a	Little interest or pleasure in things you normally enjoy
C5b	Anxious, restless, or uneasy
C5c	Sad, depressed, or hopeless

Pain Scale (PS)

The CA also uses the Pain Scale. The Pain Scale uses MDS assessment items pain frequency and pain intensity (see Fig.20) to allocate a score between 0 and 4: the higher the score, the higher the person's level of pain.

Table 96 *Items that inform the Contact assessment Pain scale.*

Assessment Items	
CA	**Description**
D9a	Pain frequency
D9b	Pain intensity

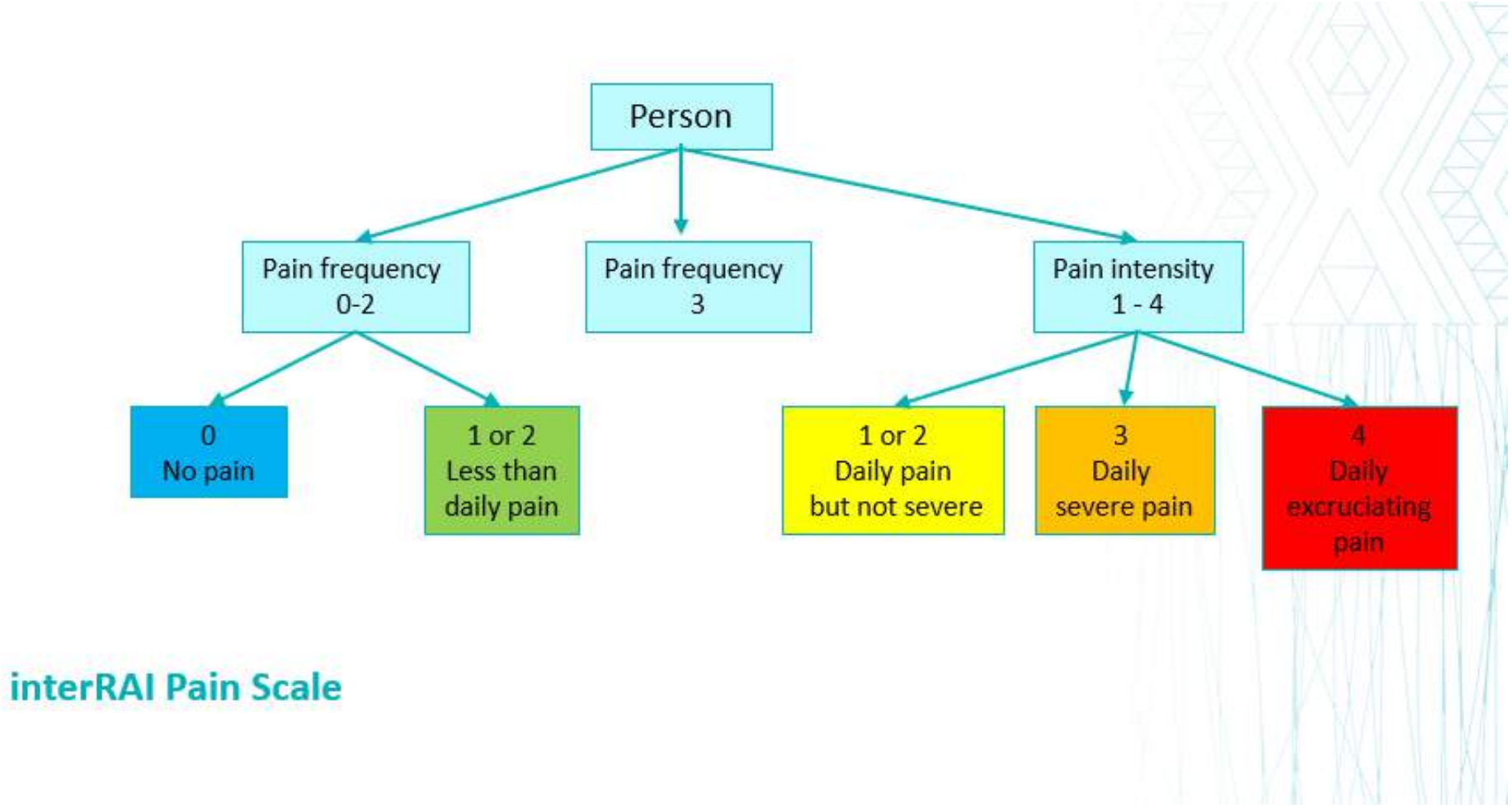


Figure 14 *Pain Scale CA assessment*

Personal Support Algorithm (PSA)

The Personal Support (PS) algorithm is designed to help make decisions about how to prioritise community-based support and how to allocate resources.

Table 97 *Items that inform the Contact assessment Personal Support algorithm.*

Assessment Items	
CA	**Description**
C1	Daily decision-making
C2a	Bathing - performance
C2b	Personal hygiene - performance
C2c	Dressing lower body - performance
C2d	Mobility - performance
C5a	Conditions/diseases make cognitive ADL mood or behaviour patterns unstable (fluctuating, precarious or deteriorating)
C5b	Experiencing an acute episode or a flare- up of a recurrent or chronic problem
D2	Ability to understand others
D4a	Meal Preparation - capacity
D4b	Ordinary Housework - capacity
D4c	Managing medication - capacity
D4d	Stairs - capacity
D20a	Primary informal helper expresses feelings of distress, anger or depression
D20b	Family or close friends report feeling overwhelmed by person's illness
Self-Reliance index (SRI)	0 = self-reliant or 1 = not self-reliant

Five of these items (attributes) are also used in the Self-Reliance Index to allocate a person to one of six self-reliance score group. Each person's score is informed by two to five assessment items. Research has found that, regardless of which set of attributes are used within a scoring group, everyone who falls into the same group needs similar support services.

Table 98 *Personal Support Algorithm descriptions*

PSA score	Description
1	Very low need
2	Low need
3	Mild need
4	Moderate need
5	High need
6	Very high need

COVID Items in the Contact Assessment are not mandatory across all districts. This may impact data volumes. Check district NASC protocols.

COVID Emergency Care Flag

The COVID Emergency Care Flag is used to identify if a person needs urgent medical attention. It uses four MDS assessment items. The algorithm converts the coding to a score of 0 or 1. If the person scores 1, the COVID Emergency Care Flag will be triggered.

Table 99 *Items that inform the COVID Emergency Care Flag*

Assessment Items		
CA	**Description**	**Scale range**
C3	Dyspnoea	0 - 1
B6d	Persistent pressure or pain in chest	0 - 1
B6e	Feeling confused (new or more than usual)	0 - 1
B6f	Difficulty waking up	0 - 1

COVID Major Comorbidity Count algorithm scale

The COVID Major Comorbidity Count algorithm scale identifies if the person has any medical diagnoses that the WHO reports are associated with an increased risk of death related to COVID-19. This algorithm has been validated using over 3 million interRAI assessment records from nursing homes and home-care agencies in Canada and the USA. (Hirdes J.P. D. A.-S., July 2020)

The COVID Major Comorbidity Count uses 12 MDS assessment items.

Table 100 *Items that inform the COVID Major Comorbidity Count*

Assessment Items	
CA	**Description**
B11a	Alzheimer’s disease
B11b	Other dementia
B11c	Stroke
B11d	Coronary heart disease
B11e	Congestive heart failure
B11g	Chronic obstructive pulmonary disease
B11h	Asthma
B11i	Cancer
B11l	Tuberculosis

The algorithm converts the COVID Major Comorbidity Count into a score between 0 and 2, based on the number of organ systems affected. A score of 1 or 2 means a person has comorbidities that could result in a higher mortality risk if they contract COVID-19. A score of 1 indicates an elevated risk while a score of 2 indicates a very high risk.

COVID Symptoms Count algorithm

The COVID Symptoms Count algorithm scale is used to detect symptoms associated with COVID infection. The COVID Symptoms Count algorithm assesses the presence of symptoms associated with COVID infection; it uses 12 MDS assessment items. The COVID Symptoms Count ranges from 0 to 12: a higher score indicates a higher likelihood that the person is infected and, therefore, should be tested. The algorithm converts the COVID Symptoms Count to a score of 0 or 1. If the person scores 1, the COVID Symptoms Flag will be triggered.

Table 101 *Items that inform the COVID Symptoms Count Algorithm*

Assessment Items		
CA	**Description**	**Scale range**
B6a	New, continuing cough or worsening cough	0 - 1
B6b	Sore throat	0 - 1
B6c	Fever (temperature of 38 C or higher)	0 - 1
B6d	Persistent pressure or pain in chest	0 - 1
B6e	Feeling confused (new feeling, or more than normal)	0 - 1
B6f	Difficulty waking up	0 - 1
B6g	Diarrhoea, vomiting or abdominal pain	0 - 1
B6h	Chills	0 - 1
B6i	Headache	0 - 1
B6j	New loss of taste or smell	0 - 1
B7	Fatigue	0 - 1
C3	Dyspnoea	0 - 1

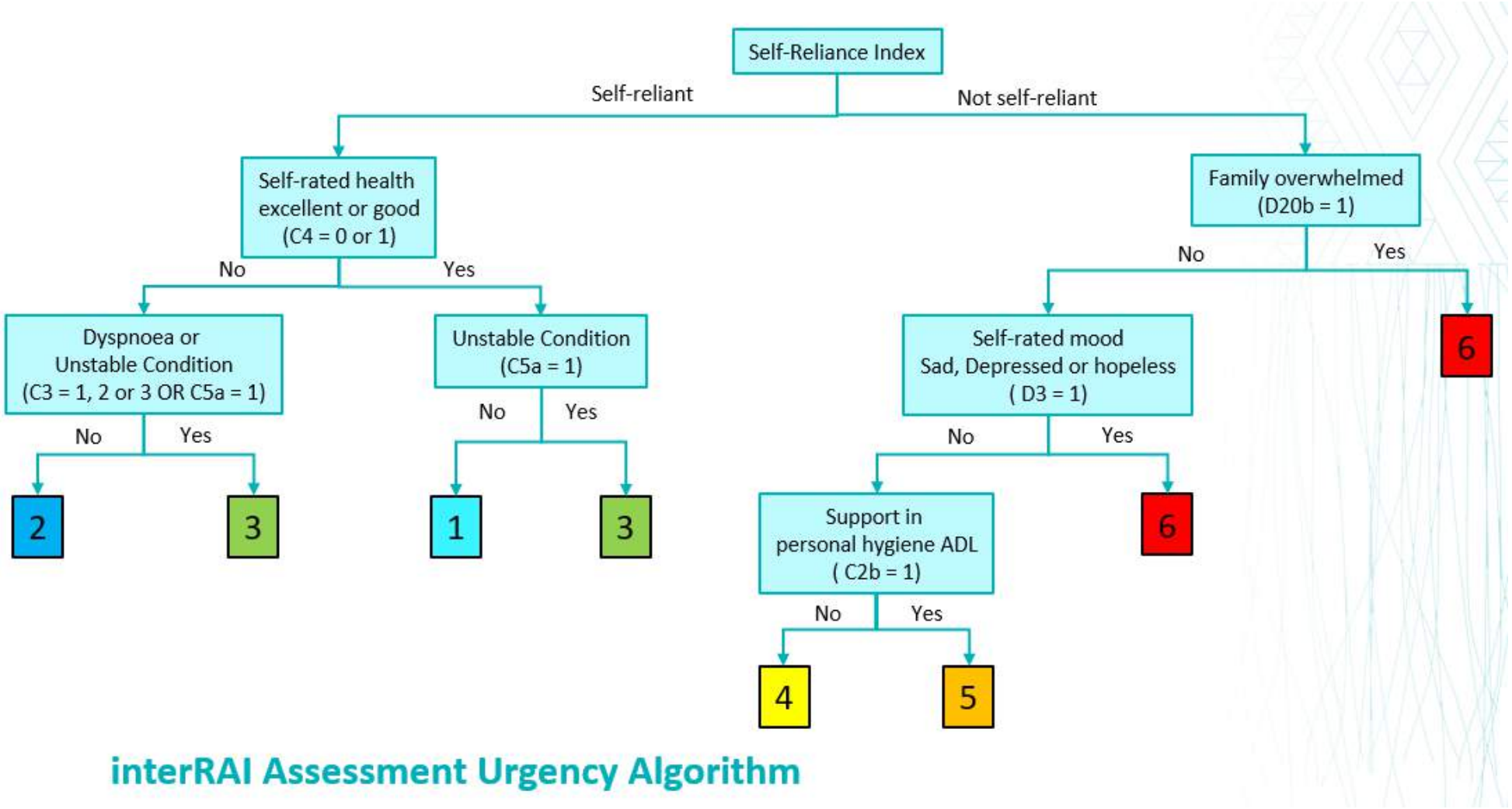


Figure 15 *CA Assessment Urgency algorithm*

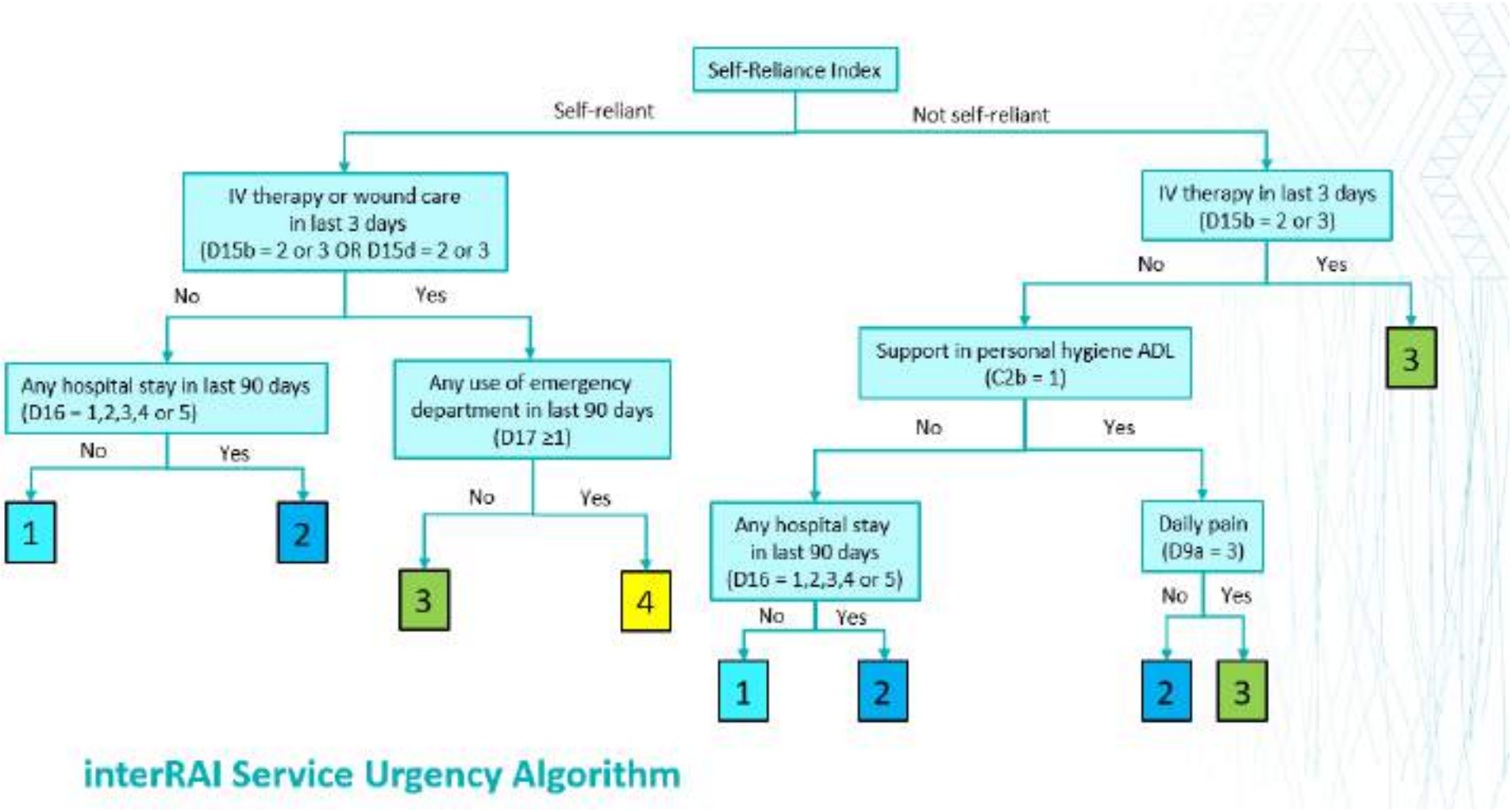


Figure 16 *CA Service Urgency algorithm*

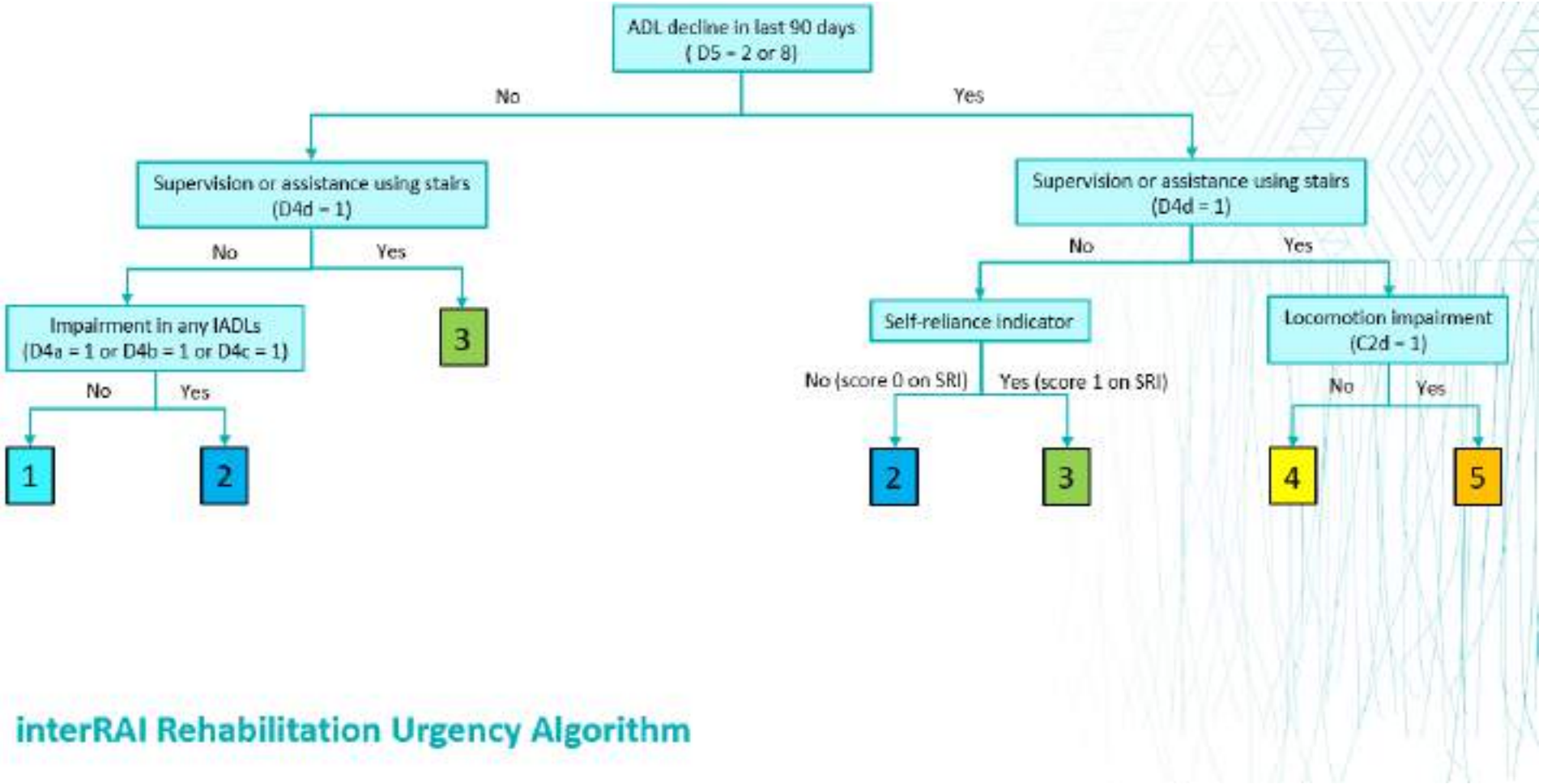


Figure 17 *CA Rehabilitation Urgency algorithm*

Using Resource Utilisation Groups (RUGs) for CHA, HC and LTCF Assessments

Resource utilisation groups (RUGs) are case-mix classification scores that group people according to the relative costs of the resources they need. RUGs have seven major categories, which contain 23 subgroups. People who fit into more than one category are assigned to the group that demands the highest resources.

RUGs use these factors to describe different groups' relative use of resources:

- Personal characteristics
- Cognitive impairment
- ADL impairment
- Medical complexity
- Behavioural disturbance
- Psychiatric symptoms
- Specialised treatment
- Rehabilitation
- Average weekly costs of both formal and informal care

The RUG-III Home Care is the RUG specific to the Home Care Assessment. It can be used to:

- Inform financial funding formulas
- Inform staffing requirements, by identifying which caseloads or agencies in a region are resource intensive
- Set benchmarks
- Adjust resources for population differences

Table 102 *RUG descriptions*

RUG category	Description	Number of sub-groups
Special rehabilitation	Highest level of need, 120 minutes of therapy/intervention per week required	Three based on ADL and IADL function
Extensive services	Moderate ADL impairment plus need for at least one of : suction, ventilator/respirator, tracheostomy	Three based on number of specialised services received
Special care	Moderate ADL impairment with one of: burns, fever/vomiting/weight loss/pneumonia or dehydration, septicaemia, Multiple Sclerosis, stage 3-4 pressure injuries, IV meds or radiation	Two depending on ADL impairment
Clinically complex	Mild ADL impairment and a feature from extensive	Four depending on ADL and IADL impairment

RUG category	Description	Number of sub-groups
	services or special care. Mild ADL impairment and at least one of: aphasia, cerebral palsy, dehydration, hemiplegia, pneumonia, stasis ulcer, terminal illness, urinary tract infection, chemotherapy, transfusion, active foot care dressings	
Impaired cognition	Mile to moderate ADL impairment and a score of CPS 3+ (less than the score of 50 in the Modified Mini-Mental State Examination)	Three depending on ADL or IADL impairment
Behaviour problems	Mild to moderate ADL impairment and daily wandering and socially inappropriate behaviours, such as verbal abuse/physical abuse/hallucinations	Three depending on ADL and IADL impairment
Physical function reduced	All other assessed persons	Five depending on ADL and IADL impairment

Chapter 4: The Assessment Summary

What this Chapter Covers:

- The purpose of the Assessment Summary

The Purpose of the Assessment Summary

The Assessment Summary (AS) is the last section in the MDS assessment. Its purpose is to provide a place for the assessor to summarise their findings and demonstrate how these findings will link to the plan of care. Care planning may include the initiation or continuation of services, monitoring and/or more in-depth clinical assessment. For example, the person at assessment with evident cognitive impairment that is undiagnosed, will require medical assessment.

Findings from the assessment are supported by CAPS and Outcomes. Triggered CAPs will require a clinical response relative to the severity of the risk and the opportunity for the person to benefit from intervention. Non-triggered CAPs may require a response based on related Outcomes, that demonstrate irreversible decline in function/wellbeing. The person's own wishes and the availability of resources will also impact the response planned.

Therefore, the Assessment Summary section is the pivotal point of the assessment and care planning process. This section forms the link between the assessment and plan of care.

It is here that you will see the CAPs (Clinical Assessment Protocols) identified for the first time.

To complete the Assessment Summary the assessor must have:

- reviewed relevant medical and personal history,
- engaged with the older/vulnerable adult and family and other key people as appropriate,
- coded the information in each section of the assessment,
- reviewed the written notes,
- considered Outcome Scales and CAPs triggers, using the CAPs manual,
- determined the key components to be addressed in the plan of care, based on all the information.

The older/vulnerable adult and their family must be involved in developing the care plan and agree to interventions and supports.

Chapter 5: interRAI Data and Research

What this Chapter Covers:

- Data Visualisation
- Reports for aged residential care facilities
- Reports for home care providers
- Reports for District Health Boards
- Individual requests for data
- Information for Researchers to support ethic and funding applications

The National interRAI Data Analysis and Reporting Centre collects, analyses, and interprets information from interRAI assessments.

The information does not identify individuals but provides:

- Service providers with the ability to benchmark their performance,
- Detection of areas of high resource need,
- Detection of emerging incidences of specific health issues.

The Centre holds all selected response data, outcome scales and clinical assessment protocols for every interRAI assessment that is completed in New Zealand.

Data Visualisation

Access interRAI data at national, regional, DHB and population subgroup level through interRAI Data Visualisation. Visit the interRAI website at www.interRAI.co.nz/data.

Reports for Aged Residential Care (ARC) facilities

Four times a year, each aged residential care facility in New Zealand receives a report of their own data, including comparisons with other facilities within their DHB and nationally, and comparisons with other similar sized facilities. Access to the reports is via Microsoft Power BI with Multiple Factor Authentication (MFA).

Reports for Home Care providers

Home care providers receive regular individual reports each January and July. These reports use data from person assessments and compare a provider's persons with all persons for both Contact and Home Care assessments. The reports are available via Power BI with MFA.

Reports for Health Districts

Te Whatu Ora districts receive quarterly reports for cross-district and national level comparisons.

- Compliance report: Percentage of people in aged residential care who have a subsequent interRAI long term care facility (LTCF) assessment completed within 230 days of the previous assessment, by facility and by DHB.
- Benchmarking report: Summarised interRAI assessment data for Te Whatu Ora nationally, regionally and at district level.

Individual requests for data

Organisations and individuals can request interRAI assessment data from the Centre. All applications will be considered on an individual basis against specific criteria, including the level of assurance of privacy and respect, and how the requester intends to use the data.

Use of the data is subject to interRAI Data Access Protocols endorsed by the interRAI Leadership Advisory Board and the Joint Aged Residential Care Steering Group.

Requests can either be at the unit record level or at the aggregated level.

Contact the National interRAI Data Analysis and Reporting Centre at interRAI_Data@tas.health.nz

Information for Researchers to Support Ethics and Funding Applications

After an evidence-based review in 2003 the Ministry of Health chose the interRAI Home Care Assessment as the 'best practice' process for determining home and community support needs for older people in New Zealand. interRAI offer a suite of tools and, in New Zealand, an interRAI assessment is a requirement for publicly funded aged care support services either in the community or aged residential care (ARC). The choice of interRAI assessment instrument depends on the level of need of the individual and whether the person lives in the community or in ARC. An interRAI assessment is undertaken as a conversation, where the assessor codes responses into software and algorithms provide decision-support clinical assessment protocols and outcome measures to inform a person's care plan and determine change over time. The interRAI Long Term Care Facilities Assessment is used in ARC where the assessment is usually undertaken by a nurse working in the facility. The assessment, which includes over two hundred compulsory fields, is comprehensive and covers health, behavioural and psychosocial domains as well as many items directly focused on social engagement. Over 70,000 assessments are completed annually in New Zealand.

The interRAI was developed by a multidisciplinary collaborative network of academics and clinicians in over thirty countries. interRAI is the name of the not-for-profit fellowship as well as the name of the assessment instruments. Companion interRAI assessments such as the Acute Care and Palliative Care assessment instruments are now being used across the sector. All assessment information is recorded electronically and stored in the national data warehouse without requiring any further effort from the assessor or the person assessed. All data is coded using a national unique identifier (called National Health Index number or NHI) and is stored using encryption for data security.

New Zealand is the first country in the world to implement a universal standardised comprehensive geriatric assessment for all older people who are being considered for access to publicly funded community services or residential care. The primary aim of interRAI is to improve health outcomes by understanding the person's needs and potential response to intervention. It is designed to improve quality of care through supporting communication and reducing variability of assessment. Although interRAI was not designed to be a research tool, the mandatory collection of interRAI data has created a researchable dataset that is almost unparalleled in the world. To date, over a million assessments are in the database. The large data size allows for stratified analyses of different variables including ethnicity. Ethnic groupings include Māori, Pacific peoples (categorized as Samoan, Tongan, Niuean, Tokelauan, Fijian or other Pacific peoples) and Asian.

New Zealand's financial investment in the development and implementation of interRAI is significant. The interRAI infrastructure is managed by interRAI Services (also known as interRAI New Zealand) through Te Whatu Ora and includes a national training service, data and analytics service and a national software service. Operational management sits with the Director interRAI Services in Te Whatu Ora. Governance oversight sits with an interRAI Leadership Advisory Board, appointed by the Director General of Health and in line with relevant Te Whatu Ora policy and practice. The Board are responsible for ensuring New Zealand meets the requirements of the license held between interRAI and the Director General. This includes ensuring the integrity of the assessment use in New Zealand and participating in international research efforts through annual sharing of aggregated and anonymised data. The same aggregated and anonymised data set is also available in Statistics New Zealand's Integrated Data Infrastructure (IDI).

Day to day responsibility for the interRAI data in the data warehouse and data reporting sits within the Te Whatu Ora Service Improvement and Innovation's Data and Digital team. All assessments include a question about consent and approximately ninety-three percent (Schluter P. J., 2016) of people who have been assessed provide consent for their data to be used for research. interRAI Data Access Protocols (www.interrai.org) set out seven Guiding Principles: Ownership, Kaitiaki/Guardianship, Privacy, Security, Confidentiality, Linking with other datasets and information about a breach of these Protocols. A Māori data sovereignty plan will be developed

consistent with Te Whatu Ora policy and guidance. In the meantime, researchers are responsible for developing their own data sovereignty and management processes in the context of their own projects. The information set out in the interRAI data Access Protocols Data may assist researchers when developing a Data Management Plan required as part of their study protocol and ethics application. Access to the data is provided through a Third-Party Data Request process (www.interrai.co.nz) that requires final approval by interRAI Services.

There are over five thousand trained interRAI assessors currently in New Zealand. To produce high quality data, a stringent Quality Assurance programme has been established. All assessors are health professionals who undergo a competency based interRAI training programme. Their work is subject to continuous monitoring and there are regular online updates and competency audits and annual exams to be completed.

All persons eligible to access assessment information in the software must complete a User Access Agreement which must also be approved by their manager before a user account is created. All users, including administrators, read only access and analysts, must complete education provided by interRAI Services that includes appropriate use of the software and the responsibilities of accessing medical records. Access is limited by role and each role has specific functionality embedded. Clinical roles have the most access and widest functionality, whereas administration roles are limited to demographic functionality only. Access audits and regular competency checks are undertaken, with users who do not meet current competency requirements, or are not a regular user, having their access adjusted or removed. No user account is ever deleted off the system. For users who no longer require access their account is deactivated thus retaining full user access audit records.

Use of the data could contribute to national quality improvement throughout the country. There are multiple benefits for the many older people, with approximately 74,950 New Zealanders (2021/2022 year) having an interRAI assessment. Analysing this large New Zealand-based dataset allows the early identification of people who are at elevated risk of adverse outcomes. The information obtained may be used to optimise and better target standard service delivery, allow regional comparisons and support better service delivery to individuals, their whānau, and wider society. Better outcomes provide economic benefits for New Zealand from cost savings in a health system that is facing the multiple challenges of a rapidly growing, ageing population. There are also opportunities to use the NZ interRAI data for international collaborative research with other countries that use interRAI assessments.

If you are interested in finding out about our **interRAI Research Network,** please phone 0800 10 80 44 option 3.

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