ahsri
australian health services
research institute

UNIVERSITY OF WOLLONGONG

AN-ACC Technical appendices

The Resource Utilisation and Classification Study: Report 7

February 2019

Carol Loggie

Jenny McNamee

Rob Gordon

Milena Snoek

Conrad Kobel

Cathy Duncan

Peter Samsa

Karen Quinsey

This series of papers reports on different aspects of a major national study into needs, costs and classification of residential aged care called the Resource Utilisation and Classification Study (RUCS). The RUCS was undertaken during 2018.

This technical appendices report (Report 7) includes supplementary information that relates to the body of work completed as part of the overall RUCS program, as presented in Reports 1 to 6. As such, it does not stand alone and should only be read in conjunction with the source reports.

Report 1: The Australian National Aged Care Classification (AN-ACC)

Report 2: The AN-ACC assessment model

Report 3: Structural and individual costs of residential aged care services in Australia

Report 4: Modelling the impact of the AN-ACC in Australia

Report 5: AN-ACC: A funding model for the residential aged care sector

Report 6: AN-ACC: A national classification and funding model for residential aged care: Synthesis and consolidated recommendations

Report 7: **AN-ACC Technical appendices** (this report)

Suggested citation:

Loggie C et al. (2019) *AN-ACC Technical appendices. The Resource Utilisation and Classification Study: Report 7*. Australian Health Services Research Institute, University of Wollongong.
ISBN: 978-1-74128-301-3

Contents

Appendix 1 Classification development

This section includes supplementary information that relates to the Australian National Aged Care Classification (AN-ACC) development work that was undertaken in the Resource Utilisation and Classification Study (RUCS) service utilisation and classification development study (Study One). Source information is included in Report 1 and Report 2.

Service utilisation data quality

Table 1.1 Data validation items included in service utilisation summary facility report

Data item	Description	Validation measure
Hours of individual care per staff member	The amount of recorded activity (in hours) per staff member for each shift per day.	• There should be activity for each staff member rostered. • Any significant drop could indicate a problem with the data collection. • Large values in the table may indicate errors in the recording of an activity.
Hours of individual care by activity duration - capture method	The amount of recorded activity (in hours) by method of capture duration for each shift per day, i.e. recording in real time (measured duration) or recording retrospectively (using time blocks).	Monitoring trends in data collection.
Hours of individual care by care delivery location	The proportion of activity that was measured in the resident's room and not in the resident's room.	Monitoring trends in data collection.
Hours of individual care by activity type	The amount of recorded activity (in hours) by type of care (general or nursing activities) for each shift per day.	Monitoring trends in data collection.
Hours of individual care by combined care or other activity	The amount of recorded activity (in hours) broken down by whether the activity was combined care or other activity types.	Monitoring trends in data collection.
Records with missing or unusual data	• missing staff ID • missing resident ID • missing activity type • scanning resident ID before activity type • scanning of multiple activities, instead of using 'combined care' activity • missing the 'STOP' scan at the completion of a record entry • 'Long activity' (<1 hour) • 'Short activity' (<2 mins)	Flagging of missing or potentially incorrect data.

Clinical assessment data preparation

Table 1.2 Imputation rules and impute rates for clinical assessment data

Rule	Justification	# imputes	% imputed
RUG Bed Mobility = RUG Transfer	High correlation between these two items (r=0.89)	8	0.4%
RUG Toileting = RUG Bed Mobility	High correlation between these two items (r=0.83)	6	0.3%
RUG Transfer = RUG Mobility	High correlation between these two items (r=0.89)	5	0.3%
AKPS based on entire assessment	Advice from Palliative Care Nurse	4	0.2%
Braden Sensory = Braden Mobility	High correlation between these two items (r=0.59)	6	0.3%
Braden Moisture = Braden Sensory	High correlation between these two items (r=0.52)	4	0.2%
Braden Activity = Braden Mobility	High correlation between these two items (r=0.81)	7	0.4%
Braden Mobility = Braden Activity	High correlation between these two items (r=0.81)	3	0.2%
Braden Nutrition based on all other Braden scores	Advice from Palliative Care Nurse	2	0.1%
Braden Friction based on all other Braden scores	Advice from Palliative Care Nurse	5	0.3%
DEMMI If a higher mobility subscale is complete and all 0, then lower mobility missing values become 0 OR If one item is missing and all other items are 0, then set the missing item to 0	The DEMMI scale is progressive and as such reflects the order of mobility loss	29 (12 items)	0.1%
AM-FIM Eat based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	15	0.8%
AM-FIM Groom based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	7	0.4%
AM-FIM Bath based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	4	0.2%
AM-FIM Upper Body based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	4	0.2%
AM-FIM Lower Body based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	5	0.3%
AM-FIM Toileting based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	4	0.2%
AM-FIM Bladder based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	7	0.4%

Rule	Justification	# imputes	% imputed
AM-FIM Bowel based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	2	0.1%
AM-FIM Transfer Chair based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	11	0.6%
AM-FIM Transfer Toilet based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	4	0.2%
AM-FIM Transfer Shower based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	5	0.3%
AM-FIM Walk based on the average of AM-FIM Motor subscale	Based on advice from the Australasian Rehabilitation Outcomes Centre, AHSRI, UOW	12	0.6%
AM-FIM Comprehension = AM-FIM Expression	High correlation between these two items (r=0.94)	16	0.9%
AM-FIM Expression = AM-FIM Comprehension	High correlation between these two items (r=0.94)	6	0.3%
AM-FIM Social = AM-FIM Expression	High correlation between these two items (r=0.89)	10	0.5%
AM-FIM Problem Solving = AM-FIM Memory	High correlation between these two items (r=0.93)	5	0.3%
AM-FIM Memory = AM-FIM Problem Solving	High correlation between these two items (r=0.93)	5	0.3%
NPI-NH screen If the assessor answered all of the questions up to NPI-NH infer that the missing item is No = 0 OR If the assessor answered other NPI-NH questions, infer that the missing item is No = 0 OR If the details of the NPI-NH are filled, set the screening question to Yes = 1	It is a valid use of the tool to only capture a 'Yes' response for the relevant screening questions	283 (12 items)	1.3%
NPI-NH Disruptiveness If this is missing and all other NPI-NH items are complete, infer value is Not at all = 0	It is a valid use of the tool to only record a response where the item is relevant	7	0.1%

Relationship between resident assessment scores and individual care time

Table 1.3 RUG-ADL – distribution of score with associated care staff time

RUG-ADL total score	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
4	472	25%	0.48
5	34	2%	0.81
6	136	7%	0.72
7	54	3%	0.86
8	90	5%	0.68
9	47	2%	0.76
10	141	8%	0.77
11	133	7%	0.91
12	49	3%	0.95
13	76	4%	0.98
14	108	6%	1.28
15	62	3%	1.24
16	71	4%	1.42
17	195	10%	1.70
18	212	11%	1.72
All residents	1,880	100%	1

Note: RUG-ADL scores range from 4 (completely independent on these items) to 18 (completely dependent on these items)

Table 1.4 AKPS – distribution of score with associated care staff time

AKPS score	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
10	3	0%	1.45
20	110	6%	1.67
30	70	4%	1.67
40	179	9%	1.51
50	839	45%	1.05
60	484	26%	0.64
70	112	6%	0.52
80	50	3%	0.53
90	23	1%	0.43
100	9	0%	0.29
Unknown	1	0%	1.23
All residents	1,880	100%	1.00

Note: AKPS scores range from 10 (comatose or barely rousable) to 100 (signifying normal physical abilities with no evidence of disease)

Table 1.5 Rockwood Frailty Scale – distribution of score with assoc. care staff time

Rockwood score	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
1 Very fit	37	2%	0.53
2 Well	67	4%	0.72
3 Well with comorbid disease	130	7%	0.62
4 Apparently vulnerable	182	10%	0.72
5 Mildly frail	290	15%	0.62
6 Moderately frail	434	23%	0.78
7 Severely frail	588	31%	1.41
8Very severely frail	134	7%	1.62
9 Terminally ill	4	0%	2.34
Unknown	14	1%	1.58
All residents	1,880	100%	1.00

Table 1.6 Braden Scale total score – distribution of score with assoc. care staff time

Braden Scale total score	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
6	5	0%	2.04
7	10	1%	1.74
8	26	1%	1.86
9	50	3%	1.62
10	50	3%	1.73
11	87	5%	1.64
12	69	4%	1.58
13	115	6%	1.59
14	115	6%	1.29
15	122	6%	1.19
16	130	7%	1.07
17	154	8%	0.82
18	159	8%	0.87
19	168	9%	0.68
20	141	8%	0.67
21	177	9%	0.62
22	145	8%	0.52
23	143	8%	0.50
Unknown	14	1%	1.30
All residents	1,880	100%	1.00

Note: Braden total score ranges from 6 (indicating an extreme risk of pressure wound) to 23 (indicating no risk)

Table 1.7 DEMMI total score – distribution of score with associated care staff time

DEMMI score	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
0	417	22%	1.68
1	89	5%	1.53
2	70	4%	1.29
3	71	4%	1.33
4	74	4%	1.08
5	73	4%	0.88
6	76	4%	0.86
7	82	4%	0.80
8	100	5%	0.74
9	97	5%	0.69
10	95	5%	0.67
11	156	8%	0.65
12	135	7%	0.67
13	135	7%	0.50
14	71	4%	0.48
15	46	2%	0.53
16	18	1%	0.51
Unknown	75	4%	0.96
All residents	1,880	100%	1.00

Note: DEMMI total score ranges from 0 (the lowest level of mobility) to 16 (the most independent in mobility)

Table 1.8 NPI-NH total items present – distribution of score with assoc. care staff time

No. of items present	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
0	547	29%	0.91
1	277	15%	0.97
2	262	14%	0.94
3	189	10%	1.13
4	158	8%	1.01
5	145	8%	1.00
6	95	5%	1.13
7	75	4%	1.22
8	55	3%	1.18
9	22	1%	1.17
10	17	1%	1.62
11	4	0%	-
12	6	0%	-
	25	1%	1.00
Unknown	3	0%	0.37
All residents	1,880	100%	1.00

Table 1.9 NPI-NH total items that were moderately to extremely disruptive – distribution of score with associated staff time

No. of items present	No. of residents	Percentage of residents	RVU of Avg Mins Per Day
0	1,232	66%	0.95
1	223	12%	1.04
2	130	7%	0.90
3	109	6%	1.26
4	76	4%	0.98
5	54	3%	1.24
6	24	1%	1.05
7	15	1%	1.42
8	8	0%	1.08
9	8	0%	1.64
10	1	0%	1.20
All residents	1,880	100%	1.00

Compounding factors in each branch of the AN-ACC

Table 1.10 Compounding factors by AN-ACC Version 1.0 main branch

Factor	Independent	Assisted mobility	Not mobile
AM-FIM Motor			
AM-FIM Transfers			
AM-FIM Eating			
AM-FIM Cognition			
AM-FIM Communication			
AM-FIM Social Cognition			
RUG-ADL			
Braden			
Braden Activity			
AKPS			
Rockwood Frailty Scale			
Falls last 12 months			
Obese Flag			
NPI-NH Disruptiveness			
NPI-NH Agitation			
Daily Injections			
Complex Wound Management			

Note: Darker shaded cells indicate the compounding factor that is the most significant in the branch.

Appendix 2 Resident assessments

This section includes supplementary information that relates to the resident assessments that were completed as part of the service utilisation and classification development study (Study One). Source information is included in Report 1 and Report 2.

RUCS Assessment Tool

The RUCS Assessment Tool included in this report (see Appendix 5) was used for the resident assessments that were undertaken in the service utilisation and classification development study (Study One).

Note: this is NOT the final version of the AN-ACC assessment tool. The AN-ACC Version 1.0 Assessment Tool is included in Report 2.

Service utilisation and classification development (Study One) descriptive statistics

The following descriptive statistics includes information from presentations given by Professor Kathy Eagar to various stakeholder and advisory groups during the RUCS project.

Details on the scales relating to the following assessment data can be found in the RUCS Assessment Tool (see Appendix 5).

Note: the following results are based on the first half of the dataset only

Results of assessor feedback

Figure 2.1 Time taken to complete a resident assessment

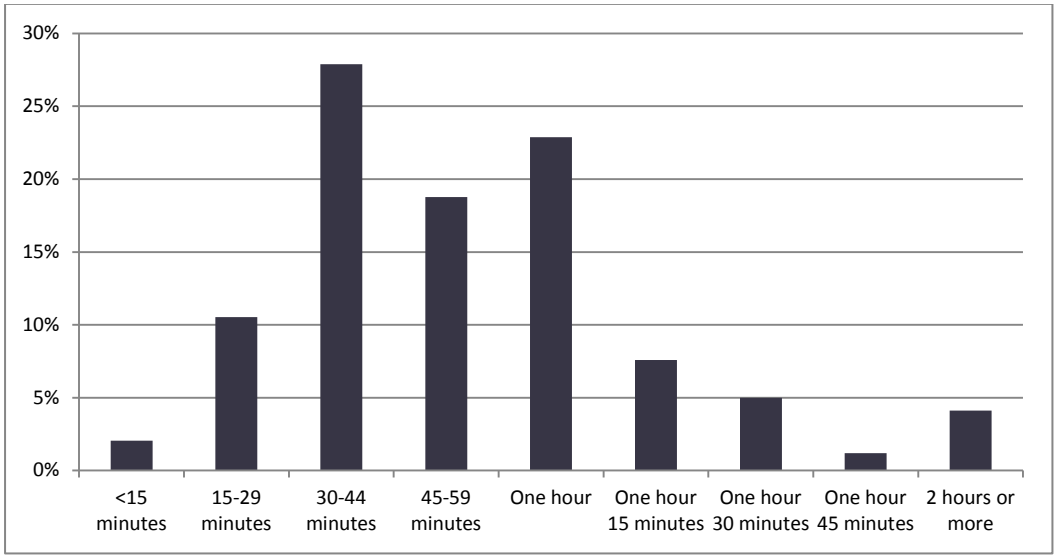


Table 2.1 Difficulty in making the ratings in the resident assessment

Difficulty	Number	Percentage
Very easy	289	28.6%
Moderately easy	465	46.0%
Not sure	111	11.0%
Moderately difficult	108	10.7%
Very difficult	5	0.5%
Not reported	33	3.3%
Total	1011	100.0%

Table 2.2 Confidence in the ratings recorded in the resident assessment

Confidence	Number	Percentage
Very confident	393	38.9%
Fairly confident	527	52.1%
Undecided	56	5.5%
Not very confident	5	0.5%
Not at all confident	1	0.1%
Not reported	29	2.9%
Total	1011	100.0%

Resident assessment profiles

Table 2.3 Technical nursing requirements

	No	Yes	% yes
Oxygen	961	41	4.1%
Enteral feed	997	5	0.5%
Tracheostomy	1002	0	0.0%
Catheter	981	21	2.1%
Stoma	991	11	1.1%
Dialysis	1002	0	0.0%
Daily injections	944	58	5.8%
Complex wounds	932	70	7.0%

Figure 2.2 RUG-ADL Scale profile

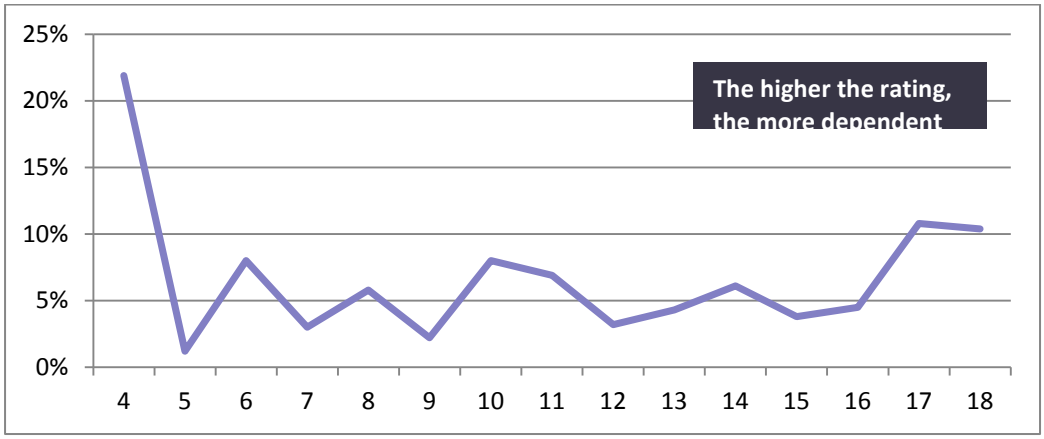


Table 2.4 Falls/Bariatric requirement/weight loss profile

	Number	Percentage
Falls in last 12 months		
No	479	48.2%
Yes, once	252	25.4%
Yes, more than once	262	26.4%
3 persons for transfers?		
No	977	97.5%
Yes	25	2.5%
Weight loss of more than 10% in last 12 months?		
No	920	92.5%
Yes	75	7.5%

Figure 2.3 AKPS profile

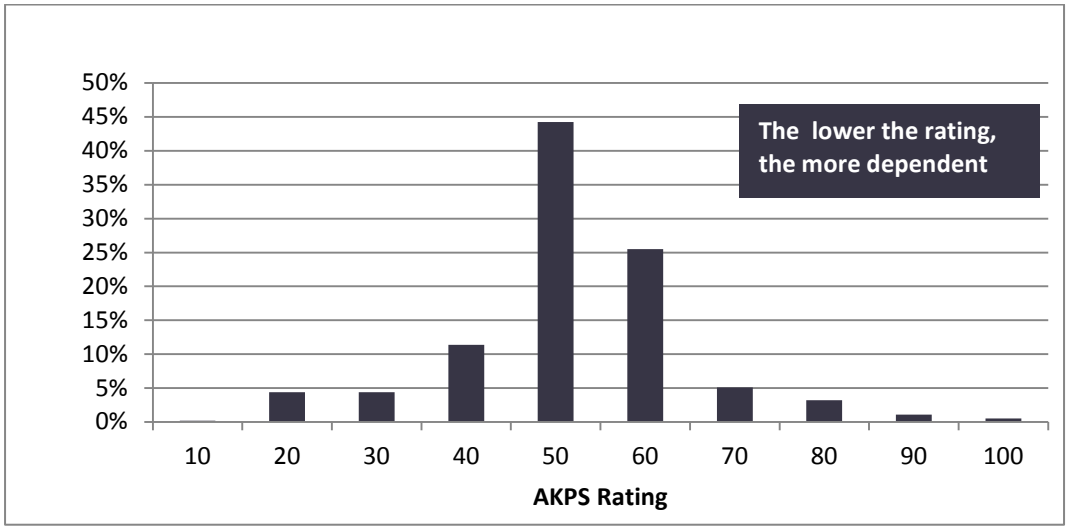


Figure 2.4 AKPS profile – RAC/Hospital/Community comparison

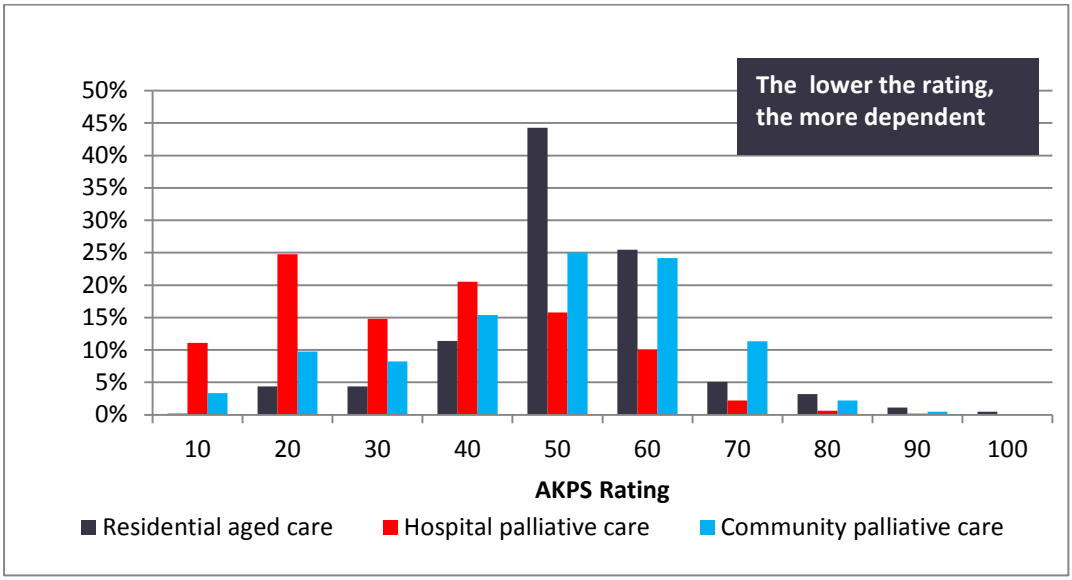


Figure 2.5 Rockwood Frailty Scale profile

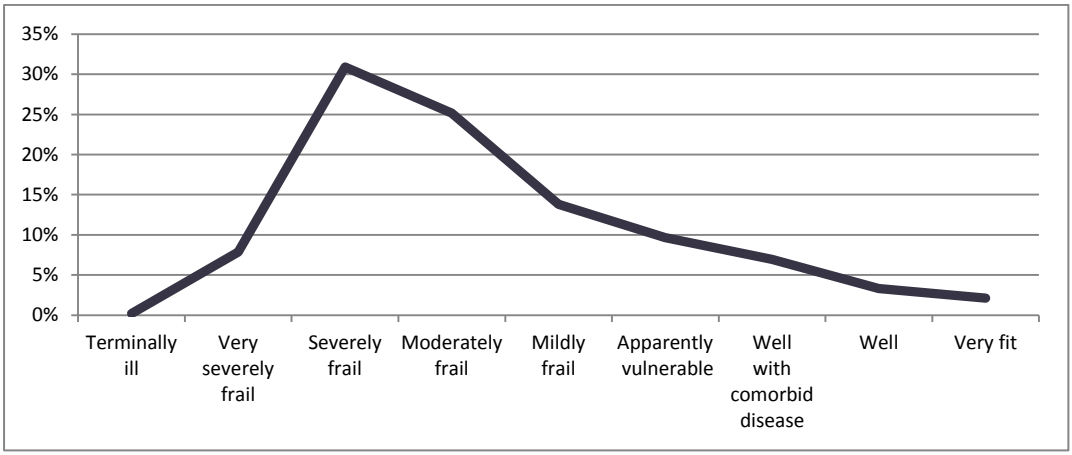


Figure 2.6 AM-FIM Motor Score profile

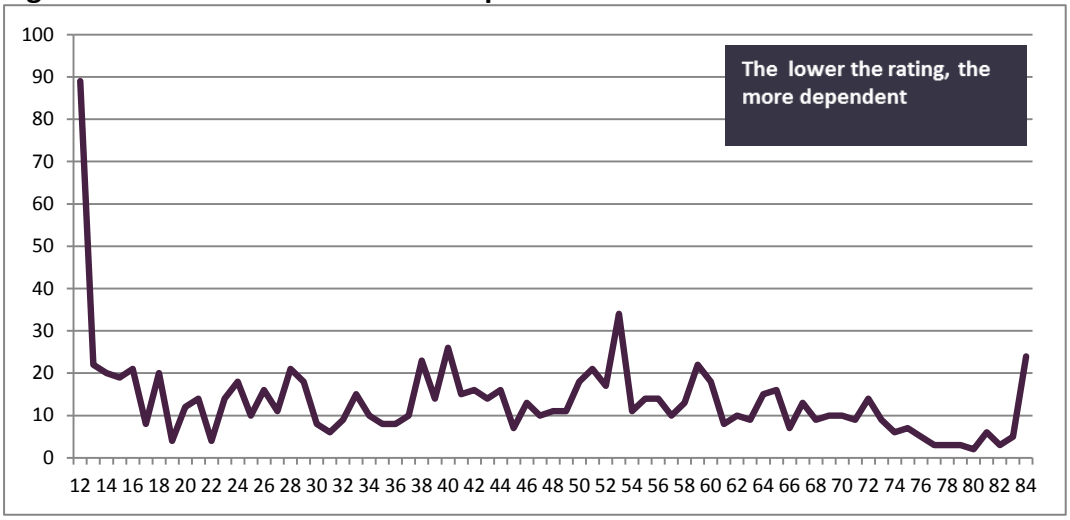


Figure 2.7 AM-FIM Cognition Score profile

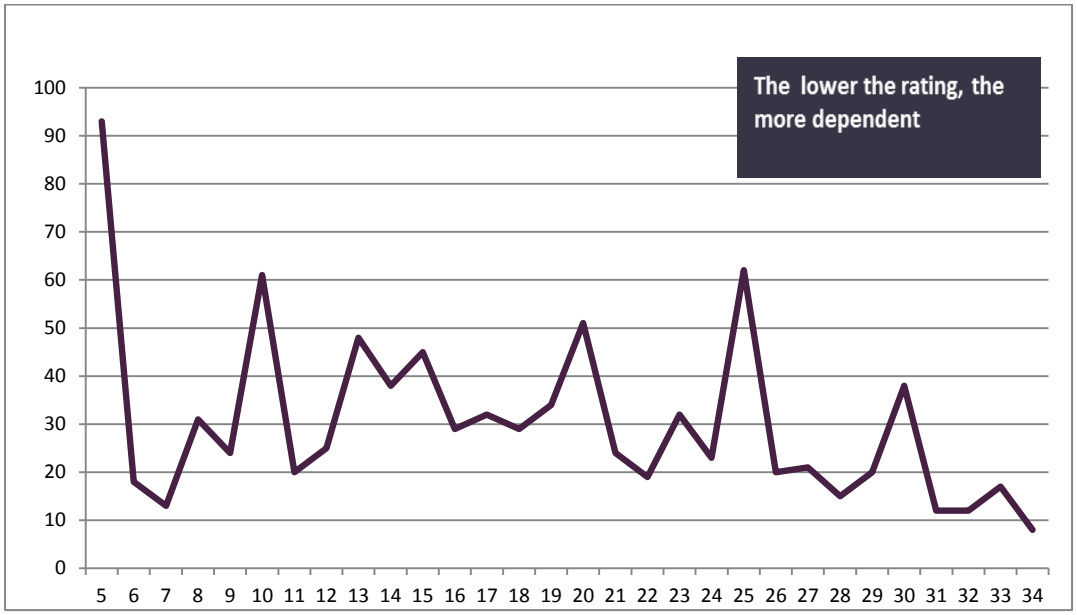
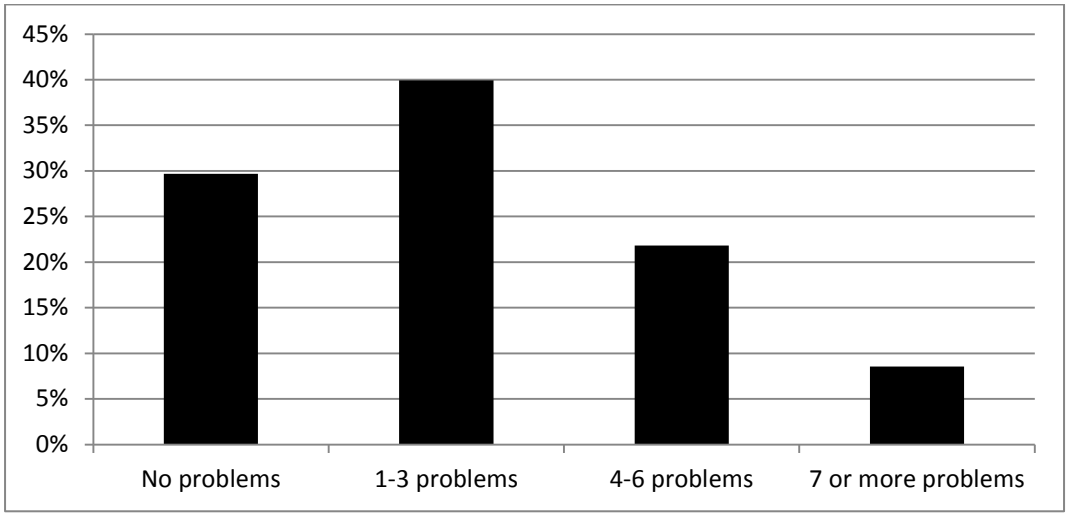


Figure 2.8 NPI-NH – 12 items profile



Appendix 3 RUCS costing process

This section includes supplementary information that relates to methodology used in the RUCS costing process. Source information is included in Report 3.

Cost allocation methodology

The following cost allocation methodology was applied to determine the individual and fixed care related costs within each residential aged care facility. The outcomes of the cost allocation were used in the identification of costs in the structural and individual costs analysis and the development of national weighted activity units (NWAU) for the proposed funding model.

Preparation of financial data

The financial data was collected from all facilities using a standard template with definitions provided to ensure consistency in the financial data types and structures. The data across all facilities was combined into a single data file and organised for costing purposes into separate data categories:

1. Categories of expenses – to be referenced in the application of rules for cost distribution:

- care staff related salary expenses
- care related consumables and other direct care related expenses
- indirect staff and other indirect care related expenses
- facility corporate expenses
- hotel and accommodation expenses.

2. Bed activity and bed occupancy data – to be used in cost allocation to determine cost per occupied bed day and cost per approved bed day.

3. Paid staff hours – to enable the review of salary expense reporting and identify discrepancies and to explore the potential impact of salaried vs agency staff costs.

4. Facility profile data – this included the characteristics of the facilities that would also be tested as potential drivers of fixed care costs.

Table 3.1 includes the different types of expenses reported by facilities and the cost allocation rules in each case. For each of the care salary types, proportional expense distribution between variable costs (individual care related) and fixed costs (shared care related) were calculated based on the care time reported by care staff across the 30 facilities in the resource utilisation data collection for the service utilisation and classification development study (Study One).

The decision regarding the allocation of expenses into the variable and fixed cost buckets for other items is based on the nature relationship of each type of cost to the delivery of care to residents. For example, the use of clinical supplies is driven by resident care need. The costs of education, care quality and administrative activities, on the other hand, are related to the structural costs of the facility rather than the needs of individual residents and are therefore fixed care costs. Corporate expenses are an overhead cost related to all aspects of facility operations and, as such, were allocated across individual care, fixed care and hotel costs.

Table 3.1 Expense allocation rules for cost categories – variable and fixed costs

Cost category	Variable costs (Individual)	Fixed costs (Shared and indirect)
Direct costs		
Care management salaries	Excluded unless Care Manager costs are bundled with RN care staff. In the case of bundled costs use RN proportion (i.e. 47% individual)	100% shared unless Care Manager costs are bundled with RN care staff. In the case of bundled costs use RN proportion (i.e. 53% shared)
Registered nurse salaries	47% Individual	53% shared
Enrolled nurse salaries	48% Individual	52% shared
Personal care staff salaries	56% Individual	44% shared
Allied health & lifestyle salaries	51% Individual	49% shared
Agency staff salaries	56% Individual (as per PCW)	44% shared
Chaplaincy/ Pastoral Care salaries	50% Individual	50% shared
Medical supplies	100% individual	Excluded
Incontinence supplies	100% individual	Excluded
Nutritional supplements	100% individual	Excluded
Other resident care	Excluded	100% shared
Quality & education for care staff	Excluded	100% shared
Corporate, indirect and hotel costs		
Corporate charges	Allocate across direct, indirect and hotel based on expense proportions.	Allocate across direct, indirect and hotel based on expense proportions.
Administration salaries, other administration, insurance, workers comp, quality & education to non-care staff -	Excluded	Split between care and hotel related costs by expense proportions

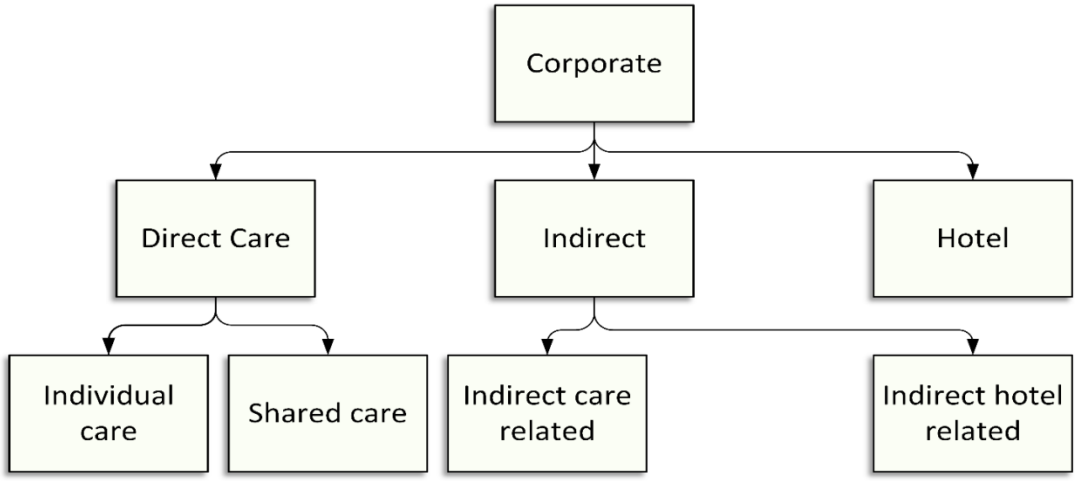
The stepwise cost allocation method

The distribution of expenses into the separate cost buckets for cost analysis was undertaken in three steps using the allocation rules outlined in Table 3.1. This three-step allocation process is outlined below and illustrated in Figure 3.1.

Step 1 – Allocate corporate expenses across the facility to direct, indirect and hotel cost 'buckets' based on reported proportions of total expense.

Step 2 – Split the direct care salary expenses into the individual and shared time related components using the proportions provided in Table 3.1.
Step 3 – Split the indirect expenses into the care related and hotel related cost 'buckets' based on total expense proportions.

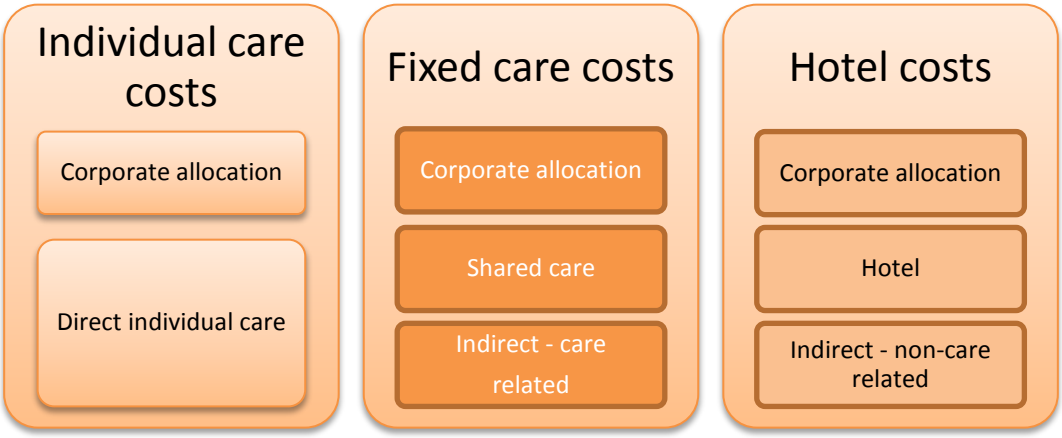
Figure 3.1 Study Two cost distribution model



The result of this allocation process is the identification of three distinct types of cost. The cost inclusions within each of these; individual care, fixed care and hotel related costs are presented in Figure 3.2.

The individual care costs are allocated to residents in the costing process based on care time per staff type. These costs inform the AN-ACC classification development and AN-ACC NWAUs. The fixed care costs are used to inform the level of fixed care payment (the base care tariff NWAUs). The hotel costs are out of scope for Commonwealth funding.

Figure 3.2 The RUCS allocated cost data model



Appendix 4 The AN-ACC funding model

This section includes supplementary information that relates to the modelling of the AN-ACC. Source information is included in Report 4.

Funding model testing

The national projections of the sample results were a three-step process. First, facility averages were calculated. Then, the strata averages were estimated based on weighted facility averages, where the weights were derived from the facility sizes. Lastly, the national results were determined as the weighted strata averages, where the weights were derived from the number of beds in each stratum. Table 4.1 shows the total number of facilities and beds for each stratum used for this calculation.

Table 4.1 Weights for population projections

State	Remoteness	Type	Size	# Facilities	# Beds
ACT	Major Cities	Not For Profit	L	7	895
ACT	Major Cities	Not For Profit	M	9	607
ACT	Major Cities	Not For Profit	S	4	123
ACT	Major Cities	Private For Profit	L	4	478
NSW	Major Cities	Not For Profit	L	104	14,578
NSW	Major Cities	Not For Profit	M	144	10,045
NSW	Major Cities	Not For Profit	S	84	3,296
NSW	Major Cities	Private For Profit	L	68	8,599
NSW	Major Cities	Private For Profit	M	113	8,275
NSW	Major Cities	Private For Profit	S	26	1,035
NSW	Major Cities	Government	M	1	98
NSW	Regional	Not For Profit	L	33	4,378
NSW	Regional	Not For Profit	M	106	7,189
NSW	Regional	Not For Profit	S	102	3,375
NSW	Regional	Private For Profit	L	17	2,054
NSW	Regional	Private For Profit	M	26	2,023
NSW	Regional	Private For Profit	S	4	158
NSW	Regional	Government	L	2	220
NSW	Regional	Government	M	2	132
NSW	Regional	Government	S	16	444
NSW	Remote	Not For Profit	S	4	67
NSW	Remote	Government	S	1	33
NT	Regional	Not For Profit	M	2	123
NT	Regional	Not For Profit	S	1	14
NT	Regional	Private For Profit	L	1	135
NT	Remote	Not For Profit	M	1	68
NT	Remote	Not For Profit	S	3	92
QLD	Major Cities	Not For Profit	L	48	6,601

State	Remoteness	Type	Size	# Facilities	# Beds
QLD	Major Cities	Not For Profit	M	67	4,565
QLD	Major Cities	Not For Profit	S	24	905
QLD	Major Cities	Private For Profit	L	45	5,896
QLD	Major Cities	Private For Profit	M	47	3,633
QLD	Major Cities	Private For Profit	S	14	488
QLD	Major Cities	Government	L	2	288
QLD	Major Cities	Government	M	2	120
QLD	Major Cities	Government	S	1	28
QLD	Regional	Not For Profit	L	21	2,752
QLD	Regional	Not For Profit	M	61	4,330
QLD	Regional	Not For Profit	S	49	1,509
QLD	Regional	Private For Profit	L	6	816
QLD	Regional	Private For Profit	M	10	760
QLD	Regional	Private For Profit	S	4	145
QLD	Regional	Government	L	2	210
QLD	Regional	Government	M	4	301
QLD	Regional	Government	S	8	271
QLD	Remote	Not For Profit	M	1	62
QLD	Remote	Not For Profit	S	8	238
QLD	Remote	Private For Profit	S	4	52
QLD	Remote	Government	S	2	65
SA	Major Cities	Not For Profit	L	29	3,588
SA	Major Cities	Not For Profit	M	53	4,004
SA	Major Cities	Not For Profit	S	20	743
SA	Major Cities	Private For Profit	L	16	2,077
SA	Major Cities	Private For Profit	M	31	2,267
SA	Major Cities	Private For Profit	S	14	575
SA	Major Cities	Government	L	2	249
SA	Major Cities	Government	M	1	55
SA	Major Cities	Government	S	2	64
SA	Regional	Not For Profit	L	1	117
SA	Regional	Not For Profit	M	23	1,514
SA	Regional	Not For Profit	S	21	663
SA	Regional	Private For Profit	L	3	327
SA	Regional	Private For Profit	M	2	151
SA	Regional	Private For Profit	S	2	89
SA	Regional	Government	M	6	381
SA	Regional	Government	S	19	547
SA	Remote	Not For Profit	M	2	142
SA	Remote	Not For Profit	S	1	44
TAS	Regional	Not For Profit	L	11	1,364
TAS	Regional	Not For Profit	M	30	2,194
TAS	Regional	Not For Profit	S	20	708

State	Remoteness	Type	Size	# Facilities	# Beds
TAS	Regional	Private For Profit	L	2	253
TAS	Regional	Private For Profit	M	2	126
TAS	Regional	Private For Profit	S	1	33
TAS	Regional	Government	S	2	48
TAS	Remote	Not For Profit	M	1	50
TAS	Remote	Government	S	3	39
VIC	Major Cities	Not For Profit	L	42	5,213
VIC	Major Cities	Not For Profit	M	85	5,919
VIC	Major Cities	Not For Profit	S	52	1,879
VIC	Major Cities	Private For Profit	L	82	10,716
VIC	Major Cities	Private For Profit	M	131	9,376
VIC	Major Cities	Private For Profit	S	45	1,823
VIC	Major Cities	Government	L	4	508
VIC	Major Cities	Government	M	5	323
VIC	Major Cities	Government	S	18	564
VIC	Regional	Not For Profit	L	10	1,097
VIC	Regional	Not For Profit	M	46	3,167
VIC	Regional	Not For Profit	S	33	1,170
VIC	Regional	Private For Profit	L	17	2,000
VIC	Regional	Private For Profit	M	34	2,551
VIC	Regional	Private For Profit	S	6	251
VIC	Regional	Government	L	2	300
VIC	Regional	Government	M	16	985
VIC	Regional	Government	S	115	2,817
VIC	Remote	Government	S	4	53
WA	Major Cities	Not For Profit	L	19	2,350
WA	Major Cities	Not For Profit	M	51	3,501
WA	Major Cities	Not For Profit	S	48	1,755
WA	Major Cities	Private For Profit	L	22	2,577
WA	Major Cities	Private For Profit	M	28	2,004
WA	Major Cities	Private For Profit	S	14	524
WA	Major Cities	Government	M	1	70
WA	Major Cities	Government	S	3	126
WA	Regional	Not For Profit	L	4	553
WA	Regional	Not For Profit	M	8	587
WA	Regional	Not For Profit	S	19	642
WA	Regional	Private For Profit	L	1	140
WA	Regional	Private For Profit	M	6	441
WA	Regional	Government	S	3	91
WA	Remote	Not For Profit	M	2	139
WA	Remote	Not For Profit	S	5	100
WA	Remote	Government	M	1	56
WA	Remote	Government	S	1	10

For the national projections occupancy rates were derived from two secondary data sources. Table 4.2 shows the occupancy rates that were used for each of the groups.

Table 4.2 Occupancy rates for national projections

		Occupancy rates (%)
Sector[1]	Government	90.0
	Not For Profit	93.0
	Private For Profit	90.0
Remoteness[2]	Major Cities	91.4
	Regional	92.5
	Remote	88.6
Size[3]	S	91.8
	M	91.8
	L	91.8
Total		91.8

[1] Aged Care Financing Authority (2018) *Sixth report on the Funding and Financing of the Aged Care Sector*. Aged Care Financing Authority, Canberra

[2] derived from Table 14A.13 in Productivity Commission (2018) *Report on Government Services.* Productivity Commission, Canberra; part f, chapter 14, aged care services attachment tables

[3] occupancy rates by facility size was unavailable. The national average was used.

Appendix 5 Assessment tool used in Study One

Resource Utilisation and Classification Study Assessment Toolkit

Assessor ID: _____

Facility ID: _____

Resident ID: _____

Consent confirmed ☐

Place of Assessment:

☐ Residential Care Facility

☐ Hospital Facility

☐ Home

☐ Other

Date ___/___/___

Start Time _____

End Time _____

Total time of any interruptions _____ minutes

SECTION 1

Assessment type:

☐ Initial assessment

↳ Continue to Section 1.1

☐ Reassessment

↳ Skip to Section 1.2

SECTION 1.1

Reason for initial assessment:

☐ Study start

☐ New resident entering facility

☐ Resident returned from hospital

↳ Date returned: ___/___/___

☐ Resident returned from other time away

↳ Date returned: ___/___/___

Skip to Section 2.0

SECTION 1.2

Has the resident:

☐ Returned from hospital (at least two (2) day stay or procedure requiring general anaesthetic)

↳ Date returned: ___/___/___

☐ Had a significant change in dependency (select all that apply)

☐ Acute illness

☐ Exacerbation of current illness

☐ Injury

SECTION 2

Technical Nursing Requirements:

Does the resident require three (3) or more people for transfers and locomotion due to weight?

☐ Yes ☐ No

Does the resident require any of the following?

	Yes	No	Not Sure
Oxygen			
Enteral feeding			
Tracheostomy			
Catheter			
Stoma			
Peritoneal dialysis			
Daily injections			
Complex wound management			

SECTION 3

Resource Utilisation group – Activities of Daily Living **(RUG – ADL)** (See score sheet for values)

	1	2	3	4	5
Bed mobility					
Toileting					
Transfer					
Eating					

Page **1** of **5**

SECTION 4.0

Australian-modified Karnofsky Performance Status (AKPS). Tick one (1) of the following boxes.

☐ (100) Normal; no complaints; no evidence of disease

☐ (90) Able to carry on normal activity; minor sign of symptoms of disease

☐ (80) Normal activity with effort; some signs or symptoms of disease

☐ (70) Cares for self; unable to carry on normal activity or to do active work

☐ (60) Able to care for most needs; but requires occasional assistance

☐ (50) Considerable assistance and frequent medical care required

☐ (40) In bed more than 50% of the time

☐ (30) Almost completely bedfast

☐ (20) Totally bedfast and requiring extensive nursing care by professionals and/or family

☐ (10) Comatose or barely rousable

SECTION 5

Palliative Care Details:

	Yes	No	Not sure
Did the resident enter the facility for residential palliative care? (prognosis ≤ three **(3)** months)	☐	☐	☐
Was there an existing palliative care plan (primary care or palliative care team) on entry to the facility?	☐	☐	☐
Is the AKPS score 50 or less?	☐	☐	

If you answered "**No**" or "**Not sure**" to **ANY** of the above questions, skip to **Section 6.0**

If you answered "**Yes**" to **ALL** three **(3)** of the above questions, continue to **Section 5.1.**

SECTION 5.1

Palliative Care:

Phase of care (circle one (1))

Stable	Unstable	Deteriorating	Terminal	Not sure

Malignancy ☐Yes ☐No ☐Not sure

This completes the Palliative Care assessment.

Now complete the Assessor Feedback on **Page 5.**

SECTION 6

Frailty:

Has the resident fallen in the last 12 months?

☐ Yes, once.
In the last 4 weeks? Yes No (circle one (1))

☐ Yes, more than once.
How many times in the last 4 weeks? _____

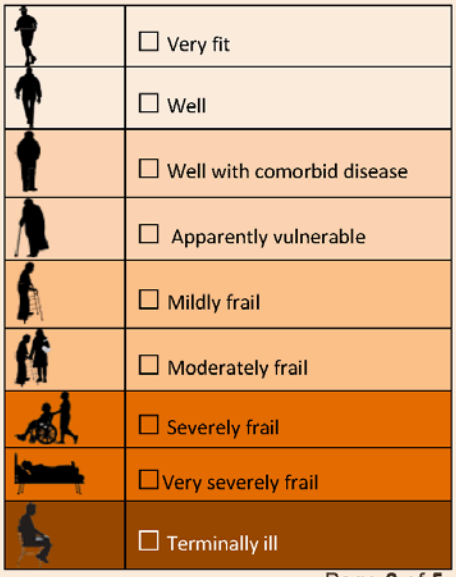
☐ No

☐ Unsure

Has the resident lost more than 10% of their body weight in the last 12 months?

☐ Yes ☐ No ☐ Unsure

Rockwood Frailty Score (Tick only one (1))



Page **2** of **5**

SECTION 7

Braden Scale – Predicting pressure sore risk

(See score sheet for values)

Risk Factor	Description and score			
	1	2	3	4
Sensory Percept-ion	☐ Completely limited	☐ Very limited	☐ Slightly limited	☐ No impairment
Is sensory perception rating based on ☐Communication ☐Sensation ☐both				
Moisture	☐ Constantly moist	☐ Often moist	☐ Occasionally moist	☐ Rarely moist
Activity	☐ Bedfast	☐ Chairfast	☐ Walks occasionally	☐ Walks frequently
Mobility	☐ Completely immobile	☐ Very limited	☐ Slightly limited	☐ No limitation
Nutrition	☐ Very poor	☐ Probably inadequate	☐ Adequate	☐ Excellent
Friction and Shear	☐ Problem	☐ Potential problem	☐ No apparent problem	

SECTION 8

De Morton Mobility Index **(DEMMI)** – Modified

Bed			
Bridge	☐ unable	☐ able	
Roll onto side	☐ unable	☐ able	
Lying to sitting	☐ unable	☐ min assist ☐ supervision	☐ independent
Chair			
Sit unsupported in chair	☐ unable	☐ 10 sec	
Sit to stand from chair	☐ unable	☐ min assist ☐ supervision	☐ independent
Sit to stand without using arms	☐ unable	☐ able	
Static balance –no gait aid			
Stand unsupported	☐ unable	☐ 10 sec	
Stand feet together	☐ unable	☐ 10 sec	
Stand on toes	☐ unable	☐ 10 sec	
Tandem stand with eyes closed	☐ unable	☐ 10 sec	
Walking			
Walking distance +/- gait aid *Gait aid*	☐ unable ☐ 5m	☐ 10m ☐ 20m	☐ 50m
Walking independence	☐ unable ☐ min assist ☐ supervision	☐ independent with gait aid	☐ independent without gait aid

SECTION 9

Functional Independence Measure **(FIM)**

Function	Score 1 – 7
Eating	
Grooming	
Bathing	
Dressing - Upper Body	
Dressing - Lower Body	
Toileting	
Bladder Management	
Bowel Management	
Bed, Chair, Wheelchair	
Toilet	
Tub, Shower	
* Walk *or* Wheelchair (*circle one **(1)**)	
Stairs	
Comprehension	
Expression	
Social Interaction	
Problem Solving	
Memory	

Independent
7 Complete Independence (Timely, Safely)
6 Modified Independence (Device)

Modified Dependence
5 Supervision (Subject = 100%+)
4 Minimal Assist (Subject = 75%+)
3 Moderate Assist (Subject = 50%+)

Complete Dependence
2 Maximal Assist (Subject = 25%+)
1 Total Assist (Subject = less than 25%)

SECTION 10

Neuropsychiatric Inventory Questions - Nursing Home Version **(NPI-NH)**

A. **Does the resident have beliefs that you know are not true?** For example, saying that people are trying to harm him/her or steal from him/her. Has he/she said that family members or staff are not who they say they are or that his/her spouse is having an affair? Has the resident had any other unusual beliefs?

☐ No

☐ Yes → Complete NPI-NH **Part A**

B. **Does the resident have hallucinations** – meaning, does he/she see, hear, or experience things that are not present? (If "Yes," ask for an example to determine if in fact it is a hallucination). Does the resident talk to people who are not there?

☐ No

☐ Yes → Complete NPI-NH **Part B**

C. **Does the resident have periods when he/she refuses to let people help him/her?** Is he/she hard to handle? Is he/she noisy or uncooperative? Does the resident attempt to hurt or hit others?

☐ No

☐ Yes → Complete NPI-NH **Part C**

D. **Does the resident seem sad or depressed?** Does he/she say that he/she feels sad or depressed? Does the resident cry at times?

☐ No

☐ Yes → Complete NPI-NH **Part D**

E. **Is the resident very nervous, worried, or frightened for no reason?** Does he/she seem very tense or unable to relax? Is the resident afraid to be apart from you or from others that he/she trusts?

☐ No

☐ Yes → Complete NPI-NH **Part A**

F. **Does the resident seem too cheerful or too happy for no reason**? I don't mean normal happiness but, for example, laughing at things that others do not find funny?

☐ No

☐ Yes → Complete NPI-NH **Part F**

G. **Does the resident sit quietly without paying attention to things going on around him/her?** Has he/she lost interest in doing things or lack motivation for participating in activities? Is it difficult to involve the resident in conversation or in group activities?

☐ No

☐ Yes → Complete NPI-NH **Part G**

H. **Does the resident do or say things that are not usually done or said in public?** Does he/she seem to act impulsively without thinking? Does the resident say things that are insensitive or hurt people's feelings?

☐ No

☐ Yes → Complete NPI-NH **Part H**

I. **Does the resident get easily irritated or disturbed?** Are his/her moods very changeable? Is he/she extremely impatient?

☐ No

☐ Yes → Complete NPI-NH **Part I**

J. **Does the resident have repetitive activities or "habits" that he/she performs over and over** such as pacing, wheeling back and forth, picking at things, or winding string? (Do not include simple tremors or tongue movements).

☐ No

☐ Yes → Complete NPI-NH **Part J**

K. **Does the resident have difficulty sleeping** (do not count as present if the resident simply gets up once or twice per night only to go to the bathroom and falls back asleep immediately)? Is he/she awake at night? Does he/she wander at night, get dressed, or go into others' rooms?

☐ No

☐ Yes → Complete NPI-NH **Part K**

L. **Does the resident have an extremely good or poor appetite, changes in weight, or unusual eating habits?** Has there been any change in type of food he/she prefers?

☐ No

☐ Yes → Complete NPI-NH **Part L**

This completes the resident assessment. Now complete the Assessor Feedback on **Page 5.**

Assessor Feedback Form

What sources of information were used for this assessment? And how long did they take?

Face to face with the resident

☐ Yes, _____minutes

☐ No

Observation of the resident

☐ Yes, _____minutes

☐ No

Contact with family and/or friend carers

☐ Yes, _____minutes

☐ No

Gathering information from facility staff

☐ Yes, _____minutes

☐ No

Gathering information from other sources, e.g. notes and documents

☐ Yes, _____minutes

☐ No

How difficult was it to make the rating? (Tick one (1) box only)

☐ Very easy	☐ Moderately Easy	☐ Not sure	☐ Moderately Difficult	☐ Very difficult

How confident do you feel that the ratings that you have recorded are accurate? (Tick one (1) box only)

☐ Very Confident	☐ Fairly Confident	☐ Undecided	☐ Not very Confident	☐ Not at all Confident

Were any of the items inappropriate or too burdensome for this resident?

☐ Yes ☐ No

↳ List the items and explain why

____

____

____

____

____

Is there anything else you would like to add?

☐ Yes ☐ No

↳ Please add your comments below

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

____

Thank you.

Page **5** of **5**