The Registry of Senior Australians (ROSA) Research Centre
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Indicator: Fractures

Indicator Definition

Proportion of residents who experience at least one fracture resulting in hospitalisation, emergency department presentation, or death

Indicator Specification

Numerator data source

SA APC, SA NAEC, NSW APDC, NSW EDDC, VAED, VAMD, QLD EDC, QHAPDC, MBS, NDI

Numerator

Number of permanent residents with an emergency department presentation or hospitalisation for fracture (Table 1), or secondary diagnosis where onset is not during the hospitalisation, the external cause of the hospitalisation is fall, treatment for which MBS paid for (Table 2), and deaths from fractures (Table 1)

Table 1. Fractures, descriptions and ICD-10-AM codes

Description	Code
Open wound (of any part of head) communicating with a fracture	S01.81
Fractures of skull and facial bones	S02*
Open wound (of any part of neck) communicating with a fracture	S11.81
Fractures of neck	S12*
Open wound (of any part of thorax) communicating with a fracture	S21.81
Fracture of rib(s), sternum and thoracic spine	S22*
Open wound (of any part of lower back and pelvis) communicating with a fracture	S31.81
Fracture of lumbar spine and pelvis	S32*
Open wound (of any part of shoulder and upper arm) communicating with a fracture	S41.81
Fracture of shoulder and upper arm	S42*
Open wound (of any part of forearm) communicating with a fracture	S51.81
Fracture of forearm	S52*
Open wound (of any part of wrist and hand) communicating with a fracture	S61.81
Fracture of wrist and hand level	S62*
Open wound (of any part of hip and thigh) communicating with a fracture	S71.81
Fracture of femur	S72*
Open wound (of any part of lower leg) communicating with a fracture	S81.81
Fracture of lower leg including ankle	S82*
Open wound (of any part of ankle and foot) communicating with a fracture	S91.81
Fracture of foot, except ankle	S92*
Fractures involving multiple body regions	T02*
Fracture of spine, level unspecified	T08*
Fracture of upper limb, level unspecified	T10*
Fracture of lower limb, level unspecified	T12*
Fracture of unspecified body region	T14.2*

SA APC: South Australian Admitted Patient Care; **SA NAEC:** South Australian Non-Admitted Emergency Care; **NSW APDC:** New South Wales Admitted Patient Data Collection; **NSW EDDC:** New South Wales Emergency Department Data Collection; **VAED:** Victorian Admitted Episodes Dataset; **VEMD:** Victorian Emergency Minimum Dataset; **QLD EDC:** Queensland Emergency Department Collection; **QHAPDC:** Queensland Hospital Admitted

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Patient Data Collection; **MBS:** Medicare Benefits Schedule; **NDI:** National Death Index. **ICD-10-AM:** International Classification of Diseases, Tenth Revision, Australian Modification.

Table 2. Non-surgical and surgical treatment of fractures, descriptions and MBS codes

MBS Item Group	MBS Subgroup	MBS Subheading	Codes
O09: Oral and Maxillofacial Services - Treatment of Fractures			53400, 53403, 53406, 53409, 53410, 53411, 53412, 53413, 53414, 53415, 53416, 53418, 53419, 53422, 53423, 53424, 53425, 53427, 53429, 53439, 53458, 53459, 53460
T08: Therapeutic Procedures-Surgical Operations	T0803: Vascular	13: Interventional Radiology Procedures	35401
	T0807: Neurosurgical	5: Cranio-Cerebral Injuries	39606, 39609, 39610, 39612, 39615,
	T0808: Ear, Nose and Throat		41888
	T0813-Plastic and Reconstructive Surgery	5: Oral and Maxillofacial Surgery	45975, 45978, 45981, 45984, 45987, 45990, 45993, 45996
	T0814: Hand Surgery		46442
	T0815: Orthopaedic	2: Treatment of Fractures	47300, 47301, 47303, 47304, 47306, 47307, 47309, 47310, 47312, 47313, 47315, 47316, 47318, 47319, 47321, 47324, 47327, 47330, 47333, 47336, 47339, 47342, 47345, 47348, 47351, 47354, 47357, 47360, 47361, 47362, 47363, 47364, 47366, 47367, 47369, 47370, 47372, 47373, 47375, 47378, 47381, 47384, 47385, 47386, 47387, 47390, 47393, 47396, 47399, 47402, 47405, 47408, 47411, 47414, 47417, 47420, 47423, 47426, 47429, 47432, 47435, 47438, 47441, 47444, 47447, 47450, 47451, 47453, 47456, 47459, 47462, 47465, 47466, 47467, 47468, 47471, 47474, 47477, 47480, 47483, 47486, 47489, 47492, 47495, 47498, 47501, 47504, 47507, 47510, 47511, 47514, 47516, 47519, 47525, 47528, 47531, 47534, 47537, 47540, 47543, 47546, 47549, 47552, 47555, 47558, 47559, 47561, 47564, 47565, 47566, 47567, 47568, 47570, 47573, 47576, 47579, 47582, 47585, 47588, 47591, 47594, 47595, 47597, 47600, 47603, 47606, 47609, 47612, 47615, 47618,

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			47621, 47624, 47627, 47630, 47633, 47636, 47637, 47639, 47642, 47645, 47648, 47651, 47654, 47657, 47663, 47666, 47672, 47678, 47681, 47684, 47687, 47690, 47693, 47696, 47699, 47702, 47703, 47735, 47738, 47741, 47753, 47756, 47762, 47765, 47768, 47771, 47774, 47777, 47780, 47783, 47786, 47789
		4: Bone Grafts	48203
		5: Osteotomy and Osteectomy	48433, 48435
		11: Hip	47491, 47522, 49315, 49336
	T0817: Spinal Surgery		51110

MBS: Medicare Benefits Schedule. **NDI:** National Death Index.

Denominator
Number of permanent residents

Exclusions
None

Covariates
Age, sex, number of health conditions excluding osteoporosis/Paget's, dementia (Table 3), osteoporosis medication dispensing (Table 4), AN-ACC classification (Table 5)

Table 3. Dementia diagnoses, including ACAP MDSV2.0, NSAF codes[2], ACFI, ATC codes and used ICD-10 AM codes for ascertainment

	Description[1]	Coding
Data source	**Condition**	**ACAP MDSV2.0 and NSAF code**
ACAP, NSAF[1], ACFI[2]	**Dementia in Alzheimer's disease**	**0500**
	Dementia in Alzheimer's disease with early onset (<65 yrs)	0501
	Dementia in Alzheimer's disease with late onset (>65 yrs)	0502
	Dementia in Alzheimer's disease, atypical or mixed type	0503
	Dementia in Alzheimer's disease, unspecified	0504
	Vascular dementia	**0510**
	Vascular dementia of acute onset	0511
	Multi-infarct dementia	0512
	Subcortical vascular dementia	0513
	Mixed cortical & subcortical vascular dementia	0514
	Other vascular dementia	0515
	Vascular dementia – unspecified	0516
	Dementia in other diseases classified elsewhere	**0520**
	Dementia in Pick's disease	0521
	Dementia in Creutzfeldt-Jakob disease	0522

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	Dementia in Huntington's disease	0523
	Dementia in Parkinson's disease	0524
	Dementia in human immunodeficiency virus (HIV) disease	0525
	Dementia in other specified diseases classified elsewhere	0526
	Lewy body dementia	0584
	Other dementia	**0530**
	Alcoholic dementia	0531
	Unspecified dementia (includes presenile & senile dementia)	0532
	Delirium superimposed on dementia	0542
Data source	**Drug name**	**ATC codes**
PBS	Donepezil	N06DA02
	Rivastigmine	N06DA03
	Galantamine	N06DA04
	Memantine	N06DX01
	Risperidone for dementia	N05AX08 AND PBS item codes 08787L, 08788M, 08789N, 08790P, 08791Q, 09293D, 01842Y, 11869Q, 11872W, 11874Y, 11877D, 11873X, 11879F, 11881H, 11882J
Data source	**Description**	**ICD-10 AM codes**
SA APC, SA NAEC, NSW APDC, NSW EDDC, VAED, VAMD, QLD EDC, QHAPDC	Dementia in Alzheimer's disease	F00*
	Vascular dementia	F01*
	Dementia in other diseases classified elsewhere	F02*
	Unspecified dementia	F03*
	Delirium superimposed on dementia	F05.1
	Alzheimer's disease	G30*
	Lewy body disease	G31.3
	Dementia (including in Alzheimer's disease)	U79.1

[1]All codes are used in the assessment conducted prior to entering residential aged care. [2]In the ACFI assessment prior to 1 October 2022, dementia is only identified using the codes in bold.
ACAP: Aged Care Assessment Program; **NSAF:** National Screening and Assessment Form; **ACFI:** Aged Care Funding Instrument; **PBS:** Pharmaceutical Benefits Scheme. **ICD-10-AM:** International Classification of Diseases, Tenth Revision, Australian Modification. **SA APC:** South Australian Admitted Patient Care; **SA NAEC:** South Australian Non-Admitted Emergency Care; **NSW APDC:** New South Wales Admitted Patient Data Collection; **NSW EDDC:** New South Wales Emergency Department Data Collection; **VAED:** Victorian Admitted Episodes Dataset; **VEMD:** Victorian Emergency Minimum Dataset; **QLD EDC:** Queensland Emergency Department Collection; **QHAPDC:** Queensland Hospital Admitted Patient Data Collection.

Table 4. Osteoporosis medications[1], descriptions and ATC codes

Data Source	Description	Code
PBS	Bisphosphonates and bisphosphonates combinations	M05BA01–M05BB05
	Strontium ranelate	M05BX03
	Denosumab	M05BX04

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	Raloxifene	G03XC01
	Teriparatide	H05AA02

[1]History of dispensing of osteoporosis medications in 182 days prior to the start of the reporting period, or date of entry into permanent residential aged care for new residents during the reporting period.
PBS: Pharmaceutical Benefits Scheme. **ATC:** Anatomical Therapeutic Classification.

Table 5. AN-ACC classification

Data source	Description	Codes
NACDC-AN-ACC	Classification of residents that reflects their characteristics, care needs and determines the associated variable residential care subsidy, which is determined through residential aged care funding assessment using the AN-ACC assessment tool. There are 13 AN-ACC classes for permanent residents, including a class for planned admissions for palliative care.	1 – Class 1 (admit for palliative care) 2 – Class 2 (independent without compounding factors) 3 – Class 3 (independent with compounding factors) 4 – Class 4 (assisted mobility, high cognition without compounding factors) 5 – Class 5 (assisted mobility, high cognition with compounding factors) 6 – Class 6 (assisted mobility, medium cognition without compounding factors) 7 – Class 7 (assisted mobility, high cognition with compounding factors) 8 – Class 8 (assisted mobility, low cognition) 9 – Class 9 (not mobile, higher function without compounding factors) 10 – Class 10 (not mobile, higher function with compounding factors) 11 – Class 11 (not mobile, lower function, lower pressure sore risk) 12 – Class 12 (not mobile, lower function, higher pressure sore risk without compounding factors) 13 – Class 13 (not mobile, lower function, higher pressure sore risk with compounding factors)

NACDC: National Aged Care Data Clearinghouse. **AN-ACC:** Australian National Aged Classification.

Stratifications
None

Comments
None

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Any enquires about, or comments on, this Technical Specification document should be directed to:

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