Supplementary information for

Identification of care tasks for the use of wearable transfer support robots - an

observational study at nursing facilities using robots on a daily basis

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1

## Supplementary Table 1. Code chart

Major category	Middle category	Code: subcategory	Classification	Major category	Middle category	Code: subcategory	Classification
1 Bathing / keeping clean / conditioning / changing	1 Bathing	111 Bathing preparation 112 Bathing: verbal action, assistance, watching, etc. 113 Bathing cleanup		6 Social life support	1 Events, club activities 2 Telephone, FAX, E- mail, letter 3 Document creation	610 Events, club activities 620 Telephone, FAX, E-mail, Letter 630 Document creation	
clothes	2 Wiping and cleansing	120 Wiping and cleansing			4 Responding to visitors 5 Movement when	640 Responding to visitors	
	3 Hair washing	130 Hair washing			going out	650 Moving when going out	
	4 Washbasin / hand washing	140 Washbasin / hand washing			6 Acts on the go	660 Acts on the go	Communication
	5 Oral and ear care	150 Oral and ear care			7 Relationship with the community	670 Relationship with the community	
	6 Dealing with menstruation	160 Dealing with menstruation			8 Professional training / production activities	680 Professional training / production activities	
	7 Conditioning	170 Conditioning			9 Social life training	690 Social life training	
	8 Changing clothes	180 Changing clothes 190 Others		7 Behavioral	0 Other 710 Response when behav	600 Other	
2 Moving /	9 Others  1 Movement within the facility	211 Preparation for movement within the		problems	720 Preventive response to		
transfers /		facility 212 Movement within the facility: verbal					Others
changing position		action, assistance, watching, etc.			730 Preventive training for		
		213 Movement within the facility 221 Transfer preparation		8 Medical	9 Others 1 Use of drugs	790 Others 810 Use of drugs	
		222 Transfers: verbal action, assistance,		o Modiodi		, digestive, and urinary procedures	
	2 Transfers	watching, etc.			830 Exercise equipment / skin / eye / otolaryngology / dental and		
		223 Transfer cleanup			surgical procedures	,	jology / dollar and
		231 Preparation for getting up			4 Observation / measurement /	840 Observation / measurement /	
					inspection	inspection	
	3 Getting up	232 Getting up: verbal action, assistance, watching, etc.			5 Guidance / advice	850 Guidance / advice	
		233 Getting up: cleaning up			6 Assistance when visiting a medical	860 Assistance when visiting a medical institution	
		241 Proporation for standing up			institution 9 Others		Medical care
		241 Preparation for standing up 242 Standing up, verbal action,		9 Physical	1 General	890 Others 910 General	
	4 Standing up	assistance, watching, etc.	Direct care	function		9 to General	
		243 Standing up: cleaning up	2001.000	training	2 Applied daily life training	920 Applied daily life training	
		251 Preparation for other posture changes			930 Speech / hearing training (speech / hearing therapy)		
	5 Other postural	252 Other postural changes: verbal			4 Sports training	940 Sports training	
	changes	action, assistance, watching, etc.			5 Traction / heat /	050 T# / b / -l#	
3 Meal assistance		253 Other postural changes: cleaning up			electrotherapy	950 Traction / heat / electrotherapy	
		261 Preparation for attaching / detaching assistance tools			9 Others	990 Others	
	6 Putting on and taking off assistance tools	262 Attaching/ detaching assistance tools: verbal action, assistance, watching, etc.		0 Care that is not directly related to the	How about to use service like "1 Service about the recipient"	011 Contact / coordination	Indirect care
		263 Attaching/ detaching assistance tools: cleaning up		recipient	2 Service about staff	012 Recording / document creation	Indirect care
	9 Others	290 Others				013 Residents' units, floors, etc., environment maintenance and cleaning	
	1 Cooking 2 Serving / lower	310 Cooking				014 Resident goods management (including goods purchasing) 015 Patrol and overlooking using	
	serving 3 Dishwashing and	320 Serving / lower serving				installed equipment	
	cleaning up dishes	330 Dishwashing and cleaning up dishes				016 Patrol, overlooking (other than that)	Transit
	4 Eating (meals / snacks)	340 Eating (meals / snacks)			2 Service about stail	021 Hand washing	la dias at a sas
	E Hudrotion					, and the second	Indirect care
	5 Hydration	350 Hydration				022 Waiting (napping)	Staff Break
	9 Others	350 Hydration 390 Other				022 Waiting (napping) 023 Records and coordination regarding staff	
4 Toileting	9 Others	390 Other 411 Preparation for urination				023 Records and coordination regarding staff 024 Break	Staff Break
4 Toileting		390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc.				023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff	Staff Break  Documentation  Staff Break  Indirect care
4 Toileting	9 Others	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup				023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving	Staff Break  Documentation  Staff Break  Indirect care  Transit
4 Toileting	9 Others 1 Urination	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action,				023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment	Staff Break Documentation Staff Break Indirect care Transit Equipment
4 Toileting	9 Others	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action, assistance, watching, etc.			9 Others	023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other)	Staff Break  Documentation  Staff Break  Indirect care  Transit
4 Toileting	9 Others 1 Urination	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action,		10 Correspond with other units	9 Others	023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other)	Staff Break Documentation Staff Break Indirect care Transit Equipment
5 Life support	9 Others  1 Urination  2 Defecation	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action, assistance, watching, etc. 423 Defecation cleanup		10 Correspond with other units	9 Others	023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units 1 Bathing / keeping clean / conditioning /	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care
5 Life support for	9 Others  1 Urination  2 Defecation  9 Others  1 Laundry  2 Cleaning and garbage	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action, assistance, watching, etc. 423 Defecation: verbal action, assistance, watching, etc. 423 Defecation cleanup			9 Others	023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care
5 Life support for	9 Others  1 Urination  2 Defecation  9 Others  1 Laundry  2 Cleaning and garbage disposal 3 Organizing	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action, assistance, watching, etc. 423 Defecation cleanup 490 Others 510 Laundry 520 Cleaning and garbage disposal 530 Organizing			9 Others	023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units 1 Bathing / keeping clean / conditioning / changing clothes 2 Moving / transfers / changing position 3 Meal assistance	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care Others
4 Toileting  5 Life support for independence	9 Others  1 Urination  2 Defecation  9 Others  1 Laundry  2 Cleaning and garbage disposal  3 Organizing  4 Food management	390 Other 411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation: verbal action, assistance, watching, etc. 423 Defecation cleanup 490 Others 510 Laundry 520 Cleaning and garbage disposal 530 Organizing 540 Food management	Indirect care		9 Others	023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units 1 Bathing / keeping clean / conditioning / changing clothes 2 Moving / transfers / changing position 3 Meal assistance 4 Toileting	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care Others
5 Life support for	9 Others  1 Urination  2 Defecation  9 Others  1 Laundry  2 Cleaning and garbage disposal  3 Organizing  4 Food management  5 Money management  6 Door locking, fire	390 Other  411 Preparation for urination  412 Urination: verbal action, assistance, watching, etc.  413 Urination cleanup  421 Defecation preparation  422 Defecation: verbal action, assistance, watching, etc.  423 Defecation: verbal action, assistance, watching, etc.  423 Defecation cleanup  490 Others  510 Laundry  520 Cleaning and garbage disposal  530 Organizing  540 Food management  550 Money management	Indirect care			023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units 1 Bathing / keeping clean / conditioning / changing clothes 2 Moving / transfers / changing position 3 Meal assistance 4 Toileting 5 Life support for independence	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care Others Direct care
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5 Life support for	9 Others  1 Urination  2 Defecation  9 Others  1 Laundry  2 Cleaning and garbage disposal  3 Organizing  4 Food management  5 Money management  6 Door locking, fire extinguishing, disaster prevention  7 Awakening and sleeping  8 Other daily life	390 Other  411 Preparation for urination  412 Urination: verbal action, assistance, watching, etc.  413 Urination cleanup  421 Defecation preparation  422 Defecation: verbal action, assistance, watching, etc.  423 Defecation: verbal action, assistance, watching, etc.  423 Defecation cleanup  490 Others  510 Laundry  520 Cleaning and garbage disposal  530 Organizing  540 Food management  550 Money management  560 Door locking, fire extinguishing, disaster prevention  570 Awakening sleeping  580 Other daily life				023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units 1 Bathing / keeping clean / conditioning / changing clothes 2 Moving / transfers / changing position 3 Meal assistance 4 Toileting 5 Life support for independence	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care Others Direct care  Indirect care/ Communication Others
5 Life support for	9 Others  1 Urination  2 Defecation  9 Others  1 Laundry  2 Cleaning and garbage disposal  3 Organizing  4 Food management  5 Money management  6 Door locking, fire extinguishing, disaster prevention  7 Awakening and sleeping  8 Other daily life	390 Other  411 Preparation for urination 412 Urination: verbal action, assistance, watching, etc. 413 Urination cleanup 421 Defecation preparation 422 Defecation verbal action, assistance, watching, etc. 423 Defecation cleanup 490 Others 510 Laundry 520 Cleaning and garbage disposal 530 Organizing 540 Food management 550 Money management 560 Door locking, fire extinguishing, disaster prevention	Indirect care  Communication			023 Records and coordination regarding staff 024 Break 025 Environmental maintenance and cleaning for staff 026 Moving 027 Maintenance of installed equipment 028 About staff (other) 099 Others 999 Correspond with other units 1 Bathing / keeping clean / conditioning / changing clothes 2 Moving / transfers / changing position 3 Meal assistance 4 Toileting 5 Life support for independence 6 Social life support	Staff Break Documentation Staff Break Indirect care Transit Equipment Indirect care Others Direct care Indirect care/Communication Communication