

## Eligibility Classification Logic of the Japanese Long Term Care Insurance

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### Abstract

Japan has moved toward socialization of care for the frail elderly by introducing a public, mandatory Long Term Care Insurance on April 1, 2000. The program covers both home-based and institutional caregiving. The budget of the insurance is based on fifty percent from the general tax and another fifty percent from the premium of the insured. The eligibility process begins with the individual or his/her family applying to the insurer (usually municipal government). That is followed by the two-step assessment process that determines the limit of benefit. The first is on-site assessment using the 79 items of standardized questionnaire. The 74 items are analyzed by the official computer program to classify applicant into one of 7 levels of dependency or to reject eligibility. In this article, the authors explain this logic in detail.

**Key words:** long term care insurance, classification logic, eligibility, Japan

### ❖ Introduction

Japan has implemented a new social insurance scheme for the frail elderly, Long-Term-Care Insurance (LTCI) on 1 April 2000. It is an époque-making event for the history of the Japanese public health policy, because it means that Japan has moved toward socialization of care in modifying its tradition of family care for the elderly. In order to assure the equality and neutrality of scheme, Ministry of Health, Labor and Welfare (MHLW) has introduced a computer based eligibility assessment system for LTCI scheme. Figure 1 shows the scheme <sup>1)</sup>. The eligibility is determined by the 2-step assessment process. The first is on-site assessment using the 74 items of standardized questionnaire, each with a choice of 2 to 4 levels, plus space for comments on particular aspects to be remarked. The 74 items are analyzed by the official

computer program to classify applicant into one of 7 levels of dependency or to reject eligibility. The two lightest levels are “assistance required level 1 and level 2” which are subject to preventive services; the other 5 levels are called “care required level 1 to 5”. It is important to know that the institutional services are available only for “care required” levels under the Japanese LTCI scheme. The second process is the assessment conference by health care professionals. The conference reviews the classification made by computer program by taking into account the descriptive statement plus a report from the applicant’s home doctor. The eligibility decision is then to be communicated to the applicant within 30 days of applying. If dissatisfied, the applicant may appeal to an agency of re-evaluation at the prefecture level.

The classification logic was developed by MHLW research team based on the data that was gathered by the 1-min time study of sampled aged population (originally based on about 3400 aged, and then larger size population for continuous refinement of the logic). Compared with the eligibility logic of other countries, i.e., Germany and France, the Japanese eli-

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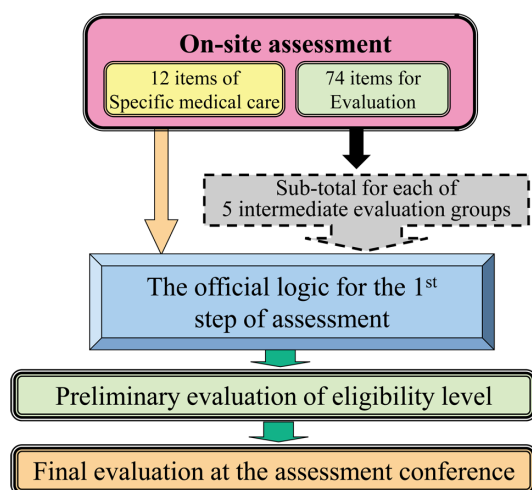


Figure 1 Process of the 1st step of assessment

gibility logic is complicated. As the long term care for the aged is a common topic for most of the developed countries, it will be useful to organize several international comparative studies about classification logic in order to ameliorate the accuracy of classification logic of each country. This requires the detailed information of each logic. Up to now, the detail of Japanese LTCI classification logic has not been fully explained for foreign researchers because of the language barrier. In this article, the authors explain the Japanese LTCI eligibility assessment logic in order to serve for the future internationally collaborative studies.

### ❖ Eligibility Assessment Logic

The logic of the official case mix classification of dependency has been constructed based on the results of time studies of dependent elderly. Table 1-1 to Table 1-5 shows the 74 items of assessment with their scores that are calculated for each of the five intermediate evaluation groups. The estimation method of time required for care is very complicated. Using the score of each item and total score of each intermediate evaluation group, the theoretical time required for caregiving is estimated based on a set of decision trees. There is a decision tree for the estimation of caring time for each of 8 care categories; eating, toileting, mobility, personal hygiene, indirect assistance, BPSD related care, functional training related care and medical services related care. These decision trees have been constructed by the discriminant function analyses. Figure 2 to Figure 9 explains how to calculate the

theoretical caregiving time for each intermediate score.

Using Figure 2, we will explain how the time of care for eating is estimated. If a male aged (75 yr old) is partially dependent for eating, then he is evaluated for swallowing. If his swallowing level is “Need watching”, then he is evaluated for ADL function level. If the sum of ADL function score calculated by Table 1-2 is 67.8 ( $\geq 11.6$ ), then he is evaluated for oral hygiene. If his oral hygiene level is partially dependent, again he is evaluated for ADL level. As his ADL score is 67.8 ( $\geq 35.8$ ), the theoretical time for eating care of this aged is estimated as 15.4 min.

The estimated caregiving time of the applicant is determined as a sum of the caregiving time of times estimated from the above mentioned 8 decision trees and time allocated to each of 12 medical treatments as shown in Table 2. If a person receives any medical treatment listed in Table 2, the corresponding time is added to the theoretical time calculated as the sum of Figure 2 to Figure 9. Table 3 shows the criteria of dependency level and monetary limitation of each category.

### ❖ Conclusion

In this article, we have explained the classification logic of Japanese LTCI system. It is true that this computerized system has contributed to the rapid generalization of LTCI. The fact that “the computer system evaluates the eligibility level by the officially validated logic” gives “a pardon” for the persons in charge of LTCI at the local level. This has lightened their workload by decreasing the burden of complaint procedure. Furthermore, the applicants also seem to have a feeling of rationality or resignation for the decided eligibility level. Apart from the debate of financial difficulty of LTCI scheme, the scheme is relatively well accepted by the citizen. For these reasons, most of the associated persons in charge of LTCI at the central and local level do not seem to want any change of LTCI logic.

In fact, it seems that the 10 yr’ experience of LTCI has made us non-sensitive to assessment logic. However, the validity of assessment logic must be periodically checked. According to the report on the modification rate of assessment at the second step (final evaluation at the evaluation committee, the rate is 30% on average and this rate varies between 10 and

50% among the committees<sup>2)</sup>. The thirty percentage of change of results is enough to re-consider the validity of assessment logic. Another reason for necessity of modifying the logic is the change in clinical characteristics of users. At the beginning of LTCI scheme introduction in 2000, most of the causal diseases of dependency were stroke, dementia and osteo-muscular diseases. However, the type of causal diseases has been widened, i.e., cancer, chronic obstructive lung diseases, diabetes. The change in the clinical characteristics of users naturally requires the continuous refinement of logic.

Considering the fact that all insurers have installed the logic into their IT system and that the users have become accustomed to the current logic,

the drastic change of system is not practical. The modification of assessment sheet and logic must be incremental according to the field study. This modification process requires an external evidence for reasoning. An internationally comparative study can serve as such evidence. It should be advanced such studies between Japan and other countries.

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## ❖ References

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- 2) Fukuoka prefecture: Report on the actual situation of the LTCI assessment conference in 2011, (2012).

Table 1-1 The first intermediate evaluation group (Physical function, sitting and standing)

item	status	score	status	score	status	score	status	score	status	score
Paralysis	not exist	6.5	monopegia	5.5	paraplegia	3.9	hemiplegia	3.3	quadriplegia	0.0
Contracture										
shoulder	not exist	2.3	exist	0.0						
hip	not exist	2.7	exist	0.0						
knee	not exist	1.1	exist	0.0						
Roll over in the bed	Possible	9.0	Using upper limbs	6.5	Impossible	0.0				
Sitting up in the bed	Possible	8.8	Using upper limbs	6.7	Impossible	0.0				
Keep sitting	Possible	10.0	Using upper limbs	8.4	Need assistance	4.7	Impossible	0.0		
Hold standing position with two legs	Possible	8.7	Need assistance	6.2	Impossible	0.0				
Walking	Possible	7.6	Need assistance	5.5	Impossible	0.0				
Standing up	Possible	9.7	Using upper limbs	7.1	Impossible	0.0				
Hold standing position with one leg	Possible	7.3	Need assistance	5.4	Impossible	0.0				
Washing oneself	Independent	6.2	Partially dependent	4.4	Totally dependent	0.0	Not conducting	0.0		
Cutting nails	Independent	4.1	Partially dependent	2.8	Totally dependent	0.0				
Acuity	Normal	5.2	Possible at 1m distance	4.0	Possible at close to eye	2.9	Almost blind	0.0	Impossible to evaluate	0.0
Hearing	Normal	10.8	Occasionally difficult	10.6	Possible by loud voice	9.8	Almost deaf	9.0	Impossible to evaluate	0.0

Table 1-2 The second intermediate evaluation group (ADL function)

item	status	score	status	score	status	score	status	score	status	score
Transfer (e.g. bed to wheel chair)	Independent	9.1	Need watching	6.9	Partially dependent	3.5	Totally dependent	0.0		
Mobility	Independent	8.1	Need watching	6.4	Partially dependent	3.7	Totally dependent	0.0		
Swallowing	Independent	10.2	Need watching	7.2	Impossible	0.0				
Eating	Independent	9.8	Need watching	6.8	Partially dependent	4.6	Totally dependent	0.0		
Urination	Independent	7.2	Need watching	5.9	Partially dependent	5.1	Totally dependent	0.0		
Defecation	Independent	7.2	Need watching	5.7	Partially dependent	4.9	Totally dependent	0.0		
Oral hygiene	Independent	9.3	Partially dependent	5.2	Totally dependent	0.0				
Washing face	Independent	9.0	Partially dependent	5.1	Totally dependent	0.0				
Hairdressing	Independent	7.9	Partially dependent	4.1	Totally dependent	0.0				
Wearing on/off shirt and jacket	Independent	9.4	Need watching	8.0	Partially dependent	5.7	Totally dependent	0.0		
Wearing on/off pants, trousers, and skirt	Independent	8.7	Need watching	7.3	Partially dependent	5.4	Totally dependent	0.0		
Going outdoor	More than once a week	4.1	More than once a month	3.4	Less than once a month	0.0				

Table 1-3 The third intermediate evaluation group (Cognitive function)

item	status	score	status	score	status	score	status	score
Communication	Possible	17.7	Occasionally	12.5	Almost impossible	4.2	Impossible	0.0
Orientation								
Schedule	No problem	7.6	Disturbed	0.0				
Birthday	No problem	11.3	Disturbed	0.0				
Short term memory	No problem	7.0	Disturbed	0.0				
One's name	No problem	16.3	Disturbed	0.0				
Current season	No problem	9.1	Disturbed	0.0				
Place	No problem	11.6	Disturbed	0.0				
Wandering	No	9.5	Occasionally	2.7	Often	0.0		
Difficulty to return home	No	9.9	Occasionally	4.7	Often	0.0		

Table 1-4 The fourth intermediate evaluation group (Behavioral and psychological symptom of dementia related problems; BPSD related problems)

item	status	score	status	score	status	score
Persecution tendency	Not exist	7.0	Occasionally	3.2	Exist	0.0
Confabulation	Not exist	8.2	Occasionally	3.4	Exist	0.0
Rapid changes in moods	Not exist	5.0	Occasionally	2.5	Exist	0.0
Reversal of the night-day sleep-wake cycle	Not exist	4.2	Occasionally	1.9	Exist	0.0
Repeat the same story	Not exist	4.9	Occasionally	3.0	Exist	0.0
Shouting	Not exist	7.0	Occasionally	2.8	Exist	0.0
Resistance to care	Not exist	6.1	Occasionally	2.4	Exist	0.0
Restless	Not exist	7.8	Occasionally	2.1	Exist	0.0
Eager to go out by oneself	Not exist	8.7	Occasionally	2.3	Exist	0.0
Collection mania	Not exist	8.3	Occasionally	1.6	Exist	0.0
Violence	Not exist	10.7	Occasionally	2.3	Exist	0.0
Severe memory loss	Not exist	4.0	Occasionally	3.3	Exist	0.0
Abnormal muttering and loughing to oneself	Not exist	6.5	Occasionally	2.3	Exist	0.0
Selfish behavior	Not exist	6.3	Occasionally	3.0	Exist	0.0
Endless talking	Not exist	5.3	Occasionally	1.9	Exist	0.0

Table 1-5 The fifth intermediate evaluation group (Adaptation to social life)

item	status	score	status	score	status	score	status	score
Taking drugs	Independent	21.2	Partially dependent	9.9	Totally dependent	0.0		
Handling finance	Independent	18.2	Partially dependent	9.5	Totally dependent	0.0		
Daily decision making	Possible	22.5	Possible in ordinary situation	13.7	Difficult	5.5	Impossible	0.0
Difficulty of adaptation to group activity	Not exist	6.1	Occasionally	1.8	Exist	0.0		
Shopping	Independent	16.6	Need watching	9.2	Partially dependent	7.4	Totally dependent	0.0
Cooking	Independent	15.4	Need watching	9.0	Partially dependent	8.6	Totally dependent	0.0

Table 2 Theoretical time required for care related to specific medical treatment

Treatment	Minute
Drip infusion in vein	8.5
Intra-venous hyperalimentation	8.5
Dialysis	8.5
Stoma care	3.8
Oxygen therapy	0.8
Use of respirator	4.5
Thoracheotomy	5.6
Nursing care for pain	2.1
Tubal feeding	9.1
Use of monitoring devices	3.6
Care for decubitus	4.0
Urethral catheter	8.2

If a person receives specific medical care in this table within the last 14 days, the corresponding time is added to expected time for care estimated as a sum of Figure 2 to Figure 8.

Table 3 The amount of benefit according to the eligibility level (in the case of home care)

Eligibility level	Eligibility criteria	Monthly benefit limit *2
Not eligible	Under 25 minutes	
Assistance required level 1	25 to 31 minutes	4,970 points
Assistance required level 2	32 to 49 minutes with stable condition *1	10,400 points
Care required: level 1	32 to 49 minutes with unstable condition *1	16,580 points
Care required: level 2	50 to 69 minutes	19,480 points
Care required: level 3	70 to 89 minutes	26,750 points
Care required: level 4	90 to 109 minutes	30,600 points
Care required: level 5	110 minutes and more	35,830 points

\*1: Level of stability is evaluated as clinical condition of causal diseases and dementia at the assessment conference

\*2: Benefit is allocated in kind. In principle, there is no cash allowance  
1point = 0.9 to 1.1 JPN. Ratio is different according to the region

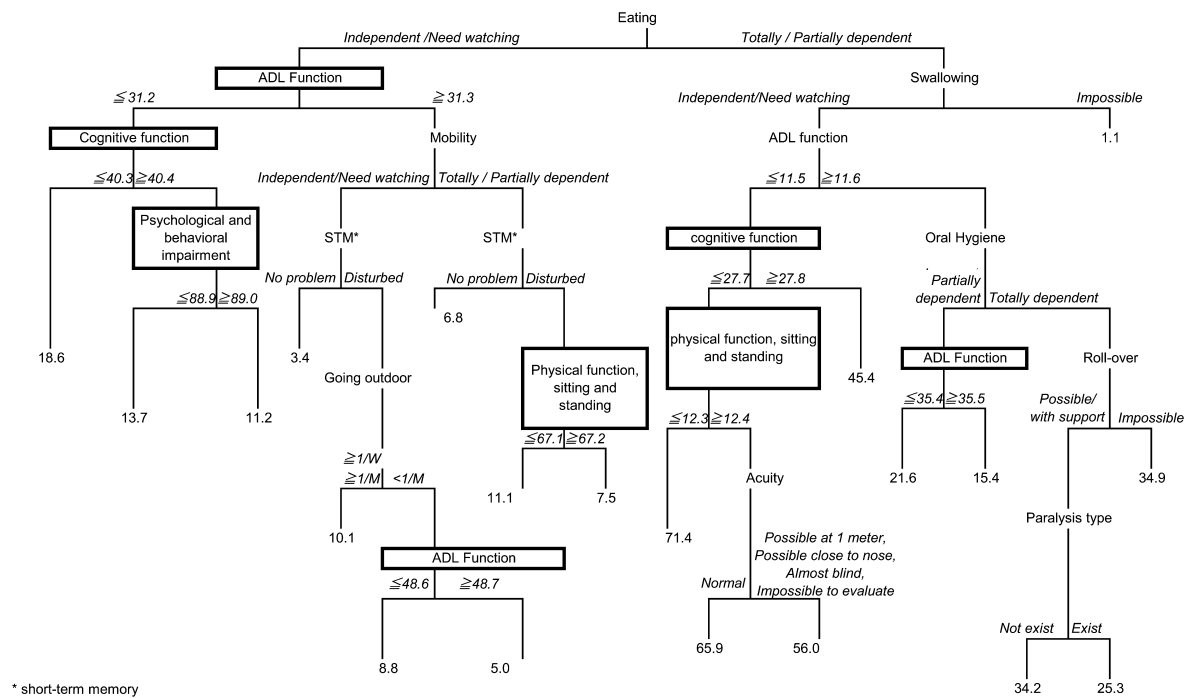


Figure 2 Estimation of theoretical time need for care (Direct assistance; eating)

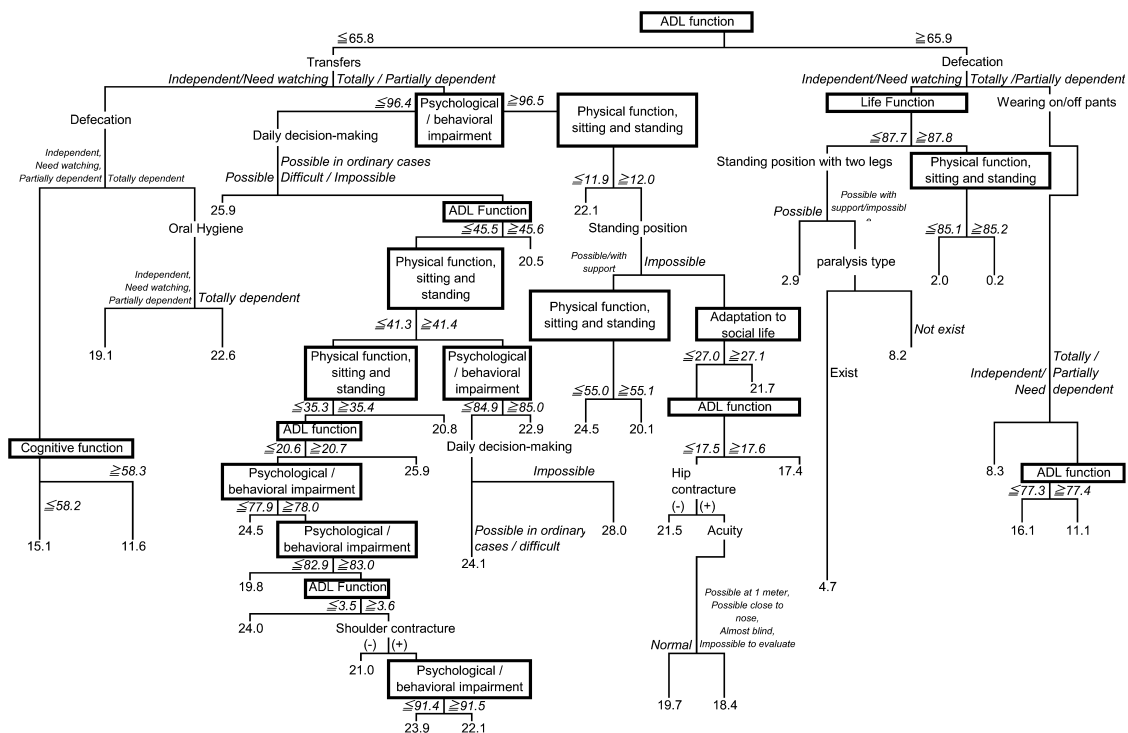


Figure 3 Estimation of theoretical time need for care (Direct assistance; toileting)

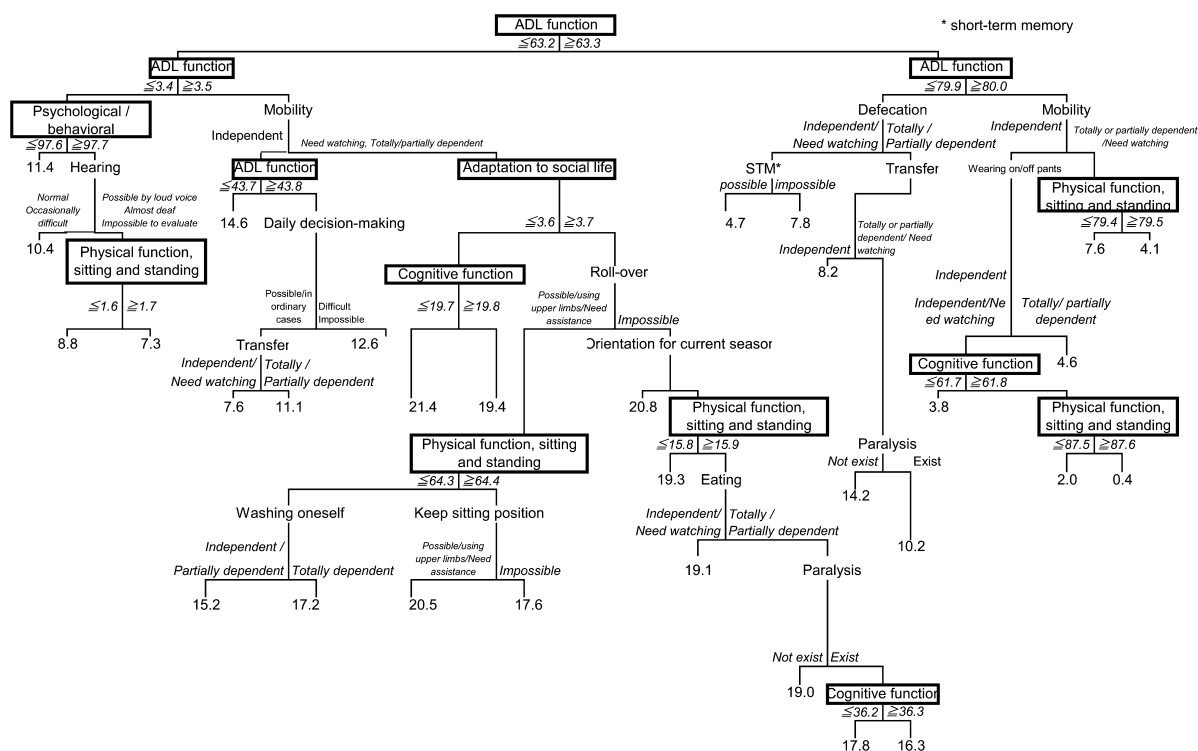


Figure 4 Estimation of theoretical time need for care (Direct assistance; mobility)

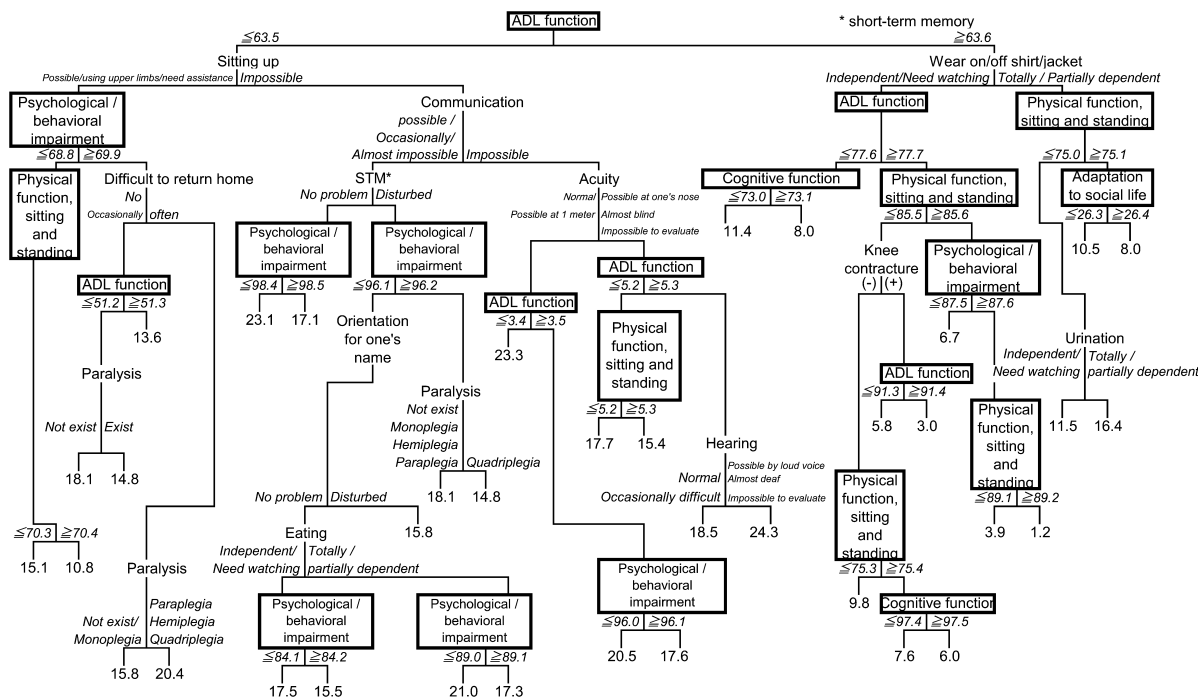


Figure 5 Estimation of theoretical time need for care (Direct assistance; personal hygiene)



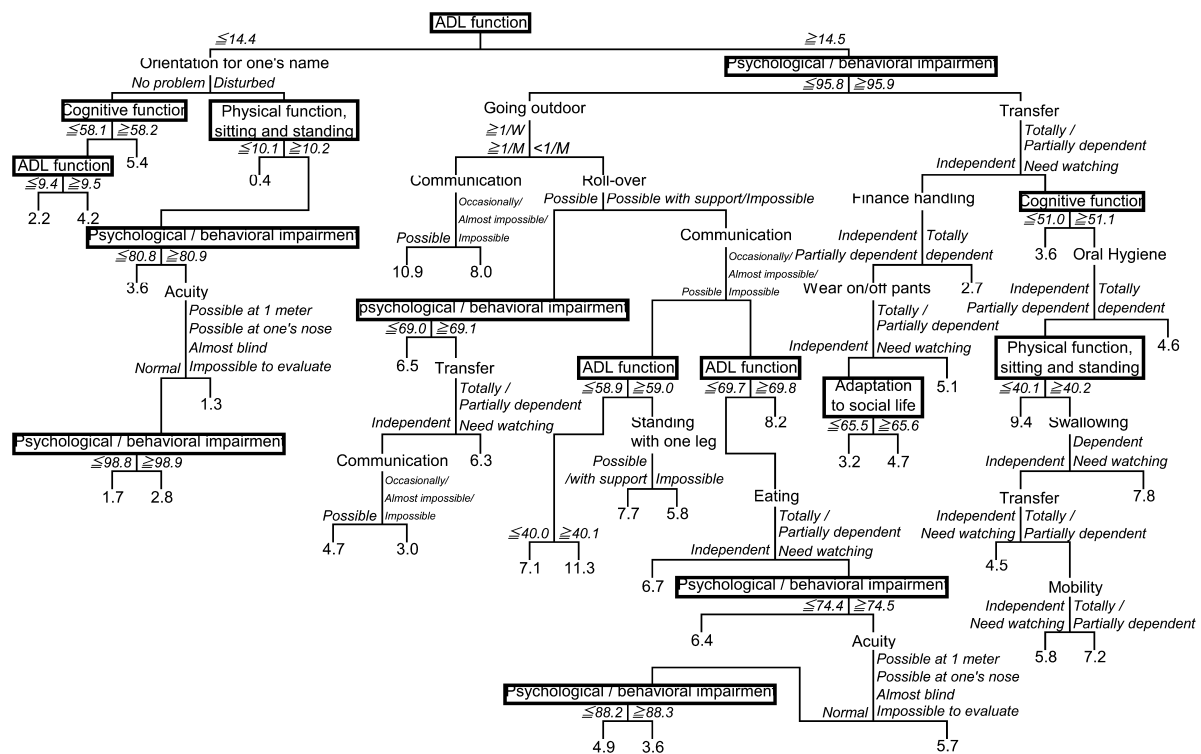


Figure 6 Estimation of theoretical time need for care (Indirect assistance)

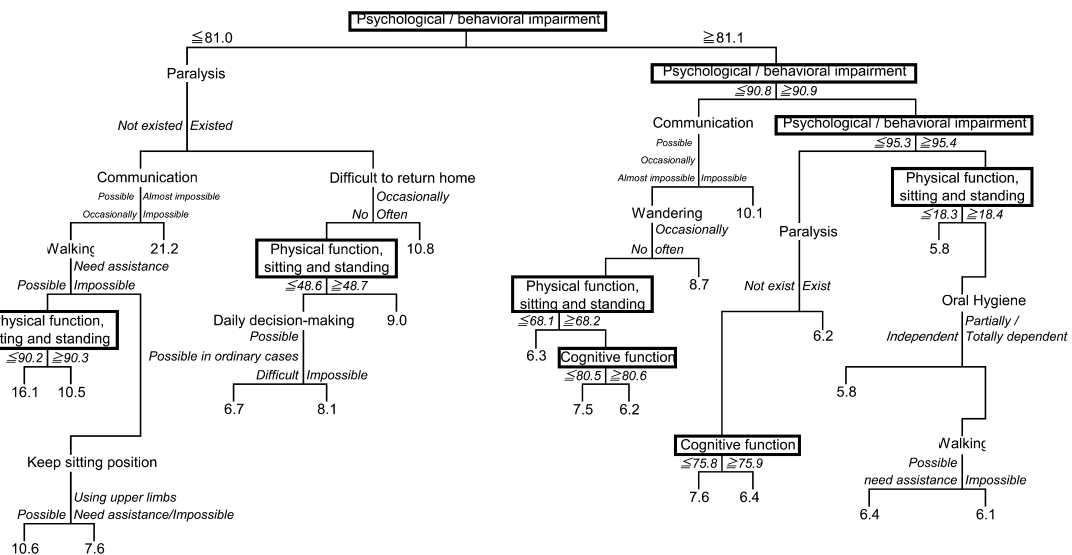


Figure 7 Estimation of theoretical time need for care (BPSD related assistance)

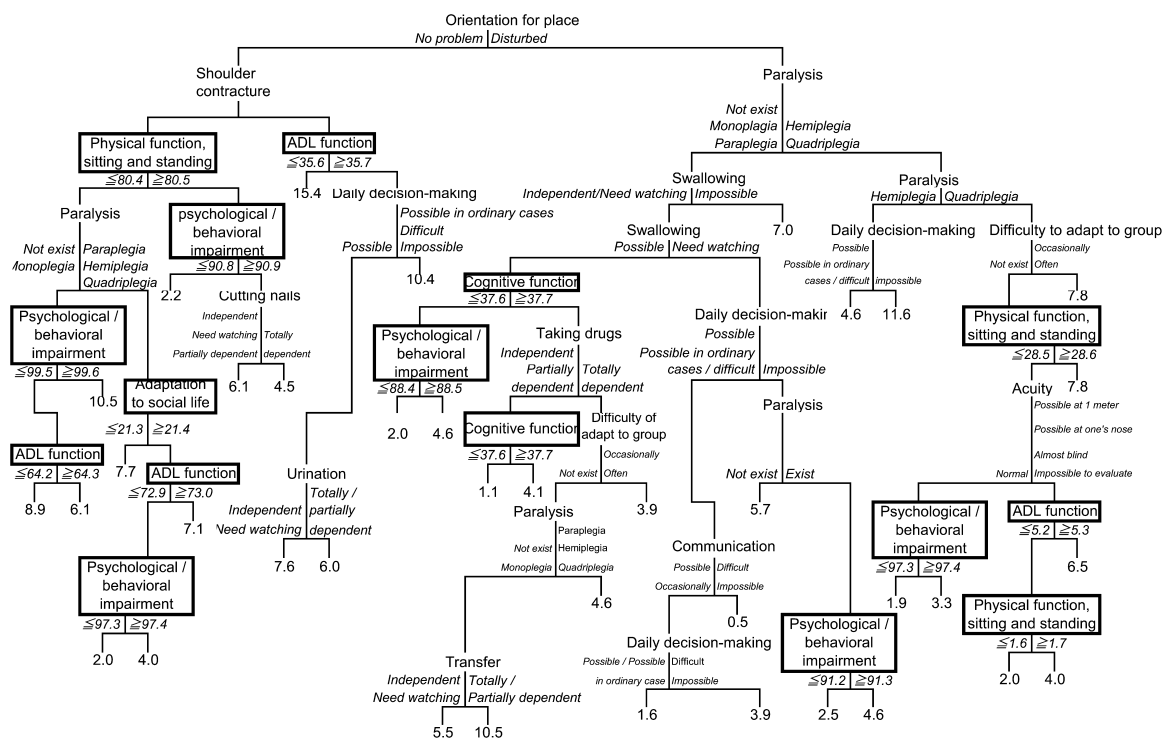


Figure 8 Estimation of theoretical time need for care (Functional training related assistance)

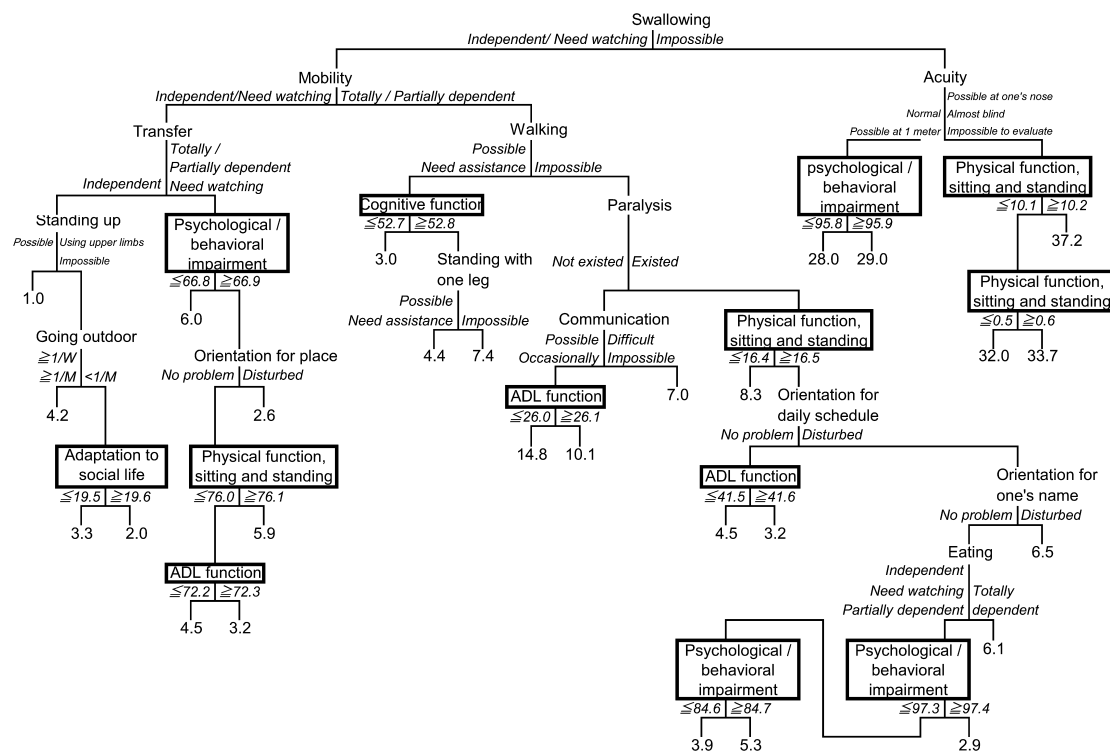


Figure 9 Estimation of theoretical time need for care (Medical care related assistance)