PLAISIR AUDIT

MIRABEL CENTER

Unit nr.6

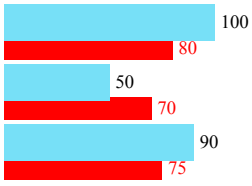
November 2003

Équipe de Recherche
Opérationnelle
en Santé

Contents

AUDIT

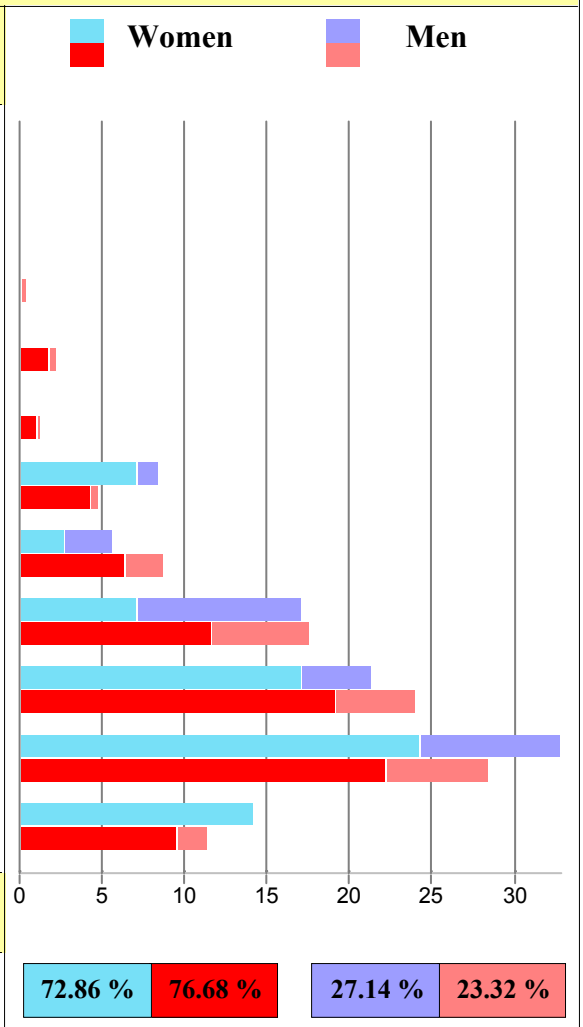
RESULTS



In the following figures and tables, the blue color represents Unit nr. 6 of Mirabel Center (70 Clients) and the red color represents Mirabel Center (386 Clients)

Distribution of clients according to sex and age on admission and at the time of observation

	Age on admission				Age at time of observation	
Age of clients	Nr		%		Nr	
less than30 years	-	1	-	0.3	-	1
30 to 44 years	-	2	-	0.5	-	1
45 to 54 years	-	3	-	0.8	-	2
55 to 64 years	-	16	-	4.1	-	9
65 to 69 years	4	17	5.7	4.4	-	5
70 to 74 years	8	27	11.4	7.0	6	19
75 to 79 years	6	59	8.6	15.3	4	34
80 to 84 years	14	71	20.0	18.4	12	68
85 to 89 years	21	108	30.0	28.0	15	93
90 to 95 years	14	64	20.0	16.6	23	110
95 years and over	3	18	4.3	4.7	10	44
Total	70	386	100	100	70	386
Mean age: all	84.2	82.5			88.1	86.1
Mean age: women	85.0	82.7			89.1	86.6
Mean age: men	82.3	81.8			85.7	84.6



	Women		Men		All	
Mean length of stay	4.1	3.9	3.4	2.8	3.9	3.7

Sex, age and length of stay

Clients of the Unit are in average older than those of the Center : 88.1 versus 86.1 years old. They have also been admitted at a more advanced age compared to the clients of the Center : 84.2 years versus 82.5 years. Their length of stay is more or less the same : 3.9 years versus 3.7 years.

There are no clients less then 70 years old in the Unit. The mode of the distribution of clients, in regards to their age, is in the 90 to 95 years range, both in the Unit and the Center.

The proportion of women is lower in the Unit (72.9 %) than in the Center (76.9 %). The women's average age at admission in the Unit is higher than the age of men : 85.0 versus 82.3 years. One observes the same phenomenon regarding the women's average age at the time of observation : 89.1 versus 85.7 years. The women's average length of stay in the Unit is higher than the men's average length of stay : 4.1 versus 3.4 years. One observes the same differences in Mirabel Center but their scale is smaller.

Diseases prevalence (number and % of clients) coded with three digits (ICD-9)

Diseases	Nr		%		
Malignant neoplasm	2	23	2.9	6.0	3 6
Acquired hypothyroidism	10	69	14.3	17.9	14 18
Diabetes mellitus	21	76	30.0	19.7	30 20
Obesity	2	6	2.9	1.6	3 2
Deficiency anemia	4	39	5.7	10.1	6 10
Organic psychotic conditions	44	184	62.9	47.7	63 48
Schizophrenic disorders	4	17	5.7	4.4	6 4
Other psychosis	8	30	11.4	7.8	11 8
Nevrotic disorders	1	10	1.4	2.6	1 3
Spec. nonpsycho. disor. due to organ. brain damages	-	2	-	0.5	1
Depressive disorders	16	72	22.9	18.7	23 19
Other nonpsychotic disorders	2	17	2.9	4.4	3 4
Senility without mention of psychosis	-	-	-	-	
Mental retardation	-	3	-	0.8	1
Cerebral degeneration - Alzheimer	14	84	20.0	21.8	20 22
Parkinson and other extra pyramidal diseases	10	48	14.3	12.4	14 12
Multiple sclerosis and demyelinating diseases	-	8	-	2.1	2
Hemiplegia	2	15	2.9	3.9	3 4
Epilepsy	4	18	5.7	4.7	6 5
Other disorders of the central nervous system	-	8	-	2.1	2
Glaucoma	4	29	5.7	7.5	6 8
Cataract	5	33	7.1	8.5	7 9
Blindness, both eyes	3	11	4.3	2.8	4 3
Hearing loss	3	18	4.3	4.7	4 5
Hypertensive diseases	20	128	28.6	33.2	29 33
Ischemic heart diseases	8	57	11.4	14.8	11 15
Cardiac insufficiency	9	40	12.9	10.4	13 10
Other heart diseases	12	55	17.1	14.2	17 14
Cerebro vascular diseases	-	11	-	2.8	3
Late effects of cerebrovascular diseases	15	66	21.4	17.1	21 17
Diseases of arteries	4	17	5.7	4.4	6 4
Chronic obstructive pulmonary diseases	9	41	12.9	10.6	13 11
Hernia of abdominal cavity	3	17	4.3	4.4	4 4
Renal failure	1	10	1.4	2.6	1 3
Rheumatoid arthritis	-	8	-	2.1	2
Osteoarthrosis	4	24	5.7	6.2	6 6
Other arthropathies	7	40	10.0	10.4	10 10
Dorsopathies	1	12	1.4	3.1	1 3
Osteopathies	11	78	15.7	20.2	16 20
Aphasia	1	4	1.4	1.0	1 1
Late effects of musculo squel. tissue injuries	12	58	17.1	15.0	17 15

Diseases prevalence

There are few differences between the disease prevalence in the Unit and the Center. However, there are more clients suffering from psychosis in the Unit (80 %) than in the Center (60 %) and also from diabetes (30 % versus 20 %).

In decreasing order, the most prevalent diseases in the Unit are :

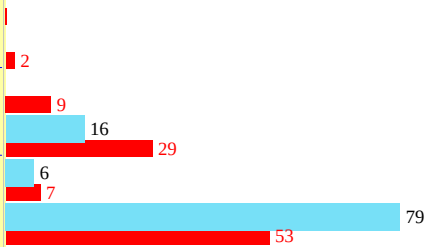
	Unit	Center
1. Psychoses	80 %	60 %
2. Hearth diseases	41 %	39 %
3. Diabetes	30 %	20 %
4. Hypertensive diseases	29 %	33 %
5. Depressive, nevrotic and other nonpsychotic disorders	27 %	26 %
6. Late effects of cerebrovascular diseases	21 %	17 %
7. Cerebral degeneration	20 %	22 %
8. Late effects of musculo squel. tissue injuries	17 %	15 %
9. Osteopathies	16 %	20 %
10. Arthrose, arthritis and other arthropathies	16 %	19 %
11. Acquired hypothyroidism	14 %	18 %
12. Parkinson and other extra pyramidal diseases	14 %	12 %
13. Chronic obstructive pulmonary diseases	13 %	11 %

The most prevalent diseases in the Unit are also the most prevalent diseases in the Center. Only their order differs a little.

Distribution of clients by level of handicap

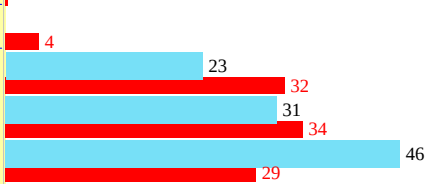
Mobility

	Nr		%	
1. Fully mobile	-	-	-	-
2. Variable restriction of mobility	-	-	-	-
3. Impaired mobility (slowness)	-	-	-	-
4. Reduced mobility	-	1	-	0
5. Neighbourhood restriction	-	7	-	2
6. Dwelling restriction	-	35	-	9
7. Floor restriction	11	113	16	29
8. Room restriction	4	27	6	7
9. Total restriction of mobility	55	203	79	53



Physical independence (ADL)

	Nr		%	
1. Independent	-	-	-	-
2. Ind. with mechanical device	-	-	-	-
3. Ind. with adaptation / modif. of the environm.	-	-	-	-
4. Situational dependence	-	-	-	-
5. Dependence long intervals (<= 1 x /24h)	-	1	-	0
6. Dependence > 1 x /24h predictable	-	15	-	4
7. Dependence at short intervals and unpredictable	16	125	23	32
8. Dependent for most needs	22	133	31	34
9. Dependent for all needs	32	112	46	29



"Mobility" and "Independence (ADL)" crosstable

ADL / Mobility	1	2	3	4	5	6	7	8	9	Total
1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4	- -	- -	- -	- -	- 1	- -	- -	- -	- -	- 1
5	- -	- -	- -	- -	- -	- 4	- 3	- -	- -	- 7
6	- -	- -	- -	- -	- -	- 6	- 27	- 2	- -	- 35
7	- -	- -	- -	- -	- -	- 5	5 65	6 43	- -	11 113
8	- -	- -	- -	- -	- -	- -	4 12	- 13	- 2	4 27
9	- -	- -	- -	- -	- -	- -	7 18	16 75	32 110	55 203
Total	- -	- -	- -	- -	- 1	- 15	16 125	22 133	32 112	70 386

Handicaps (WHO's classification)

1. Mobility (area of independent movement)

None of the clients of the Unit can go out of it in an independent way (without the help of someone) and the mobility of 79 % of the Unit's clients is null, which is to say that they are confined to their bed or chair. This is significantly more than in the Center where 53 % of the clients suffer a null mobility.

2. Independence for ADL

Clients of the Unit are also more dependent on the help from others for ADL than those of the Center. In particular, 46 % of clients of the Unit are dependent for all their needs compared to 29 % of the Center's clients. At best, all clients from the Unit are dependent at short and unpredictable intervals.

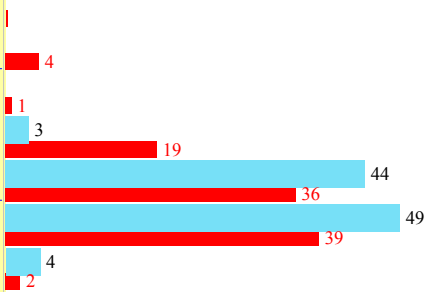
"Mobility" and «"independence (ADL)" crosstable

All clients of the Unit (100 %) have a level of handicap higher or equal to 7 on both scales, compared to 87 % of the Center's clients. Those clients cannot go out of the Unit without human help and are at least dependent for ADL at short and unpredictable intervals. Also, 48 clients of the Unit (69 %) have a level of handicap higher or equal to 8 on both scales, compared to 51 % of the Center's clients. Those clients cannot get out from their room without human help and are dependent for most or all of their needs. Lastly, 32 clients of the Unit (46 %) are at level 9 on both scales, compared to 28 % of the Center's clients, which means that they are incapable of moving or to transfer and are dependent for all their needs.

Distribution of clients by level of handicap

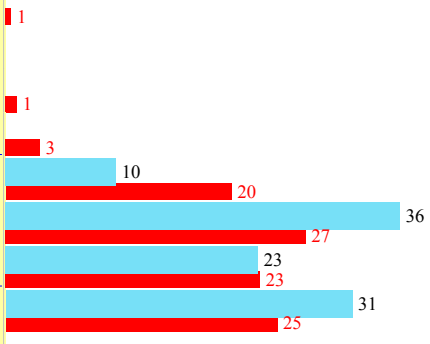
Occupation

	Nr		%	
1. Customarily occupied	-	-	-	-
2. Intermittently unoccupied	-	-	-	-
3. Curtailed occupation	-	1	-	0
4. Adjusted occupation	-	16	-	4
5. Reduced occupation (in terms of amount of time)	-	3	-	1
6. Restricted occupation (in terms of type)	2	72	3	19
7. Confined occupation (amount of time and type)	31	138	44	36
8. No occupation	34	149	49	39
9. Unoccupiable	3	7	4	2



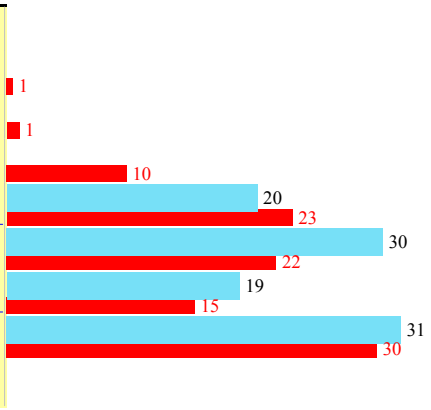
Social integration

	Nr		%	
1. Socially integrated	-	2	-	1
2. Inhibited participation (shyness, timidity)	-	-	-	-
3. Restricted participation (type of social activities)	-	4	-	1
4. Primary and secondary contacts only	-	12	-	3
5. Secondary contacts difficult	7	79	10	20
6. Primary contacts only	25	105	36	27
7. Primary contacts difficult	16	89	23	23
8. Alienated (unable to relate to others)	22	95	31	25
9. Socially isolated (no relationships)	-	-	-	-



Orientation

	Nr		%	
1. Fully orientated	-	-	-	-
2. Fully compensated impediment to orientation	-	2	-	1
3. Intermittent disturbance of orientation	-	4	-	1
4. Partially compensated impediment to orientation	-	37	-	10
5. Moderate impediment to orientation	14	88	20	23
6. Severe impediments to orientation	21	83	30	22
7. Orientation deprivation	13	58	19	15
8. Disorientation	22	114	31	30
9. Unconscious, persistent vegetative state	-	-	-	-



3. Occupation

Client's occupation in the Unit is poorer than in the Center. Thus, occupation of 97 % of the Unit's clients is at best confined in terms of the amount of time devoted to it and of the type of occupation. The corresponding percentage (three last levels of the variable) for the Center is 76 %.

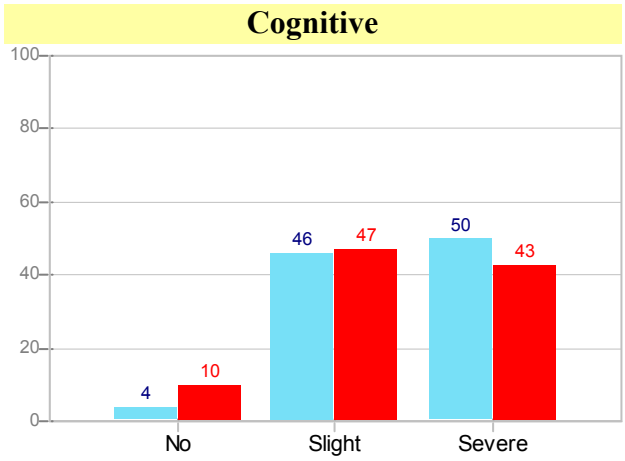
4. Social integration

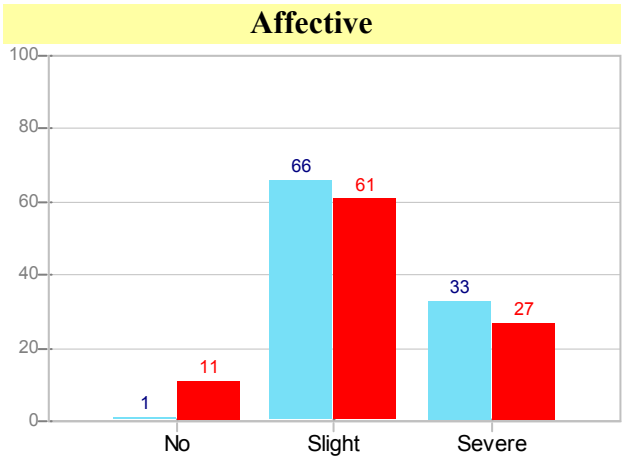
The social integration of the Unit's clients is also worst than the social integration of the Center's clients. Thus, 90 % of clients of the Unit, compared to 75 % of the Center's clients, are at best capable of primary contacts.

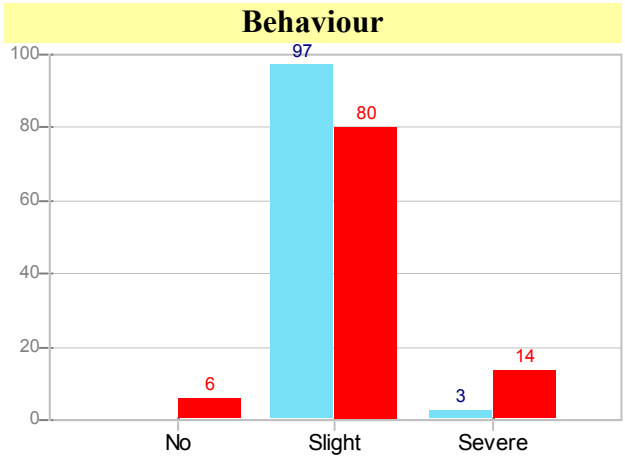
5. Orientation

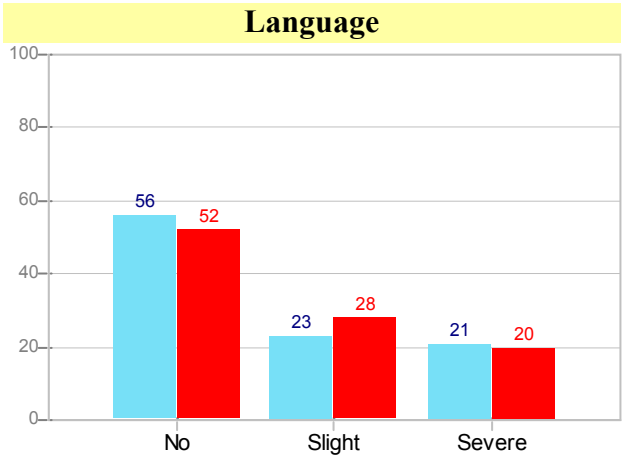
The Unit's clients are more disoriented than those from the Center : 80 % of clients of the Unit are suffering from severe impediments to orientation or worst, compared to 67 % of the Center's clients.

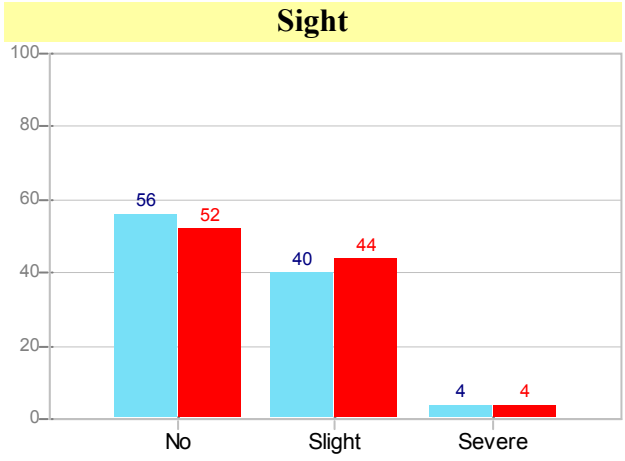
Distribution of clients by level of impairment

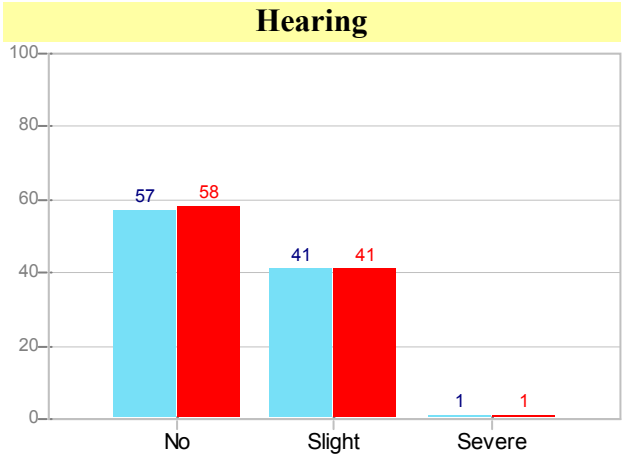












Psychological and sensorial impairments

Cognitive and affective

A small proportion of the Unit's clients are not cognitively (4 %) and affectively (1 %) impaired while numbers for the Center on the same aspects are respectively 10 % and 11 %. At the other end of the scale, 50 % and 33 % of the Unit's clients suffer from severe or total cognitive and affective impairments compared to 43 % and 27 % of the Center's clients.

Behaviour

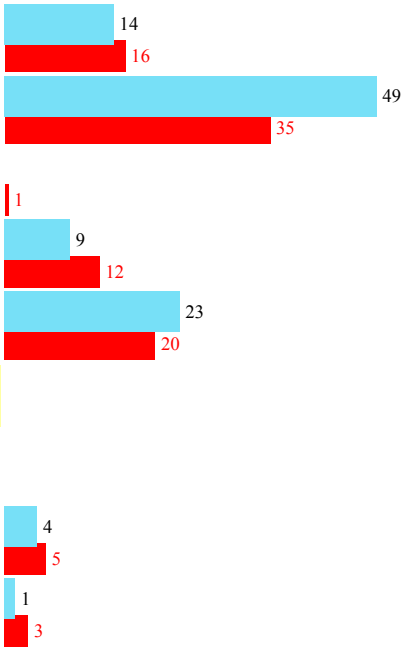
Almost all clients of the Unit (97 %) are suffering from slight behaviour impairments. The other 3 % is severely or totally deficient on this same aspect. Distribution of clients is sensibly different in the Center where 6 % of clients have an appropriate behaviour while 14 % of them are severely or totally impaired.

Sensorial functions

In regards to the sensorial functions, a little more than half of the Unit's clients do not have any impairments and the rest are slightly impaired, except for the language aspect where the clients are divided up half-and-half between slightly and severely or totally impaired. Over all, client's distribution in terms of sensorial impairments are similar between the Unit and the Center.

Distribution of clients according to the level of cognitive deficits (Reisberg scale) or the level of psychiatric problems

	Nr		%		NMC/CD	
No problem	-	32	-	8	-	134
Light cognitive deficits	10	61	14	16	186	149
Light moderate cognitive deficits	34	134	49	35	207	188
Severe moderate cognitive deficits	-	2	-	1	-	159
Severe cognitive deficits : active client	6	48	9	12	204	203
Severe cognitive deficits : passive client	16	76	23	20	239	247
Total of cognitive deficits	66	321	94	83	211	197
Light psychiatric problems	3	21	4	5	160	136
Moderate psychiatric problems	1	12	1	3	202	137
Severe psychiatric problems	-	-	-	-	-	-
Total of psychiatric problems	4	33	6	9	171	136



Cognitive deficits and psychiatric problems

All clients of the Unit are suffering either from cognitive deficits or from psychiatric problems. 8 % of the Center's clients are exempt from both.

Besides those facts, distribution of the Unit's clients in regard to the level of cognitive deficits and psychiatric problems is relatively similar to the distribution of the Center's clients. However, the prevalence of light moderate cognitive deficits is significantly higher in the Unit (49 % compared to 35 %) and that there is less clients with psychiatric problems in the Unit than in the Center (6 % versus 9 %).

Clients from the Unit suffering from light cognitive deficits require more care (in average 186 net minutes of care required per day (NMC)) than clients from the same category in the Center (149 NMC). One observes the same phenomenon for clients suffering from light moderate cognitive deficits (207 NMC for the Unit versus 188 NMC for the Center). In the case of severe cognitive deficit, active clients of the Unit and the Center require the same level of care (204 NMC and 203 NMC). On the other hand, passive clients suffering from severe cognitive deficits are in need of slightly more care in the Center (247 NMC) than in the Unit (239 NMC).

Clients suffering from psychiatric problems are in average in need of more care in the Unit (171 NMC) than in the Center (136 NMC).

Prevalence of specific problems of behaviour and mood

Problems	Not corrected				Corrected			
	Nr		%		Nr		%	
No problem	14	101	20	26	-	-	-	-
Physical abuse	14	66	20	17	-	1	-	0
Verbal abuse	12	62	17	16	-	1	-	0
Disturbs others	21	71	30	18	-	-	-	-
Agitation	20	84	29	22	-	3	-	1
Wandering	3	52	4	13	-	-	-	-
Behaviour problems	38	190	54	49	-	2	-	1
Persistent anxiety	12	74	17	19	-	1	-	0
Sadness	20	87	29	23	-	1	-	0
Expressions of distress	1	16	1	4	-	-	-	-
Withdrawal	5	34	7	9	-	-	-	-
Awake 7 hours or less a day	1	24	1	6	-	-	-	-
Mood problems	33	166	47	43	-	1	-	0
Behaviour and mood problems	15	72	21	19	-	1	-	0

Problems	%	Mood							
		None		C		NC		Total	
Behaviour	None	20	26	-	-	26	24	46	50
	C	-	-	-	0	-	0	-	1
	NC	33	31	-	-	21	19	54	49
	Total	53	57	-	0	47	43	100	100

NC = Not corrected C = Corrected

Specific problems of behaviour and mood

No problem

20 % of clients from the Unit (compared to 26 % of the Center's clients) have no problems of behaviour or mood.

Behaviour problems

20 % of clients from the Unit are physically agressive compared to 17 % in the Center. 17 % of clients from the Unit are verbally agressive compared to 16 %. 30 % of clients from the Unit disturb others compared to 18 % in the Center. 29 % of clients from the Unit are agitated compared to 22 % in the Center. 4 % of clients from the Unit are wandering compared to 13 % in the Center. Except for wandering, the prevalence of problems of behaviour considered here is higher in the Unit than in the Center in particular in regard to the disturbance of others and agitation. Globally, 54 % of the Unit's clients have one or more problems of behaviour compared to 49 % in the Center.

Mood problems

Clients from the Unit are suffering less from anxiety (17 %) than clients from the Center (19 %). One notes the same for manifestations of distress (1% versus 4 %), withdrawal (7 % versus 9 %) and for being awake 7 hours or less a day (1 % versus 6 %). It is only on the aspect of sadness that the prevalence is higher in the Unit (29 %) than it is in the Center (23 %).

The two type of problems

21 % of clients in the Unit are suffering of problems of behaviour **and** mood compared to 19 % of the Center's clients.

Use of physical and chemical means of protection

	Rarely Nr		Sometimes Nr		Often Nr		Often %
No protection	-	-	-	-	3	26	4 / 7
Bed rails	-	4	-	3	65	306	93 / 79
Geriatric chair table	-	-	-	1	2	10	3 / 3
Wheelchair table	-	-	-	-	2	26	3 / 7
Protections fitted to furniture	-	4	-	4	65	306	93 / 79
Strait jacket	-	-	-	-	-	-	
Wrist restraint(s)	-	-	-	-	-	6	2
Ankle restraint(s)	-	-	-	-	-	2	1
Abdominal band	-	-	2	2	7	55	10 / 14
Body restraint, jumpsuit	-	-	-	-	-	3	1
Protections limiting mobility	-	-	2	2	7	62	10 / 16
Fireproof apron	-	-	-	-	-	-	
Half-door	-	-	-	1	-	3	1
Isolation room	-	-	-	-	-	-	
Locked ward	-	-	-	-	-	25	6
Protections limiting liberty	-	-	-	1	-	28	7
Psycho-active drugs	1	1	-	2	19	171	27 / 44

Physical and chemical means of protection

No protection

Only 4 % of the Unit's clients compared to 7 % of the Center's clients do not need any means of protection.

Protections fitted to furniture

Beds rails are frequently used in the Unit for 93 % of clients compared to 79 % for the clients in the Center. Use of chair tables is low and less frequent in the Unit than in the Center. Globally, protections fitted to furniture are used for 93 % of clients from the Unit compared to 79 % of clients of the Center.

Protections limiting mobility

The only protection limiting mobility that is used in the Unit is the abdominal band which is applied to 10 % of clients compared to 14 % of the clients from the Center. Other restraints are rarely used in the Center and never in the Unit. Globally, protections limiting mobility are used for 10 % of the Unit's clients compared to 16 % of the Center's clients.

Protection limiting liberty

Protections limiting liberty are not used in the Unit.

Psycho-active drugs

Significantly less psycho-active drugs are used in the Unit (27 % of clients) than in the Center (44 % clients).

Use of mechanical devices

	Nr		%		
No decrease or loss	1	36	1	9	
None (with decrease / loss)	1	13	1	3	
Cane	-	4	-	1	
Walker	24	147	34	38	
Quadcane	-	-	-	-	
Handrails or furniture	4	9	6	2	
Compensation for walking	25	156	36	40	
Orthesis	1	42	1	11	
Prosthesis	-	1	-	0	
Wheelchair no assistance	1	52	1	13	
Wheelchair with assistance	54	229	77	59	
Motorized wheelchair	-	3	-	1	
Geriatric chair	1	23	1	6	
Wheelchair or geriatric chair	56	276	80	72	
Lift	27	114	39	30	

Compensation for the loss of mobility (mechanical devices)

1% of clients of the Unit have no decrease or loss of mobility, which is much less than in the Center (9%).

Another 1 % of the Unit's clients do not compensate their decrease or loss of mobility with a mechanical device, compared to 3 % in the Center.

Mechanical devices for walking are used by 36 % of clients in the Unit compared to 40 % in the Center. Of all devices, the walker is by far the most used in the Unit (34 %) and in the Center (38 %).

Orthesis are used more often in the Center (11 % of clients) than in the Unit (1 % of clients).

The wheelchair or geriatric chair is used by 80 % of clients of the Unit compared to 72 % of clients of the Center. The wheelchair is used without help only by 1 % of the clients of the Unit while 13 % of the clients in the Center are using it independently. Consequently, 77 % of the clients in the Unit are using the wheelchair with assistance compared to 59 % in the Center. The geriatric chair is used more often in the Center (6 % of clients) than in the Unit (1 % of clients).

The lift is more often used in the Unit (39 % of clients) than in the Center (30 % of clients).

Rehabilitation and other services received

Rehabilitation	Nr		%		X/week		Min/week	
Physical therapy	18	103	26	27	2.17	2.17	34.1	34.0
Occupational therapy	14	91	20	24	1.36	1.54	26.8	31.1
Physical or occupational therapy	26	145	37	38				
Speech therapy	-	3	-	1	-	1.33	-	70.0
Feeding and hydration	1	6	1	2	7.00	7.00		
Elimination	11	44	16	11	7.00	6.89		
Hygiene / Dressing	8	38	11	10	7.00	6.95		
Locomotion / bed mobility	-	9	-	2	-	7.00		
Transfers	-	5	-	1	-	7.00		
Nursing rehabilitation	15	79	21	20				
					X/month			
Medical visits (per month)	70	386	100	100	(1.99	2.94)		

Others services	Nr		%	
Chemotherapy	-	2	-	1
Radiation treatment	-	-	-	-
Inhalation therapy	-	-	-	-
Dialysis	-	1	-	0
Transfusions	-	-	-	-
IV therapy	3	17	4	4
Urethral catheter	1	11	1	3
Tracheotomy	-	-	-	-
Ostomy	-	4	-	1
Stasis ulcer	-	2	-	1
Pressure ulcers				
Stages 1 and 2	2	17	3	4
Stages 3 and 4	1	8	1	2
Stages (1 and 2) or (3 and 4)	3	24	4	6
Foot care	-	9	-	2

Rehabilitation and other services received

Rehabilitation

26 % of clients in the Unit are benefiting from physical therapy (compared to 27 % for the Center) about 2.2 times a week (same in the Center) for 16 minutes per session (same in the Center). 20 % of the clients in the Unit are benefiting from occupational therapy (compared to 24 % for the Center) about 1.4 session per week (1.5 in the Center), a session lasting in average 20 minutes in the Unit and in the Center. Globally, 37 % of clients in the Unit are receiving either physical or occupational therapy services compared to 38 % of the clients of the Center. 9 % of clients of the Unit are receiving both physical and occupational therapy services compared to 13 % of clients of the Center. None of the clients of the Unit are benefiting of speech therapy services. 21 % of clients in the Unit are benefiting of nursing rehabilitation services compared to 20 % for the Center : 1 % of clients in the Unit are receiving nursing rehabilitation services for eating (2 % in the Center), 16 % for toileting activities (11 % in the Center) and 11 % for dressing and grooming (10 % in the Center). Clients of the Unit are not benefiting from nursing rehabilitation for locomotion, bed mobility and transfers.

Medical services

Clients of the Unit are receiving two medical visits per month compared to approximately three per month for the clients of the Center.

Other treatments

4 % of clients in the Unit are benefiting from intravenous therapy (same for the Center) and 3 % have an urethral catheter (same for the Center). 4 % of clients in the Unit are suffering from pressure ulcers compared to 6 % for the clients of the Center. Most of those pressure ulcers are of stages 1 and 2.

Profile of basic care per intervention

		% of clients		Frequency per day		Guiding or motivating		Partial assistance		Partial assistance Ct. pr.		Complete assistance	
Feeding and hydration													
1041 meals		99	98	3.0	3.0	13	25	46	47	-	-	48	34
1070 snacks		99	97	2.0	2.0	25	46	30	24	-	-	46	30
1080 hydration		100	96	3.0	2.7	47	65	-	-	-	-	53	36
1090 menu selection		-	-	-	-	-	-	-	-	-	-	-	-
1100 continuous gavage		-	2	-	1.0	-	-	-	-	-	-	-	100
1110 intermittent gavage		-	-	-	-	-	-	-	-	-	-	-	-
Elimination													
2030 urinal		1	1	1.0	1.3	100	67	-	33	-	-	-	-
2040 bedpan		-	2	-	2.5	-	-	-	33	-	-	-	67
2050 help to toilet or commode		43	40	3.4	3.7	7	10	17	29	20	11	57	49
2060 urinary incontinence care		89	83	5.0	5.0	-	3	3	4	-	-	97	94
2070 fecal incontinence care		73	67	0.4	0.5	-	-	-	-	-	-	100	100
2100 insertion of urethral catheter	/W	1	1	14.0	7.5	-	-	-	-	-	-	100	100
2110 care of urethral catheter		1	3	2.0	1.9	-	-	-	-	-	-	100	100
2120 drainage of collection bag		4	3	1.4	2.6	-	-	-	-	-	-	100	100
2130 bladder irrigation	/W	-	-	-	1.0	-	-	-	-	-	-	-	100
2180 rectal irrigation	/W	9	9	1.7	1.4	-	-	-	-	-	-	100	100
2190 rectal examination	/W	1	1	1.0	1.0	-	-	-	-	-	-	100	100
Hygiene													
3030 partial washing	/W	96	96	5.0	5.0	-	3	7	14	16	16	76	67
3040 complete washing	/W	100	100	2.2	2.2	-	-	-	-	11	18	89	82
3050 personal hygiene	/W	4	3	7.0	7.0	-	-	-	8	33	38	67	54
3090 shampoo	/W	100	99	1.0	1.1	-	-	-	-	-	1	100	98
3100 shampoo / hair cut / style	/W	-	-	-	-	-	-	-	-	-	-	-	-
3130 manicure / pedicure	/W	100	100	1.0	1.0	-	-	-	1	-	-	100	99
3140 shaving of beard / hair removal	/W	36	28	5.2	5.3	-	5	4	7	-	3	96	86
3151 jewelry / make-up		21	31	1.9	2.0	-	13	53	41	-	2	53	47
3160 glycerine swabs		13	16	3.0	3.3	-	-	22	5	-	2	78	93
3170 brushing of teeth		89	81	3.0	3.0	2	11	16	16	8	15	74	58
3181 dressing / undressing		96	95	2.0	2.0	-	5	6	12	13	15	81	68
Mobilization													
4011 get up / lie down		61	60	4.6	4.6	12	27	49	52	-	-	42	24
4021 get up / lie down with lift		37	30	3.5	3.7	-	-	-	-	-	-	100	100
4030 assitance to walk		30	34	3.3	3.3	52	59	48	41	-	-	-	-
4040 push wheelchair or geriatric chair		70	57	2.5	2.4	-	-	-	-	-	-	100	100
4050 rubbing / positioning		84	69	4.6	4.4	-	-	24	32	-	-	76	68
4060 muscular exercices		67	42	1.9	1.8	-	-	-	1	9	9	94	91
4080 physical restraints		6	4	1.0	2.2	-	-	-	-	-	-	100	100

/W : frequency / week

Profile of basic care per intervention

The first column of the table (% of clients) provides the prevalence of dependant clients for each intervention. The second column provide the average frequency per day (or per week) of each intervention calculated only on clients requiring the intervention. The following columns provide the distribution of dependent clients only between the compensation modes. For every intervention, the total distribution should be 100 %. However, the total is often over 100 % because some clients are counted 2 times or more since they required 2 modes of compensation or more during the observation week.

99 % of the clients need help for their meals, 43 % of clients need help to go to the toilet, 89 % require care for their urinary incontinence (83 % in the Center) and 73 % for fecal incontinence (67 % in the Center). 96 % of clients need help for their partial washing (same in the Center) and 96 % for dressing and undressing (95 % in the Center). 61 % of clients are getting up and laying down with help (60 % in the Center) and 37 % are getting up and laying down with a lift (30 % in the Center). Assistance is needed to walk for 30 % of the clients in the Unit (34 % in the Center) and assistance to push the wheelchair or geriatric chair is needed by 70 % of the clients in the Unit (57 % in the Center). 84 % of clients require rubbing and positioning (69 % in the Center) and 67 % require passive or active muscular exercises (42 % in the Center).

The average frequency of hydration is of 3 times per day. The average frequency of assistance for the toilet or commode is 3.4 times per day. Care for urinary incontinence is required 5 times per day and for fecal incontinence 0.4 times per day or around 3 times per week. Help for getting up or laying down is required in average 4.6 times per day but only 3.5 times per day when a lift is used. Assistance for walking is required 3.3 times per day; assistance to push the wheelchair or geriatric chair, 2.5 times per day; help for rubbing and positioning, 4.6 times per day and assistance for muscular exercises, 1.9 times per day.

One can note that the differences between the frequencies of interventions in the Unit and in the Center are very small.

In PLAISIR, one distinguishes five modes of compensation of the dependence which are the following :

1. *Guiding or motivating;*
2. *Guiding or motivating with constant presence of the caregiver during the time of the care, including self-care;*
3. *Partial assistance;*
4. *Partial assistance with the constant presence of the caregiver during the time of the care, including self-care;*
5. *Complete assistance.*

The second mode, which is very rare, has been merged with the first mode in the "Profile of basic care per intervention".

One notes, that depending on the nursing interventions, one mode or another is more prevalent. For example, mode 1 is almost inexistent and mode 5 is required by a majority of clients in elimination and hygiene interventions. Mode 3 (partial assistance) is very prevalent in regard to the meals (46 %), getting up and laying down without lift (49 %) and assistance for walking (48 %). The mode 1 (guiding or motivating) is prevalent in the case of snacks (25 %), hydration (47 %) and assistance for walking (52 %). Mode 4 (partial assistance with the constant presence of the caregiver) is less used than the other modes. Nonetheless, its prevalence is not negligible in the cases of some interventions of hygiene and for assistance to the toilet.

Interventions for which there is the most diversity of clients in terms of compensation modes are :

	% of clients			
	Mode 1 and 2	**Mode 3**	**Mode 4**	**Mode 5**
Meals	13	46	-	48
Snacks	25	30	-	46
Assistance to toilet or commode	7	17	20	57
Partial washing	-	7	16	76
Brushing of teeth	2	16	8	74
Dressing / undressing	-	6	13	81
Get up / lie down (without lift)	12	49	-	43

For feeding and hydration, one observes less mode 1 and more mode 5 in the Unit than in the Center. For assistance to the toilet, one notes less mode 1 and 3, and more 4 and 5 modes in the Unit than in the Center. For hygiene and mobilization, one notes less mode 1 and 4 and more mode 5 in the Unit than in the Center. Those factors are signs of a more dependent clientele in the Unit than in the Center.

Profile of resources required for basic care per intervention

The first column of the table, entitled "% of clients" provides the prevalence of dependant clients for each intervention. The second column provides the % of the minutes of direct and indirect care (= NMC : net minutes of care) required by each required intervention. The last column provides the average time per day per client, of each intervention, this time being calculated over all clients including those who do not require the intervention. This time should not be interpreted as the intervention unitary time (ie : the time for performing once the intervention).

Profile of resources required for basic care per intervention

	% of clients			% net minutes of care (NMC)			NMC/CD	
Feeding and hydration								
1041 meals		99	98		17.0	15.0	35.5	28.0
1070 snacks		99	97		3.0	2.5	6.3	4.6
1080 hydration		100	96		0.8	0.6	1.7	1.1
1090 menu selection		-	-		-	-	-	-
1100 continuous gavage		-	2		-	0.2	-	0.3
1110 intermittent gavage		-	-		-	-	-	-
Total		100	100		20.8	18.2	43.5	34.0
Elimination								
2030 urinal		1	1		0.0	0.0	0.0	0.0
2040 bedpan		-	2		-	0.1	-	0.1
2050 help to toilet or commode		43	40		3.3	3.7	6.9	6.8
2060 urinary incontinence care		89	83		11.5	12.0	24.1	22.3
2070 fecal incontinence care		73	67		0.8	1.2	1.7	2.3
2100 insertion of urethral catheter		1	1		0.2	0.0	0.4	0.1
2110 care of urethral catheter		1	3		0.0	0.1	0.1	0.2
2120 drainage of collection bag		4	3		0.0	0.1	0.1	0.1
2130 bladder irrigation		-	0		-	-	-	0.0
2180 rectal irrigation		9	9		0.0	0.0	0.1	0.1
2190 rectal examination		1	1		-	-	0.0	0.0
Others interventions		4	3		0.0	0.1	0.1	0.2
Total		100	94		16.0	17.2	33.5	32.1
Hygiene								
3030 partial washing		96	96		3.8	4.1	8.0	7.6
3040 complete washing		100	100		4.6	5.2	9.7	9.7
3050 personal hygiene		4	3		0.1	0.1	0.2	0.2
3090 shampoo		100	99		1.1	1.2	2.2	2.3
3100 shampoo / hair cut / style		-	-		-	-	-	-
3130 manicure / pedicure		100	100		0.3	0.4	0.7	0.7
3140 shaving of beard / hair removal		36	28		1.2	1.1	2.6	2.0
3151 jewelry / make-up		21	31		0.1	0.2	0.3	0.4
3160 glycerine swabs		13	16		0.3	0.5	0.6	1.0
3170 brushing of teeth		89	81		2.9	2.7	6.1	5.1
3181 dressing / undressing		96	95		7.4	7.7	15.4	14.3
Others interventions		-	-		-	-	-	-
Total		100	100		21.9	23.3	45.8	43.4
Mobilization								
4011 get up / lie down		61	60		3.5	3.5	7.2	6.6
4021 get up / lie down with lift		37	30		3.1	2.9	6.5	5.4
4030 assitance to walk		30	34		1.9	2.3	3.9	4.2
4040 push wheelchair or geriatric chair		70	57		2.5	2.2	5.3	4.1
4050 rubbing / positioning		84	69		7.4	6.6	15.4	12.3
4060 muscular exercices		67	42		6.1	4.2	12.7	7.7
4080 physical restraints		6	4		0.1	0.1	0.1	0.2
Others interventions		-	-		-	-	-	-
Total		99	93		24.5	21.7	51.2	40.5

Indeed :

1° the time of an intervention varies with the compensation mode;
2° most of the time, an intervention is not required by 100 % of clients;
3° the frequency per day of most interventions is different from one;
4° some interventions are not required each day of the week.

Thus the time values which appear in the table last column are average per day (whatever the frequency of interventions per day), over 7 days, over 100 % of clients, over all compensation modes.

The five most time consuming interventions represent more than 50 % of the direct and indirect (DIC) time required (= Net Minutes of Care - NMC). Those interventions are the following :

	% of clients	% of NMC	Frequency per day	NMC / CD
1. Assistance for the three meals	99 %	17 %	3	35.5
2. Urinary incontinence care	89 %	11.5 %	5	24.1
3. Partial and complete washing	96-100 %	8.4 %	1	17.7
4. Dressing and undressing	96 %	7.4 %	2	15.4
5. Rubbing and positioning	84 %	7.3 %	4.6	15.4
All		51.6 %		108.1
Afterwards :				
6. Passive and active muscular exercises	67 %	6.1 %	1.9	12.7
7. Assistance to get up and lie down (without lift)	61 %	3.5 %	4.6	7.2
8. Assistance to go to the toilet/commode	43 %	3.3 %	3.4	6.9
9. Assistance to get up and lie down (with lift)	37 %	3.1 %	3.5	6.5
10. Snacks	99 %	3.0 %	2	6.1
All		19.0 %		39.4

One can conclude that 10 of the basic care interventions represent 70.6 % of the time of direct and indirect of care required. One does not see any major difference between the Unit and the Center in the distribution of the careload per intervention. Nevertheless, it should be noted that meals and snacks, rubbings and positioning and passive or active muscular exercises represent a bigger portion of the workload in the Unit than in the Center.

Profile of resources required for basic care per intervention and per category of staff

	% of clients	% net minutes of care (NMC)				NMC/CD			
Feeding and hydration		TOT	RN	LPN	AID	TOT	RN	LPN	AID
1041 meals	99	17.0	0.8	3.2	96.0	35.5	0.3	1.1	34.1
1070 snacks	99	3.0	0.7	2.7	96.6	6.3	0.0	0.2	6.1
1080 hydration	100	0.8	1.0	3.9	95.2	1.7	0.0	0.1	1.6
1090 menu selection	-	-	-	-	-	-	-	-	-
1100 continuous gavage	-	-	-	-	-	-	-	-	-
1110 intermittent gavage	-	-	-	-	-	-	-	-	-
Total	100	20.8	0.8	3.1	96.1	43.5	0.3	1.4	41.8
Elimination		TOT	RN	LPN	AID	TOT	RN	LPN	AID
2030 urinal	1	0.0	-	-	100	0.0	-	-	0.0
2040 bedpan	-	-	-	-	-	-	-	-	-
2050 help to toilet or commode	43	3.3	-	0.4	99.6	6.9	-	0.0	6.8
2060 urinary incontinence care	89	11.5	-	6.7	93.3	24.1	-	1.6	22.5
2070 fecal incontinence care	73	0.8	-	6.0	94.0	1.7	-	0.1	1.6
2100 insertion of urethral catheter	1	0.2	4.0	70.9	24.9	0.4	0.0	0.3	0.1
2110 care of urethral catheter	1	0.0	-	100	-	0.1	-	0.1	-
2120 drainage of collection bag	4	0.0	-	75.3	24.7	0.1	-	0.1	0.0
2130 bladder irrigation	-	-	-	-	-	-	-	-	-
2180 rectal irrigation	9	0.0	-	55.7	45.9	0.1	-	0.0	0.0
2190 rectal examination	1	-	100	-	-	0.0	0.0	-	-
Others interventions	4	0.0	33.3	54.4	12.2	0.1	0.0	0.0	0.0
Total	100	16.0	0.2	6.9	93.0	33.5	0.1	2.3	31.1
Hygiene		TOT	RN	LPN	AID	TOT	RN	LPN	AID
3030 partial washing	96	3.8	-	0.2	99.8	8.0	-	0.0	8.0
3040 complete washing	100	4.6	-	1.1	98.9	9.7	-	0.1	9.6
3050 personal hygiene	4	0.1	-	-	100	0.2	-	-	0.2
3090 shampoo	100	1.1	-	-	100	2.2	-	-	2.2
3100 shampoo / hair cut / style	-	-	-	-	-	-	-	-	-
3130 manicure / pedicure	100	0.3	-	5.0	95.1	0.7	-	0.0	0.7
3140 shaving of beard / hair removal	36	1.2	-	-	100	2.6	-	-	2.6
3151 jewelry / make-up	21	0.1	-	-	100	0.3	-	-	0.3
3160 glycerine swabs	13	0.3	-	10.0	90.0	0.6	-	0.1	0.5
3170 brushing of teeth	89	2.9	-	-	100	6.1	-	-	6.1
3181 dressing / undressing	96	7.4	-	-	100	15.4	-	-	15.4
Others interventions	-	-	-	-	-	-	-	-	-
Total	100	21.9	-	0.5	99.5	45.8	-	0.2	45.6
Mobilization		TOT	RN	LPN	AID	TOT	RN	LPN	AID
4011 get up / lie down	61	3.5	0.0	0.0	100.0	7.2	0.0	0.0	7.2
4021 get up / lie down with lift	37	3.1	-	-	100	6.5	-	-	6.5
4030 assitance to walk	30	1.9	-	1.5	98.5	3.9	-	0.1	3.9
4040 push wheelchair or geriatric chair	70	2.5	-	-	100	5.3	-	-	5.3
4050 rubbing / positioning	84	7.4	0.8	4.1	95.0	15.4	0.1	0.6	14.6
4060 muscular exercices	67	6.1	100	-	-	12.7	12.7	-	-
4080 physical restraints	6	0.1	0.9	0.9	98.2	0.1	0.0	0.0	0.1
Others interventions	-	-	-	-	-	-	-	-	-
Total	99	24.5	25.1	1.4	73.6	51.2	12.8	0.7	37.7

Profile of resources required for basic care per intervention and per category of staff

The first column of the table, entitled "% of clients" provides the prevalence of dependant clients (all compensation modes combined) for each intervention. The second column provides the % of the minutes of direct and indirect care (= NMC : net minutes of care) required by each intervention. The three following columns give the distribution (%) of the time of ***each intervention*** *between the categories of staff (RN, LPN, Aides). This distribution has been calculated on the basis of the distributions of the unitary time of* ***each care action*** *which have been established subjectively by a panel of nurses from the center on the basis of their care philosophy and the rules of attribution of the different care actions to the different categories of staff in Quebec. Finally, the last four columns provide the same information in terms of minutes of care.*

One notes that the contribution of RNs is not much required in the realization of all these basic care interventions, except with regard to passive or active muscular exercises. In term of time, the contribution required from LPNs is even lower than the contribution required from RNs, but LPNs' contribution concerns several interventions, in particular in the area of elimination. Finally, the major contribution is expected from Aides : more than 90 % of the time allocated to most of the nursing interventions, except for a few of them.

Profile of resources required per type and category of care

	% of productive minutes of care (PMC)		PMC/CD	
DIC (Net minutes of care)	89.7	88.6	209.1	186.4
CRC (Communications regarding the client)	4.9	5.5	11.5	11.5
AAMT (Administrative activities, maintenance, travelling)	5.4	5.9	12.5	12.5
Productive minutes of care	100.0	100.0	233.1	210.4

	% net minutes of care (NMC)		NMC/CD	
Basic care	83.2	80.5	174.0	150.0
Relational / educational care	10.6	11.7	22.2	21.8
Technical care	6.1	7.8	12.8	14.6
Feeding and hydration	20.8	18.2	43.5	34.0
Elimination	16.0	17.2	33.5	32.1
Hygiene / Dressing	21.9	23.3	45.8	43.4
Mobilization	24.5	21.7	51.2	40.5
Communication	10.6	11.7	22.2	21.8
Respiration	0.0	0.3	0.1	0.5
Medication	2.8	3.3	5.8	6.1
I.V. therapy	0.3	0.4	0.7	0.7
Treatments	1.0	1.8	2.0	3.3
Diagnostic procedures	2.0	2.1	4.2	3.9

Profile of resources required per type and category of care

Clients of the Unit required in average 209.1 minutes of direct and indirect care per day versus 186.4 in the Center.

Those 209.1 minutes are divided in 174 minutes of basic care (83.2 % of the total minutes of direct and indirect care required), 22,2 minutes of relational/educational care (10.6 %) and 12.8 minutes of technical care (6.1%).

In regards to basic care, mobilization requires the most time (51.2 minute or 24.5 %) followed by hygiene and dressing (45.8 minutes or 21.9 %) and feeding and hydration (43.5 minutes or 20.8 %). Care for elimination is last with 33.5 minutes or 16 % of the direct and indirect care time.

For technical care, medication requires almost half of the time and treatments and diagnostic procedures are consuming the other half. Respiration and IV therapy require a negligible time.

The most important difference between the Unit and the Center concerns basic care : 174.0 minutes versus 150.0 minutes. In all categories of basic care and particularly in the feeding/hydration and mobilization categories, the Unit average client requires more time that the Center average client. This is particularly true in the feeding and mobilization categories.

Profile of resources required per type and category of care and per category of staff

	Distributions of net minutes of care (NMC)						
	NMC/CD			%		NMC/CD	
DIC (Net minutes of care)			RN	9.6	8.0	20.0	15.0
	209.1		LPN	9.4	11.0	19.7	20.6
	186.4		AID	81.0	80.9	169.3	150.9
Basic care			RN	7.6	5.4	13.2	8.0
	174.0		LPN	2.6	2.8	4.6	4.2
	150.0		AID	89.8	91.9	156.2	137.8
Technical care			RN	19.3	18.7	2.5	2.7
	12.8		LPN	67.1	67.3	8.6	9.8
	14.6		AID	13.6	14.0	1.7	2.0
Feeding and hydration			RN	0.8	0.7	0.3	0.2
	43.5		LPN	3.1	3.6	1.4	1.2
	34.0		AID	96.1	95.7	41.8	32.5
Elimination			RN	0.2	0.1	0.1	0.0
	33.5		LPN	6.9	6.8	2.3	2.2
	32.1		AID	93.0	93.2	31.1	29.9
Hygiene / Dressing			RN	-	-	-	-
	45.8		LPN	0.5	0.6	0.2	0.2
	43.4		AID	99.5	99.4	45.6	43.1
Mobilization			RN	25.1	19.2	12.8	7.8
	51.2		LPN	1.4	1.3	0.7	0.5
	40.5		AID	73.6	79.5	37.7	32.2
Communication			RN	19.3	19.2	4.3	4.2
	22.2		LPN	29.5	30.2	6.6	6.6
	21.8		AID	51.2	50.6	11.4	11.0
Respiration			RN	100.0	100.0	0.1	0.5
	0.1		LPN	-	-	-	-
	0.5		AID	-	-	-	-
Medication			RN	8.6	10.0	0.5	0.6
	5.8		LPN	91.4	90.0	5.3	5.5
	6.1		AID	-	-	-	-
I.V. therapy			RN	54.0	65.6	0.4	0.5
	0.7		LPN	35.7	26.3	0.3	0.2
	0.7		AID	10.3	8.1	0.1	0.1
Treatments			RN	2.8	3.3	0.1	0.1
	2.0		LPN	74.4	71.9	1.5	2.4
	3.3		AID	22.8	24.8	0.5	0.8
Diagnostic procedures			RN	34.8	26.9	1.4	1.0
	4.2		LPN	36.2	43.7	1.5	1.7
	3.9		AID	28.9	29.4	1.2	1.1

Profile of resources required per type and category of care and per category of staff

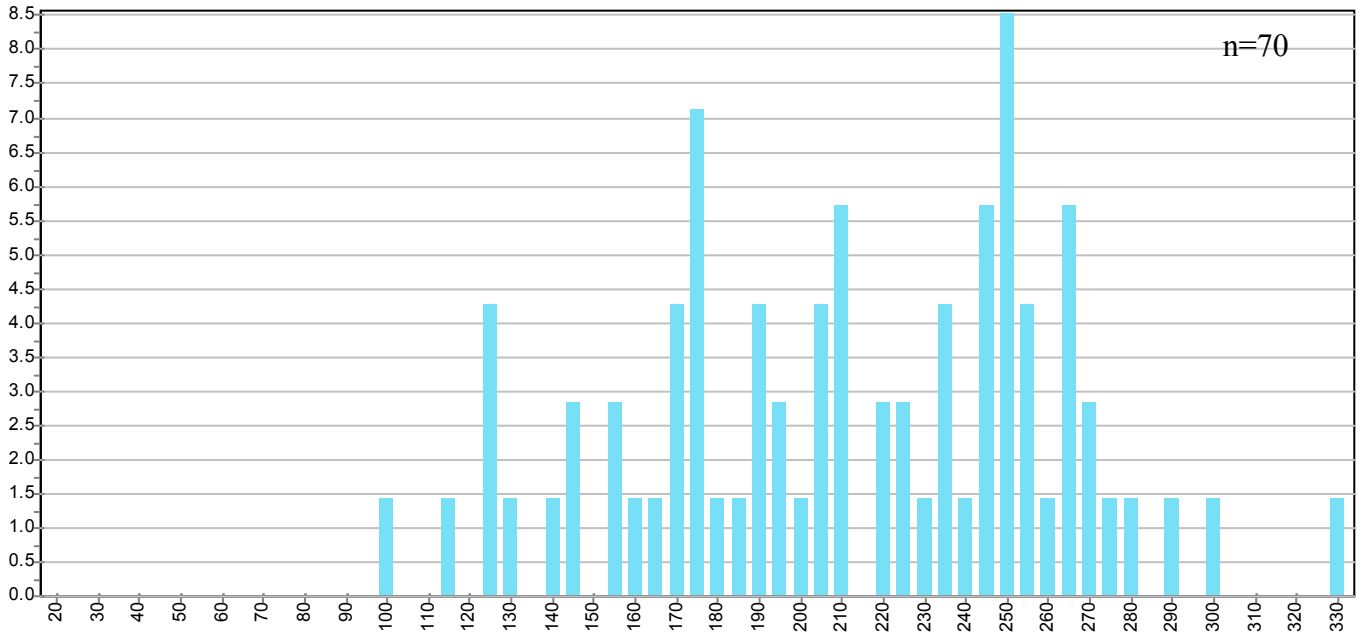
The Unit average client required 209.1 minutes of direct and indirect care, essentially from Aides (81 %), RNs and LPNs sharing the rest half-and-half. By far, the contribution of Aides is larger in basic care (89.8 %), it is smaller in the relational / educative care (=communications) (51.2 %) and significantly smaller in the case of technical care (13.6 %). RNs are required at the level of 7.6 % for basic care, 19.3 % for relational care and for technical care. The corresponding figures for LPNs are : 2.6 %, 29.5 % and 67.1 %.

Feeding and hydration and hygiene and dressing are essentially the realm of Aides, as well as elimination with a small part for LPNs (6.9 %), and mobilization also with a more substantial part for RNs (25.1 %). Medication (91.4 %) and treatments (74.4 %) are mainly the responsibility of LPNs while intravenous therapies are the only intervention category which is mainly a matter for RNs (54 %). The three staff categories share more or less equally the diagnostic methods workload.

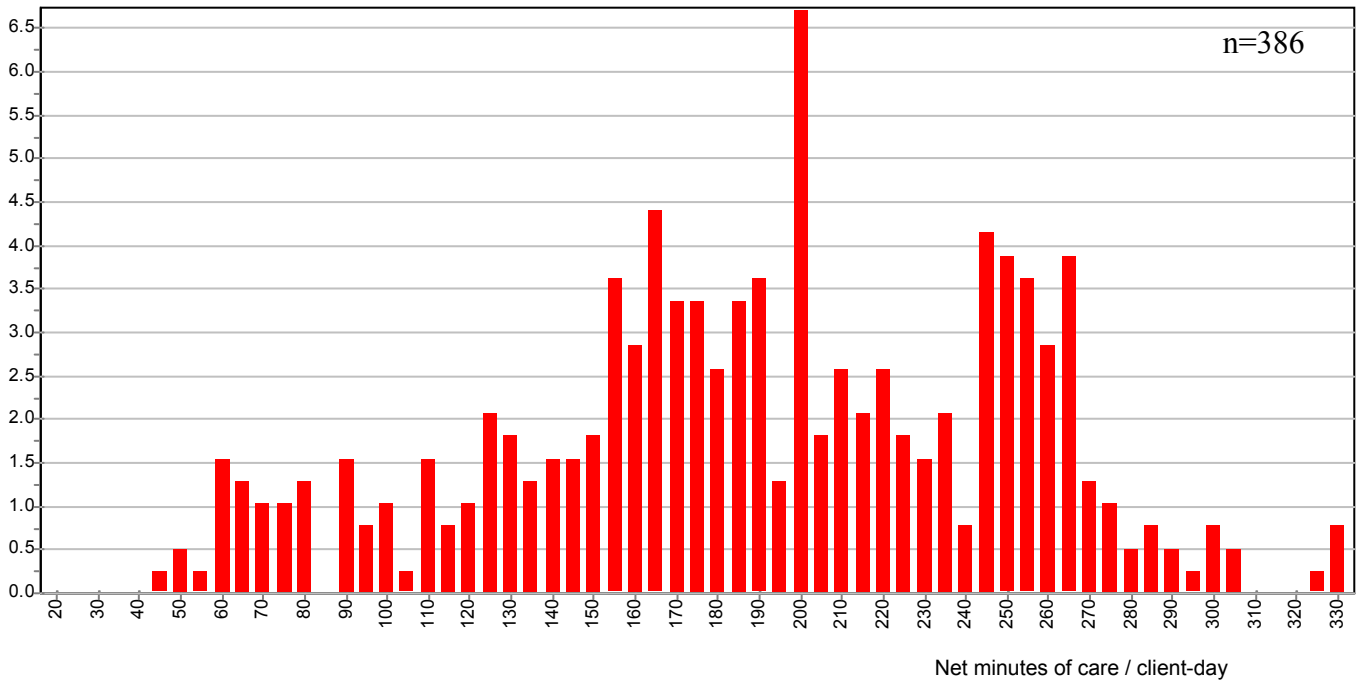
One does not notice important differences between the Unit and the Center in the matter of the distribution of care load per category of staff. There is only small differences at the level of mobilization, IV therapies and diagnostic methods.

Distribution of clients according to net minutes of care required per day

% of clients



% of clients



Distribution of clients according to net minutes of care required

The "lighest" client of the Unit requires 100 net minutes of care per day. The "heaviest", more than 330. One observes a large scattering of clients in term of their level of resources required per day. The distribution is moreover very irregular, as is also the distribution of clients of the Center.

Hours and minutes of care required in average per client-day (CD)

	Hours/CD		Minutes/CD	
Net	3.48	3.11	209.1	186.4
Productive	3.88	3.51	233.1	210.4
Worked	4.17	3.77	250.3	226.0
Remunerated	4.99	4.50	299.2	270.1

Number of worked hours of care (WHC) and of nursing staff presences and positions required per shift

	Day	Evening	Night	24 Hr
Number of WHC per day per client :	2.27 2.11	1.40 1.22	0.50 0.43	4.17 3.77
Number of WHC for 70 clients : Number of WHC for 386 clients :	159.00 814.48	98.25 471.96	34.79 167.37	292.04 1453.82
Number of nursing staff presences per day per client :	0.31 0.29	0.19 0.17	0.07 0.06	0.58 0.52
Number of clients per nursing staff presence :	3.19 3.44	5.17 5.93	14.59 16.72	
Number of nursing staff presences per day for 70 clients : Number of nursing staff presences per day for 386 clients :	21.93 112.34	13.55 65.10	4.80 23.09	40.28 200.53
Number of nursing staff positions per client	0.52 0.49	0.32 0.28	0.11 0.10	0.96 0.87
Number of clients per nursing staff position :				1.04 1.15
Number of nursing staff positions for 70 clients :	36.69 187.97	22.67 108.92	8.03 38.63	67.40 335.52

Number of nursing staff positions and presences required

Clients of the Unit required in average 209.1 minutes of direct and indirect care per day. Those minutes are referred to as net minutes of care (NMC).

To the net minutes of care, one adds 24 minutes per client per day for the communications of the nursing staff regarding the client (CRC), for daily administrative activities done by the staff, for light maintenance activities and staff traveling (AAMT), to obtain productive minutes of care (PMC). In the Unit, this represents 209.1 + 24 = 233.1 PMC per client day (CD).

The 24 minutes standard was fixed by the Ministry of Health and Social Affairs of Quebec in 1980. This standard does not correspond to the reality of today clientele which is heavier than the 1980s' clientele, in particular to the clientele of the Unit which is heavy.

Since in Quebec, one has to pay 435 minutes (including 30 minutes of break) to obtain 405 productive minutes from the staff, one has to multiply productive minutes by 435/405 to obtain what is called worked minutes of care (WMC). For the Unit, 233.1 PMC x 435/405 = 250.3 WMC/CD.

It remains to take into account social benefits. Staff is paid 5 days a week (5 x 52.18 weeks per year = 260.9 days paid per year) and on those 260.9 days, a staff member would be absent from work but paid in average 42.6 days (paid absence is defined as annual vacation, paid holiday and all other absences except for long term sickness). Again, this norm was established in 1980 by the Ministry of Health of Quebec and does not necessarily correspond to the reality of the Unit which we do not know of. According to this norm one must pay the staff 260.9 days to obtain 218.4 worked days.

Thus, to obtain 250.3 WMC, one would have to pay 250.3 x 260.9/218.4 = 299.2 remunerated minutes of care (RMC) per client day.

To summarize, the average client from the Unit require in average 209.1 net minute of care (NMC) per day. If one considers other staff activities, break and paid absences, one would have to remunerate 299.2 minutes of care (RMC) per day.

If one transforms those numbers in terms of presences and full time positions, one obtains the following results :

For **70 clients** requiring in average 209.1 NMC per day, **365 days a years**, one would need :

40.28 presences per day (a staff presence = 405 productive minutes), of which 22 during the day (54.4 %), 13.5 in the evening (33.6 %) and 5 at night (11.9 %). In that manner there would be in average 3.2 clients per staff during daytime, 5.2 during the evening and 14.6 at night.

To insure those presences, one would need 67 full time positions, of which 36.7 during the daytime, 22.7 in the evening and 8 at night. This means 0.96 position per client or 1.04 client per position.

Eventually those numbers should be revised to take into account the real number of annual client-days (here we have considered the hypothesis of 70 x 365.26 = 25568 client-day per year) and the real number of staff absences, as we have worked here with the provincial norm of 42.6 days of paid absence per staff member per year.

Hours and minutes of care required in average per client-day and per category of staff

	Hours/CD				Minutes/CD			
	RN	LPN	AID	ALL	RN	LPN	AID	ALL
Net	0.33	0.33	2.82	3.48	20.0	19.7	169.3	209.1
Productive	0.57	0.43	2.89	3.88	34.3	25.5	173.2	233.1
Worked	0.61	0.46	3.10	4.17	36.9	27.4	186.0	250.3
Remunerated	0.73	0.55	3.71	4.99	44.1	32.8	222.3	299.2

Number of worked hours of care (WHC) and of nurssing staff presences and positions required per category of staff and per shift

		Day	Evening	Night	24 Hr
Number of WHC per day per client :	RN	0.31	0.24	0.06	0.61
	LPN	0.22	0.16	0.07	0.46
	AID	1.73	1.00	0.37	3.10
Number of WHC for 70 clients :	RN	21.89	16.91	4.22	43.01
	LPN	15.72	11.52	4.76	32.00
	AID	121.38	69.83	25.81	217.02
Number of nursing staff presences per day per client :	RN	0.04	0.03	0.01	0.08
	LPN	0.03	0.02	0.01	0.06
	AID	0.24	0.14	0.05	0.43
Number of clients per nursing staff presence :	RN	23.19	30.01	120.40	
	LPN	32.28	44.07	106.53	
	AID	4.18	7.27	19.66	
Number of nursing staff presences per day for 70 clients :	RN	3.02	2.33	0.58	5.93
	LPN	2.17	1.59	0.66	4.41
	AID	16.74	9.63	3.56	29.93
Number of nursing staff positions per client	RN	0.07	0.06	0.01	0.14
	LPN	0.05	0.04	0.02	0.11
	AID	0.40	0.23	0.09	0.72
Number of clients per nursing staff position :	RN				7.05
	LPN				9.48
	AID				1.40
Number of nursing staff positions for 70 clients :	RN	5.05	3.90	0.97	9.93
	LPN	3.63	2.66	1.10	7.39
	AID	28.01	16.11	5.96	50.09

Number of nursing staff positions and presences required per category of staff

The average client of Unit nr.6 requires 209.1 NMC/day. These minutes split up into 20 minutes required from RNs (10 %), 19.7 minutes required form LPNs (10 %) and 169.3 minutes required from non professional staff (80 %). This translates in presences and positions as follows :

The 40.28 presences required each day should be provided by 6 RNs, 4.5 LPNs and 30 Aides. To offer these 40.28 presences required in average each day, it would be necessary to allocate 10 RNs' positions, 7.5 LPNs' positions and 50 Aides' positions. There would then be 7 clients per RN, 9.5 clients per LPN and 1.5 clients per Aide position.

Worked minutes and hours of care required per shift and per day of the week

Per client	***Minutes***			
	Day	Evening	Night	24 Hr
Monday	135.8 129.0	85.2 73.6	30.0 26.4	251.0 229.0
Tuesday	143.4 129.2	85.0 73.4	30.1 26.0	258.5 228.6
Wednesday	136.5 128.7	83.5 73.3	29.9 26.2	249.8 228.2
Thursday	133.5 125.2	84.9 73.3	29.7 25.9	248.0 224.4
Friday	137.2 128.8	84.8 73.5	30.0 26.1	252.0 228.4
Saturday	133.3 121.3	83.5 73.1	29.6 25.8	246.4 220.3
Sunday	134.3 123.9	82.7 73.3	29.6 25.8	246.6 223.0
Average per working day	137.3 128.2	84.7 73.4	29.9 26.1	251.9 227.7
Average per weekend day	133.8 122.6	83.1 73.2	29.6 25.8	246.5 221.6
Total for the week	954.0 886.2	589.5 513.5	208.7 182.1	1752.2 1581.9
Global daily average	136.3 126.6	84.2 73.4	29.8 26.0	250.3 226.0
Distribution per shift in %	54.44% 56.02%	33.64% 32.46%	11.91% 11.51%	100.00% 100.00%

For 70 clients	***Hours***			
For 386 clients	Day	Evening	Night	24 Hr
Monday	158.4 830.2	99.4 473.2	35.0 170.0	292.8 1473.4
Tuesday	167.3 831.3	99.1 472.4	35.1 167.0	301.6 1470.7
Wednesday	159.2 827.7	97.4 471.8	34.9 168.5	291.4 1468.0
Thursday	155.7 805.6	99.0 471.7	34.6 166.3	289.4 1443.6
Friday	160.1 828.6	98.9 472.8	34.9 167.9	293.9 1469.3
Saturday	155.5 780.7	97.5 470.2	34.5 166.1	287.4 1417.0
Sunday	156.7 797.2	96.4 471.7	34.5 165.8	287.7 1434.7
Average per working day	160.2 824.7	98.8 472.4	34.9 167.9	293.8 1465.0
Average per weekend day	156.1 788.9	97.0 470.9	34.5 166.0	287.6 1425.8
Total for the week	1113.0 5701.4	687.8 3303.7	243.5 1171.6	2044.3 10176.7
Global daily average	159.0 814.5	98.3 472.0	34.8 167.4	292.0 1453.8

Weekly workload variations

One notes almost no workload variations between the days of the week. The maximum load is observed on Tuesday (301.6 worked hours of care) and the minimal load is observed on Saturday (287.4 worked hours of care). Difference between the minimum and the maximum is only of 5 %. It is to be noted that Tuesday is an exception since the loads for the other days of the week vary from 287.4 to 293.9 hours.

In regard to the shift, the night load is almost always the same during the whole week. One also notes almost no variations in the evening load. The Tuesday exception observed in the total daily load comes from a different daytime load. As we have mentioned those variations are low. Still, they could justify the presence of one more member of staff during the day shift on Tuesday and half of a presence less during the day shift on Thursday, Saturday and Sunday.

Supply and demand equilibrium

The purpose of the last set of outputs is to compare nursing staff supply, as observed in the Unit, to the demand for nursing staff as measured by PLAISIR.

Nursing staff can be measured in full time equivalent (FTE) presences or in worked hours of care (WHC). In the following outputs, the staff is expressed in WHC.

*The **scheduled** staff is the Unit regular staff whose presence is planed for one specific day at a specific work shift. The staff replacing long term absences is included in scheduled staff.*

*The **absent** staff corresponds to the scheduled staff who are absent (short term absenteeism) on the day and shift that they were supposed to be working.*

*The **casual** staff represents the staff which is not part of the regular staff of the Unit and that is added to regular staff to replace short term absences or to face an overload of work.*

*The **real** staff of the Unit is defined as the scheduled staff, minus the absent staff, and plus the casual staff.*

REAL STAFF = SCHEDULED – ABSENT + CASUAL

*At last, the staff **required** is the staff needed to satisfy the client's needs as measured with PLAISIR in terms of time of care and of other staff activities.*

In Unit nr.6, the **scheduled** staff is systematically lower than the required staff during the day and evening shifts. The opposite is true for the night shift but the surplus is small. The **real** staff is systematically lower than the required staff during the day and evening shifts except on Wednesday evening and on Thursday day shift. At night, real staff is always larger than required staff, except on Wednesday and Friday.

The average shortage of real staff during day shift is 16.07 WHC on a required average of 159 HST. The average shortage during evening shift is 6.18 WHC (a little less than one caregiver) on a required average of 13.5 caregivers (98.25 WHC). The average surplus at night is 0.94 WHC on a required average of 34.79 WHC.

Absenteeism is relatively low on the Unit : 68.88 WHC during the week for a total of 1884.25 WHC scheduled, which is to say 3.7 % of the scheduled WHC. Absenteeism is higher during the night : 18.13 WHC on 253.75 WHC scheduled, which is to say 7.1 % of the scheduled WHC. Casual staff magnitude is the same than that of absent staff : 79.76 WHC during the week. However, all casual staff are not used to replace absences; a big part of casual staff is provided to reinforce scheduled staff.

Casual staff is added mostly during the evening shift : 36.26 WHC during the observed week while there was only 21.75 WHC of absence during that same shift.

In summary, scheduled staff was lower than the demand during the day and evening shift. As casual staff was the same magnitude than the absences, real staff was, in general, also lower than the demand during day and evening shift. To match supply and demand, scheduled or casual staff, or both, could be increased. One will also note that if the global deficit of scheduled staff for day shift during the week (112.47 WHC) is equal to the global deficit of real staff, there are important differences between those deficits from one day to another during the week.

Supply and demand equilibrium of staff during the observation week (Worked hours of care)

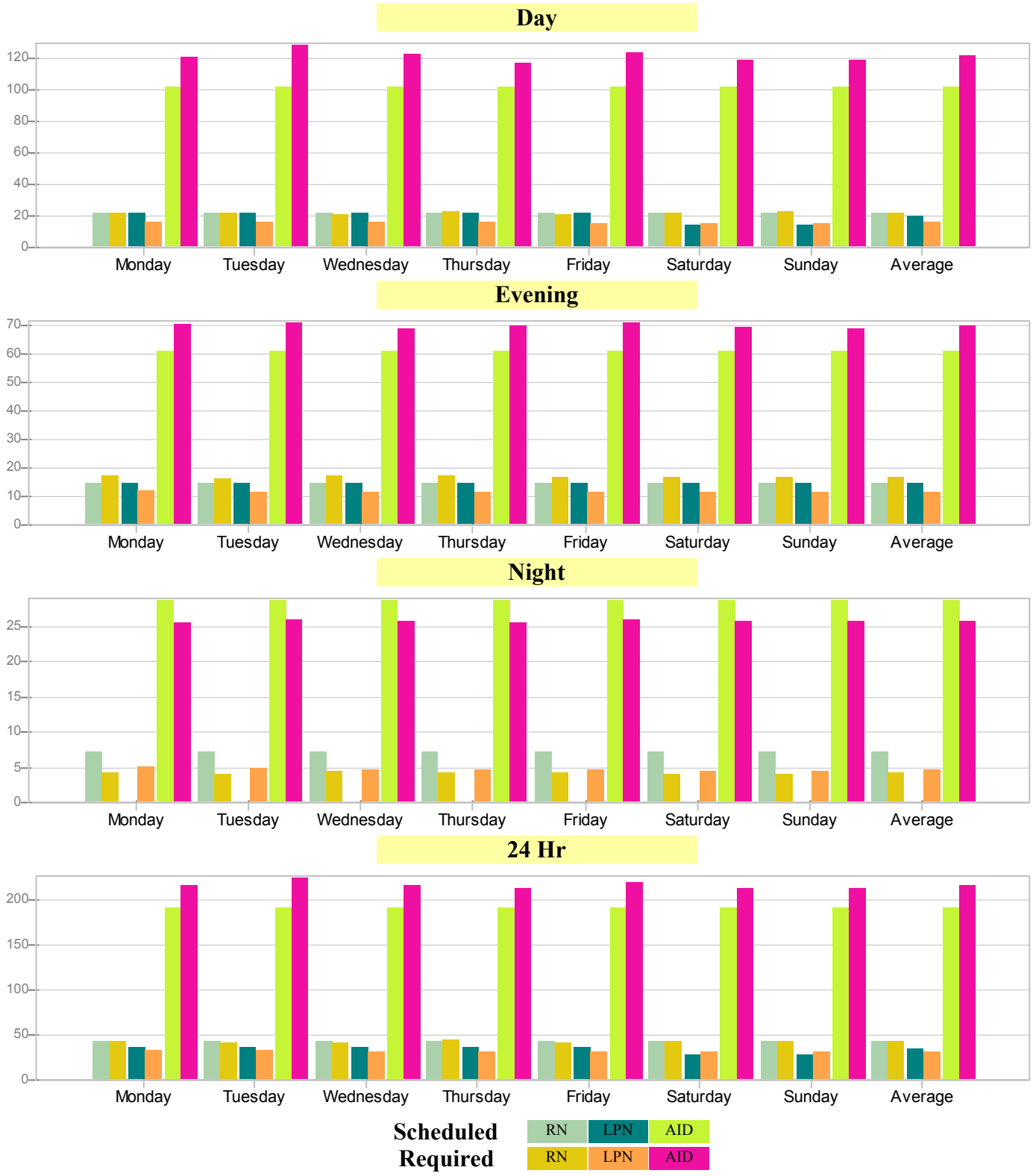
Day	Shift	Scheduled	Absent	Casual	Real	Required	Real - Required	Sched.- Required
Monday	Day	145.00	7.25	-	137.75	158.44	-20.69	-13.44
	Evening	90.00	7.25	7.25	90.00	99.42	-9.42	-9.42
	Night	36.25	-	-	36.25	34.96	1.29	1.29
	24 Hr	271.25	14.50	7.25	264.00	292.82	-28.82	-21.57
Tuesday	Day	145.00	14.50	7.25	137.75	167.34	-29.59	-22.34
	Evening	90.00	-	-	90.00	99.14	-9.14	-9.14
	Night	36.25	-	7.25	43.50	35.12	8.38	1.13
	24 Hr	271.25	14.50	14.50	271.25	301.61	-30.36	-30.36
Wednesday	Day	145.00	-	7.25	152.25	159.20	-6.95	-14.20
	Evening	90.00	-	10.88	100.88	97.36	3.52	-7.36
	Night	36.25	3.63	-	32.62	34.87	-2.25	1.38
	24 Hr	271.25	3.63	18.13	285.75	291.43	-5.68	-20.18
Thursday	Day	145.00	-	14.50	159.50	155.70	3.80	-10.70
	Evening	90.00	-	-	90.00	99.02	-9.02	-9.02
	Night	36.25	-	-	36.25	34.63	1.62	1.62
	24 Hr	271.25	-	14.50	285.75	289.35	-3.60	-18.10
Friday	Day	145.00	-	-	145.00	160.09	-15.09	-15.09
	Evening	90.00	-	3.63	93.63	98.91	-5.28	-8.91
	Night	36.25	7.25	-	29.00	34.94	-5.94	1.31
	24 Hr	271.25	7.25	3.63	267.63	293.95	-26.32	-22.70
Saturday	Day	137.75	7.25	-	130.50	155.46	-24.96	-17.71
	Evening	90.00	7.25	14.50	97.25	97.45	-0.20	-7.45
	Night	36.25	7.25	7.25	36.25	34.51	1.74	1.74
	24 Hr	264.00	21.75	21.75	264.00	287.42	-23.42	-23.42
Sunday	Day	137.75	-	-	137.75	156.73	-18.98	-18.98
	Evening	90.00	7.25	-	82.75	96.45	-13.70	-6.45
	Night	36.25	-	-	36.25	34.50	1.75	1.75
	24 Hr	264.00	7.25	-	256.75	287.68	-30.93	-23.68
Total Week	Day	1000.50	29.00	29.00	1000.50	1112.97	-112.47	-112.47
	Evening	630.00	21.75	36.26	644.51	687.75	-43.24	-57.75
	Night	253.75	18.13	14.50	250.12	243.54	6.58	10.21
	24 Hr	1884.25	68.88	79.76	1895.13	2044.25	-149.12	-160.00
Global daily average	Day	142.93	4.14	4.14	142.93	159.00	-16.07	-16.07
	Evening	90.00	3.11	5.18	92.07	98.25	-6.18	-8.25
	Night	36.25	2.59	2.07	35.73	34.79	0.94	1.46
	24 Hr	269.18	9.84	11.39	270.73	292.04	-21.30	-22.86
Average per working day	Day	145.00	4.35	5.80	146.45	160.16	-13.71	-15.16
	Evening	90.00	1.45	4.35	92.90	98.77	-5.87	-8.77
	Night	36.25	2.18	1.45	35.52	34.90	0.62	1.35
	24 Hr	271.25	7.98	11.60	274.88	293.83	-18.95	-22.58
Average per weekend day	Day	137.75	3.63	-	134.13	156.09	-21.97	-18.34
	Evening	90.00	7.25	7.25	90.00	96.95	-6.95	-6.95
	Night	36.25	3.63	3.63	36.25	34.51	1.74	1.74
	24 Hr	264.00	14.50	10.88	260.38	287.55	-27.18	-23.55

Supply and demand equilibrium of staff during the observation week (Worked hours of care)

Supply and demand equilibrium per category of staff during the observation week (Worked hours of care)

Day	Shift	RN			LPN			AID			ALL		
		Scheduled	Required	Prv - Req	Scheduled	Required	Prv - Req	Scheduled	Required	Prv - Req	Scheduled	Required	Prv - Req
Monday	Day	21.75	22.03	-0.28	21.75	15.83	5.92	101.50	120.58	-19.08	145.00	158.44	-13.44
	Evening	14.50	17.07	-2.57	14.50	11.82	2.68	61.00	70.53	-9.53	90.00	99.42	-9.42
	Night	7.25	4.34	2.91	-	5.08	-5.08	29.00	25.54	3.46	36.25	34.96	1.29
	24 Hr	43.50	43.44	0.06	36.25	32.72	3.53	191.50	216.66	-25.16	271.25	292.82	-21.57
Tuesday	Day	21.75	21.97	-0.22	21.75	16.17	5.58	101.50	129.20	-27.70	145.00	167.34	-22.34
	Evening	14.50	16.36	-1.86	14.50	11.45	3.05	61.00	71.33	-10.33	90.00	99.14	-9.14
	Night	7.25	4.12	3.13	-	4.95	-4.95	29.00	26.05	2.95	36.25	35.12	1.13
	24 Hr	43.50	42.45	1.05	36.25	32.57	3.68	191.50	226.59	-35.09	271.25	301.61	-30.36
Wednesday	Day	21.75	20.74	1.01	21.75	15.88	5.87	101.50	122.58	-21.08	145.00	159.20	-14.20
	Evening	14.50	17.27	-2.77	14.50	11.64	2.86	61.00	68.45	-7.45	90.00	97.36	-7.36
	Night	7.25	4.39	2.86	-	4.67	-4.67	29.00	25.82	3.18	36.25	34.87	1.38
	24 Hr	43.50	42.40	1.10	36.25	32.19	4.06	191.50	216.84	-25.34	271.25	291.43	-20.18
Thursday	Day	21.75	22.63	-0.88	21.75	15.93	5.82	101.50	117.15	-15.65	145.00	155.71	-10.71
	Evening	14.50	17.57	-3.07	14.50	11.57	2.93	61.00	69.88	-8.88	90.00	99.02	-9.02
	Night	7.25	4.28	2.97	-	4.73	-4.73	29.00	25.63	3.37	36.25	34.63	1.62
	24 Hr	43.50	44.48	-0.98	36.25	32.22	4.03	191.50	212.66	-21.16	271.25	289.36	-18.11
Friday	Day	21.75	21.06	0.69	21.75	15.65	6.10	101.50	123.38	-21.88	145.00	160.09	-15.09
	Evening	14.50	16.86	-2.36	14.50	11.45	3.05	61.00	70.60	-9.60	90.00	98.91	-8.91
	Night	7.25	4.26	2.99	-	4.76	-4.76	29.00	25.93	3.07	36.25	34.95	1.30
	24 Hr	43.50	42.19	1.31	36.25	31.86	4.39	191.50	219.91	-28.41	271.25	293.95	-22.70
Saturday	Day	21.75	21.88	-0.13	14.50	15.26	-0.76	101.50	118.32	-16.82	137.75	155.46	-17.71
	Evening	14.50	16.64	-2.14	14.50	11.36	3.14	61.00	69.45	-8.45	90.00	97.45	-7.45
	Night	7.25	4.06	3.19	-	4.58	-4.58	29.00	25.87	3.13	36.25	34.52	1.73
	24 Hr	43.50	42.58	0.92	29.00	31.20	-2.20	191.50	213.64	-22.14	264.00	287.43	-23.43
Sunday	Day	21.75	22.91	-1.16	14.50	15.35	-0.85	101.50	118.47	-16.97	137.75	156.73	-18.98
	Evening	14.50	16.59	-2.09	14.50	11.33	3.17	61.00	68.53	-7.53	90.00	96.45	-6.45
	Night	7.25	4.06	3.19	-	4.58	-4.58	29.00	25.86	3.14	36.25	34.50	1.75
	24 Hr	43.50	43.56	-0.06	29.00	31.26	-2.26	191.50	212.85	-21.35	264.00	287.68	-23.68
Total Week	Day	152.25	153.22	-0.97	137.75	110.06	27.69	710.50	849.68	-139.18	1000.50	1112.97	-112.47
	Evening	101.50	118.36	-16.86	101.50	80.61	20.89	427.00	488.78	-61.78	630.00	687.75	-57.75
	Night	50.75	29.51	21.24	-	33.35	-33.35	203.00	180.70	22.30	253.75	243.55	10.20
	24 Hr	304.50	301.09	3.41	239.25	224.02	15.23	1340.50	1519.16	-178.66	1884.25	2044.27	-160.02
Global daily average	Day	21.75	21.89	-0.14	19.68	15.72	3.96	101.50	121.38	-19.88	142.93	159.00	-16.07
	Evening	14.50	16.91	-2.41	14.50	11.52	2.98	61.00	69.83	-8.83	90.00	98.25	-8.25
	Night	7.25	4.22	3.03	-	4.76	-4.76	29.00	25.81	3.19	36.25	34.79	1.46
	24 Hr	43.50	43.01	0.49	34.18	32.00	2.18	191.50	217.02	-25.52	269.18	292.04	-22.86
Average per working day	Day	21.75	21.69	0.06	21.75	15.89	5.86	101.50	122.58	-21.08	145.00	160.16	-15.16
	Evening	14.50	17.03	-2.53	14.50	11.58	2.92	61.00	70.16	-9.16	90.00	98.77	-8.77
	Night	7.25	4.28	2.97	-	4.84	-4.84	29.00	25.79	3.21	36.25	34.91	1.34
	24 Hr	43.50	42.99	0.51	36.25	32.31	3.94	191.50	218.53	-27.03	271.25	293.83	-22.58
Average per weekend day	Day	21.75	22.39	-0.64	14.50	15.31	-0.81	101.50	118.39	-16.89	137.75	156.09	-18.34
	Evening	14.50	16.62	-2.12	14.50	11.34	3.16	61.00	68.99	-7.99	90.00	96.95	-6.95
	Night	7.25	4.06	3.19	-	4.58	-4.58	29.00	25.86	3.14	36.25	34.51	1.74
	24 Hr	43.50	43.07	0.43	29.00	31.23	-2.23	191.50	213.25	-21.75	264.00	287.55	-23.55

Supply and demand equilibrium per category of staff during the observation week (Worked hours of care)



The analysis per category of staff of the equilibrium between scheduled staff and required staff shows that :

- the RNs' basic team corresponds well to what is required : equilibrium for the day shift, slight understaffing for the evening shift and slight (in absolute value) overstaffing for the night shift. In terms of hours of care, evening understaffing is about the same size as night overstaffing.

- the LPNs' basic team is slightly larger than required over 24 hours, except for the week-end where it is slightly smaller than required. But, the LPNs' basic team is not split up between the shifts in relation with the demand of care : the day team is 40 % too large (except for the week-end where practically, the equilibrium is realized); the evening team is 20 % too large all days of the week; finally no LPNs are scheduled for the night shift when the average demand is 4.76 WHC during this shift.

- the Aides' basic team is insufficient for the day shift (by ± 15 %) and the night shift (by ± 13 %) but is too large for the night shift (by ± 12 %), and this is true all days of the week. Globally, over 24 hours, the Aides' basic team is insufficient: shortage of 12 % which is not compensated by a very slight surplus of RNs and a slight surplus of LPNs.

*One will now define the concepts of **effective** staff, **rate of adequacy** and rate of **utilization** in order to describe the supply and demand equilibrium in relative (rates) rather than absolute figures.*

*The **real effective** staff is the portion of the real staff that is well used, meaning that the presence of this staff is necessary to satisfy the demand. The effective staff reflects both well "**used supply**" and "**appropriately**" satisfied demand.*

For a specific shift on a specific day in a specific Unit, (what is defined as an "elementary entity"), the real effective staff is the minimum of real and required staff.

REAL EFFECTIVE staff = minimum (REAL staff, REQUIRED staff)

For a specific day, the real effective staff is calculated by summing the real effective staff in each shift. For a specific week, the real effective staff is the sum of the real effective staff during each day of the week.

	Real	***Required***		***Real effective***	
Elementary entity 1	*4.0* →	*3.0* →	min. →	*3.0*	+
Elementary entity 2	*3.0* →	*6.0* →	min. →	*3.0*	
Total	*7.0*	*9.0*		*6.0*	

*In the above example, one can see that in the elementary entity 1 (for example, day shift of a Monday) only 3.0 FTE are **used** to fulfill the demand. The fourth FTE is in surplus. The demand is also satisfied up to the 3.0 FTE level since the supply is sufficient to fulfill it up to that level.*

*To the contrary, in elementary entity 2 (for example, day shift of a Tuesday) the available 3.0 FTE are well **used.** Moreover, they do not even satisfy the demand of 6.0 FTE that is only **partially** satisfied at a level of 3.0 FTE, since it is the maximum that the real can provide.*

*Finally, the Total of 6.0 FTE for the Real effective, that results from the addition of the 3.0 FTE and the 3.0 FTE, **is not** the minimum of the total of the Real and the total of the Required (the minimum of 7.0 and 9.0). This last line is telling us that for both elementary entities, the total supply (Real) was 7.0 FTE while the total demand (Required) was 9.0 FTE. The difference was 2.0 FTE (9.0 FTE – 7.0 FTE). In reality the Real effective of 6.0 FTE suggest that the situation is more complicated. In the entity 1, there is a 1.0 FTE (7.0 – 6.0) in excess and in the entity 2 there is a 3.0 FTE (6.0 – 9.0) in*

shortage. So, the global difference between supply and demand would have been of 2.0 FTE only if the FTE in excess in the entity 1 could have been considered as compensating for one of the 3.0 FTE lacking in the entity 2.

In general and in reality, this kind of hypothesis does not make sense since the staff is excess in one elementary entity (shift, unit, date) – for example, a day shift a Monday – cannot compensate for the staff missing in another elementary entity (another unit, shift or date) – for example a day shift a Tuesday.

The ratio of the real effective staff on the required staff allows to calculate the ***real (staff) adequacy rate (RAR).*** *This rate measures the percentage of the demand (required staff) which is satisfied by the* ***final*** *supply of care (real staff).*

$$\text{Real staff adequacy rate (RAR)} = \frac{\text{Real effective staff}}{\text{Required staff}}$$

The adequacy rate measures the level up to which the need for staff is satisfied. A rate of 100 % signifies that the effective supply of staff is at least as large as the demand of staff (the required). A rate of 75 % signifies that the effective supply of staff represents only 75 % of the demand in staff.

The ratio of the real effective staff on the real staff allows to calculate the ***real (staff) utilization rate (RUR)*** *which measures the percentage of the final supply of staff (the real) that is used to respond to the demand (the required).*

$$\text{Real staff utilization rate (RUR)} = \frac{\text{Real effective staff}}{\text{Real staff}}$$

The utilization rate measures the level up to which the final supply of staff (the real) is effectively used to satisfy the demand. A rate of utilization of 100 % signifies that the final supply of staff is totally used to respond to the demand. A rate of utilization of 80 % signifies that only 80 % of the real staff is used to respond to the demand.

In an elementary entity, Real effective = minimum (Real, Required) so :

$\text{If Real} > \text{Required} \rightarrow \text{Real effective} = \text{Required}$ and RAR = 1 and RUR < 1
$\text{If Real} < \text{Required} \rightarrow \text{Real effective} = \text{Real}$ and RAR < 1 and RUR = 1
$\text{If Real} = \text{Required} \rightarrow \text{Real effective} = \text{Real and required}$ and RAR = 1 and RUR = 1

This is most of the time not the case when one combines elementary entities since the Real effective can be lower than the Real and the Required.

The following table gives rates of adequacy and utilization for the above example :

	Real	***Required***	***Real effective***	***Real adequacy rate***	***Real utilization rate***
Elementary entity 1	*4.0*	*3.0*	*3.0*	*100.0*	*75.0*
Elementary entity 2	*3.0*	*6.0*	*3.0*	*50.0*	*100.0*
Total	*7.0*	*9.0*	*6.0*	*66.7*	*85.7*

Adequacy and utilization rates < 100 at the "Total" line reflect what was already discussed in the above concerning a unsatisfied demand (rate of adequacy < 100) combined with a misutilization of resources (rate of utilization < 100).

Similarly to the notion of Real effective staff, one can define ***scheduled effective*** *staff as the portion of scheduled staff that is well used. For a specific shift on a specific day, in a specific Unit, scheduled effective staff is the minimum of scheduled and required staff.*

SCHEDULED EFFECTIVE staff = minimum (SCHEDULED staff, REQUIRED staff)

For a specific day, the scheduled effective staff is obtained by summing scheduled effective staff on each shift of the day. For a specific week, the scheduled effective staff is the sum of the scheduled effective staff of each day of the week.

The ratio of the scheduled effective staff on the required staff allows to calculate the ***scheduled (staff) adequacy rate (SAR)*** *which measures the percentage of the demand (required staff) that is satisfied by the* ***initial*** *supply of care (scheduled staff).*

$$\text{Scheduled staff adequacy rate (SAR)} = \frac{\text{Scheduled effective staff}}{\text{Required staff}}$$

The ratio of the scheduled effective staff on the scheduled staff allows to calculate the ***scheduled (staff) utilization rate (SUR)*** *which measures the percentage of the initial supply of staff (the scheduled) used to respond to the demand (the required).*

$$\text{Scheduled staff utilization rate (SUR)} = \frac{\text{Scheduled effective}}{\text{Scheduled}}$$

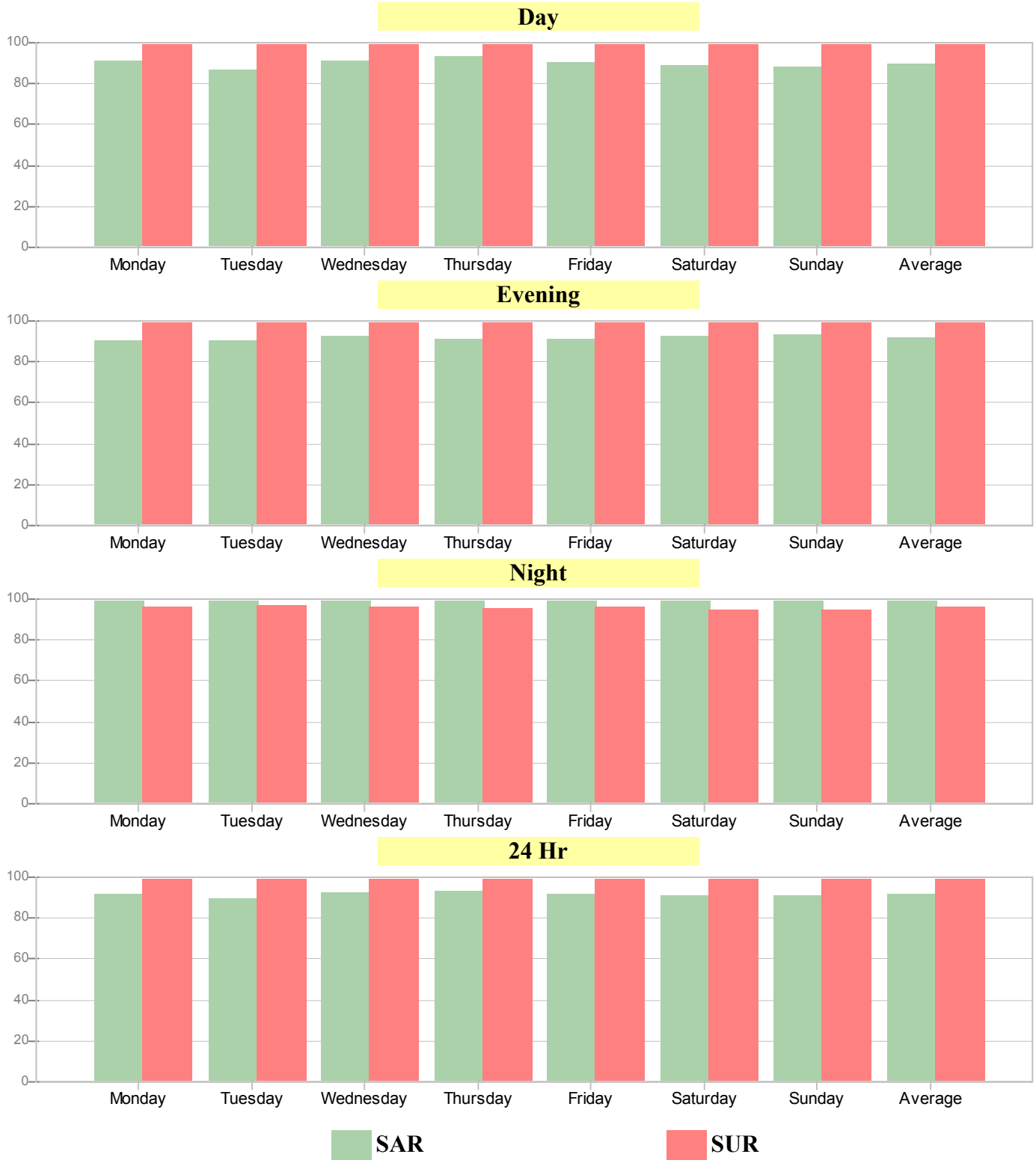
Adequacy rate (AR) and Utilization rate (UR) of the Scheduled (S) and Real staff (R) during the observation week

Day	Shift	Scheduled			Real		
		Scheduled effective	S. Effective / Required SAR	S. Effective / Scheduled SUR	Real Effective	R. Effective / Required RAR	R. Effective / Real RUR
Monday	Day	145.00	92	100	137.75	87	100
	Evening	90.00	91	100	90.00	91	100
	Night	34.96	100	96	34.96	100	96
	24 Hr	269.96	92	100	262.71	90	100
Tuesday	Day	145.00	87	100	137.75	82	100
	Evening	90.00	91	100	90.00	91	100
	Night	35.12	100	97	35.12	100	81
	24 Hr	270.12	90	100	262.87	87	97
Wednesday	Day	145.00	91	100	152.25	96	100
	Evening	90.00	92	100	97.36	100	97
	Night	34.87	100	96	32.62	94	100
	24 Hr	269.87	93	99	282.23	97	99
Thursday	Day	145.00	93	100	155.70	100	98
	Evening	90.00	91	100	90.00	91	100
	Night	34.63	100	96	34.63	100	96
	24 Hr	269.63	93	99	280.33	97	98
Friday	Day	145.00	91	100	145.00	91	100
	Evening	90.00	91	100	93.63	95	100
	Night	34.94	100	96	29.00	83	100
	24 Hr	269.94	92	100	267.63	91	100
Saturday	Day	137.75	89	100	130.50	84	100
	Evening	90.00	92	100	97.25	100	100
	Night	34.51	100	95	34.51	100	95
	24 Hr	262.26	91	99	262.26	91	99
Sunday	Day	137.75	88	100	137.75	88	100
	Evening	90.00	93	100	82.75	86	100
	Night	34.50	100	95	34.50	100	95
	24 Hr	262.25	91	99	255.00	89	99
Total Week	Day	1000.50	90	100	996.70	90	100
	Evening	630.00	92	100	640.99	93	99
	Night	243.54	100	96	235.34	97	94
	24 Hr	1874.04	92	99	1873.04	92	99
Global daily average	Day	142.93	90	100	142.39	90	100
	Evening	90.00	92	100	91.57	93	99
	Night	34.79	100	96	33.62	97	94
	24 Hr	267.72	92	99	267.58	92	99
Average per working day	Day	145.00	91	100	145.69	91	99
	Evening	90.00	91	100	92.20	93	99
	Night	34.90	100	96	33.27	95	94
	24 Hr	269.90	92	100	271.15	92	99
Average per weekend day	Day	137.75	88	100	134.13	86	100
	Evening	90.00	93	100	90.00	93	100
	Night	34.51	100	95	34.51	100	95
	24 Hr	262.26	91	99	258.63	90	99

Since the differences are slight between scheduled and real staff in Unit nr.6, rates of adequacy and utilization of the scheduled and real staff are relatively similar. The lowest scheduled staff adequacy rate (SAR) is observed during daytime on Tuesday : 87 %. The lowest scheduled staff utilization rate (SUR) is observed during nights on Saturday and Sunday : 95 %. One notes that the SUR are always at 100 % during day and evening shifts since the scheduled staff is always lower than the demand during those two shifts. Conversely, SAR are always equal to 100 % during the night since scheduled staff is always higher than the required staff during this shift. On a weekly base, the SAR is 90 % for the day shift, 92 % for the evening shift and 100 % for the night shift, and the SUR is 100 % for day and evening and 96 % for night. Those rates are high and they indicate a good balance between scheduled and required staff in the Unit : the scheduled staff is well used and satisfies fairly well the demand.

The lowest Real staff adequacy rate (RAR) is observed during the day on Tuesday : 82 %. The lowest Real staff utilization rate (RUR) is observed during the night on Tuesday : 81 %. Globally, on the week, RAR is 90 % for the day, 93 % for the evening and 97 % for the night, and RUR is 100 % for the day, 99 % for the evening and 94 % for the night. Day and evening RUR are higher than day and evening RAR which means that resources are used a little bit better than the demand is satisfied. The contrary is true at night. However, those rates are high and indicate a good enough balance between real and required staff on the Unit.

Scheduled staff adequacy rate (SAR) and utilization rate (SUR) during the observation week



Real staff adequacy rate (RAR) and utilization rate (RUR) during the observation week

Attestation

EROS has realized this evaluation and produced this report
in the context of the accreditation process of Mirabel Center.

EROS certifies that it has benefited from the full collaboration of the Center's management and staff. EROS got access, without limitation, to all information sources required to execute the mandate received from Mirabel Center. EROS evaluators-nurses were able to work freely without any interference.

Consequently, EROS certifies that this report presents an accurate picture of Mirabel Center clientele as it was in November 2003.

Charles Tilquin, Ing., Ph. D.
President
Honorary professor
University of Montreal