



# UEMS PRM Section & Board

## Clinical Affairs Committee

*Template Version 2.3*

### Programme

## Program of Reeducation Geriatrique Unit

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## Quality criteria of a PRM Program of Care Reviewing table

Reviewers are invited to use the table below in order to express their opinion about the programme description. Absolute criteria should be noted "yes or no". Relative criteria can be marked:

- G: Good
- F: Fare
- I: Insufficient

Reviewers should also add a short comment in each box.

Criteria	Assessment
The programme must be under the responsibility of a PRM doctor <i>Comment:</i>	Yes/No
The description provides relevant information on each item of the template <i>Comment:</i>	G/F/I
<b>Foundations</b> of the programme must be linked to EBM and/or official data and/or official documents <i>Comment:</i>	G/F/I
<b>PRM care principles</b> must not be confused with the description of the programme content	G/F/I
<b>Environment description</b> should be brief and not redundant with other chapters <i>Comment:</i>	G/F/I
<b>The goals</b> of the programme should be expressed in ICF terms and an additional brief text <i>Comment:</i>	G/F/I
<b>In the PRM organization chapter</b> , a difference should be made between the staff of the facility and those specifically involved in the programme <i>Comment:</i>	G/F/I
Number of PRM specialists involved in the PRM programme should be mentioned <i>Comment:</i>	G/F/I
Comparison with legal national standards or other available standards should be made for staff devoted to the programme and team management <i>Comment:</i>	G/F/I
Patients records (medical files) are mandatory <i>Comment:</i>	Yes/No
Statistics about general organisation are required <i>Comment:</i>	G/F/I

<b>Sustainability of the programme (IV.C.4):</b> prior to final accreditation by the UEM PRM Section, a programme of care should be <b>submitted at a national level, at least as an oral paper in a PRM congress.</b>	Yes/No
<b>References</b> must be cited within the description of the programme; they must be freely accessible on the Internet or provided to the reviewers in a “pdf” file. <i>Comment:</i>	G/F/I
A short summary in English should be provided for the documents in other languages. <i>Comment:</i>	G/F/I

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3  
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Other comments:

...

## I. Summary

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There is an increasing demand of rehabilitation services for older people worldwide due to the demographic pressure. Hence the need to establish what is an evidence-based rehabilitation programme for this age group (usually more than 65 years) that ensures the best level of care for our seniors. To this end we create an evidence-based patient-centred interdisciplinary holistic rehabilitation programme for older people in the Geriatric Rehabilitation Clinic of the Centre Hospitalier du Nord in Luxembourg. The program is based in the ICF model of the WHO that promotes activity and participation as the final objective, of the project. As any other type of rehabilitation programme, it is drafted based on the patient's goals, the impairments, the functional ability, and the comorbidity with the two main variables which are the personal and the social environment of the patient. The main difference is the added burden of the geriatric syndromes that add complexity and days of rehabilitation. To address this complexity, we used the Comprehensive Geriatric Assessment as the best clinical management tool, and we evaluate every patient of more than 65 years of age in the 15 domains that are important for the overall functional ability of the seniors. The assessment was provided by evidence based fit for purpose scales evaluated by the interdisciplinary rehabilitation team. The domains are cognitive function, swallowing disorders, psychological evaluation, communication impairments, nutrition, mobility, pain elimination, frailty, sarcopenia, osteoporosis, polypharmacy, activities of daily living, quality of life and social evaluation. Based on the findings, and of course on the underlying condition a very complex programme is being provided that states clearly the type, the intensity and the duration of the exercise and the functional programme the cognitive adaptations the assistive devices in the home modification that must be provided. The programme is weekly re-evaluated and specific modifications are made to ensure the best possible clinical outcome. Communication with the family and the caregivers is provided as needed, also the plan of discharge is discussed with the patient and the family to ensure maximum autonomy and safety after rehabilitation. A close collaboration with institutional bodies and field agents, is also with the aim to facilitate as much as possible the continuity of care. In the program also therapeutic weekends are provided before discharge to evaluate possible obstacles. The patient goes back to the living environment as soon as possible and if there are some remaining goals also to be attained but they don't need the intensive programme of the inpatient rehabilitation the programme is transformed to an outpatient one, or if possible, to a home-based one. The outpatient rehabilitation is also offered to patient with no need for intensive rehabilitation but still with some rehabilitation demands from the beginning. We also ensure that the patients are provided with the necessary follow up depending on the underlying pathology and functional capability. The team is composed by a PMR doctor, nurses, physical therapist, occupational therapist, dietitian, neuropsychologist, psychologist, speech therapist, social worker, and a dog with a trainer. As needed, we are also helped by other medical specialties, and other health care professionals (orthotist, prosthetist and a podologist).

## II. General foundations of the Programme

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*In this chapter, please, describe the **main reasons and principles** which support your programme, **with citations** of the scientific literature and/or of international and national guidelines.*

*Details about the means and content of your own programme should NOT appear in this chapter, but in the NEXT ONE*

*Your text should explain why and how you designed your programme according to scientific evidence and to your local background.*

### A. PATHOLOGICAL AND IMPAIRMENT CONSIDERATIONS

**Just outline medical knowledge** of the area covered by your programme. This **MUST** NOT be a description of your own programme.

#### 1. Aetiology

Ageing is one of the biggest challenges that Europe, and the whole world are currently facing (1). Demographic trends suggest that there will be an increase in age-related disability and dependence, which will impact the wellbeing of individuals, but will also present a challenge for health and social care systems (2). The loss of autonomy, even by a minor illness, is detrimental to older persons, not only physically, as it is strictly binds with longevity, but also emotionally. To help older people gain maximum autonomy, the rehabilitation principles and practices must be applied, respecting the particularities of this group and help them achieve what is defined by the WHO as Healthy Ageing (1) "the process of developing and maintaining the functional ability that enables well-being in older age".

As per World Health Organization, rehabilitation intervention should be aimed at achieving following broad objectives:

- ✓ preventing the loss of function
- ✓ slowing the rate of loss of function
- ✓ improving or restoring function
- ✓ compensating for lost function
- ✓ maintaining current function

The challenges faced by a geriatric rehabilitation facility to provide the best service delivery are related to the characteristics of this population. The vast age category and functional reality, the burden of comorbidity makes it more difficult to produce a one fits all intervention (3). The rehabilitation protocol must be individualized, based in the functional capacity of the patient requiring rehabilitation, the goals, and objectives that he/she desires and his or her plan of life. It should be stated that also very old patients are eligible for rehabilitation and age is a mere arithmetical parameter, the importance of maintaining function is crucial also for the ultra-octogenarian and deny rehabilitation due to shorter life expectancy is widely unethical.

What makes geriatric rehabilitation a distinct form of rehabilitation is the burden of the geriatric syndromes in the overall functioning that are independent risks factors for disability. Those are sarcopenia, frailty, incontinence, dementia, polypharmacy, loss of balance and falls and osteoporosis (4). In all disability trajectories independent from the initial etiology the answer is always the interdisciplinary approach to restore or adapt the loss and in the end to reintegrate the older person to the society.



## 2. *Natural history and relationship to impairment*

As stated, before geriatric patients have an adjunct risk for the loss of autonomy related to geriatric syndromes strictly linked with older age. This is why a minor health stress like a cold or a non-traumatic fall can quickly produce a loss of autonomy and be a road towards disability if our patient is frail(5). But this is not a one-way street, frailty is a continuum from robust to prefrail and frail that can be reversed in any point (6). Frailty defined by the WHO "is a progressive age-related decline in physiological systems that results in decreased reserves of intrinsic capacity, which confers extreme vulnerability to stressors and increases the risk of a range of adverse health outcomes." Frailty must be prevented and managed and to this aim the EC has produced many actions. The ADVANTAGE JA on Frailty is an action made to deliver practical and evidence-based prevention and management strategies towards frailty. Prevention starts in the middle age and continues throughout the life span, lifestyle interventions (exercise, nutrition, cessation of smoking and reduction of alcohol, consumption). Frailty management is based in the following main interventions, nutrition for adequate protein intake, low intensity multicomponent exercise program, management of polypharmacy and an overall clinical evaluation of the personalized patient's needs with the CGA (Comprehensive Geriatric Assessment) (7).

Sarcopenia is closely linked to physical frailty and there is also a clear line with disability (8). The guidelines for effective management of the condition are adequate protein intake and strengthening exercises (9). Sarcopenia is also linked to osteoporosis a disease that is a big contributor for loss of autonomy through fragility fractures (9). A fragility fracture defined as a low energy fracture (10), is the number one risk factor for a second one and the main reason of traumatic related disability in older age (10). A prompt treatment of the underlying cause of bone loss with appropriate medication, together with balance rehabilitation has been proven to be the most effective strategy (11).

The loss of balance with subsequent falls and the detrimental consequences for older people are very well known. Falls are the leading cause of accidental death in older age and there are effective and proven strategies to prevent them(12). The multicomponent prevention program is the most effective strategy (involving all actors of the interdisciplinary team) with focus on balance exercise programs(13).

Incontinence impacts widely the self-esteem and stresses older people. It is not related to physical disability, but it can create important problems when mobility is impaired in everyday activities. Older people usually don't ask for advice or interventions because they feel ashamed and that is a cultural trend we must keep in mind. Today there are interventions, pharmacological, conservative, and surgical to address the problem(14).

Polypharmacy but mainly inadequate prescription is a huge challenge for clinicians and health care systems and negatively impact the patient, it is also closely linked to frailty and as such to frailty related disability(15). Today there are tools to control and address the issue(16).

Delirium is another important syndrome that impacts older people. It can also be present during rehabilitation but it is evident from the research that the rehabilitation intervention can really negatively impact it's frequency(17)

Last but not least, we must not forget that gait speed is more linked to longevity in older age than multimorbidity which makes rehabilitation crucial(18).

## 3. *Diagnosis approach and prognosis*

The best evidence for an effective management for older people lies in the principles of CGA. The CGA is a multidisciplinary tool that evaluates the physical, cognitive, emotional, nutritional and also daily and social function of the older person to deliver the best of care. The CGA is performed by the interdisciplinary team and gives vital information's on how to proceed and what to expect(19).

The CGA uses adequate scales of proven accuracy and efficacy to quantify every aspect and monitor improvement. This holistic approach focusses on the person and not on the disease as the biopsychosocial model demands and gives a more comprehensive understanding of the individual patient.

Based on the findings of the CGA a rehabilitation program can be drafted and implemented, and a prognosis of the outcome can be made. Monitoring of the progress as well as long term results are still based on the same approach.

#### 4. *Impairment treatment principles*

The treatment principles in geriatric rehabilitation are the same of the general rehabilitation. Impairments are listed and effective strategies to manage them are used.

Technology, home modifications and aids are also implemented to achieve the maximum autonomy.

## B. ACTIVITY LIMITATIONS AND PARTICIPATION RESTRICTIONS

*No list here. Please, emphasize the main issues related to the topic.*

The International Classification of Function, Disability, and Health (ICF) model (20) indicates that an individual's level of function (body function, ability to execute a task [activity], and participate in life activities) is determined by his or her health condition(s) within the context of environmental and personal factors. Geriatric Rehabilitation' interventions are directed at the underlying health conditions causing disability; rehabilitation services target the impairment, activities, and participation levels of the disablement process, as well as personal and environmental contextual factors that influence activity and participation. Multiple health conditions or comorbidities, with concomitant impairments, are common in older persons and influence the disablement process.

Disability results from a mismatch between individual capacity and task demands, which in turn are influenced by the environment and the way in which tasks are performed remediation of disability occurs through treatments that either increase individual capacity or reduce task demand. Rehabilitation interventions may improve capacity (e.x braces, splints), reduce task demands (ex raised toilet seats), or accomplish both (ramp or elevator).

Social and economic consequences

**Local and national data** may be given in addition to general information from the International Literature. This may help to understand some specific aspects of your programme.

*This is not the place for the outcomes of your own programme.*

#### 1. *Epidemiological data*

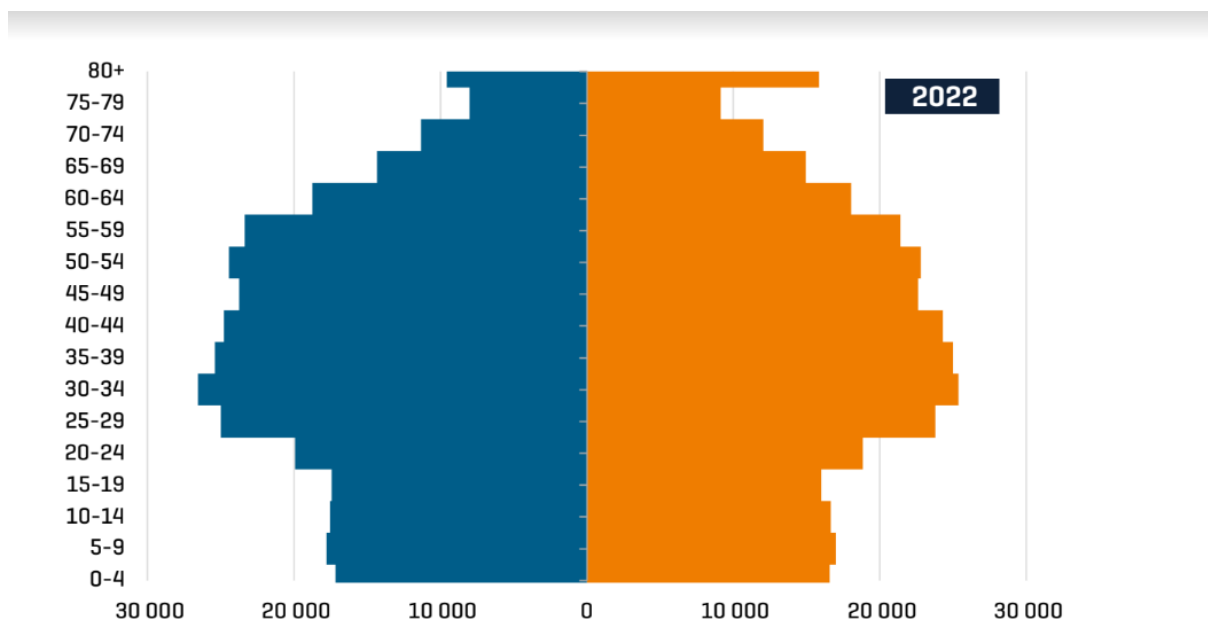
International data for geriatric rehabilitation needs.

The global population aged ≥60 years has increased from 382 million in 1980, to 962 million in 2017 and has expected to increase to 2.1 billion by 2050. The population aged ≥80 years is expected to increase more than threefold, from 137 million in 2017 to 425 million in 2050(21). Currently, high-income countries have the highest prevalence of older people. Related to the aging of the population is the increase in multimorbidity and geriatric syndromes (frailty, impaired cognition, continence, gait, and balance problems). This leads to a higher risk of disability with impairments in functioning in daily life.

After hospitalization, 11% of the older patients are referred to rehabilitation facilities(22)

In Luxembourg based on the STATEC 2022(23) edition a new born child has a life expectancy of 80.3 years if male and 84.8 years if female. Today in the age category of 65-79 there are 69.794 and plus 80 25.405 people. We see the same trend seen in other European countries that we no longer have a pyramid of age due to the fact we have an enlargement in the top and in the middle see fig.1

1



Source : STATEC, CTIE

2

3

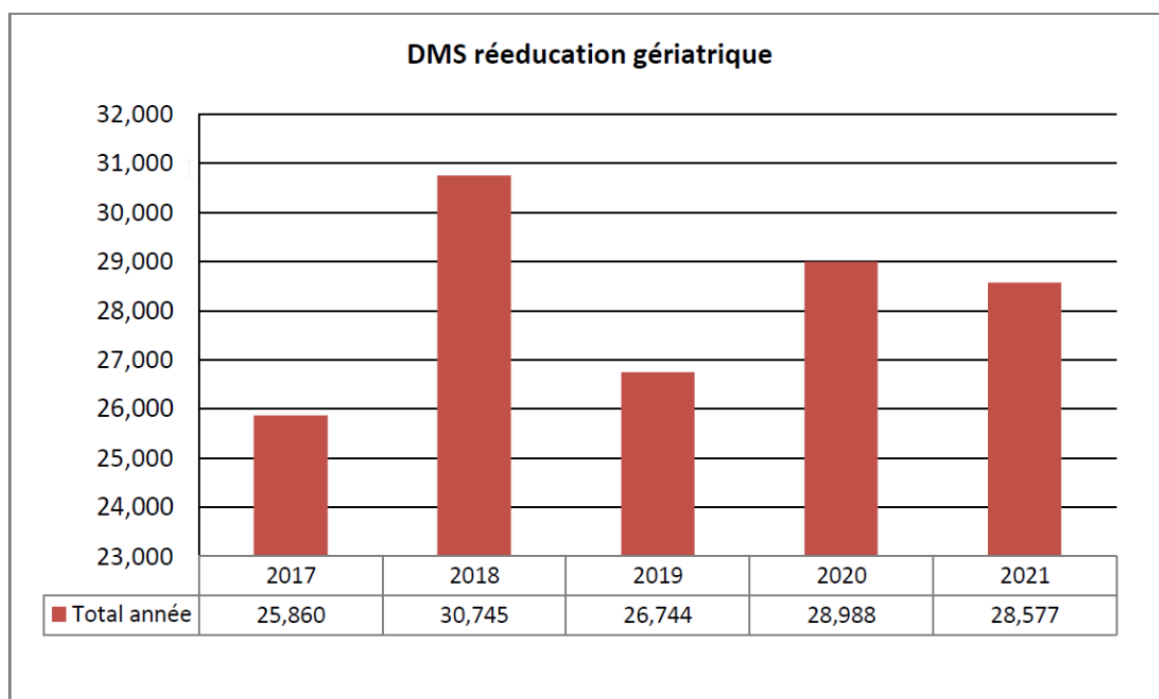
Fig 1. The age pyramide of Luxembourg in 2022

4

5

6

In 2021 the CHdN hospital where the service is based had 98771 days of acute hospitalisation and 9948 days of Rehabilitation (10%). The following picture (fig. 2) express's the average length of stay variation between 2017 and 2021 in geriatric rehabilitation.



7

8

Fig 2. In 2021 the bed occupation in geriatric rehabilitation of the ChdN was covered by 90.1%.

9

The following graf shows the repartition by age group (resource Carte Sanitaire)(24) fig 3.

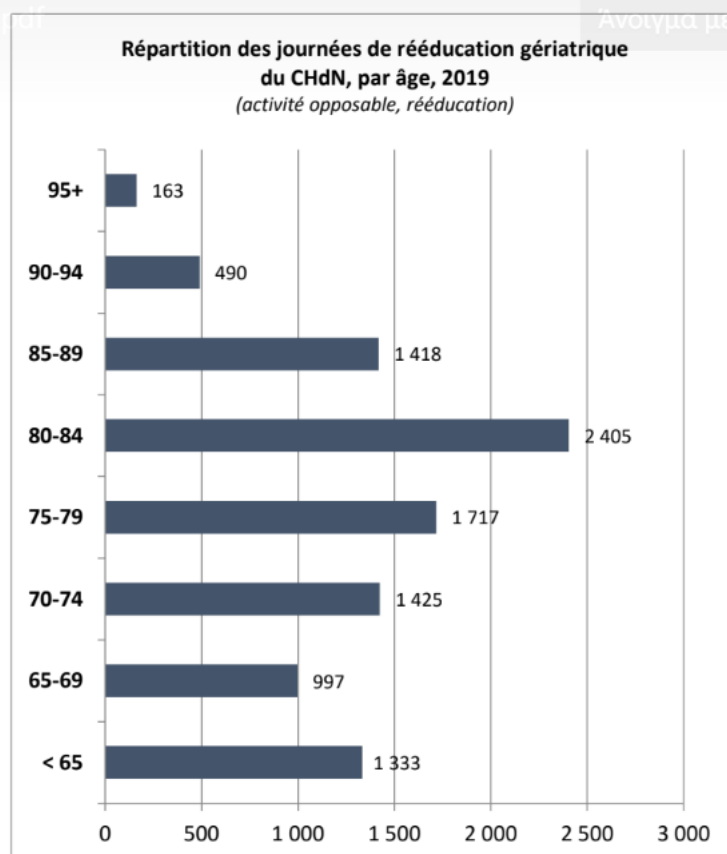


Fig. 3 Age group/rehabilitation days repartition in the Geriatric Rehabilitation unit in 2019

## 2. Social data

There are no social indicators to my knowledge that are measured by the hospital.

In Luxembourg there are 13 Health Networks that operate in the territory and deliver health and social care to people also older people. A vast offer of senior homes that accept elders based on their functional ability is also present throughout the country.

Every patient is eligible to apply and part of the cost is covered by the state if the patient is severely handicapped.

## 3. Economic data

The cost of Geriatric Rehabilitation is entirely covered by the National Centre of Health (CNS) for all insured individuals.

# C. LEGAL FRAMEWORK IN YOUR COUNTRY

The law 8.03.2018 art 4(3) and 5 (carte sanitaire)(25) is determining the eligible structures for geriatric Rehabilitation in Luxembourg, and also the proper way of service delivering in broad terms. In particularly the rehabilitation geriatric unit must connect with an acute geriatric ward or an internal medicine one, with clear criteria of admission and discharge. The unit must also relate to the territory structures to ensure continuation of care. The inpatient rehabilitation is determined by the need of 2 or more different disciplines, like physical therapy, occupational therapy, speech therapy, psychology. For every patient the service must produce an interdisciplinary evaluation on admission, a clear goal set-up, an estimation of the length of stay and a weekly revaluation of goal achievement and progression. An outpatient rehabilitation can also be established in eligible units.

SERVICE DE REEDUCATION GERIATRIQUE				
<b>Typologie</b> <i>Loi hospitalière 8.03.2018 Art.4 (3) et 5</i>	Service de moyen séjour Service hospitalier qui peut être exploité par un centre hospitalier ou par un établissement spécialisé en rééducation gériatrique			
<b>Définition</b> <i>Loi hospitalière 8.03.2018 Annexe 2</i>	<p>Un service assurant la récupération optimale des performances fonctionnelles, de la meilleure autonomie et qualité de vie de la personne fragile d'âge gériatrique, tenant compte de ses spécificités médicales, cognitives, psychiques, sociales, nutritionnelles et culturelles, en vue du retour ou maintien dans le milieu de vie du patient à la suite d'un événement de santé. Le service de rééducation gériatrique travaille en lien fonctionnel avec un service de gériatrie aiguë ou de médecine interne de l'établissement ou dispose d'une convention avec au moins un service de gériatrie aiguë d'un autre établissement, précisant les critères d'admission, de début et de fin de prise en charge des patients, ainsi que l'offre de soins disponible, qui doit couvrir quotidiennement au moins 2 des disciplines suivantes : kinésithérapie, orthophonie, ergothérapie, au soutien psychologique, à l'assistance sociale et diététique. Pour chaque patient, il réalise un bilan interdisciplinaire d'admission, un programme individualisé de rééducation précisant les objectifs et la durée prévisible du projet thérapeutique et une réévaluation hebdomadaire interdisciplinaire.</p> <p>Un service de rééducation gériatrique peut disposer d'un hôpital de jour accueillant des patients ambulatoires pour rééducation gériatrique.</p> <p>Un service de rééducation gériatrique peut héberger une unité de rééducation neurologique et orthopédique, en l'absence de service dédié à ce type de rééducation sur le territoire.</p>			
<b>Niveau national</b>		<b>Planification</b> <i>(Loi hospitalière 8.03.2018 Annexe 2)</i>	<b>Autorisations</b> <i>depuis le 01.01.2019</i>	<b>Situation au 1.07.2021</b>
	Services	4 services	4 services	4 services
	Antennes	/	1 antenne	1 antenne
	Nombre de lits minimum/service	30 lits	30 lits	30 lits
	Nombre de lits au niveau national	310 lits maximum	210 lits	189 lits

Situation détaillée par établissement hospitalier				
	HIS	CHdN	CHEM	HRS
<b>Autorisations</b> <i>depuis le 01.01.2019 (HIS : revu depuis le 01.01.2020)</i>	HIS : <b>40 lits</b> et 10 lits HDJ de rééducation gériatrique	CHdN-Wiltz : <b>30 lits</b>	<b>70 lits</b> dont - Service : CHEM-Dudelange : 36 lits - Antenne : CHEM-Niederkorn : 34 lits	HRS-Clinique Ste Marie : <b>70 lits</b>
<b>Localisation du service / antenne et nombre de lits au 1.07.2021</b>	HIS : <b>30 lits*</b> et 10 lits HDJ	CHdN-Wiltz : <b>30 lits</b> et 8 lits HDJ	<b>59 lits**</b> dont - Service : CHEM-Dudelange : 36 lits et 10 lits HDJ - Antenne : CHEM-Niederkorn : 23 lits	HRS-Clinique Ste Marie : <b>70 lits</b> + 12 lits HDJ

\*Pour ouvrir ses 10 lits supplémentaires, l'HIS a dû installer des éléments modulables qui ont nécessité du temps et des autorisations. L'inauguration des lits a eu lieu le 26.10.2021.  
\*\*CHEM : Phase transitoire avec regroupement final prévu sur un seul site (Dudelange).

## A. ENVIRONMENT OF THE PROGRAMME

### 1. Clinical setting

Individual practice or part of a doctor's group practice	No
Individual practice in a private hospital	No
Part of a local (public) hospital	Yes
Part of a regional hospital (or rehabilitation centre)	No
Part of a university or national hospital	No

Comment:

### 2. Clinical programme

Inpatients in beds under PRM responsibility	Yes 30
Inpatient beds belonging to other departments	3
Day programme (most of the day in outpatient setting, not home)	No
Outpatient clinic (assessment and/or treatment, for up to 3 hours/day)	Yes
Community based (in the patient's home or workplace or other relevant community location, eg sports centre)	No

Comment:

### 3. Clinical approach

Uniprofessional	No
Multiprofessional	Yes

Comment:

### 4. Facilities

Does your programme have a designated space for:	
For assessments and consultations?	Yes
For an ambulatory or day care programme?	Yes
For inpatient beds?	Yes
For therapeutic exercises?	Yes
For training in independence and daily living?	Yes

For vocational and/or recreational activities?	Yes
------------------------------------------------	-----

Comment:

## B. TARGET POPULATION

### 1. *Inclusion criteria*

To be enrolled in the geriatric rehabilitation programme a patients should be of older age >60-65 and have a loss of autonomy due to an acute or subacute illness or a geriatric profil. The inclusion criteria are as for every rehabilitation service the loss of autonomy due to an acute stressor (whether medical or surgical) that has provoked a loss of autonomy (not present before) and at the same time the patient can regain his previous (sometimes a better) level of autonomy, or an acceptable level of autonomy.

### 2. *Criteria for refusal*

Important cognitive decline that makes impossible the communication with the patient.

Instable medical condition that would not allow patient to participate in the rehabilitation programme.

The service does not accept patients with positive multi-resistant bacteria.

### 3. *Patients' referrals*

Direct access to the PRM programme	Yes
Referral from general practitioners	Yes
Referral from other specialists	Yes
Referral from specialists in PRM	Yes

Comment : We also have referrals from other hospitals were a detailed report of the treating physicians with clearly stated goals and objectives is demanded before admission.

For outpatient rehabilitation if the patient has not been evaluated in the acute phase, an outpatient appointment with the inhouse PMR doctor is scheduled in order to evaluate the rehabilitation needs of the patient and draft the program.

In the country, there is a minimum requirement of 7 days of hospitalization in the acute phase to be eligible for outpatient rehabilitation.

### 4. *Stage of recovery before admission*

Within two weeks of onset	Yes
2 weeks to 3 months after onset	Yes
3 months or longer after onset	Yes

Comment : Patients are usually admitted within 2 weeks after the stabilisation of the acute illness in order to avoid important loss of time for early rehabilitation. If the patient cannot be admitted for early rehabilitation (p.e. a positive resistant bacterium is diagnosed, or an

important diagnostic exam) although the patient is eligible for rehabilitation, then an early rehabilitation intervention starts, in the acute department, in order to avoid complications by the PRM doctor in charge.

#### **5. *Early management before admission***

How are patients selected? A PRM doctor evaluates the patient in the acute setting if he/she is hospitalized in the same hospital or a thorough report is requested by the treating physician if the patients are in an acute setting of another hospital. For outpatients the PRM physician evaluates the needs of rehabilitation and proposes the more appropriate type of rehabilitation.

Do they benefit from PRM advice in acute settings?

That depends on the demands of the treating physician. If there is demand for early intervention the PRM doctor evaluates and proposes realistic solutions.

What alternate solutions are proposed to refuse patients?

Patients refused are usually cognitive impaired at a level not possible to follow a structured rehabilitation program. Patients are offered a supportive physical therapy, to help them gain the best mobility possible and avoid unnecessary complications.



## C. GOALS

Please, complete the tables with ICF codes and full labels. See ICF Browser: <http://www3.who.int/icf/onlinebrowser/icf.cfm>. Then, make a short description in full text.

### 1. In terms of body structure and body function (impairment)

ICF code	ICF label
S110	Structure of brain
B110	consciousness function
B114	orientation functions
B117	intellectual functions
B139	global mental health
B140	attention functions
B144	Memory functions
B1470	psycho motor control
B152	Emotional functions
B156	perceptual functions
B164	higher level cognitive function
B1648	cognitive flexibility
S1106	Structure of cranial nerves
S120	spinal cord and related structures
B167	mental functions of language
S1201	Structure of spinal nerves
B21000	Binocular acuity of distal vision
B21002	Binocular acuity of near vision
s2601	Vestibular labyrinth
B235	Vestibular functions
B2351	Vestibular function of balance
S320	Structure of mouth
S398	Structure involved in voice and speech
B399	voice and speech functions unspecified
S598	Structures related to the digestive metabolic and endocrine system
B540	general metabolic function
B5402	protein metabolism
B555	endocrine gland function

S498	Structure related to the cardiovascular immunological and respiratory system
B4459	respiratory muscle functions unspecified
B5253	Fecal incontinence
B5105	swallowing
B545	water mineral and electrolyte balance function
S610	Structure of the urinary system
B620	urinary functions
S710	Structure of head and neck region
S730	Structure of upper extremity
S730	Structure of lower extremity
S760	Structure of trunk
S770	<u>Additional musculoskeletal structures related to movement</u>
B710	mobility of joint function
B730	muscle power functions
B735	muscle tone functions
B750	muscle reflex functions
B755	involuntary movement reaction functions
B760	control or voluntary movement functions
B770	gait pattern functions

Comment: The comparison is with the previous state of the patient and not with a.....

## 2. *In terms of activity*

ICF code ICF label

d1 All codes of chapter 1: d110-d179 Learning

d3 All codes of chapter 3 Communication

d4 All codes of chapter 4 Mobility

d5 All codes of chapter 5 Self Care

ICF code	ICF label
D163	thinking
D175	solving problems
D177	making decisions
D110	watching
D240	handling stress and other psychological demands biggest activity caring for healthy
D450	walking
D455	moving around
d510	Washing on self

D550	Eating
D6401	Cleaning cooking area and utensils
D6600	Assisting others with self-care

Comment: .....

### 3. *In terms of participation*

ICF code	ICF label
D360	using communication devices and techniques
D460	moving around in different locations
D4600	moving around within the home

Comment:

The rehabilitation of older people unfolds around the activity and participation domains of the ICF considering the fact that body structures and functions are less important in the age group.

## D. CONTENT OF THE PROGRAMME

### 1. *General scheme and time frame*

- A. The preadmission processes
- B. The inpatient rehabilitation
- C. The outpatient rehabilitation
- D. Follow up
- E. Consultation

#### a. The preadmission process

Call from treating physician or report of hospitalization or consultation, to evaluate the patient's eligibility for rehabilitation.

. Evaluation for type of rehabilitation (inpatient, outpatient or home based) depending on

- ❖ Level of loss of autonomy
- ❖ Medical stability
- ❖ Overall evaluation (social, geographical and personal factors also)
- ❖ Ability to participate and regain previous or a good level of autonomy

At the end of this phase if the patient is eligible for inpatient rehabilitation is enlisted in a file of preadmission as a priority list and the coordination nurse (a key player that coordinates administrative, nursing and social demands of the patient) will use the list to plan admissions.

#### b. The inpatient rehabilitation

- ❖ Evaluation based on the Geriatric Comprehensive Assessment which is the base for appropriate geriatric care. All-important domains are included, cognition, swallowing, nutrition, psychological state, mobility (comprising balance), activities of daily living both basic and instrumentals, pain, sarcopenia, frailty, osteoporosis, polypharmacy and incontinence. A thorough neurological and musculoskeletal examination is also performed to unveil any underlying condition and to evaluate when present neurological (like spasticity, pyramidal or extrapyramidal syndromes) or musculoskeletal (restriction in range of motion, lack of strength and power) condition important when drafting the rehabilitation program and its goals and restrictions. At the same time a general medical exam is performed to evaluated heart and respiratory ability to performance and to evaluate any other medical condition to take care before or during rehabilitation.

The geriatric rehabilitation is based on the concept of activity and participation of the ICF and an open conversation with the patient is held to determine his goals to this end, his habitat but also his/her perspectives about the future. Accessibility and safety of the living space are carefully considered by the team, since most traumatism in this age groups are happening at home. The quality of life and the view of their future is also noted as it influences the drafting of the program.

Social workers also are a part of the program providing if needed all necessary

information and assistance. Orthotists, prosthetist and a podologist are also part of the team management when needed.

- ❖ Based on this evaluation, if needed consultations from other specialists are demanded as well as imagining techniques are performed.
- ❖ A blood test is also requested to evaluate general health as well as the nutrition and hydration state very important parameters for older people.
- ❖ The rehabilitation program is drafted and discussed with the therapists.
- ❖ Every week the rehabilitation team is regularly meeting to evaluate the progress of the patient and the program, make necessary adjustments and plan the discharge.
- ❖ The day before discharge an overall evaluation is performed both clinical and laboratory.
- ❖ Before returning in their living environment, the patients is provided with the information about his stay and progress also all necessary instructions both for medications and also for the continuation of the program if needed. The patient is also provided with an appointment for the follow up with a time frame that depends on the specifics of the patient.

### 3. The outpatient rehabilitation

- Specific goals to achieve.
- Less medical complexity

The program is less complex, and the patient has a good level of autonomy and medical stabilization to be able to go back to his/her home. The program is based in the same principles as for the inpatient, although the level of complexity of the interventions is way lesser.

### 4. Follow-up

All patients receive a follow-up appointment with the time frame depending on the specific condition.

#### 1. Consultations.

There is the possibility for a patient to seek for specialized consultation in our department.

## **2. Role of PRM specialist**

The PRM specialist is involved in all aspects of the process, from acute care consultations to inpatients and outpatient rehabilitation care.

The PRM specialist also is directing the rehabilitation team and provides patients and families with all necessary information's for the development of the program and the overall health of the patient.

## **3. Specific role of each team member in this programme**

### ***The team is composed by:***

1. Physical Therapist: they are more concentrated in mobility issues
2. Occupational therapist: they work towards regaining function, and they also are charged with home visits and proposals for home modifications if needed

3. Speech therapist: for speech and swallow disorders both evaluation and management
  4. Dieticians: for nutritional deficits or disorders
  5. Neuropsychologists: for cognitive evaluation and management
  6. Psychologist: for mood disorders
  7. Social worker: for every legal and societal aspect that needs organisation
  8. Nurses: through the Coordination Nurse a key figure, she organises all relevant aspect of everyday life for the patient and transfers all relevant information to all implicated parties. The nurses as in any other Rehabilitation department are key figures in the process, as they are charged on putting in place all the achievement of the patient during therapy in regards of the ADLs. Also, they provide together with the standard methods of care, sphincter rehabilitation (p.e. timed voiding) if needed, relaxation techniques with aroma and bath therapy.
- This team is coordinated by the PRM physician and may be enriched with other specialists medical (neurologists, internists etc.) or not medical (ex orthotist) if needed.

#### **4. Diagnostic and assessment tools**

The patient's care is based on an interdisciplinary holistic evidence-based patient-centred approach. To achieve this goal, the development of the program is based in the findings of the CGA as is the evidence-based clinical practice tool for the management of the geriatric patient.

As stated, before for the preadmission process the PRM doctor relies on the data from the visit in the acute care, that is to say the overall health and in particular the level of frailty the comorbidities and the loss of autonomy (measured by a KATZ index)(26) and of course the ability to regain the previous level or a good level of autonomy .

In the Inpatient care the CGA is more thorough considering that the patients are more complex, and a more comprehensive approach is needed. To that aim for every aspect of the CGA special diagnostic tools are used (all evidence-based and fit for purpose). In detail:

As a first step the patient undergoes a thorough clinical examination with emphasis in the neurological and musculoskeletal exam.

1. Cognitive function (neuropsychologist): All patients undergo the MMSE (mini Mental State Evaluation) or MoCA and Clock Test. We repeat the exam if the patient had a previous evaluation only if more than 6 months from the last one has passed or if something is changed. The evaluation is performed by a trained neuropsychologist.

2. Swallowing disorders (physician, nurse, speech therapist): the clinical suspicion is posed by the nurse or the PRM specialist who also performs a clinical evaluation of swallowing. If there is clinical evidence of a disorder, then the speech therapist is involved and sometimes also an ORL evaluation is asked. Depending on the condition imaging diagnostic tools could also be implemented.

3. Language disorders (physician speech therapist): when present are dealt with speech therapy or alternative communications devices

4. Nutrition (physician, nurse, dietician): a very important topic in older people's management, due to the ease of malnutrition or dehydration in this age category. The evaluation test used by a specialized dietician is the MUST, and at the same time a with blood exams to evaluated in detail the nutritional profile of the patients is asked.

5. Psychological (all team members psychologist): The psychologist performs a GDS (Geriatric Depression Scale) test for evaluation and also an open dialogue to ensure good compliance with the patient.

6. Mobility (physician, physical therapist): The general aspect is clinically determined but also the SPPB (Short Physical Performance Battery) test is performed, when possible, to have a baseline quantification on the 3 more important parameters, gait speed, balance

and strength-power. The need of assistive devices is also assessed. Balance: if there are balance disorders a more thorough examination is performed with The Tinetti test and a mCTSIB (modified Clinical test of Sensory Interaction in Balance) on a dynamic platform. The risk for falls is assessed by the nurses with the MORSE test.

7. Pain (nurse, physician): open questions about the type and quality of pain and evaluation of the level with NAS (Numerical Analogue Scale) score. When neuropathic pain is present the treating physician investigates clinically for the cause.

8. Continence (nurse, physician): both urinary and faecal. The clinician with the nursing team evaluates the type and sometimes also keep a diary to help older people manage sphincter problems. If needed urodynamics and specialized urological care is asked.

9. Sarcopenia (physician, nutritionist, occupational therapist): The very important and yet poorly managed geriatric syndrome is a central point to the geriatric assessment. For this purpose, we use the EWGSOP (European Working Group for Sarcopenia in Older People) revised 2019 (27) algorithm and if there is suspicion for it (measured by the hand grip), we ask for a CT in order to quantify muscle mass.

10. Frailty (nurse, physician): no geriatric rehabilitation program can be drafted if there is no evaluation of frailty, to ensure the best profiling of the patient. To this purpose we use the recommended Clinical Frailty Scale, and the nurses also evaluate with the French scale known as SEGA.

11. Osteoporosis (physician): in the geriatric rehabilitation department we usually treat the consequences of an osteoporotic fracture. Often the patient has no idea of having the disease and as already established in the literature secondary prevention plays a key role to avoid future fractures in the best way possible. To this end we use the FRAX index and the definition of a fragility fracture to have a diagnosis of osteoporosis. Also, a blood test to evaluate vit D and Ca and start management.

12. Activities of daily living (occupational therapist): the trained occupational therapist implements both the KATZ, and the Lawton Brody indexes to rate both the simple and instrumental ADLs. They also evaluate the patient in the admission, every 4 weeks and the discharge with the FIM, which is also a National indicator for rehabilitation.

13. Polypharmacy (physician): a huge burden to older people as it is closely linked to frailty and worst outcomes. The treating physician revises the totality of the treatment and gets help from the START-STOPP criteria to search for inadequate prescription.

14. Quality of life (nurse): with EQ5 we ask form a quick evaluation on the quality of a patient life.

15. Social evaluation (social worker): the social workers work together with the patient and the caregiver to ensure the safe return to the living environment or the appropriate facility. If needed a report (called R20) is issued from the Rehabilitation Doctor that certifies disability.

Depending on the medical condition of the patient and of the clinical evaluation of the same we also use other specific scales, like for spasticity the Tardieu and Asworth or for musculoskeletal disorders the MMT and range of motion measurements with goniometer. Nevertheless, we use the Borg Scale to measure exertion and have an estimation of the aerobic capacity of the patient.

Aeroscout is a device implemented to monitor the patients movements in the hospital and activates an alarm system if the patient leaves the building. Of course, is tool for dementia patients with high risk to run away.

## 5. *Specific interventions*

After this thorough evaluation by the interdisciplinary team a rehabilitation program is drafted with the following criteria:

- ✓ Is based on the findings of the evaluation and the initial medical condition.
- ✓ Is discussed and agreed with the patient and the caregivers.

- ✓ The treatment is based on evidence-based practices and on international standards and recommendations.
- ✓ The reevaluation is done every week during the staff meetings. In the meeting all aspect of the program is discussed, starting by the achievements and the failures. If needed changes concerning intensity, duration type of the exercise and functional protocol are made. We also consider the feedback from the cognitive evaluation to adapt our protocol.
- ✓ There is a plan of discharge that takes in account the patient's preferences and wishes and can be a return home, the organization of home care by a local health network if needed and the discharge in an elder's care facility.

The program determines:

- ✓ Intensity and type of exercises (aerobic exercises, strength training, balance and flexibility) and special precautions. The exercise protocol determines also intensity as a % of 1RM depending on the findings, endurance as a BORG exertion scale.
- ✓ Pain rehabilitation if needed.
- ✓ Respiratory and cardiovascular rehabilitation.
- ✓ Assistive devices.
- ✓ Physical modalities.

ALL aimed to achieve the specific goal of the patient and prevent further deterioration.

At the same time specific intervention are implemented by the physician depending on the underlying pathology:

- a. For malnutrition a special diet enriched with protein supplements if there are metabolic disorders (hyperuricemia or hyperlipidemia) are also treated.
- b. If a mild depression is present and is burdening the patient we start with a mild SSRI, if a major depression is present, we always ask for psychiatric evaluation and treatment.
- c. Effective and efficient treatment of pain is a key player in the program because it impacts the wellbeing of older patients more than any other health problem. Treatment is offered always by a step-by-step approach in order to ensure maximum safety.
- d. Medications and pelvic rehabilitation when feasible are also prescribed to help better manage urinary incontinence.
- e. For sarcopenic patients' dietary modifications and protein supplementation is implemented together with the exercise program. The strengthening protocol is more gradual with less resistance.
- f. The osteoporotic patient is treated promptly as is unethical to not treat a patient with a major osteoporotic fracture, the guidelines and recommendations of the IOF are used to ensure best treatment options (we promptly treat hip and 2 vertebral fractures even without DEXA evaluation).
- g. Frailty is also managed, based on the already existing guidelines, multimodal exercise program with gradual resistance training and protein supplementation.
- h. The Balance rehabilitation protocol, starts with a thorough evaluation as already described and based on the finding all pathological parameters are addressed, adding also cognitive tasks if needed.
- i. At the same time when specific conditions are present ex spasticity all necessary actions are put in place and treatment with oral and injectable (toxins) drugs is offered.
- j. For moderate dementia patients we use more tasks and less exercise sessions.
- k. If a patient presents with a pelvic floor problem (sexual or continence) a pelvic floor exercise program is used to address, it.
- l. Respiratory and cardiovascular protocols to enhance endurance and facilitate ADLs..

The discharge planning starts early in the process to allow the time needed for any modification to take place (home, long term care discharge etc). Follow up if needed is also provided.

## **6. Discharge criteria**

1. Rehabilitation goals achieved



2. Plateaued of the program no more gain

3. Patient demands less intense rehabilitation and can be discharged to the outpatient program

4. patients' choice

5. The National health care system, allows to the geriatric rehabilitation department 4 weeks as an initial phase, if the patient progresses and more time is needed a prolongation must be asked based also in the FIM progression. Another 4 weeks 2 times can be added.

## **7. *How are patients managed after the programme?***

The patients are whether returning to their home and based on the level of functioning a local health network takes charge of them as needed, or a more permanent carrier is.

If the patient or the family wishes (if patient cannot make own decision) for an organized long-term facility, then all necessary steps are being taken to ensure that the patient is placed in the more appropriate facility for his conditions and depending on his/her preferences and level of autonomy.

If after the discharge, there are still goals to be attained then the patient continues in the outpatient program or if possible in a home-based (where the PRM physician is not in charge).

The state's disability insurance called Assurance Dependence, is providing disables people with the technical aids, home modifications and also is paying for home visits and help by specialized health care providers, in order to insure an acceptable and comfort living. The type of aide covered, is based at the previous mentioned report, the R20, and a home visit by a committee that ascertains the disability in a scale from 0-10. Our program is closely collaborating with the AD to ensure the best possible living conditions, with the provision of aides, if needed. The report after the home visit of our team is accepted as such, and no further actions are needed for the delivering of material. The AD only visits in place when structural modifications must take place.

## IV. Additional information about PRM organization

### A. SAFETY AND PATIENT RIGHTS

#### 1. Safety

The safety concerns of people in the unit where the programme takes place, relate to:	
Emergencies (fire, assault, escape)	Yes
Medical emergencies	Yes
Equipment	Yes
Handling of materials	Yes
Transports	Yes
The safety of people in the programmes of your unit is provided by:	
Written standards from National Safety Bodies	Yes
Written standards from National Medical Bodies	Yes
Unit-specific written rules	Yes
Periodic inspection	
Internal	Yes
External	Yes

Comment:

#### 2. Patient rights

Has your programme adopted a formal policy or statement of patients' rights?	Yes
Does this statement specify the influence that the patient should have in the formulation and implementation of the programme?	Yes
Is the statement known to all personnel involved in delivering the programme?	Yes
Is this checked periodically?	Yes
Is the statement made known to and is available to all persons visiting your unit?	Yes

Comment:

1. Link to patients' rights in Luxembourg (English version)

<https://guichet.public.lu/en/citoyens/sante-social/droits-devoirs-patient/droits-devoirs-patient/droits-obligations-patient.html>

2. Link to patient's rights in the CHDN (French and German)

<https://www.chdn.lu/patient-visiteur/vos-droits-vos-devoirs/>

### 3. *Advocacy*

Give at least one example of how your organization advocates for people your programme deals with:

Straight collaboration with local health networks for the transition of care

Collaboration with AD (Assurance Dependence) aka Insurance for the Disable

Comment:

## B. PRM SPECIALISTS AND TEAM MANAGEMENT

### 1. *PRM Specialists in the Programme*

Does your PRM physician have overall responsibility and direction of the multiprofessionnal team?	Yes
Does your PRM physician have overall responsibility and direction of the rehabilitation programme, not medical responsibility only?	Yes
Does he/she have a European Board Certification in PRM?	Yes
Does he/she meet National or European CME/CPD Requirements?	Yes
Number of CME or EACCME points earned in the last 3 years:	More than a 100
<b>The two primary functions for the PRM specialist in your Programme are to:</b>	
Treat comorbidity	No
Assess the rehabilitation potential of the patient	Yes
Analyse & treat impairments	Yes
Coordinate interprofessional teams	Yes

Comment: the comorbidity treatment is together with a geriatrician

### 2. *Staff devoted to this programme.*

Please, don't mention staff members who do NOT participate in this specific programme!

<b>Which rehabilitation professionals work on a regular basis (minimum of once every week) in your programme? (give the number)</b>	
Physiotherapists	8
Occupational therapists	10
Psychologists	2
Speech & Language therapists	3 part time
Social workers	1

Vocational specialists	0
Nurses	26
Orthotists/prosthetists assistive technicians/engineers	On demand
Other (please specify)	Dog

Comment: In the psychologist we are also counting the neuropsychologist.

The dog is a very important adjunct to the project as a real therapist by engaging older people to do more but also as an emotional help.

There are people that work full time and some part time for parental leave.

### 3. Team management

<b>How often does your staff receive formal continuing education (mark as is)?</b>	
In team rehabilitation:	Every year
In their own profession:	Every year
<b>Do team activities in your rehabilitation programme include the following?</b>	
Is the patient at the centre of a multiprofessional approach?	Yes
Do you always give informed choices of treatment?	Yes
Do you regularly promote family involvement?	Yes
<b>Does your organisation of multi professional team working include:</b>	
Holding regular team meetings with patient's records only (more than 2 members)	Yes
Holding regular team meetings (more than 2 members) with the presence of the patients	Yes
Joint assessment of the patient or joint intervention	Yes
Regular exchanges of information between team members	Yes

Comment: The regularity depends of the patient length of stay and the needs

## C. INFORMATION MANAGEMENT

### 1. Patient records

Do the rehabilitation records have a designated space within the medical files?	yes
<b>Do you have written criteria for:</b>	
Admission	Yes
Discharge	Yes
Do your rehabilitation plans include written information about aims and goals, time frames and identification of responsible team members?	Yes

<b>Do you produce a formal discharge report (summary) about each patient?</b>	Yes
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Comment: on annexes examples

## 2. Data about general organization

<b>How many new patients (registered for the first time) are treated in your programme each year:</b>	<b>329</b>
<b>In your day care or inpatient programme:</b>	
What is the mean duration spent in therapy by patients on this programme	21 Days inpatient and day care
How many hours a day do the patients spend in therapy.	2 Hours
<b>Give the mean duration of stay spent in the programme:</b>	28,577 Days

Comment: the 329 were data from 2021

## 3. Programme monitoring and outcomes

<b>Does your programme have an overall monitoring system in addition to patient's records?</b>	Yes
<b>Are the long-term outcomes of patients who have completed your programme regularly monitored?</b>	No
Impairment (medical) outcomes:	No
Activity/Participation (ICF) outcomes:	No
Duration of follow up of the outcomes:	3-6 months
<b>Do you use your outcome data to bring about regular improvements in the quality of your programme's performance?</b>	Yes
<b>Do you make the long term overall outcomes of your programme available to your patients or to the public?</b>	No

Comment: we are starting our short- and long-term follow-up and this is a point of improvement for us. We are aiming to take valuable information's on outcomes to improve our program.

## 4. Sustainability of the programme

<b>Does your programme show evidence of sustainability?</b>	
Established as part of public service:	Yes

Has existed for more than 3 years:	Yes
Has received national accreditation (where available):	No
Has been accepted for oral presentation in a National or International congress (mandatory criterion for accreditation)	Yes
Has been the subject for papers in PRM journals	No

- 1 Comment: The program was presented in the international congress of rehabilitation
- 2 ISPRM Cartagena 2023 congress.
- 3 It is also accepted as a presentation the Hellenic Congress of PMR 2022, and as a
- 4 presentation in the same congress.

## V. Quality improvement

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### A. WHAT ARE THE MOST POSITIVE POINTS OF YOUR PROGRAMME?

The evidence-based patient centred care and the personal involvement with the patient

### B. WHAT ARE THE POINTS TO IMPROVE IN YOUR PROGRAMME?

More family involvement

More cognitive rehabilitation

Better follow-up

Art and music therapy to be incorporated

Creation of a Fracture liaison service.

Better networking with the community

### C. WHAT ACTION PLAN DO YOU INTEND TO IMPLEMENT IN ORDER TO IMPROVE YOUR PROGRAMME?

#### 1. *Extrinsic conditions that you wish to obtain*

We always aim to enrich our program with equipment's of proven efficacy.

We will involve the local art school for afternoon art therapy

#### 2. *Intrinsic improvement of the programme*

More educational activities for the staff members to always stay updated with the newest trends.

## VI. References

Please, list here all references cited in your document in the same format as in scientific journals (eg EJPRM). References can consist of Cochrane or National Guidelines, papers published in indexed journals, documents published on official websites.

For national documents, please give details about the source and write down an abstract in English.

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27. Cruz-Jentoft AJ, Baeyens JP, Bauer JM, Boirie Y, Cederholm T, Landi F, κ.ά. Sarcopenia: European consensus on definition and diagnosis: Report of the European Working Group on Sarcopenia in Older People. *Age Ageing*. 1 July 2010;39(4):412–23.

#### NATIONAL DOCUMENTS

1. Ref 23. Website STATIQUE.Lu the website is also in English. The site presents the official data of the Luxembourgish government.

- 1           2. Ref 24 Carte sanitaire fascicule 1 pages 69 and 70 analyze data concerning the  
2           inpatient coverage of the hospital's rehabilitation beds for 2019, such as average  
3           length of stay
  
- 4           3. Ref 25 la Carte sanitaire "The Health Map is a report that provides a detailed  
5           overview of the hospital sector both from a structural point of view (inventory of  
6           structural and human resources of the hospital sector and their organization) and  
7           from a functional point of view (statement of activities, utilization rates). In  
8           accordance with the law of March 2, 2021 establishing a National Health  
9           Observatory and amending the law of March 8, 2018 on hospitals and hospital  
10          planning (art. 3, paragraph 2), the Health Map is prepared and updated every two  
11          years by the National Health Observatory. The Health Map serves as the basis for  
12          estimating national health needs, both in terms of the number of hospital facilities  
13          and hospital beds and services."

## VII. Technical advices for using this template

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### A. WHAT IS THE STRUCTURE OF THIS DOCUMENT?

In a MS Word documents, every type of paragraph can be characterized by a specific name, called a "style", which is linked to specific formatting features.

In this document, we have only defined different level of titles (Titre 1, Titre 2, Titre 3...) and a paragraph style, called "Text".

### B. WHAT SHOULD NEVER BE DONE !

The default style in MS Word is called "Normal". All other styles are derived from this generic one. Therefore, if ever you change the feature of "Normal", as many people unfortunately do, this will affect all other styles of the document and may lead to an awful mess!

Thus, NEVER USE "Normal" for typing your document and NEVER MODIFY it

### C. HOW TO USE THE TITLES?

Any paragraph can easily be turned into a title by typing **"Ctrl-Alt-Left Arrow"**.

Then, you can shift the title to an upper rank or to a lower rank, with the "Ctrl-Alt-Left Arrow" or the "Ctrl-Alt-Right Arrow". The format will adapt itself automatically.

When your cursor is at the end of the line of a paragraph, just type "ENTER" to create a new "Text" paragraph.

### D. HOW TO ADAPT THE PRESENTATION OF PARAGRAPHS?

**Titles format should NOT be modified**, since the document is supposed to be merged with others, with the same structure and format.

**On the opposite, "Text" paragraphs can easily be formatted** with the usual functions (Police, Paragraph, etc.). This will only affect the single or several paragraphs, which you will have selected for this purpose.

But if you click on the style label in the tool bar, MS Word will ask you whether you want to apply those modifications *to all paragraphs called "Text"* or not. YOU NEED TO REPLY "NO", either all your document will be affected!

Don't panic! If ever you have made a error, you may cancel your last operations and repeat your formatting manoeuvres more carefully.

If some different formats have to be applied repeatedly, a new style can easily be created: after having formatted one paragraph, type a new style name in the toolbar. Then, you will be able to apply this new style to other paragraphs. However, avoid to create too many styles. Those styles will be imported with your document and may lead to some confusion.

## E. THE SIZE OF CHARACTERS

If you wish to enlarge the text, in order to make it more easy to read, you should use the “**zoom**” **function of MS Word**, rather to change the size of the characters in the documents.

Documents with large characters are difficult to handle by the Secretary and lead to a waste of paper when they are printed.

## F. CORRECTIONS

When reviewing a document which has been circulated, you should use the “**correction tool**” of MS Word. By this way, corrections will be obviously displayed in specific colours and the author will keep the possibility to validate them or not.