

SYNTHESIS

USE OF THE BELRAI SUITE IN REHABILITATION CARE



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AN EXPLORATORY STUDY OF THE APPLICABILITY OF THE INTERRAI/BELRAI SUITE IN CARE PLANNING AND BUDGET ALLOCATION

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■ FOREWORD

A classification system for the rehabilitation sector? For the patient it seems like pointless administrative fuss that is miles away from his bed. What on earth does this have to do with what he expects from care: competent and involved physicians, nurses, physical therapists, etc., who help him get back on his feet quickly or at least deal with his problem efficiently *and* empathetically. And why did the KCE have to devote a whole study to this? Well, we'll say it plainly: a good, broadly applied classification system is an essential building block of a high-quality care system and indispensable for good collaboration on many different levels. By definition, rehabilitation is a sector to which patients are referred from other care sectors. And that is where it begins; a good referral demands a common vocabulary among caregivers.

As in every field of healthcare that takes itself seriously, rehabilitation too strives to consistently offer the most suitable, preferably evidence-based, approach for every type of patient. Here too the vocabulary with which the needs of the patient are described should be standardised and widespread, and we are talking not just about a classification system, but also an assessment system. Furthermore, adequate care – certainly in rehabilitation – is very often multidisciplinary care. Good care planning and collaboration on the patient is only possible through efficient communication among the various caregivers...on the basis, of course, of a shared language.

But also at a higher, institutional level, an integrated vision of the organisation of rehabilitation care, post-Sixth State Reform, demands a shared conceptual framework among the various levels of competence. The Interministerial Conference on Public Health has understood this very well, and given a strong impetus to generalised use of the interRAI classification system, at least in its local variant BelRAI.

But how well does the 'suite' of interRAI instruments perform in the rehabilitation sector for care planning and orientation of the individual patient and for supporting a balanced and reasonable financing system? These are the questions this study has considered. The short answer? In this sector too, interRAI/BelRAI is a legitimate choice... but there is still a great deal of work to be done.

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■ KEY MESSAGES

- In the Belgian rehabilitation sector and in the federal and defederated governments there is a need for a patient classification system to organise the various types of rehabilitation care and finance them on the basis of the functioning profile of the patient, his care needs and the care intensity.
- There are many multidimensional instruments to measure the functioning of patients. On the basis of scientific comparisons it has already been decided on the federal and defederated level to introduce the interRAI suite for the chronically ill and in general for all vulnerable persons with complex and multidimensional problems, and to establish this use in the e-Health action plan.
- The tools of the interRAI suite are a set of assessment instruments that were originally designed to help in planning care for the individual patient. They can however also be used to measure quality and to get insight into care intensity.
- The validity and reliability of the interRAI suite have already been studied and demonstrated in various countries.
- Some of the assessment instruments in the interRAI suite have already been adapted to and validated for the Belgian context (BelRAI).
- The assessment instruments in the interRAI suite are useful in two primary sectors of the transferred rehabilitation care (and have also been used elsewhere):
 - specialised rehabilitation services (Sp services): some assessment instruments have already been adapted to the Belgian context.
 - Centres for Ambulatory Rehabilitation (CARs): a number of assessment instruments are in development or already available, but none is already adapted to the Belgian context. For some groups of patients (for example, deaf children) it has not yet been determined which existing interRAI instruments are useful.

The assessment instruments in the interRAI suite cover the areas that are included in the International Classification of Functioning (ICF) to a significant degree. The measurements are also equivalent to those in the Functional Independence Measure (FIM).

- In addition to use for clinical purposes, the interRAI suite has also been used for organisational aspects, such as measurement of care intensity. The Resource Utilization Groups (RUG) and case-mix indices based on the interRAI suite have been extensively studied and validated in various countries and for various care settings.
 - specialised rehabilitation services (Sp services): the RUGs have already been developed and validated on the basis of the home care and long-term care facilities assessment instruments. For the other interRAI assessment instruments, the RUGs are still in development.
 - Centres for Ambulatory Rehabilitation (CARs): the RUGs are still in development.



- The assessment instruments in the interRAI suite and the related RUGs can potentially be used in the Belgian context for allocation of budgets. A large number of preparatory steps must still be taken.
- The assessment instruments in the interRAI suite are intended first of all for clinical purposes and cannot be used exclusively for other purposes, such as budget allocation.
- Application of the interRAI suite requires high-performance ICT.



■ SYNTHESIS

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1. CONTEXT

The aim of rehabilitation care is to help patients achieve and maintain their optimal functional capacity, and various care disciplines collaborate for this (Meyer *et al.*, 2014). The patients are highly varied: traffic accident victims, people who are recovering from a heart attack or have undergone a hip operation, but also children with autism, people struggling with an addiction, people suffering from dementia, etc. The care settings are also highly diverse, from residential long-term care to home care, and in addition various ambulatory care options are offered.

In the sixth state reform a number of competences with regard to rehabilitation care were transferred from the federal government to the defederated governments, in particular the isolated specialised rehabilitation services and certain NIHDI rehabilitation agreements (e.g. the 771 agreement with the institutes for motor rehabilitation and the 953 agreements with the Centres for Ambulatory Rehabilitation (CAR)).

Clinicians and policymakers want to organise care as optimally as possible, and therefore opt for a patient classification system. **This classification system must according to them be based on a multidimensional assessment of the functional, medical and psychosocial needs of each individual patient.**

A whole array of multidimensional assessment instruments exists. A decade ago, the assessment instruments in the interRAI suite were chosen on the federal and defederated level, on the basis of scientific studies. The assessment instruments of the interRAI suite have since been adapted to the Belgian context (with the BelRAI suite as a result). The introduction of the BelRAI suite has also been included in the e-Health action plan (e-gezondheid, 2016).

The interRAI suite was first introduced in care for the elderly, and recently the Interministerial Conference decided to expand use of these assessment instruments across different care settings and to other patient groups, including the chronically ill. (Interministeriële Conferentie Volksgezondheid - Interkabinettenwerkgroep “Chronische Ziekten”, 2015; Interministeriële Conferentie Volksgezondheid, 2015)

Objectives of this report

One of the advantages of the interRAI/BelRAI suite is that the instruments can be used in very diverse areas and care settings thanks to the many modules, so that work can be “tailored”. Their use **in the specific context of Belgian rehabilitation care** has however not yet been evaluated. Neither has it been studied whether they can be used for **allocation of budgets in rehabilitation care.**

The present exploratory study, conducted by request of the Flemish Community, answers the following research questions:

- **Can the interRAI/BelRAI suite be used for assessment of patient needs in rehabilitation care?**
- **Can the interRAI/BelRAI suite be used for financial purposes, and in particular for the allocation of budgets to the various services/facilities within rehabilitation care, on the basis of the functioning and rehabilitation needs of the patient?**

This report focuses on the two largest patient groups that have been transferred in the sixth state reform, especially the patients in the specialised rehabilitation services (Sp services) and the CARs.



2. INTERRAI AND BELRAI

InterRAI (www.interrai.org) is a series (a “suite”) of instruments to map out various aspects of functioning of patients. In this way care needs can be determined.

Figure 1– The different instruments in the interRAI suite



Source: From a presentation by Prof. Dr. Declercq (LUCAS, KU Leuven) (http://www.zorgneticuro.be/sites/default/files/general/20160126%20Prof.%20Dr.%20Anja%20Declercq_0.pdf)

At this time four specific instruments have already been adapted to the Belgian context: BelRAI *home care*, BelRAI *long-term care facilities*, BelRAI *acute care* and BelRAI *palliative care*. The BelRAI *screener* has also been developed to determine who needs a full BelRAI assessment and who is eligible for the Vlaamse Zorgverzekering [*Flemish Care Insurance*]. The e-Health action plan provides that the BelRAI suite will be further expanded to

The suite contains

- a **common set** of standardised items, independent of care setting or disorder.
- **specific instruments** for certain patient groups or care settings. At the moment there are twenty specific instruments (see Figure 1).

InterRAI suite of instruments for adults	InterRAI suite of instruments for children
Acute Care (+ Post-Acute Care supplement)	
Community Health Assessment (+ supplements: Functional, Mental Health, Assisted Living, Deafblind)	
Brief Mental Health Screener Community Mental Health Emergency Screener for Psychiatry Mental Health for Correctional Facilities Mental Health for In-patient Psychiatry	Child and Youth Mental Health (Adolescent supplement, Developmental Disabilities)
Home Care (+ contact assessment)	Pediatric Home Care
Intellectual Disability	
Long-term Care Facilities	
Palliative Care	
Post-acute Care	
Quality of life (+ wellness)	

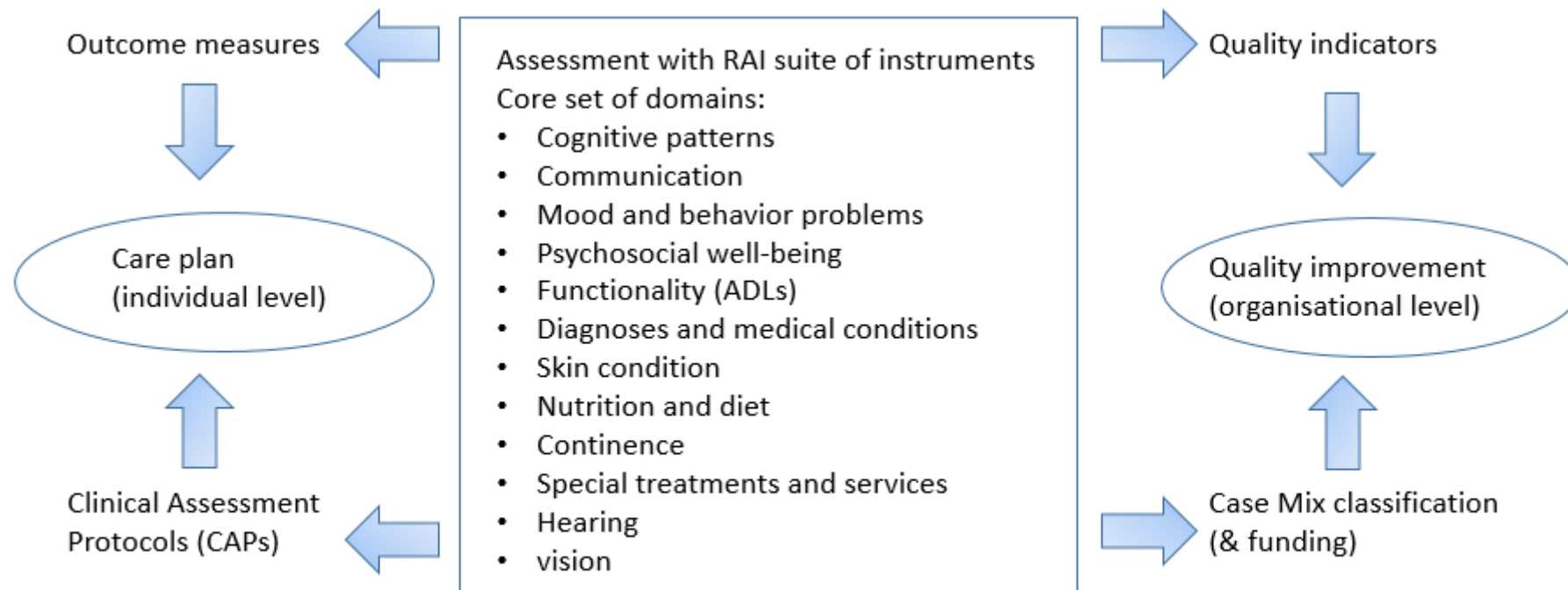
Source: <http://www.interrai.org/instruments.html>

other patient groups, such as post-acute care, care for children and rehabilitation care. (e-gezondheid, 2016)

The interRAI suite was initially designed for **assessing needs and planning care for the individual patient**. It can however also be used for more organisational purposes, such as measuring quality, obtaining insight into care intensity and allocating budgets (see Figure 2).



Figure 2 – Use of the interRAI suite and its applications



Source: modified version of <http://www.nedrai.org/rai-overzicht/>

An international consortium

The interRAI suite was developed by an international nonprofit consortium of approximately 100 researchers and caregivers from more than 35 countries. They are still involved in further development of the instruments. The interRAI instruments enjoy international recognition and are used worldwide.

More information at: <http://www.INTERRAI.org/> and <https://wiki.BELRAI.org/nl/>



3. RESULTS

3.1. Can the interRAI/BeIRAI suite be used for assessing the rehabilitation needs of the individual patient?

3.1.1. Use of the interRAI/BeIRAI suite in the specialised rehabilitation services (Sp services)

For the applicability of the interRAI suite in **Sp services** we found studies in which one of the assessment instruments of the interRAI suite was used for e.g. patients with cerebral palsy, multiple sclerosis, Alzheimer's, Parkinson's, epilepsy, head trauma, Huntington's, amyotrophic lateral sclerosis, geriatric problems, heart conditions, and for people who had received a knee or hip prosthesis or were recovering from various fractures.

3.1.2. Use of the interRAI/BeIRAI suite in the Centres for Ambulatory Rehabilitation (CARs)

For the applicability of the interRAI suite in **Centres for Ambulatory Rehabilitation (CAR)** we found various publications in which one of the assessment instruments of the interRAI suite was used e.g. for children with autism, attention/hyperactivity disorders (ADHD), mental retardation or complex developmental disorders.

For some specific groups in CARs (e.g. deaf children), it is not yet clear which interRAI instrument is most suitable. Additional analyses are needed for this and additional assessment instruments may even need to be developed.

3.1.3. InterRAI suite in relation to the International Classification of Functioning, Disability and Health (ICF) and Functional Independence Measurement (FIM)

The Belgian clinicians and the working group of Zorgnet Vlaanderen (Zorgnet Vlaanderen, 2012) find the **ICF** (*International Classification of Functioning, Disability and Health*) to be a suitable conceptual framework for assessing the functioning and needs of patients in musculoskeletal and neurological rehabilitation. The two comparative studies that we found (Berg *et al.*, 2009; Proding *et al.*, 2015) confirm the completeness and scope of the interRAI instruments (Home Care, Long-term Care Facilities, Community

Health Assessment) with regard to the fields of the ICF, and that the interRAI suite can serve as a basis for further psychometric studies for the implementation of the ICF. Moreover, the interRAI suite is already further operationalised.

With regard to the **FIM** assessment instrument, it appears from comparative studies that the interRAI post-acute care instrument and the FIM both measure the functioning of adult patients in an equivalent way. In addition, the interRAI post-acute care (PAC) instrument provides more possibilities to explain the variability of rehabilitation outcomes. The larger amount of PAC items allow a more global approach of the assessment, the care planning and the measurement of the outcomes. The system allows also the development of more solid quality indicators and outcome measurements.

However, we found no comparisons for paediatric patients.

International Classification of Functioning, Disability and Health (ICF)

The ICF is a conceptual framework for the description of human functioning from three different perspectives: the perspective of the human body (bodily functions and anatomical properties), that of human action (activities) and that of the human as a participant in social life (participation). In addition the ICF includes a list with external factors that can affect each area of functioning. In this way a picture of how a person functions is formed (Gijssbers, 2006).

Functional Independence Measurement (FIM)

The FIM evaluates the functional capacities of the patient. The tool contains 18 items for examining motor and cognitive capacities and personal care. This is the most widespread functional assessment instrument in the rehabilitation sector in the western world today for day-to-day evaluation of patients.



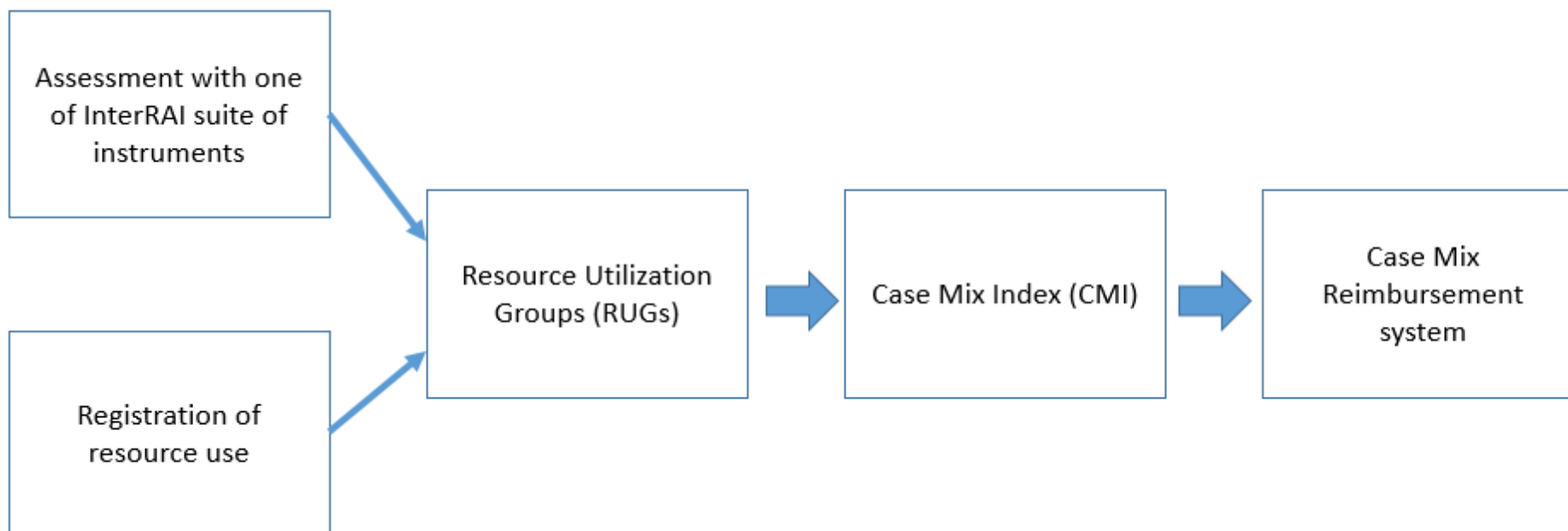
3.2. Can the interRAI/BelRAI suite also be used to allocate budgets for rehabilitation care?

3.2.1. Case-mix financing

In a case-mix financing system the amounts that are allocated are calculated on the basis of the intensity of care the patient receives. In such a system individual patients are grouped into clinically meaningful groups with similar

care consumption ('**Resource Utilization Groups**' (RUG)). These groups are also on clinical aspects homogeneous composed, i.e. patients have similar functional needs (e.g. a patient who can –temporarily- not walk due to multiple sclerosis or a hip prosthesis).

Figure 3 – Development of a financing system based on the case mix



A financing system based on the case mix includes the following steps:

- measurement of the functioning profile of the patient (needs);
- measurement of the care consumption (in number of minutes);
- development and calculation of the RUGs and the case-mix index (relative weight of each RUG)
- on the basis of the case-mix index an amount per RUG can be determined
- the amount per RUG and the non-patient-related financial factors form the basis for a case-mix financing system.



3.2.2. Validation of the interRAI suite for calculation of a case-mix financing system

Within the interRAI suite, there are also algorithms with which the RUGs and the case-mix index can be calculated. In these, the functioning profile of the patient (possibly supplemented by a number of medical characteristics) and the daily care intensity (per diem system) form the basis for a case-mix financing system. In our literature study we found various studies that validate the RUGs in the interRAI suite for the interRAI *home care*, interRAI *long-term care facilities* and interRAI *inpatient psychiatry* modules in various countries and in various care settings:

- **specialised rehabilitation services (Sp services):** the studies confirm the potential usefulness of the interRAI suite assessment instruments (LTCF and HC) (and the related RUGs) in allocation of budgets for rehabilitation care. Despite the adaptation and validation of the LTCF and HC assessment instruments for clinical use to the Belgian context, additional research (including development of the BelRAI post-acute care assessment instrument) is still needed before a case-mix financing system can be applied with budget allocation for the specialised rehabilitation services.
- **Centres for Ambulatory Rehabilitation (CARs):** case-mix financing systems for paediatric patients have been studied much less worldwide. Consequently there is less international comparison material for development of the Belgian RUGs. More research is thus needed on adaptation of the interRAI assessment instruments (and even development of new modules) for the context of the CARs.

These interRAI/BelRAI RUGs represent only the intensity of the care provided (measured in number of minutes of care per type of caregiver). Other non-patient-related financial factors (such as materials costs) are not a part of the RUGs. The care intensity is also a poor reflection of whether appropriate care was provided.

4. NEXT STEPS

Many steps must still be taken before the instruments in the interRAI/BelRAI suite can be used in all care settings within rehabilitation care, and before the functioning profiles of the patients can also be used for other purposes, such as allocation of budgets within a case-mix financing system. This implementation process will still take a number of years. The caregivers and facilities must furthermore receive proper support from the authorities in the areas of training and user-friendly tools. (Financial) support for scientific research on development and validation of the BelRAI assessment instruments is also essential.

In allocation of financing on the basis of the BelRAI assessment instruments, the experience of the caregivers with systematic assessment of the functioning of the patient in his daily clinical practice is a crucial factor. In addition the interRAI/BelRAI suite must be introduced as widely as possible in the sector, without making a distinction between federal and regional authorities.

Other conditions for the implementation of the BelRAI have already been noted in various policy documents, such as the joint declaration of the Public Health IMC on development and implementation of the BelRAI:

- Other modules of the interRAI suite must still be adapted to and validated for Belgian care settings. Adequate research capacity must be provided for this.
- After they are adapted, the instruments must be introduced into the daily practice of the care settings concerned.
- These care settings must receive support when these instruments are introduced, such as training for caregivers, a suitable ICT infrastructure and a helpdesk.
- The ICT infrastructure must be developed so that
 - all BelRAI assessments are available and usable in the various software applications of electronic patient files,
 - all data recorded are centralised in a central databank and are accessible for research purposes (and for the development of the RUGs),



- all BelRAI assessments can be easily consulted by caregivers and care settings,
- and all of this with the necessary provisions for the protection of patient and caregiver data.
- A policy structure must be set up to oversee the collection, exchange and use of the BelRAI assessments.
- Embedding of the BelRAI suite in the care for all chronic or vulnerable patients and in all care settings must be pursued further, as described in the protocol that has recently been approved by the Interministerial Conference; this embedding must be included in the legislation at every policy level, on the basis of a detailed rollout plan.

Additional validation studies are needed specifically for development of Belgian RUGs. In this, the functioning profile of the patient (on the basis of the BelRAI assessment instruments) must be related to the care intensity (measured in time registration studies). Use of the central databank of the interRAI suite would make development of the Belgian RUGs much easier than developing a new instrument *de novo*.

In conclusion, we repeat that the interRAI/BelRAI suite is intended first of all for assessment of the functioning of the patient and his care needs for individual care planning and quality monitoring. The use of these assessment instruments for financing purposes is a secondary option that may not surpass – or replace – these primary purposes.



■ RECOMMENDATIONS^a

To the ministers responsible for health care, depending on their competences:

- The interRAI suite of instruments appears to be suitable for mapping out the functioning of various types of patients in many different care settings in many countries. This is possible for various applications, including care intensity calculations, patient classification, quality indicators, budget allocation, etc. Moreover, the interRAI is extensively scientifically funded internationally (and in Belgium) and it has already long been used in Belgium, due to which it has already often been the subject of (previous and recent) political decisions, at the federal as well as the community and regional level. Therefore the KCE considers it opportune to also introduce the interRAI suite of instruments in the rehabilitation sector. This involves first of all use for individual care planning, and in due time also as a resource for budget allocation. However, there is still a long way to go, and many conditions must still be met before clinical use and on long-term as aid for budget allocation. Therefore the assessment instruments of the interRAI suite of instruments should be adapted, completed where needed and validated for clinical use in the rehabilitation sector, as already mentioned in the e-Health plan. In addition we can formulate the following recommendations:
 - Validate the algorithms for calculating RUGs in the Belgian context, that is, the duration of care per type of caregiver for a representative sample of patients and care facilities.
 - Validate the relevance of use of the interRAI/BelRAI suite as a triage instrument to determine the level and location of most suitable care for the Belgian context.
 - Ensure that the BelRAI suite is primarily used for care planning and not exclusively for budgetary purposes.
 - Coordinate the regional and federal policy levels on an ongoing basis for use of the interRAI data, especially for allocation of budgets, so that the interRAI/BelRAI suite is introduced into the sector as broadly as possible, without making a distinction between federal and regional authorities.
 - Establish an expertise and analysis centre for data collection and processing, training, further development, analysis for financial purposes, etc.
 - Monitor any inequality in care access that may arise due to differing standards in and financing of the different types of care.

^a The KCE remains solely responsible for the recommendations.



To the privacy commission and the sectoral committee:

- Give advice on establishing regulations to facilitate collection, storage, exchange, and processing of, and research on, the interRAI data for patients, caregivers, care facilities and researchers.
- Examine the possibilities for making the Belgian interRAI data available to the international interRAI collaboration.
- Examine the possibilities of linking the international interRAI data to Belgian interRAI data

To the interministerial conference on Public Health:

- Continue consultation with the appropriate authorities at the regional/community level on standardisation of the use, also for financial purposes, in rehabilitation patients in care facilities who have not (yet) or who have already been transferred to the communities.
- Approve the objectives on implementation of the BelRAI by caregivers and the health insurance funds

To the NIHDI and the competent defederated authorities:

- Exploration of the inclusion of the interRAI/BelRAI assessment instruments in the determination of the musculoskeletal, neurological and if necessary other rehabilitation agreements and in the determination of the nomenclature of fysiotherapy, rehabilitation, speech therapy and other relevant domain in the treatment of patient with rehabilitation needs, in order to validate the use as assessment instrument
- Exploration how the use of the BelRAI suite by the care providers can be supported and encouraged.



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Acknowledgements:	Anja Declercq (LUCAS KU Leuven)
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Onafhankelijk Zorgnetwerk), Carlotte Kiekens (Verbond der Belgische Beroepsverenigingen van Geneesheren-Specialisten, Belgische Vereniging van Artsensyndicaten), Ingrid Nolis (Stafflid Zorgnet Vlaanderen), Louis Paquay (Wit-Gele Kruis Vlaanderen)

Owner of subscribed capital, options, shares or other financial instruments: Bert Paepen (Mede-eigenaar Pyxima die software levert aan BelRAI)

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Consultancy or employment for a company, an association or an organisation that may gain or lose financially due to the results of this report: Laurence Antoine, Bernard Dan (Directeur van het revalidatiedepartement van Inkendaalziekenhuis), Marijke Eyssen (vzw Zeplin CAR Lovenjoel), Bert Paepen (Pyxima), Louis Paquay (Wit-Gele Kruis Vlaanderen)

Payments to speak, training remuneration, subsidised travel or payment for participation at a conference: Ingo Beyer (Deelname aan medische congressen), Anja Declercq (Symposia over BelRAI, lessen op Hogescholen)

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Lay-out :

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Publication date:	18 maart 2016
Domain:	Health Services Research (HSR)
MeSH:	Rehabilitation, Rehabilitation Centers, Physical and Rehabilitation Medicine, Neurological Rehabilitation, Reimbursement Mechanisms, Resource Allocation, International Classification of Functioning, Disability and Health
NLM Classification:	WB 320 (rehabilitation adults)
Language:	English
Format:	Adobe® PDF™ (A4)
Legal depot:	D/2016/10.273/19
ISSN:	2466-6459
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How to refer to this document? Anja Desomer, Patriek Mistiaen, Marijke Eyssen. Use of the Belrai suite in rehabilitation care – Synthesis. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE). 2016. KCE Reports 262Cs. D/2016/10.273/19.

This document is available on the website of the Belgian Health Care Knowledge Centre.

