

PECUNIA



Programme in costing, resource use measurement and outcome valuation for use in multi-sectoral national and international health economic evaluations

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# The self-reported PECUNIA resource use measurement (RUM) instrument going global: an update

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# Background

## Challenges



- **Data accuracy:**
  - High-quality (trial-based) economic evaluations of health interventions require **accurate measurement of relevant resource use**



- **Self-reported resource use data:**
  - The most practical method of generating valid resource use estimates for the measurement of **broader resource use** based on patient recall → **societal perspective**



- **Cultural and linguistic appropriateness:**
  - **Linguistic and cultural barriers** are an important obstacle in ensuring appropriateness for the use in multi-national contexts → **biased data**

Availability of a valid and **comparable resource use measurement (RUM)** instrument is crucial for **multi-sectoral and multi-national economic evaluations** for evidence-based decision making



# Background

## PECUNIA project (Jan 2018 – Jun 2021)



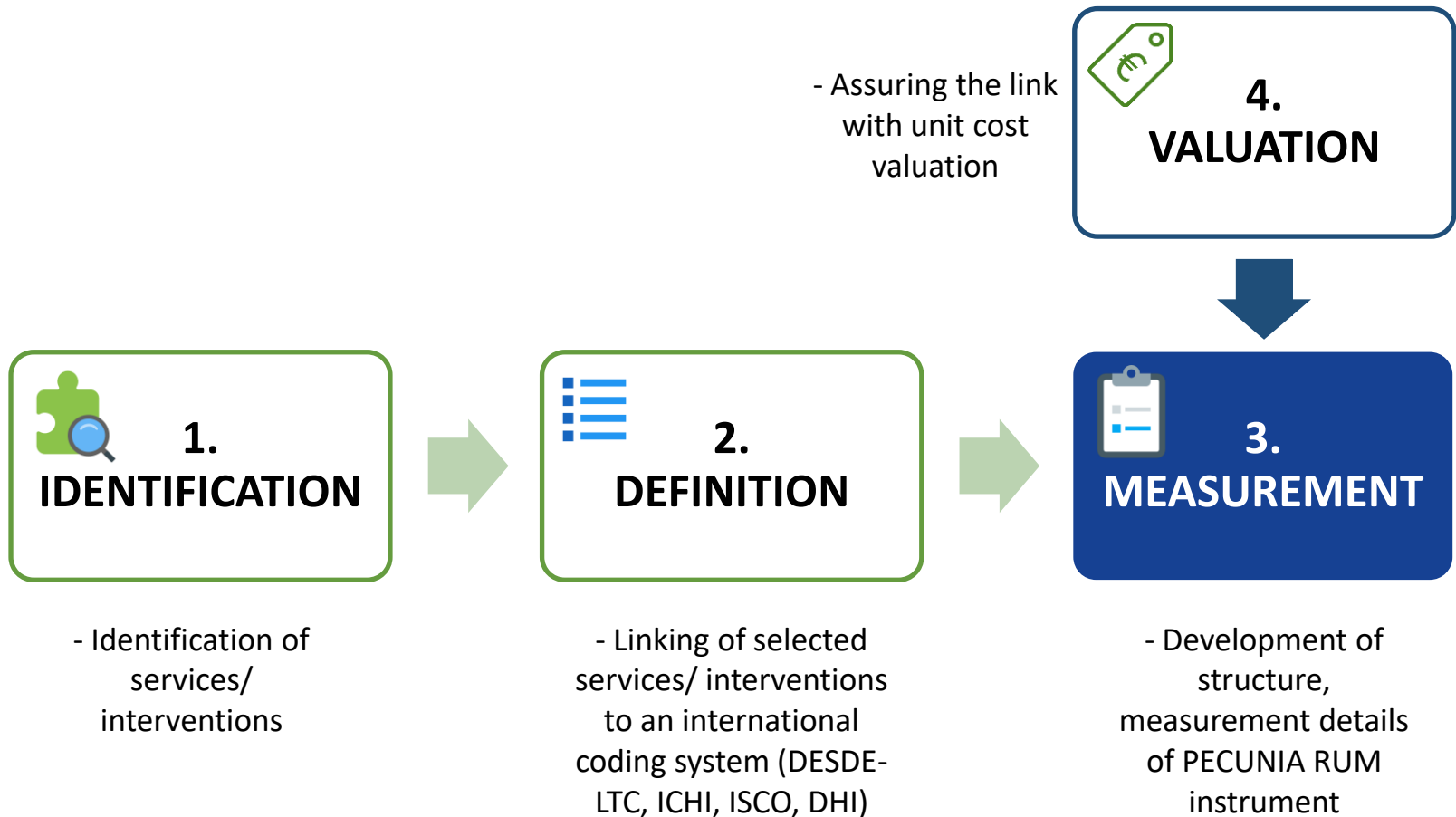
### PECUNIA objectives

- **Harmonisation of costs in terms of**
  - Unit of analysis
  - **Unit of measurement**
  - Unit cost valuation methods
  - Availability of comparable unit costs
  
- Harmonisation of outcomes in terms of
  - Factors of heterogeneity
  - Availability
  - Comparability



# Methods

## The PECUNIA Costing Concept



# Methods

## The RUM Instrument development process

Based on Thorn et al. 2013 and Acquadro et al. 2018

**STEP 1:** Definition of instrument attributes

**STEP 2:** Identification and definition of main cost driving elements

**STEP 3:** Scoping review to identify evidence-based RUM recommendations

**STEP 4:** Development of a harmonized methodological approach (*validation by health economists*)

**STEPS 5 & 6:** Development and harmonization of the pilot PECUNIA RUM

**STEP 7a:** Professional English language editing and wording review

**STEP 7b:** Pilot testing of the PECUNIA RUM with potential respondents in AT, DE, NL & UK

**STEP 8:** Translatability assessment and concept elaboration

**MILESTONE:** Final RUM optimized for formal translation

**STEP 9:** Formal psychometric testing



**TODAY**



# Methods

## Translatability assessment (TA) process

- Preparation of instrument for formal translation
- In collaboration with Oxford University Innovation
- Based on guidelines from Acquadro et al. 2018

### STEP 7a

#### Wording review

- ✓ Clarity
- ✓ Grammar and spelling
- ✓ Uniqueness
- ✓ Cultural diversity
- ✓ Layout

### STEP 8

#### Translatability assessment and concept elaboration

- performed by linguists from a **linguistic, cultural and societal** perspective
- **six languages**: French (France), Polish, Hebrew, Portuguese (Brazil), Russian, Spanish (Spain)
- **concept elaboration** to guide translators with advice on how to address all problematic issues



# Results

PECUNIA RUM is a 37-page pen-and-paper questionnaire in English with 9 sections

Module		Types of resource-use measured
<b>A</b>	<b>Place of living and overnight stays</b>	Usual living situation, residential care, and institutional stay selected from a range of residential, health, social, educational and correctional facilities
<b>B</b>	<b>Non-residential health and social care</b>	Use of health and social services including outpatient, daycare, helplines, and vocational services
<b>C</b>	<b>Medication</b>	Use of medications
<b>D</b>	<b>Unpaid help (informal care)</b>	Informal care provided by the respondent's friends, relatives, neighbors or volunteers
<b>E</b>	<b>Education</b>	Highest level of education, current educational status, absenteeism and presenteeism at school, the use of education services (e.g. tutoring)
<b>F</b>	<b>Employment and productivity</b>	Current employment status, absenteeism and presenteeism at paid and unpaid work
<b>G</b>	<b>Safety and justice system</b>	Contacts with police, fire-and-rescue and legal services, material damage caused by the respondent (e.g. theft, vandalism), incarceration
<b>H</b>	<b>Out-of-pocket and other expenses</b>	Personal expenses including expenses for household help, childcare, purchase of goods (e.g. wheelchair)
<b>I</b>	<b>Final remarks</b>	Feedback



# Results – Pilot testing with potential respondents

## Preparing 1st forward German translation

- **Approach:** ‘in-house’ translation by DE partners (MUW & UKE) in Nov 2020 & pilot tested with 2-3 colleagues
- **Issues:** even in the same language, we found country-specific differences,
  - e.g. „helpline“ → „Sorgentelefon“ (DE) vs. „Telefonseelsorge“ (AT)
  - Agreed translation: Telefonische Beratung (Telefonseelsorge, Gesundheitshotline)

EN

### B4 Helplines

B4.1 Have you called a helpline or received online support regarding health or other life problems in the past 3 months?

Yes Please go to question B4.2

No Please go to question B5

I don't know/I would rather not say Please go to question B5

DE

### B4 Beratungsstellen

B4.1 Haben Sie in den letzten drei Monaten eine telefonische Beratungsstelle angerufen (z.B. Telefonseelsorge oder Gesundheitshotline) oder online Unterstützung aufgrund gesundheitlicher oder anderer Probleme in Anspruch genommen?

Ja Bitte fahren Sie mit Frage B4.2 fort

Nein Bitte fahren Sie mit Frage B5 fort

Ich weiß nicht/dazu möchte ich nichts sagen Bitte fahren Sie mit Frage B5 fort

- **Solution:** generic definitions of concepts with national (or regional) adaptation by adding examples

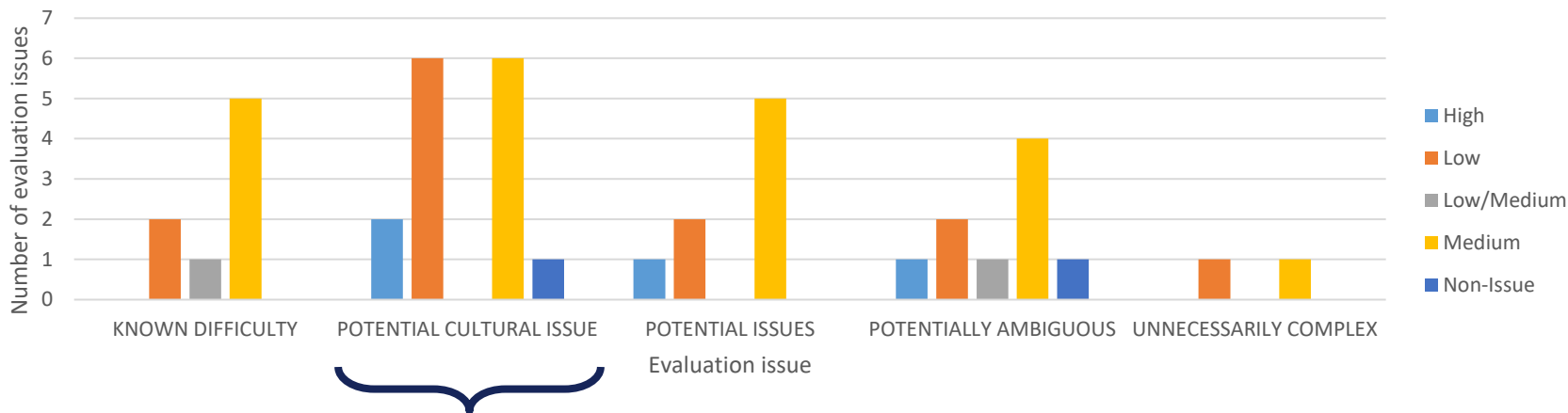




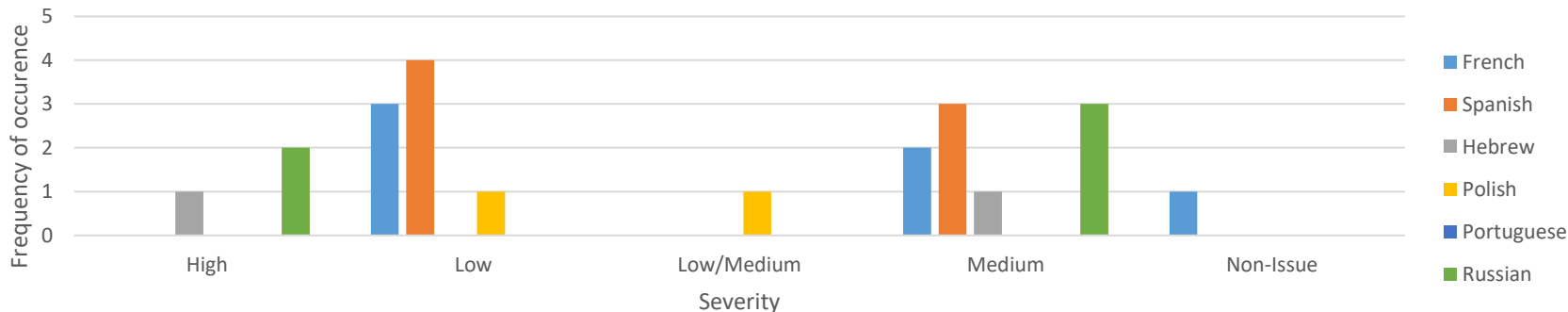
# Results – Translatability Assessment

## Cultural issues were predominant

Translatability assessment evaluation issues **by severity**, N=42



Potential cultural issue **by language**, N=22



# Results – Translatability Assessment

## Example of a potentially ambiguous issue: „Sheltered housing“ I

BEFORE TA

EN RUM Version 23,  
Nov 2020

SECTION A: LIVING SITUATION, RESIDENTIAL CARE AND INSTITUTIONAL STAY

In this section, we ask you about your usual place of living and any residential care or overnight institutional stays you have had in the past 3 months (i.e. in the past 90 nights).

A1	Where have you lived and where have you stayed overnight (e.g. in an institution) in the past 3 months? <i>Please tick all answers that apply and indicate the number of nights that you spent in each place. If you are unsure, please tick 'Other' and provide details.</i>
1	Your own home <input type="checkbox"/> _____ nights
2	Dormitory (e.g. boarding school, college, hostel) <input type="checkbox"/> _____ nights
3	Family or friend's home <input type="checkbox"/> _____ nights
4	Paid for temporary accommodation (e.g. hotel, motel, etc.) <input type="checkbox"/> _____ nights
5	Sheltered housing <input type="checkbox"/> _____ nights
6	Nursing home <input type="checkbox"/> _____ nights
7	Therapeutic community or other residential care home <input type="checkbox"/> _____ nights
8	Hospital Name of hospital department/service: _____ <input type="checkbox"/> _____ nights
9	Hospice/palliative care <input type="checkbox"/> _____ nights
10	Prison/jail <input type="checkbox"/> _____ nights
11	On the street <input type="checkbox"/> _____ nights
12	Other, please specify: _____ <input type="checkbox"/> _____ nights

1st DE forward translation,  
Nov 2020

TEIL A: LEBENSITUATION, BETREUTES WOHNEN UND AUFENTHALT IN EINER EINRICHTUNG

In diesem Teil werden Sie über Ihren gewöhnlichen Wohnort, die Inanspruchnahme betreuter Wohnmöglichkeiten (z.B. Heimpflege) oder einen Aufenthalt in einer Einrichtung in den letzten drei Monaten (d.h. die letzten 90 Nächte) gefragt.

A1	Wo haben Sie in den letzten drei Monaten gelebt und wo haben Sie die Nächte verbracht (z.B. in einem Krankenhaus)? <i>Bitte kreuzen Sie alle zutreffenden Antworten an und geben Sie die Anzahl der Nächte in der dafür vorgesehenen Zeile an. Wenn Sie unsicher sind, wählen Sie „Andere“ und schreiben Sie Ihre Antwort in die dafür vorgesehene Zeile.</i>
1	In meinem Zuhause <input type="checkbox"/> _____ Nächte
2	Schlafsaal (z.B. Internat) <input type="checkbox"/> _____ Nächte
3	Bei Familie oder Freunden <input type="checkbox"/> _____ Nächte
4	Bezahlte, zeitweilige Unterkunft (z.B. Hotel, Motel) <input type="checkbox"/> _____ Nächte
5	Obdachlosenunterbringung, Notschlafstelle <input type="checkbox"/> _____ Nächte
6	Pflegeheim <input type="checkbox"/> _____ Nächte
7	Therapeutische Wohngemeinschaft oder anderes betreutes Wohnen <input type="checkbox"/> _____ Nächte
8	Krankenhaus Fachrichtung der Station: _____ <input type="checkbox"/> _____ Nächte
9	Hospiz/palliative Versorgung <input type="checkbox"/> _____ Nächte
10	Gefängnis <input type="checkbox"/> _____ Nächte
11	Auf der Straße <input type="checkbox"/> _____ Nächte
12	Andere, und zwar: _____ <input type="checkbox"/> _____ Nächte



# Results – Translatability Assessment

## Example of a potentially ambiguous issue: „Sheltered housing“ II

AFTER TA

FINAL EN RUM  
Version 28, Jul 2021

FINAL RUM DE forward  
translation, Sep 2021

Meaning in the UK  
is different

### SECTION A: PLACE OF LIVING AND OVERNIGHT STAYS

In this section, we ask you about your usual place of living and any overnight stays you have had in the past 3 months (i.e. in the past 90 nights).

A1 Where have you lived or stayed overnight (e.g. in hospital) in the past 3 months?	
<i>Please tick all answers that apply and indicate the number of nights that you spent in each place. If you are unsure, please tick 'Other' and provide details.</i>	
1 Individual or shared flat or house	<input type="checkbox"/> ___nights
2 Family or friend's flat or house	<input type="checkbox"/> ___nights
3 Dormitory (e.g. boarding school, university residence)	<input type="checkbox"/> ___nights
4 Paid temporary accommodation (e.g. hotel)	<input type="checkbox"/> ___nights
5 Emergency shelter (e.g. temporary shelter for homeless)	<input type="checkbox"/> ___nights
6 Sheltered housing (e.g. housing with assistance)	<input type="checkbox"/> ___nights
7 Nursing home (e.g. residential care home with nursing)	<input type="checkbox"/> ___nights
8 Other long-term residential care home	<input type="checkbox"/> ___nights
9 Therapeutic community home (e.g. temporary group residence for therapeutic purposes)	<input type="checkbox"/> ___nights
10 Hospital	
Type of hospital department/service (e.g. oncology, surgery, psychiatry): _____	<input type="checkbox"/> ___nights
Type of hospital department/service (e.g. oncology, surgery, psychiatry): _____	<input type="checkbox"/> ___nights
Type of hospital department/service (e.g. oncology, surgery, psychiatry): _____	<input type="checkbox"/> ___nights
11 Palliative care (e.g. hospice)	<input type="checkbox"/> ___nights
12 Place of detention (e.g. prison)	<input type="checkbox"/> ___nights
13 On the street	<input type="checkbox"/> ___nights
14 Other, please specify: _____	<input type="checkbox"/> ___nights

### TEIL A: WOHNORT UND ÜBERNACHTUNGEN

In diesem Teil werden Sie über Ihren Wohnort und etwaige Übernachtungen in den letzten drei Monaten gefragt (die letzten 90 Nächte).

A1 Wo haben Sie in den letzten drei Monaten gelebt und wo haben Sie die Nächte verbracht (z.B. in einem Krankenhaus)?	
<i>Bitte kreuzen Sie alle zutreffenden Antworten an und geben Sie die Anzahl der Nächte in der dafür vorgesehenen Zeile an. Wenn Sie unsicher sind, wählen Sie „Andere“ und schreiben Sie Ihre Antwort in die dafür vorgesehene Zeile.</i>	
1 Eigene Wohnung, Haus oder Wohngemeinschaft	<input type="checkbox"/> ___Nächte
2 Bei Familie oder Freunden	<input type="checkbox"/> ___Nächte
3 Schlafsaal (z.B. Internat, Studentenwohnheim)	<input type="checkbox"/> ___Nächte
4 Bezahlte, zeitweilige Unterkunft (z.B. Hotel)	<input type="checkbox"/> ___Nächte
5 Notschlafstelle (z.B. Obdachlosenunterbringung)	<input type="checkbox"/> ___Nächte
6 Betreutes Wohnen	<input type="checkbox"/> ___Nächte
7 Pflegeheim	<input type="checkbox"/> ___Nächte
8 Andere betreute Wohnform	<input type="checkbox"/> ___Nächte
9 Therapeutische Wohngemeinschaft	<input type="checkbox"/> ___Nächte
10 Krankenhaus	
Fachrichtung der Station (z.B. Onkologie, Chirurgie, Psychiatrie): _____	<input type="checkbox"/> ___Nächte
Fachrichtung der Station (z.B. Onkologie, Chirurgie, Psychiatrie): _____	<input type="checkbox"/> ___Nächte
Fachrichtung der Station (z.B. Onkologie, Chirurgie, Psychiatrie): _____	<input type="checkbox"/> ___Nächte
11 Palliative Versorgung (z.B. Hospiz)	<input type="checkbox"/> ___Nächte
12 Haftort (z.B. Gefängnis)	<input type="checkbox"/> ___Nächte
13 Auf der Straße	<input type="checkbox"/> ___Nächte
14 Andere, und zwar: _____	<input type="checkbox"/> ___Nächte



24/09/2021

# Results – Translatability Assessment

## Example of a potentially ambiguous issue: „Sheltered housing“ III

### Concept Elaboration specified meanings

- **Sheltered housing** → refers to a type of accommodation designed especially for **elderly or disabled people** consisting of a group of individual premises, often with some **shared facilities** and a caretaker. Also called: sheltered accommodation, sheltered homes.
- **Emergency shelter** → a sanctuary for **temporary housing**, set up to provide for the needs of **homeless people/women**, often including shelter, food, sanitation and other forms of support, or for the needs of those using mental health services.



# Results – Translatability Assessment

## Concept Elaboration Document

Ref	Questionnaire Wording	Concept Elaboration	Developer's Comments	Additional Localization recommendations
60	Emergency ambulance (e.g. paramedics)	One of the possible answers to this question. It refers to any ride in an emergency ambulance or any visit from paramedics.		<b>Note to Translators:</b> please localize examples as needed (for example, there might not be paramedics)
61	Out-of-hours medical service (e.g. night care)	One of the possible answers to this question. It refers to any contact with an emergency physician that was available at any given moment.		
62	Accident and Emergency (A&E) department	One of the possible answers to this question. It refers to any visit to a healthcare department that treats emergencies or accident-related injuries.		<b>Note to Translators:</b> please localize as needed

- 56 page document

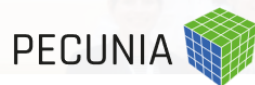
# Discussion

- **Concept Elaboration Document is crucial**
  - Improving **translation quality and comparability** already during the **development stage** of the RUM instrument and not just at the translation stage is important
- **Cooperation of linguists and RUM developers is key**
  - **Close collaboration at the onset** of the translation phase has a positive impact on minimizing the hurdles in the creation of future translations and **counteract translation problems** before they arise
- **Multi-national applicability & diffusion is fostered**
  - The PECUNIA RUM is a **linguistically and culturally appropriate** RUM for the translation in **six languages** (French, Polish, Hebrew, Portuguese, Russian and Spanish)
  - **Comparable** economic evaluations around the globe are enabled



# Access the PECUNIA RUM Instrument

<https://www.pecunia-project.eu/tools/rum-instrument>



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## PECUNIA RUM Instrument


The **PECUNIA Resource Use Measurement (PECUNIA RUM)** Instrument is a Microsoft Word®-based **internationally standardised, harmonised and validated, generic, self-reported RUM instrument** that measures resource use in all relevant sectors for costing from a **societal perspective** in the **adult population**: health and social care, education, (criminal) justice, productivity losses, and informal care. It is consistent with the harmonised [PECUNIA Costing Concept \(PECUNIA Care Atom, PECUNIA Service Lists, PECUNIA Coding System\)](#) and therefore with other [PECUNIA Costing Tools \(PECUNIA RUC Templates, PECUNIA RUC Compendium\)](#) to achieve cross-country and cross-sectoral comparability by referring to activity-based rather than linguistic equivalence of services. The PECUNIA RUM was developed as a 37-page pen-and-paper questionnaire in English by the scientific partners of the PECUNIA Consortium between mid-2019 and June 2021. It has a modular structure of 9 sections covering questions related to

- Place of living and overnight stays (Section A)
- Non-residential health and social care (Section B)
- Medication (Section C)
- Unpaid help (informal care) (Section D)
- Education (Section E)
- Employment and productivity (Section F)
- Safety and justice system (Section G)
- Out-of-pocket and other expenses (Section H)
- Final remarks (Section I).

While Sections A, B, C, D, E, G, H were all developed newly, the section on 'Employment and productivity' (Section F, the so called IPCQ PECUNIA) is based on the existing [IPCQ instrument](#). The different modules have been harmonised with each other alongside the following steps: a

### Access/permission

Anyone wishing to use the PECUNIA RUM for non-commercial research, healthcare and academic teaching activities can do so free-of-charge. For further information on access for non-commercial purposes and details of permission to use for commercial purposes, please contact the PECUNIA Consortium via e-mail at [pecunia@meduniwien.ac.at](mailto:pecunia@meduniwien.ac.at).

 [Sample copy of the PECUNIA RUM](#)



# Thank you for your attention!



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