In search for comparability: the PECUNIA reference unit costs for health and social care in Europe

Susanne Mayer¹, Michael Berger¹, Alexander Konnopka, Valentin Brodszky, Silvia M.M.A. Evers, Leona Hakkaart-van Roijen, Luis Salvador-Carulla, A-La Park, William Hollingworth, Judit Simon¹, on behalf of the PECUNIA group

1 Department of Health Economics, Center for Public Health, Medical University of Vienna, Vienna, Austria

24 September 2021

Austrian Health Economics Association (ATHEA) 2021

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 779292
Motivation
Heterogeneity in costing between countries and sectors

Application of international costing approaches to Austrian data (2015):
general practitioner (GP) unit cost

→ staggering differences in unit cost estimates

Figure based on Mayer et al. (2020)
Study aims

Improving unit cost estimates

• **Comparability**
  - Reference Unit Costs (RUC) for cross-country comparisons
  - Harmonized and validated methods (PECUNIA RUC Templates)
  - Five core health and social care services
  - Six European countries (AT, ES, DE, HU, NL, UK)

• **Quality**
  - External validation to assure RUC quality as key step in RUC development

• **Availability**
  - Available in the PECUNIA RUC Compendium and compatible with the PECUNIA Resource-Use Measurement (RUM) questionnaire
Methods

RUC calculation

• RUC calculation in six PECUNIA countries in 2020/2021
  ◦ Aimed at fulfilling harmonized PECUNIA costing standards
    • Representative on the national level
    • Top-down micro- or gross-costing approach

• RUC calculations based on
  ◦ National-level secondary data AND/OR
  ◦ Primary data collected from service providers

• RUCs adjusted to
  ◦ Reference currency: EUR
  ◦ Reference year: 2019
Methods
External validation of RUCs

• Three approaches to external validation
  
  (1) Presentation at (inter)national conferences and peer-reviewed publication

  (2) Proactive validation
    a) Comparative evaluation against existing UC estimates
    b) Expert feedback
    c) Data provider feedback

  (3) As part of a dedicated validation work package in Spain
Results

External validation

- Initial external validation (November 2020) on **28 preliminary RUCs**
  - Re-calculation of **five preliminary RUCs**:
    - AT: Nursing home
    - NL: Nursing home; dental care
    - HU: Nursing home; dental care (divided into five separate RUCs)

- Outcome of external validation and compliance with PECUNIA costing standards reported as level-of-certainty index

![Level-of-certainty of Reference Unit Cost estimates for the core set of health and social care services compatible with the PECUNIA RUM (n=27), in percent](chart)

- High: 63%
- Medium: 30%
- Low: 7%
## Results

### Country comparison

Reference unit cost estimates for the core set of health and social care services compatible with the PECUNIA RUM (n=27), per country

<table>
<thead>
<tr>
<th>Service</th>
<th>Austria</th>
<th>Germany</th>
<th>Hungary</th>
<th>Netherlands</th>
<th>United Kingdom (England)</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Practitioner (per contact)</td>
<td>32</td>
<td>23</td>
<td>7</td>
<td>45</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Dental Care (per contact)</td>
<td>113</td>
<td>24</td>
<td>42</td>
<td>50</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Day Care Centre (per day)</td>
<td>32*</td>
<td>34</td>
<td>36</td>
<td>43</td>
<td>69</td>
<td>69*</td>
</tr>
<tr>
<td>Nursing Homes (per night)</td>
<td>178</td>
<td>19</td>
<td></td>
<td>144</td>
<td>179*</td>
<td>179*</td>
</tr>
<tr>
<td>Support Hotline (per contact)</td>
<td>10*</td>
<td>10</td>
<td>0.4</td>
<td>15</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
</table>

*limitations
Discussion

RUC development process

• Cross-country RUC variation
  ◦ Exacerbated by differences in
    • Purchasing power
    • Scope of services
    • Healthcare system organization (private versus public funding)
  ◦ Country-specific peculiarities,
    • e.g. dental care tourism in HU

• Data collection
  ◦ Limited cooperation from service providers
    • Time constraints, lack of staff (Covid-19)
    • Sensitive nature of information
    • Inadequate internal accounting
  ◦ Primary data require large samples for national representativeness
  ◦ Secondary data not always harmonized across countries
    • e.g. inclusion of dentures in dental care
Discussion

Results

• First set of harmonized RUCs suitable for cross-country comparisons

• RUCs homogenous across PECUNIA countries
  ◦ Differences reflecting purchasing power and wage levels
  ◦ Outliers caused by data limitations

• RUCs indicate high cost level in AT
  ◦ RUCs for health and social care services in AT rank among the highest for each service
THANK YOU FOR YOUR ATTENTION!

Susanne Mayer
Associate Professor
Department of Health Economics, Center for Public Health
Medical University of Vienna

Keep in touch:
susanne.mayer@muv.ac.at
Further information on PECUNIA

Our website:

https://www.pecunia-project.eu

Request access to the PECUNIA RUC Compendium via:

https://pecunia-project.eu/tools/ruc-compendium

ResearchGate PECUNIA-EU

@Pecunia_EU

Contact Coordinator

Prof. Dr. Judit Simon
Department of Health Economics
Center for Public Health
Medical University of Vienna
pecunia@meduniwien.ac.at

Contact Management

European Research and Project Office GmbH
pecunia@eurice.eu