SPPI for Human health activities session
OECD PPPS programme on hospital services, lessons learnt

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Project started in 2007 to develop output-based hospital PPPs aiming to improve PPPs for health as a whole

Five pilot studies carried out to assess the feasibility of the methodology

Pilot studies results published in 2010

Implementation in December 2013 for 2011 PPPs calculation within the framework of the Eurostat-OECD PPP programme
Why a need to develop PPPS for hospital services? (1/2)

Total health expenditure as a share of GDP, 2010
In the past, volume of outputs of non-market services were estimated by volume of inputs

- Implies zero productivity growth

OECD, Eurostat and others have worked towards producing output-based measures of the volume of these services and growth overtime
In the perspective of the construction of temporal price indices for hospital services, what lessons could be learnt from the PPPs program on hospital services?
Production of health services:
- Uses input approach
- Only wages are directly measured, all other input prices are approximated through reference PPPs
  - In concept, input approach cannot reflect productivity differences between countries
  - In practice, wages and salaries are difficult to measure and there is an unknown bias from using reference PPPs for other cost items

Move to output measure of hospital services
- As in most of the countries, absence of market prices, use of “quasi prices
Calculate PPPs poses difficulties for ...

1. Identifying products that are comparable across countries
2. Representativeness of products
3. No meaningful market price for comparison

Requires implementation of an output survey of hospital services:

- Identify representative and comparable hospital products (case-types) using diagnoses and procedures codes
Two types of cases-types: medical and chirurgical

Use the *International Classification of Diseases (ICD)* to identify cases-types

Cases-types included were common procedures or diagnoses. They account for a significant percentage of hospital expenditures

International comparability of product classification systems is limited for *Diagnosis Related Group (DRG)*-type system

Use **quasi-prices**: costs per unit of case-type
  - Unobserved prices that emulate a competitive situation where prices equal average costs per products
Output-based PPPs for hospital services: *Sample of service products*

- **Medical cases:** 7, no operating room procedures are performed
- **Surgical cases:** 21 in-hospital, plus 4 types using out-patient procedures
- **Only ‘standard’ hospitalisation cases:** omit very long stays or transfers
Output-based PPPs for hospital services: *Products definition (1/2)*

<table>
<thead>
<tr>
<th>M01</th>
<th>Acute myocardial infarction</th>
</tr>
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<tbody>
<tr>
<td>M02</td>
<td>Angina pectoris</td>
</tr>
<tr>
<td>M03</td>
<td>Cholelithiasis</td>
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<tr>
<td>M04</td>
<td>Heart failure</td>
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<tr>
<td>M05</td>
<td>Malignant neoplasm of bronchus and lung</td>
</tr>
<tr>
<td>M06</td>
<td>Normal delivery</td>
</tr>
<tr>
<td>M07</td>
<td>Pneumonia</td>
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</tbody>
</table>

| S01  | Appendectomy                |
| S02  | Caesarean section           |
| S03  | Cholecystectomy             |
| S04  | Colorectal resection        |
| S05  | Coronary artery bypass graft|
| S06  | Discectomy                  |
| S07  | Endarterectomy: vessels of head and neck |
| S08  | Hip replacement: total and partial |
| S09  | Hysterectomy: abdominal and vaginal |
| S10  | Knee replacement             |
| S11  | Mastectomy                  |
| S12  | Open prostatectomy           |
| S13  | Percutaneous transhuminal coronary angioplasty (PTCA) |
| S14  | Peripheral vascular bypass   |
| S15  | Repair of inguinal hernia    |
| S16  | Thyroidectomy               |
| S17  | Transurethral resection of prostate (TURP) |
| S18  | Arthroscopic excision of meniscus of knee |
| S19  | Cataract surgery             |
| S20  | Ligation and stripping of varicose veins - lower limb |
| S21  | Tonsillectomy and/or adenoidectomy |

*Separate items for inpatient and outpatient*
Output-based PPPs for hospital services: *Products definition* (1/2)

**So3 Cholecystectomy**

<table>
<thead>
<tr>
<th>Case type description</th>
<th>Cholecystectomy is here defined as the surgical removal of the gallbladder or of a part of the gallbladder. These interventions can be employed for treating a number of diseases including symptomatic gallstones or neoplasms. It is the most common method for treating symptomatic gallstones. Surgical options include the standard procedure, called laparoscopic cholecystectomy, and an older more invasive procedure, called open cholecystectomy.</th>
</tr>
</thead>
</table>
| **ICD-9-CM codes** | 51.21, Other partial cholecystectomy  
51.22, Cholecystectomy  
51.23, Laparoscopic cholecystectomy  
51.24, Laparoscopic partial cholecystectomy |
| **Rules** | Principal diagnosis of cholelithiasis (K80), cholecystitis (K81) or other diseases of gallbladder (K82) |
| **Inclusion** | Partial colecistectomy |
| **Exclusion** | |
Output-based PPPs for hospital services: *Quasi-prices* (1/3)

- Provide, in theory, an indication of the *purchasers willingness-to-pay* (usually government or insurer) .... and the *providers willingness-to-accept* these value as the price for hospital services.

- Can be *negotiated price* or *administrated price* but need to include *direct costs, capital costs and overhead*.
Output-based PPPs for hospital services: *Quasi*-prices (2/3)

- **Negotiated** or **administered rates** could be labelled as ‘quasi-prices’ to signal that:
  - they are not necessarily the result of market transactions
  - they are not prices that apply to transactions between producers and consumers of health services
  - they are not observed

- As a general principle, the **full set of costs should be reflected in the quasi-price**
Output-based PPPs for hospital services: 
*Quasi-prices (2/3)*

**Negotiated quasi-prices:**
- Established through independent negotiations between purchasers/third party payers and providers
- Are not necessarily directly tied to the cost of care
- Could include profit margins (or losses if some services are cross-subsidised by others).

**Administered quasi-prices**
- Reflective of average costs per product
- Important that the scope of costs reflected in the administered price is similar across countries
Survey conducted using a standardized questionnaire to collect quasi prices for selected case-types

Quasi-prices extracted from existing database: health administrations and national insurance

Number of cases were also collected and used to calculate values and share weights

Derived Price level indices (PLIs) – ratio of PPPs to exchange rate.
In 2013, the methods used for calculate Output-based PPPs for hospital services have been officially implemented.

Data collected through the annual hospital PPPs survey for European countries and hopefully soon on an annual basis for OECD non-European countries.

Detailed results are available in Koechlin et al. (2014).
Output-based PPPs for hospital services: What lessons could be learnt?

- An opportunity to develop temporal price indices for hospital services and health?
  - Measure output prices
  - Product approach
  - Quasi-prices
  - Regular collection: low cost method as use of existing data (initialisation is more expensive)

- Further steps to improve methodology
  - Improve comparability with the developments of the DRGs system
  - Treatment of residential care
  - Better take into account quality differences
  - Regular collection
Francette Koechlin, Paul Konijn, Luca Lorenzoni and Paul Schreyer (2014), *Comparing hospital and health prices and volumes internationally: results of a Eurostat/OECD project*, OECD Health working papers, No 75 available at:


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THANK YOU VERY MUCH FOR YOUR ATTENTION

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