• Review of 2007/08 project
• Aims of the new project
• Preliminary results
  – Hospital expenditures
  – Mental health expenditures by ISHMT
• Next steps
Previous 2007/08 project

- Develop guidelines for estimating expenditure by disease, age and gender under the SHA framework
- Test the feasibility through a series of country case studies – different health systems, varying experience
- Serve as an input to the SHA 2011 revision process
- Comparative estimates of expenditure by disease, age and gender
• Implementation of the draft guidelines
• Australia, Germany, Hungary, Korea, Slovenia, and Sweden.
• Korea, Germany, and Australia all had previous experience in producing COI studies – the most complete set of estimates.
• Data subsequently obtained from the Czech Republic, France, the Netherlands, and the USA.
Country reports

• **Sources and methodology**
  – Data sources, methodologies used
  – Comparison with existing methodologies

• **Implementation issues**
  – Details of guidelines that are insufficiently clear
  – Country-specific problems in implementation
  – Departures (actual/anticipated) from guidelines
  – Cost units for which no estimates can be made
Key allocation methodology

Current health expenditure (according to SHA)

Partition into homogeneous units (HP→HC)

- Hospital in-patient
- Dentists’ offices
- Home care
- ....
- Other

Use a unit specific **utilisation key** to allocate spending over dimensions

- Exp. by -disease -age -gender
- Exp. by -disease -age -gender
- Exp. by -disease -age -gender
- Exp. by -disease -age -gender
- Exp. by -disease -age -gender
Allocation of expenditures

- Hospital care
  - Most straightforward (principal diagnosis, discharge data)
- Out-patient curative care (physicians)
  - Generally survey or encounter data
- Pharmaceutical expenditures
  - Linking ATC and ICD codes
  - Survey (e.g. Australia BEACH, IMS)
- Challenges:
  - Long term care
  - Out of pocket expenditures (private)
  - Public health programs
  - Transport
  - Results in comparability issues
  - Bias some disease expenditure estimates
General results

- Variation in share of total spending allocated
  - DEU, KOR, SVN ≈ 100% allocated,
  - NLD ≈ 90%
  - AUS, FRA, HUN, USA ≈ 70-75%,
  - CZE ≈ 50%, (Public spending only, pharmaceuticals)
  - SWE ≈ 25% (hospital IP only)
- Breakdown by SHA classification of provider possible for most countries
- Provider (HP) versus function (HC)
- ICD chapter / GBD
<table>
<thead>
<tr>
<th>Disease Category</th>
<th>CAN</th>
<th>CZ</th>
<th>FR</th>
<th>GER</th>
<th>HUN</th>
<th>KOR</th>
<th>NL</th>
<th>SL</th>
<th>US</th>
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<td>9.1</td>
<td>5.2</td>
<td>7.0</td>
<td>5.8</td>
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<td>2.5</td>
<td>2.8</td>
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<td>2.5</td>
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<td>7.1</td>
<td>11.3</td>
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<td>7.7</td>
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<td>2.5</td>
<td>4.9</td>
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<td>4.4</td>
<td>3.6</td>
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<td>1.4</td>
<td>3.9</td>
<td>2.7</td>
<td>1.8</td>
<td>3.9</td>
<td>3.7</td>
<td>4.6</td>
<td>1.3</td>
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<td>0.4</td>
<td>0.6</td>
<td>1.0</td>
<td>0.8</td>
<td>1.0</td>
<td>1.4</td>
<td>0.8</td>
<td>0.0</td>
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<td>5.3</td>
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<td>7.6</td>
<td>6.3</td>
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<td>Diseases of the genitourinary system</td>
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<td>3.8</td>
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<td>3.9</td>
<td>5.4</td>
<td>3.5</td>
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<td>18.5</td>
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<td>Grand Total</td>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100.0</td>
</tr>
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</table>

Sources: Public Health Agency of Canada (2010) unpublished data; Roehring et al 2009; Unpublished OECD data
Data is for the following years: Canada(2000); Czech republic (2009); France (2002); Germany 2008; Hungary 2006; Korea (2009); Netherlands (2005); Slovenia (2006); United Stated (2005)
Conclusions from project

• A suitable framework
  – Defined by the use of SHA as the expenditure framework

• Use of direct health care spending, subject to the comparability limitations of SHA itself - e.g. LTC, personal, prevention, etc.

• More granular data would be beneficial

• Allocation concerns – affects comparability
Aims of new project

• Finalise guidelines
• Update, accelerate and expand comparable health expenditure data by disease (age and gender)
• Breakdown of (inpatient) hospital data by disease for a greater number of countries
• Examine expenditures in particular for specific diseases areas: mental health, cancer, RMCH.
• (Assess the importance and methodologies of estimating indirect costs)
Expert meeting

• Interest in moving forward
• Countries with data:
  – Australia, Canada, Czech Republic, England, Finland (hospital), Germany, Israel (hospital), Japan, Korea, Netherlands, Slovenia, Sweden (hospital)

• ISHMT
• Physician and pharmaceutical expenditures is a general concern
• Hospital is most straightforward
Allocating Hospital Expenditures

• per diem cost
  – assumes all diseases employ similar resources intensity
  – (could use bed-days if this was the case)

• Diagnosis Related Groups (DRGs)
  – Classify patients into homogeneous units based on primary diagnosis and may also include information on such items as procedures and services employed, length of stay, co-morbidities, and age.
  – They are meant to indicate information related to resource use and generally used in reimbursement systems.
Allocating Hospital Expenditures

- Data on ALOS and bed-days is available for all OECD countries
- Predict expenditures using currently available data based on actual expenditure data
- Preliminary analysis
  - Used 2006 data (to date)
  - Variables: ALOS, bed-days, per-capita GDP, Asian, disease prevalence, percentage of public exp.
Hospital expenditures: comparing expenditures, bed-days, predicted values (Germany)
Hospital expenditures: comparing expenditures, bed-days, predicted values (Korea)
Estimating hospital Expenditures: Next steps

• Increase data points
• More countries (eleven?)
• More granular – ISHMT
• Aiming to obtain the average weights by disease component (ISHMT code, ICD chapter)
# Mental Health Expenditures by ISHMT
(per-capita, 2010 US$)

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>Korea</th>
<th>NL</th>
<th>CZ</th>
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<tbody>
<tr>
<td></td>
<td>per capita US$</td>
<td>per capita US$</td>
<td>per capita US$</td>
<td>per capita US$</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Dementia</td>
<td>145.4</td>
<td>54.2</td>
<td>186.2</td>
<td>4.5</td>
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<tr>
<td></td>
<td>32.7%</td>
<td>50.2%</td>
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<tr>
<td>Alcohol</td>
<td>45.8</td>
<td>7.8</td>
<td>63.3</td>
<td>5.8</td>
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<tr>
<td></td>
<td>10.3%</td>
<td>7.2%</td>
<td>9.8%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Psychoactive substances</td>
<td>*</td>
<td>0.1</td>
<td>*</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>0.1%</td>
<td>*</td>
<td>4.1%</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>45.6</td>
<td>22.1</td>
<td>58.2</td>
<td>13.0</td>
</tr>
<tr>
<td></td>
<td>10.2%</td>
<td>20.5%</td>
<td>9.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>mood disorders</td>
<td>88.2</td>
<td>11.9</td>
<td>117.7</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>19.8%</td>
<td>11.0%</td>
<td>18.2%</td>
<td>8.1%</td>
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<tr>
<td>other mental</td>
<td>120.0</td>
<td>11.9</td>
<td>222.9</td>
<td>22.3</td>
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<td></td>
<td>27.0%</td>
<td>11.0%</td>
<td>34.4%</td>
<td>43.0%</td>
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<tr>
<td>all mental health</td>
<td>445.0</td>
<td>108.1</td>
<td>648.4</td>
<td>51.9</td>
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<td></td>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Germany and NL: expenditure data only available for Alcohol and psychoactive substances grouped together*
## Expenditures on schizophrenia (percentage of total, and per-capita)

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th></th>
<th>Korea</th>
<th></th>
<th>NL</th>
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<tbody>
<tr>
<td></td>
<td>per capita</td>
<td>%</td>
<td>per capita</td>
<td>%</td>
<td>per capita</td>
<td>%</td>
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<td>per capita</td>
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<td></td>
<td>US$</td>
<td></td>
<td>US$</td>
<td></td>
<td>US$</td>
<td></td>
</tr>
<tr>
<td><strong>hospital</strong></td>
<td>23.2</td>
<td>50.9%</td>
<td>15.7</td>
<td>71.2%</td>
<td>54.2</td>
<td>93.0%</td>
<td>10.9</td>
<td>84.3%</td>
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<tr>
<td><strong>long-term care</strong></td>
<td>3.3</td>
<td>7.2%</td>
<td>0.0</td>
<td>0.2%</td>
<td>1.5</td>
<td>2.5%</td>
<td>0.2</td>
<td>1.9%</td>
</tr>
<tr>
<td><strong>ambulatory</strong></td>
<td>2.9</td>
<td>6.4%</td>
<td>4.7</td>
<td>21.2%</td>
<td>0.6</td>
<td>1.0%</td>
<td>1.5</td>
<td>11.5%</td>
</tr>
<tr>
<td><strong>pharmaceuticals</strong></td>
<td>12.5</td>
<td>27.4%</td>
<td>0.9</td>
<td>4.2%</td>
<td>1.4</td>
<td>2.5%</td>
<td>0.0</td>
<td>0.2%</td>
</tr>
<tr>
<td><strong>Other providers</strong></td>
<td>3.7</td>
<td>8.1%</td>
<td>0.7</td>
<td>3.1%</td>
<td>0.6</td>
<td>1.1%</td>
<td>0.3</td>
<td>2.0%</td>
</tr>
<tr>
<td><strong>All expenditures</strong></td>
<td>45.6</td>
<td>100.0%</td>
<td>22.1</td>
<td>100.0%</td>
<td>58.2</td>
<td>100.0%</td>
<td>13.0</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Next Steps (1)

• Hospital data:
  – further analysis comparing discharge data and expenditure by disease data.
  – statistical and econometric analysis to derive an allocation
  – By ISHMT
  – More countries

• Pharmaceuticals
  – Work with selected countries on review with methodologies to derive pharmaceutical expenditures by disease
  – mapping of ATC to ICD-10 codes.
Next Steps (2)

• Investigate how changing the components allocated according to disease affects country specific results in an attempt to derive more internationally comparable results.

• Disease specific costing studies
  – Mental Health – combine with more detailed data
  – Cancer
  – RMCH
Next Steps (3)

• Final guidelines on deriving expenditures by disease.
• Detailed information on health expenditures for some cancers, mental health, and RMNCH for selected countries.
• An expanded OECD database on expenditure by disease, age and gender based on the finalized guidelines based on the aforementioned outputs.
• Final Report by end of 2013
Uses of data

- Need for comparable data for COI studies
- Patterns of practice
- Examine allocations of expenditures across countries
- Effective and efficient treatment modalities
- Compare with health outcomes
- Direct costs
  - Hospital
  - Primary care / outpatient / physician
  - Pharmaceutical
- Indirect costs
  - Lost production due to disability
Thank you!

• Questions?
• Data?