L'Italian Horizon Scanning Project

Roberta Joppi, Laura Agnoletto, Luca Demattè, Daniela Pase, Chiara Poggiani, Luigi Mezzalira

- Dipartimento Farmaceutico - Az. ULSS 20 di Verona

HTA e HS come strumenti decisionali per l'appropriatezza d’impiego dei farmaci
Napoli, 25 Novembre 2011
Health Technology Assessment

As HTA as an activity became more common practice around the world, it was increasingly recognized that timeliness of the assessment was key in the support of healthcare decision makers.

What is horizon scanning?

Horizon Scanning is defined by the Office of Science and Technology (OST) as:

'The systematic examination of potential threats, opportunities and likely future developments, including (but not restricted to) those at the margins of current thinking and planning.'
Why horizon scan for medicines?

✓ Manage budgets
✓ Plan services - new and redesign
✓ Anticipate pressures (financial and service delivery)
✓ Identify areas for disinvestment
✓ Manage entry into hospital/formulary/practice, etc
✓ Be prepared! It’s better than fire fighting!
Early Warning System

Banta and Gelijns were the first to conclude that it is not satisfactory to react to technological developments only when confronted with their consequences. Their study for the Dutch government in the 1980s called for a systematic approach to identification and early assessment of new health technologies to provide early notice to decision makers in health care.

An Early Warning System was subsequently established at the Dutch Health Council

Comparative and timeliness evaluation of new treatments is the most important information to provide policy makers with.
Host organization: Azienda ULSS 20 in Verona
Aims

Specific aims:

✓ to produce periodical lists of emerging drugs for which a MA will be expected within 12–36 months

✓ to evaluate potential clinical impact and cost effectiveness in terms of healthcare and cost for National Health Service

✓ to give well-timed information to improve regulatory decisions about emerging drugs

✓ to identify further research fields needed to be investigated
IHSP Workflow

- Database IHSP
- Emerging drugs - 36 months report
- PRELIMINARY SELECTION (SC-IHSP)
- Selected Drugs - 18 months report
- New Product Information Report - NPIR (-12 months M.A.)
- Evaluation Team
- PRIORITIZATION
- SC-IHSP
- MinSal
- REGIONS
Methods and tools of the IHSP
Organization Structure

Scientific Committee (SC)
Database Team (DT)
Evaluation Team (ET)

Data Management

Information sources
Evidence considered
Data presentation
Trial Quality Assessment

IHSP Database

Data Collection
Check
Archive
Discussion Forum

IHSP Reports

Priority-setting criteria
Output
Scientific Committee
- To prioritise drugs
- To sign up experts to be involved in the assessment of prioritised drugs
- To review and approve New Product Information Reports

Database Team
- To maintain and update the database
- To guarantee the confidentiality of the stored data
- To collect information
- To produce the different reports of emerging medicines

Evaluation Team
- To produce the New Product Information Report
Information Sources
- Regulatory Agencies
- Medical-scientific literature
- Scientific databases
- Medical websites/Press-releases
- Pharmaceutical Bulletins

Evidence considered
- Clinical Trial (Phase I-III):
  - Completed and published
  - Completed not published
  - Ongoing

Data presentation
- Narrative tables of all Phase II-III studies

Trial Quality assessment
- Item evaluated (Jadad modified + 3-level Likert scale):
  - Design
  - Allocation
  - Blinding
  - Lost to follow-up
  - Protocol violation(s)
  - Sample size
  - Pre-specified secondary/sub-group analysis
The IHSP Database

Information Input

Italian Horizon Scanning Unit (LHU of Verona)

Product classification and description
Brand information
Licensing information
Efficacy and safety
Burden of disease
Possible price

IHSP Database

Integrated Information

DRUGS
ATC
ICD IX
...
<table>
<thead>
<tr>
<th>ATC code (I level)</th>
<th>ATC description</th>
<th>US+EUn</th>
<th>EU n</th>
<th>EU phase I n (%)</th>
<th>EU phase II n (%)</th>
<th>EU phase III n (%)</th>
<th>EU phase I/II+III n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Antineoplastic and immunomodulating agents</td>
<td>851</td>
<td>406</td>
<td>30 (7.4)</td>
<td>153 (37.7)</td>
<td>197 (48.5)</td>
<td>26 (6.4)</td>
</tr>
<tr>
<td>N</td>
<td>Nervous system</td>
<td>229</td>
<td>100</td>
<td>16 (16.0)</td>
<td>32 (32.0)</td>
<td>49 (49.0)</td>
<td>3 (3.0)</td>
</tr>
<tr>
<td>A</td>
<td>Alimentary tract and metabolism</td>
<td>149</td>
<td>84</td>
<td>11 (13.1)</td>
<td>25 (29.8)</td>
<td>45 (53.6)</td>
<td>3 (3.6)</td>
</tr>
<tr>
<td>J</td>
<td>Antiinfectives for systemic use</td>
<td>123</td>
<td>64</td>
<td>8 (12.5)</td>
<td>18 (28.1)</td>
<td>36 (56.3)</td>
<td>2 (3.1)</td>
</tr>
<tr>
<td>C</td>
<td>Cardiovascular system</td>
<td>96</td>
<td>58</td>
<td>0 (0.0)</td>
<td>16 (27.6)</td>
<td>41 (70.7)</td>
<td>1 (1.7)</td>
</tr>
<tr>
<td>B</td>
<td>Blood and blood forming organs</td>
<td>79</td>
<td>52</td>
<td>3 (5.8)</td>
<td>17 (32.7)</td>
<td>32 (61.5)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>M</td>
<td>Musculo-skeletal system</td>
<td>71</td>
<td>27</td>
<td>4 (14.8)</td>
<td>7 (25.9)</td>
<td>12 (44.4)</td>
<td>4 (14.8)</td>
</tr>
<tr>
<td>R</td>
<td>Sistema respiratorio</td>
<td>53</td>
<td>29</td>
<td>6 (20.7)</td>
<td>9 (31.0)</td>
<td>14 (48.3)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>G</td>
<td>Genito-urinary system and sex hormones</td>
<td>35</td>
<td>16</td>
<td>2 (12.5)</td>
<td>5 (31.3)</td>
<td>9 (56.3)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>D</td>
<td>Dermatologicals</td>
<td>25</td>
<td>13</td>
<td>1 (7.7)</td>
<td>5 (38.5)</td>
<td>7 (53.8)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>S</td>
<td>Sensory organs</td>
<td>27</td>
<td>12</td>
<td>0 (0.0)</td>
<td>4 (33.3)</td>
<td>7 (58.3)</td>
<td>1 (8.3)</td>
</tr>
<tr>
<td>V</td>
<td>Various</td>
<td>21</td>
<td>5</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>5 (100.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>H</td>
<td>Systemic hormonal preparations, excl sex hormones and insulins</td>
<td>13</td>
<td>7</td>
<td>0 (0.0)</td>
<td>2 (28.6)</td>
<td>4 (57.1)</td>
<td>1 (14.3)</td>
</tr>
<tr>
<td>P</td>
<td>Antiparasitic products, insecticides and repellents</td>
<td>2</td>
<td>1</td>
<td>1 (100.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>

**Total drugs in development**: 1774
**Registered/launched drugs**: 322
**Discontinued/Suspended drugs**: 236
**Total number of items registered in the database**: 2332

*Updated in June 2011*
# Priority-setting criteria used by SC-IHSP

## AREA to INVESTIGATE PARAMETERS EVALUATION

### Burden of disease
- **Epidemiology**
  - Rare
  - Not rare
- **Severity**
  - Severe
  - Not severe
- **Duration**
  - Acute
  - Chronic
- **Treatment**
  - Available
  - Absent

### Patient impact
- **Efficacy vs. current treatments** *(mortality, morbidity, quality of life, etc.)*
  - Higher
  - Equal or Lower
- **Safety vs. current treatments**
  - Higher
  - Equal or Lower
- **Compliance vs. current treatments**
  - Higher
  - Equal or Lower

### NHS Pressures
- **Social impact** *(Media, patients associations, lobbies ...)*
  - YES
  - NO
- **Service reorganization and/or staff training required**
  - YES
  - NO
- **Economic impact on the NHS**
  - High
  - Low

### Others
- **Possible launch date**
  - < 18 months
  - > 18 months
- **Drug in development for other indications of interest**
  - YES
  - NO
- **Other drugs in development for the same indication**
  - YES
  - NO
Outputs

-36 MONTHS REPORT
Produced annually

-18 MONTHS REPORT
Produced every 6 months

**NPIR**
(-12 months to M.A.)
"Drug Name"
"Drug Indication"

- 36 MONTHS REPORT
- General information
  - Drug/brand name/ active substance
  - Company
  - ATC Group
  - Licensee
  - Stage of development
  - Possible submission date of the MAA
  - Main proposed indication(s)
  - Ongoing studies

- 18 MONTHS REPORT
- General information
  - Drug/brand name /active substance:
    - Company
    - ATC Group
    - Route of administration
  - Possible submission date of the MAA
  - Proposed indication(s)
  - Summary of the available data on clinical efficacy and safety
  - Overview of all ongoing trials and completed studies not published
  - Possible price and economic impact (if available)
  - Alternative(s) already on the market
  - Possible competitors in development

**NPIR**
(-12 months to M.A.)
"Drug Name"
"Drug Indication"

- General information
  - Active substance
  - Brand name
  - Company
  - ATC Group
  - Dosage
  - Route of administration
  - Development state

- Clinical need and burden of disease
- Summary of efficacy/safety data from available clinical trials
- Clinical critical assessment
- Social / economic impact
- Ongoing trial(s) for the same or other indication(s)
Molecules for which an M.A. in EU is expected within 18 months (with prioritisation results of November 2011)

<table>
<thead>
<tr>
<th>ATC</th>
<th>Molecule</th>
<th>Indication</th>
<th>Classification</th>
<th>Orphan status</th>
<th>Prioritisation results</th>
</tr>
</thead>
<tbody>
<tr>
<td>L01</td>
<td>AFLIBERCEPT</td>
<td>Metastatic colorectal cancer, second-line</td>
<td>NCE</td>
<td>−</td>
<td>P</td>
</tr>
<tr>
<td>L01</td>
<td>ALPHARADIN (radium-223)</td>
<td>Bone metastasis in patients with hormone-refractory prostate cancer</td>
<td>NCE</td>
<td>−</td>
<td>KW</td>
</tr>
<tr>
<td>L01</td>
<td>CABOZANTINIB</td>
<td>Unresectable, locally advanced or metastatic medullary thyroid cancer</td>
<td>NCE</td>
<td>US</td>
<td>KW</td>
</tr>
<tr>
<td>L01</td>
<td>CARFILZOMIB</td>
<td>Relapsed-refractory multiple myeloma (monotherapy)</td>
<td>NCE</td>
<td>EU/US</td>
<td>KW</td>
</tr>
<tr>
<td>L01</td>
<td>CRIZOTINIB</td>
<td>Previously-treated, advanced ALK-positive non-small cell lung cancer</td>
<td>NCE</td>
<td>US</td>
<td>P</td>
</tr>
<tr>
<td>L01</td>
<td>EVEROLIMUS</td>
<td>Postmenopausal ER+ HER2- metastatic breast cancer progressing after endocrine therapy</td>
<td>NI</td>
<td>−</td>
<td>P</td>
</tr>
<tr>
<td>L01X</td>
<td>PERTUZUMAB</td>
<td>HER2-positive, metastatic breast cancer, first-line plus trastuzumab and docetaxel</td>
<td>NCE</td>
<td>−</td>
<td>P</td>
</tr>
<tr>
<td>L01</td>
<td>VEMURAFENIB</td>
<td>BRAF V600E mutation-positive metastatic melanoma</td>
<td>NCE</td>
<td>−</td>
<td>P</td>
</tr>
<tr>
<td>L01</td>
<td>VISMODEGIB</td>
<td>Locally advanced or metastatic basal cell carcinoma</td>
<td>NCE</td>
<td>−</td>
<td>KW</td>
</tr>
<tr>
<td>C10</td>
<td>MIPOMERSEN</td>
<td>Homozygous and severe heterozygous familial hypercholesterolemia</td>
<td>NCE</td>
<td>−</td>
<td>P</td>
</tr>
<tr>
<td>L04A</td>
<td>ALEMTUZUMAB</td>
<td>Relapsing-remitting multiple sclerosis (treatment-naive patients)</td>
<td>NI</td>
<td>−</td>
<td>KW</td>
</tr>
<tr>
<td>L04A</td>
<td>ALEMTUZUMAB</td>
<td>Relapsing-remitting multiple sclerosis (treatment-refractory patients)</td>
<td>NI</td>
<td>−</td>
<td>KW</td>
</tr>
<tr>
<td>N07</td>
<td>LAQUINIMOD</td>
<td>Relapsing-remitting multiple sclerosis</td>
<td>NCE</td>
<td>−</td>
<td>KW</td>
</tr>
<tr>
<td>N07</td>
<td>TERIFLUNOMIDE</td>
<td>Relapsing multiple sclerosis with or without progression (add-on)</td>
<td>NCE</td>
<td>−</td>
<td>KW</td>
</tr>
<tr>
<td>N07</td>
<td>TERIFLUNOMIDE</td>
<td>Relapsing multiple sclerosis with or without progression (monotherapy)</td>
<td>NCE</td>
<td>−</td>
<td>KW</td>
</tr>
</tbody>
</table>
IHSP chronology

August 2006
IHSP kickoff

Database set up

2007 2008 2009 2010 2011

- 36 reports
- 20 65 251 50

- 18 reports
- 39 34 29 26

NPIR
- 8 9 9 6

Total IHSP documents (n): 546

Update November 2011
In 1999 several Horizon Scanning Systems (HSS) established EuroScan, an information network on new and changing health technologies.

The network currently consists of 21 representatives (Canada, Denmark, Norway, Sweden, Australia, New Zealand, The Netherlands, The United Kingdom, Israel, Spain, France, Switzerland, Germany, Ireland, Austria, Italy, Finland).

Any HSS is a non-profit organization with at least 50% funding from public sources.
Since November 2008, IHSP is a member of:

- to evaluate and exchange information
- to develop the sources of information
- to disseminate the information
- to share methodology
IHSP - Working Group

Pharmaceutical Department
Verona LHU

Roberta Joppi
Luigi Mezzalira
Chiara Poggiani
Daniela Pase
Laura Agnoletto

Cineca IT-Group
Bologna

Luca Demattè
Elisa Cinconze
Elisa Rinieri
Elisa Rossi