Hospital Pharmacy in Europe
The EAHP survey 2010
Outline

- EAHP
- Methodology of the survey
- Results
  - General frame, staffing
  - Procurement
  - Production & Quality assurance
  - Clinical services
  - Patient safety
  - Education & Research
European Association of Hospital Pharmacists (EAHP)

- Created in 1972 in The Hague (NL)
- Federation of National Associations of Pharmacists
- Members of the Council of Europe
- 31 countries: 24 EU + 7 outside EU
- More than 21,000 Hospital Pharmacists working in hospitals and other healthcare facilities in Europe

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Methodology

- **87** questions on hospital pharmacy practice
- Direct approach through national coordinators of every Head of Pharmacy of the member states (4,747 in total)
- Data collection Oct. 2010 - Jan. 2011
- Total number of answers 1,238 = 26.1%
Methodology: Response rate

- green = > 20 (30)%
- yellow = 10-20%
- orange = < 10%
- red = no answer
- grey = no member

Max % = 100% (Fyrom)
Max # = 130 (Germany)
Methodology

- By insufficient response rate (<25%) check by national coordinators
- Decision on inclusion in national reports based on the national distribution of hospital types and the distribution of answering hospitals
- Rates (%) always in relation to the total number of answers to the question
- Response rate for each question ranges between 5.0% and 91.0%
Limitations by bias

- The response rate varies substantially from country to country and does not reflect the weight of the population of that country in Europe.
- Language barriers might have created a bias of answering pharmacists.
- Some of the questions might have been misunderstood by non-native English speakers.
- Enlargement of EU to eastern countries might have created a bias in relation to past survey.
General frame
Staffing
General Frame: Number of beds served
General Frame: Number of beds served

**Hospitalisation**

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<th>Sum</th>
<th>2010</th>
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<td>Average</td>
<td>708</td>
<td>703</td>
<td>648</td>
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<tr>
<td>Median</td>
<td>427</td>
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General Frame: Ownership

Hospital ownership in 2010 (n= 1102)

- Public hospital (i.e. owned by the government) 81%
- Private hospital 10%
- Church affiliated hospital 4%
- Other 5%
The biggest group of staff in European Hospital Pharmacies is:

- Green = Bachelor of Pharmacy
- Blue = Qualified Technician
- Yellow = Unqualified Technician
- Red = Pharmacist
Staffing: Qualification of Staff in Pharmacies (FTE)

- Qualified pharmacy assistants / technicians: 32%
- Pharmacists: 27%
- Non qualified pharmacy assistants: 14%
- Administrative Staff: 8%
- Trainee pharmacists (interns): 4%
- Others: 5%
- Nurses: 3%
- Cleaning personnel: 3%
- Pharmacy students: 3%
- Prescriptionists (Bachelor of Pharmacy): 1%
Staffing: Pharmacists/100 beds
(complete + partial hospitalisation)

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<thead>
<tr>
<th>Country</th>
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<tbody>
<tr>
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<td>0.9</td>
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Staffing: Shortages

Have you experienced any shortages of pharmacists (n=939) or Technicians (n=936) in your hospital pharmacy in the past 2 years?

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Staffing: Specialisation in Hospital Pharmacy

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<tr>
<td>Median</td>
<td>33.3</td>
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</table>

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Staffing: % of pharmacies with internal CPD

* Total >100% as partially more than 1 target group
Staffing: Financial support of CPD

* Total >100% as partially more than 1 system
The average number of bed served by one pharmacy did not change since 2005 but there is a decrease of complete and an increase of partial hospitalisation.

Pharmacists (27%) and qualified technicians (32%) cover 60% of the total staff.

The number of pharmacists/100 beds varies from 0.33 (Germany) to 3.47 (UK).

Only few countries did not experience shortages for pharmacists and technicians.

49% of the pharmacists are specialised in Hospital Pharmacy.
Procurement
Purchasing groups

- National multi hospital alliance: 15%
- Regional group: 17%
- Local group: 6%
- Multiple answers: 7%
- No group purchasing: 55%
The major source of procurement in European hospital pharmacies is:

- **Green** = Industry
- **Blue** = Wholesalers
- **Yellow** = Own production
- **Red** = Other pharmacies
Procurement’s source

- Industry: 46%
- Wholesaler: 51%
- Own production: 2%
- Other: 1%
Purchasing: Responsibility for medical devices

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<tr>
<td>%</td>
<td>55.8</td>
<td>77.8</td>
<td>84.6</td>
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Number of Products in formulary

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Average: 2010 = 1,006, 2005 = 1,031, 2000 = 700
Median: 2010 = 960

% Hospitals with: 2010 = 77.1, 2005 = 82.4, 2000 = 85.3
Formularies: Information content

* Total >100% as partially more than 1 information
* Total >100% as partially more than 1 system
45% of pharmacies are purchasing in groups

Industry (46%) and wholesalers (51%) are the most important suppliers

55.8% of the pharmacies are responsible also for medical devices

Formularies have an average of 1,006 products with a broad range from 246 to 1982 and an increase since 2000 by 43.7%

94.2% of the pharmacies distribute by manual picking and the total of automation is still only 10.1%
Production & Quality assurance
Batch production

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<tr>
<td>Non sterile</td>
<td>48.4</td>
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<tr>
<td>Reagents</td>
<td>16.3</td>
<td>30.1</td>
<td>33.6</td>
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- Sterile pharmaceuticals
- Non sterile pharmaceuticals
- Laboratory reagents
Sterile production of individual preparations is performed by

- **Green** = 10% of Pharmacies
- **Blue** = 80% of Pharmacies
- **Yellow** = 30% of Pharmacies
- **Red** = 50% of Pharmacies
Individual prescriptions

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<th>2005</th>
<th>2000</th>
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<td>Sterile</td>
<td>48.5</td>
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<tr>
<td>Non sterile</td>
<td>64.9</td>
<td>91.6</td>
<td>92.5</td>
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</table>
External quality certification

- External certification: 46.8%
- ISO 9001: 27.7%
- ISO 14001: 2.4%
- Others: 16.6%

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The batch as well as the individual production of sterile and non sterile medicines decreased significantly since 2000.

In average **58.5%** of pharmacies follow GMP guidelines with a broad range between countries from **0%** to **100%**.

There is a need for more resources in the field of quality assurance especially in the eastern part of Europe.

**46.6%** of the pharmacies are certified by external bodies.
Clinical services
Pharmacists are working at the ward in

- **Green** = 10% of Hospitals
- **Blue** = 80% of Hospitals
- **Yellow** = 25% of Hospitals
- **Red** = 95% of Hospitals
Presence of pharmacists at ward

- **77%** - no
- **23%** - yes occasionally
- **16%** - yes daily
- **4%** - yes decentralised*
- **3%** - yes

* pharmacists at least 50% of time at ward
Clinical services by technicians

* Total >100% as partially more than 1 activity
Outpatients services

- Yes, through the hospital in inpatient pharmacy department: 49%
- Yes, through a separately licensed outpatient pharmacy: 8%
- Both: 9%
- No: 34%
Clinical services nutrition

- Participation in TPN team only: 58%
- Participation in TPN/Enteral nutrition team: 42%
- Not involved in decisions about nutrition prescription: 32%
- Other: 10%
Clinical services pharmacokinetic

- No: 81.1%
- Yes: 18.9%
- Inpatients: 0.2%
- Outpatients: 13.5%
- Both: 5.3%
Drug information by pharmacist

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<td>%</td>
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<td>29.2</td>
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</table>

71% yes
29% no
Documentation of services

- 76% No
- 24% Yes*
- 14% Inpatients
- 2% Outpatients
- 8% Both

* At least 80% of interventions
Only 23% of pharmacies offer clinical services at the ward and only 7% do it on regular base.

Clinical services for outpatients are common (67%).

The major field of consultations are antibiotics, cytotoxic induced nausea and nutrition.

Drug information by pharmacists is implemented only in 29% of the hospitals and constant since 2000.

Only 24% of the pharmacies document at least 80% of their interventions.
Patient safety
Policy of hospital in safe medication practice

- 74% at least 1 activity
- 26% none

% of ‘at least 1’

- Yellow bar: policy on safe medication practice, 51.1%
- Red bar: committee for safe medication practice, 38.1%
- Blue bar: dedicated team doctor/pharmacist/nurse, 35.2%
- Green bar: clinical incident reporting system (CIRS), 55.1%

** Total >100% as partially more than 1 activity
Patient safety system implemented in hospital

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Average: 55.0%
The most common activity for save medication in European hospitals is

- **Green** = Therapeutic drug monitoring
- **Blue** = Drug information
- **Yellow** = Unite dose dispensing
- **Red** = Centralized cytotoxics reconstitution
Implemented activities in safe medication practice*

* At least 50% of activities on regular base  ** Total >100% as partially more than 1 activity
Patient care of adverse reactions

- No: 46%
- Yes: 54%

- Inpatients: 31%
- Outpatients: 19%
- Both: 4%

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Activities to avoid medication errors

- No: 47%
- Yes: 53%
- Inpatients: 31%
- Outpatients: 3%
- Both: 19%
* At least 80% of the interventions
** Total >100% as partially more than 1 activity
SOP for withdrawing own products

<table>
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<th>2010</th>
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<th>2000</th>
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<tbody>
<tr>
<td>%</td>
<td>64.1</td>
<td>55.5</td>
<td>61.0</td>
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</table>

36% yes
64% no
Patient safety

Patient safety is in focus of hospital pharmacies and **80%** of them have implemented activities in safe medication practice.

There is a broad range between countries from **0%** to **100%** with some need for improvement especially in the eastern part of Europe.

There is a lack of documentation with only **16%** of interventions registered in medical records.

**76%** of pharmacies have at least 1 education activity in safe medication.

**64%** of pharmacies with production have a SOP for withdrawing own products.
Education & Research
Affiliation with teaching programmes

**Total >100% as partially more than 1 activity**
Training of students

% of ‘at least 1’

- Pharmacy students: 81.5%
- Post graduate pharmacy training programme: 48.2%
- Technicians training programme: 55.5%

** Total >100% as partially more than 1 activity
How many hospital pharmacies are involved in research

- Green = 10% of Pharmacies
- Blue = 90% of Pharmacies
- Yellow = 30% of Pharmacies
- Red = 60% of Pharmacies
Participation in research

A) Research (including clinical drug trials)
B) Drug use evaluation programmes
C) Pharmaco-epidemiological studies

** Total >100% as partially more than 1 activity
Hospital pharmacies are highly involved (68%) in teaching programmes for health professionals including physicians, pharmacists, technicians and nurses.

61% of hospital pharmacies are involved in clinical research.
Take home messages

The 4\textsuperscript{th} pan-European survey on Hospital Pharmacy is based on 1,238 (26.1\%) answers out of all European pharmacies (# = 4,747).

Despite some unavoidable bias, the survey is a valuable source of information about the status quo of hospital pharmacy in Europe.

The data from the survey highlight priorities for actions to achieve the state of the art as postulated in the Basel statements of FIP.
Thanks for great input and dedication!

Tajda Miharija Gala
University Medical Centre Ljubljana

Prof. Juraj Sykora
Pharmacy Department SZU
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EAHP board members responsible for the survey
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AUSTRIA
Silvia HETZ

BELGIUM
Raphaël COLLARD
Sofie VERBEKE

BOLGARIA
Nina PURVANOVA
Ilko GETOV

BIH
Enisa SALIHEFENDIĆ
Tijana MARINKOVIĆ

CROATIA
Marijeta DUKARIĆ KURTIĆ
Ana CRNKOVIĆ

CZECH REP.
Helena ROTTEROVA
Petr Horak

DENMARK
Helle McNULTY
Gitte NIELSEN

ESTONIA
Tiia VALS

FINLAND
Hanna TOLONEN

FYROM
Maja KOVAČEVA

FRANCE
André RIEUTORD

GERMANY
Steffen AMANN

GREECE
Despina MAKRIDAKI

HUNGARY
Gyöngyver SOOS

IRELAND
Joan PEPPARD

ITALY
Ilaria UOMO

LATVIA
Valdis PIRSKO

LITHUANIA
Birutė VARANAVICIENE

LUXEMBOURG
Patrick ENGELHARDT

NETHERLANDS
Rob MOSS

NORWAY
Hans OVERDIEK

PORTUGAL
Frank JORGENSEN

POLAND
Aida BATISTA

SERBIA
Dariusz SMOLINSKI

SLOVAKIA
Dragana RAJINAC

SLOVENIA
Juraj SYKORA

SLOVENIA
Tajda MIHARIJA GALA

SPAIN
María José TAMES

SWITZERLAND
Eduardo ECHARRI

SWEDEN
Susanna KUSSMANN

UK
Per Nydert

Richard CATELL