



# Pharmine

## PHARMINE

### ***PHARMacy education IN Europe***


### **on education and training for hospital pharmacy in Europe**

EAHP, Barcelona, March 2014

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Executive Director, Pharmacolor Consultants Nancy

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# Pharmine

## Pharmacy education for hospital pharmacy.

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First EAFP survey  
on pharmacy  
education: 1994  
(EAFP founded in  
Chatenay, 1992).

4/16/2014


**SESSION II**

Chairmen: Pr W. GLOMBITZA & Pr B. DEL CASTILLO GARCIA

**"EVALUATION AND COMPARISON OF  
EDUCATION AND TRAINING IN  
EUROPEAN FACULTIES OF PHARMACY"**

Communications from:

- Pr. AHLGRIMM (Germany)
- Pr. BOURLIGNON (France)
- General discussion, Conclusions and recommendations.



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Directive  
85/432/EEC  
and  
pharmacy  
education.

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**Pr. AHLGRIMM (Germany)**

When the Council of the European Community enacted in 1985 the Directive concerning mutual recognition of pharmacist diplomas it was clear among experts that the statement of the first Directive 85/432/EEC was wrong. There was not at all a broad comparability of training courses.

Slide No. 1

Directive 85/432/EEC:

Whereas, with a view to achieving mutual recognition . . . . . the broad comparability of training courses in the Member States enables coordination in this field to be confined to the requirement that minimum standards be observed, . . .

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## Concept of “subject areas”.

Part of the coordinating provisions in this Directive are the following criteria:

- A minimum education period, that means five years
- Subject areas in which the student has to obtain knowledge
- And a list of topics which have to be dealt with during the training

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### Breakdown of Subject Areas


- I. Chemistry
  - general and inorganic chemistry
  - organic chemistry
  - analytical chemistry
  - pharmaceutical chemistry, including analysis of medicinal products
  - medical physicochemistry \*
  - pharmaceutical analysis \*
- II. Physics/mathematics/computing/statistics
  - physics
  - mathematics/computing \*
  - statistics \*
- III. Biology/biochemistry/pharmacology
  - plant and animal biology
  - general and applied biochemistry
  - microbiology
  - pharmacology
  - physicochemistry \*
- IV. Pharmacy/technology
  - pharmaceutical technology
  - finished medicinal products \*

### Breakdown of Subject Areas (cont'd)

- V. Medicine/pharmacology/toxicology
  - anatomy, physiology, medical terminology
  - pharmacology/pharmacotherapy
  - toxicology
  - pathology/histology \*
  - nutrition \*
  - bacteriology/immunology \*
  - parasitology \*
  - hygiene \*
  - emergency therapy
- VI. Law/social aspects of pharmacy
  - legislation/professional ethics
  - philosophy \*
  - economics \*
  - management \*
  - history of pharmacy \*
  - public health \*

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## The PHARMINE project

The PHARMINE consortium consisted of:

- four universities (Brussels, Nancy, London and Lisbon) members of the European Association of Faculties of Pharmacy
- EU partner associations representing
  - community (Pharmaceutical Group of the European Union)
  - hospital (European Association of Hospital Pharmacists)
  - industrial (European Industrial Pharmacists Group)
  - plus the European Pharmacy Students' Association

PHARMINE surveyed:

- WP7: departments and pharmacy education and training (PET)
- WP3-5: competences for practice (WP4: hospital pharmacy)
- WP6: QA in PET

WP1: MNGT  
WP2: DISS

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## The PHARMINE WP7 survey

  **PHARMINE**  
Pharmacy Education in Europe

**The PHARMINE survey of European higher education institutions delivering pharmacy education & training**  
V1



*If you encounter any problems when filling out this form please contact the leader of PHARMINE work program WP7:*  
[jeffrey.atkinson@orange.fr](mailto:jeffrey.atkinson@orange.fr)

**PHARMINE**  
Coordinator: Bart Bambaas, School of Pharmacy, Vrije Universiteit Brussel, Brussels, Belgium. [bambaas@vub.ac.be](mailto:bambaas@vub.ac.be)  
Executive Director: Jeff Atkinson, Pharmacolor Consultants Nancy, Villers, France. [jeffrey.atkinson@orange.fr](mailto:jeffrey.atkinson@orange.fr)

With the support of the Lifelong Learning Programme of the European Union (142078-LLP-1-2008-BE-ERASMUS-ECDSP)

Website: [www.pharmine.org](http://www.pharmine.org)

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**The PHARMINE WP7 survey publications**

ATKINSON, J., ROMBAUT, B.

*The 2011 PHARMINE report on pharmacy and pharmacy education in the European Union*

Pharmacy Practice (Internet) 2011 Oct-Dec;9(4):169-187.  
[www.pharmacypractice.org](http://www.pharmacypractice.org)

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**The PHARMINE WP7 survey publications**

ATKINSON, J., ROMBAUT, B.

*The PHARMINE study on the impact of the European Union directive on sectoral professions and of the Bologna declaration on pharmacy education in Europe.*

Pharmacy Practice (Internet) 2011 Oct-Dec;9(4):188-194  
[www.pharmacypractice.org](http://www.pharmacypractice.org)

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## The PHARMINE WP7 survey publications

GUIMARÃES MORAIS JA, CAVACO AM,  
ROMBAUT B, ROUSE M, ATKINSON J.

*Quality assurance in European pharmacy  
education and training.*

Pharmacy Practice (Internet) 2011 Oct-  
Dec;9(4):195-199.  
[www.pharmacypractice.org](http://www.pharmacypractice.org)

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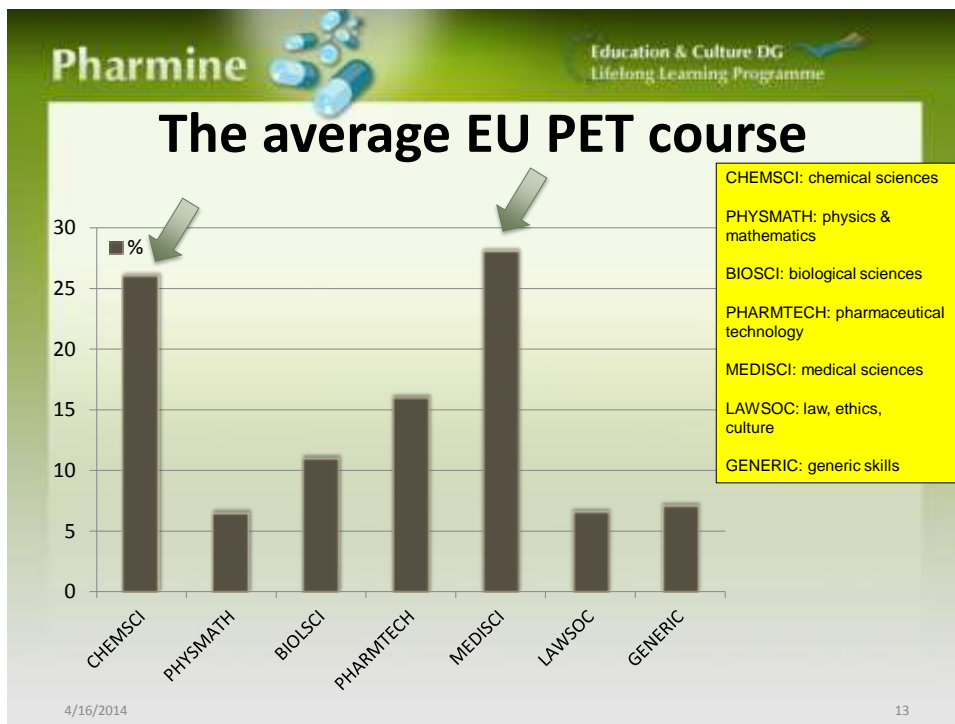
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## Staff, pharmacists and work load in PET.

(n=31 faculties in 31 countries)

	<b><u>Mean±SEM</u></b>
<b>Staff</b>	<b>75±9/faculty</b>
<b>Pharmacists graduating/year</b>	<b>118±14/faculty</b>
<b>Pharmacists/staff</b>	<b>1.6</b>
<b>Total hours over 5 years</b>	<b>5348±335</b>
<b>Project work (hours)*</b>	<b>677±154</b>
<b>Project hours as % total</b>	<b>12.7%</b>

4/16/2014 \*: often research project (excluding traineeship) 12



## Pharmacy Education in 1994

Subject area	% (range)
Chemistry	25-46
Biological sciences	12-32
Medical sciences	11-30
Pharmaceutical technology	6-22
Physics and Mathematics	3-13
Law and Social aspects	1-16

EAFP. Evaluation and comparison of education training in European Faculties of Pharmacy. 1994  
[http://enzu.pharmine.org/media/filebook/files/Bourlioux\\_full\\_report.pdf](http://enzu.pharmine.org/media/filebook/files/Bourlioux_full_report.pdf)

AACP Annual Meeting

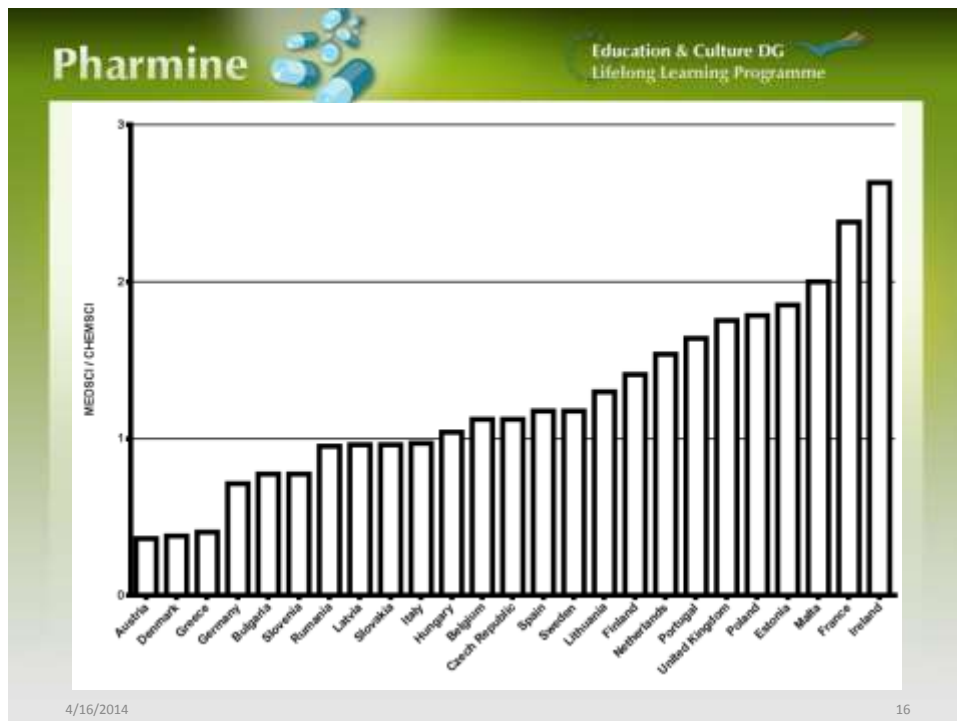


## Pharmacy Education in 2006

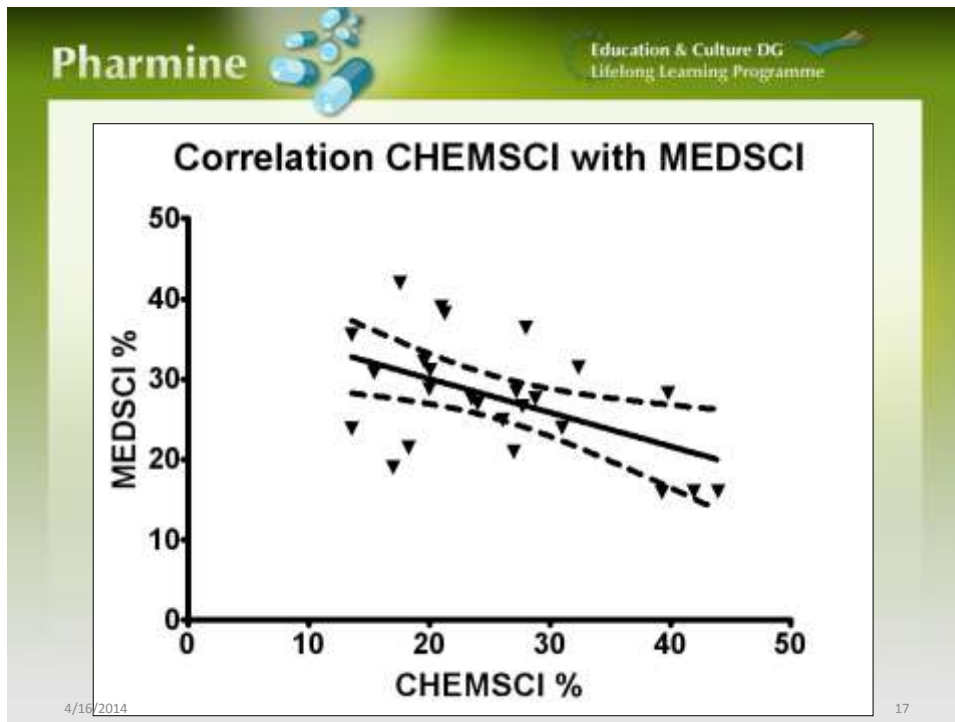
Subject area	%
Medical sciences	28.0% ▲▲
Chemistry	24.0%
Pharmaceutical technology	15.0% ▲
Biological sciences	11.0%
Physics and Mathematics	6.4% ▬
Generic	6.4% ■
Law and Social aspects	6.2% ■


Atkinson J, Rombaut B. The PHARMINE study on the impact of the European Union directive on sectoral professions and of the Bologna declaration on pharmacy education in Europe. *Pharmacy Practice* 2011; 9(4): 188-194.

AACP Annual Meeting







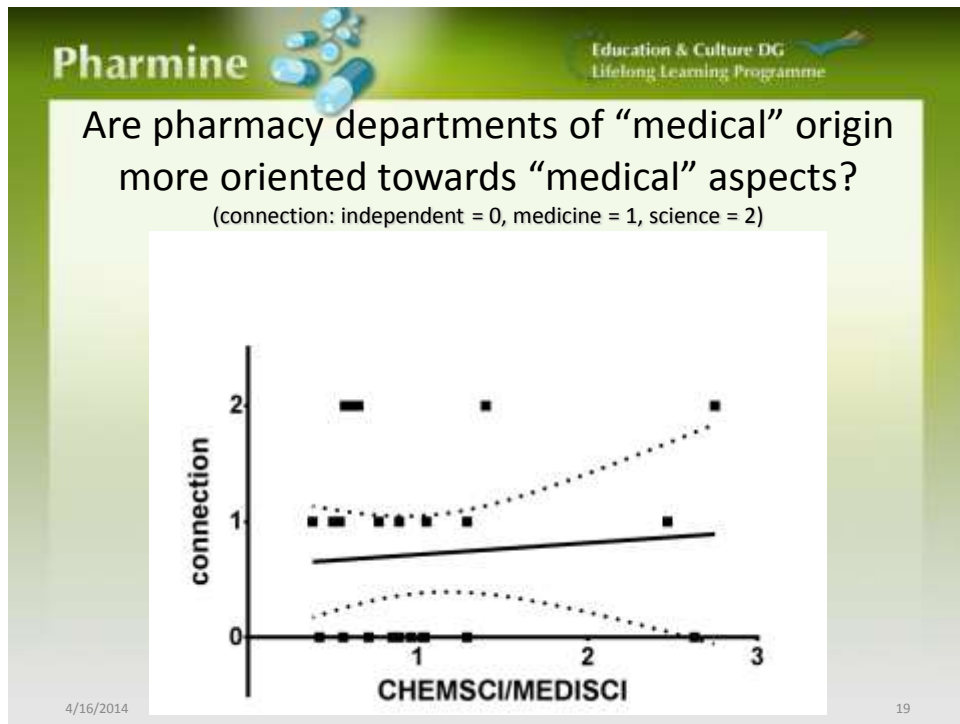
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### Historical $\pm$ contemporary adherence of European pharmacy departments

(n=31 faculties in 31 countries)

	<u>Number</u>	<u>%</u>
<b>To a medical faculty</b>	<b>16</b>	<b>52</b>
<b>To a science faculty</b>	<b>7</b>	<b>22</b>
<b>Independent</b>	<b>8</b>	<b>26</b>

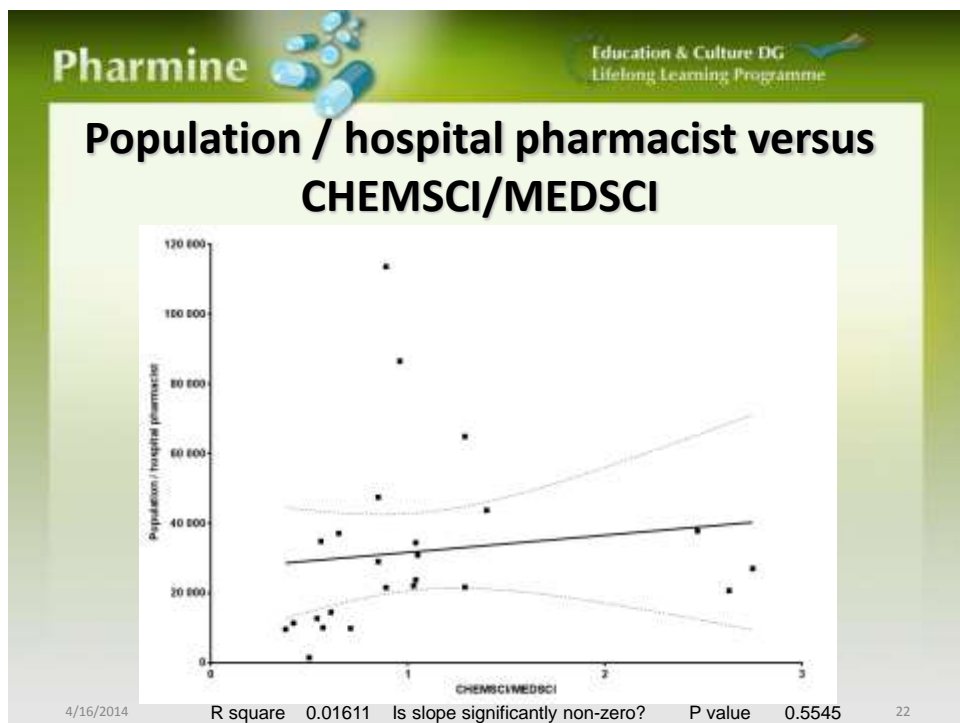
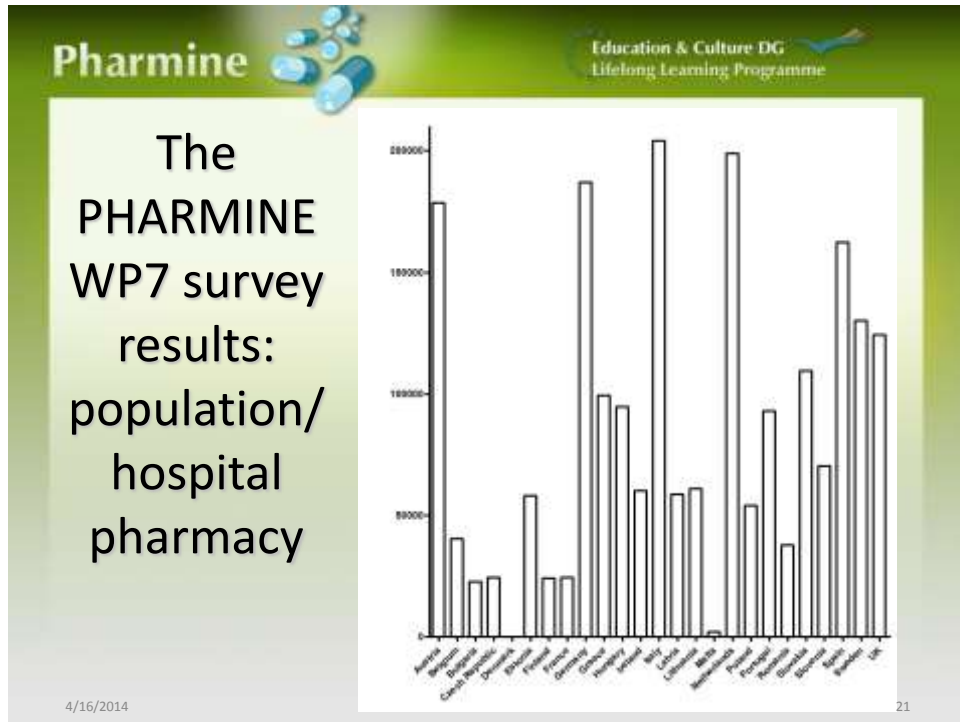
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MEDSCI / CHEMSCI	Country	Depts.	Hospital specialisation pre-grad/registration	Hospital specialisation post-grad/registration
0.36	Austria	Vienna	No	No
0.38	Denmark	Copenhagen Uni. S. Denmark	No	M.Sc. Clinical pharmacy
0.40	Greece	Athens Patras Thessaloniki	No	M.Sc. Clinical pharmacy
2.00	Malta	Msida	From 4 <sup>th</sup> year on	M.Sc. Clinical pharmacy
2.38	France	Lille	From 3 <sup>rd</sup> year on Yet: unicity of diploma	From 5 <sup>th</sup> year on: 4-year internship
2.63	Ireland	Dublin - RSCI	No	No

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## Follow-on from PHARMINE:

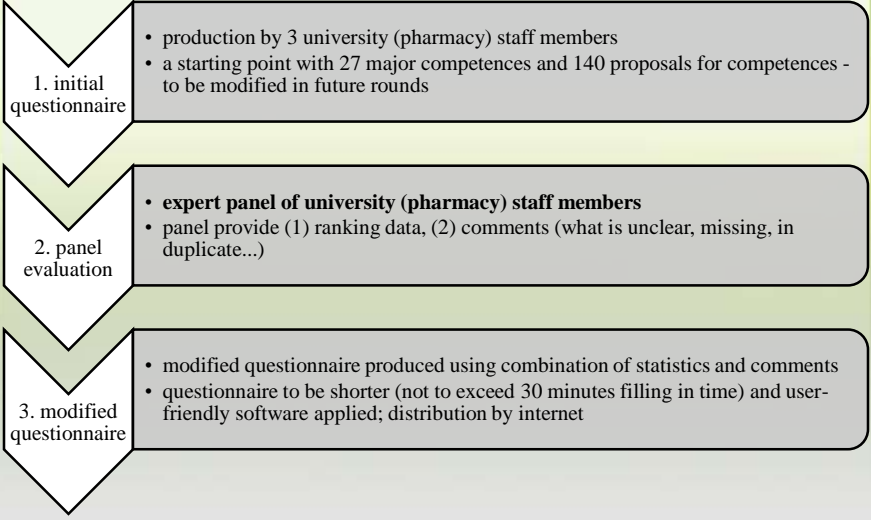
### Quality Assurance in European Pharmacy Education and Training / PHAR-QA

 Lifelong Learning Programme  
PHAR-QA Quality Assurance in European Pharmacy Education and Training
 

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## The PHAR-QA methodology 1.



1. initial questionnaire
  - production by 3 university (pharmacy) staff members
  - a starting point with 27 major competences and 140 proposals for competences - to be modified in future rounds
2. panel evaluation
  - **expert panel of university (pharmacy) staff members**
  - panel provide (1) ranking data, (2) comments (what is unclear, missing, in duplicate...)
3. modified questionnaire
  - modified questionnaire produced using combination of statistics and comments
  - questionnaire to be shorter (not to exceed 30 minutes filling in time) and user-friendly software applied; distribution by internet

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## The PHAR-QA methodology 2.

4. panel  
evaluation

- **expert panel from the pharmacy community** (university staff, students, community pharmacists, hospital pharmacists, industrial pharmacists, and others (clinical biologists, etc.))
- panel provide ranking data and comments

5. modified  
questionnaire

- modified questionnaire produced using combination of statistics and comments
- questionnaire shorter or longer

6. final  
version

- repeat of stages 4 and 5 as required
- questionnaire shorter or longer
- final version → the PHAR-QA framework of competences

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## QA-PHAR – pharmacy competences framework

 **Lifelong Learning Programme**

The PHAR-QA framework of competences for pharmacists

**The PHAR-QA survey of competences for pharmacists**

The PHAR-QA (Quality assurance in European pharmacy education and training) funded by the EC/EACEA, will produce a framework of competences for pharmacy practice and a quality assurance system to back these up.

The PHAR-QA competence framework is primarily in line with the EU directive on the external profession of pharmacy but also takes into account the diversity of the pharmacy profession and the on-going changes in European healthcare systems (with an increasingly important role for pharmacists) and in the pharmaceutical/biotechnological industry. Changes in the European Higher Education Area, especially those involving the bachelor and master degree organisation are also considered when producing the framework.

You are asked to rank the importance of the competences taking into account that the survey applies to the wide range of domains of pharmaceutical activity. Respondents should concentrate on competences needed for all pharmacists - not only on those for their speciality. It also applies to Europe - minor differences in different countries should not be stressed.

If you wish to change your ranking for 1 or several competences click on "Previous" to reach the relevant page(s) before the final validation of your replies.

In the "My comments" box you can:

- + explain your ranking,
- + explain why you were unable to rank a competence,
- + suggest competence(s) that should be added.

Following analysis of your replies, a second version will be produced for your evaluation. Following refinement of the framework via this repetitive Delphi process, a final version will be produced. This will form the basis of the quality assurance system.


Further information can be obtained from Jeffrey ATKINSON, executive director of PHAR-QA.  
[jeffrey.atkinson@phar-qanet.eu](mailto:jeffrey.atkinson@phar-qanet.eu)  
<http://phar-qanet.eu>

Thank you for participating in this survey.

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## QA-PHAR – pharmacy competences framework

 Lifelong Learning Programme  
The PHAR-QA framework of competences for pharmacists

**Personal competences: learning and knowledge**

The pharmacist as an expert

**3. Personal competences: learning and knowledge.**  
According to your experience how would you rank each competence?

	Not important	Quite important	Very important	Essential	I cannot rank this competence
1. Capacity to learn including continuous professional development (CPD)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Ability to learn others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Analysis: ability to apply topics to problems solving, evaluating risks and costs and following up on the solution found	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Synthesis: capacity to gather relevant knowledge and summarise the key points	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Capacity to evaluate scientific data in line with current scientific and technological progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Ability to interpret up-to-date and critical evidence-based medical sciences and apply the knowledge to pharmaceutical practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Skills in scientific and technical research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any comments?

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## QA-PHAR – pharmacy competences framework

 Lifelong Learning Programme  
The PHAR-QA framework of competences for pharmacists


**Patient care competences - drug interactions**

**14. Patient care competences - drug interactions.**  
According to your experience how would you rank the need for competence in the various areas below?

	Not important	Quite important	Very important	Essential	I cannot rank this competence
1. Drug-drug interactions: identification, understanding and prevention of drug-drug interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Drug-patient interactions: identification, understanding and prevention of drug-related interactions, including those that precede or occur first use of a specific drug	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Drug-disease interactions: identification, understanding and prevention of drug-disease interactions (e.g. NSAIDs on heart failure)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any comments?

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## QA-PHAR – the European network in QA for PET

### Organisation of MNGT for QA-PHAR

Administrator: B. Rombaut, VUB, Executive Director: J. Atkinson, PCN  
 General Secretaries: A. Cavaco, Lisbon, D. Rekkas, Athens, D. Volmer, Tartu

<u>"Northern"</u>	<u>"Central"</u>	<u>"Eastern"</u>	<u>"Western"</u>	<u>"Southern"</u>
Regional directors D. Volmer - Estonia J. Hirvonen – Finland	Regional directors B. Bozic - Slovenia S. Polak - Poland	Regional directors V. Petkova - Bulgaria C. Rais, Romania	Regional directors B. Thys - Belgium H. J. Haisma – The Netherlands	Regional director A. Cavaco - Portugal D. Rekkas - Greece
Members: Estonia Finland Latvia Lithuania Sweden Iceland Norway	Members: Slovenia Poland Czech Republic Slovakia Hungary Austria	Members: Bulgaria Romania Albania Bosnia Croatia FYROM Kosovo Moldova Montenegro Serbia Ukraine	Members: Belgium The Netherlands Ireland UK Germany Switzerland	Members: Portugal Spain France Italy Greece Malta Turkey

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## QA-PHAR Stakeholders.

Stakeholders (not funded, invited to meetings)

- EU DGs: Internal Market, Health
- Professional pharmacist organisations
  - a. EU
    1. PGEU <http://www.pgeu.eu/>
    2. EAHP <http://www.eahp.eu/>
    3. EIPG <http://www.eipg.eu/>
    4. EPSA <http://epsa-online.org/content/index.php>
  - b. International
    1. FIP <http://www.fip.org/www/>
- QA agencies
  - a. EU – ANECA Spain: <http://www.aneca.es/eng/ANECA>
  - b. ACPE <http://www.acpe-accredit.org/>
- MEDINE <http://medine2.com/>
- National professional bodies
  - a. Orders
  - b. Societies and associations


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## PHAR-QA survey

<https://www.surveymonkey.com/s/pharqasurvey1>

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**PHARMINE follow-on in education  
and training for hospital pharmacy:**

**PHAR-HO**

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## PHAR-HO 1

### Survey followed by harmonisation of hospital pharmacy competences

- Survey and Delphi - PHAR-QA methodology
- Future development of hospital pharmacy specialisation curricula with use of MOOCS for pre- and post-registration distance learning (CPD)

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## Hospital pharmacy competences

### Outcome specific competencies for Hospital Pharmacy (3)

#### SPECIFIC COMPETENCIES

- Intensive care
- Rare diseases and emergency situation
- Hospital management
- Interface management
- Specialist practice
  - TDM/Pharmacokinetic
  - Oncology
  - Radiopharmacy
  - Advanced therapies
  - Nosocomial infections
  - Paediatrics
- Development and research



 © Dr Roberto Portini - Pharmine meeting - Lisbon 25/06/2011

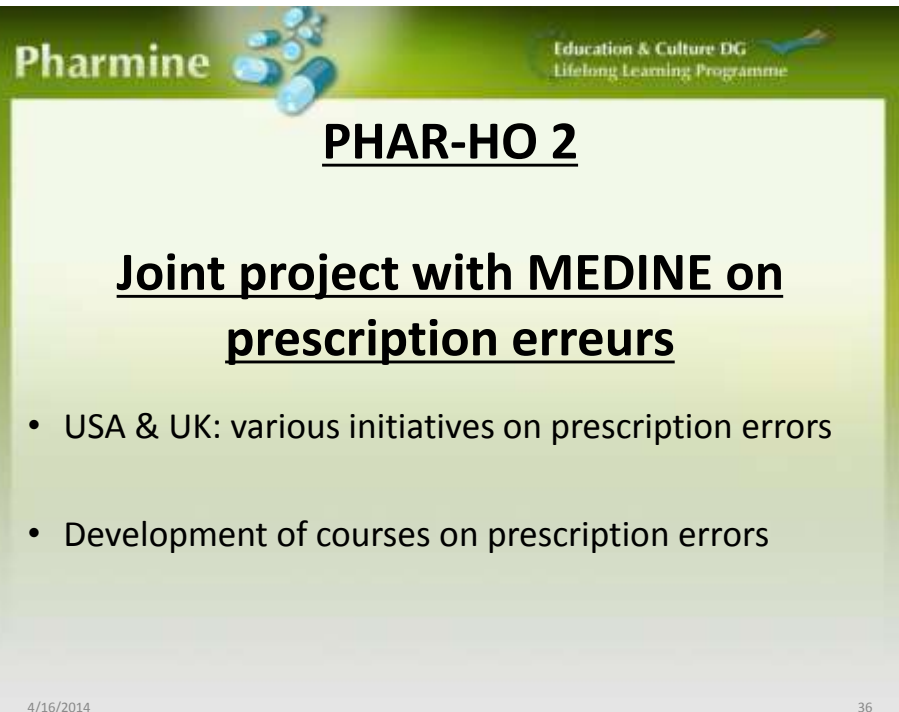
12 34

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The screenshot shows the Harvard Open Courses website. At the top, there is a green banner with the 'Pharmine' logo on the left and the 'Education & Culture DG Lifelong Learning Programme' logo on the right. Below the banner, the text 'Massive Open Online Course' is displayed in a large, bold font. Underneath, the 'HARVARD EXTENSION SCHOOL' logo is visible. The main content area features a navigation bar with links such as 'About Us', 'Courses', 'Registration', 'Degrees & Certificates', 'Distance Education', 'Exams, Grants, & Policies', 'Resources', and 'News & Info'. A large image of a classical building facade is shown. Below the image, the text 'Harvard Open Courses: Open Learning Initiative' is followed by social media icons. A section titled 'edX courses (Harvard-MIT initiative)' provides information about registering for edX courses. Another section, 'Harvard open courses at Harvard Extension School', lists free Harvard courses available through the Open Learning Initiative. A video player is partially visible at the bottom, showing a lecture titled 'The Heroes and the Anti-Heroes in Classical Greek Civilization' by Gregory Nagy.

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The slide features a green banner at the top with the 'Pharmine' logo on the left and the 'Education & Culture DG Lifelong Learning Programme' logo on the right. The main title 'PHAR-HO 2' is centered in a large, bold, black font. Below the title, the subtitle 'Joint project with MEDINE on prescription errors' is centered in a bold, black font. The subtitle is underlined. Below the subtitle, there is a bulleted list with two items: 'USA & UK: various initiatives on prescription errors' and 'Development of courses on prescription errors'. The slide is numbered '36' in the bottom right corner.

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### Teaching Clinicians about Drugs

1. Pharmacists are **well trained to play a larger role in providing reliable drug information to other health care professionals**. ...need for inter-professional health education and **collaborative patient care**.
2. Active **engagement of pharmacists in hospital and community settings** provides an excellent **source of unbiased drug information**. Pharmacists are established providers of medication education for medical students and residents as part of interdisciplinary teams in academic settings.
3. Their involvement in **patient care activities** includes education about medications, diseases, and adherence; disease-state management; and **drug-utilization review** — all of which result in improved health care outcomes.

*n engl j med 364;26 nejm.org june 30, 2011*

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**PCN**

*Pharmacolor  
Consultants  
Nancy*



<http://pcn-consultants.com/>

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## PHAR-QA survey

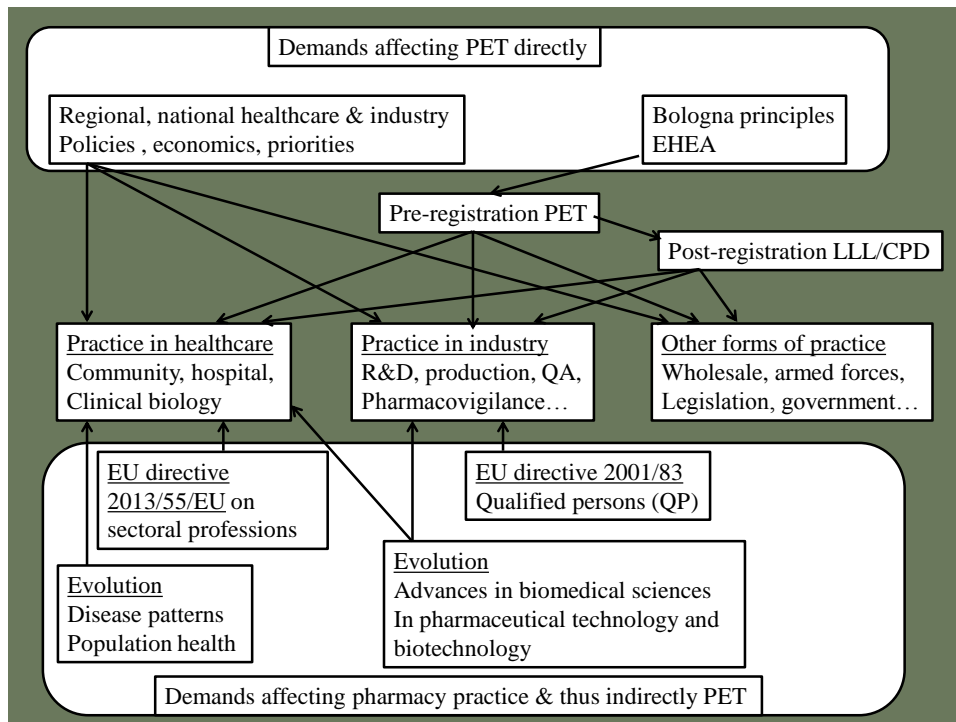
<https://www.surveymonkey.com/s/pharqasurvey1>

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## Spare slides.

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**PHARMINE looks at education and training for hospital pharmacy practice**

**The 2010 EAHP survey\* looked at the role of hospital pharmacists in education and training of pharmacists and doctors.**

\*: Frontini, *et al. Eur. J. Hosp. Pharm.*, 1012; 19: 385-387.

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## Potential funding



**EXECUTIVE AGENCY FOR HEALTH AND CONSUMERS**  
Health Programme

**Call 2013: Projects**  
*This call for proposals for 2013 is closed.*

**How to apply**  
In accordance with the EU Health Programme, a call for proposals for projects is launched every year. The next call is expected in early 2014.  
For submitting a proposal for a project you need to fill in and send an **application form**. Note that this application form varies, depending on the project proposal call you would like to respond to.

If you are planning to apply for a project grant in one of the following areas:

- Improving access to early diagnosis of MRCNS and timely treatment and care of most vulnerable groups and in priority regions
- Addressing chronic diseases and promoting healthy ageing across the life cycle
- Supporting the priorities of the European Innovation Partnership on Active and Healthy Ageing

**Contact:**  
If you have questions about this call please contact SANC-projects at [SANC-PPP-Unit@ec.europa.eu](mailto:SANC-PPP-Unit@ec.europa.eu)

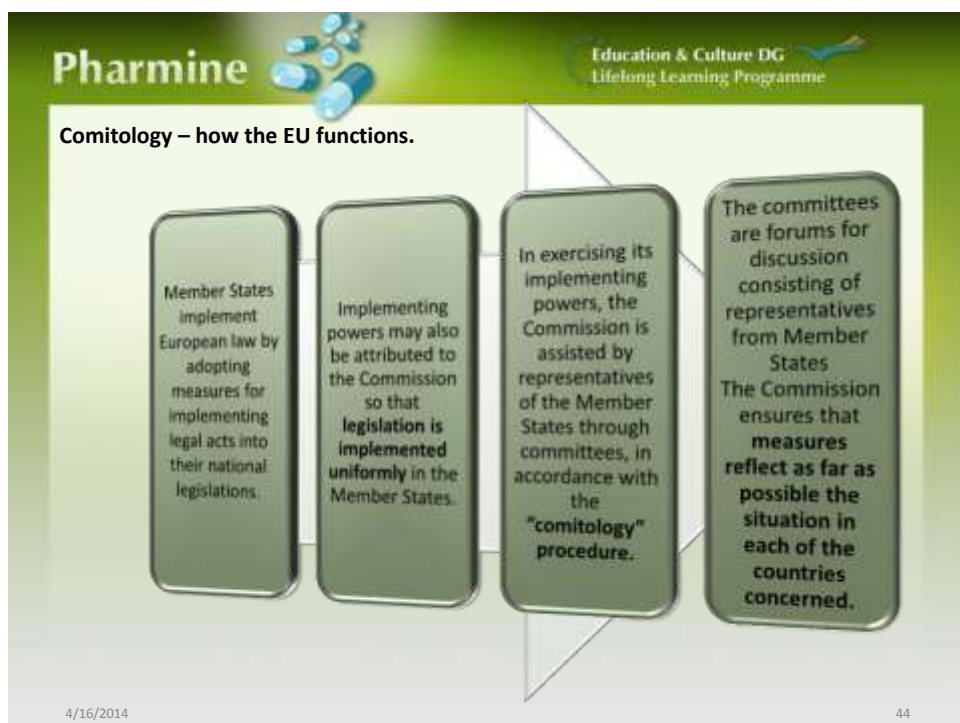
**Who can apply?**  
**Country eligibility**  
To receive EU financial support for a project, i.e. to be a main beneficiary or associated partner, this organisation needs to be legally established in:  
 \* The European Union (any of the 27 Member States), or


**Calls and documents**

- Medical Area of Public Health Programme
- Early diagnosis to be an expert for the public programme
- Priority diseases
- Health Programme activities
- Project proposals
- EU Health and Consumers Public Health Portal
- EU Agencies

**Calls**  
Health Programme:  
new open call

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### Teaching Clinicians about Drugs

...Avorn highlights the need for high-quality, unbiased physician education regarding drug therapies. Although public policy is important, pharmacists already serve as knowledgeable and accessible participants in clinician education and patient-specific pharmaceutical care. **Pharmacists are well trained to play a larger role in providing reliable drug information to other health care professionals. The Institute of Medicine has described a need for inter-professional health education and collaborative patient care. 2 Active engagement of pharmacists in hospital and community settings provides an excellent source of unbiased drug information. Pharmacists are established providers of medication education for medical students and residents as part of interdisciplinary teams in academic settings. 3 Their involvement in patient care activities includes education about medications, diseases, and adherence; disease-state management; and drug-utilization review — all of which result in improved health care outcomes. 4 Standards for medical residency programs include ...**

*n engl j med 364;26 nejm.org june 30, 2011*

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The [British Pharmacological Society](#) and the [Medical Schools Council](#) are working together to develop the Prescribing Skills Assessment (PSA) that will allow all students to demonstrate their competencies in relation to the safe and effective use of medicines.

#### Why are we doing this?

Prescribing is a fundamental part of the work of Foundation year one doctors, who write and review many prescriptions each day. It is a complex task requiring knowledge of medicines and the diseases they are used to treat, careful judgement of risks and benefits of treatment, and attention to detail. As well as offering the potential for improving health, prescribing is an activity associated with potential hazards: a [recent GMC-sponsored study](#) found that 9% of hospital prescriptions contain errors. It is also apparent in other research (see [How prepared are medical graduates to begin practice?](#)) that this is the area of the Foundation Doctor role that new graduates find the most challenging. In response, the General Medical Council (which regulates undergraduate medical education in the UK) has placed a much greater emphasis on the prescribing competencies expected of new graduates in its latest recommendations to medical schools ([Tomorrow's Doctors 2009](#)).

#### What are we proposing?

Our aim is not to place any additional hurdles in front of UK medical students; rather it is to provide a reliable and validated assessment that will serve to demonstrate that the core prescribing competencies outlined in [Tomorrow's Doctors \(2009\)](#) have been achieved by all graduates.

The proposed assessment is pass/fail, and medical students will be expected to pass the assessment prior to graduation. The ultimate goal is to create an online assessment, to be undertaken by final year medical students. Once live, students who fail the assessment will have opportunities to retake. Medical schools will be responsible for provide further training and support in prescribing for those retaking the assessment prior to graduation.

#### How is the assessment being developed?

The MSC and BPS are leading the development of the Prescribing Skills Assessment. The MSC and BPS are supported by the Assessment Board to the PSA, a Technical Capacity and Delivery Group and a cross sector Stakeholder Group. The Assessment Board to the PSA is responsible for overseeing the recruitment experts to write and review assessment items and for developing quality assurance processes. The Stakeholder Group includes a student representative from the BMA, and will enable key stakeholders, including medical students, to be involved in the development of the assessment and the associated policies and processes.

Piloting will continue in 2013 and decisions around live implementation will be based on consensus and evidence.

4/16/2014

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