

HOSPITAL AND CLINICAL PHARMACIST – PRESENT AND FUTURE ROLES

A photograph of two seagulls perched on a rocky cliff overlooking the ocean. One seagull is standing upright on the right, while the other is on the left with its wings spread as if landing or taking off. The background is a vast, blue sea under a clear sky.

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What is a HOSPITAL PHARMACIST ? (EAHP)

- Hospital pharmacy is the health care service, which comprises the art, practice, and profession of **choosing, preparing, storing, compounding, and dispensing** medicines and medical devices, advising healthcare professionals and patients on their **safe, effective and efficient** use.
Hospital pharmacy is a specialised field of pharmacy which forms an integrated part of patient health care in a health facility.
- Hospital pharmacy is the profession that strives to continuously maintain and improve the medication management and pharmaceutical care of patients to the highest standards in a hospital setting.
- Hospital pharmacists provide services to patients and health care professionals in hospitals.

The missions of the hospital pharmacist

- to be part of the **medication management** in hospitals, which encompasses the entire way in which medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that medicines make to producing informed and desired outcomes
- to enhance the **safety and quality of all medicine related processes** affecting patients of the hospital
- to ensure the 7 “rights” are respected: right patient, right dose, right route, right time, right drug with the right information and documentation

What is a CLINICAL PHARMACIST ?

ESCP

Clinical Pharmacy - a Definition

- Clinical Pharmacy (...) is a health specialty, which describes the activities and services of the clinical pharmacist to develop and promote the rational and appropriate use of medicinal products and devices.
- Clinical Pharmacy includes all the services performed by pharmacists practising in hospitals, community pharmacies, nursing homes, home-based care services, clinics and any other setting where medicines are prescribed and used.
- The term “clinical” **does not** necessarily **imply** an activity implemented in a **hospital setting**. A community pharmacist may perform clinical activities as well as a hospital practitioner.

How does clinical pharmacy differ from pharmacy?

- the discipline of pharmacy embraces the knowledge on synthesis, chemistry and preparation of drugs
- clinical pharmacy is more oriented to the analysis of **population needs with regards to medicines, ways of administration, patterns of use and drugs effects on the patients.**
- The **focus (...) moves from the drug to the single patient or population** receiving drugs.

Clinical Pharmacy - Overall Goal

The (...) goal of clinical pharmacy activities is to promote the correct and appropriate use of medicinal products and devices. (...) **maximising the clinical effect** of medicines, i.e., using the most effective treatment for each type of patient ; **minimising the risk** of treatment-induced adverse events, i.e., monitoring the therapy course and the patient’s compliance with therapy (...) **minimising the expenditures** for pharmacological treatments (...) trying to provide the best treatment alternative for the greatest number of patients.

So, where are the differences?

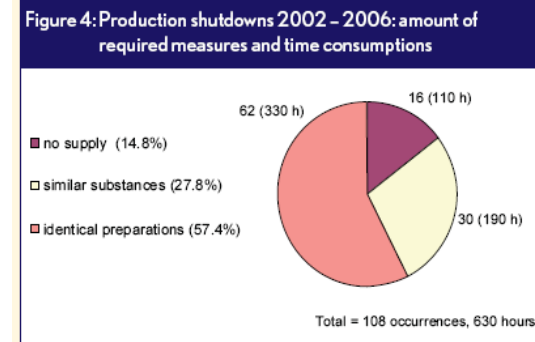
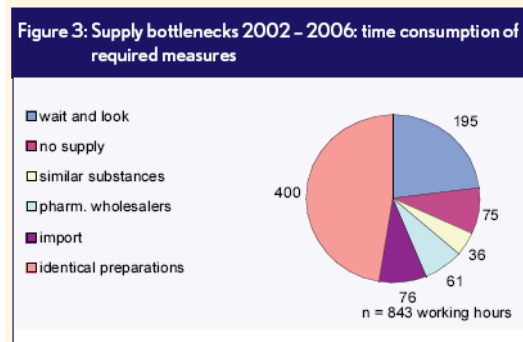
- Specific to Hospital Pharmacy: buying and compounding (is it totally outside clinical pharmacy ... or not ?)
- Specific to Clinical Pharmacy: outside the hospital setting

What about REAL LIFE ? (of the Hospital Pharmacist ...)

- Getting the drugs the patients need
- Compounding what we cannot get
- Small scale manufacturing
- Storing medication
- Therapeutic drug monitoring
- Preparing Cytotoxics and other IV drugs
- Dispensing Drugs to Patients
- Working within the therapeutic team

Getting the drugs the patients need

- No logistic operator to support us.
- Choosing therapeutic equivalents (the “me too’s” - which one is better, cheaper, more likely to have generics.) and the market – find the lowest price always.
- Finding the “hard to find” drug:
 - Too new (I need defibrotide for my bone marrow transplant patient by Monday ... back in 2003)
 - Too old (it is unthinkable that you don’t have liotironin for my patient- can you at least suggest a replacement drug?)
- “Drug shortages at a hospital pharmacy in Germany”, EJHP, Year: 2007; Nr: 6; Pages: 44- 48; Author: Walter Deutschmann



Compounding what we cannot get

Compounding may be like factory work, but often in HP it is very patient oriented.



Even small scale production is often a direct answer to patients needs (or economic/market concerns)

- The very young children in the Bone Marrow Transplant unit need tacrolimus oral suspension ... can you do it? (2004)
- The radiotherapy patients often have anal fissures that don't heal. I've read something about L-arginine...

E6. PHARMACEUTICAL DEVELOPMENT AND STABILITY STUDIES OF A TOPICAL GEL CONTAINING L-ARGININE

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- The GVH reaction is impairing the sight of this patient – could we try ciclosporin eyedrops or autologous serum eyedrops ?

Storing medication



Doesn't seem very "patient oriented".

However...

- In the hospital (and elsewhere), nobody cares about the very informative pharmacist who doesn't have the drug for the patient.
- The way we reduce the weight of tasks in stock management is the way towards the patient.

Therapeutic drug monitoring

- Analytics – it's pharmacy
- Result interpretation and dosage schedule suggestion – it's clinical pharmacy
- Again, the weight of pharmacy work can hinder the ability to look at the patient.

Preparing Cytotoxics and other IV drugs

- GMP (even in a “light” HP version) is a MUST.
- Hospital pharmacists must ensure GMP compliance but...
- Error control in cytotoxics is a major problem.
- Patient by patient prescription validation is fundamental.
- Process design is also fundamental

Preparing Cytotoxics and other IV drugs

Some validation topics:

- Strict use of pre-approved protocols (P?)
- Patient data: diagnosis, weight/body surface (CP)
- Check adequate dosing for patient/disease/drug (CP)
- Check for variations to previous cycles (CP)
- Recalculate body surface, eventually correction for renal function data may be adequate (CP)
- Check dilution, solvents, stability , light sensitivity, etc.(P)

In the same process you must use typical pharmacy skills and perform clinical pharmacy activity.

Dispensing Drugs to Patients

In some countries, some drugs for ambulatory use must be dispensed by hospital pharmacy. Typical of these are HIV drugs and Cancer oral drugs (cytotoxics but also hormonal drugs)

- Compliance, advice, connection to the therapeutic team, easy access to hospital resources
- The (HP?) pharmacist works with the patient. Should provide a “clinic” environment.
- Uncontrolled info (www) vs Technically sound info

Working within the therapeutic team



The key issue !

- Doctors and Nurses are all around us.
- And nutritionists, and psychologists, and social workers and ...
- Decisions can have immediate and serious consequences. Must be right! Must be fast!
- Advice is expected to be correct and swift, otherwise credibility is lost

Education: the EAHP data

This brings us to education issues:

- What makes a hospital pharmacist?
- In Europe!

The EAHP has made a SURVEY!

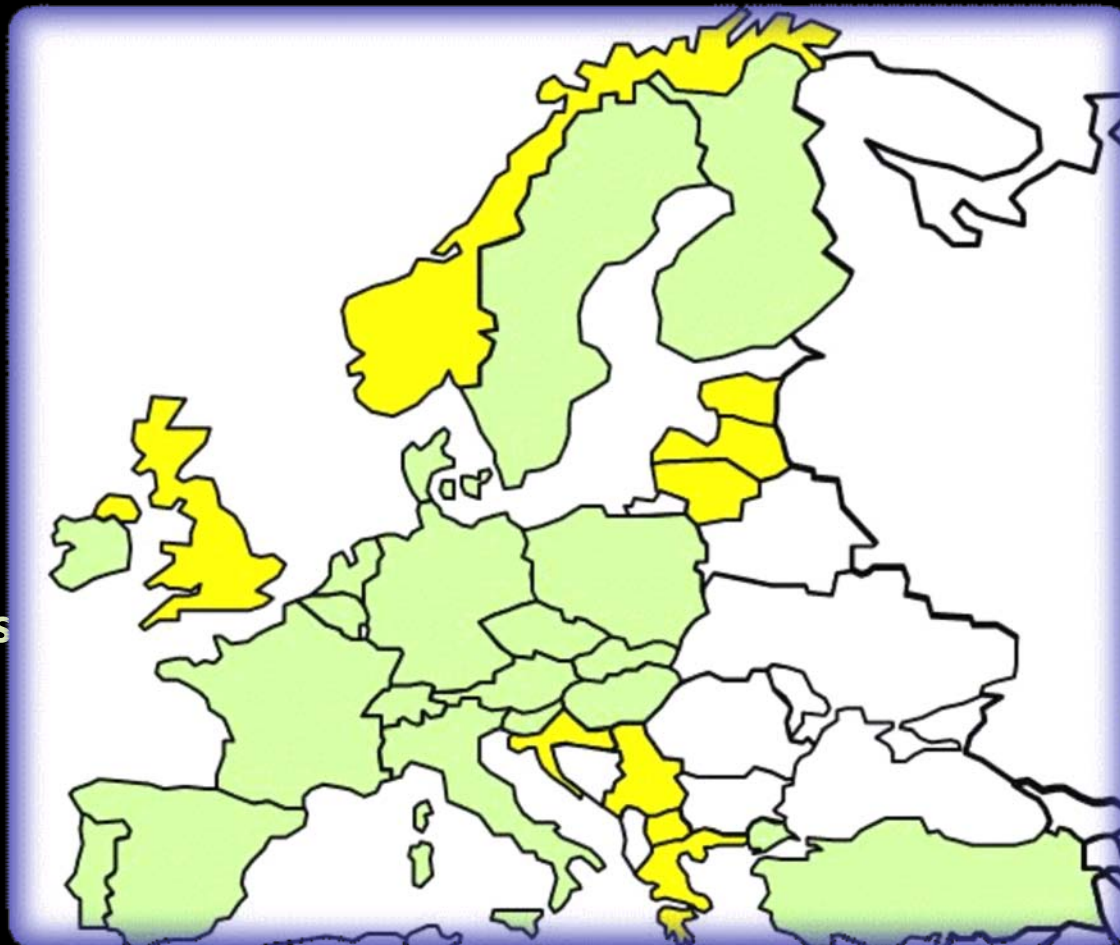
- The problem with surveys is that not everybody answers, and when answers, they are not all very clear.



EAHP

Specialisation in HP in Europe

Austria	Belgium
Croatia	Czech Rep.
Denmark	Estonia
Finland	France
FYROM	Germany
Greece	Hungary
Ireland	Italy
Latvia	Lithuania
Luxembourg	Netherlands
Norway	Poland
Portugal	Serbia
Slovakia	Slovenia
Spain	Sweden
Switzerland	Turkey
United Kingdom	



No specialisation

Specialisation

Not member of EAHP

29 EAHP members

Country	Specialization	Inclusion criteria	Years	Title	Responsible Association/University
AT	YES	M Sc Pharm	3		Apotekarkammar
BE	YES	M Sc Pharm	1	Hospital Pharmacist	All University work together /Flemish), Leuven and Liege/Brussels (French)
CH	YES	M Sc Pharm	3		Swiss Society of Hospital Pharmacy
CR	NO				
CZ	YES	M Sc Pharm	4	Pharmacist with specialisation in hospital pharmacy	Ministry of health/Institute of further education for staff in health care
DE	YES	Stadtsexam in Pharmacy	3	Fachapotekar for (clinical pharmacy etc)	Chamber of Pharmacy/Regional
DK	YES	M Sc Pharm	2	Specialist in Hospital Pharmacy	Pharmacy Faculty Copenhagen/Hospital Pharmacy Managers
ES	YES	M Sc Pham + exam	4	Specialist in Hospital Pharmacy	Ministry of Health/Spanish Hospital Pharmacy Association
EST	NO				
FI	YES	M Sc Pharm	3	Specialist in Health Care Pharmacy	Faculty of Pharmacy Kuopio
FR	YES	M Sc Pharm	4	Specialist in Hospital Pharmacy	Faculty of pharmacy/University
GR	NO				
HU	YES	M Sc Pharm	3	Hospital pharmacist	Four different Faculty of Pharmacy
IE	YES	M Sc Pharm	2	M Sc Hosp Pharm	Trinity College Dublin or Cork University
IT	YES	M Sc Pham + exam	4	Specialist in Hospital Pharmacy	Dep of Pharm Sci/School of Specialization in Hospital Pharmacy
LA	NO				
LIT	NO				
LUX	NO				
NL	YES	M Sc Pharm	4	Hospital Pharmacist (registerd specialisation)	Dutch National Assos of Pharm
NO	NO				
PL	YES	M Sc Pharm	3	Specialist in Hospital Pharmacy	center for education after the study work with ministry of health
POR	YES	M Sc Pharm	3	Specialist in Hospital Pharmacy	Order of Pharmacist-College of Hospital Pharmacy
SE	YES	M Sc Pharm	3	Specialist in Health Care Pharmacy	Swedish Pharmaceutical Association
SK	YES	M Sc Pharm	3	Specialist in....	Pharmacy Faculty Ljubliana
SL	YES	M Sc Pharm	3	Specialist in Pharmacy	Ministry of health/University/Institute of further education for staff in health care
UK	YES	M Sc Pharm	1	M Sc Clin Pharm	University

What makes a Hospital Pharmacist ?

EAHP concept!

- Pharmacy education, obviously, because HP is “pharmacy in a nutshell” – from manufacturing to patient counseling, you have to do it all.
- Specialization: the responsibility and the specific demands of hospital environment multidisciplinary work require a specialist – in Hospital Pharmacy

What is a “Specialist in Hospital Pharmacy”

- Should be a pharmacist who, through a mix of practice and formal education, is given a “degree” - which means a level of responsibility.
- Can further specialize in clinical areas of interest – oncology, nutrition, infectious diseases, cardiovascular ...
- Is the guy who is working within the hospital therapeutic team, and can take for responsibility for:
 - Suggesting a new dosage schedule
 - Stopping a dangerous prescription
 - Designing and testing a new formulation
 - Prescribing according to protocol

How to create this “Specialist”

In Europe there are many ways to achieve the same goals – thus, some degree of harmonization could be welcome.

- Internship plus final examination by competent entity
- Formal education in university, with a practical component (MSc in Hospital Pharmacy)
- Etc.

The EAHP believes that specialisation in hospital pharmacy should be recognised on the European level: this is hopefully the outcome of the Pharmine project lead by EAFP where EAHP is a partner.

What about the future ?



The way towards the patient.

- The tasks of Hospital Pharmacy already require that the focus is the patient.
- The shift of focus towards the patient should intensify in the coming years
- In the near future, the development of genomic and proteomic medicines will imply more and more tailored made treatments requiring specific clinical pharmacy skills.
- The number of pharmacists and the weight of basic pharmacy tasks can block the process.
- There is a two sided relationship between clinical pharmacy activities in hospitals and number of pharmacists

It's a question of balance!

The balance for the hospital pharmacist is between the buying/storing/compounding/dispensing and the increased focus on the patient in all activities.



**It's not what we do, but how we
do it.**

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Thank You

