Hospital pharmacy and academia in Leipzig

working together for the best education of students
Conflict of interest

Nothing to disclose
Agenda

- The University Hospital in Leipzig
- The Faculty of Pharmacy in Leipzig
- Teaching in the hospital-facility
- Teaching at the patient‘s bed
- Research, students and the hospital
The University Hospital in Leipzig

• Tertiary care hospital of the Faculty of Medicine
• 1,350 beds in 7 departments
• 54,000 in-patients/year
• 300,000 out-patients/year
The Pharmacy

- 1,550 sqm facility, 250 sqm aseptic facility
- 42 staff members, but only 9 Pharmacists!
- Supply and distribution of medicines
- Aseptic production of individualized preparations (cytotoxics, TPN etc., ca. 50,000 preparations/year)
- Clinical pharmacy (consultancy)
- Clinical trials
- Production of investigational medicines
The Faculty of Pharmacy in Leipzig

• 185 students
• 173 applications/year → 50 accepted → 46 graduate
• 80% of the students graduate in 8 semesters
  (+2 semester in pharmacies / industry / research)
Clinical Pharmacy

- Introduced in the curriculum of Pharmacy in Germany since 2001 (in addition to Chemistry, Biosciences, Pharmacology, Pharm. Technology)
- Only few chairs in Germany
- Chair in Leipzig since 2010
- Supported financially by the Chamber of Pharmacists of Saxony
- Supported by the University Hospital
Hospital Pharmacy

- Hospital Pharmacy is in some aspects different to clinical pharmacy in the community:
  - Acute more then chronic diseases
  - Intensive care
  - Rare diseases
  - Close relationship to physicians and nurses
  - Large production of individualized cytotoxic, pain- and parenteral nutrition preparations
Hospital and academia: a win-win situation

- Hospital Pharmacy is usually not part of the education in Germany
  - Promotion of hospital pharmacy
  - Recruitment of students as trainees
  - Diploma projects
- Students get the opportunity to work in high tech facility
- Students get the opportunity to interact with physicians and nurses at the patient’s bed
Practical training in aseptic facility

- Small group of 8 students
- Training under supervision of experienced hospital pharmacists (teaching practitioners)
  - Aseptic technique
  - Behaviour in rooms class B
  - Handling of cytotoxics
Students at the patient’s bed

• Small group of 8 students working with an experienced hospital pharmacist (teaching practitioner)
• A total of 120h during the 8th semester
• 11-12 topics relevant to hospital pharmacy
• Case specific discussion in a seminar
• Visit of the ward and evaluation of 3-4 patients together with the physicians and nurses
• Record and evaluation of medication
Research and Hospital Pharmacy

• Students in practical training (last year of study) can get an additional “diploma” degree (“Diplom-Pharmazeut”) by completing a small research project in the hospital.

• Training on scientific methods in the field of clinical pharmacy under supervision of the faculty and the hospital pharmacy
Patient safety in drug administration*

Prevalence of medication errors

Focus wards

Clinical Center

Identification of drug-related problems

Aims of intervention

Guideline Monitoring

Monitoring

Prospective intervention study

Follow-up Monitoring

Retrospective study

Status-quo study

Time

* By kindly permission Dr. Bertsche
Research and Hospital Pharmacy

Example: Quantification of medication errors in a surgery ward with and without medication recording by a pharmacist*

*C.5.1 Medication not at hospital formulary
*C.1.2 Inappropriate dosage selection
*C.1.6 Detoriation/improvement of disease state
*C.1.4 Pharmacokinetic problems incl. ageing/detoriation of organ functions and interactions
*C.1.1 Inappropriate drug selection
*C.2.3 Drug overused/overadministered
*C.2.2 Drug underused/underadministered
*Other

Take home

- The collaboration between academia and hospital pharmacy is a win-win situation
- Students get knowledge of specific fields like intensive care and large aseptic production by teaching practitioners
- The performance of the pharmaceutical care in the hospital is enhanced by research projects
Thank you very much for your attention!