Getting in Early: Teaching Research in the Acute Setting

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Emergency Medicine and CPUs
Campus Virchow Klinikum and Campus Mitte
Charité Berlin
Charité research tradition
Charité Emergency Medicine tradition
Charité teaching tradition

1924
Formal characteristics:

- 6 years total
  - 2 years **Basic Sciences**: Chemistry, Biochemistry, Physics, Physiology, Anatomy, etc.
  - 3 years **Clinical Sciences**: Radiology, Laboratory Medicine to Internal Medicine, Surgery, Paediatrics, Emergency Medicine
  - 1 year Practical Year (3 clerkships: Internal Medicine, Surgery, Elective)

Teaching of research and science?

**Emergency Medicine restricted to acute emergencies in a classical sense**
Modular Curriculum of Medicine
Charité Universitätsmedizin Berlin

Challenges:
Real life experiment
Large scale
2 x 320 students per year
Approx. 2,500 teachers
# Modular Curriculum of Medicine

Charité Berlin

## Practical Year (Internal Medicine, Surgery, Elective)

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<tr>
<td>Old Age, Death and Dying Intensive Care, Palliative Medicine</td>
<td>General Medicine, „Paper Work“, Emergency Medicine, Contact Points</td>
<td>Scientific Approaches III</td>
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<td>Pregnancy, Birth, Newborn and Infant</td>
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<td>Diseases of the Head, Neck and Endocrine Systems</td>
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## Clinical Modules

- Basic Science Modules
- Disease Models
- Organ/System Modules

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**Charité Universitätsmedizin Berlin**
# Modular Curriculum of Medicine

## Charité Berlin

### 1 year

- **S10** Psychosocial aspects of EM: Triage
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

### 2 years

- **S9**
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

- **S8**
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

- **S7** Thorax
  - Problem-Based Learning --- Working with Patients --- Principles of Medical Theory and Practice

- **S6** Summary Module
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

- **S5**
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

- **S4**
  - Problem-Based Learning --- Medical Skills Training --- Communication, Interaction und Team Work

- **S3** Heart and Circulation
  - Problem-Based Learning --- Medical Skills Training --- Principles of Medical Theory and Practice

- **S2**
  - Problem-Based Learning --- Medical Skills Training --- Communication, Interaction und Team Work

- **S1** Introduction
  - Problem-Based Learning --- Medical Skills Training --- Communication, Interaction und Team Work

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**ACLS and „classic“ emergencies**

**CPU and ACS**

**Bedside teaching: Patient in the Emergency Room**

**BLS**

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**3 years**

**Summary Module Section 1**

- **S10**
  - Psychosocial aspects of EM: Triage
  - General Medicine, Emergency Medicine

- **S9**
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

- **S8**
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

- **S7** Thorax
  - Problem-Based Learning --- Working with Patients --- Principles of Medical Theory and Practice

- **S6** Summary Module
  - Problem-Based Learning --- Working with Patients --- Communication, Interaction und Team Work

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- **S1** Introduction
  - Problem-Based Learning --- Medical Skills Training --- Communication, Interaction und Team Work
End of year 3 students
Manageable research project
Time frame 4 weeks
Presentation at a students congress after 4 weeks
Written scientific work (3,000-5,000 words) after 6 weeks

1-4 students per general theme, each student must have his/her own objective
Consistency of medical history in Emergency Medicine

- Time difference first and second medical history: 1h (0/18.5)
- Time difference first and third medical history: 2h (0/72)
- Time difference first medical history and routine ED report: 4.5h (0/25)

ACS-Guidelines

- Acute Chest Pain
  - hsTn < ULN
    - Pain >6h
    - Re-test hsTn: 3h
      - hsTn no change
      - Δ change (1 value > ULN)
        - Painfree, GRACE <140, differential diagnoses excluded
          - Discharge/Stress testing
          - Invasive management
  - hsTn > ULN
    - Pain <6h
      - Highly abnormal Tn + clinical presentation
      - Work-up differential diagnoses

European Heart Journal
doi:10.1093/eurheartj/ehr236
Emergency Medicine in Germany

- Developing from a decentralized system
  - Run by one of the departments / clinics (at Charité: Cardiology)
  - Staffed with doctors from the specialist-clinics in a rotation system
- Since 2010: Centralized under an Emergency Medicine Head but still not an independent clinic and academic unit
  - Not a specialist discipline
  - From 2015 Subspecialty Emergency Medicine (Berlin)

High work-load with limited career options
Research in Emergency Medicine

- Often single center studies with low patient numbers
- Time issues, ethical issues with emergency patients
- Difficulties to receive funding
  - Lack of powerful Societies and Trusts
  - Lack of awareness of EM as a study site

None of the included studies provided data on patient wait-times, length of hospital stay, adverse effects or mortality. Overall, the evidence is of very low quality, the safety has not been thoroughly examined and results are disparate. The evidence suggests that there is insufficient basis upon which to draw conclusions regarding the effectiveness and safety of care provided by GPs versus EPs for non-urgent patients in the ED.
Research Team:

- Biomarker and process research
- Health care research
- Pharmaceutical and Biotech contract research

Teaching:

- Clinical teaching in a number of different modules
- Teaching of Science and research
Academic Emergency/Acute Medicine

Charité vision

Academic EM with an excellent research and teaching structure

Attracting students and young doctors via teaching and research

Creating jobs for permanent ED staff capacity

Successful research and publication

Capacity for teaching preparation research and networking
Vielen

Thank you!
Merci! Gracias!
Danke! Spasiba!
Thank you! Xièxie!
Thank you! Kha-wp khun!
Thank you! Tsek-kür!
Thank you! Obrigado!
Thank you! Efharisto!
Thank you! Shukriya!

For your Attention!