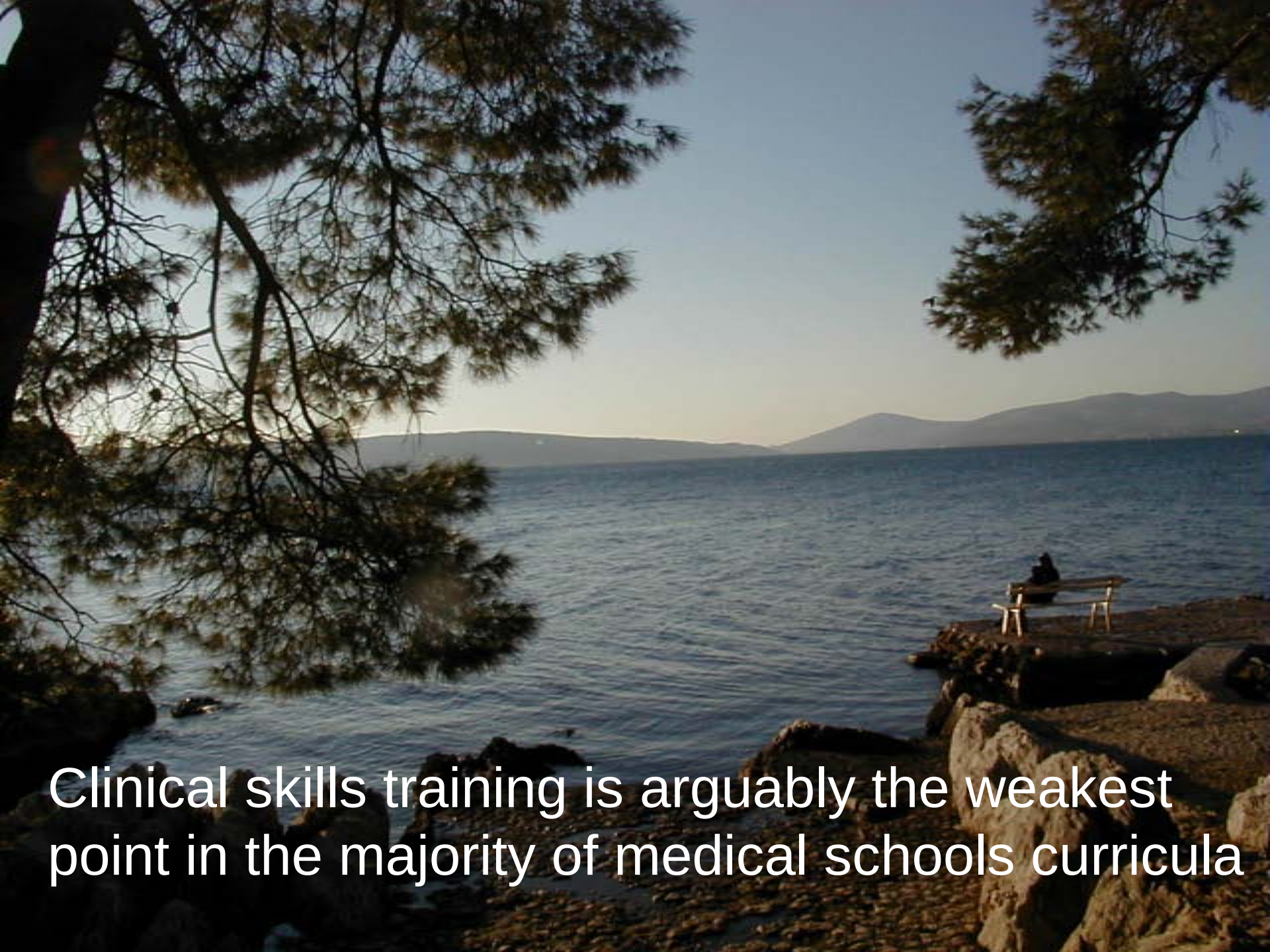
New Paradigm in Training of Undergraduate Clinical Skills - NEPTUNE-CS


Clinical skills training is arguably the weakest point in the majority of medical schools curricula

Objective

To identify the causes of the problem and to suggest possible remedies.

Unresolved issues

(i) the institutional value system, impeding the motivation of the teaching staff;

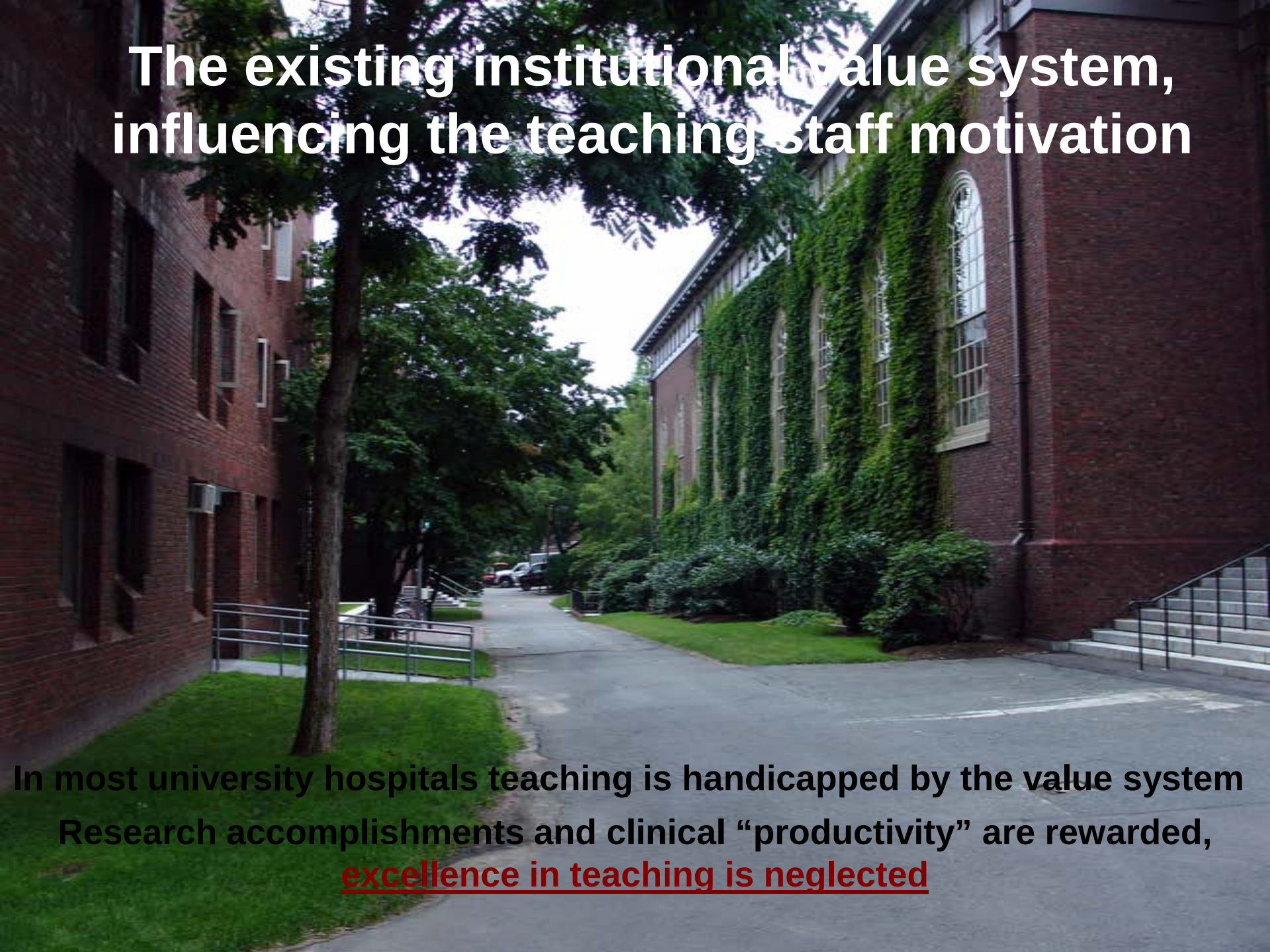
(ii) neglected mentorship paradigm;

(iii) organization, timing and placement of training in the curriculum;

(iv) lack of publications pertinent to training;

(v) the attitude of the patients towards participation in the training

The existing institutional value system, influencing the teaching staff motivation



In most university hospitals teaching is handicapped by the value system

Research accomplishments and clinical “productivity” are rewarded,

excellence in teaching is neglected

Possible solution

- **Decisive willingness of hospital management to support the educational mission**
- **set of acts and regulations that will support teaching with adequate financial input and career promotion mechanisms**
- **the mechanisms for the control of the teaching process, regular assessment and evaluation of teaching staff**
- **students anonymous surveys**
- **‘*credits for good teaching*’ practice**

Mentorship

The essential prerequisite in clinical training is

"*a meaningful, ongoing relationship between faculty and students*" (Ludmerer 2005)

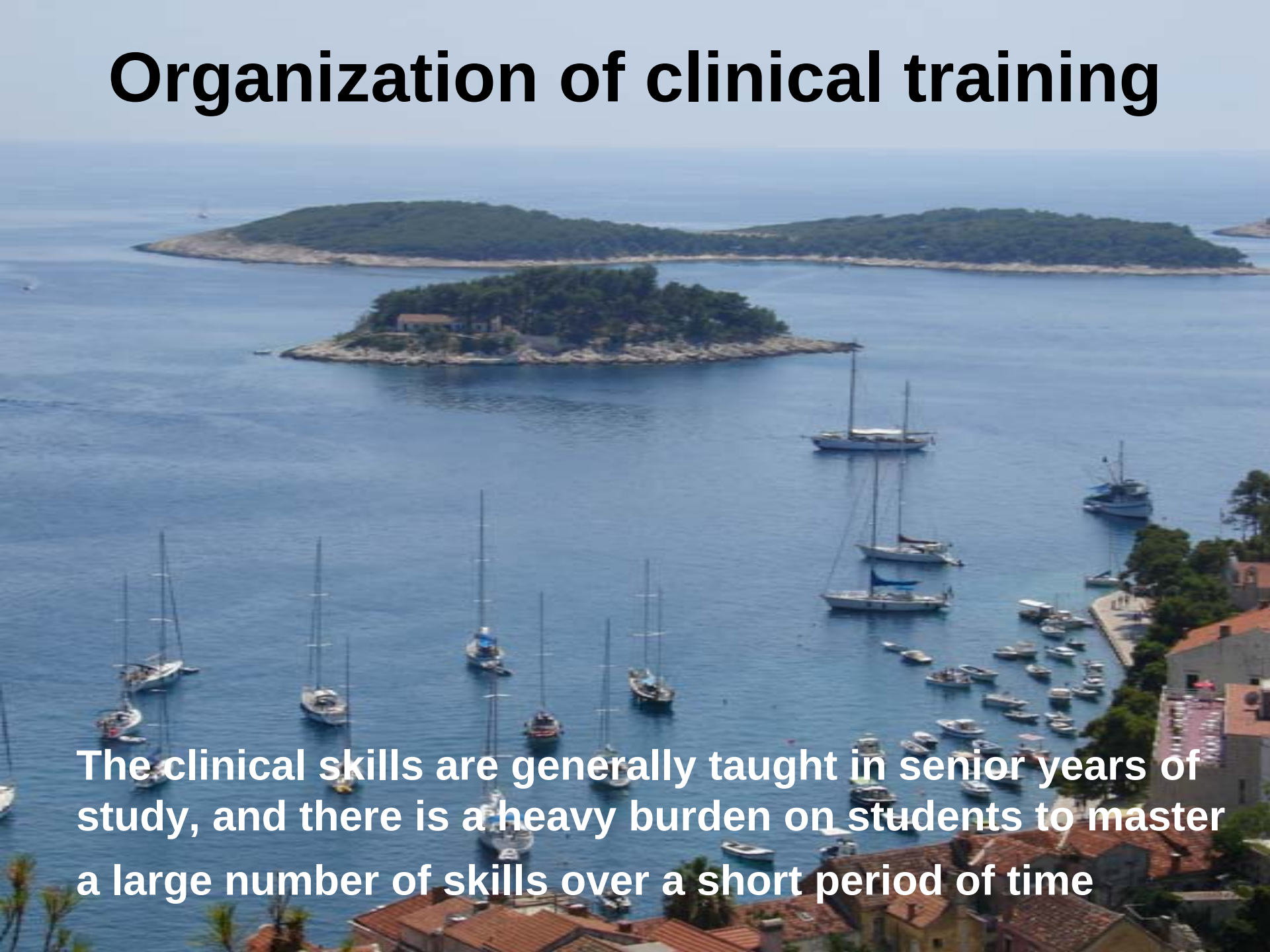
Mentorship

In the majority of institutions of today mentorship is
"*either fragile or does not exist, and the progressive advancement of student competencies is not well guided across the curriculum*"
(Irby DM, 2007)

Possible solution

1. Cooperation across clinical specialties
2. Interdisciplinary ownership of the clinical curriculum
3. Carefully structured network of clinical instructors in different clinical disciplines

Organization of clinical training



The clinical skills are generally taught in senior years of study, and there is a heavy burden on students to master a large number of skills over a short period of time

Possible solution - Timing

The training of simple skills (positioning patients in the bed, proper cleaning and skin care) starts early in curriculum

Possible solution: Graduate Learning

First phase explanation of the rationale for the procedure, equipment, instruments and materials

Second phase skill practice in the Clinical Skills Laboratory (CSL)

Third phase: skill practice in clinical setting, first to observe, and finally to perform

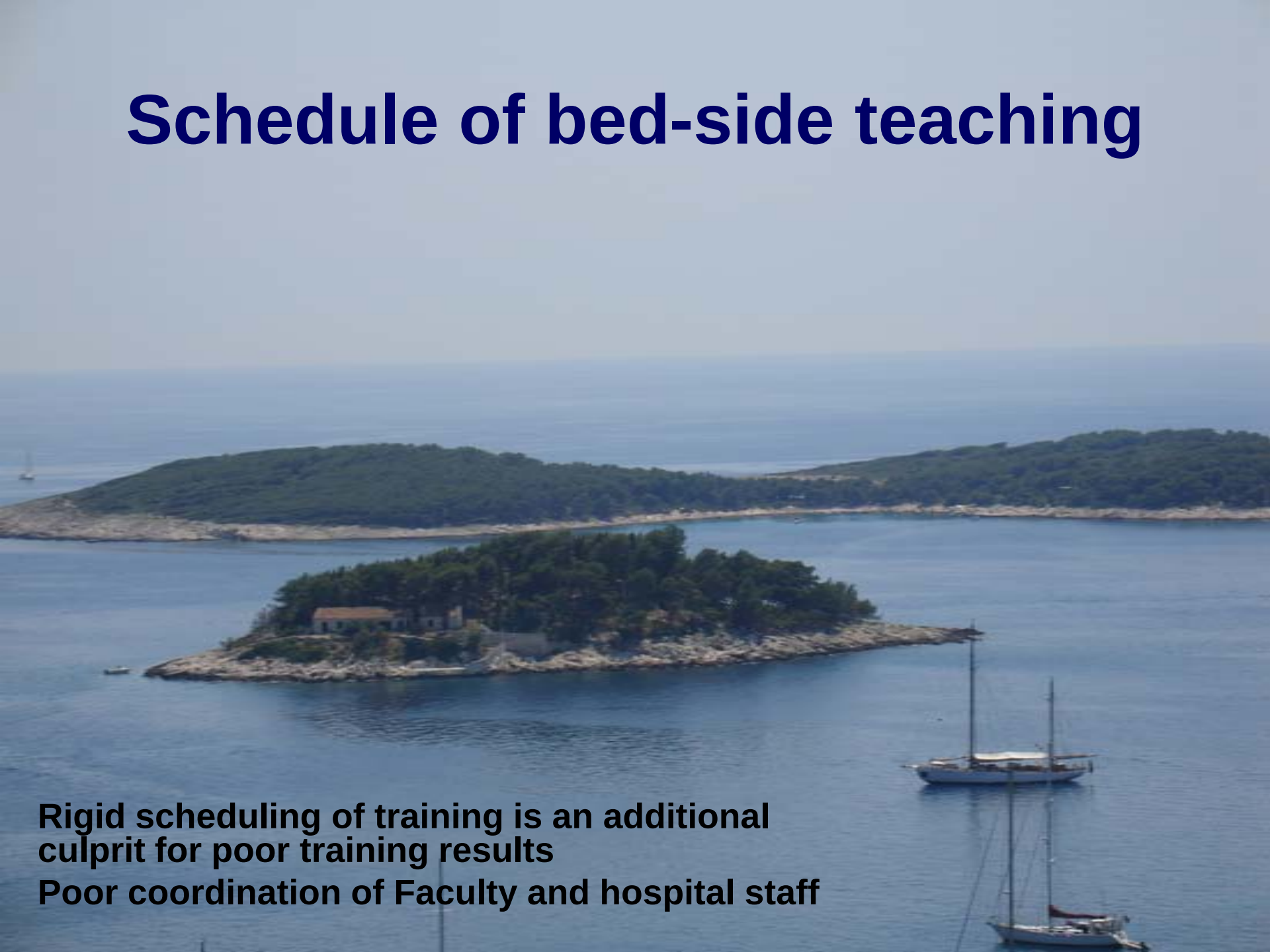
Possible solution: Graduate Assessment

First level: clinical instructor

Second level: mentor

Third level: independent summative assessment of student's competency

Schedule of bed-side teaching



Rigid scheduling of training is an additional culprit for poor training results

Poor coordination of Faculty and hospital staff

Possible solution: Flexible Schedule

Students and their instructor should plan the timeframe for in-hospital activities

The priority should be that a specific skill is mastered, not when it is mastered.

Catalogue of Clinical Skills

Student needs to know:

1. **What is expected of her/him?**
2. **What is necessary and what is decorum?**
3. **When (s)he is competent to do something?**

Catalogue of Clinical Skills

Not only list the required skills, but

1. classify them in relation to their significance
2. classify them in relation to their complexity

Catalogue of Clinical Skills
Accidents and emergencies

Knows

Principles of advanced cardiac life support

Knows how:

Intubations

Shows how & does

- **Application of bandage**
- **Assessment and care of injuries (wounds, bleeding, burns, distortion, dislocation, fractures)**
- **Basic life support: assessment, breathing, circulation, defibrillation**
- **Heimlich maneuver**
- **Temporary hemorrhage control (direct pressure, pressure point, pressure bandage)**
- **Transport of casualty**

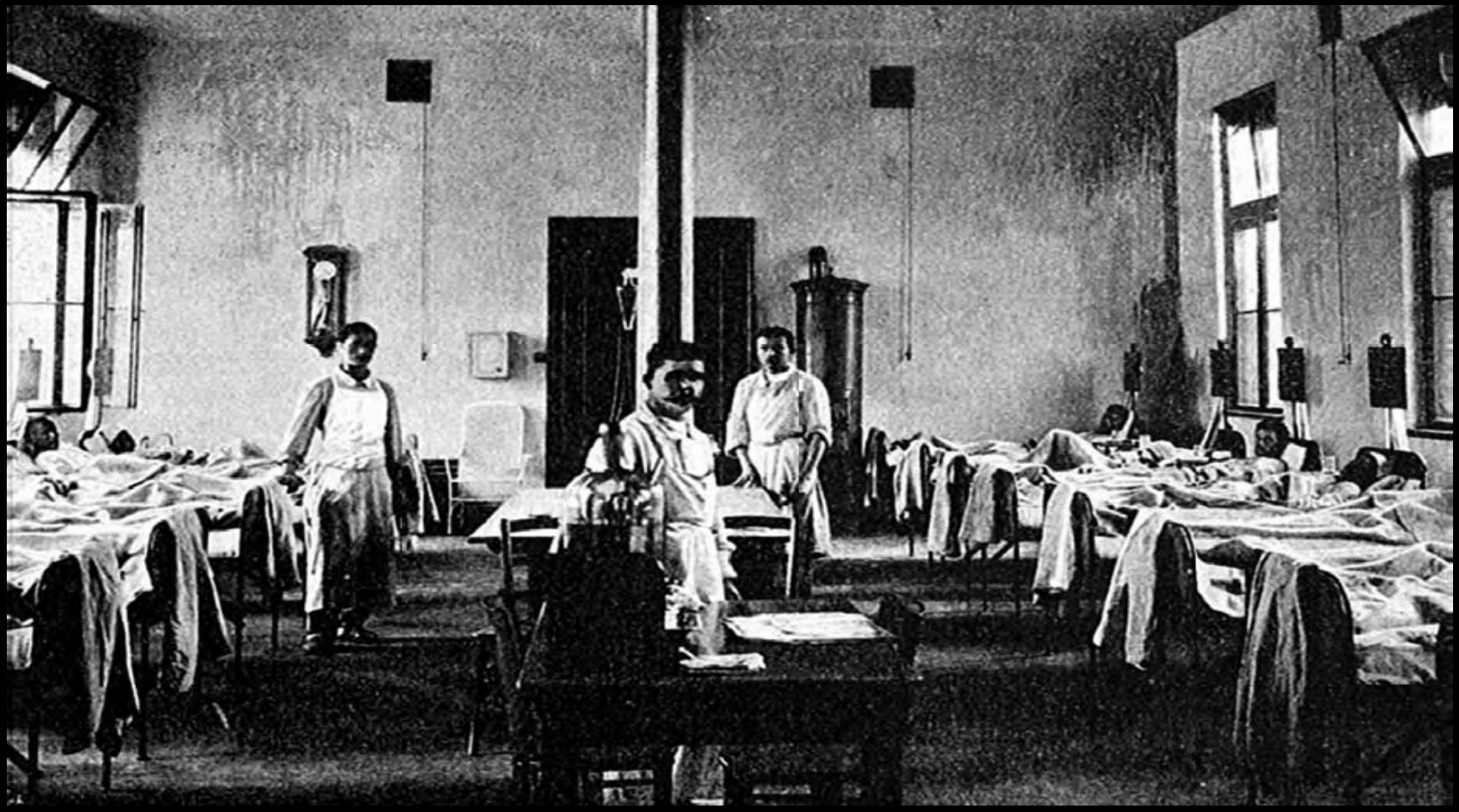
Practicum of Clinical Skills

To adopt any skill, a student should know why it is important, what are the indications and contraindications, and which instruments, materials and equipment are necessary for its successful execution.

Next follow the instructions how to position the patient, what kind of anesthesia to apply, how to handle the specimens for analysis.

The procedure should be described step-by-step, with appropriate notes on anatomy and physiology, and warnings on possible complications and their management.

Praktikum izabranih kliničkih vještina s katalogom



Vladimir J. Šimunović i Mladen Mimica

Practicum of Clinical Skills

A. **Procedure title**
B. **Definition & Rationale**
C. **Indication(s)**
D. **Contraindication(s)**
E. **Preparation of patient for procedure**

- Information
- Informed consent (signature)
- Premedication
- Dressing
- Positioning

Practicum of Clinical Skills

F. Preparation of materials, instruments and apparatus

- Cleaning set
- Dressing set
- Dressing for personnel
- Material (disposable)
- Instruments
- Catheters, drains, tubes, etc.
- Equipment and apparatus
- Pharmaceuticals

Practicum of Clinical Skills

G. Anesthesia required for procedure

- Anesthetics
- Operative field infiltration
- Regional blocks
- Nerves block

Practicum of Clinical Skills

H. Procedure phases

- Operative field cleaning
- Operative field antisepsis
- Measuring and marking of anatomical landmarks
- Operative field dressing
- Detailed description of the procedure (phases)
- Dressing, immobilization and protection of the region

Practicum of Clinical Skills

I. **Complications**
- Intra-procedural complications
- Early complications
- Late complications

J. **Side effects**

K. **Post-procedure counseling**

L. **Handling of specimens**

Portfolio of Clinical Skills

Assessment drives learning.

Portfolio of Clinical Skills

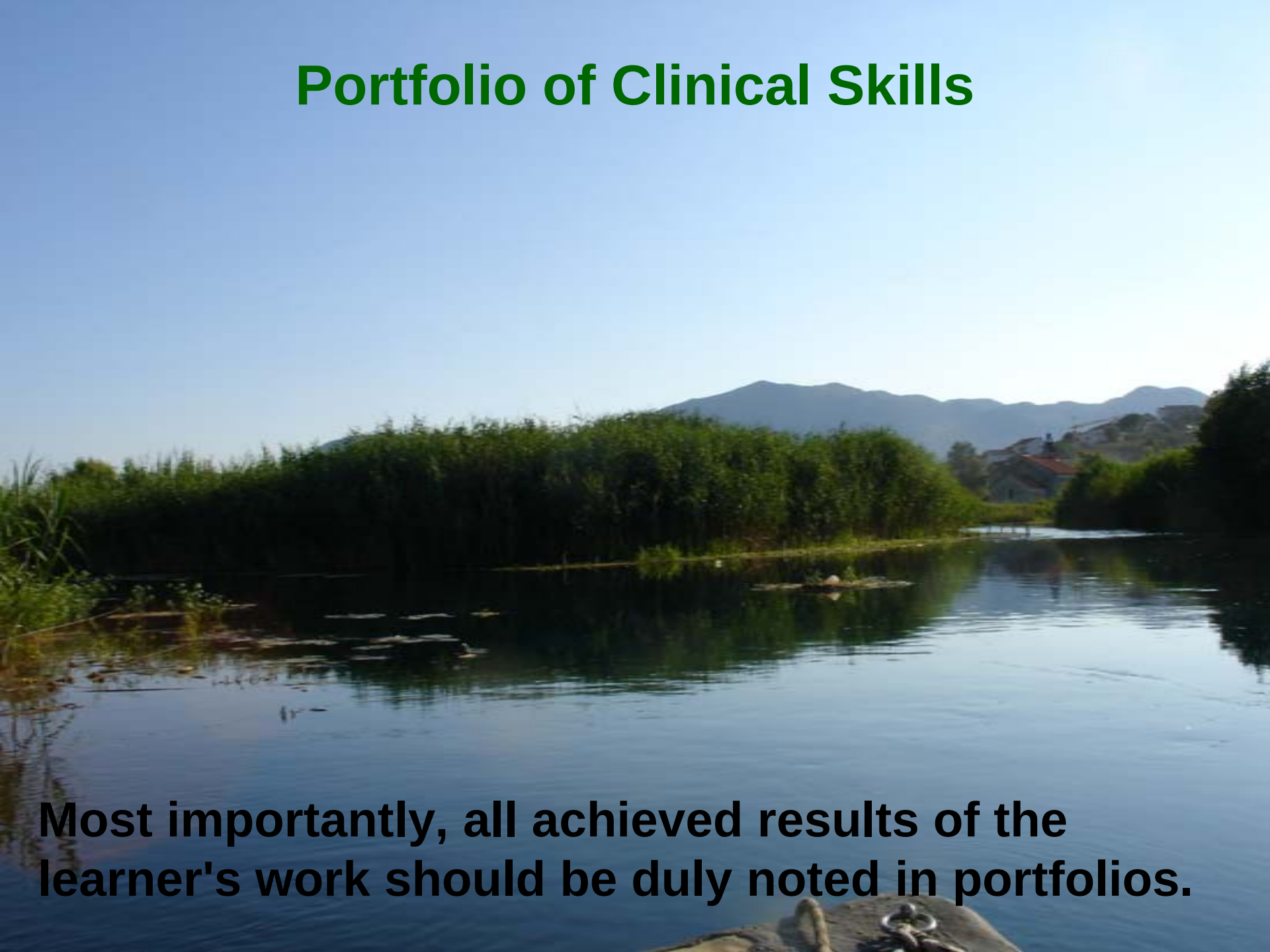
Rigorous assessment has the potential to inspire learning, influence values, reinforce competence, and reassure the public (Driessen, 2008)

Portfolio of Clinical Skills

To ensure that students mastered all Clinical Skills we must employ all instruments we have at disposal today:

- self-assessment,
- peer evaluations,
- written assessments of clinical reasoning,
- standardized patient examinations,
- Objective Structured Clinical Examination, OSCE
- oral examinations, and
- interactive simulations.

Portfolio of Clinical Skills

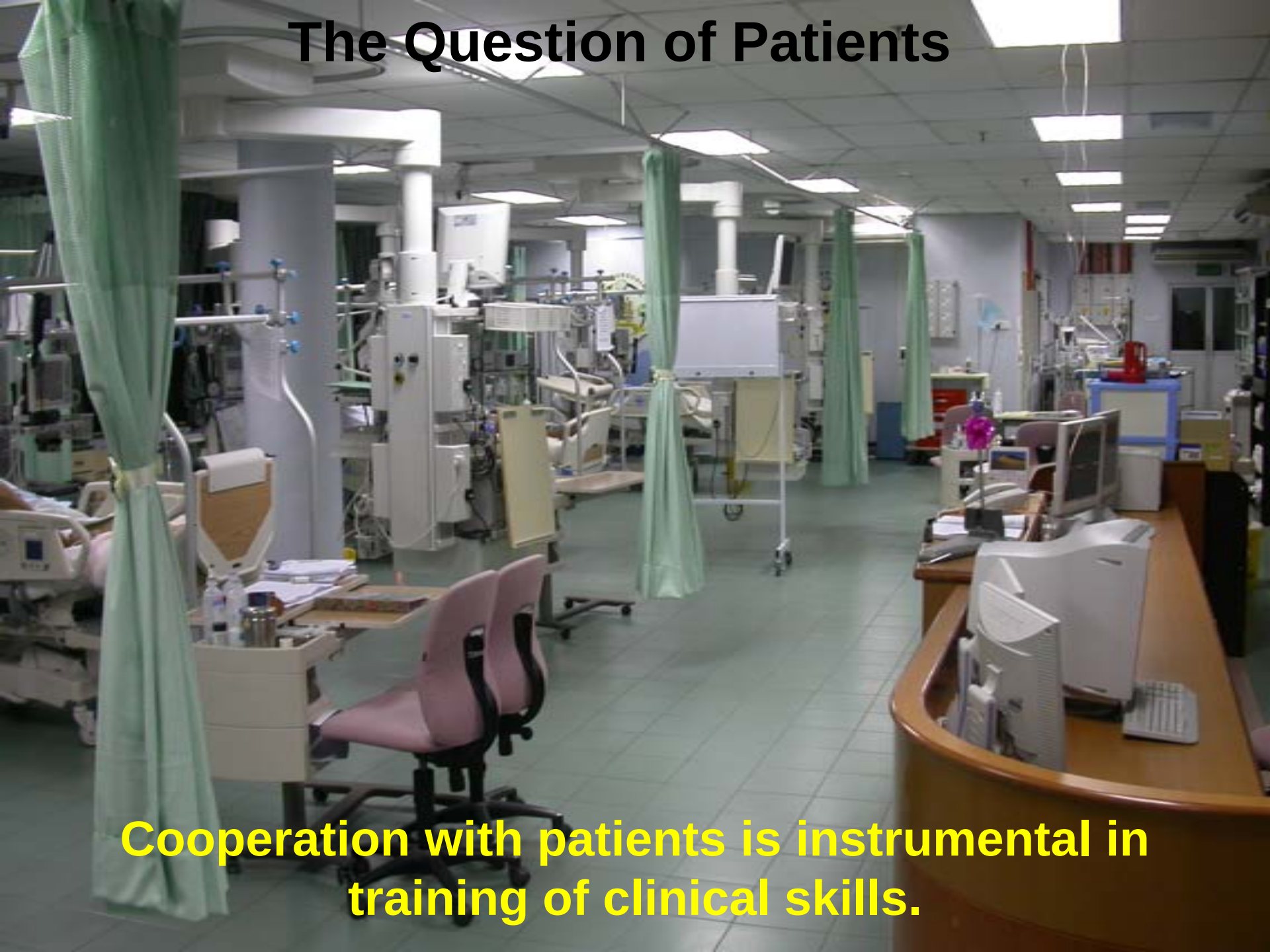


Most importantly, all achieved results of the learner's work should be duly noted in portfolios.

Portfolio of Clinical Skills
Year One; Complexity Level One

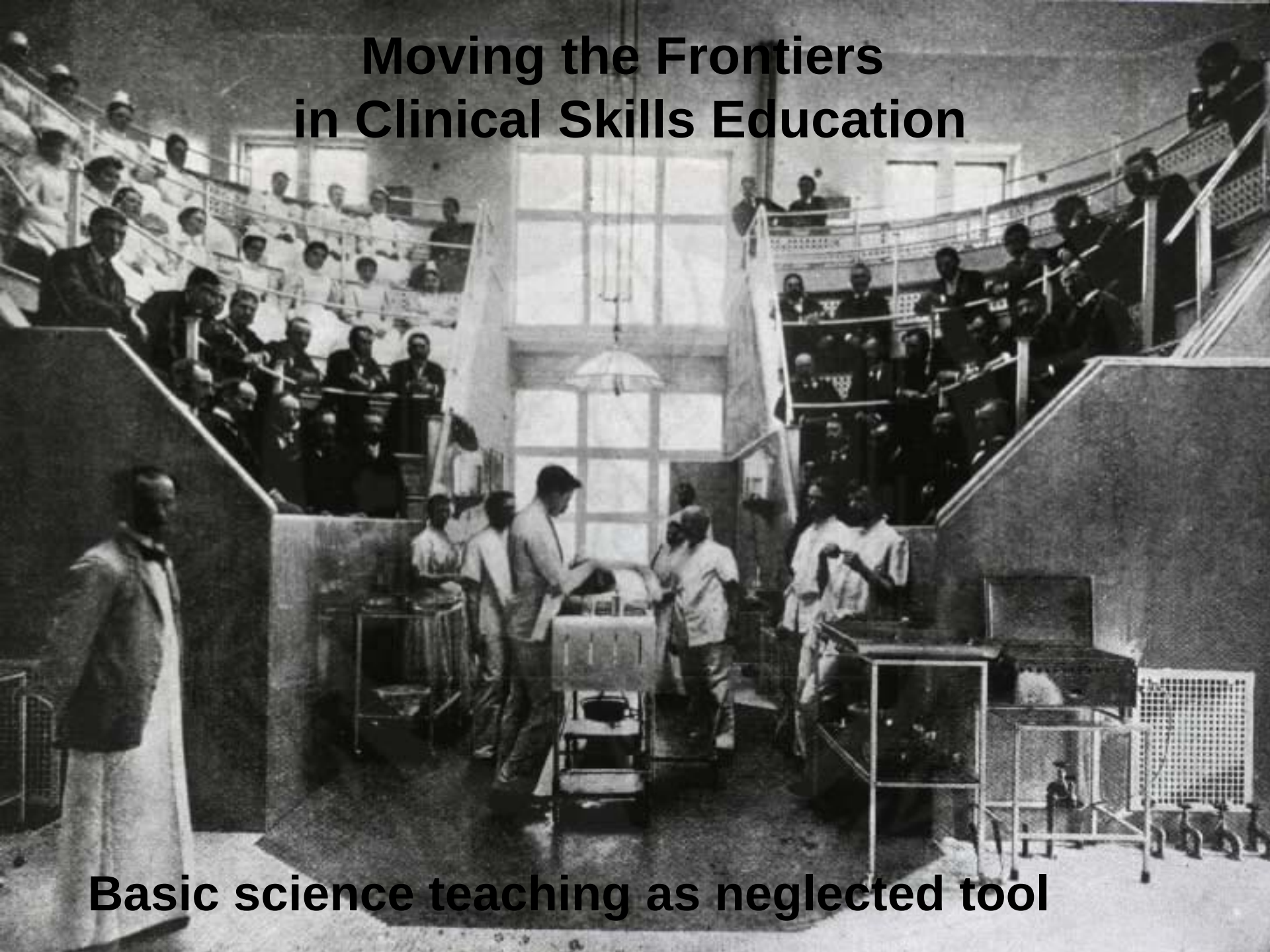
Procedure	Rationale	Laboratory	Clin. settings
Bandage application			
Care of injuries			
Basic Life Support			
Temporary control of bleedings			
Casualties transportation			

The Question of Patients



Cooperation with patients is instrumental in training of clinical skills.

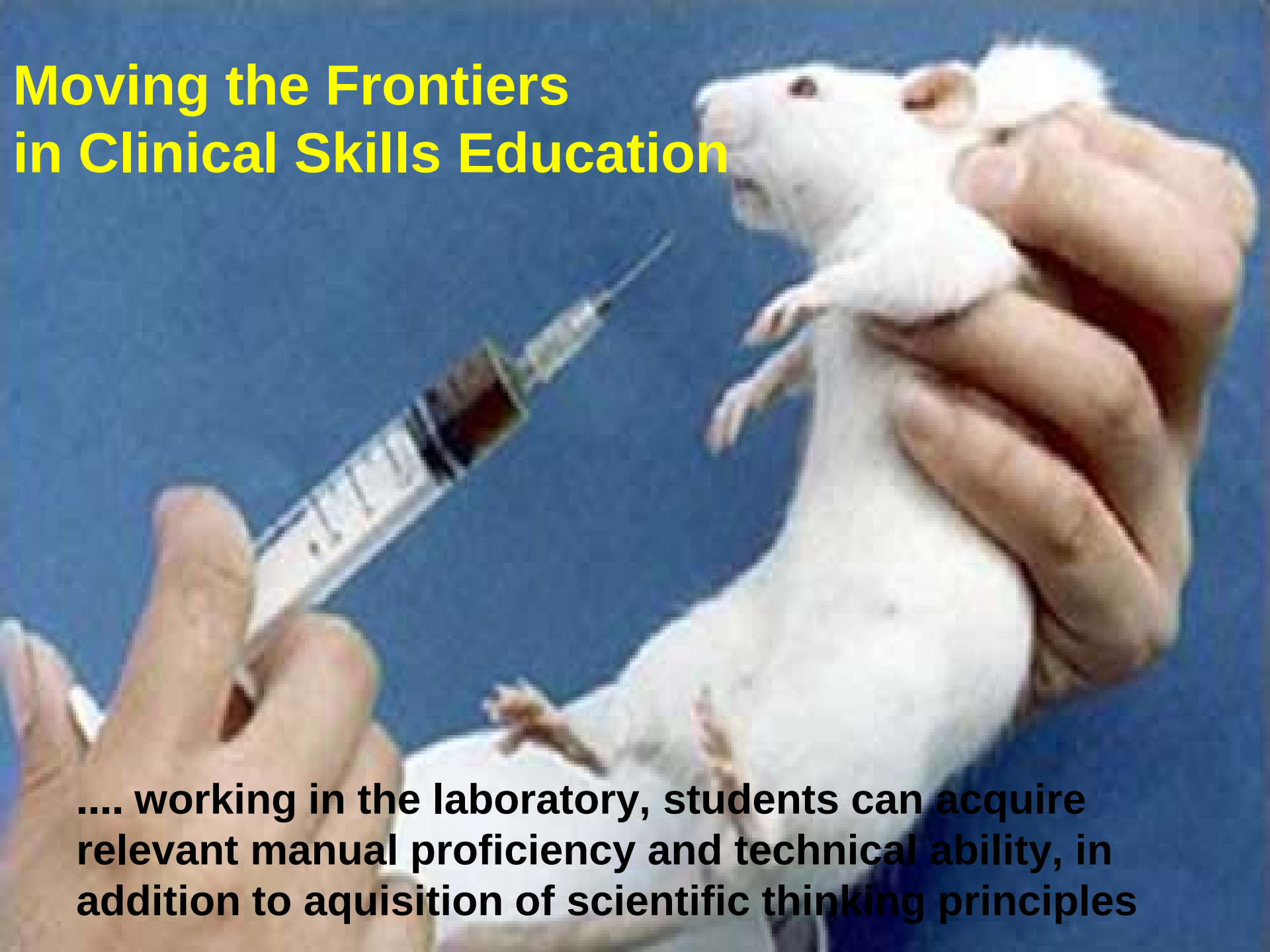

Patients
Young doctors-to-be have to touch, feel, hear and smell


Moving the Frontiers
in Clinical Skills Education
Basic science teaching as neglected tool

Moving the Frontiers in Clinical Skills Education

Research and experimental animals as training tools (Simunovic F, Med Teach. 2008)

Moving the Frontiers in Clinical Skills Education



.... working in the laboratory, students can acquire relevant manual proficiency and technical ability, in addition to aquisition of scientific thinking principles

To summarize:

We believe that training of clinical skills can be significantly improved, through:

1. **Changes in institution values**
2. **Introduction of mentorship and clinical instructors structure**
3. **Flexible timing of training**
4. **Extensive use of training laboratories**
5. **Graduate learning that start in the first year of study**
6. **Introduction of Catalogue, Practicum and Portfolio (logbook)**
7. **Multilevel assessment and strict control – all skills should be adopted at the end of study**

Thanks for your attention