



Medical Education in Germany:
Development of the National Competence Based
Catalogue of Learning Objectives (NKLM)

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Plan of Presentation

1. Medical Education in Germany: Some Characteristics and Numbers
2. German Licensure Law for Physicians (Ärztliche Approbationsordnung)
3. German Association for Medical Education (GMA)
4. Initiation and Development of the NKLM
5. Roles, Enabling Competencies and Patient Encounters in the NKLM
 - a. Levels of Competence
 - b. Milestones of Medical Education in the NKLM
5. Assessment of Competencies: Performance and Role of Feed Back
6. Mastering the First Day in Postgraduate ME: EPAs
7. Summary and Take Home Messages

Number of Medical Students in Germany 2014

Year	<u>German and Foreign Students</u>			<u>German Students</u>		
	all	male	female	all	male	female
2014	87 863	34 511	53 352	77 431	29 661	47 770
					38,3 %	61,7 %

[Represented by bvmd – Bundesvertretung der Medizinstudierenden in Deutschland - Federal Representation of Medical Students in Germany]

Medical Faculties in Germany

2,2/1 Mill Inhabitants in Deutschland
VS
1,6/1 Mill Inhabitants in Japan



Goals and Objectives of German Licensure Law for Physicians - § 1

Regular, Systematic Evaluation of Achievement of Goals by the University

Physician Trained in the Science and Practice of Medicine

Prepared for **self-dependent**
medical practice under
his/her **own responsibility**

Enabled for postgraduate
professional education and
continuous medical education

Medical education objectives based on evidence,
using published research and focused on practice and the patient

New Curriculum (WS 2003/2004 - Amendment 2012)

First Section:

2 Years

Science,
some clinical content,
lectures, seminars,
courses

Ongoing Assessment



1st State Examination

M 1 new (old: „Physikum“)

Second Section:

3 Years

Lectures, seminars
comprehensive courses,
self-learning, e-learning
bed-side teaching

Ongoing Assessment



2nd State Examination (M2 written new)

Third Section (final year): 1 Year



3rd State Examination (M3
written, oral, with patient, new)

Used for:

License to practice medicine,
MD-Thesis

Characteristics of the Final (6th) Year - § 3

- 12 Months without intermission
- 3 terms of 4 months each
 - Internal Medicine
 - Surgery
 - Elective Discipline (new: Family Medicine included)
- Practice medicine under guidance, control and responsibility of teaching faculty
- „Deepen knowledge, skills and practice previously acquired“
- No formal description or assessment of competences

Responsible Organisations/Effects

- 39 lecture or course associated examinations:
medical faculty
- M1, M2 and M3: **Ministry of Labour & Social Affairs**
- Oral and practical (observational) parts administered by members of **faculty**; mostly unstructured
- **Effects** on institutions, examinees, and residency choices and training **unknown** – first cohort under new amendment started 2003

German Association for Medical Education
(Germany, Austria, Switzerland)

owns

GMS Journal of Medical Education

Graduate, Postgraduate and Continuing Medical Education

978 +

52 +

institutional



Gesellschaft für medizinische Ausbildung

From Content-based to competence-based education

Competency in Health Professions:

- The **ability and the willingness** to apply a combination of knowledge, skills and attitudes necessary to perform a specific task
- Composed of partial competencies, which build on knowledge, skills and attitudes
- Derived from the professional world of health care and the needs of society

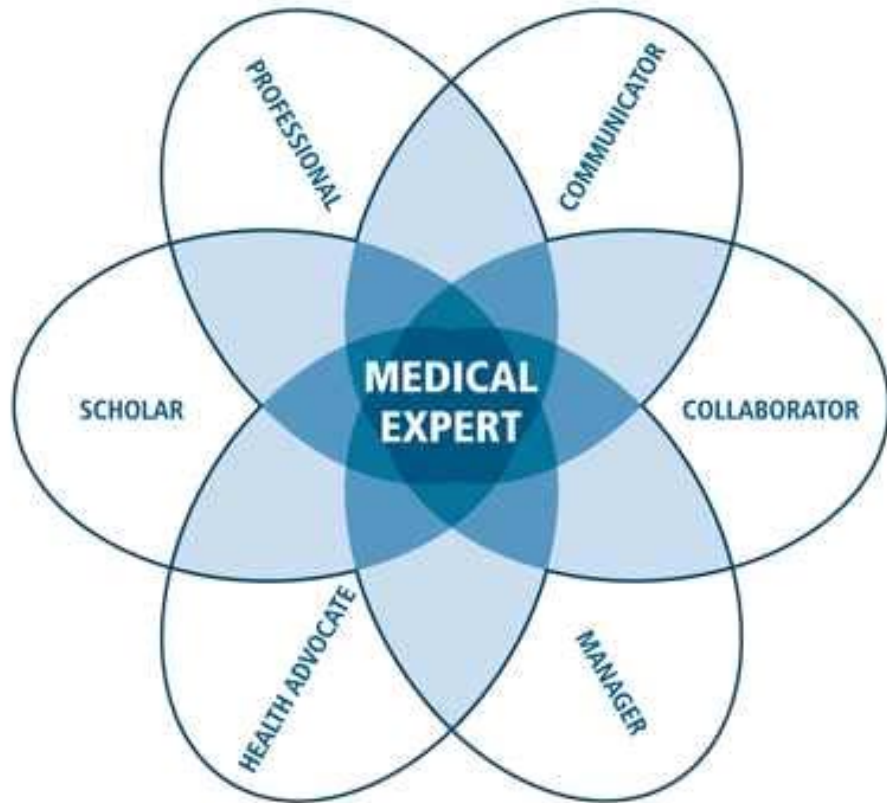
Definitions see Weinert 2002, Epstein & Hundert 2002; also: Introduction to NKLM

Roles and Competences of Physicians

Competences CanMEDS 2005 Framework	Competences WHO (5-star)	Competence Clusters German Licensure Law
<ul style="list-style-type: none"> • Medical Expert • Collaborator • Communicator • Health Advocate • Manager • Scholar • Professional 	<ul style="list-style-type: none"> • Care Provider • Decision Maker • Communicator • Community Leader • Manager 	<ul style="list-style-type: none"> • Medical Expert • Teamworker • Health Advocate • Manager • Professional • Life long learner • Communicator • Scholar

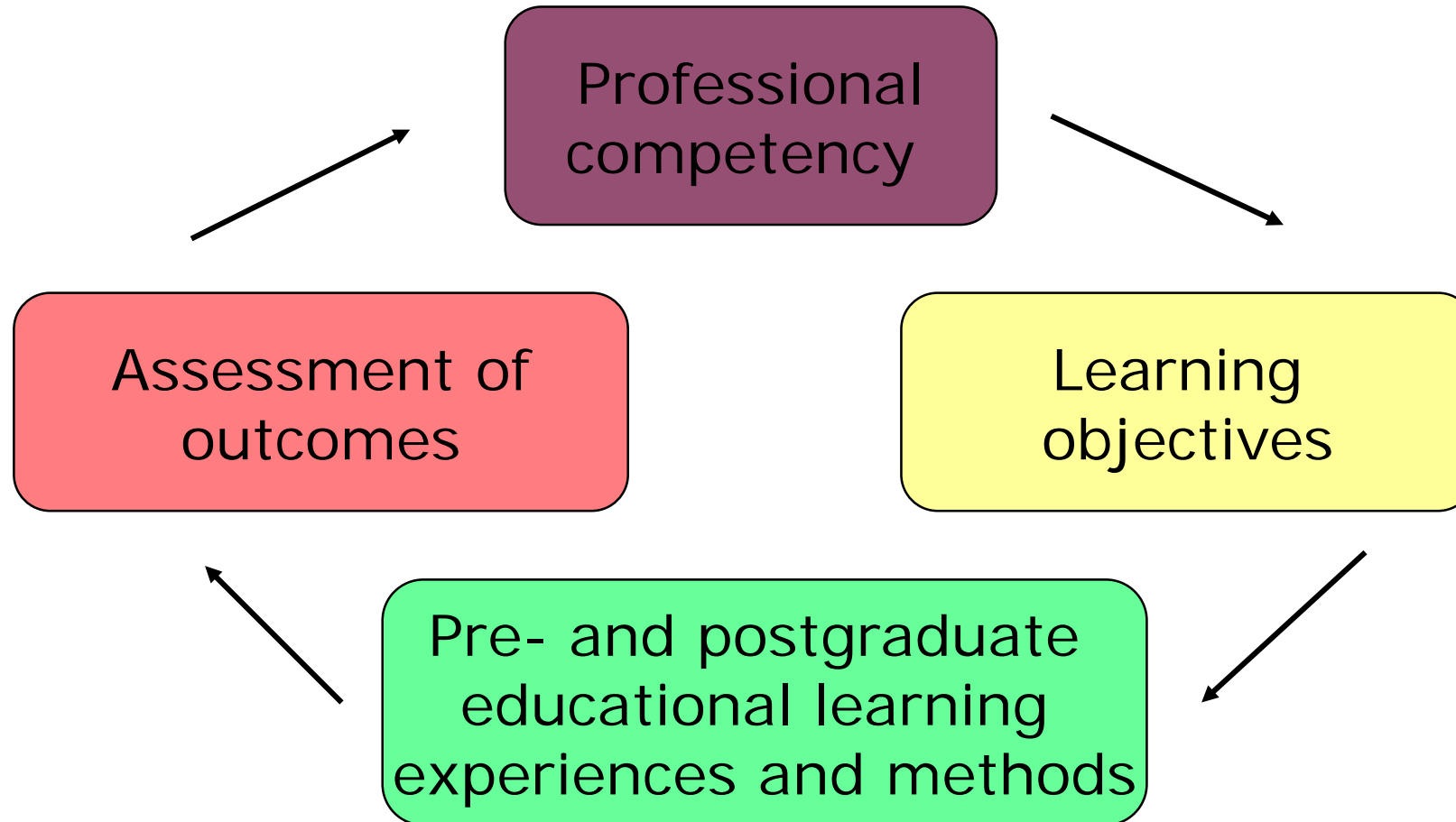
Öchsner W, Forster J. GMS Z Med Ausbild (2005); 22 (1)

Roles of Physicians – Clusters of Competence (CanMEDS 2005)

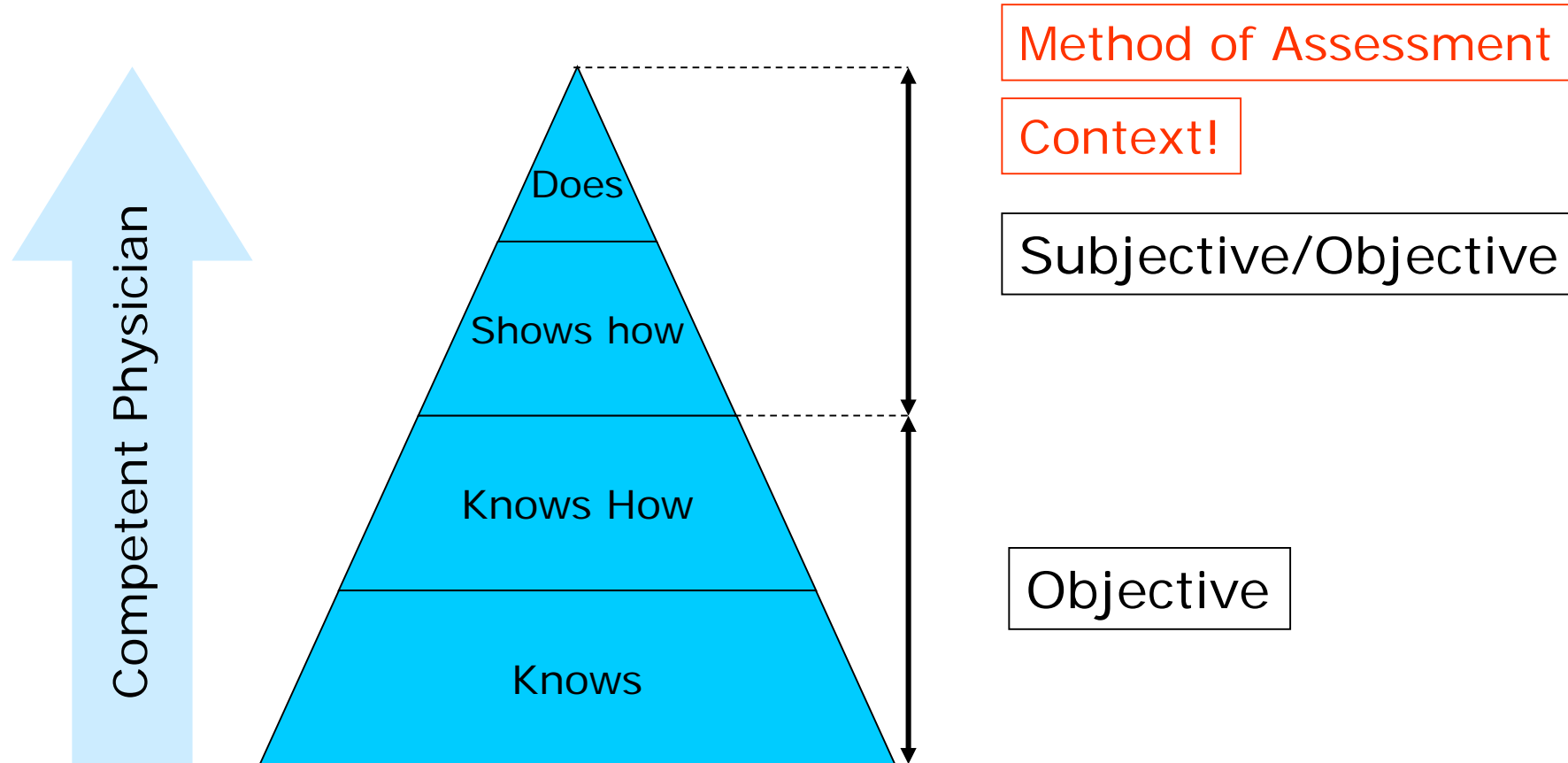


- Medical Expert
- Communicator
- Team Worker
- Manager
- Health Advocate
- Scholar
- Professional

Competence-Based Graduate and Postgraduate Medical Education

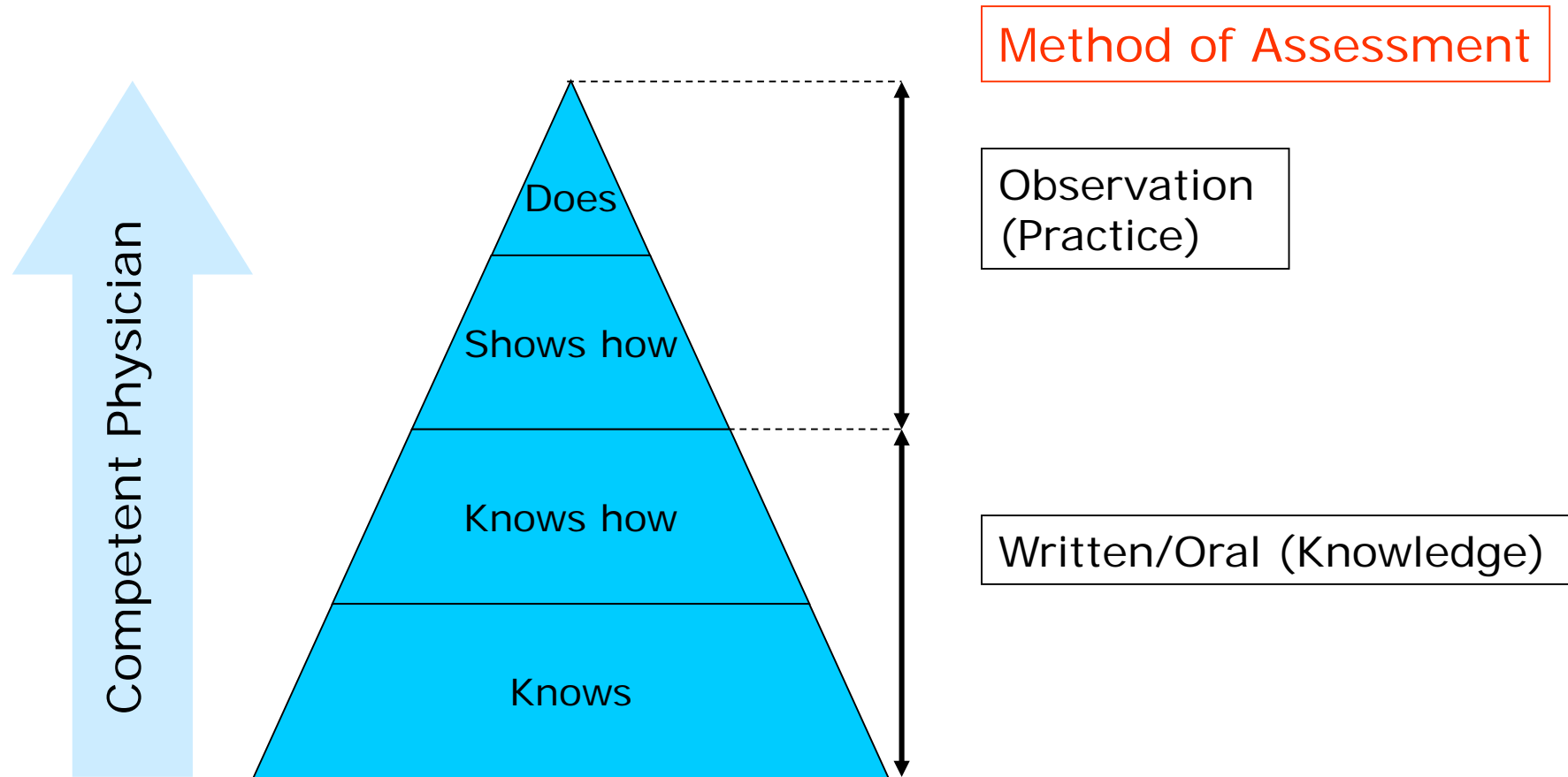


Miller's Pyramid of Clinical Competence



Miller GE: The Assessment of Clinical Skills/Competence/Performance. Acad Med 1990; 65: 63-7

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Background of the NKLM

Political Background:

- National Science Council (2008): Quality improvement of Teaching and Learning
- Committee of Higher Education of the Conference of Ministries of Education (2009): Qualification Framework for Medical Education?

Decision of Cooperation of MFT und GMA

- Development of a competence-based core curriculum for physicians

Framework of Legal and Vocational Policies

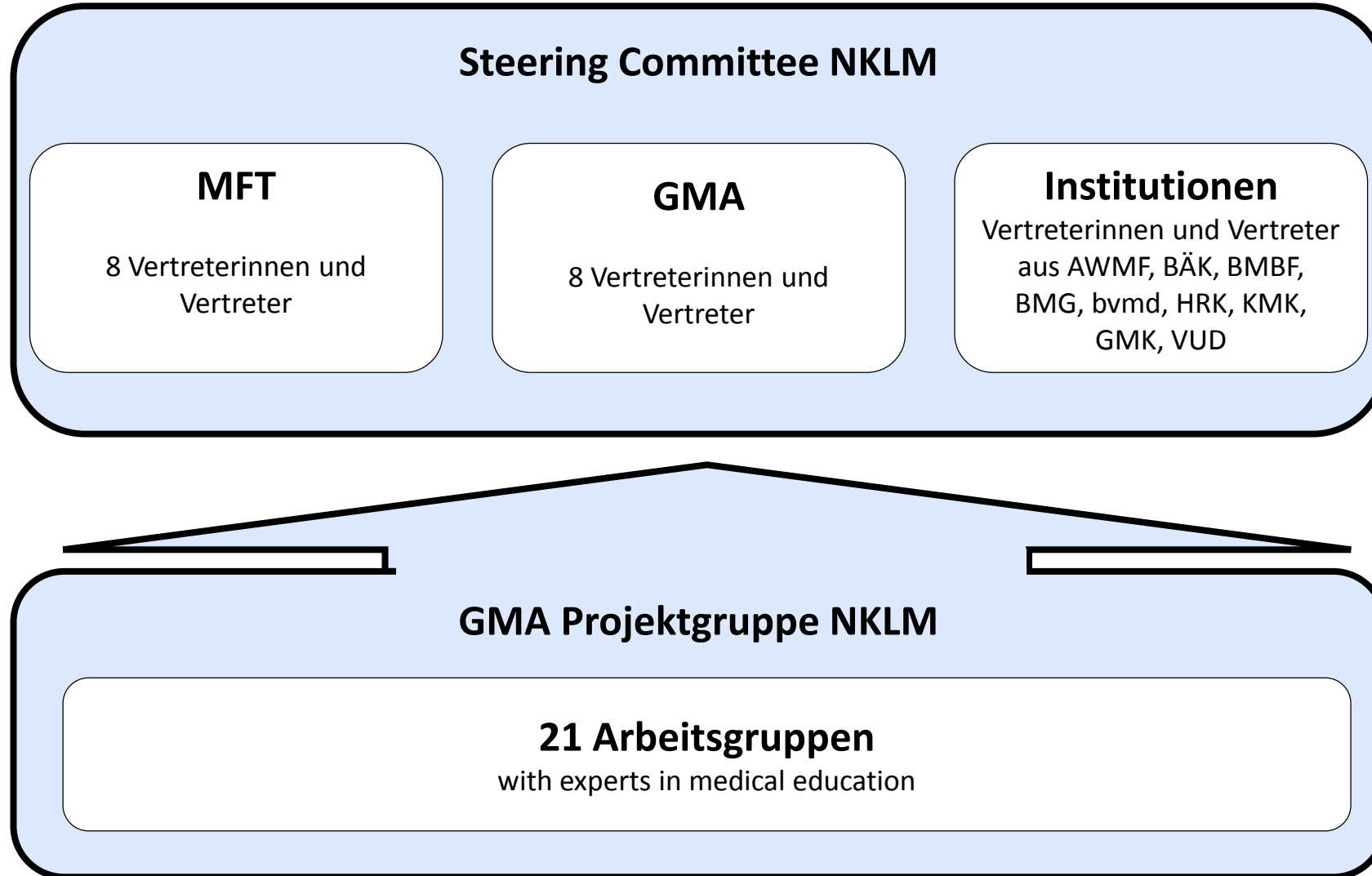
- EU-Directive 2005/36/EU to ensure European acknowledgement
- National and european laws and regulations
- Professional and vocational regulations, existing foreign national learning catalogues, national, discipline and faculty-based learning catalogues
- Derived from competencies observed in professional activities of physicians and the needs of the population

National Competency-based Catalogue of Learning Objectives for Medicine (NKLM)

- Close collaboration between the German Medical Faculties' Association (MFT) and the Association for Medical Education in the German-speaking countries (GMA)
- Started 2009, 21 interdisciplinary workgroups established
- Supported by the Robert Bosch Foundation (Coordinating office in Witten)
- Goes along with an initiative of the Colleges for Health („Hochschulen für Gesundheit“, see <http://www.hochges.de/>) for the creation of learning objectives catalogues

Hahn EG, Fischer MR. Nationaler Kompetenzbasierter Lernzielkatalog Medizin (NKLM) für Deutschland: Zusammenarbeit der Gesellschaft für Medizinische Ausbildung (GMA) und des Medizinischen Fakultätentages (MFT). *GMS Z Med Ausbild.* 2009;26(3):Doc35.

Stakeholder Groups Working Together



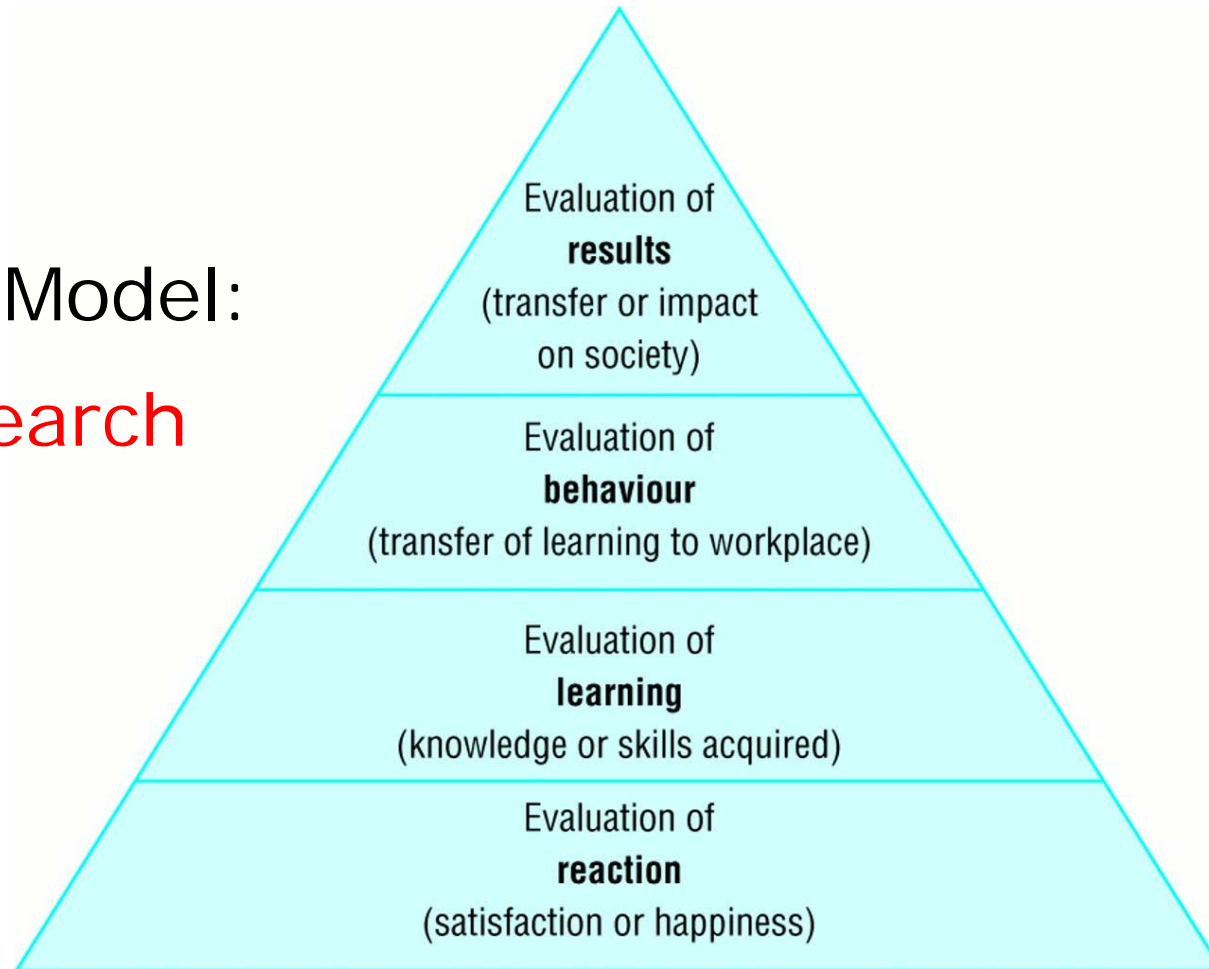
Competence-based MedEd: NKLM

www.nklm.de/download.html

- **Cluster of Competences as Roles**
 - Adoption of the CanMEDS-Model: Roles of physicians
 - Composed from enabling competencies and learning objectives in clinical knowledge, clinical skills and professional attitudes
- **Competences**
 - Understood as retrievable cognitive and practical skills to solve patient's problems and the necessary attitudes to apply them successfully
- **Assessment**
 - Development of competencies by aligning learning and assessment: measurement of performance

Outcome of Medical Education

Kirkpatrick's Model:
Outcome **Research**
Warranted

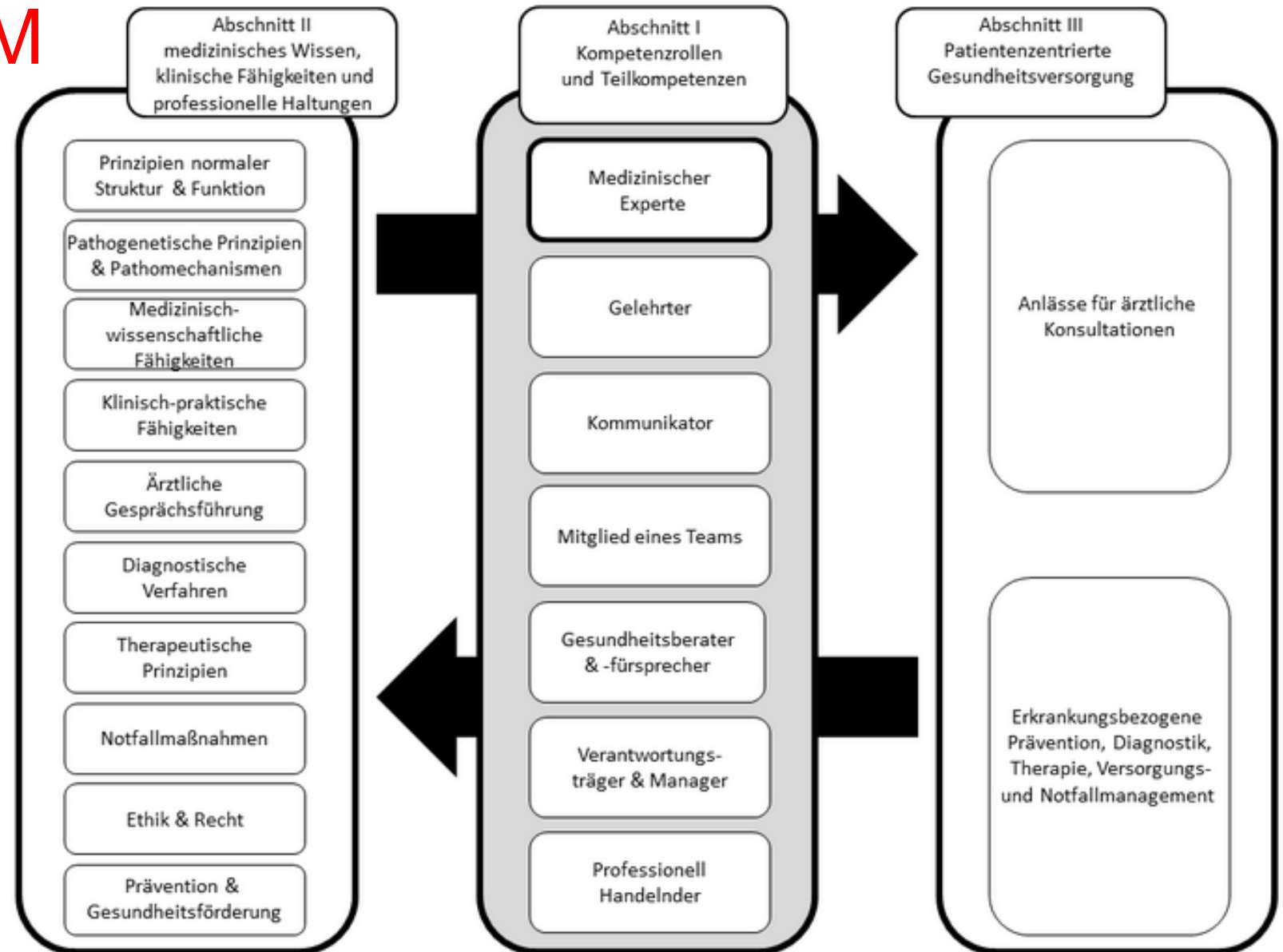


Structure of NKLM

Milestones

1. Cognitive competencies
2. Scientific competence
3. Basic competencies for graduate contact with patients
4. Competencies for the (final) Practical Year
5. Ärztliche Approbation und Weiterbildungs-Kompetenz

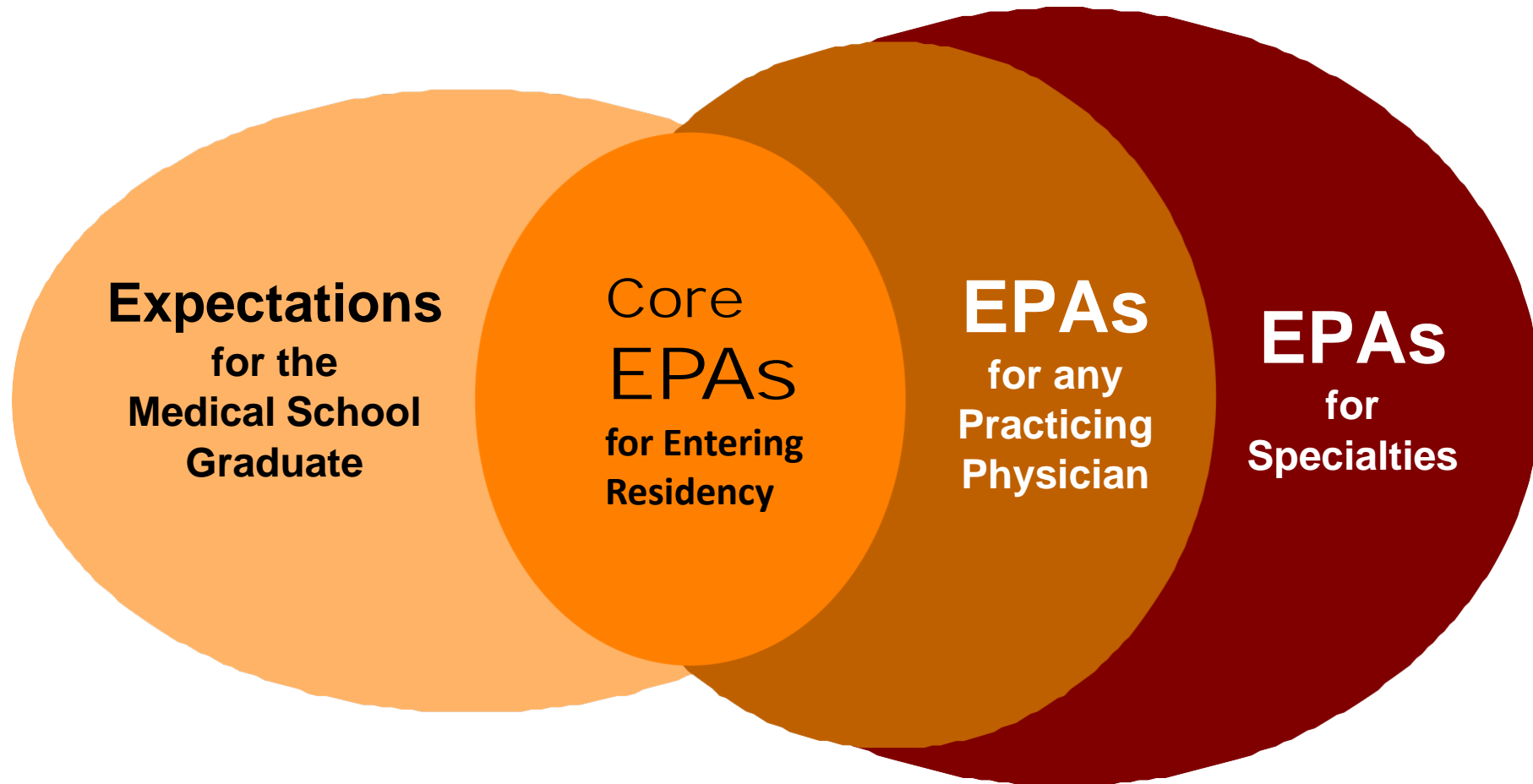
Hahn EG, Fischer MR. *Nationaler Kompetenzbasierter Lernzielkatalog Medizin (NKLM) für Deutschland*.
GMS Z Med Ausbild. 2009;26(3):Doc35



Entrustable Professional Activity (EPA)

EPAs are **units of professional practice**, defined as tasks or responsibilities that trainees are entrusted to perform unsupervised once they have attained sufficient specific competence. EPAs are independently executable, **observable, and measurable** in their process and outcome, and, therefore, **suitable for entrustment decisions**.¹

¹Cate O. Nuts and bolts of entrustable professional activities. *J Grad Med Educ*. 2013;5(1):157-158.



Core EPAs for Entering Residency

- 01. Gather a history and perform a physical examination**
- 02. Prioritize a differential diagnosis following a clinical encounter**
- 03. Recommend and interpret common diagnostic and screening tests**
- 04. Enter and discuss orders/prescriptions**
- 05. Document a clinical encounter in the patient record**
- 06. Provide an oral presentation of a clinical encounter**
- 07. Form Clinical Questions and retrieve evidence to advance patient care**
- 08. Give or receive a patient handover to transition care responsibility**
- 09. Collaborate as a member of an interprofessional team**
- 10. Recognize a patient requiring urgent or emergent care, and initiate evaluation and management**
- 11. Obtain informed consent for tests and/or procedures**
- 12. Perform general procedures of a physician**
- 13. Identify system failures and contribute to a culture of safety and improvement**

Summary

1. In Germany, the **transition to competency-based medical education** has been sluggish, depending on Faculties and State authorities. The present licencing law has been amended in this direction but falls short of explicit regulations.
2. The National Competence-Based Catalogue of Learning Objectives (NKLM) encourages and supports faculties for **a nationally convergent curriculum development**, albeit their individual profile is maintained.
3. It is hoped, that the experiences with the NKLM and its re-evaluation will inform a **new German Federal Licensure Law**.
4. The **transition from graduate to postgraduate medical education** is a matter of great concern („black Wednesday“). This is not yet directly addressed in the NKLM.
5. To allow for a smooth transition, **entrustable professional activities (EPAs)** will play a role, as already integrated into accreditation programmes in the USA.