



# Integrative Medicine in Medical Education

Prof. Eckhart G. Hahn, MME (Bern), FACP  
University Hospital Erlangen, Department of Medicine

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Stuttgart,  
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# Plan of Presentation

1. Integrative Medicine and Health: Conceptual Frameworks and Definitions
2. Practice of Integrative Medicine and Health
3. Core Competencies for IM: Levels and Milestones
  - Undergraduate
  - Graduate
  - Life-long
4. Curriculum Development: Kern's Six Step Approach
5. Assessment of Competencies: Level of Performance and Role of Feed Back
6. Summary and Take Home Messages

# Definition of Health & Disease (Meikirch Model)

“Health is a dynamic state of well-being emergent from conducive interactions between an individual’s potentials, life’s demands, and social and environmental determinants.”

“Health results throughout the life course when an individual’s potentials – and social and environmental determinants – suffice to respond satisfactorily to the demands of life. Life’s demands can be physiological, psychosocial, or environmental, and vary across individuals and contexts, but in every case **unsatisfactory responses lead to disease.**”

Bircher & Kuruvilla 2014; Bircher & Hahn 2016



# Integrative Medicine and Health

## ***Academic Consortium for Integrative Medicine and Health 2015***

<https://www.imconsortium.org>

„Integrative medicine and health reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic and lifestyle approaches, healthcare professionals and disciplines to achieve optimal health and healing.“

# Caveats for Integrative Medicine

Integrative Medicine ist **not** equal to CAM or conventional medicine!

Integrative Medicine is also **not** the uncoordinated addition of CAM to conventional medicine!

The practice of Integrative Medicine is the conscientious **interprofessional planning and application** of all appropriate and effective therapeutic interventions by experienced therapists, usually in a **team-based approach**!

“Bringing conventional and complementary approaches together in a coordinated way” (NCCIH)

For this a broad knowledge base of all therapeutic modalities is indispensable !

# Terminology of Complementary and Alternative Medical Practices<sup>1</sup>

## **Mind-Body Practices**

Acupuncture and acupressure  
Alexander technique  
Guided imagery  
Hypnosis  
Massage  
Meditation  
Reflexology  
Rolfing/structural integration  
Spinal manipulation  
Tai chi  
Therapeutic touch  
Yoga

## **Traditional Medical Systems**

Ayurvedic medicine  
Curanderismo  
Native American medicine  
Siddha medicine  
Tibetan medicine  
Traditional Chinese medicine  
Unani medicine (also called “hikmat”)

## **“Modern” Medical Systems**

Anthroposophic medicine  
Chiropractic  
Homeopathy  
Naturopathy  
Osteopathy

<sup>1</sup>Josephine P. Briggs. Complementary, Alternative, and Integrative Health Practices. Harrison’s Principles of Internal Medicine, 19<sup>th</sup> Edition, Part 1, Chapter 14e1-4, Table 14e-1, p. 86, McGrawHill 2015

# Integrative Medicine Attitude Questionnaire (IMAQ)<sup>1</sup>

IMAQ is a validated 29-item, 7-point Likert scale-rated instrument for medical students and health care providers, usually modified for the sampling of demographic data. <sup>1,2</sup> Although Integrative Medicine appears **in the title only**, the selection of items was carefully derived from concepts of Integrative Medicine.

When applied to target groups (medical students, residents, fellows) the scores show a more positive attitude to CAM. „Medical students believe that integrative medicine should be taught in medical school.” <sup>2</sup>

<sup>1</sup>Schneider CD, Meek PM, Bell IR. Development and validation of IMAQ: integrative medicine attitude questionnaire. *BMC Med Educ.* 2003; 3: 5.

<sup>2</sup>Flaherty G, Fitzgibbon J, Cantillon P. Attitudes of medical students toward the practice and teaching of integrative medicine. *J Integr Med.* 2015; 13(6): 412–415.

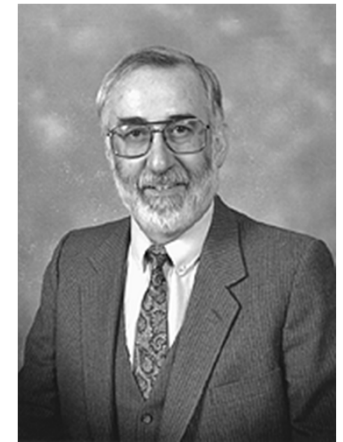


# (Practice of) Evidence-based Medicine (EBM)

„Evidence-based medicine (EBM)...:

... requires the **integration of best research evidence** with our **clinical expertise** and our **patient's unique values and circumstances**“

Straus SE, Glasziou P, Richardson WS, and Haynes RB. Evidence-Based Medicine. How to Practice and Teach it. Churchill Livingstone-Elsevier, Edinburgh, 4th ed., p. 1.



David Sackett



# Practice of EBM in IM

- Clear clinical question
- Best Published Evidence: Literature Search and Definition of Grade of Recommendation
- Preference and Resources of the Patient: Participation
- Experience and Resources of Physician (Group)
- Follow Up and Recycle

# Introducing EBM into IM

## Evidence Classification and Grade of Recommendation of the results of clinical trials in relation to scientific significance

Grade of Recommendation	Class of Evidence	
<b>A</b>	Ia	Evidence based on metanalysis of randomized controlled trials
	Ib	Evidence based on at least one randomized controlled trial
<b>B</b>	IIa	Evidence based on at least one well designed, controlled trial without randomization
	IIb	Evidence based on at least one well desingned, quasi-experimental trial
	III	Evidnece based on well designed, non-experimental, descriptive trials like comparative trials, correlation trials and case-control trials
<b>C</b>	IV	Evidence based on reports by expert groups or expert opinions and/or clinical experience of accepted authorities.

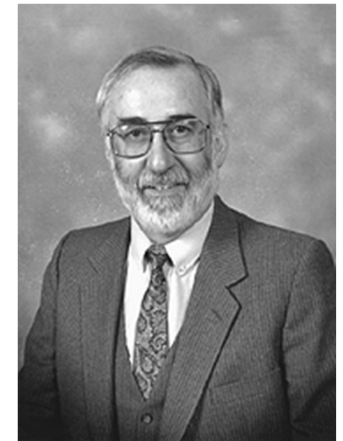
Reference: SIGN – Scottish Intercollegiate Guidelines Network 1999. SIGN-Guidelines – An introduction to SIGN methodology fort he development of evidence-based clinical guidelines. SIGN Publication 39

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# The Cochrane Collaboration Complementary Medicine Reviews

(Includes more than 300 reviews of complementary health practices)

<http://www.cochrane.org/cochrane-review>

CAM is ...”a broad domain of **healing resources** that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, **other than those intrinsic to the politically dominant health system of a particular society or culture** in a given historical period. CAM includes all such practices and ideas **self-defined by their users** as preventing or treating illness or promoting health and well-being. Boundaries within CAM and between the CAM domain and that of the dominant system are not always sharp or fixed”

# 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;  
Hodges BD, Lingard L (Hrg.): The Question of Competence.  
IRL Press 2013

# Roles and Competencies of Physicians

<b>CanMEDS 2005<sup>1</sup></b>	<b>WHO (5-star)<sup>2</sup></b>	<b>ACGME<sup>3</sup></b> (Accreditation Council for Graduate Medical Education)
<ul style="list-style-type: none"> <li>• Medical Expert</li> <li>• Collaborator</li> <li>• Communicator</li> <li>• Health Advocate</li> <li>• Manager</li> <li>• Scholar</li> <li>• Professional</li> </ul>	<ul style="list-style-type: none"> <li>• Care Provider</li> <li>• Decision Maker</li> <li>• Communicator</li> <li>• Community Leader</li> <li>• Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Medical Knowledge &amp; Clinical Reasoning</li> <li>• Patient Care Skills</li> <li>• Communication abilities</li> <li>• Professionalism</li> <li>• Practice-Based Learning &amp; Improvement</li> <li>• Systems-Based Practice</li> </ul>

<sup>1</sup>Frank, JR. (Ed). 2005. The CanMEDS 2005 physician competency framework. Better standards. Better physicians. Better care. Ottawa: The Royal College of Physicians and Surgeons of Canada.

<sup>2</sup>Boelen C. Frontline doctors of tomorrow. World Health, 1994, 47:4–5

<sup>3</sup>Nasca TJ, Philibert I, Brigham T, Flynn TC. The next GME accreditation system--rationale and benefits. N Engl J Med. 2012 Mar 15;366(11):1051-6.

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# Educational Task Forces of the Academic Consortium for Integrative Medicine and Health to Propose Undergraduate and Graduate IM Curricula

Education Working Group of the Consortium of Academic Health Centers for Integrative Medicine (CAHCIM, 2002): Kligler B, Maizes V, Schachter S, Park CM, Gaudet T, Benn R, Lee R, Remen RN. Core Competencies in **Integrative Medicine for Medical School Curricula**: A Proposal. Acad Med. 2004;79:521–531

Task force of the CAHCIM to draft integrative medicine fellowship core competencies (2010): Ring M, Brodsky, M, Low Dog T, Sierpina V, Bailey M, Locke A, Kogan M, Rindfleisch JA, Saper R. Developing and Implementing Core Competencies for **Integrative Medicine Fellowships**. Acad Med. 2014;89:421–428



# Medical School Curricula

## Domains of Learning Goals

### Values

Philosophical and conceptual framework special  
to Integrative Medicine

### Knowledge

### Skills

### Attitudes

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Integrative Medicine in Medical Education

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# Core Competencies for IM Fellowships

## Alignment with ACGME Competencies

„Medical Knowledge“ and „Patient Care“ deviated most.

Notably four areas of competencies needed to be addressed:

Pain Management

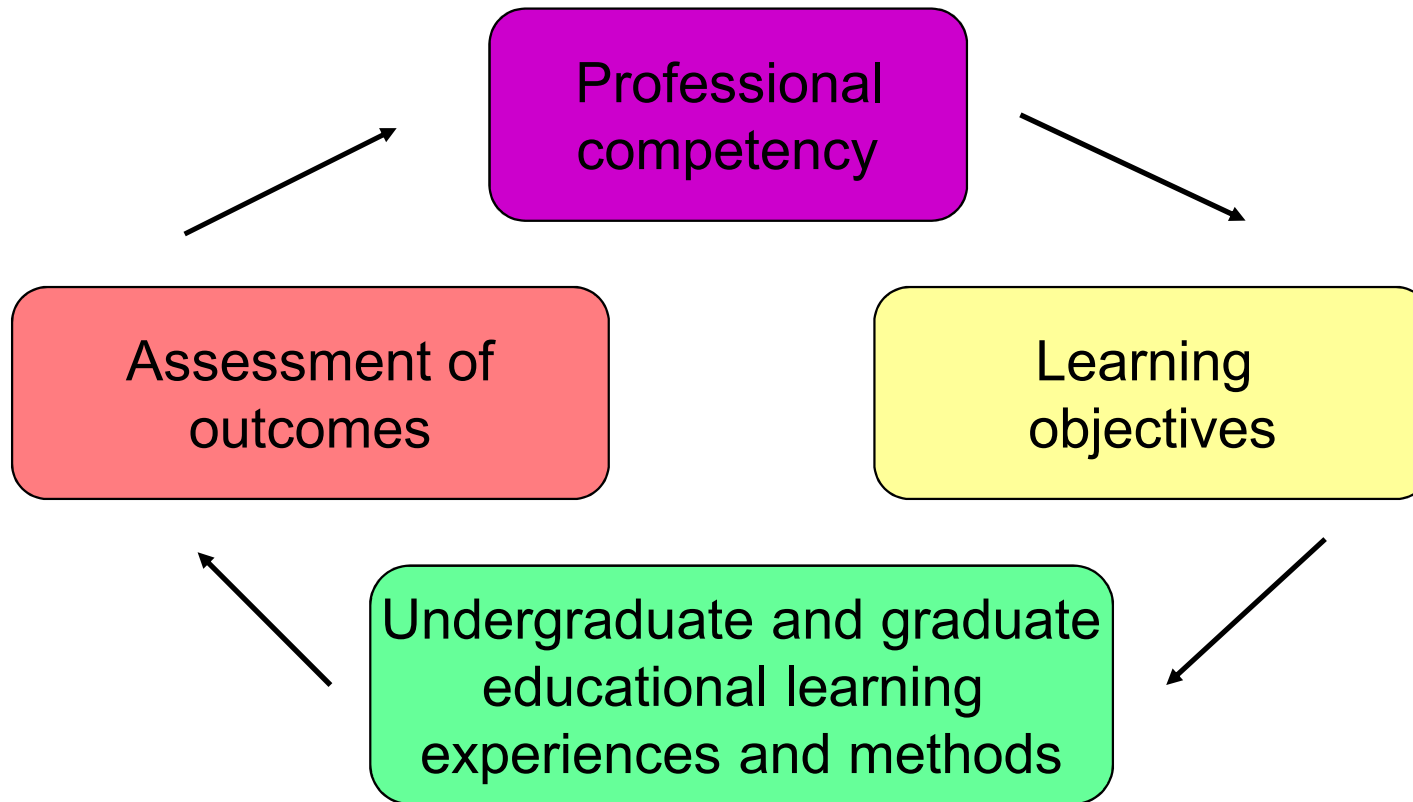
Nutritional Science

Mind-Body Medicine

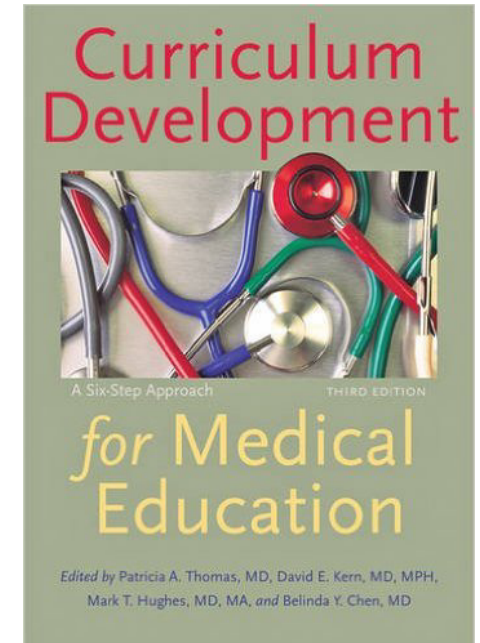
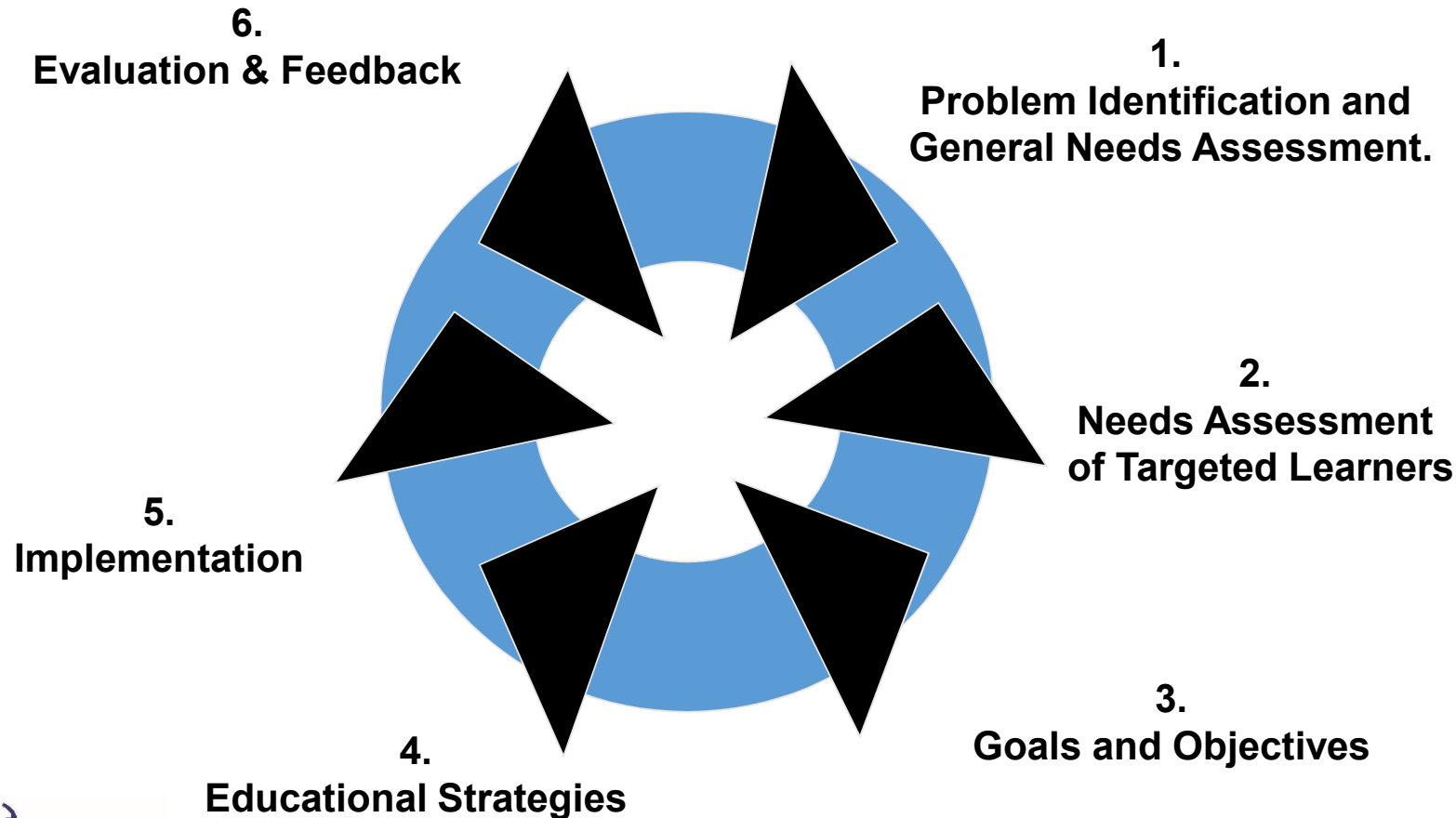
Life Style Medicine

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# Competence-Based Graduate and Postgraduate Medical Education

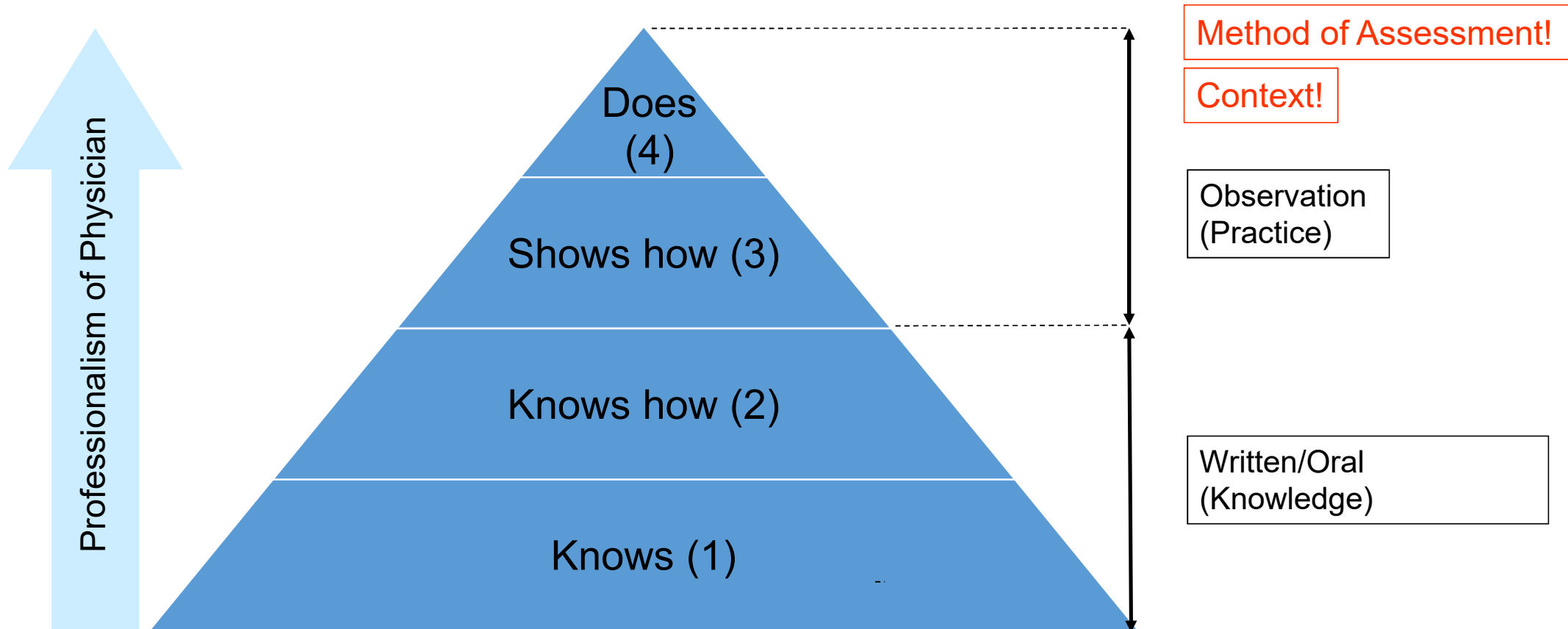


# Quality Cycle of Curriculum Development (Thomas, Kern et al., 2016)



# Miller's Pyramid of Clinical Competences (Level)

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



## Levels of competence for objectives needed for the practice of IM: **Undergraduate (UME) and Postgraduate Medical Education (GME)**

Applies criteria of accepted and of unfounded modalities

**UME** [1,2,3]

**GME** [1,2,3,4]

Applies evidence based (individual) medicine (EBM)

**UME** [1,2,3,exemplary 4]

**GME** [1,2,3,4]

Applies evidence based and evaluable therapeutic modalities

**UME** [1,2, exemplary 3]

**GME** [1,2,3,4]

Applies the definition of health care and interprofessional practice

**UME** [1,2,3,4]

**GME** [1,2,3,4]

Applies personalized medicine (Genomics, Proteonomics, Values, Lifestyle, Microtechnology, Nanotechnology)

**UME** [1,2, exemplary3]

**GME** [1,2,3,exemplary4]

# IM Practice & Case Based Conference

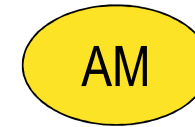
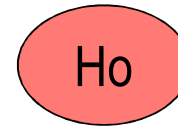
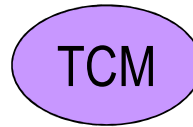
## Initial clinical IM encounter:

History taking & IM therapeutic concept: selection of IM team

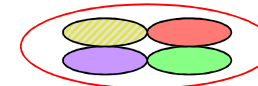
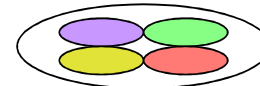
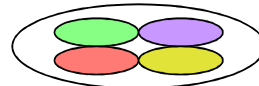
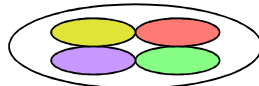
## Presentation of patient in IM team:

    History taking, diagnosis & therapeutic concepts

Group work 1: How is the therapeutic concept achieved?



Group work 2: Discussion of the different approaches



Plenary discussion

Recommendation  
/Follow up

 Homoeopathy

 Regular (allopathic) Medicine

 Anthroposophic Medicine

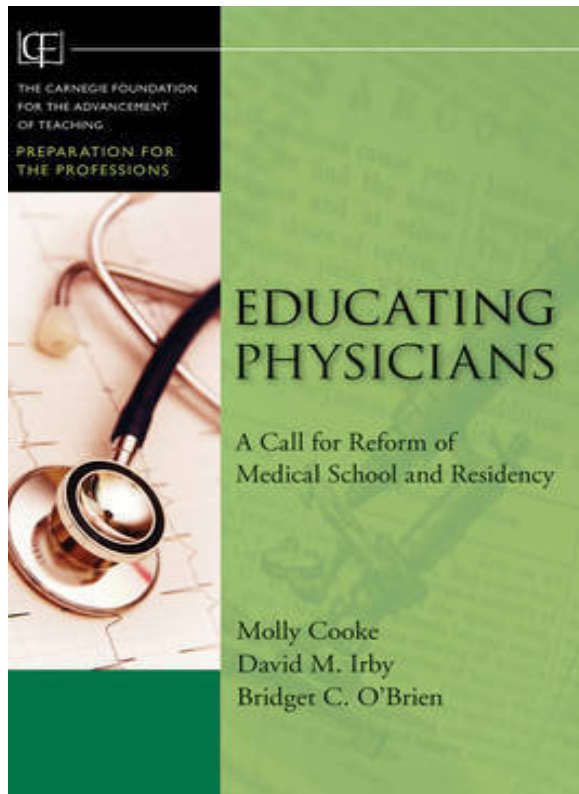
 Trad. Chinese Medicine

[Modified from a suggestion by Christian Scheffer]

EGH 24



# Introducing Integrative Medicine into UME and GME: **Change Management & Leadership** - the Role of the Faculty



“As curriculum reform transforms the structure of medical education, faculty will have new roles and responsibilities”

”These new teaching responsibilities require **faculty development**”

# Faculty Change Management for IM Education: The University of Arizona Center for Integrative Medicine Experience

Charismatic person (Anrew Weil) <> students demand (faculty scepticism)

Fellowship (Dean leadership: online programme) <> residency (role model for students)

Family medicine (200h IM curriculum) – pediatrics – American Board of Integrative Medicine (ABOIM)

Distinction track for medical students (15 % of students in 2015)

Maizes V, Horwitz R, Lebensohn P, McClafferty H, Dalen J, Weil A. The evolution of integrative medical education: the influence of the University of Arizona Center for Integrative Medicine. *J Integr Med.* 2015; 13(6): 356–362.

# Summary and Take Home Messages

- The teaching of CAM modalities and Integrative Medicine in medical curricula, residency and fellowship programs varies, increases worldwide and is driven by patients, students, charismatic personalities, consortia, cultural traditions and, recently, **value considerations and legal actions**.
- Specific needs for implementing the **philosophy and competences for Integrative Medicine** into medical education have been defined and published.
- In the US, the advance of IM is particularly fast: 40 % of academic medical institutions are members in the ACIMH, the NCCIH provides funds and the ABOIM was established.
- Curriculum development, choice of assessment instruments, and assessment strategies are based on **competence and context** (Competence: Miller-Pyramid, Milestones; Context: team-based practice, teaching ward, work place assessment).
- **Primary care** (family medicine, pediatrics) and even **public health** (preventive medicine) seem to be particularly attracted by IM competencies.
- IM, when properly included into the continuum of medical education, has shown the potential to **change the way how we practice medicine**. The same is true for all health professions.