Medical Education in 21st Century

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II. 21st Century and its challenges
III. Current Professional Education
IV. Generations of Reforms in Medical Education
V. Competencies of the 21st Century physicians and how medical education needs to change to teach
VI. Future Medical Trainer

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I. 20th Century

- a very prolific period for medical education
- slow progress until the end of the nineteenth century
- changed pace, and educational innovations were introduced at an ever growing rate

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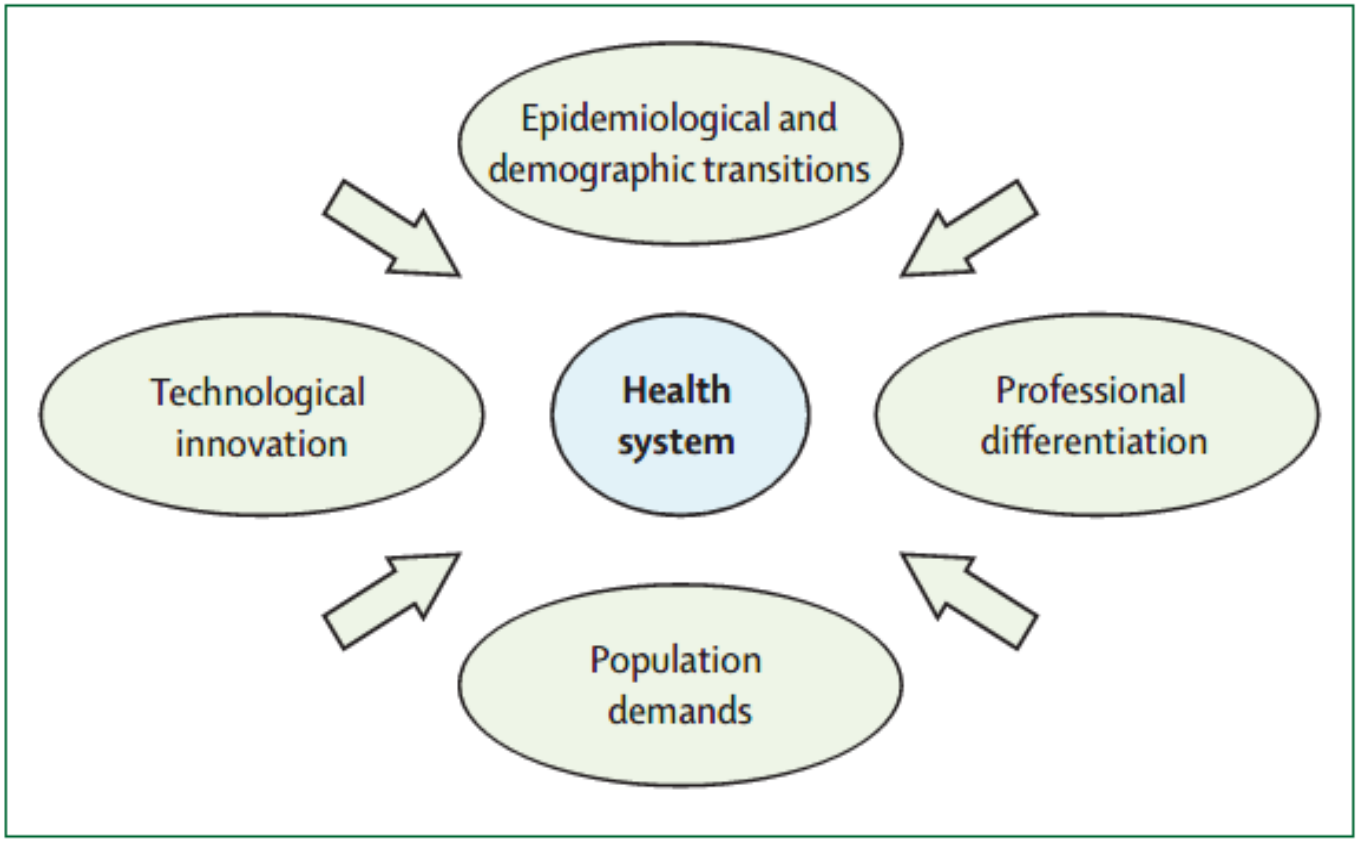
II. 21st Century and its challenges

- Beginning of the 21st century is not all well.
- Glaring gaps and inequities in health persist both within and between countries
- At the same time, fresh health challenges loom.



Emerging challenges to 21st Century

21st Century Challenges

1. Health problems
2. Explosion of scientific information
3. Patients and Society
4. Medical Trainee
5. Health Care and training system

1. Health Problems

- New infections

  (epidemic, drug resistance, ..)
- Rise in chronic and episodic illness
- Aging Societies and end of life care
- Environmental risk

  (climate change, disasters,accident,..)
- Behavioural risks

  (drug abuse, unhealthy lifestyle,..)
- Rapid demographic and epidemiological transitions

  (people migration, globalization,..)

2. Explosion of scientific information

- availability and accessibility of information has been growing at an exponential rate during the last two decades
- world wide web (www), home, mobile, and tablet, computers, smartphones, wearable devices such as glasses, wrist watches
- Information overload → Information pollution

3. Patients and Society

- People's expectations of health care are also evolving.
- More people wish to be informed and involved in decisions about their health
- Increasing they expect to use technology to interact with services.

- Inequalities in the social determinants of health
- Complex social needs
- Changing nature of the relationship between doctors and patients

4. Medical trainees

- Generation Jones (1955-1965)
- Generation X (1966-1976)
- **Generation Y (Millenniums) (1977-1994)**
- **Generation Z (1995-2012)**

- Technology has also significant impact on the practice of teaching
- Medical trainees must become proficient in technology and adaptable to new technologies
- Medical educators can take advantage the availability of curricular material on the web
- Potential to open the classroom to online participations

- Vast and growing amount of information requires the learners to be selective, to assess the quality of the information

- to pick the reliable and sound sources upon which they can build their knowledge base

5. Health Care and training system

- health systems worldwide are struggling to keep up, as they become more complex and costly
- additional demands on health workers
- Shortage of primary care doctors
- Misdistribution of specialties chosen by medial students
- Lack of evenly distributed learning opportunities in clinical practice

- Growing need of team work
- Teaming up with health professionals other than doctors as well as with technicians and other staff is inevitable
- Rotating leadership roles according to the problem

- Individualized medicine, personalized medicine (not one size fit for all)

- Additional issues
  - Stem cell research, genetic manipulation, cloning, delay or prevention of aging
  - Untoward territories

- New array of ethical dilemmas to society

- Moral and ethical dilemma may cause much distress to all involved – students, teachers, patients and families

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III. Current Professional Education

- Professional education has not kept pace with these challenges
- because of fragmented, outdated, and static curricula that produce ill-equipped graduates.
- Narrow technical focus without broader contextual understanding
- predominant hospital orientation at the expense of primary care

- mismatch of competencies to patient and population needs
- quantitative and qualitative imbalances in the professional labour market
- Weak leadership to improve health-system performance

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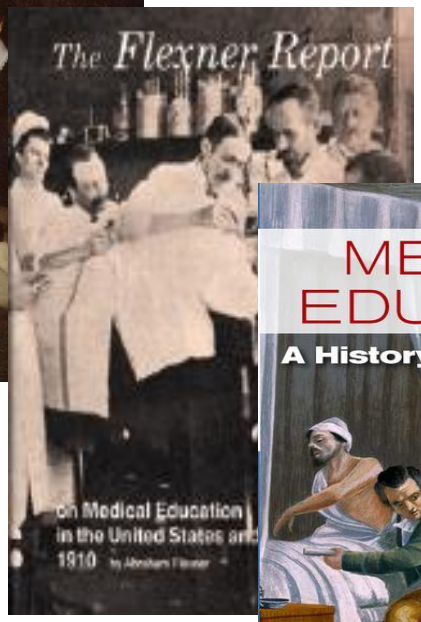
IV. Generations of Reforms in Medical Education

- Innovation in medical learning has long and deep historical roots worldwide
- In India, early systems of medical education were reported around 6th century BC
- In China, with lectureships in Chinese medicine at the Imperial Academy in 624 AD
- In the UK, the Royal College of Physicians started in the 17th century


The Flexner Report
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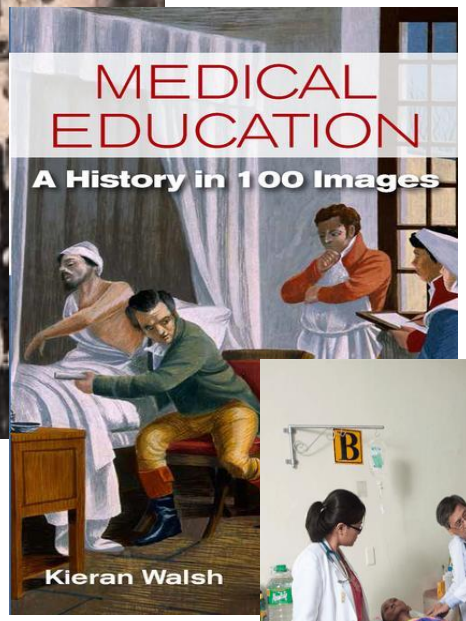
in the United States and
1910


MEDICAL
EDUCATION
A History in 100 Images
Kieran Walsh

Three generations of reform

- First generation

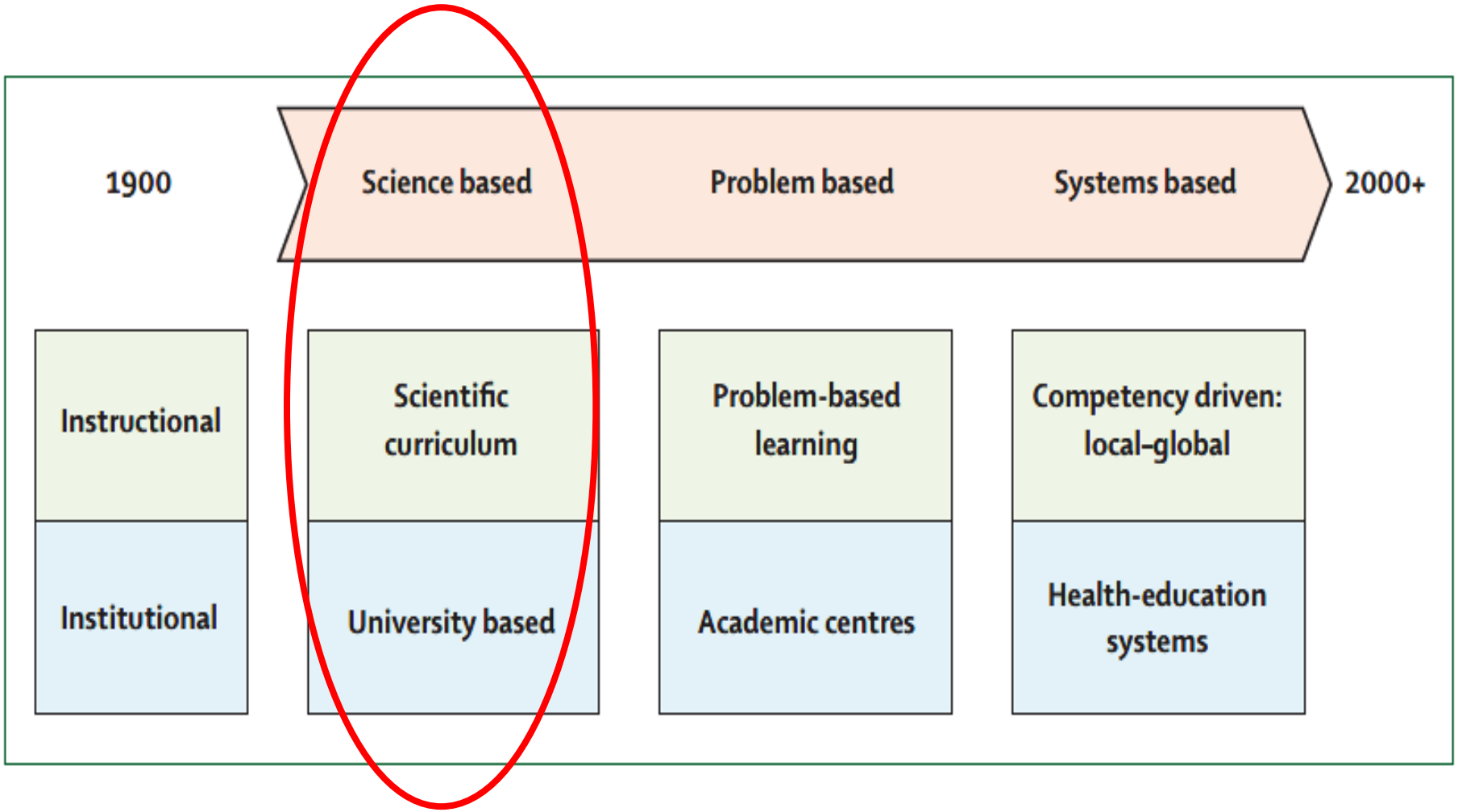
  - beginning of 20th century - Science-based curriculum

- Second generation

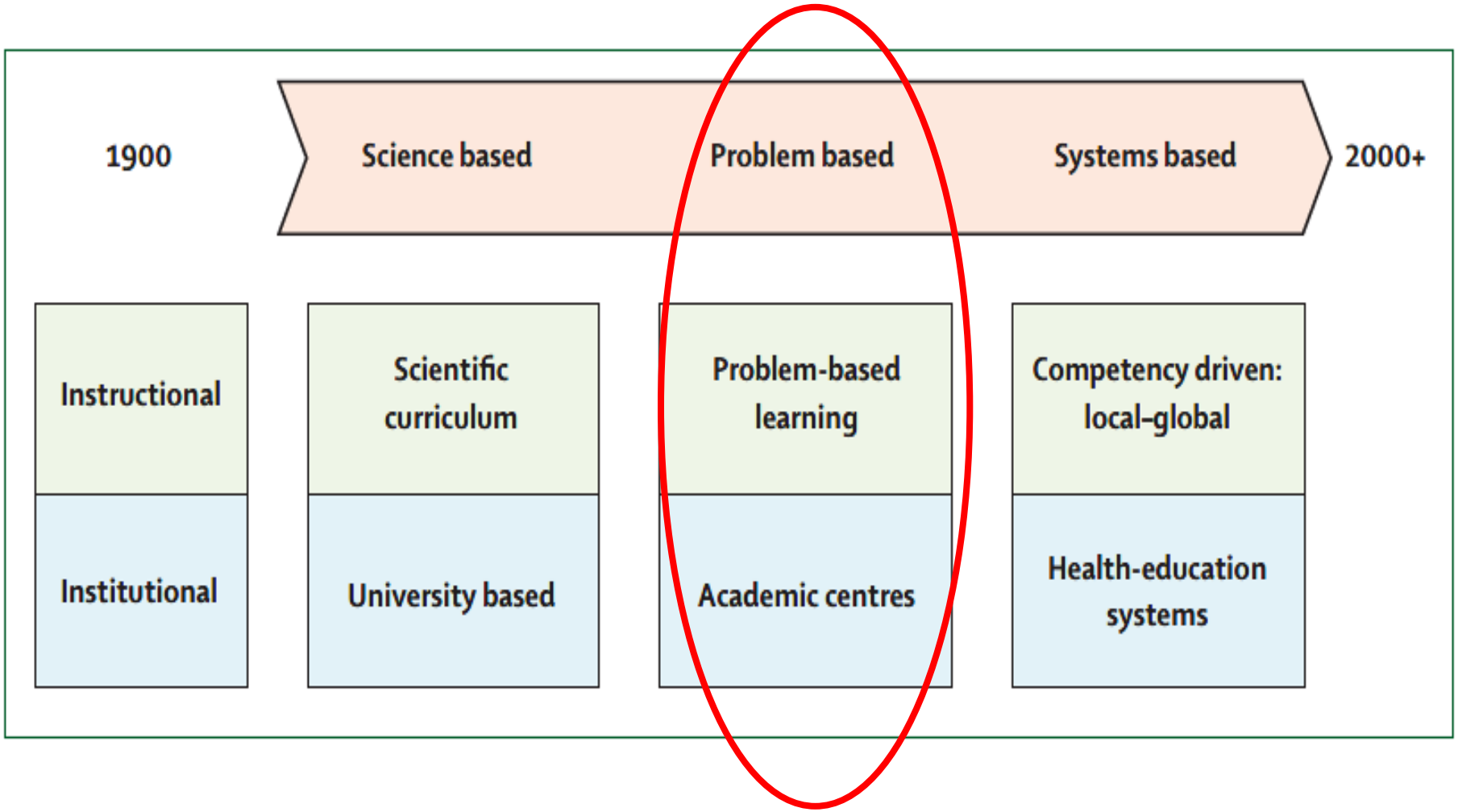
  - Mid 20th century – problem-based instructional innovations

- Third generation

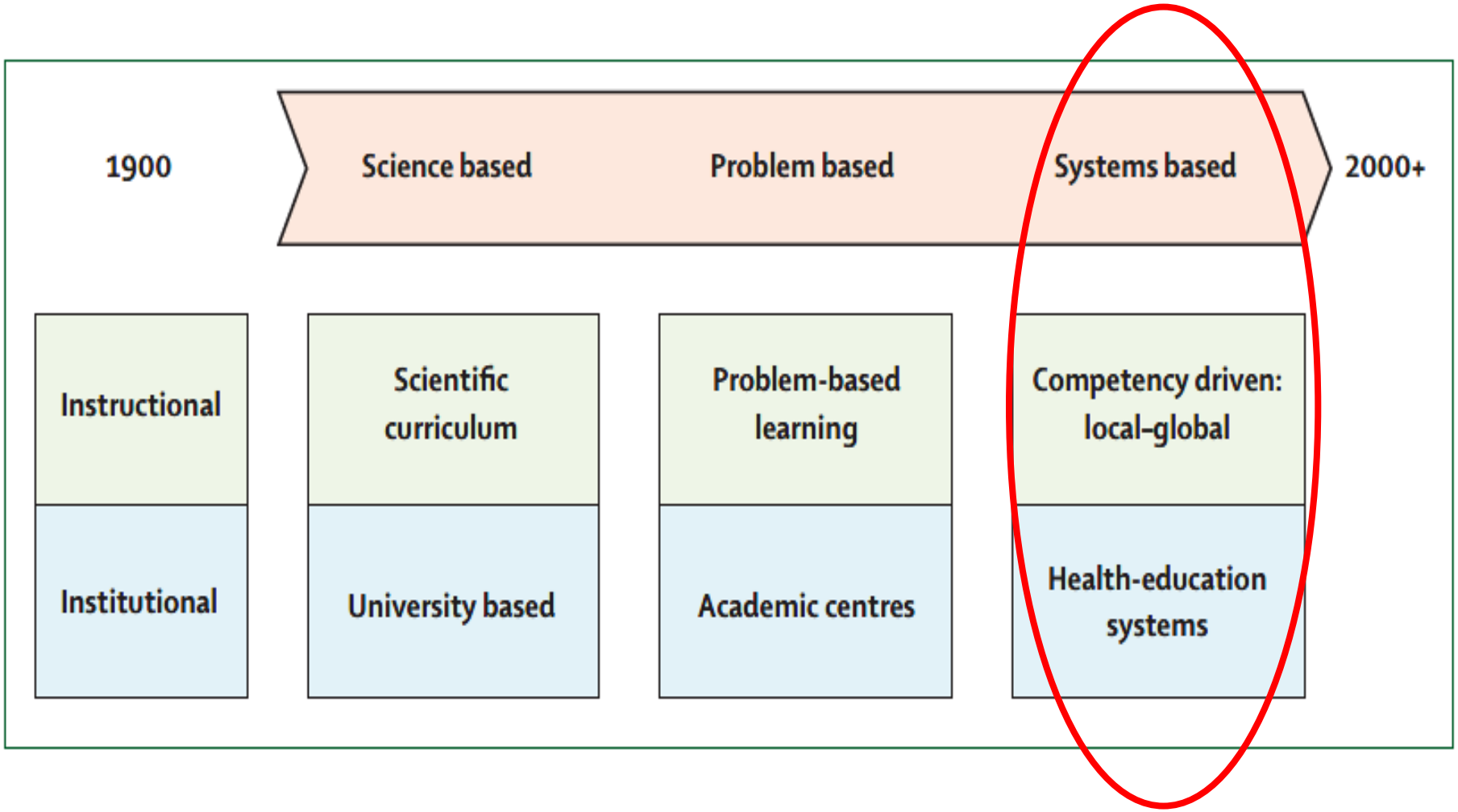
  - Now – based to improve the performance of health systems by adapting core professional competencies to specific contexts, while drawing on global knowledge



Three generations of reform in medical education



Three generations of reform in medical education



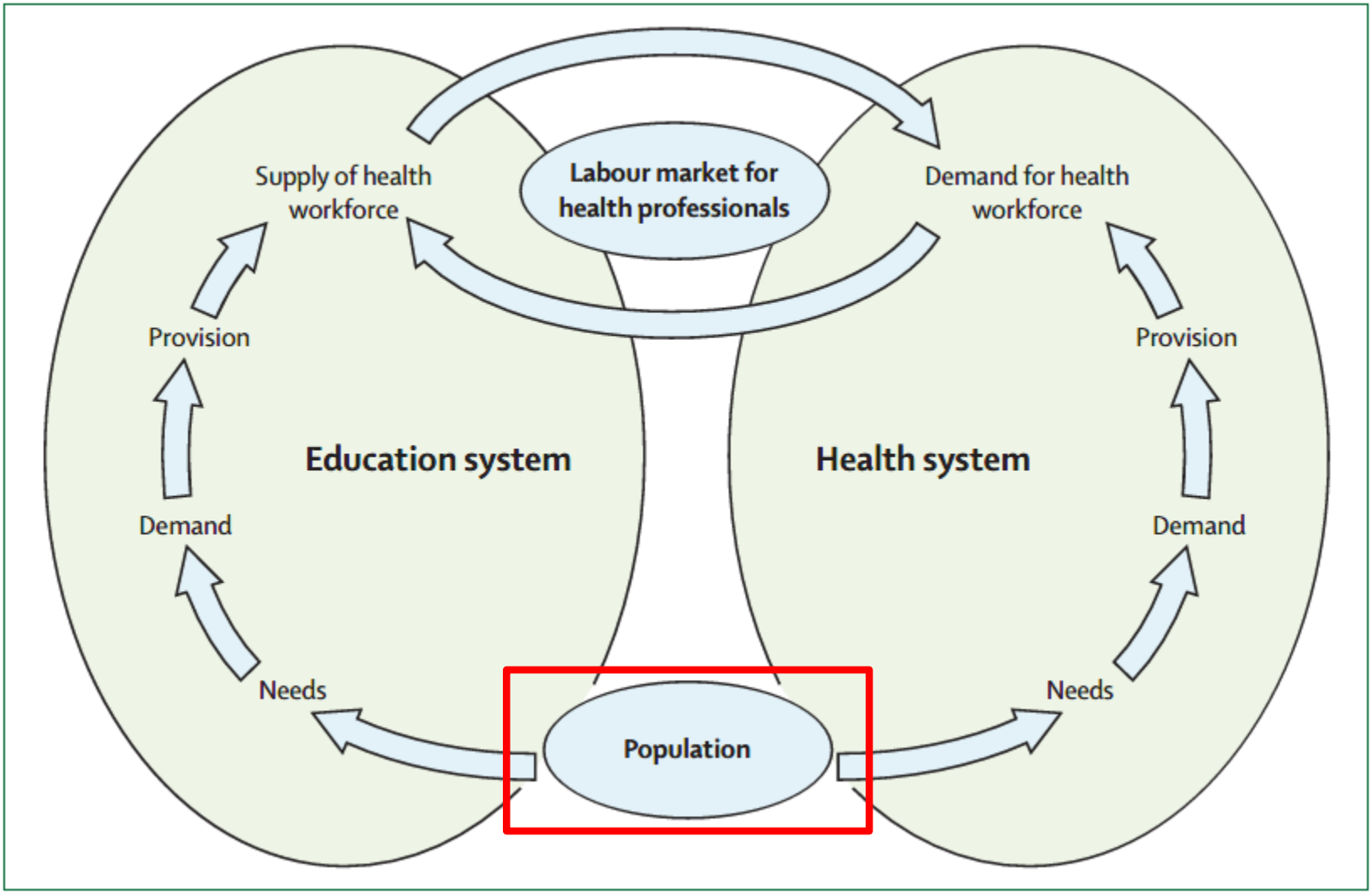
Three generations of reform in medical education

- Most countries and professional institutions – mixed patterns of these reforms.
- In some countries, most schools are entirely confined to the first generation, with traditional and stagnant curricula and teaching methods and with an inability, or even resistance, to change
- Many countries are incorporating second-generation reforms
- a few are moving into the third generation
- No country seems to have all schools in the third generation.

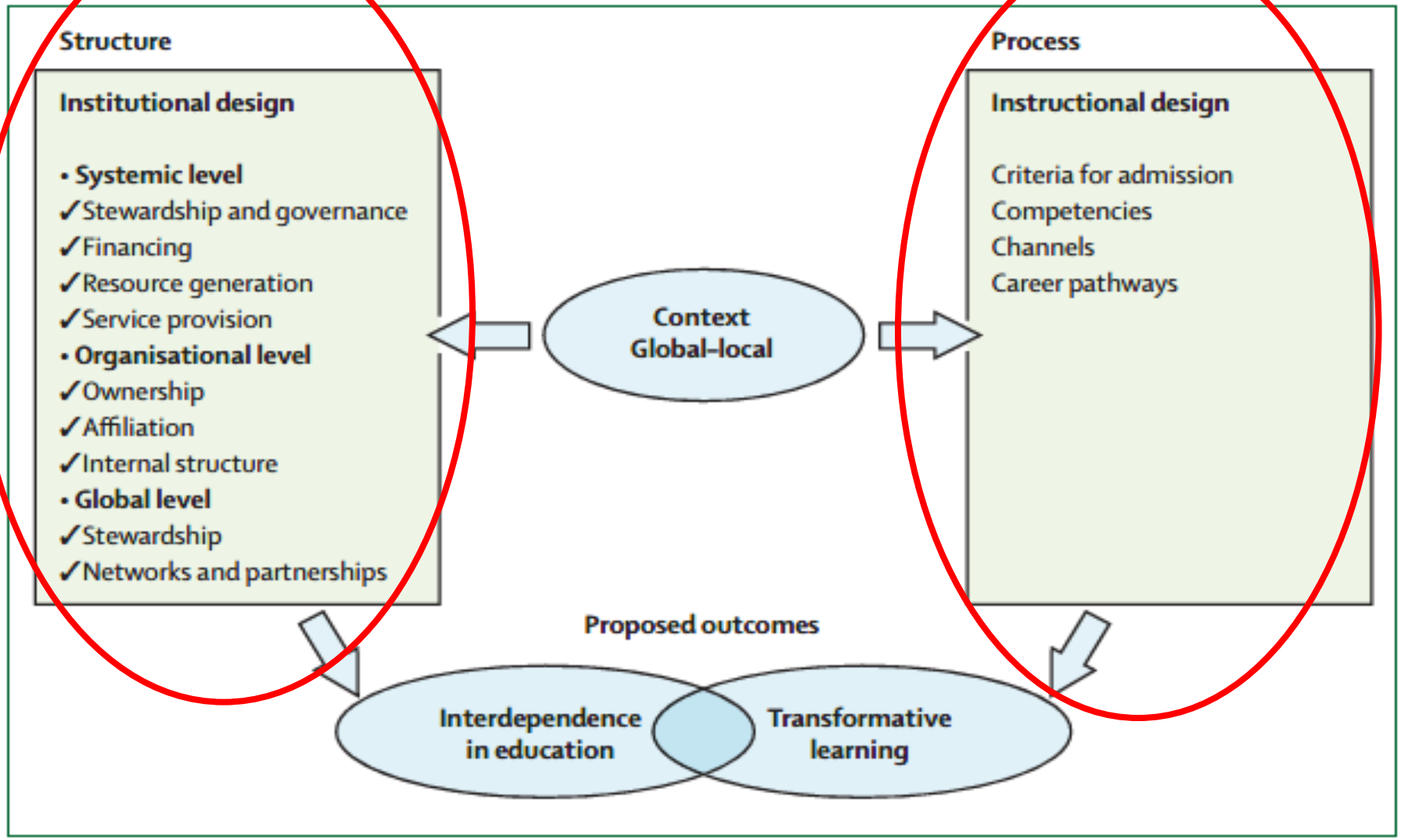
To advance third-generation reforms

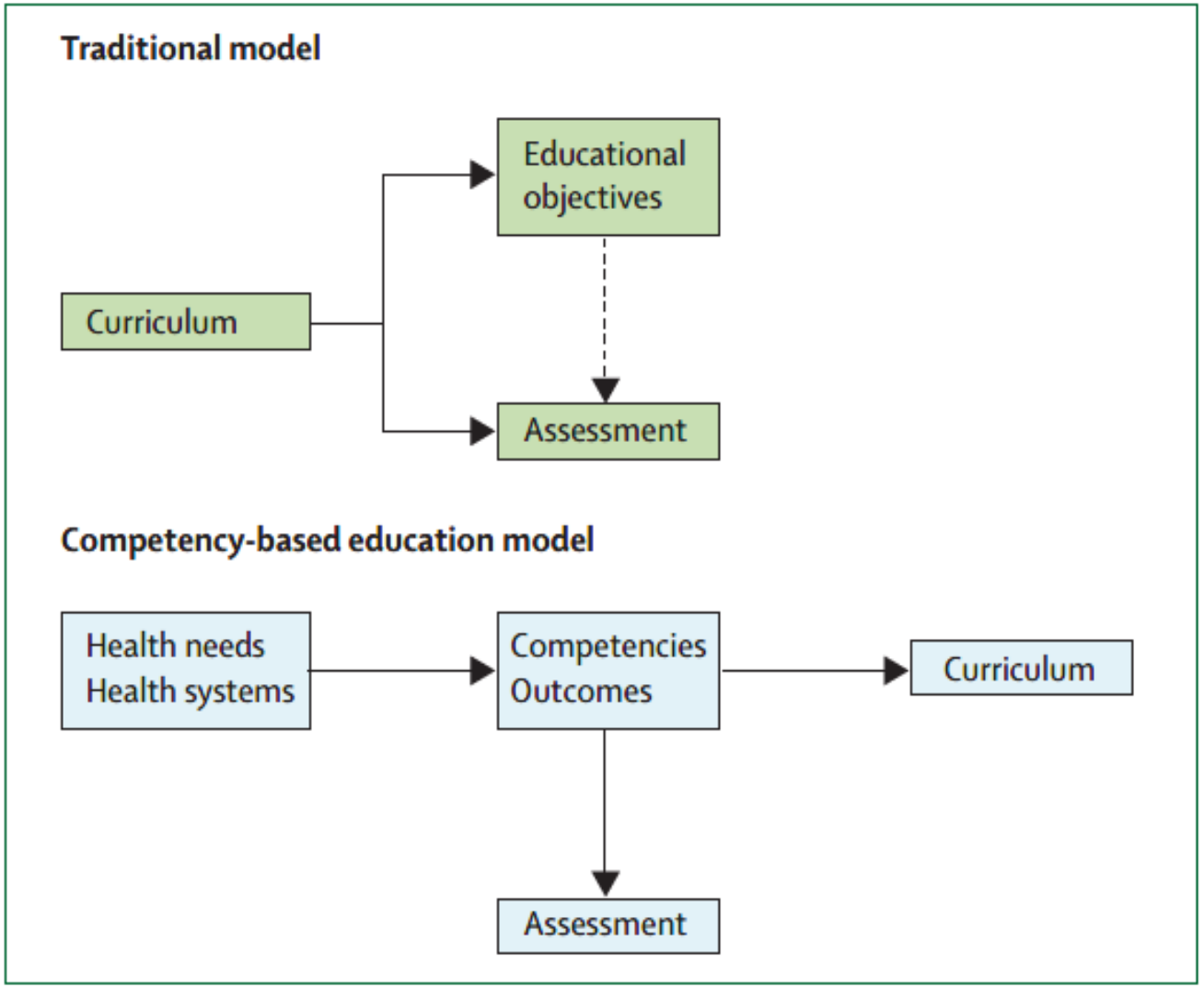
- all health professionals in all countries
- to mobilise knowledge
- to engage in critical reasoning and ethical conduct
- competent
- patient and population-centred health systems
- members of locally responsive and globally connected teams

- The ultimate purpose is to assure
- universal coverage of the high quality comprehensive services that are essential to advance opportunity for health equity
- within and between countries.


Supply of health workforce
Labour market for health professionals
Demand for health workforce
Provision
Provision
Education system
Health system
Demand
Demand
Needs
Needs
Population

Key component of education system





Competency-based education

Competency

- "Competency is the habitual and judicious use of
- communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice
- for the benefit of the individual and the community being served".

(Epstein and Hundert)

Physician skills required for the next generation of health care delivery

- Leadership training
- Systems theory and analysis
- Cross-disciplinary training/multidisciplinary teams
- Understanding and respecting the skills of other practitioners
- Population health management
- Palliative care/end-of-life
- Resource management/medical economics
- Health policy and regulation
- Less "captain of the ship" and more "member/leader of the team"
- Empathy/customer service
- Time management
- Conflict management
- Giving performance feedback
- Understanding cultural and economic diversity
- Emotional intelligence

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V. Competencies of the 21st century physician and how medical education needs to change to teach

The most important qualities of future physicians

how medical education needs to change to teach these qualities

1. Inquiry and Improvement
2. Interdependency
3. Information management
4. Interest and Insight
5. Involvement

1. Inquiry and Improvement

- Teaching what is known – teaching how to explore unknown
- Key competency – to *acknowledge the unknown* and know how to explore

- In order to practise medicine in the 21st century, a core understanding of quality improvement is as important as our understanding of anatomy, physiology and biochemistry.

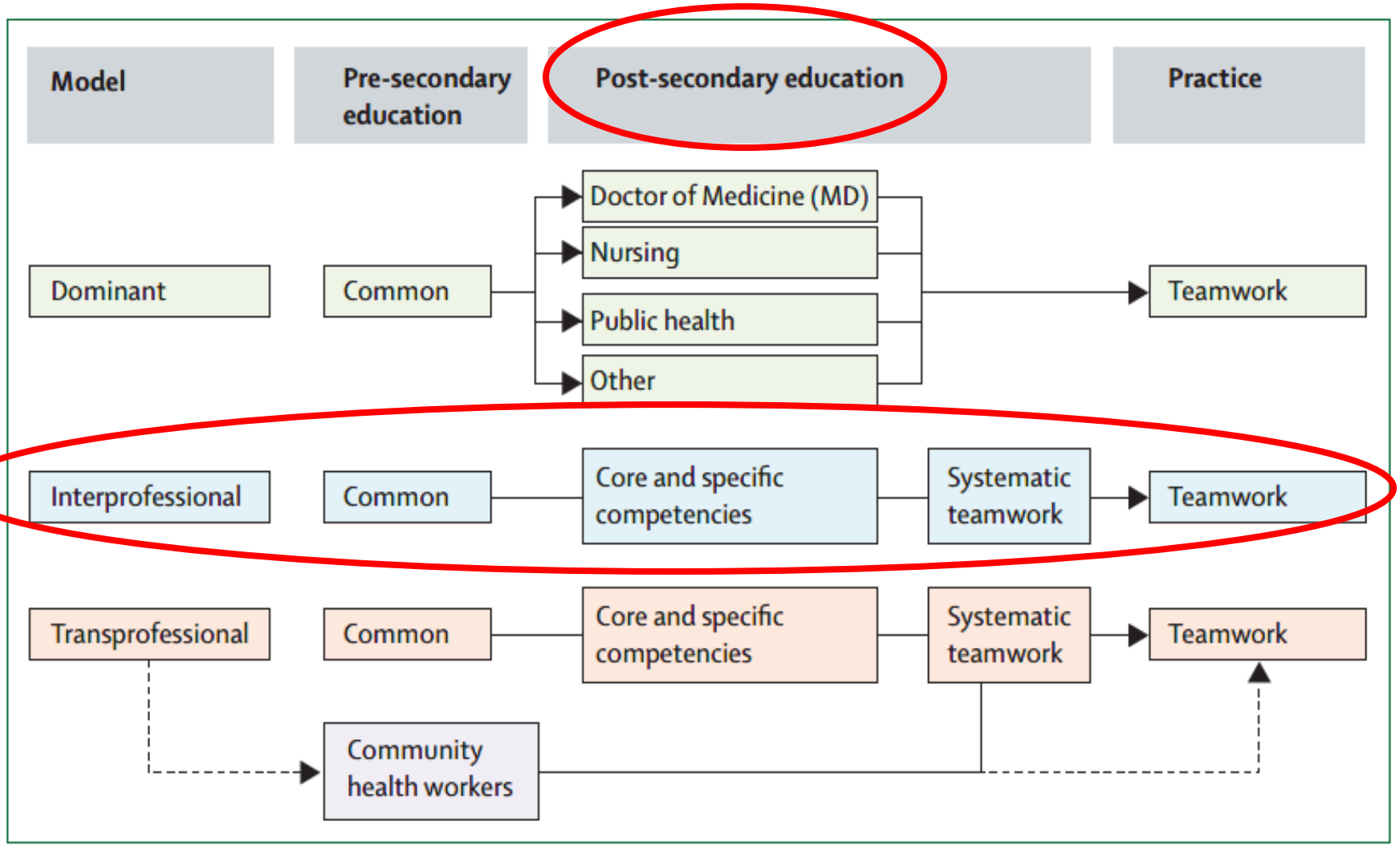
(Stephen Powis, 2015)

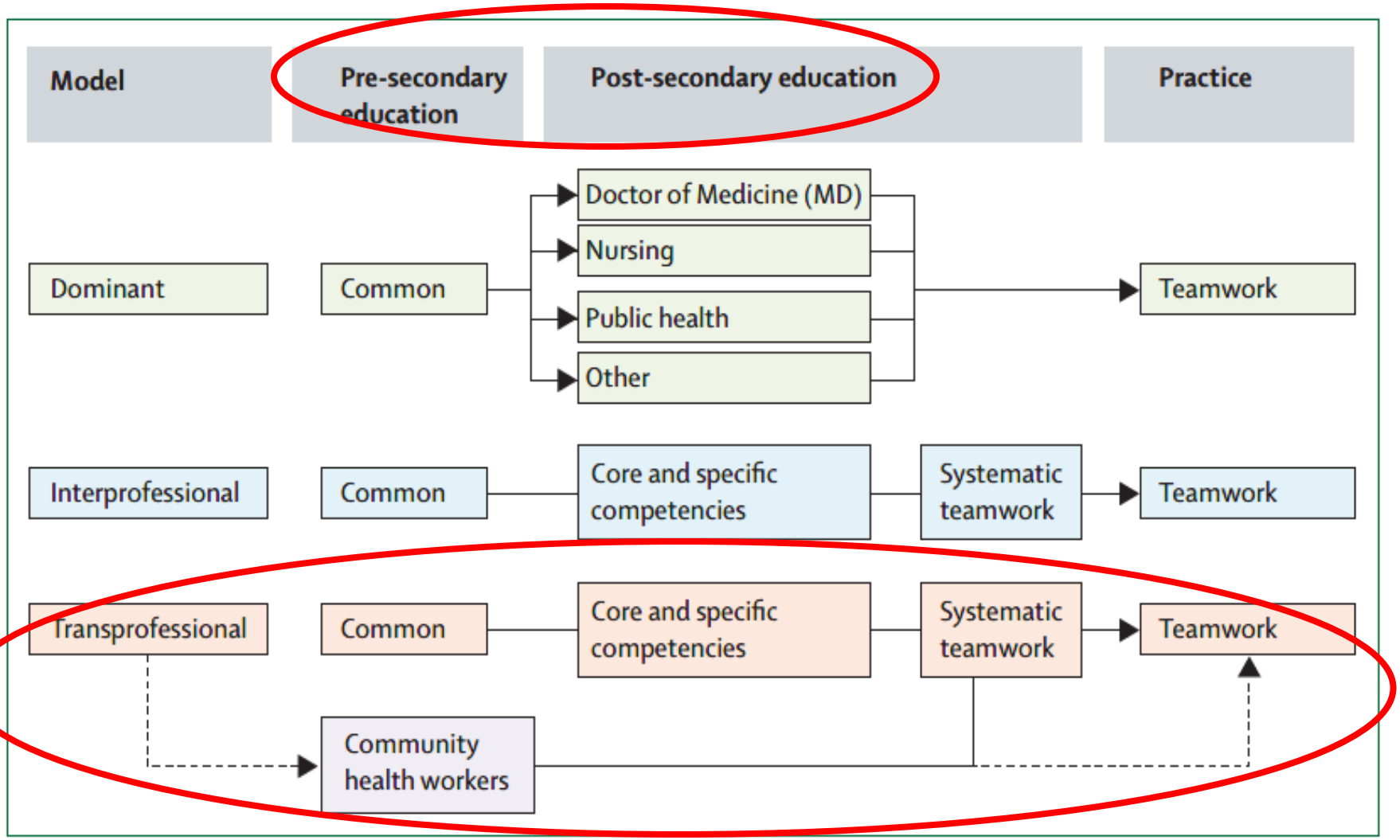
2. Interdependency

- The next generation of physicians won't have to just work in teams with other health professions
- They'll have to work with individuals from other disciplines and even professionals outside of health care
- Need to teach to relinquish the dominance model where physicians were a boss
- In its place, teach a model that's a merger of transformational and emergent leadership.

Team based learning

- Interprofessional Education
- Transprofessional Education


Model
Pre-secondary education
Post-secondary education
Practice
Dominant
Common
Doctor of Medicine (MD)
Nursing
Public health
Other
Teamwork
Interprofessional
Common
Core and specific competencies
Systematic teamwork
Teamwork
Transprofessional
Common
Core and specific competencies
Systematic teamwork
Teamwork
Community health workers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Community health workers

3. Information management

- The main role of the future medical teacher will, therefore, be to teach the students to retrieve, select, assess, and prioritize information.

- To integrate, analyze and critically appraise in real time- an environment that will be ‘cognitively overwhelming’.

- memorization of facts → location of requisite information for synthesis, analysis, decision making.
- Rapid access to information does not equate to wisdom knowledge.
- For doctors, wisdom means medical judgment.
- Can only occur if the learning process is focused and not fragmented.
- Teaching is human experience.

Full exploitation of digital resources

+

Human interaction

=

Essence of true education.

4. Interest and Insight

- Relationship building will become a core aspect of what we need to teach

- Need to teach to spend more time understanding the person in front of them

5. Involvement

- Relationship-building and more personal interactions comes increased involvement

- Just making a diagnosis and enacting evidence-based treatment is not sufficient to bring health to our communities.

- Need to broaden their outlooks to expand the scope and the impact of what they ‘re doing

Competencies of the 21st century physician and how medical education needs to change

1. Inquiry and Improvement
2. Interdependency
3. Information management
4. Interest and Insight
5. Involvement

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VI. Future Medical Trainer

- Medical trainer/teacher training and faculty development programs today are mostly voluntary and scattered
- This will need to become both obligatory and systematic.
- Teaching the need skills will have to more conscious and targeted and less intuitive

- It is also expected that a new genre of medical teacher will emerge that work side by side with the clinical teachers known today.

- This type of teacher will have to be compassionate, tolerant companion, a kind of mentor, a coach for students to self-learn.

- It will require much more time than the present medical teacher devotes to his or her students.

- **Busy clinicians, therefore, will not be qualified for this role.**

- Instead, these teachers will emerge from four sources:
  - Clinicians who wish to change their career path in the same manner that some clinicians,
  - Clinicians who wish to take a break from their erosive clinical tasks
  - Retired physicians, retired because of their age or chose to retire because of a variety of personal reasons.
  - The last, and probably the smallest source of such medical teachers, will be young physicians who, during their residencies or after, will choose the educational path as a career

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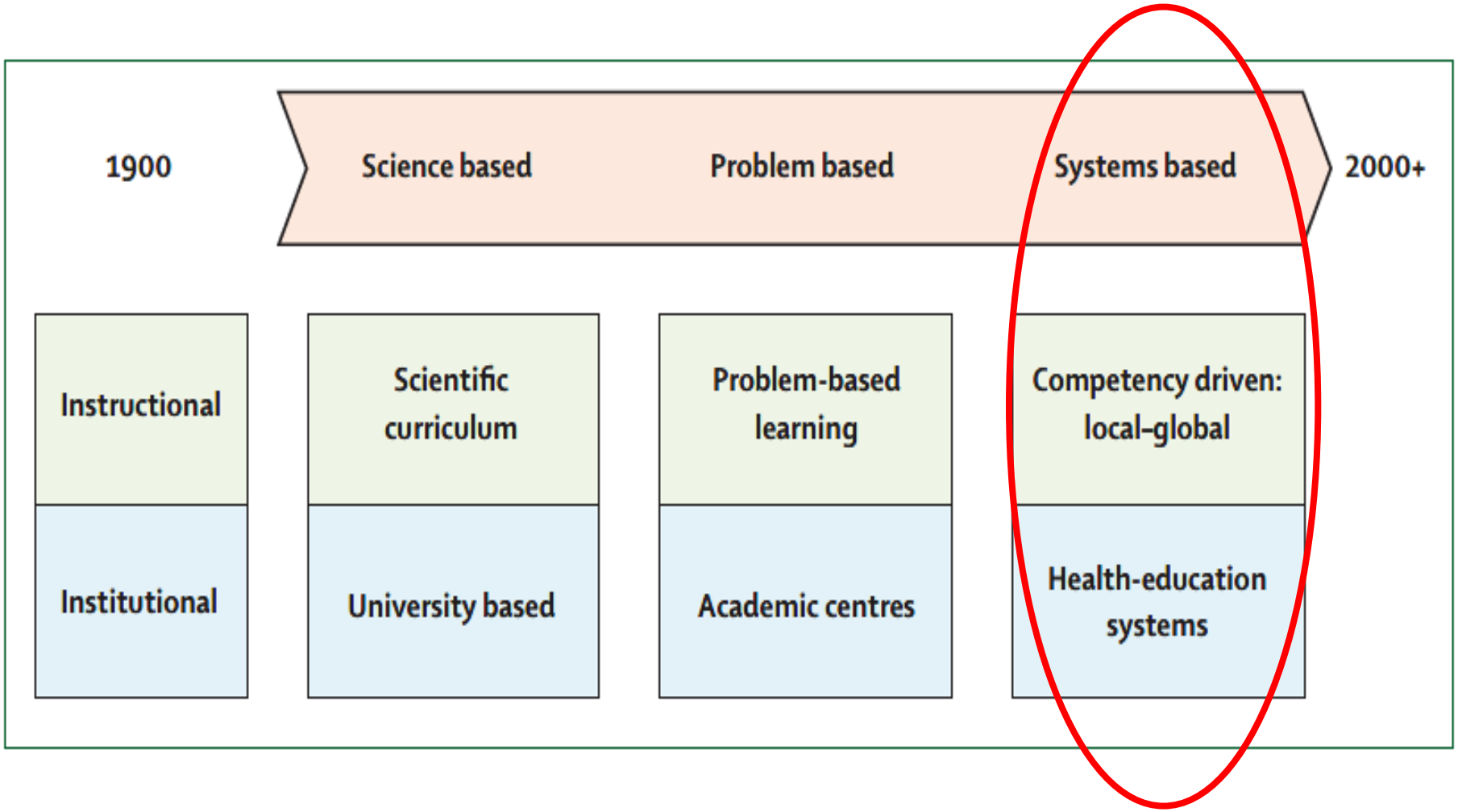

Three generations of reform in medical education

Competencies of the 21st century physician and how medical education needs to change

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2. Interdependency
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5. Involvement


LIFE

20th Century

- To Add **YEARS** To **LIFE**

21st Century

- To Add **LIFE** To **YEARS**

THANK YOU

References:

- Benor, D.E., 2014. A new paradigm is needed for medical education in the mid-twenty-first century and beyond: are we ready?. *Rambam Maimonides medical journal*, *5*(3).
- Combes, J.R. and Arespacochaga, E., 2012. Physician competencies for a 21st century health care system. *Journal of Graduate Medical Education*, *4*(3), pp.401-405.
- Frenk, J., Chen, L., Bhutta, Z.A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P. and Kistnasamy, B., 2010. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The lancet*, *376*(9756), pp.1923-1958.

- Heisler, M., 2016. The future of medical education: areas that should receive increased focus in the 21st Century. *Revista de Medicina*, *95*(spe3), pp.30-31.
- Liu, D. Are millennial doctors ready for 21st century medicine? KevinMD.com
- Mishra, P., Major Reforms in Medical Education for an Interdependent World of 21st Century.
- RCPGP, 2014. An inquiry to patient centered care in 21st century. Report of an independent inquiry commissioned by the Royal College of General Practitioners
- Staff Writer, 2014. 5 Competencies of the 21st Century physician. AMA Wire.