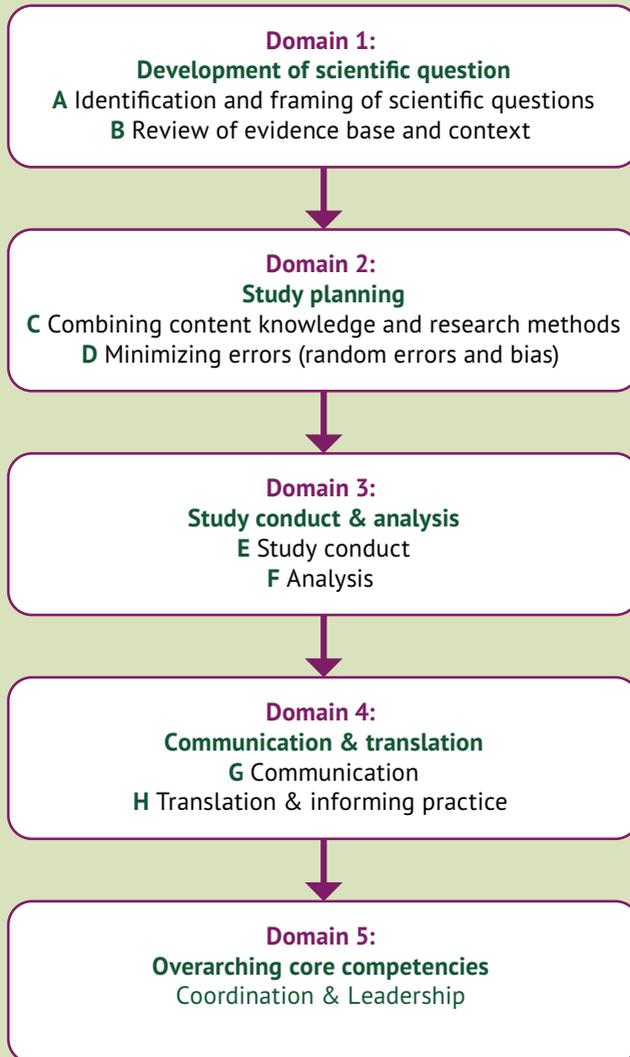


# Epidemiology teaching in the 21<sup>st</sup> century

## Domains of core competencies of Epidemiologists (over the study life-cycle)



Help us shaping the future!

At two conferences, against a background of a fast changing science landscape, big data science and AI, an international group of epidemiologists formulated 31 future core competencies for epidemiology. Consequences for epi teaching will be the topic of an upcoming conference at the Epidemiology, Biostatistics & Prevention Institute in Zurich, Switzerland. This flyer informs you about the process and some of the results of these conferences.



### Amsterdam 2018

#### Amsterdam conference:

1. 'Core' Competencies (CC) for epi?
2. CCs now
3. Boiling down (50 → 20 CCs)

### Zurich 2019

#### Zurich conference:

4. Reviewing 20 CCs
5. Defining future CCs
6. Rating all CCs
7. Exploring variability
8. Consolidating 31 CCs

### Zurich 2020

#### Zurich conference on implications for teaching:

9. Dissemination
10. Discussion of implications

## Get involved!

The link below leads you to a survey about the CCs. The aim of this survey is to achieve a global dissemination and consultation. What are the CCs on whose importance epidemiologists disagree most?

[www.ebpi.uzh.ch/en/aboutus/activities/core\\_competencies.html](http://www.ebpi.uzh.ch/en/aboutus/activities/core_competencies.html)

Watch the 47 sec explanatory video and complete the survey. Consequences for epi teaching will be the topic of a conference at the Epidemiology, Biostatistics & Prevention Institute in Zurich, Switzerland on **21 and 22 January, 2020**.

## Examples of the 31 core competencies:

### Identification and framing of scientific question

1. Engage with stakeholders and the public to identify relevant health needs from their perspective.
2. Formulate a scientific question and to justify the relevance of the question given the state of the evidence and a specific population health problem.

### Review of evidence and context

3. Systematically appraise the methodological quality of existing research findings for a specific scientific question using appropriate tools and guidelines.
4. Critically evaluate the suitability, quality, and validity of existing data sources for a specific research question.

### Combining content knowledge and research methods

5. Distinguish between prediction, and a causality framework, and plan a study and analysis accordingly.
6. Evaluate the appropriateness of and to plan qualitative and/or quantitative health research methods for a given study context.

### Minimizing errors (random and systematic biases)

7. Anticipate bias (i.e. information bias, selection bias, confounding) when planning a study and to minimize its consequences for inferences through optimal study design and data analysis.
8. Adopt and apply new methods and study designs that may more effectively minimize inferential threats in particular study contexts.

### **Study conduct**

9. Conduct health research including the set-up, coordination, data collection, monitoring and data quality control.
10. Assess the data quality in newly collected data or existing databases and extract the data deemed sufficiently valid for answering a specific research question.

### **Analysis**

11. Calculate and interpret epidemiologic measures of disease occurrence and measures of association and their precision, and explain the importance in various specific decision-making contexts.
12. Apply appropriate analytical approaches to make causal inference based on implicit and explicit assumptions.

### **Communication**

13. Effectively communicate the results of health research to health care professionals, lay public and various media and thus contribute to debates concerning health and health care.

### **Translation & informing practice**

14. Translate current evidence and knowledge to public health and health care and to appraise and guide health related questions in society from a population perspective.

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