
Commentary III

Towards good epidemiological practice in Switzerland

Prof. Dr. Thomas Zeltner is head of the Swiss Federal Office of Public Health

A hearty welcome to “Good epidemiological practice!” The initiative of enhancing epidemiology as one of the solid scientific bases of public health is greatly appreciated. The burden of disease and its determinants, properly assessed by observational studies and surveillance, but also communicated in a timely fashion, are at the root of policy making, of interventions, and of their evaluation. Valid data and sensible conclusions serve as the basis for resource allocation. Proper randomized trials are crucial to assess the effectiveness of these allocations. The framework addresses these aspects.

Public health sciences only make progress if rational theory development is combined with empirical confirmation. Consistent theories are put to the test in daily life. In science, daily life requires that the theories allow for deriving and formulating – always theoretically refutable, according to Karl Popper – hypotheses that can be tested by observational or experimental studies.

Proper development and formulation of the hypothesis are crucial before it can be tested. For instance, as one is unable to check on all stones existing on earth to see whether one of them could float in the air, you might choose to reformulate the hypothesis to “all stones float in the air”. Trying to make one of them float, you could refute the hypothesis.

Once we are happy with the hypothesis, we plan and select the appropriate study design. As in life, there are things that are grossly inappropriate, such as exposing healthy men aged 20 years to a pathogenic agent for 30 minutes under ideal laboratory conditions and then extrapolating the

health effects that they experience as a result to sick women aged 60 years.

As in life, there is not only design but also conduct. If we fail to properly design a study, it is meaningless to interpret its results. Foul data are the main cause of faulty results and can only lead to faulty conclusions. However, even if trials are valid and repeatable, it is not guaranteed that valid conclusions are drawn from them. While this is most important to public health decision makers, humans tend to generalize where they should not.

The present paper constitutes a valuable basis for studies that are both relevant to public health and proper science. As a check list, its use may not be limited to beginners. Its content should be incorporated into the core curriculum of any scientist. In public health, we want to do the right thing rightly and at the right time. The public also rightly expects this from us. Let’s use the “essentials” and do it essentially right.

Thomas Zeltner

Address for correspondence

Prof. Dr. Thomas Zeltner
Bundesamt für Gesundheit
Amtsleiter
CH-3003 Bern
e-mail: thomas.zeltner@bag.admin.ch