

Public health surveillance and population health monitoring

Facilitators

PD Valérie Pittet, PhD

Department Epidemiology and Health Systems, Center for primary medicine and public health (Unisanté) – University of Lausanne

MER Yolanda Mueller, MD PhD

Department of Family Medicine, Center for primary medicine and public health (Unisanté) – University of Lausanne

Description

Public health surveillance is the ongoing and systematic collection, analysis, and interpretation of health-related data, closely integrated with their timely dissemination and communication to those responsible for public health strategies and action on disease prevention and control. Methods and tools for surveillance and population health monitoring, initially developed for infectious diseases and outbreak control, are now applied to other health conditions like chronic diseases, mental health or occupational and environmental health.

With the advances in the field of data science and the growing access to multiple types and increasing volumes of data, the field of surveillance and health monitoring is going to adapt and evolve rapidly. This includes moving to a wider scope of applications, for example, surveillance may also include monitoring of risk factors associated with adverse health events or monitoring of health care services. This also implies using new methods for analyzing data, as well as tools for visualizing and communicating data, depending on target publics.

Objectives

Our aim is to work with participants on concrete examples of public health surveillance and monitoring programs from the Swiss context, with the target to help them understand some of main challenges associated with their implementation and future perspectives.

By the end of the course, the participants should be familiar with the principles and methods of public health surveillance. In particular, they should:

- Understand the challenges of surveillance and how they relate to policy making, epidemiology, health data science and research.
- Know and handle the development of surveillance indicators depending on data available (census and vital statistics, national health surveys, registries, but also medico-administrative data, data from social media or google).
- Know the utility, validity and limitations of health indicators.
- Correctly interpret commonly used surveillance indicators.
- Understand the basics of syndromic surveillance and epidemic forecasting.
- Understand the basics of data visualization tools for communication purposes.

Dates

10 – 13 March 2025

Eligibility

SSPH+ PhD students, researchers and public health staff with basic training in public health surveillance or population health monitoring.

The course consists of lectures and computer exercises with R, R Markdown and R Shiny. Basic knowledge of R is therefore requested. List of packages used will be provided two weeks before the beginning of the course. You have to bring your own laptop to the course.

Please note this is an advanced course. Participants should be familiar with basic principles of public health surveillance.

Course Structure

Lectures, individual exercises and group work

Assessment

In-class assignments and personal work, to be handed in after the course

Credits

2 ECTS

Preliminary Work: 8 h; Contact time: 24 h; In-course work: 8 h; Wrap-Up Work: 24 h

(1 ECTS corresponds to appr. 25-30 hours workload)

Location

Center for primary medicine and public health (Unisanté) – University of Lausanne (Biopôle Campus)

Course Fees

	2 ECTS
SSPH+ IGC PhD Students	30 CHF
SSPH+ IGC MD Students	30 CHF
External PhD students, external MD Students and Swiss Public Health Doctors in training	600 CHF
Others	1'600 CHF

Registration

<https://www.conftool.com/ssph-phd-courses2025/>

**Deadline for
registration**

10 February 2025