

# 1.0. Round table: The impact of new and emerging technologies on population health

Organised by: RIVM and EUPHA section on Public health monitoring and reporting  
Contact: jacqueline.pot@rivm.nl

Chairperson(s): *Maaïke de Vries – The Netherlands*

Technological developments have always been a strong driver of innovations and changes in health care. However, we seem to be on the verge of a new era, in which potentially disruptive new technologies may change the health care landscape completely. Examples of such ‘game changers’ are consumer eHealth/technologies, personalized medicine and artificial intelligence. Also, outside the health care field, new technologies arise that could have a large impact on population health and well-being. For example, self-driving cars may contribute significantly to people’s independence and their ability to organize their own life, having a positive effect on health and well-being and extending the period in which elderly people and/or people with health problems can live in their own homes. Thus, new technologies potentially have a positive effect on health and health care, which may be substantial. On the other hand, new technologies may also have negative side effects, and raise all kinds of complicated ethical and societal questions. Comprehensive outlook studies, taking into account all these various aspects of technology, are important for policy-makers in order to be able to anticipate both wanted and unwanted effects of new technologies, and take appropriate policy-measures. In the framework of the Dutch Public Health Status and Forecast Report 2018, the National Institute for Public Health and the Environment (RIVM) is working on an outlook study, which encompasses the mapping of emerging and anticipated new technologies and their expected impact between now and 2040. In this round table workshop, which is co-organized by RIVM and the EUPHA section on Public health monitoring and reporting, first we will be setting the scene by presenting the outcomes of the ‘technology scan’ performed by RIVM (see abstract for presentation 1). After that, we will have a round table discussion, for which 3-5 experts will be invited as panellists, representing some of the main relevant health technology fields; genomics/personalized medicine, eHealth, nanomedicine and robotics/artificial intelligence. The focus of the discussion will be on exploring the potential impacts of new technologies, both positive and negative, their likelihood, and how they could be enhanced or diminished/prevented. Active contributions of the workshop participants to the discussions will be stimulated. The objective of this workshop is to stimulate a comprehensive discussion on the potential impacts of new technologies on (population) health and health care. The added value of this workshop is that it will result in useful insights for policy-making. Now is a good time for exchanging knowledge and ideas on this topic, given the potential disruptive technologies that are currently emerging or gaining momentum.

## Key messages:

- Comprehensive outlook studies are important for policy-makers to anticipate both wanted and unwanted effects of new technologies, and take appropriate policy-measures
- In this workshop we will explore the potential impacts of new technologies, both positive and negative, their likelihood, and how they could be enhanced or diminished/prevented

## Setting the scene: outcomes of a technology scan

Jacqueline Pot

*M Verschuuren, J Pot, M de Vries*  
RIVM, Bilthoven, The Netherlands  
Contact: jacqueline.pot@rivm.nl

### Background

The RIVM produces a comprehensive public health forecasting study once every four years. Target audiences are the Ministry of Health, local policy-makers and other stakeholders. In the framework of the 2018 forecasting study, a ‘technology scan’ was performed to identify new and emerging technologies that are likely to have an impact on population health.

### Methods

The scan entailed a combination of a literature search (using a snowball method and a wide array of sources (articles, reports, websites/blogs, newsletters)), in depth interviews with key experts, and expert sessions.

### Results

The main technological developments that are expected to have a significant impact on population health between now and 2040 are big data/artificial intelligence, regenerative medicine, 3D-printing, genomics/personalized medicine, eHealth/digitalization, robots, nanotechnology, consumer technology, and the internet of things. Relevant related developments/effects include a potential increase of health inequalities, ethical issues (related to e.g. data ownership, the removal of ‘imperfections’ from society, less acceptance for an unhealthy lifestyle as the possibilities for managing one’s own health increase), and shifting roles of patients, health care professionals and health care facilities. According to the experts, the likelihood of these technologies having been implemented and having a substantial effect before 2040 differs. Implementing innovations in health care proves difficult because they are usually added to existing techniques and structures (add-ons rather than replacements).

### Conclusions

Predicting the impact of new and emerging technologies is very difficult because their implementation and acceptance is influenced by a variety of complex, inter-related factors. Nevertheless, it seems fair to say that their influence on health and health care will be substantial in the coming decades.