STUDYING HEALTH ISSUES
“UPON THE PEOPLE”

The novel coronavirus pandemic took the world by storm, forcing governments to take unprecedented measures to reduce the impact of the epidemic. Now, after lifting the lockdown, it is time to closely monitor the evolution of the epidemic, and to capitalize this experience to tackle and respond to possible new waves of the COVID-19 or of future epidemics.

By Dimitri Loringett

While research labs across the globe are racing against time to develop vaccines and treatments, a particular category of medical scientists – epidemiologists – are working hard to understand the impact of the epidemic and the public health measures required to best respond to it. Epidemiology, literally meaning “the study of what is upon the people”, is the cornerstone of public health, which informs and shapes policy decisions by identifying risk factors for disease and targets for health promotion, prevention, and healthcare. Epidemiologists rely on scientific disciplines, e.g. biology, chemistry, etc., to better understand disease processes, and statistics to make efficient use of the data and draw appropriate conclusions, as well as social sciences to identify causes. In May, the Swiss School of Public Health (SSPH+) launched “Corona Immunitas”, a nation-wide research programme for the collection of epidemiological data on immunity to SARS CoV-2, to determine risk factors for infection, and the impact of the Covid-19 outbreak on the population. The study will be conducted also in Ticino, involving USI and SUPSI, and other private and public actors in the region, including Ente Ospedaliero Cantonale, and Institute for Research in Biomedicine.

Prof. Albanese*, epidemiology is a relatively new concept for the general population. Could you explain its genuine meaning?

*Emiliano Albanese, MD PhD
Full professor at the USI Faculty of Biomedical Sciences and Director of the Institute of Public Health. He is first, and foremost, an epidemiologist and a systematic reviewer and meta-analyst, with research and academic interests in three main, interlinked areas: dementia, aging, and global mental health. Among his many endeavours, Prof. Albanese was director of the WHO Collaborating Centre (CC) for Mental Health Research and Training in Geneva.
time and space, with considerable numbers, or concentration, of cases over the given period. This manifestation occurs in the general population, with many more people becoming ill in a short period, which is precisely what we have experienced this year with the novel coronavirus. Epidemiology is a quantitative discipline, and answers questions like ‘How many people have the disease?’. Epidemiology also answers another question, of a more analytical nature, about what are the factors, the characteristics associated with the outbreak of a disease in the population, which we normally call risk and protective factors. Epidemiology is interested in risk and protective factors for two reasons. The first, to help trace the causes of a disease by providing clues useful for scientific investigation. The second, to identify the elements associated with the disease, which can help define the interventions to be undertaken, first of all those related to health promotion and prevention, but also those related to treatment and care.

What are the main challenges of the Corona Immunitas programme?
«An important aspect of an epidemic, namely the rapid spread of a disease caused by a virus, concerns all the consequences of the outbreak. Many of these consequences pertain to the disease caused by the virus, but others to the public health measures enforced to reduce the impact of the epidemic on individuals and the health systems. These include voluntary sheltering, quarantine, isolation of ill persons, social distancing, school closures, and hygiene and respiratory etiquettes etc. In the case of Covid-19 outbreak, most people have not fallen ill, but each and all of us have nevertheless experienced the consequences of the epidemic. The aim of the Corona Immunitas programme is to study the broad impact of Covid-19 across social, economic, psychological, and several other dimensions, and in both individuals and at the societal level. Through observation and valid assessments, we aim to determine the extent to which and the characteristics, as well as the mechanisms of the Covid-19 affect individuals, the population, and society. We want to understand whether there are different experiences, and different consequences in the subgroups of the population – e.g. by age, social class, etc. Although the occurrence of the infection in the Ticino population is a key measure of our study, with the epidemiological approach we look beyond the people who have fallen ill, and even beyond the presence or absence of the virus in individuals. This requires setting up a study in a large, representative sample of the general population. We will ask several thousand people to participate. This a study on the population, for the population and thus with the population.»

What have we learned so far from the Covid-19 pandemic, in terms of the public health and policy measures taken and, looking ahead, of healthcare policy?
«In Europe, the main policy and public health measures taken and enforced are part of the so-called ‘mitigation strategy’, i.e. to reduce the impact of the epidemic, and of the disease as such, on the healthcare system. The approach was relatively simple, we asked everybody to stay at home to avoid physical contacts as an extreme precaution to drastically reduce contagions. However, these are rather general – and unprecedented – measures, which were introduced because very little was known about the disease caused by the novel coronavirus.»

“The approach was relatively simple, we asked everybody to stay at home to avoid physical contacts as an extreme precaution to drastically reduce contagions. However, these are rather general – and unprecedented – measures, which were introduced because very little was known about the disease caused by the novel coronavirus. For instance, we still do not know much about the ‘incubation period’, the period during which a person shows no symptoms and does not appear ill, but can be contagious, and contribute to spreading the disease. Different from the suppression strategy, which aims at stopping the circulation of the virus and thus of the disease, the mitigation strategy is primarily aimed at reducing the impact of the epidemic on the healthcare system, not on the individuals. Flattening the curve refers to the deferral of cases over a longer period, not necessarily to the reduction of the number of cases. This is very important, because if the healthcare system fails, there will be a major socio-economic disruption, and dreadful consequences on the public health beyond those related to the Covid-19. What we have learned so far, though, is that strategies are not implemented in the same way everywhere, also because cultural, societal and contextual factors vary significantly across nations and regions, and must be adequately accounted for. For example, in the Chinese province of Wuhan a suppression strategy was enforced through stricter measures than those adopted in Europe. Millions of people were in full isolation, not simply in voluntary sheltering. Basic needs, including food and medications, were
“I have always dealt with the phenomenon of ageing, and in particular with cognitive ageing, which, clinically speaking, is called dementia, a condition that includes of course Alzheimer’s disease. In my research, I try to understand how many people have Alzheimer’s, an incurable disease that cannot be treated. Dementia is an insidious disease, with a progressive and degenerative course. The impact of dementia is enormous on not only those who are affected, but also on their family, and the community they live in”