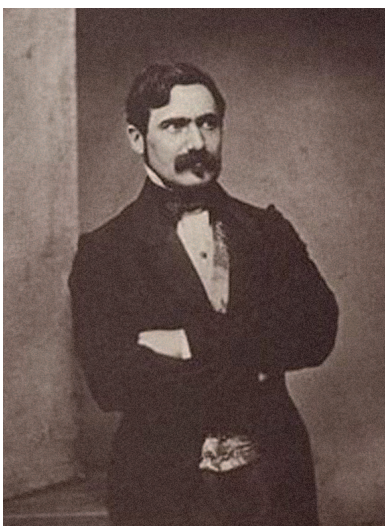


Public health research in Munich

Not just a medical issue...

In the face of demographic changes in our society and dramatic financial implications for the organisation of health services, politicians are becoming more and more aware of the relevance of public health. Numerous institutions within the Munich metropolitan area are working on answers to new, pressing questions. Interdisciplinary exchange and a platform for common action need to join forces. The Medical Faculty of the Munich University (Ludwig-Maximilians-Universität), the Helmholtz Zentrum München, and the Bayerische Landesamt für Gesundheit und Lebensmittelsicherheit (Bavarian Health and Food Agency) established such a platform for Munich by setting up the Pettenkofer School of Public Health (PSPH).

Max von Pettenkofer (1818-1901), the eponym of the Pettenkofer School of Public Health Munich, considered health not only as a medical issue but also as a social, economic, technical and epidemiological challenge. He can be considered the founder of 'Public Health Research' in Germany.



The new Munich approach to public health research perceives individual health as a reaction of the subject to his/her interaction with a complex surrounding system. It makes public health research a systems science, based on input from molecular biomedicine, clinical medicine, epidemiology, social, as well as economic, managerial and political sciences. The partners of the PSPH develop research projects that bring this idea to life.

The Institute of Epidemiology at the Helmholtz Zentrum covers a wide spectrum, including classical cohorts, molecular epidemiology, environmental health research and genetic epidemiology. It supervises the KORA cohort, which turns the town of Augsburg into a health laboratory and prepares major contributions to the German National Cohort, a long-term cohort study including 200,000 adults. "The goal of the study will be

to illuminate the causes of common health problems like cardiovascular disease, cancer, diabetes and dementia, as well as to identify risk factors and effective methods of prevention," says Professor H Erich Wichmann, Director of the institute.

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The medical faculty of the LMU Munich has a strong interest in the translational fields of research



between basic sciences, clinical and population-based medicine. Research methods that were initially developed for clinical purposes are now increasingly employed for epidemiological and etiological research in healthy populations. Results of clinical research are the starting point for population-based prevention, and epidemiological research is translated into clinical practice.

These activities create four new perspectives in medicine: first, predictive medicine where insights into the genome and proteome offer new views on the prediction of individual health trajectories. Secondly, preventive medicine provides interventions to prevent a disease. Thirdly, personalised medicine allows treatment for a patient considering his/her genetic variations. This also includes means for assessing a patient's probability to respond to

treatment. Finally, in participatory medicine, patients are informed about their health perspectives and are involved in medical choices and cure, acting in partnership with healthcare providers. "Implementing this new paradigm into our health systems needs translation between the fields of clinical medicine, epidemiology and public health," says Professor Ulrich Mansmann, Director of the Master's programmes offered by the PSPH.

Effective public health requires the development, implementation and evaluation of effective programmes and policies in public health. Inspired by the concepts of evidence-based medicine, the translation of new concepts into programmes requires the application of principles of scientific reasoning, including systematic uses of data and information systems. "This idea is gaining momentum – nationally as well as internationally," says Professor Manfred Wildner from the Bavarian Health and Food Agency. "It is the basis of the needed informed choices of society, organisations, public and private, communities and individuals for promoting health through organised efforts."

The PSPH establishes the needed infrastructure between people and institutions contributing to these endeavours. A new generation of

scientists will be trained to have a broad understanding of the clinical and methodological foundations of public health. A clinician will receive the broader perspective of strategies that can be used when counselling or treating a patient. Epidemiologists and public health experts will be trained to comprehend the potential of basic medical research to design strategies that improve health services in general (screening, cost-effective treatment, health promotion strategies, etc.). The career perspectives of these students are excellent.

As a result, substantial and unique competence in the field of quantitative health sciences is emerging in Munich.

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