PublicHealth@Cambridge

Round table discussion
Public Health and Sustainability
Monday 1st July 2013

Actions

Three areas of research relating to public health and sustainability were identified for action. Researchers at the meeting are exploring potential for collaboration around these three topics:

- Opportunities around the new North-West Cambridge development;
- Modelling, risk and uncertainty;
- International sustainability and public health.

These opportunities will also be advertised across the wider Network and researchers are advised to contact Paula for more information should they wish to become involved in any of these topics.

The round table discussion around the theme of ‘Public Health and Sustainability’ was held on July 1st 2013. This discussion was part of the development of the initial working themes of the PublicHealth@Cambridge strategic research network, with the aim of providing a forum to begin scoping the expertise and research interests available across Cambridge as well as the potential research opportunities on the horizon. The overall goal of the meeting was to provide an environment for identifying new collaborative partnerships to be explored and taken forward into the future.

Summary of discussion

This note summarises key points made during the discussion, for reference.

Research into action

The group discussed challenges in relating research to public health decision making.

It is important to demonstrate potential practical applications of research and it can be helpful to consider practice or policy focussed elements early on in the development of new projects. Academic research is often focussed on uncertainties whereas policy makers tend to require simple, straight forward answers, so it can be challenging to link the two. There is a need for ‘systems thinking’; joining the rich thinking from the different scientific backgrounds together with the implementation of research in a real life setting, and getting the different disciplines to work together in an integrated way. The group, and the public health research network in general, was encouraged to ‘think big’ – thinking about transformational research which has the potential to
make major impacts on the way systems (buildings, infrastructure, behaviours, service delivery, etc) should be established and work in the future. By being ambitious as well as practical, this can help fulfil the obligations a global university such as Cambridge has to society in the long-term.

The North-West Cambridge focus

One potential collaborative research opportunity highlighted was to look at the health impacts (both beneficial and detrimental) that the new North-West Cambridge development will have on the community. There had been encouragement from the Pro-Vice Chancellor for research projects to be initiated around the development and there was funding specifically available for this from the EPSRC.

Using an overlapping set of lenses to study the development – for example, looking at behavioural aspects, governance issues and technology/innovation issues – could draw together a useful cross-disciplinary collaboration. There was a proposal to begin to generate a bid for funding to develop baseline health and environmental measures in order to facilitate on-going studies as the site is developed and used.

Available expertise could include epidemiology, planning and chemistry.

Topics for study could include impacts on health resulting from:

- indoor/outdoor air quality;
- behavioural change;
- transport and green space.

Although the availability of potential funding and the unique characteristics of the development made this an attractive area to explore, there were questions over the transferability of learning to the wider community given the specialist design of the proposed development and the demographics of the occupants, on top of the fairly unique existing environment Cambridge offered. It would be important to seek generalizable themes which would have wider significance beyond academic settlements in Cambridge. Despite the limitations of the site in terms of its specialist nature, there was enthusiasm for following up this strand of research. It was agreed there was potential to use the site for methodology development and it could represent a concrete example to focus on how to develop more robust studies in this area with a more convincing interdisciplinary approach.

The modelling, risk and uncertainty focus

A second area of interest to emerge in the discussion was modelling and its relationship to risk-based public health decisions, which was agreed to be an area of existing strength in Cambridge that could benefit from increased cross-disciplinary interaction. Modelling can usefully provide descriptions of complex systems that can then be interrogated. A top-down approach to modelling was advocated, developing the questions that need to be addressed and then creating models to answer them. Much discussion was focussed on how best to deal with uncertainties and risk. Given the long timescales involved in both climate change and public health research, the uncertainties tend to be large. The extreme ends of the distribution correspond to severe risks/consequences.
which in health terms were important areas of study. There was discussion over the need for both on-going detailed scientific and economic studies needed to support bottom-up assessments and development of integrated models needed to support top-down assessments.

Areas which would offer scope for development included:

- ways to facilitate full access to current information at any given point in order to inform policy when decisions were needed quickly.
- in economics, gaps that were noted included the integration of spatial elements and new mathematical tools to provide a control dimension, which could balance the way that economists model individual responses.
- improved linkage with social scientists to incorporate issues such as acceptability of interventions and robustness to non-compliance.
- social sciences and particularly law have developed ideas on dealing with uncertainty and risk which might also be useful in public health/sustainability modelling.
- a need to develop models of low probability but high consequence/catastrophic events was proposed, given that on a practical level, we are currently not equipped to deal with such extremes. For example, modelling the health and economic effects of a 10 degree rise in global mean temperatures or the cumulative effects of a number of consecutive ‘heat-wave’ summers as opposed to studying isolated extreme events. Developing resilience to sudden events was key in that extreme events often facilitated transformational changes to how systems were established.

The International focus

The third major area to emerge was public health and sustainability research with an international dimension, particularly focussed on Africa and other developing countries. Many innovative sustainability solutions have emerged from these more challenging circumstances where needs are immediate. Innovative solutions from the regulatory perspective were also emerging from Asia and Africa and there was interest from the legal perspective particularly around human rights and natural resource management. From the chronic disease perspective, across Africa there is low current base of disease which means the area will have the fastest rise in incidence of disease in the future, as has already been seen in China and India.

Areas which generated significant interest included:

- infectious disease and changes implicit in the development process;
- ‘cities’ as a theme, particularly given the current interest from government and funders in the area.
- public health related to megacities and large communities.

Other themes

Other potential research opportunities were highlighted throughout the meeting.
• In addition to ongoing work to improve efficiency and sustainability of the NHS estate, broad interests in the internal and external built environment were highlighted and it was agreed that the potential interface of these with public health research had not yet been fully exploited.

• In public health research, natural experiments were increasingly being used to evaluate interventions but it was noted that although large amounts of observational data were collected to demonstrate positive effects on health behaviours linked to certain environments, more evidence of causal links was required to fully understand the evidence.

• From the physical science perspective, although modelling can be helpful to fill gaps in data collection, there was a role for further research in areas such as improving measuring technologies to ensure that the models are correct in the first place.

• Issues around rights to health, well-being, self-determination and externalities were discussed and the different ways these are used currently in different disciplines.
Chairs:
Nick Wareham  MRC Epidemiology Unit/CEDAR
Doug Crawford Brown  Land Economy

Attendees:
Roz Almond  Cambridge Forum for Sustainability and the Environment
John Battersby  Public Health England Knowledge and Intelligence Team (East)
Partha Dasgupta  Economics
Louise De Muscote  Cambridge Programme for Sustainability Leadership
Dick Fenner  Engineering
Paula Frampton  PublicHealth@Cambridge
Markus Gehring  Law
Chris Gilligan  Plant Science/Global Food security Initiative
Chris Hope  Judge Business School
Rod Jones  Chemistry
Lucy Lloyd  Institute of Public Health
David Ogilve  MRC Epidemiology Unit/CEDAR
David Pencheon  NHS Sustainability Unit
John Pyle  Chemistry
Alan Short  Architecture
Janna Tweed  Cambridge Programme for Sustainability Leadership
James Woodcock  CEDAR

Apologies:
Koen Steemers  Architecture
Victoria Lee  Architecture
Jamie Anderson  Architecture
Markus Kalberer  Chemistry
Pramila Krishnan  Economics
Linda Sharples  MRC Biostatistics Unit
Barbara Bodenhorn  Social Anthropology
Nayanika Mathur  Social Anthropology
Richard Irvine  Social Anthropology
Felicia Huppert  Wellbeing Institute