The Academy of Medical Sciences

Media Release

Embargoed until 00.01 Tuesday 27 November 2007

Academy reports on value of observational research to policy and medicine

A new Academy report highlights the role of observational research in identifying environmental and lifestyle causes of disease, but warns researchers against overstating the importance of these findings.

Disease and ill-health can be caused by a variety of genetic or age-related factors, but can also be caused by agents in our environment. Often traditional 'interventional' methods, such as randomised controlled trials, are not suitable to investigate these environmental causes of disease, so observational data must be used to draw conclusions about cause and effect.

Sir Michael Rutter CBE FRS FBA FMedSci, chair of the working group that produced the report said, '*Many major advances in medicine have stemmed simply from observation, including the discovery that smoking can cause cancer and the realisation that high cholesterol can cause heart disease.*

'These methods can play a valuable role in illuminating the causes of disease and are fundamental to developing good policy and effective clinical practice. We recommend that researchers and policy-makers give greater consideration to the use of observational methods, provided they meet stringent conditions.'

Scarcely a day goes by without news of a study claiming to have discovered a new cause of disease. These claims stimulate great interest amongst the public – interest that can turn to confusion when claims appear to contradict each other. Many findings have stood the test of time, for example the damaging effects of high levels of alcohol on early foetal development. However, other studies have not been confirmed - or occasionally have been contradicted - by subsequent research. For instance, until recently Hormone Replacement Therapy (HRT) was thought to be protective against heart disease but is now thought to be a risk factor.

Sir Michael added *'Most misleading claims stem from poor quality studies of small biased samples. These are often reported in conferences and not subjected to rigorous review by fellow researchers in scientific journals.*

'*We warn researchers against overstating the importance of their findings. Researchers, their funders and their institutions have a responsibility to analyse and present findings in a considered and balanced fashion.'*

The Academy's report proposes guidelines for scientists, policy-makers and journalists on how research into environmental and lifestyle causes of disease should be communicated and acted upon. The report presents a range of measures, including making accurate communication of research results a requisite of scientific funding and identifying what evidence journalists and policy-makers should look for when deciding if observed associations really do have a 'cause and effect' connection.

The report concludes that observational research can make a fundamental contribution to formulating public health policy and the treatment of individual patients. Policy-makers should assess the strength and reliability of evidence before using it to develop public policy and should integrate 'pilot' stages into the implementation of all new policies.

Sir Michael said, *'Policy-makers often have to make public health decisions very quickly, using existing evidence rather than waiting for further research. It is therefore imperative that rigorous piloting is included in the implementation of new policies and practice. Such piloting may indicate the desirability of modifying the new policy and, occasionally, even the need for a complete rethink.'*

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Notes for Editors

The independent Academy of Medical Sciences promotes advances in medical science and campaigns to ensure these are translated into benefits for patients. The Academy's Fellows are the United Kingdom's leading medical scientists from hospitals, academia, industry and the public service.

In 2006 the Academy of Medical Sciences established a working group to produce a set of principles, illustrated with specific examples, to determine the potential problems and likely success of non-experimental methods in identifying the environmental causes of disease.

The final report of this inquiry is entitled 'Identifying the environmental causes of disease: how should we decide what to believe and when to take action?' Complete copies of which can be found at http://www.acmedsci.ac.uk/publications.

The report will be launched at an event on Tuesday 27 November from 18:00 – 20:00 at the Law Society, 113 Chancery Lane, London.

Speakers at this event are Sir Michael Rutter CBE FRS FBA FMedSci (Chair)
Vice-President, Academy of Medical Sciences; Dr Richard Horton FMedSci FRCP, Editor, The Lancet; and Dr Geoff Mulgan, Director, Young Foundation.

To book a press place to attend this event contact nick.hillier@acmedsci.ac.uk.

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