Research Evaluation in the UK

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Approaches used to understand and influence research impact

1. Collect comprehensive evidence of the progress, productivity and quality of research output

2. Support research on the “science of science”

3. Encourage researchers to think about, and act to maximise, their “pathways to impact”

4. Introduce the assessment of impact into the allocation of funds for UK Universities
Funding flows in UK science

Taken from “The Scientific Century” (Royal Society 2010)
1. Gathering evidence of progress/productivity (MRC e-Val)

- MRC e-Val is an online system to gather *evidenced outputs/outcomes/impacts* arising from MRC research
  - better communicate the benefits of MRC funding
  - support strategy development/evaluation
  - understand the linkages between output and the economic, societal and academic impact of MRC research
  - “set case studies in context” of the productivity and quality of all MRC output

- Codify outputs other than papers and patents (e.g. influence on policy, development of products)

- Prospectively track progress over time
2 years of data gathering
3,000 researchers
70,000 reports of output
Outputs since 2006
Feedback on £2bn MRC spend (92%)
MRC e-Val 2010 results

• Details of 5,000 active collaborations involving 6,000 partners (20% of MRC researchers have had a productive interaction with the private sector since 2006)

• 66 spin out companies with an evidenced link to MRC research (35 formed since 2006)

• Over 130 citations in policy documents, including 30 citations in NICE guidelines since 2006

• 360 new products and interventions in development, around 40 launched onto the market since 2006, including 10 new drugs

• £300m of inward investment to UK research and development from overseas and private sector research funding between 2006 and 2010 (around 30% of leveraged funding)

• 200 published patents since 2006 (roughly 30% are licensed)

• 37,500 publications reported (30,000 papers between 2006-2010)

- Consistent time series for medical research funding in CVD and MH from 1975-1992
- Clear conceptual framework relating to GDP gain from “spillovers”
- Estimation from literature of the magnitude of this GDP return
- Development and application to CVD and MH, of a ‘bottom-up’ approach to estimate health gain in terms of QALYs
- Analysis of UK guidelines (5 CVD and 12 MH) to provide indicators of lags and proportion of benefits attributable to UK
- Suggestions for developing research agenda
- Strong quantitative argument for investment in medical research
3. RCUK “Pathways to Impact”

7 UK Research Councils together allocate £3bn each year to research

Key principle - **Excellent research** leads to economic, academic and societal impact

RCUK is keen to assess efforts to maximise impact, beginning with the peer review process – “Pathways to Impact”

Applications should explore ways to enhance potential impact, not predict impact

http://impacts.rcuk.ac.uk/default.htm
Pathways to Impact

Academic Impacts
- Enhancing the knowledge economy
- Training highly skilled researchers
- Worldwide academic advancement
- Innovative methodologies, equipment, techniques, technologies and cross-disciplinary approaches
- Contributing towards the health of academic disciplines

Economic and Societal Impacts
- Enhancing the effectiveness and sustainability of organisations including public services and businesses
- Attracting R&D investment
- Improving social welfare, social cohesion and/or national security
- Commercialisation and exploitation
- Enhancing cultural enrichment and quality of life
- Changing organisational culture and practices
- Increasing public engagement with research and related societal issues

Environmental sustainability, protection and impact
- Evidence based policy-making and influencing public policies
4. HEFCE Research Excellence Framework (REF)

- Higher Education Funding Councils in the UK allocate around £2 billion of support for research to Universities each year.

- The REF will assess research outputs, impacts and the research environment at each UK University.

- Assessment is at the level of “substantive bodies of research in coherent discipline groups” (Units of Assessment “UOA”) there are roughly 30 UOA.

- HEFCE ran an impact assessment pilot involving 29 Universities (each submitting case studies for 2 UOAs) across 5 UOAs in total (results published in 2010).

- Impacts had to be evidenced as occurring in the assessment period 2003-2008, resulting from excellent research supported from 1993 (up to 15 years ago).

- Impact assessment using expert panels was considered workable across all disciplines, and will contribute 20% of the overall REF assessment.
## Benefits of research

### Clinical Medicine
- Impacts on patient outcomes, health policy and practice, medical technology and the pharmaceutical industry.

### Physics
- Impacts on high-tech products and services, public engagement with science and defence and energy policy.

### Earth systems & environmental sciences
- Impacts on environmental policy, conservation, managing the environmental, utilities, risks and hazards, exploration of resources, public health.

### Social work & social policy
- Impacts on social policy, public services, third sector, practitioners and public debate.

### English language & literature
- Impacts on creative industries, cultural enrichment, civil society, English as a global product, policy development.

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Changes in the UK – Developing “The Impact Agenda”

- In the 2010 Comprehensive Spending Review, HM Treasury stated that MRC’s budget would be protected in real terms (providing for an inflationary increase), and the science budget overall given flat cash. The Science Minister noted “evidence is now coming in of economic returns to science. The empirical research has been very helpful.”

- Other research funding agencies in the UK are implementing processes to gather output data similar to MRC e-Val, including other Research Councils and medical research charities.

- Discussions are underway to harmonise and rationalise data collection approaches across multiple funding agencies, and provide more of a “UK wide” view of research output.

- The importance of capturing and describing, understanding, and assessing impact, with a view to maximising it, is now more accepted in the UK.

- Plans are underway to increase the investment in “science of science” work.

- Government focus is on economic growth.
What has worked? What is transferable?

- Very early stages of developing our evaluative capability, but some success in demonstrating return on investment

- Funding agency perspective, follow projects and programmes, aggregate results

- Survey researchers for “evidenced” outputs that cannot be gathered from other sources, replace end of grant reports with an ongoing dialogue

- Too early to tell whether “pathways to impact” has been successful, but this has begun the debate about what might lead to impact and has gained acceptance

- REF will be used to allocate funds to Universities in 2014, support has been won across disciplines for impact assessment to play a significant part