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Mapping the impact
Exploring the payback of arthritis research
The research described in this report was prepared for and funded by the Arthritis Research Campaign (arc).

Cover Design ‘Making an Impact’:
(left) Dr George Peat, Senior Lecturer in Clinical Epidemiology at the Arthritis Research Campaign National Primary Care Centre at Keele University, who is leading a major study aimed at improving the care and treatment of osteoarthritis.

(centre) Andrew McCaskie, Professor of Orthopaedics at the University of Newcastle, prepares for surgery.

(right) Andrew Fulljames had both knees replaced in 2005 at the Nuffield Orthopaedic Hospital in Oxford. His surgery has been very successful and has enabled him to lead a normal life.

(background picture) Dr David Gould and arc Professor Yuti Chernajovsky working on gene therapy research at the University of London.

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Mapping the impact
Exploring the payback of arthritis research

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Executive summary

To further its mission of curing arthritis, arc needs to develop a better understanding of its research portfolio and the impacts arising from its research. What types of research are being funded? What paybacks are being produced? And how will the advances made through research be followed up, in the short and long term? The charity also needs to be able to demonstrate the impacts and importance of the work it funds to justify its spending to donors and reform its end-of-grant reporting. Although previous end-of-grant reports have been detailed, it has been difficult to aggregate and analyse the information they collect across arc’s research portfolio.

Working with RAND Europe, arc set out to develop a new survey system that would provide an overview of the research arc funds through an information-gathering tool (survey instrument) that would be quick and easy for researchers to complete. This overview would inform arc’s future funding strategy and provide a foundation for more detailed evaluation work. The work built on earlier detailed case study research carried out for arc by RAND Europe, investigating how arc-funded research led to patient benefit. Figure S.1 details the key characteristics of an “ideal survey system” against which we could compare our designs and plans.

The survey instrument was intended to identify the diverse range of impacts arising from arc research. In addition to mapping the impacts of arc research, arc wanted a better overview of the types of research it was funding. While arc knows what types of research it funds in terms of disciplines, it has been harder to assess the stage of development of that research. The research pathway section of the instrument was developed to tackle this information gap. From an initially very rudimentary design, a complex and specific pathway emerged, through an iterative design process guided by consultation with researchers.

Over 40 arc researchers were consulted throughout the development of the system. They were involved at all stages, from initial conception of the system, through the design and testing of the final web-based questionnaire, and all appraisal areas.

The survey instrument

The new system is built around a web-based survey instrument (questionnaire) that asks about the sort of research that has been done, how it was developed and its impacts. Two major virtues of the instrument are that it is easy to use and that it...
provides data that is easy to analyse. One indication of the ease of use is the speed with which researchers can complete the questionnaire: in most cases it takes less than an hour (see Figure S.2). In contrast, previous end-of-grant forms could take between half a day and a full day to complete.

There are two key sections in the questionnaire. The first asks researchers to place their work on a research pathway (see Figure S.3). This allows arc to collect and analyse information on the range of research it funds.

The second key section investigates the impacts of that research. Rather than just examining publication outputs or qualifications gained, the tool covers a broad range of research impacts, including:

- research questions addressed and experimental systems used
- the position of the research on the research pathway
- whether the research has been or will be developed since the grant
- how the grant affected future research
- how results were disseminated
- impacts of the research on health policy, training and education
- whether the work led to medical intervention of public health advice.

Most questions can be answered with Yes/No tickboxes. Figures S.4 and S.5 show sample questions from the Future Research and Interventions/Products sections of the questionnaire.

When arc adopted the survey to replace its end-of-grant reports it added two sections of qualitative questions encompassing a scientific summary and a lay summary. The structure of the survey instrument is discussed in more detail in Chapter 4.

![Figure S.2](image1.png)
**Time to complete questionnaire (minutes)**

![Figure S.3](image2.png)
**The final research pathway**

![Figure S.4](image3.png)
**Example questions on research collaborations showing the Yes/No/Not Known tickbox structure**
The approach presented here depends on the researchers’ knowledge and honesty, and simplifies quantification of impacts and their attribution. It does this as a trade-off for the benefits of ease of use and analysis. Overall the indications are that the instrument is an effective and low burden way of collecting an overview of the impacts arising from a portfolio of research.

Pilot results

A pilot survey was conducted in 2007 on 136 grants ending in 2002 and 2006, from which a response rate of 87% was achieved. The questionnaire enabled rapid data collection and the results mapped a wide and diverse range of research impacts. While it is too early to draw specific policy conclusions from this initial survey, we made a number of preliminary observations: there was a diverse range of paybacks, and most impacts were generated at least once; over 80% of grants generated new research tools, of which 50% were shared; there was strong academic dissemination of the research results; and around 10% of grants have contributed to new diagnostics, interventions or public health advice, or have had intellectual property arising from them protected.