Majority support for homeopathy in Britain?

Paul Stoneman and Patrick Sturgis, NCRM Hub, University of Southampton

The appropriate place for Complementary and Alternative Medicines (CAM) in modern healthcare continues to emerge as a source of controversy in policy debates.

The issue attracted media attention again recently, following the appointment in 2012 of the new Secretary of State for Health, Jeremy Hunt, who supports the availability of homeopathic cures through the NHS. Due to the high degree of controversy surrounding its use and regulation, a number of studies have been undertaken which seek, in one way or another, to understand why people use these kinds of treatments. Where studies have been based on sample surveys of the general population, attention has focused on measures of reported use over some reference period. Reported use can then be specified as the outcome in a regression analysis, with demographic and attitudinal predictors introduced to enable inferences about the factors associated with CAM uptake. While this approach has resulted in a number of useful insights, it is problematic to assume that people who report having used CAMs in the past necessarily believe them to be efficacious (that is, better than a placebo) now. Conversely, the fact that an individual does not report having used a CAM in the past cannot be taken as indicating that she believes them to be inefficacious. As a consequence, our understanding of the factors which underpin support and opposition to CAM may be distorted through an exclusive focus on reported use. In this research, funded by the Wellcome Trust, we investigated the correspondence between reported use and the perceived efficacy of a particularly prominent and controversial treatment – homeopathy.

Using data from the 2009 Wellcome Trust Monitor, we found that 18% of UK adults report having used homeopathy at some point in the past. However, when asked their reasons for using it, only 16% spontaneously reported it being due to its superior efficacy relative to conventional treatments. The most frequent response (49%) was ‘(I) didn’t think it could do any harm’. Similarly, the responses of homeopathy users to a direct question about the efficacy of homeopathy reveal that, while a majority said they thought it was ‘just as’ (44%) or ‘more effective’ (13%) than conventional medicine, a substantial minority (21%) believed it to be ‘less effective’ and 6% reported it to be ‘not effective at all’. A yet more striking degree of variability was evident amongst non-users, with more than a quarter believing homeopathy to be ‘just as’ or ‘more effective’ than conventional treatments and 16% stating that the efficacy of homeopathy ‘depends on the illness’. Although not a strong endorsement, this certainly cannot be taken as rejection of homeopathy as a potentially effective cure. Combining the views of users and non-users, we find that more than half of UK adults appear to believe homeopathy is as effective or more effective than conventional medicine.

Multivariate analyses revealed that the social profile of the typical homeopathy supporter is quite different, depending on whether support is operationalised as perceived efficacy or reported use. Homeopathy use was most strongly associated with the reporting of specific symptoms, as well as scepticism about conventional medicine. Perceived efficacy, on the other hand, was primarily related to concerns about the pace and governance of medical research.

These findings have both methodological and substantive implications. Methodologically, we show that reported past use is a problematic indicator of an individual’s beliefs about treatment efficacy. Substantively it is clear that, when we take into account the high degree of what might be termed ‘latent support’ for homeopathy amongst the sub-group of non-users, a majority of Britons appear to endorse homeopathic remedies as potentially efficacious treatments.

Female labour supply, human capital and the lifetime effects of in-work benefits

Monica Costas Dias and Jonathan Shaw, PEPA node of NCRM, Institute for Fiscal Studies

Most evaluation studies of tax reforms focus on directly affected outcomes. For instance, in-work benefits aiming to improve the incentives to work of families with children have been assessed on their ability to increase employment rates among mothers in low-income families. These are likely to be the key effects in the short-term.

However, some of the most important lifetime decisions, such as those on education and employment, are closely intertwined. Education happens early in life and affects employment and earnings later on; it has also been shown to respond in advance to changes in its expected value for working. Employment status is related over time and can lead to higher future earnings through the accumulation of working experience; conversely, future returns to current employment may affect employment choice. These connections are crucial to understand the overall long-term impact of policies like in-work benefits and how they may differ from their short-term counterparts.

The focus is on the labour supply, experience accumulation and education choices of women within their families. In the model, women choose education at the beginning of life and subsequently enter the labour market where they can decide to work full-time, part-time or not at all. Their earnings depend on how many hours they work, their education and working experience. They may be entitled to benefits depending on their working status and family circumstances as determined by their spousal income (if they have one) and the presence of children.

The focus on women is justified by their behaviour and exposure to hardship. Women are more responsive than men to work incentives, particularly as mothers. They often live through periods of lone motherhood, are especially vulnerable to poverty and at risk of long career breaks that can have long-lasting effects on future employment and earnings prospects. The recent reforms to in-work benefits in the UK have been driven by these concerns and specifically targeted women. Part of the motivation to incentivise mothers into work has been that continuous work promotes attachment to the labour market and preserves valuable skills.

Within this framework we study a specific reform to the tax and benefits system in the UK. It amounts to the succession of policy changes implemented after the introduction of Working Families Tax Credits in 1999 up until April 2002. Overall, it involved an expansion in the generosity of welfare and tax-credits to families with children.

We find that women can respond strongly to work incentives depending on their circumstances. Less educated single mothers face an especially high risk of unemployment but are very responsive to incentives to work and earn more. Thus, targeting work incentive schemes on them maximises impact.

However, the effect is long-lasting only if working experience matters for future working and earnings. We find that experience is important only if women work full-time, particularly for those with some education above the GCSE level. Part-time work, which is strongly incentivised by the UK tax-credit system, carries a penalty for female wages that can be explained by experience effects: women in part-time work experience no increase in wages.

These results explain why static models of labour supply provide an accurate prediction of the short-run effects of tax-credit reforms on employment of women with basic education. While they are very responsive to work incentives, working experience plays almost no role in determining their wages and thus has little impact both on future employment prospects and on working decisions in anticipation of becoming eligible to generous subsidies.

Finally, we also find that there is a small but important impact of the tax-credit reform on education choices. More generous tax credits provide a strong insurance against low wages that affect women with basic education disproportionately. Thus, the value of education as a means of avoiding low wages is reduced and some women may be induced to invest less in education. This strongly affects the working decisions and earnings of these women.

This is a short overview of the paper “Female Labour Supply, Human Capital and Tax Reform”, which is joint work with Richard Blundell and Costas Meghir (mimeo, Institute for Fiscal Studies, 2012).
Understanding pathways from fertility history to later life health

Emily Grundy and Sanna Read, PATHWAYS node

Many studies have shown that events and circumstances over the life course can have a longer term, as well as more immediate, influence on health. Much of this research has focused on socio-economic influences but other aspects of the life course may be important too.

In the PATHWAYS programme we have been examining how people’s family-building patterns are associated with later life health and trying to unpick the mechanisms underlying observed associations.

We know from previous studies that in contemporary European and North American populations there seems to be a U- or J-shaped association between number of children born (parity) and later life mortality and morbidity with nulliparity (having had no children) or having only one child and having had four, five or more children, being associated with worse health and earlier death, although there are some interesting country differences in this pattern of association. Most studies have only considered women, but some research also including men points to similar associations, suggesting biosocial rather than strictly physiological reasons for this pattern. Research also shows later life health disadvantages for women and men who become parents at relatively young ages.

How and why might fertility patterns and other aspects of family life be related to health? There are several potential mechanisms which are likely to operate differently across populations and population sub-groups, and by gender. In contemporary Western populations in which most people plan their family-building and contraception is widely available, a range of characteristics, attitudes and circumstances influence people’s fertility patterns and some of these are independently related to health. For example, teenage parenthood is now more usual among young people who have had less advantaged childhoods and we know that disadvantage in childhood influences health in later life. It is also known that some health related behaviours and characteristics influence the ‘fecundity’ – potential for having children – of both women and men.

These characteristics are also strongly related to health. Apart from these (and other ‘selection’ effects, there are other direct and indirect mechanisms whereby fertility patterns may influence later health. For women these include the physiological consequences of pregnancy, childbirth and lactation. These have protective effects against some diseases, most notably breast cancer, but high parity is associated with higher risks of some other diseases including diabetes. Indirect effects, which apply to both women and men, also encompass some that may be health protective and some that are potentially harmful. Health protective effects of parenthood include incentives to avoid unhealthy behaviours, increased participation in community networks and, later in the life course, social support from children. Less positively, parenting may involve stress and substantial economic costs.

There are a number of limitations in previous studies of fertility histories and later life health. Many have been unable to take account of early life factors or to address the pathways whereby fertility histories and health may be associated. Moreover many have used outcome measures such as morbidity and disability which may be too far ‘upstream’ – it may be more informative to have measures of sub-clinical morbidity observable earlier in the life course.

In PATHWAYS we have been examining biosocial pathways from fertility trajectories to health in later life. We have focussed so far on the role of three possible mediating factors: wealth; health related behaviour, and social support and perceived strain. As well as using measures of long-term illness and self-rated health, we have been investigating associations with a measure of allostatic load derived from data on 9 biomarkers. Allostatic load is conceptualised as providing an indicator of multisytem physical dysregulation resulting from long-term exposure to stress. We have also included an indicator of childhood health in our analyses in order to try to control for health-related selection to particular fertility trajectories.

Results and further work

In models looking at direct associations between aspects of fertility histories and our health outcomes (controlled for various factors including childhood health) we found the expected associations between large family size and early parenthood and higher (worse) allostatic load and long-term illness. The path analysis showed that the association between large family size and allostatic load and health is mediated by wealth (M&F), and smoking and social strain (F) i.e. there is little direct association once all intermediate factors are included in models. Associations between having adopted or step-children and later health were also mediated by wealth. Among mothers there was still a direct association between early motherhood and allostatic load, but otherwise associations were mediated by wealth, physical activity and smoking. Among fathers, direct effects remain to some extent, although some were mediated by wealth and physical activity. In short, it seems that the reason that having a larger number of children appears to be bad for health in England is because of the financial strain and stress that a larger family size often involves. Next steps include further work to make sure we have addressed the challenge of missing data as well as possible and more detailed analysis of pathways to particular fertility trajectories - especially the influence of childhood socio-economic status.

Data and Methods

We have been using a sample of men and women aged 50+ who participated in waves 1-3 of the English Longitudinal Study of Ageing (ELSA). ELSA includes a wide range of data on socio-economic, socio-demographic and psychosocial variables and in alternate rounds more detailed health information is collected, including blood analytes. Wave 3 of ELSA collected retrospective data information on childhood circumstances and on partnership and fertility histories. The aspects of parenthood history we have been considering include number of natural children, adopted and step children, and timing of first and last birth. Mediators considered are health, social support and strain, and smoking and physical activity. An allostatic load index was calculated using quartiles of 9 biological measures. Health was measured by self-rated health and limiting long-term illness.
What can we do with marginalia, notes and letters?
The possibilities of narrative analysis for paradata in historical surveys

Ann Phoenix, Janet Boddy and Heather Elliott, NOVELLA node, and Rosalind Edwards, NCRM Hub

In recent years, two methodological innovations have led researchers to attend to features of their research beyond the data collected. On the one hand, survey researchers have focused on the by-products of data collection (e.g. computer keystrokes; the order of completion and revisions of answers); the context in which questionnaires are completed; interviewer-generated observations and so on, with a view to improving recruitment and retention in large-scale datasets. On the other, many qualitative researchers now analyse fieldnotes in order better to understand how research accounts are co-constructed between researchers and participants. ‘Paradata’ analysis is now well-established in the quantitative field.

A new study brings together the focus on paradata from quantitative analysis with epistemological interest in how researchers are implicated in their analyses. It will analyse the marginalia recorded by field interviewers on paper questionnaires completed for Peter Townsend’s classic 1960s study, Poverty in the United Kingdom, archived at Qualidata, UKDA, University of Essex. The research examines the applicability of secondary narrative analysis to paradata commenting on the survey data.

Initial pilot work has identified an emergent typology of seven kinds of paradata:

1) Coding paradata of three kinds:
   • careful computation, checking and reworking of financial data, revealed through markings in different coloured pen, erasures and replacement of data;
   • amplification of codes to capture the complexity of the data;
   • justifications for particular coding, for not asking certain questions or for failing to accomplish interviews fully or at all.

These included reports of ‘checking’ return visits and one striking example of an interviewer who repeatedly asked supervisors to decide between codes.

2) Explanations of benefits and entitlements. Some of these were generated to take stock of ongoing or recent changes – for example, in the benefits system and in the Devlin Report on changes in dock workers’ employment rights.

3) Evaluations included comments that went beyond the interview and coding framework to expand on observations or impressions. Some privileged interviewers’ observations or beliefs, contradicting, re-framing or verifying interviewees’ accounts. Interviewers also described the interviewees or their homes, giving insight into the social context and the interviewers’ preoccupations. The interviewers made comments that contemporary researchers would not, highlighting the dangers of an anachronistic view.

4) Debriefing. Paradata were sometimes provoked by interview dynamics and research relationships. These included comments about interviews that were challenging to conduct, but also those that were sad or upsetting, allowing interviewers to debrief themselves of, and alert supervisors to, their feelings.

5) Some interviewers consistently wrote comments that constituted social commentary or were designed to contribute to Townsend’s analysis.

6) Raising ethical issues. A frequently-raised ethical dilemma was how far to pursue an interview if an interviewee had refused, or was struggling to continue. Some paradata themselves constituted what today would be considered ethical breaches, in comments about participants but also, occasionally, interviewee addresses or names were included in what were meant to be anonymous questionnaires.

7) Paradata leaving traces of locations, public policy and social practices. Taken together, the paradata indicated regional health effects (e.g. geographical prevalence of bronchitis and pneumoconiosis) and historical change in the population as in queries about whether Maltese migrants should be counted as ‘coloured’.

Across different types of paradata, fieldworkers’ notes were often directed to the checkers or Townsend himself, justifying or explaining, and making visible the core research team’s (inscribed) presence within the interview.

From this initial work, it is clear that some of the paradata will enable narrative analysis and help to illuminate substantive as well as methodological issues.
How do surgical trainees learn to operate on real patients without increasing patient risks? How do surgeons come to make critical decisions during operations? How have new technologies changed learning and decision making?

Researchers at Multimodal Methodologies for Research Digital Data and Environments (MODE) develop methods for analyzing digital data and environments to address substantive questions about society.

Laparoscopy

Today many operations are performed through natural openings or small incisions in the patient’s body. For instance, operations on organs involved in the digestive system are often done through key holes in the abdominal cavity of the patient. In these operations surgeons work inside the body using long thin instruments. Key to these operations is the laparoscope, that is, the camera that is inserted in the body cavity. The view that is picked up by the laparoscope is then magnified and projected onto screens around the operating table. Much contemporary surgery relies on this video technology. Surgeons can record the laparoscopic view, allowing them to replay the operation afterwards, for instance to reflect on how the operation went or to demonstrate to trainees and patients how a procedure is done. Edited versions of these recordings are sometimes disseminated through YouTube and other platforms, with running commentaries added to the visuals.

Using video to investigate surgery

We at MODE collect two types of data: laparoscopic view of operations and the use of laparoscopes. The two types of data produce very different views on operations: one micro-view, showing what happens inside the patient’s body, and one macro-view, showing what happens outside the patient’s body at and around the operating table. We use these data to address questions about learning, decision making and impact of technology; to provide a resource for health professionals to reflect on their work in operating theatres; and to offer a glimpse of what happens inside operating theatres to the general public.

How do surgical trainees learn to operate on real patients?

In order to train up the next generation of surgeons, we need to let them operate on real patients under the watchful eye of an experienced consultant surgeon. We explored how a trainer and trainee jointly achieve surgical care in these situations, that is, when the trainee holds the laparoscopic scalpel. We analysed laparoscopic video recordings and audio recordings, transcribing what the trainer and trainee said and did moment-by-moment. We found that the actions performed by the trainee with the scalpel served as mini-gestures, signalling to the trainer exactly where and when the trainee was about to cut. The trainer’s speech served as prompts, signalling to the trainee to continue or to change his course of action. We take this as one of the key strategies that surgical trainers and trainees use to manage patient safety when the trainee holds the scalpel.

How do surgeons make decisions during operations?

Decision making has become a key term in discussions about the quality and safety of health care. We analysed laparoscopic video recordings and audio recordings focusing on who says what to whom alongside what is visible through the laparoscope prior to the cutting of the cystic duct and the cystic artery.

This is a critical moment in gall bladder removal operations as there is a risk of incorrect identification; the structures to be cut look like the main structures from which they branch off and which should not be damaged. Our analysis shows that in our data set the decision to cut was always made in collaboration, irrespective of whether it was a consultant or a registrar who was operating. By asking, e.g., “Are you happy?” the ‘operating’ surgeons sought confirmation from their (senior) colleagues prior to making the cuts.

How have new technologies changed learning and decision-making?

We also investigate how laparoscopy shapes clinical practice and education in the operating theatre. When operating laparoscopically the screens that project the operative field surgeons can consult other surgeons at a distance, and they can teach trainees and involve them in the decision-making even if they are not standing at the operating table.

For further information about MODE training, seminars and resources please see http://mode.ioe.ac.uk/
The bead method: a biographical approach to researching mothers and trust in post-war South Sudan

Rachel Ayrton, NCRM Hub, University of Southampton

Although the use of the timelines method in biographical interviews can make the construction and analysis of data a more collaborative process, how can this be achieved in the context of cross-cultural research with a marginalised group where literacy is limited?

In my recent study of South Sudanese mothers' trust in medical professionals, I wanted to use the timeline method as part of in-depth biographical interviews. Timelines are sometimes incorporated into qualitative interviews to encourage participants to represent their life graphically, marking key events or phases in their lives along a line. This enables data to be communicated visually as well as verbally, which was beneficial in this cross-cultural research project.

After around fifty years of civil war and a longer history of underdevelopment and exploitation, basic services including health care and education are starting from scratch in the new nation of South Sudan. Gender inequality continues to be a problem, and literacy is particularly low amongst women, so using pens and paper to produce timelines, ‘artefacts’ associated with education and literacy, was not the best option. Instead, I developed a method of beads strung on a leather cord to enable participants to construct their stories about their lives and experiences of health care.

Each participant made a bracelet that they could keep as “a concrete reflective product”.

Each participant was given a cord to act as the timeline, and they chose beads to represent things that have happened in their lives, and particularly their families' health. During the interviews, the bead timeline provided a reference point for episodes in the story, enabling us both to isolate particular aspects of the data and enrich storytelling, encouraging comparisons to be made by setting experiences alongside each other. In terms of the relative power of researcher, interpreter and participant in the interview, the bead timeline enabled my participants to direct how they would structure their story, using beads to represent sections in a continuous narrative, discrete episodes, or the key characters in their stories. Within their chosen framework each participant exercised agency in deciding where the subdivisions in her health story would occur, which episodes to choose and where they would start and finish, or who the most important characters are around whom to shape her health story.

Some participants used this agency to introduce a layer of symbolic meaning into the beads, which added significant depth. Several participants gave a reason for their choice of a particular bead that related its appearance to the meaning they attached to it. One mother, nursing her newborn baby, vocalised how she expressed her pride in her child in her choice of bead:

“Rachel: So which one would you like for this little baby?”
“Patience: Mm, this little one, let me take this beautiful one.” (Patience, 04/08/12)

A silver bead was chosen to represent one participant's bright hopes for the future for her children and her country:

“This one I took it I want to talk about the future, yeah. I felt after all these sufferings and I was able to cover with all these children of mine... I wanted God to give them a bright future, so they became children who are also to help build this country of ours.” (Praise, 08/08/12)

Other women chose to use the colour and texture of their beads to say something about how they felt during a period in their life or episode:

“During the war, this bead here represents her life. Her life was like, this bead. It’s not perfect, it’s like ups and downs. Just like this one here... She was thinking that maybe one time she is not going to stay in a white place like that, she was going to go into a dark spot like that.” (Anna, 06/08/12)

During its construction the bead timeline also became symbolically significant by giving a physical presence to the participant's story. This enabled me to express empathy and make a physical connection with the story by touching the bead when asking a question, without acting invasively towards the participant, and participants often acted affectionately towards the object as they spoke. The bead timeline gave the participant, interviewer and interpreter ways to symbolically interact physically with the story.

The ‘bead method’ is an approach developed by Rachel Ayrton. Rachel is a research student attached to the NCRM Hub.

References


Developing ethical literacy: an unnecessary burden or a benefit to researchers?

Rose Wiles, NCRM Hub, University of Southampton

Discussion of research ethics in social research has become dominated by a concern with the increasing regulation of social research which has occurred over the last decade or so.

Various authors in qualitative social science as well as in other methodological traditions have contested the appropriateness of ethical regulation in social research, arguing that it poses minimal risks to participants. Ethical review by research ethics committees (RECs) is viewed by these authors as unnecessary and more importantly, as detrimental to the future of social science research in that it is perceived as having the potential to render some types of social science research as impossible to undertake. Researchers using ethnographic, visual and online methods have all identified the threat to their practice posed by ethical regulation. Yet, despite extensive critiques of ethical regulation, systems of ethical review have become embedded in universities and research organisations in the public, commercial and third sectors.

An alternative view, less widely expressed, is that no research is ever risk-free and that systems of ethical review encourage researchers to think through the ethical issues that they may encounter in their research and thereby improve levels of ‘ethical literacy’ in the research community. However, ethical literacy means more than learning how to achieve a favourable opinion from an ethics committee, it means encouraging the development of an attitude to research where ethical issues are foregrounded and one where attention to ethical issues is given throughout the process of conducting research. This means that consideration of ethical issues should be central to, and guide decision-making in, all aspects of a research project from its conception to its dissemination. In short, conducting ethical research should not be reduced to the process of ‘getting ethics approval’.

In my recently published book ‘What are qualitative research ethics?’ I note that, despite concerns about unethical practice in social research, it appears that the ‘horror stories’ are both well-known and relatively rare.

Milgram’s obedience to authority experiment, Zimbardo’s Stanford prison experiment and Lau Humphrey’s covert ethnography of homosexuality are unusual exceptions. In the main, there appear to be few cases of serious ethical breaches but this does not mean that researchers do not experience ethical challenges or that consideration of ethical issues should not be at the forefront of researcher’s minds in conducting social research.

In the book, which is an introductory text, I argue that ethical frameworks can help researchers to identify and think through the ethical issues that emerge in their research. Ethical frameworks do not provide definitive answers to ethical dilemmas, but rather a means of thinking about them and assessing what an appropriate and defensible course of action might be. In the book I outline a number of ethical frameworks: consequentialist; principlist; ethics of care; and virtue ethics. Each of these provides different ways for thinking about the ethical issues that emerge in research but each foregrounds the key ethical dilemmas that researchers experience, those of consent, confidentiality, risk and respect.

One of the concerns commonly expressed by researchers is that traditional thinking about ethics in research is not applicable to some of the more recent developments in research methods, such as visual methods, creative methods and digital and e-research.

In particular, conventional concepts of consent, anonymity and confidentiality are challenged by researchers using these methods. Researchers using visual and creative methods, for example, have argued that anonymity (and perhaps confidentiality also) may not always be possible or indeed desired by research participants. In digital and e-research issues of consent raise important challenges. To what extent should publicly available digital data be subject to traditional notions of informed consent and how do these concepts apply to different types of digital data (blogs, tweets, forum discussions and social networking data)? On the one hand there is the notion that the internet (and digital research more broadly) is a ‘huge social science laboratory’ (Eynon et al, 2008) and on the other is the notion that concepts of consent and privacy should still apply or at least be a central feature of the consideration that researchers give to how they access and use digital data.

New and emergent forms of data and methods may mean that we need to think about ethical issues in new ways but they don’t negate foregrounding ethical thinking in our practice or the use of ethical frameworks to help us in our endeavours.

‘What are qualitative research ethics?’ by Rose Wiles is available from Bloomsbury Academic publishers in http://bit.ly/SMwpH6
NCRM in ESRC Festival of Social Sciences: Smart Cities exhibition in Leeds City Museum

The Talisman node of the NCRM organised a 3-day Smart Cities exhibition at the Leeds City Museum as part of the annual ESRC Festival of Social Science.

The free exhibition demonstrated how the latest innovations in research and technology are revolutionizing the urban landscape and our experience of it.

Over 1500 visitors had the opportunity to engage with the latest technologies through interactive exhibits to see how cities are becoming ‘smarter’ and more habitable.

One of the new exhibits that made its debut in public was the ‘SurveyMapper Live’ which allows people to vote by standing in front of a screen and selecting from a list of options by waving their hand over their preferred option. The question in the exhibition was “Do you think Yorkshire should be independent?” 40% voted for more local powers, 28% voted for freedom, 16% voted for legal independence and 16% voted “none”.

The exhibition was organised by the Talisman node of the NCRM, which is based at the University of Leeds and Centre for Advanced Spatial Analysis (CASA) at University College London.

MethodsNews is published three times a year by the National Centre for Research Methods.

Editorial team: Kaisa Puustinen and Graham Crow.

National Centre for Research Methods
Social Sciences
University of Southampton
Southampton SO17 1BJ
United Kingdom

Email info@ncrm.ac.uk
Tel +44 23 8059 4539
Web http://www.ncrm.ac.uk
Twitter @NCRMUK