

The UK Biobank  
Ethics Consultation Workshop  
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## **CONTENTS**

<b><u>INTRODUCTION</u></b>	<b>2</b>
ACTIVITIES LEADING UP TO THE WORKSHOP	3
<b>THE KEY QUESTIONS</b>	<b>3</b>
<b>FORMAT OF THE MEETING</b>	<b>4</b>
GENERAL COMMENTS ON THE DISCUSSIONS	4
<b><u>CONSENT</u></b>	<b>5</b>
<b>BROAD VERSUS SPECIFIC CONSENT</b>	<b>5</b>
<b>OPTING OUT FROM PARTICULAR KINDS OF RESEARCH</b>	<b>6</b>
<b>OPENNESS AND TRANSPARENCY</b>	<b>6</b>
<b>RELATIONSHIP TO RESEARCH ETHICS COMMITTEES</b>	<b>7</b>
<b>DEVELOPING THE CONSENT PROCEDURES</b>	<b>7</b>
<b>BIOBANK PARTICIPANTS' WITHDRAWAL FROM THE STUDY</b>	<b>8</b>
<b>FEEDBACK OF INFORMATION TO BIOBANK PARTICIPANTS</b>	<b>8</b>
<b>RECALL OF BIOBANK PARTICIPANTS FOR FURTHER STUDIES</b>	<b>9</b>
<b>GENERATING CELL LINES FROM THE SAMPLE COLLECTION</b>	<b>9</b>
<b><u>CONFIDENTIALITY AND SECURITY</u></b>	<b>11</b>
RELATIONSHIP TO NHS INFORMATION SYSTEMS	11
LEGAL ISSUES	11
<b><u>COMMERCIALISATION</u></b>	<b>13</b>
ACCESS	13
<b>BENEFIT SHARING AND INTELLECTUAL PROPERTY RIGHTS</b>	<b>13</b>
<b><u>GOVERNANCE</u></b>	<b>15</b>
<b>CURRENT PROPOSALS</b>	<b>15</b>
<b>DISCUSSION</b>	<b>15</b>
THE STRUCTURE OF THE UK BIOBANK	15
THE OVERSIGHT BODY AND LINES OF ACCOUNTABILITY	16
OVERSIGHT OF COMMERCIALISATION	17
ROLE OF RESEARCH ETHICS COMMITTEES	17
<b><u>FINAL REMARKS</u></b>	<b>19</b>

## **Introduction**

This is a report of a workshop held on 25 April 2002 to discuss the ethical issues raised by the UK Biobank project, a proposed large-scale study of the combined effects of genes, environment and lifestyle on common diseases of adult life. The UK Biobank plans to recruit a group of 500,000 people aged between 45 and 69 on a voluntary basis through General Practitioners throughout the UK. Records of the Biobank participants' lifestyles, gathered via questionnaire and interview, together with a physical assessment and a blood sample, will form the initial UK Biobank database. This information will be supplemented with information from NHS systems as the Biobank participants make use of NHS services.

It is hoped that the UK Biobank will provide a unique opportunity to develop a better understanding of the links between genetic and environmental factors and the pathophysiology of disease, and so provide an opportunity for improving risk prediction and improving the effectiveness of treatments through the application of pharmacogenetics. The project can only succeed however if it gains and holds the confidence of its participants, and society more generally. Development of the ethical framework is crucial to securing this confidence.

The consultation involved some 60 invited individuals from a wide variety of fields, including biomedical scientists and clinicians, social scientists, ethicists and lawyers, health service professionals, and patients' groups and other civil society groups. A briefing document was sent out to workshop participants beforehand (Appendix I), outlining the current state of development of the ethical framework for the UK Biobank, and setting out a number of questions for discussion. Workshop participants were also given the opportunity to raise questions that had not been identified in the briefing document.

The workshop was held to sound out a range of views on the important issues, and identify key areas for further development. Workshop participants were not asked to arrive at a consensus on the questions raised. This report sets out some of the key issues identified at the meeting. The views expressed do not necessarily represent the views of the funding bodies for the Biobank (MRC, Wellcome Trust, and Department of Health).

Shortly after the meeting, an announcement was made from the three funding bodies that funding had been approved for the UK Biobank. Recruitment for the CEO position is now under way, as is the process to identify the host institution for the Biobank "hub". The deliberations of the ethics consultation will be an important resource for the ongoing development of the ethical framework for the Biobank. As the structure of the Biobank is established and its scientific protocol is developed, it is likely that further questions will be raised, over both legal issues and ethical considerations.

### *Activities leading up to the workshop*

The Wellcome Trust and MRC had previously undertaken a number of activities to address the ethical issues raised by the UK Biobank. The resultant learning was used to inform the ethics workshop. A protocol development workshop in April 2001 discussed, among other aspects, a number of ethical issues, including consent, confidentiality, feedback of information to the Biobank participants, and commercialisation. The outcomes were fed into the development of the scientific protocol, which has also been subject to peer review by ethics experts. Two public consultations have also been carried out, one on human sample collections in general in 2000 and one specific to the UK Biobank in 2002. Details of these can be found on the websites of the UK Biobank, the MRC and the Wellcome Trust.<sup>1</sup>

Other activities are helping inform the subject of large population collections for biomedical research. The Wellcome Trust held a workshop in 1999 on the use of human biological sample collections for DNA to encourage research proposals on the social, ethics, legal and public policy aspects of this subject. Several studies were subsequently funded and are currently underway.<sup>2</sup>

The Wellcome Trust and MRC responded to the HGC consultation “Whose hands on your genes?” in 2000/2001.<sup>3</sup> The HGC reported on this consultation in May 2002 in its report “Inside Information: balancing interests in the use of personal genetic data”.<sup>4</sup> This makes a number of observations and recommendations for the future conduct of genetic research. The MRC and the Wellcome Trust also gave evidence to the House of Lords Select Committee on Science and Technology, which issued a report “Human genetic databases: challenges and opportunities” in 2001.<sup>5</sup>

### The key questions

Five key areas of ethical concern were identified as being relevant for the UK Biobank:

- Consent, its nature and scope, the level of feedback that should be given and the right of participants to withdraw from the study;
- Confidentiality, the relationship between the UK Biobank and third party research groups;
- Security of data, and the question of what constitutes de-identification (anonymisation);

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<sup>1</sup> UK Biobank website: [www.ukbiobank.ac.uk](http://www.ukbiobank.ac.uk)

MRC pages on Biobank: [http://www.mrc.ac.uk/index/public\\_interest/public-consultation/public-biobank\\_consult.htm](http://www.mrc.ac.uk/index/public_interest/public-consultation/public-biobank_consult.htm)

Wellcome Trust pages on Biobank: <http://www.wellcome.ac.uk/en/1/ukbiobank>

<sup>2</sup> <http://www.wellcome.ac.uk/en/1/mismisethresgen.html>

<sup>3</sup> [http://www.wellcome.ac.uk/en/images/HGCconsultation2\\_5400.pdf](http://www.wellcome.ac.uk/en/images/HGCconsultation2_5400.pdf)

<sup>4</sup> <http://www.hgc.gov.uk/insideinformation/index.htm>

<sup>5</sup> <http://www.parliament.the-stationery-office.co.uk/pa/ld200001/ldselect/ldsctech/57/5701.htm>

- Commercialisation and the relationship between the UK Biobank and commercial interests;
- Governance, including the role of the oversight body proposed for the UK Biobank and its relationship with existing mechanisms of research governance.

### Format of the meeting

Opening statements outlining the aims and objectives of the UK Biobank were given by Professor Tom Meade, Chairman of the UK Biobank Protocol Development Committee; and by Dr Ron Zimmern, the Chairman of the meeting and Director of the Public Health Genetics Unit, Cambridge. The workshop participants then divided into five Working Groups, each tasked with discussing a particular set of key ethical questions. All the Working Groups then addressed the questions concerning governance.

### *General comments on the discussions*

There was a considerable degree of overlap between the discussion in each of the Working Groups. The debates continually returned to consent as the most fundamental of all the issues. Recruitment into the study would only be successful if the Biobank participants had confidence in the UK Biobank's procedures for ensuring that appropriate and ethically sound procedures for consent, confidentiality and the regulation of commercial access to samples and data were in place. This in turn required a commitment by the UK Biobank to provide exemplary security processes and an effective and robust oversight structure.

Some of the discussion at the workshop highlighted points for actions that had already been taken within the Biobank project. It was recognised from the outset that the details of the consent process were critical to the success of the study. This had already been the subject of public consultation and it had already been decided that further work would be required. It had also been recognised that an explicit and consistently applied policy for the security of the Biobank should be put in place, including the use of encryption, and that a number of commercialisation issues would need to be resolved.

## Consent

### Broad versus specific consent

The major point of discussion was whether the UK Biobank could legitimately adopt a broad general approach to consent, or whether it would have to obtain explicit consent that related specifically to each individual project that would make use of the Biobank material or data.

The broad consent approach would require the Biobank to give prospective participants information only about the nature and purpose of the project, the processes that were to be followed, arrangements for security and for protecting confidentiality, and other relevant matters such as the rules relating to the commercial exploitation of data and samples. The consent so obtained would enable the Biobank participants to understand that their medical data and genetic variants would be used at some future date to study the links between genetic factors and their lifestyle on disease risk. It would not allow them to be specific about what diseases or genetic variants they would or would not permit to be studied. Specific diseases would be discussed only in broad terms and by way of illustration.

The general consent would explicitly inform the Biobank participants that their specific consent would not be sought for each individual study, but that they would be protected by safeguards that would include a requirement for research ethics committee approval for each individual project and an absolute right for any participant to withdraw from the UK Biobank at any future date. Those not content with such an approach should decline to participate.

A number of reasons were cited for not requiring specific consent for each individual research proposal. First, the difficulty of specifying in advance the details of any such research, and hence of covering all eventualities through explicit consent procedures at the start of the project. Second, because of the logistical difficulty of contacting all the Biobank participants at future dates it was considered no less difficult to seek consent at the time each study was conceived. Third, because the details of this type of research were so complex that many thought that the provision of detailed information would give only the appearance of fully informing the Biobank participants without actually fulfilling such a function. The idea that consent might be more fully informed purely by virtue of the inclusion of huge amounts of detail was believed to be a sham and would not be sufficient in itself to make the study more ethical.

These matters were debated at length. Most (although not all) workshop participants accepted that it was neither possible nor necessary to obtain consent for each and every individual study. They understood that for practical reasons the UK Biobank could not allow one individual to opt out of projects involving a particular disease, and another individual to opt out of studies related to a different one. Yet they were also uncomfortable about the use of a general consent that covered all types of research without exception. Many felt that it would not be unreasonable to delineate, for a small number of particularly sensitive situations (for example, behavioural

genetic research) where explicit consent by the Biobank participants should be required.

A number of workshop participants also felt that the approach that was advocated was insufficiently sensitive to the views of the prospective Biobank participants. The “take it or leave it” approach was considered to be too draconian. Many individuals might wish to participate in the UK Biobank but only if they could ensure that their data was not used for research in certain sensitive areas. Others were concerned that what was being proposed appeared to be a “passive” model, designed to protect the Biobank participants from the risk of harm, instead of a more “active” model in which the Biobank participants would be given a say in how the study was to be managed and overseen.

It was suggested that research should be carried out to establish what conditions people would expect to fall outside the scope of general consent and to identify them. The Biobank participants could then, at the start, decide that their material or data could or could not be used for those specific purposes. Others, while agreeing with the general sentiment that there might be some specifically sensitive situations, felt that it would not be possible to predefine such a set and that its prior delineation at entry to the Biobank would be too difficult. They suggested that the oversight committee might be given the responsibility, where it was necessary to do so, for making a decision that specific consent would be required at the time that ethical approval was sought for a specific study, and that in those instances the Biobank participants would be re-contacted for their approval.

#### Opting out from particular kinds of research

It was clear from the discussion that opinions varied on whether the Biobank participants should be allowed to opt out of specific lines of research. Some believed that even if no opt-out was allowed for most areas of research, certain sensitive areas should be excluded from broad general consent provisions. Others were of the view that most people would agree to full participation in the Biobank and would be content for their data and tissue to be used for any project, provided that a research ethics committee had approved it. They believed that a failure to allow for the opting out of specific areas of research would not pose a major difficulty for the administration of the UK Biobank.

#### Openness and transparency

Everyone agreed that it was essential that the basis on which the Biobank would function should be communicated clearly and unambiguously to potential Biobank participants. Openness and a willingness to go into greater detail for those Biobank participants that required it were essential aspects of the consent procedure. It was desirable to describe the nature of the types of research projects in clear but general terms, and to give illustrative examples. The Biobank participants’ understanding of the consent form and accompanying information would be crucial. The Biobank participants would need to appreciate, for example, that their samples might be held for a considerable period before analysis.

It was generally agreed that the Biobank participants had to be told about the exact relationship between themselves, the Biobank and commercial partners. More explicitly, they had to understand that while research based on their tissue and data might lead to significant commercial gain for others, they themselves could have no financial interest in the transaction. The consent procedure had to include this understanding. It was a sensitive issue and workshop participants agreed that it could have an adverse impact on uptake. There would be individuals that would be willing to participate in an endeavour perceived to be of scientific and medical benefit to the larger community, but not in one that might benefit specific commercial interests.

Opinions differed on whether it would be possible to offer too much information upon which to base the granting of consent. Some workshop participants suggested that people wanted information provided in a concise manner and would 'switch off' if presented with too much detail. Others felt that detailed information was essential. Everyone agreed however that detailed information on relevant topics should be readily available in a convenient format to those who requested it.

Workshop participants emphasised that the process of obtaining consent from members of vulnerable groups, and those who became incompetent over time, would have to be specifically considered. An approach based on broad consent would permit the continued inclusion in the UK Biobank of those who had validly consented at the start. Nevertheless there were issues here that had significant ethical implications and would require further consideration.

#### Relationship to research ethics committees

It was recognised at the meeting that research ethics committees usually required full, explicit and specific consent for participation in medical research. The possibility that they might, therefore, find it difficult to approve the establishment of the UK Biobank on the basis of broad general consent was discussed at some length. It was felt that these issues should be discussed with the Central Organisation for Research Ethics Committees at an early stage. Workshop participants were also concerned about the exact role of research ethics committees and emphasised the importance of clarifying the exact delineation of the responsibilities they held, from those of the proposed oversight body and other interested bodies. (See also the discussion below under "Governance".)

#### Developing the consent procedures

It was felt to be necessary to have some way of validating the consent procedure, with clear evidence that people signing the consent form were fully aware of what they had agreed. Consent procedures would have to be valid for all social groups. Pilot studies would be needed once an appropriate protocol had been agreed, together with reflection on what would be an appropriate "reasonable person" standard around which to base the consent process. It had been estimated from prior public consultation that around 50 per cent of those approached would agree to take part. This number could however be affected (in either direction) by the exact details of the



chosen approach to consent, and by the way that it was presented to the potential Biobank participants.

One suggestion was that engagement with patients' groups could help raise awareness and understanding of the Biobank's objectives. There should be ongoing reflection by the Biobank on its consent procedures, to take into account any changes in public policy or legislation. This reflection would also need to be informed by continuing dialogue with the Biobank participants through the suggested mechanisms for general feedback, to ascertain whether their expectations of the Biobank at the time of giving consent had been met.

Other participants pointed out that the views of GPs were also important. Prior consultation with them about the UK Biobank had revealed that they might be reluctant to release medical information on the Biobank participants without specific consent for each episode of release. This was a matter that would have to be resolved with them at an early stage. Some workshop participants drew attention to the more general impact on the primary care system that might result from the establishment of the Biobank.

#### Biobank participants' withdrawal from the study

There was unanimous agreement that the Biobank participants should have the right to withdraw from the study at any time and to require that all information that could be used to identify them in the future would be deleted from the database. Workshop participants recognised that an exception would have to be made in cases where anonymised information had already been incorporated in research studies, as it would not be possible then to identify individuals or to exclude them from analyses that had already been carried out.

#### Feedback of information to Biobank participants

The UK Biobank is a population study designed primarily to quantify on a probabilistic basis the combined effects of genetic and environmental factors on disease risk. Previous studies of this type had demonstrated huge problems in providing meaningful individual feedback from such research. Criteria for ascertaining the reliability of test results for population based research are different to those used in a service setting. Research findings would rarely be meaningful at an individual level. Correlation between genetic variants and disease would be probabilistic and of little predictive value for individuals. For these reasons the decision had been taken that feedback of individual results to the Biobank participants, and estimates of an individual's disease risk, would not be given. It was important for the Biobank participants to understand this and the reasons for it, and to include reference to this as an explicit part of the consent procedure.

The findings from the initial physical examination would be dealt with differently. The Biobank participants would be told of any clinically relevant findings elicited during the initial consultation with the Biobank research nurse and would be asked to contact their GP about those findings. They would also be encouraged to contact their

GP if they had any concerns about their health after they had agreed to participate in the UK Biobank.

Some workshop participants wondered if the Data Protection Act might give the Biobank participants the legal right to seek access to their research records. It was believed that this was probably not the case by virtue of the “research exemption” provision within the Act. Legal advice would be taken over this issue.

By contrast general feedback to the Biobank participants was agreed by everyone to be of the greatest importance. A newsletter should be available to all the Biobank participants keeping them abreast of research developments and findings emerging from the Biobank project. A website should also be established. These could act as fora for discussion and conduits for the communication of ideas and concerns from the Biobank participants. This dialogue would help to ensure the relationship between the Biobank and its participants, and could serve to improve the quality of the research. It was important that the UK Biobank should have a robust strategy for engagement with both the Biobank participants and the wider public.

The UK Biobank will be one of the most high profile of scientific endeavours and would inevitably attract the interest of the media and the general public. Some workshop participants drew attention to the fact that 'scare stories' generated by the media could result in anxiety and the withdrawal of some of the Biobank participants. This challenge would have to be met through the proposals for generalised feedback, and by careful attention to public and media relations by the Biobank project team.

#### Recall of Biobank participants for further studies

It was generally agreed that specific consent for permission to approach the Biobank participants at a later date had to be obtained at the outset of the study. This approach had to be made by the Biobank and not by third party researchers. Recall of subjects for more extensive phenotyping or any other reason would require new and specific consent at the time of re-contact. There was not thought to be any reason in principle to prevent such recall provided prior consent had been given.

The recall of the Biobank participants for further research based on their genotype did, however, provoke some discussion and generate some concern. It was recognised that recalling people on this basis would implicitly provide information about the probability of their having a particular genotype, and that ethical issues could arise from doing so. Many suggestions were made as to how to overcome this problem, given that the ability to phenotype individuals found to have a particular genotype offered significant research advantages. This issue was not resolved at the meeting.

#### Generating cell lines from the sample collection

The advantages of generating cell lines from a sub-set of the Biobank participants were discussed. It was agreed that misconceptions could arise since it was not clear whether this technique was well understood by the public. There was potential for

confusion with other emotive research techniques such as cloning and stem cell research, which could lead to disquiet. It was therefore important to address people's concerns and possible misunderstandings regarding the generation of cell lines, and to explain as clearly as possible what was involved and why it was done. Further consideration should be given to the specific ethical issues that might be involved, such as perspectives on the human body in different cultures and their possible impact on willingness to participate. In any event, it was agreed that explicit consent had to be given by the Biobank participants for this procedure.

## **Confidentiality and Security**

Issues of confidentiality raised by the UK Biobank were not generally felt to be different in principle from those raised by other databases and tissue banks. The scale of the enterprise, its cumulative nature, and the linkages that would be made between it and other NHS databases, did, however, give rise to some specific concerns and made it necessary to ensure the highest ethical standards in these areas.

It was accepted that personally identifiable data would be held only by the “hub” of the UK Biobank. Researchers at the “spokes”, and those external to the Biobank, would be permitted to work only on de-identified (anonymised) data. The most up-to-date encryption techniques and security systems would be used to ensure de-identification. These data would be reversibly de-identified.

### **Relationship to NHS information systems**

NHS numbers would probably be used to link health data from NHS records with the Biobank participants, but these numbers would be encrypted and excluded from the anonymised data available to researchers.

It was pointed out that standards of confidentiality would have to be higher than those currently employed by the NHS. The UK Biobank should seek to take a 'state of the art' approach and be a standard bearer for best practice in this area. Information that could identify the Biobank participants and encryption keys would be kept physically separate from the anonymised data used by the Biobank researchers.

Participants stressed that systems to access follow-up information would have to link to other systems within the NHS in a totally secure manner. This could prove a considerable technical challenge, not least in view of the current levels of systems development and integration within the NHS itself. In addition to physical security there would have to be policies and procedures in place to ensure the confidentiality of data flows, with sanctions to discourage abuse. All contacts with the Biobank participants should be carried out via the Biobank. The scientific researchers present at the workshop agreed that security and confidentiality procedures should be of the highest possible standard, but at the same time expressed concerns that the UK Biobank should not be so bound up by restrictions that it would be unable to achieve its goals.

### **Legal issues**

Workshop participants noted that the research exemption within the Data Protection Act 1998 would probably mean that the individual Biobank participants did not have a legal right to gain access to their own data in the Biobank. This would mitigate one concern raised at the meeting, namely that a legal right to access could lead to individuals coming under pressure from third parties (eg insurance companies) to obtain and pass on their Biobank data. Forensic uses were discussed, and not all were entirely comfortable with the fact that Courts could lawfully require that access be given for forensic purposes. The law as it now stood could authorise the release of

data if the police had *prima facie* reasons to request them in relation to a particular individual. Much less clear, and of significantly greater concern to workshop participants, was whether the Courts could legally order a general trawl of the data and DNA samples. (NB the Human Genetics Commission has recently recommended that “genetic research databases established for health research should not be used for any purpose other than such research, and that this be put beyond any doubt, by legislation if necessary”.<sup>6</sup>)

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<sup>6</sup> HGC report “Inside Information” *op. cit*, para. 5.50

## **Commercialisation**

### **Access**

It was recognised that the access to the UK Biobank database by third parties would need to be carefully controlled. Restrictions were necessary to prevent any unethical or unscientific use of the database, and to ensure that research was within the boundaries laid down in the consent process. Decisions on requests for datasets to be made available to commercial researchers would be regulated by the Biobank's oversight body. The involvement of an independent body was felt to be necessary to ensure due probity in regulating the relationship between material and data donated by participants to the Biobank, and the interests of commercial bodies whose ultimate aim was to gain financial advantage from their use.

Some workshop participants proposed that the Biobank should carry out all research itself. If a commercial organisation wished to make use of the data and material from the Biobank it could commission the Biobank to carry out a specific line of research on its behalf. It was not likely that this approach would be acceptable to potential commercial partners.

Workshop participants were of the view that while researchers in the commercial sector should have access to data and information, including DNA sequences, they should not be given access to DNA itself. Opinion differed as to whether or not access should be granted to other samples such as plasma or serum. It was acknowledged that some commercial organisations would be very keen to have access to blood plasma to carry out proteomic analyses.

Workshop participants also agreed that there should be no monopoly access by any one company to data held by the Biobank. All datasets that had been mined from the Biobank would eventually have to be returned to the "hub" so that other researchers could access them. Any agreement between the Biobank and a third party to restrict access to data should only be for a strictly circumscribed period.

### **Benefit sharing and intellectual property rights**

The potential for commercial companies to establish intellectual property rights (IPR) from projects using data or material from the Biobank would have to be carefully regulated. It was necessary to ensure that the interests obtained by the commercial sector were fair and transparent and that, on behalf of the Biobank participants, some financial advantage would accrue to the community. From an ethical perspective, it was of the greatest importance that the community as a whole should not only benefit from the altruistic motives of the individual Biobank participants, but that it could be seen to do so.

The issues surrounding IPR, licensing and royalty payments have complex legal ramifications and expert legal advice would be needed. Some workshop participants advocated a system by which the Biobank would be remunerated for the granting of access to commercial interests. It was not clear whether this should be set at a level to

cover only administrative and other costs or whether it should be set a much higher rate. There was also support for the view that royalty payments to the Biobank should be made to the Biobank if the use of the dataset resulted in financial gains for the company concerned. Other workshop participants suggested that academic and health researchers, while not being asked to pay as much as commercial researchers, might also have to pay a fee for access to the Biobank's data.

One suggestion was made that IPR generated by publicly funded research on material from the Biobank should rest with the Biobank. It was unlikely that this could be achieved, but workshop participants appeared to support the contention that access to data should be accompanied by a contractual agreement for a share in the licence fees generated as a result of any IPR obtained by its commercial partner.

## Governance

### Current proposals

Tara Camm, solicitor with the Wellcome Trust, outlined the structure of the UK Biobank, and the proposed constitution and its aims. These proposals were then discussed by the workshop.

It was intended that the UK Biobank should be managed through a “hub”, a charitable company limited by guarantee. The “hub” would have operational responsibility for the delivery of the project. It would contract out aspects of the project, particularly the collection of data and samples from participants, to expert teams embedded within a number of research institutions within the UK. These would act as the “spokes” of the UK Biobank.

The oversight body would be entirely separate from the management structure of the UK Biobank. Its key purpose would be to safeguard the interests of the Biobank participants and the wider public and to ensure good ethical practice. It would take the form of a charitable company limited by guarantee, operating on a not-for-profit basis and in the public interest. The body might comprise seven members, or trustees, and would be accountable to the three core funders of the Biobank, the Wellcome Trust, the MRC and the Department of Health. It would be subject to the scrutiny of the Charity Commission.

The oversight body would supervise and authorise certain of the Biobank activities, including the terms relating to the release of data and samples to third party researchers and the commercial sector. It would have oversight of confidentiality and security issues and might also hold the 'key' (or one part of the key) for the decryption of anonymised data. It would handle complaints from the Biobank participants and from users of its database; it would act as the main source of advice to and support for the Biobank on ethical issues; and it would participate in policy-making fora and public debate on issues relevant to the Biobank.

In addition to the oversight body, the Biobank would establish a Security and Confidentiality Advisory Group, with specific remit for the security arrangements and the policy and procedures relating to the confidentiality of the Biobank data. The UK Biobank would also establish appropriate links to external mechanisms of research governance such as NHS and university research ethics committees, and to other organisations such as the Information Commission.

### Discussion

#### *The structure of the UK Biobank*

It was felt that the responsibilities of the various parts of the structure of the Biobank, and the details of what was to be within the “hub” and “spokes” respectively, required further clarification. The Biobank was not only a long-term research project in its own right, but would be a resource for epidemiological studies available to all *bona*



*fide* researchers who met its access criteria. Some workshop participants drew attention to the tensions that could arise from this duality of purpose.

Researchers could be based within the Biobank “spokes”, or be independent of the Biobank. It was suggested that it would be the Scientific Management Committee at the “hub” that would decide whether research proposals would be of sufficient scientific merit, but if this were so, it was not clear what role the funders of the proposal would play in the decision. It was also unclear how research ethics committees would fit in with this process. The fact that funders, research ethics committees, and the scientific managers of the UK Biobank all had a stake in these matters meant that there had to be absolute clarity about the roles and responsibilities of each. It was also unclear what role the research governance mechanisms of the host institutions, whether through NHS Trusts or Universities, would play, or how these would interact with the Biobank’s own governance procedures.

Workshop participants agreed that it was right that the “hub” should have some degree of independence from the “spokes”. There was also agreement that “spokes” should have access only to encrypted and anonymised data, and that it would be the “hub” that would hold the links to personal identifiers. There was also support for a dual key system for decryption - one key to be held by the oversight body and the other by the Biobank “hub”. The “hub” would carry the personally identifiable information for the whole cohort of 500,000 and would hold the database that linked with personal identifiers. Some workshop participants were concerned that, since the “spokes” would be responsible for recruitment for the Biobank (and for recalling individuals for activities such as more intensive phenotyping), it was not clear that their access would (or could) be confined only to de-identified data, and might give rise to potential conflicts of interest. Whilst it was intended that the Biobank’s processes would attempt to minimise this risk, there might be operational difficulties.

#### *The oversight body and lines of accountability*

The workshop participants welcomed the setting up of an oversight body. The suggestion that there should be seven members brought the response that at least one should represent the Biobank participants, and also a view that perhaps it was necessary to have more than that number. But the main concern was about the accountability arrangements. It was unclear on what legal basis the oversight body would be established and how it would relate either to the funders or the Biobank “hub”. The suggestion that this body might be accountable to the three core funders of the Biobank was of concern to some of the workshop participants. It was essential that the oversight body should be entirely independent of the management structure of the Biobank, and perceived to be so by the general public. It was argued by some that accountability to the three funders would not provide the necessary degree of independence. In addition to addressing these accountability issues, the funders would need to secure the independence of the oversight body through the provision of adequate resources.

Some participants pointed out that the wider public would have an interest, not least because of their role in being indirect funders of the project through taxation. It was this community interest that the oversight body had to represent, and it was through

this body that consultation and consent for the overall structure of the project should be sought. This was a key element in securing and retaining public confidence in the delivery of the Biobank's mission. It would however be important for the oversight body to be sensitive to potential differences between the interests of the Biobank participants, and the wider public.

The view that the oversight body should have a major role in regulating the ethical framework of the Biobank was welcomed by the workshop participants, particularly in relation to issues such as consent, confidentiality and data protection. It was, however, unclear whether issues of financial accountability would form part of its brief or whether this responsibility would remain within the "hub" and be regulated through its direct relationship to the core funders.

#### *Oversight of commercialisation*

It was recognised that the commercial sector would be given access to the Biobank resources but it was not at all clear how the arrangements for the regulation of this relationship would be made, and by whom. Some participants felt it was not enough simply for the Scientific Management Committee to authorise research proposals put before it by commercial partners. There were ethical issues of profound importance, not least the sensitivity about profits and IPR shown in earlier surveys by some members of the public. Delegates felt that there had to be independent control of the access of the commercial sector to this material, particularly in negotiating the licence arrangements for IPR. It was accepted that the individual Biobank participants would gain no financial interest in their own material, and for that reason it was important that the community as a whole should retain a reasonable share of any intellectual property. The Nuffield Council for Bioethics, in their 1995 report on Human Tissue, had discussed these matters and had advised that an independent third party body should act as an interface in the release of tissue samples for commercial use.<sup>7</sup>

#### *Role of research ethics committees*

It was understood and accepted by workshop participants that the responsibility for deciding on the ethical content of individual research projects would fall to research ethics committees. It was also accepted that they would have a part to play in approving the core protocol for the Biobank as a whole. Three issues dominated the discussion. First, the extent to which research ethics committees would approve the Biobank's preferred approach of seeking broad general consent. Second, the part that they would play, if any, in determining the propriety of granting access to a particular line of research. The hypothetical example that was cited was the use of the Biobank data by tobacco companies to investigate susceptibility to diseases such as lung cancer. This could be regarded as objectionable, even if the study design per se was ethical. Third, the more general question of whether, outwith ethical approval for individual research projects, research ethics committees should play a part in the more general regulation of the Biobank for issues such as consent, confidentiality or security.

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<sup>7</sup> [http://www.nuffieldbioethics.org/filelibrary/pdf/human\\_tissue.pdf](http://www.nuffieldbioethics.org/filelibrary/pdf/human_tissue.pdf)

No real consensus was reached about these three issues. It seemed to workshop participants that much more work was needed to sort out the respective roles of the different bodies involved in the regulation of the Biobank. One suggestion was that all research proposals involving the UK Biobank should be considered by a designated multi-centre research ethics committee (MREC), but even in this event, it would still be necessary to resolve the Biobank's lines of accountability to this MREC and to the oversight body. Some workshop participants felt that the use of a designated MREC would be advantageous and would allow experience to build up in relation to questions that might be difficult for other research ethics committees to deal with on an *ad hoc* basis. Others questioned whether research ethics committees had any role at all in the Biobank over and above their duty to approve individual research projects. These matters had yet to be agreed.

### **Final remarks**

The main learning from the workshop was that the ethical and governance framework of the UK Biobank still required considerable development. Important questions had been raised about its overall structure and the consequential ethical implications. Whilst the detailed structures and resources necessary to carry out the aims of the Biobank had yet to be put in place, the decision to fund the project (announced soon after the workshop) now enabled the funders to prepare a detailed schedule of activity and processes to resolve the ethical issues raised at this workshop.