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ORIGINAL ARTICLE

Using patient-identifiable data for epidemiological research

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SUMMARY. The use of patient-identifiable data in epidemiological research is subject to increasingly complex regulation. This article reports the experience of a research team in setting up the Epidemiology and Survival of Transfusion Recipients (EASTR) study in which patient-identifiable information was needed in order to link data from two sources for analysis and obtain long-term survival patterns of transfusion recipients. The process of establishing the study involved obtaining separate ethical, research and development and data protection approval, including application to the newly formed Patient Information Advisory Group, set up under Section 60 of the Health and Social Care Act, 2001. We describe the high cost in administrative procedures and time now necessary to gain statutory approval before such a study can begin, which has been the result of recent legislation. Issues arising from our experience are discussed.

Key words: ethics, patient-identifiable data, PIAG, transfusion.

The use of patient-identifiable data in epidemiological research and public health surveillance has recently come under increasing scrutiny and tighter control. This article reports on the experience of the National Blood Service (NBS)/Medical Research Council (MRC) Clinical Studies Unit in setting up the Epidemiology and Survival of Transfusion Recipients (EASTR) Study, to illustrate how researchers might approach the current plethora of legislation.

METHODOLOGY

The EASTR study is gathering data on 12 000 blood transfusion recipients sampled randomly from 29 English hospital blood banks to establish the usage of blood components and survival patterns of recipients. Such information is needed for policy setting and planning. In the study, patient identifiers are essential for linkage to: (i) hospital patient–administration systems to extract data on diagnostic (IDC10) and procedural (OPCS) codes, to allow the characterization of current use of blood products and (ii) National Strategic Tracing Service (NSTS) to monitor survival (Fig. 1). Since the completion of a pilot study in 2001 (Amin *et al.*, 2002), obtaining permission to start the EASTR Study has taken considerably longer than expected.

There is considerable legislation and guidance pertaining to the use of clinical data in research (Table 1). Although a UK Data Protection Act has been in place since 1984, the EU Directive on the processing and free movement of personal data in 1992 (European Union, 1992), and the Caldicott Committee in 1997, raised public awareness of privacy of data. In 2001, the Alder Hey and Bristol

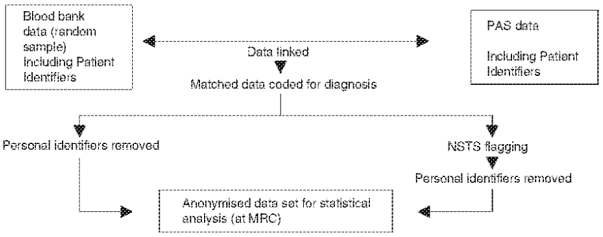

Fig. 1. Data flow for Epidemiology and Survival of Transfusion Recipients Study.
NSTS, National Strategic Tracing Service.

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Table 1. Legislation and guidance relating to the use of clinical data in research

1984	First Data Protection Act
1992	EU Directive on processing and free movement of personal data
1997	Caldicott Committee Report (Caldicott Guardians introduced by April 1999)
1998	Second Data Protection Act (enacted 2000), translated EU Directive 95/46/EC into UK law
1998	Human Rights Act (enacted 2000), incorporating European Convention on Human Rights
2000	Freedom of Information Act (full implementation by January 2005)
2001	Health and Social Care Act. Section 60 established Patient Information Advisory Group
2001 and 2003	Research Governance Framework (drafts)
2001	EU Directive on Clinical Trials, 2001/20/EC, incorporated into UK law in May 2004
Plus	Common law duty of confidentiality; guidance from regulatory and representative bodies, e.g. Medical Research Council, British Medical Association and General Medical Council

enquiries focused attention on the issue of consent, and the public perception of clinical practitioners, including researchers, appeared to change (Higgins, 2003). The government's response has included the drafting of the Human Tissue Bill, currently at committee stage in Parliament. Also, the Health and Social Care Act, 2001, set out specific conditions under which patient-identifiable data may be used when anonymization of data or obtaining informed consent is not possible. A new body, the Patient Information Advisory Group (PIAG), was established (Patient Information Advisory Group, 2001) to regulate the use of patient-identifiable data under the terms of the Act which came into force in 2002. The EASTR study therefore needed to submit an application to PIAG before it could proceed. In addition, the EU Clinical Trials Directive (European Union, 2001), which is now incorporated into UK law from 1 May 2004, significantly impacts on all clinical research (Evans *et al.*, 2003) and its influence can be seen in the Research Governance Framework for Health and Social Care (Department of Health, 2003) which has been progressively implemented over the last 2–3 years. The impact of legislation on the application process to use data is illustrated in Fig. 2.

Ethical approval

Ethical approval took 5 months and several resubmissions from initial application to a Multi-centre Research Ethics Committee (MREC). Delay was mainly due to the Health and Social Care Act, which came into force about this time and created

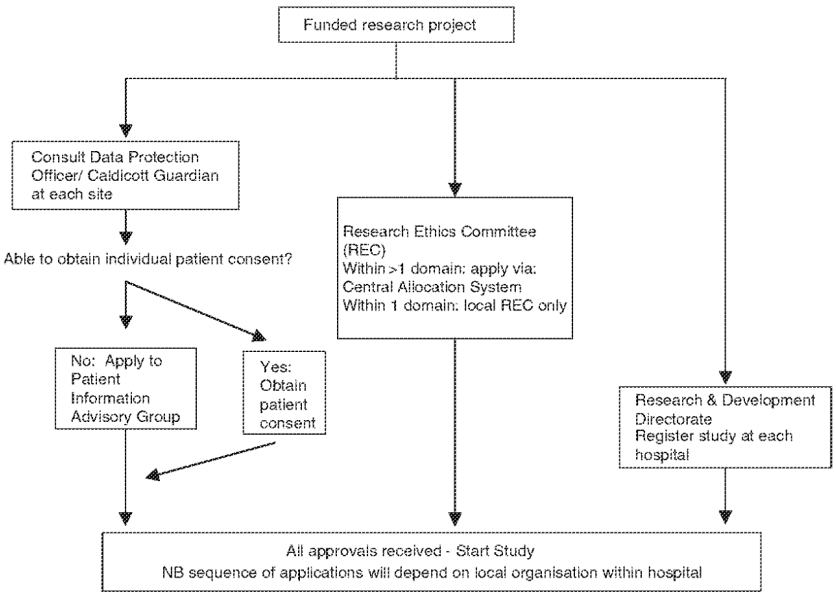

Fig. 2. Approvals necessary to start a research project using patient-identifiable data.

uncertainty whether MREC approval could be given before PIAG approval was obtained or vice versa. Eventually, MREC approved the study, subject to PIAG approval. This meant that a PIAG application had to be developed, as well as applications to 28 Local Research Ethics Committees (LRECs), for review of local issues. As others have found (Tully *et al.*, 2000), LRECs using subcommittees for MREC-approved projects responded faster than those using a full committee and required fewer copies of applications. Response time varied from 11 to 152 days (mean 45 days).

Our experience contrasts markedly with a previous regional NBS study of 5-year survival of transfusion recipients undertaken in 2000 (Wells *et al.*, 2002). The MREC involved decided that the project was classified more appropriately as audit, and therefore, ethical approval was not required. Only the Caldicott Guardians in each participating hospital were asked to sanction the project. The EASTR study, however, was considered to be research and therefore needed full ethical and data protection approval.

Data protection approval

Data protection issues arose because we needed to transfer data which included patient identifiers from one legal entity [National Health Service (NHS) Trust] to the NBS, which is a Special Health Authority, and the NSTS. These issues included whether Trusts had fulfilled their obligations under the 1998 Data Protection Act to inform patients that information held about them could be used for research, e.g. by dissemination of patient information leaflets, and whether or not individual consent should or could be obtained retrospectively (Boyd, 2003). The latter was deemed impracticable, and although we would have preferred to use anonymized data throughout, which is not regulated by the Data Protection Act, this is only feasible when the final data set is sent to the MRC for statistical analysis.

Although new information technology (IT) structures are being developed within the NHS Information Authority, to allow anonymization of data in England and Wales, they are not available at present. Determining what constitutes fully anonymized data is open to debate (Lowrance, 2002; Boyd, 2003; Chalmers & Muir, 2003), as full irreversible anonymization may render data of little continuing value, and reversible systems always risk the possibility of identity being revealed. Interestingly, in Scotland, the Confidentiality & Security Advisory Group for Scotland (CSAGS, 2002) have recommended creating a secure central agency to act as an anonymization service to receive and link national information flows. But according to CSAGS, the Scottish Parliament may need to introduce legislation to define 'anonymization', as while no statutory definition for it exists, it could only be defined by testing in the courts. Although the use of a central agency appears to be an attractive solution, it is likely to increase costs, and the feasibility of this option has yet to be demonstrated.

PIAG

PIAG application is understandably detailed (Coleman *et al.*, 2003; Higgins, 2003), and it took 4 months to obtain all the information PIAG required. From submission 1 month before committee to final approval took another 6 months. PIAG first met in December 2001, and initially, applications were few, averaging four per session at the first three meetings. By the fifth meeting, when the EASTR application was first submitted, there were 21 applications (Information Policy Unit, 2003). Like ours, many applications are reconsidered by committee, and the final approval rate in the committee's first 18 months was 42 of 65 applications (Patient Information Advisory Group, 2003). As this is a new body, there is no specified time limit from receipt of an application to a decision. Moreover, the committee only meet quarterly. It is possible to receive verbal approval, with the committee able to delegate the resolution of outstanding issues to an appropriate expert committee member. However, all amendments need to be ratified by the full committee before formal written approval can be given. If the growth in applications continues, increasing delays can be expected.

Applications to LRECs continued while our PIAG application was processed, and some were passed subject to PIAG clearance, but others would not consider our application until approval was received. Also, Data Protection Officers and Caldicott Guardians in Trusts were initially unsure of their legal position and unwilling to commit themselves to giving us permission to use patient-identifiable data. Their responses were mixed, as others have found (Strobl *et al.*, 2000). Some would register the project, but overall data collection could not proceed until PIAG approval was given. Once approval was received, each Trust cooperated fully, as all acknowledged that we had full permission to collect patient-identifiable data without individual consent.

Research governance approval

Government-directed, formal regulation and standardization of research activity in the NHS has been

recently introduced within the Research Governance Framework (Department of Health, 2003) currently being implemented. In our contact with 27 research and development departments, we found Trusts grappling with the complexities of the new system, anxious to comply with guidelines, and undergoing reorganization of research and development approval procedures. We found it best to approach NHS Trusts with an open mind. Some have forms to complete and a research and development committee structure, but many did not when we applied. Many Trusts worked closely with their ethics committee and shared paperwork, an obvious advantage to researchers, but many did not. Requirements varied, particularly for studies like ours that do not fall neatly into one clinical area. One Trust wanted us to inform all clinical directors that the study was taking place before approval was given. As researchers, we endeavour to understand the difficulties faced in interpreting legislation but would welcome a uniform response from all NHS Trusts in a national study such as this. Clear advice and guidance from the Department of Health would benefit all parties.

The EU Directive on Clinical Trials (EU2001/20/EC) requires a research sponsor to be identified who will be legally responsible for the study. This will be mandatory from April 2004 (Department of Health, 2003), and several Trusts asked for a sponsor to be identified now. This was already arranged for our study, as it is funded and sponsored by the NBS. However, some academic researchers are concerned over possible legal liability involved in the sponsor role, and there is some uncertainty as to who will act as sponsor for publicly funded research (Evans *et al.*, 2003).

DISCUSSION

We have illustrated how recent and continuing changes in the NHS research environment are affecting research in the UK at present and how new regulations can affect the type of permission needed, even once a project has started. The following points have emerged:

1 The costs of administrative procedures and time expended gaining the necessary statutory approval to undertake multicentred research using clinical data are now significant. Researchers contemplating such a project need to consider how this affects their study timeline and budget.
2 Movement towards a 60-day time frame for Research Ethics Committee (REC) applications, common application forms and parallel processing of MREC, LREC and research and development applications, being introduced with new REC governance arrangements, is welcomed (Department of Health, 2001). However, researchers must be given adequate opportunity to explain their study to ethical scrutinizers. This could be threatened by allowing only one request for further information during REC applications.
3 While REC applications are standardized nationally, each Trust now has separate formal research and development responsibility in line with research governance requirements. This increasing separation of functions is creating more bureaucracy, rather than making the system more streamlined.
4 The increasingly restrictive processes now controlling research approval are in part the result of a loss of trust by the public in those conducting medical research. Regaining public support through dialogue and education must be a key objective for researchers.
5 NHS Trusts need improved IT systems that can link data from different internal departments to facilitate anonymization. This is a difficult task, whether done by hospitals or by a special agency as suggested for Scotland, but if achieved in England and Wales, PIAG would no longer be necessary. With the current slow progress to IT modernization in the NHS, PIAG is likely to be in existence for longer than anticipated.

The issues surrounding the secondary use of personal data for research need to be debated and resolved. This is a topical issue in many countries at present. The right of individuals to privacy has to be balanced against the rights of society as a whole (Lowrance, 2002; Chalmers & Muir, 2003), because it is crucial that large national studies such as ours use clinical data for research which will ultimately lead to improvements in patient care.

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