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# Service evaluation

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# Nursing Ethics

# Service evaluation: a grey area of research?

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Keywords:	Research ethics < Topic areas, Research, Service evaluation, Ethics review, Ethics principles
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Abstract:	between the categories of 'research' and 'service evaluation' can be a grey area. A considerable percentage of studies are considered as non-research and therefore not eligible to be reviewed by the REC, which scrutinises research proposals rigorously to ensure they conform to established ethical standards; protecting research participants from harm, preserving their rights and providing reassurance to the public. This paper explores the ethical discomfort potentially inherent in the activity currently labelled service evaluation.

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# Title: Service evaluation: a grey area of research?

#### **Abstract**

The National Health Service in the United Kingdom categorises research and research-like activities in five ways, as 'service evaluation', 'clinical audit', 'surveillance', 'usual practice' and 'research'. Only activities classified as 'research' require review by the Research Ethics Committee (REC). It is argued in this position paper that the current governance of research and research-like activities does not provide sufficient ethical oversight for projects classified as 'service evaluation'. The distinction between the categories of 'research' and 'service evaluation' can be a grey area. A considerable percentage of studies are considered as non-research and therefore not eligible to be reviewed by the REC, which scrutinises research proposals rigorously to ensure they conform to established ethical standards; protecting research participants from harm, preserving their rights and providing reassurance to the public. This paper explores the ethical discomfort potentially inherent in the activity currently labelled service evaluation.

**Keywords:** Research ethics, Research, Service evaluation, Ethics review, Ethics principles

## Introduction

The National Health Service in the United Kingdom categorises research and research-like activities in five ways, as 'service evaluation', 'clinical audit', 'surveillance', 'usual practice' and 'research'. Service evaluation is widely employed in the clinical research setting.

This paper looks to raise an important issue for ethical review in the health services; that of the ethical rigour in service evaluation. Service evaluation laudably seeks to assess how effectively a patient service is achieving its intended goals. However, a concern has been identified by the authors, that the very nature of this form of enquiry, commonly seen as not requiring specific approval from research ethics committees (REC), may also be at risk, inadvertently, of bypassing ethical principles.

Recently the authors of this paper were involved in a service evaluation to investigate patient experiences and outcomes of the care provided in two different heath care settings.

The project methods included non-participant observations and interviews, but as this

enquiry had been predefined as service evaluation, this project was not submitted for review by the relevant REC. The project was given approval by the Caldicott Guardian, responsible for reviewing the arrangements for handling patients' data<sup>2</sup> and also approved by the local Quality Improvement Team. This latter process focused on potential disruption to clinical areas, such as protecting participants' confidentiality but not directly the ethical conduct of the study.

Once these approvals had been received, the researchers were permitted, quite properly in service evaluation, to proceed. The particular growing disquiet as the enquiry progressed was that an ethical dimension did not appear to be addressed and questions arose as to whether this was more appropriately seen as research. If it had had been so, a full and rigorous ethical review would have been required.

#### **Ensuring ethical behaviour and standards**

There are fundamental, well understood theories underpinning and ensuring ethical behaviour and standards. Virtue ethics focuses on the role of moral character of the individual from which choices and actions follow. Principle based ethics, on the other hand, serve to guide morally right actions and is based on: respect for autonomy, non-maleficence, beneficence and justice<sup>3-5</sup>. From this, ethical rules, policies and guidance, are widely employed by research ethics committee to make *ethics* or *ethical* 

principles more explicit<sup>3</sup>. Although ethical rules, policies and guidance are, indeed, derived from ethical principles, there are debates as to whether rules, policies or guidance can truly reflect morals. Accordingly, it is recognised that a more rule-based ethic in the real world of research also encompasses the ideals of virtue ethics to provide valuable guidance in establishing research integrity and the consequent accountability for the research process<sup>5</sup>. As indicated at the outset, five categories of research and research-like activities are identified as: 'service evaluation', 'clinical audit', 'surveillance', 'usual practice' and 'research'. Any activity collecting and/or analysing data on health or health services must be classified under one of these headings<sup>1</sup> (Table 1). All the above activities must adhere to ethical standards.

However, once the research like activity has been classified, different regulatory and ethical requirements are endorsed. Only activities classified as research are eligible for review by the REC. The classification of projects, at this point, therefore significantly changes the extent to which they are subject to institutional oversight and formal ethical governance.

The uncomfortable question that arises is whether the current governance of research and research-like activities provides sufficient ethical oversight for the category identified as service evaluation. Distinguishing between the categories of research and service evaluation is not always clear as the guidance and definitions might suggest; some projects could fit into either category with relatively little or no changes in focus

or content. As the experience of the researchers above illustrates, projects classified as 'service evaluation' may involve researcher-led activities and interventions that might equally be seen as research in other contexts, or by other institutions. It can be then discomforting and difficult to understand why these projects receive no ethical review from a REC, whilst other projects, involving similar types of activity, receive extensive ethical review. Current governance policy and processes require the individuals conducting projects classified as service evaluation to follow ethical principles and patient protection laws which should be trusted, virtuous and acted upon ethically. This assumption contrasts with the more principle-based ethics practised through the REC, where projects are examined in great detail, and each element of the project is expected to be defended against a pre-existing ethical framework<sup>6</sup>. It is argued here that it is the predetermined classification that can guide the researchers' ethical decisions and actions. However, it must be that the first imperative of any research enquiry is the ethical consequence of the activity not merely what may seem as the more obvious, and even desirable, classification.

In light of these concerns, it serves to reflect on the historical development and implementation of research enquiry in general and of service evaluation in particular, and explore the development of the ethical implications of categorising forms of research activity.

# Development of the ethical milieu

Research ethics first became of critical concern at the Nuremberg trials after the second world war. Dreadful crimes against humanity were identified, following immoral human experiments on concentration camp prisoner, undertaken under the guise of research. As a result, in August 1947, the Nuremberg Code was introduced giving the set of ten ethical principles for conducting human experiments<sup>7</sup>. As ethical sensitivity developed, the World Medical Association developed the Declaration of Helsinki in 1964<sup>8</sup> seen as the cornerstone of modern human research ethics, whatever the current classification of such research that may currently exist.

The NHS Health Research Authority<sup>1(p.4)</sup> defines the activities as follows:

- 'Service evaluation': designed and conducted solely to define or judge current care.
- 'Research': the attempt to derive generalizable new knowledge including studies that aim to generate hypotheses as well as studies that aim to test them. Specific questions generate a protocol driven project to derive new knowledge and understanding.
- 3. 'Clinical audit': designed and conducted to produce information to inform delivery of best care, which serves to identify if desired standards of

service delivery are being met.

- 4. 'Surveillance': designed to manage outbreak and help the public by identifying and understanding risks associated.
- 5. 'Usual practice': designed to investigate outbreak or incident to help in disease control and prevention.

The categories of 'research', 'service evaluation' and 'clinical audit', have consistently been present in health service guidance since the development of Research and Development (R&D) governance in the early 1990s. However, the range of terms used to classify R&D activities, and their definition, changed. A brief account of these developments can serve to identify some of the processes, motivations and definitions that have contributed to the category of *service evaluation*.

# Research and Development Governance 1948-1990

With reference to Figure 1, it can be seen that initially, research and related activities were given little attention within the NHS; there was no centralised governance for research and any such research governance occurred at a local level<sup>9</sup>. It was not until 1989, that the British government appointed a National Director of R&D, tasked with overseeing patient based activity related to teaching and research in the clinical environment in the NHS<sup>9</sup>. At this time, key terms used to describe R&D activities in

governance documents included *research*, and *clinical audit*, the latter key to the quality assessment processes for clinical practice<sup>10</sup>.

# **Research and Development Governance 1991-2000**

Despite this movement towards research governance, progress was slow, and little central funding allocated to the R&D department<sup>9</sup>. However, the implementation of the European Good Clinical Practice (GCP) regulations and guidelines in 1990<sup>11</sup>, marked a 'sea change' in the primacy of ethical behaviour in research.

In 1991, local REC were established to review the ethical quality of proposed research studies, at this time predominantly biomedical research<sup>12</sup>. These committees were under the aegis of local health services, with no centralised oversight of research activities in the health service as a whole<sup>13</sup>. Each local NHS health board established its own administrative structure and management according to the local interpretation of the latest Research Governance Framework.

In 1996, Regional Health Authorities were established, who were responsible for, amongst other things, research development<sup>9</sup>. For the first time, research and development activities in the NHS were incorporated into a clear framework for governance.

In 1997, the first national system for ethical review was established with the

development of the Multi-Centre REC responsible for research across different local government. However, the Multi-Centre REC did not have the authority over local RECs<sup>13</sup>. On a somewhat separate pathway, it was in 1997, that the idea of service evaluation emerged, with a particular focus on primary care, was put forward by Evans and Steiner<sup>14</sup>. Their suggestion was that this term could be used to describe a range of quality improvement studies where the specific purpose would be to judge the quality of care against existing approved standards.

In 1998, in response to the widely recognised GCP, the first national research strategy was developed<sup>15</sup>. A funded NHS R&D programme was established, with the aim of improving the research environment within the NHS<sup>9</sup>. The approach to research and development was becoming more strategic and unified, but oversight of the ethical conduct of individual projects continued to function at a local level and, arguably, activity under the umbrella of Service evaluation developed by a means of pragmatic gradualism.

#### Research and Development Governance 2001-2016

In 2001, the European Directive, responsible for the GCP regulation and guidelines<sup>16</sup>, required more rigorous governance of research activities within the NHS. From this the existing system of ethical review was established under a centralised REC<sup>17</sup>. REC now

acted as a gatekeeper to ensure all research studies were carried out in accordance with ethical standards on their approval. Unlike previous systems, the current REC gives ethical advice and review for studies that are identified as research and, importantly, are required to be independent of any local health service<sup>17, 18</sup>.

In 2001, the Department of Health published the Research Governance Framework for Health and Social Care<sup>17</sup>, introducing a definition of research as "the attempt to derive generalizable new knowledge by addressing clearly defined questions with systematic and rigorous methods" (p.3). The Research Governance Framework was central to changing the landscape for NHS research review. According to this Framework, all research was required to meet the ethical and scientific standards established by research governance requirements. Critically, for the authors' thesis, in contrast, activities such as clinical audit, service evaluation and practice development fell within a clinical governance framework, which was intended to safeguard the quality of care and health care delivery. The Research Governance Framework stated that there was no need for clinical audit, service evaluation and practice development to undergo ethical review<sup>19</sup>. Despite the obvious rigour identified above, it is hard to find the rationale for the essential categorising of studies into research or non-research, with service evaluation firmly in the latter. In 2006, the NHS introduced a new/revised system for classifying research and development activities under the headings of research, clinical audit and service evaluation<sup>20</sup>. In this guideline, service evaluation was defined as procedures whereby medical service was judged "...by providing a systematic assessment of its aims, objectives, activities, outputs, outcomes, and costs"<sup>21(p,9)</sup> whilst Clinical audit was defined as a "quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change."<sup>21(p,9)</sup> Figure 1 serves to demonstrate the evolution of this different terminology and associated definitions. As before, only *research* required review by the REC<sup>20</sup>. The decision as to classification could be made according to the recommendation from the local R&D office, arguably adding considerably to their work burden if, by the same token, reducing that of the REC<sup>22</sup>.

In 2009, the initial typology of research and development activity was increased to five categories: 'clinical audit', 'service evaluation', 'research', 'usual practice' and 'surveillance work'<sup>23</sup>. In 2011, this was reduced again to 'research', 'clinical audit' and 'service evaluation'. It is difficult to track these changes through government documentation, but different classifications can be found in local NHS documents such as guidelines published by NHS Wirral<sup>24</sup>. No explicit rationale could be located for the change of terminology but, as in previous iterations, only activities classified as *research* required review by the REC.

In 2013, there was further alteration, with a revised version of the 2009 terminology with the current five categories<sup>1</sup>. The same classifications are reviewed again in 2016.

In all these iterations only activities classified as *research* require, or indeed, of interest to the current debate, are permitted, review by the REC.

The Health Research Authority (HRA), established in 2011 to raise awareness of the rights of patients and the public in health and social care research, was also tasked to co-ordinate the REC and promote transparency in research. It constitutes the lead R&D office in the UK<sup>25</sup>. It is worth noting that, in England, the HRA is responsible for recommending which studies to go forward for review by a REC, whilst in Scotland, R&D is the decision maker<sup>25</sup>.

In summary, governance of R&D in the UK NHS has developed significantly since the implementation of the GCP in 1991, and any activity meeting the criteria of *research* is now subject to independent review according to centralised standards. However, the definition of research, although very specific, excludes activities which might, arguably, be regarded as research in other contexts or others' views. Since the 1990s, health research has shifted from being almost entirely biomedical in focus, towards a proliferation of studies that focus on the quality of care<sup>3, 26</sup> and the question arises as to whether the research governance has properly responded to this significant shift. It is clear that the typology of research and development activities is intended to facilitate and clarify both the organisation of research governance and the practical and timely conduct of R&D activities within the health service. Although no rationale was found for differentiating research activities and non-research activities, the report

written by Evans and Steiner¹ was clearly influential on the activity of service evaluation as identifed currently, despite the lack of a clear mandate. It has to be pragmatically acknowledged that, by excluding certain activities from the category of research, the number of studies requiring review might be kept at a manageable level, allowing non research activities to proceed relatively untroubled. This exclusion of certain activities from ethical review can also be found in other national systems of research governance, for example New Zealand and Australia both exclude certain activities from the category of 'research' and thus from ethical review²<sup>77, 28</sup>. However, this exclusion has been criticised. For example, Gerrish and Mawson¹9 and Wade²9 suggest that every quality improvement study should be categorised as research and even studies not deemed research still require independent ethical review. Surprisingly, these critiques have not generated any real debate, which may be due to the understandable paucity in published service evaluation studies²9.

#### Service Evaluation in the NHS

What is indisputable is that the volume of health research being carried out in the NHS has increased enormously over the past few decades<sup>30</sup>. However, as alluded to above, until relatively recently, very little of this research was about the health service itself. In 2000, the newly developed Service Delivery and Organisation (SDO) encouraged the

development of research projects to investigate the quality of care, and the experiences of service users<sup>30</sup>. During the first five years of the SDO, its steadily increasing budget reflected the growth in the amount of commissioned research, from £167,000 in January 2000 to £7 million in July 2006. Between 2001 and 2006, a total of 23 research projects were commissioned by the SDO, with an average budget of £102,000 per project<sup>30</sup>. These projects, meeting pre-determined SDO themes, were identified by the SDO as 'research'<sup>30</sup>, but arguably if they were to accord with the recent and latest definitions, they might have been classified as 'service evaluation'. At the very least there is inconsistency in decision making and subsequent ethical activity.

# **Recording Service Evaluation Activity**

It is difficult to give any accurate statistics as to the prevalence of service evaluation in the NHS in any given year but, as an informal illustration, the South East Scotland Research Ethics Service<sup>31</sup> estimated that they had given advice on a total of over 1,300 studies over the past 6 years of which approximately 70% of these were classified as *not research* (see Table 2, Figure 2). While this is not representative data, it is nevertheless interesting to note the proportion of studies advised as non-research.

Service Evaluation: a distinct enquiry?

Despite the lack of rationale for clear justification for its emergence, service evaluation has become embedded as a form of service enquiry distinct from research. Gerrish and Mawson<sup>19</sup> and Wade<sup>29</sup> point out, that in the NHS R&D typology, the categories of research and service evaluation necessarily have many similarities. They both include projects that start with a question, expect the answer to change or influence clinical practice, may involve the collection and analysis of new data, or the analysis of already existing data, and both depend on using an appropriate method and design to reach sound conclusions<sup>19, 29</sup>.

The most marked difference between the categories is that a service evaluation can only employ an intervention that has already been undertaken in the health service. Put simply, research investigates what should be done, whereas service evaluation investigates whether it is being done and to what standard<sup>1, 23, 24</sup>.

Although guidance on making the distinction between service evaluation and research is available<sup>1, 23, 24</sup>, the distinction can be difficult to agree or make in practice. The NHS Quality Improvement Strategy (QIS), 2011, has acknowledged that there can be a *grey area* when it can be difficult to decide where the project fits, and R&D would only *advise* the researcher of the likely classification. Casarett, Karlawish<sup>26,</sup> and Wade<sup>29</sup> agree that documents discussing the distinction between audit, service evaluation and

research, often base this distinction on the methodological 'process' of the project rather than the defined objectives. This means that projects on the border between service evaluation and research could easily be aligned to either category with relatively small, or even no, adjustments to methodology or design. For researchers facing time and resource constraints, it may be more attractive to position their project towards service evaluation, thereby avoiding the need for an in-depth ethical review. Equally, it may seem disproportionate that small changes to the design or presentation of a project may have such significant consequences for the degree of ethical oversight required for the project. These are difficult and ethical issues in themselves to confront.

The current system of research governance has evolved an 'all or nothing' approach to ethical review, arguably inadequate if it means that activities with potentially significant ethical consequences are not reviewed. Two problems are positioned here. Firstly, by adopting the absolute 'review/ no review' approach, current research governance ignores the grey areas of research ethics. This presents an absence of ethical scrutiny. Secondly, there may be an implicit assumption that the label service evaluation poses thereby less of a risk to participants than research, when this may not be the case. Challenging this, Twycross and Shorten<sup>32</sup> argue that the standards expected of service evaluation in terms of design, data collection, and analysis should be at least as high as for research because service evaluation or audit may "quickly

move findings to create tangible practice change"<sup>(p.66)</sup>. Service evaluation is often embedded within day to day practice, the latter being the very means of evaluating service provision<sup>33</sup>.

#### **Ethical Review**

Ethical review is axiomatically beneficial for research. According to Wade<sup>34</sup> "Ethical concerns arise when the involved parties have different interests or values in a situation in which a potential conflict exists between the burden and risk imposed on patients or others, including society, and the likely benefit" <sup>(p. 469)</sup>.

Ethical review provides guidance for researchers, and safeguards for participants. Although service evaluation does not require specific approval from a REC or R&D approval, ethical principles must still be adhered to in terms of such as consent, anonymity, data protection and privacy of patients<sup>29</sup>. However, it can be challenging for researchers, particularly novice researchers, to conduct a service evaluation in clinical settings without any ethical advice and support from an ethics committee.

It is difficult to conduct a meaningful review of studies classified as service evaluation, as, as indicated, few published studies are identified in this way<sup>26(p. 66)</sup>. The authors can only speculate as to why this is the case. However, based on information gathered from the South East Scotland ethics service, and the authors' own experiences, one

suggestion might be that many service evaluations are undertaken for purely pragmatic, service-led reasons, not deemed a priority for peer review journal publication. In this way, it could be argued that that most service evaluations vanish from view.

#### Service evaluation case studies

In light of this deficit of published service evaluations, three examples are discussed below. A detailed description will be given of the three service evaluation case studies in below to demonstrate that they easily have met the criteria for research. It is noted that this case analysis is not for punitive purposes but purely to demonstrate the dilemma and disquiet.

# Evaluation of PIMA point-of-care CD4 testing in a large UK HIV service<sup>35</sup>

This service evaluation was undertaken to evaluate the performance and patient acceptability of a new laboratory service for patients with HIV. Capillary blood samples were collected from consented participants for the new laboratory service. The participants were asked to complete a five point Likert questionnaire, to assess their views about the laboratory service. Surprisingly, a study involving blood sampling and direct patient involvement was still classified as service evaluation not requiring ethical review from the NHS. Studies that collect participants' blood are normally defined as

research, because collecting patients' tissues or anything from their body will require the highest ethical standard. The Human Tissue Act, 2004<sup>36</sup>, stated that all tissue collected require consent and advice from the REC. Although this study could entail risk, it had met the criteria for service evaluation. Even if not deemed research on the determined criteria, it is argued that the study carried a form of risk that should have merited closer ethical scrutiny.

The effect of anaesthetist grade and frequency of insertion on epidural failure: a service evaluation in a United Kingdom teaching hospital<sup>37</sup>

This service evaluation investigated prospectively all patients undergoing either intra-abdominal or thoraco-abdominal surgery who received epidural analgesia. Health records were examined to identify the reason for, and the method of care for, epidural catheter removal. Although it analysed existing data, it was interesting that neither ethical approval nor informed consent from patients concerned were required. Using patients' data often raises ethical concerns. The classification of this study allowed easy access to the relevant databases without any reference to ethical guidance.

A service evaluation of the feasibility of a community based consultant and stroke navigator review of health and social care needs in stroke survivors 6 weeks after hospital discharge<sup>38</sup>

In this last service evaluation, focusing on stroke survivors, all the stroke survivors took part in a joint review under the auspices of the Department of Health's National Stroke Strategy Quality Marker. The Joint review clinics were held twice a month by a stroke consultant, who completed a comprehensive and holistic assessment of the individual, alongside quality of life questionnaires and focus groups. This was in addition to the standard stroke care and constituted a new intervention whose value had yet to be proven. It is argued that such a study involving patients should perhaps have included a REC driven assessment of risk of harm.

The authors contended that those concerned in the above defined service evaluations were not encouraged to think about such ethical considerations, distracted by the comforting label of service evaluation.

As noted at the outset, the authors of this paper were also involved in a service evaluation. This service evaluation in an acute clinical setting included interview and observation with staff and patients without either ethical approval or informed consent. The study could be intrusive and key personal data was included without ethical scrutiny. At face value, it was hard to foresee risk of harm in such a defined service evaluation without the required ethical prompt axiomatic in in research. The evolving ethical concern for participants' well-being led to the evolution of this position paper.

All the above were classified as service evaluation. However, similar methods of the study and population groups, could be found in many studies classified as research required to provide extensive justification for their methods, and recruitment strategies, with detailed safeguards put in place to protect research participants. What has been established is that it can be hard to determine whether a study is research or not. Although guidance on making the distinction between service evaluation and research is available, and indeed looks superficially clear, the distinction can be difficult. However, it can be argued that the arbiter of this distinction can be the ethical review seen as a 'gatekeeper' for a study's category. This, rather the than the label, determining the route to, or away from, ethical review. Despite the fact that the process can be complicated and time-consuming, it can help the researchers to identify potential harm, which will not only protect participants, but also protect researchers. It is accepted that, at present, a service evaluation may not require specific approval from a REC or R&D, but ethical principles must still be uppermost and adhered to for the protection of participants and vulnerable 18, 29. It is important for all undertaking research activity, however defined, of any sort to reflect on their own role in the study and critically think about the ethical issues during the study 19, 29, 34.

# Discussion

Ethical principles remain at the heart of all research-like activities. The development of ethical review processes should be the guardian for all studies. Although regulation for service evaluation has been established, it has been argued that ethical dilemmas in such classification and guidance clearly exist. Fundamental is that in any research activity the researchers must do no harm<sup>7</sup>. Before any research activity or service evaluation, involving individuals is undertaken, the foreseeable risks and discomforts, as well as any anticipated benefit for the individual, are identified. Risk of harm can, indeed, on occasions be difficult to predict<sup>39</sup>. As service evaluation is commonly embedded in the practice it is evaluating, it can pose particular challenges and complexities, particularly for a novice researcher<sup>33</sup>. It is not an easier route. In any research activity, REC guidance is to assist decision making when encountering ethical dilemmas<sup>3</sup>. Inevitably, there may be gaps in a rule-based system<sup>32, 40</sup>. Reviews from the REC act as the default system, a safety net, that may reveal potential harm and/or minimise such harm, ensuring that the potential benefits outweigh any risk<sup>39</sup>. The problem identified is that in service evaluation, this vital step is not present, the choice of service evaluation even preferred to avoid the potentially complicated ethical review process.

#### Conclusion

The difficult debate put forward here is whether the main ethical concern is wrongly labelling enquiry as research and non-research activities. No published evidence could be found to explain fully the purpose of the current classification system. Whatever the classification, or when this is determined, the key driver of all such activity is its ethical component and this truism goes back over 70 years.

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# **Conflict of interest**

The authors declare that there is no conflict of interest.

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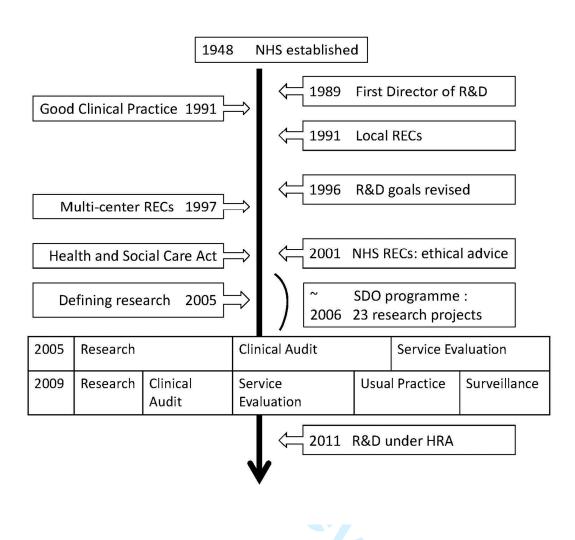
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**Table 1.** Differentiating clinical audit, service evaluation, research, usual practice and surveillance work<sup>1</sup>.

Research	Service	Clinical audit	Surveillance	Usual practice
	evaluation			(in public health)
The attempt to derive	Designed and	Designed and	Designed to manage	Designed to
generalizable new	conducted solely to	conducted to produce	outbreak and help the	investigate outbreak
knowledge including	define or judge	information to inform	public by identifying	or incident to help in
studies that aim to	current care.	delivery of best care.	and understanding	disease control and
generate hypotheses as			risks associated.	prevention.
well as studies that aim				
to test them.				
Quantitative research –	Designed to answer:	Designed to answer:	Designed to answer:	Designed to answer:
designed to test a	"What standard does	"Does this service	"What is the cause of	"What is the cause o
hypothesis. Qualitative	this service achieve?"	reach a	this outbreak?"	this outbreak?" and
research –		predetermined		treat.
identifies/explores	(Service development	standard?"		
themes following	and quality			
established	improvement may fall			
methodology.	into this category.)			
Addresses clearly	Measures current	Measures against a	Systematic, statistical	Systematic, statistica
defined questions, aims	service without	standard.	methods to allow	methods may be
and objectives.	reference to a		timely public health	used.
	standard.		action.	
Quantitative research –	Involves an	Involves an	May involve collecting	Any choice of
may involve evaluating	intervention in use	intervention in use	personal data and	treatment is based o
or comparing	only. The choice of	only. The choice of	samples with the	clinical best evidence
interventions,	treatment is that of	treatment is that of	intent to manage the	or professional
particularly new ones.	the clinician and	the clinician and	incident.	consensus.
Qualitative research –	patient according to	patient according to		
usually involves studying	guidance, professional	guidance, professional		
how interventions and	standards and/or	standards and/or		
relationships are	patient preference.	patient preference.		
experienced				
Usually involves	Usually involves	Usually involves	May involve analysis	May involve
collecting data that are	analysis of existing	analysis of existing	of existing data or	administration of
additional to those for	data but may include	data but may include	administration of	interview or
routine care but may	administration of	administration of	interview or	questionnaire to
include data collected	interview or	simple interview or	questionnaire to	those exposed.

routinely. May involve	questionnaire	questionnaire.	those exposed.	
treatments, samples or				
investigations additional				
to routine care.				
Quantitative research –	No allocation to	No allocation to	Does not involve an	May involve
study design may	intervention: the	intervention: the	intervention.	allocation to control
involve allocating	health professional	health professional		group to assess risk
patients to intervention	and patient have	and patient have		and identify source of
groups. Qualitative	chosen intervention	chosen intervention		incident but
research – uses a clearly	before service	before audit.		treatment
defined sampling	evaluation.			unaffected.
framework underpinned				
by conceptual or				
theoretical justifications.				
May involve	No randomisation.	No randomisation.	No randomisation.	May involve
randomisation.				randomisation but
				not for treatment.
Normally requires REC	Does not require REC	Does not require REC	Does not require REC	Does not require REC
review. Refer to	review.	review.	review.	review.

Figure 1. Development of ethical organisation in the UK<sup>1,9-18</sup>. (author's own)



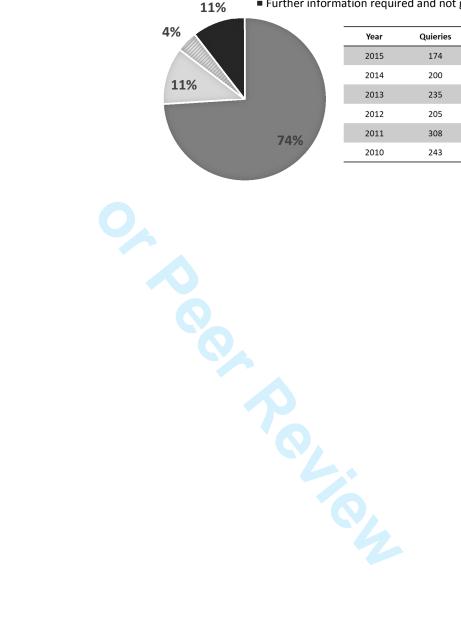
**Table 2.** Definition of research, service evaluation and clinical audit since  $1990s^{1,10,14,17,21}$ .

	Research	Service evaluation	Clinical audit
1990			Quality assessment processes for
			clinical practice.
1997		Quality improvement study to	
		judge the quality of care against	
		existing standards.	
2001	The attempt to derive generalizable		
	new knowledge by addressing		
	clearly defined questions with		
	systematic and rigorous methods.		
2006	The attempt to derive generalizable	Evaluation was seen as 'a set of	Quality improvement process that
	new knowledge by addressing	procedures to judge a pilot's merit	seeks to improve patient care and
	clearly defined questions with	by providing a systematic	outcomes through systematic review
	systematic and rigorous methods.	assessment of its aims, objectives,	of care against explicit criteria and
		activities, outputs, outcomes, and	the implementation of change.
		costs.	Aspects of the structure, processes,
			and outcomes of care are selected
			and systematically evaluated against
			explicit criteria. Where indicated,
			changes are implemented at an
			individual, team, or service level and
			further monitoring is used to
			confirm improvement in healthcare
			delivery.
2009	the attempt to derive generalizable	Designed and conducted solely to	Designed and conducted to produce
	new knowledge including studies	define or judge current care	information to inform delivery of
	that aim to generate hypotheses as		best care, which serves to identify if
	well as studies that aim to test		desired standards of service delivery
	them. Specific questions generate a		are being met
	protocol driven project to derive		
	new knowledge and understanding.		

Figure 2. Advice given as to the nature of research activity in South East Scotland

Research Ethics Service from 2010-2015<sup>31</sup>.

- Not Research
- Research
- Refer to central R&D
- Further information required and not given



Year	Quieries
2015	174
2014	200
2013	235
2012	205
2011	308
2010	243