



Understanding the state of health information in Ireland: A qualitative study using a socio-technical approach



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ABSTRACT

Objectives: The objective of this paper is to add to the broader literature on *socio-technical theory* and its value and/or relevance to health information in Ireland. The paper focuses on three factors that can impact on health information; those of policy, infrastructure and people (PIP) and examines how Ireland compares with other countries in relation to these factors.

Materials and methods: Qualitative methods (documentary analysis and semi-structured interviews) were used. Key policy and strategy documents, and original research articles from Australia, Canada, Ireland, the UK and the US were analysed from a comparative perspective. The dimensions of policy, infrastructure and people were then explored through semi-structured interviews with health information experts in Ireland. Their perceptions were compared with and contrasted against the findings from the documentary analysis, and examined thematically.

Findings: The views of health information experts support the findings of the review of Ireland's development in this area compared with other countries and that Ireland lags behind others in policy and practice terms.

Conclusions: The paper concludes that the three dimensions of policy, infrastructure and people do indeed help to frame the understanding of health information in Ireland and that a socio-technical perspective, combined with a comparative approach, can also help both policy makers and practitioners in identifying the scope for improvement in health information.

1. Introduction

Health information refers to data collected on an ongoing basis to feed into the delivery of health and social care services. The literature in this area has moved from the examination of single technological projects [1,2] to include national strategies aimed at improving health information technology which in turn will impact on patient outcomes, efficiencies of service delivery and service integration [3,4]. There is also now greater consideration of the human factors that can help shape the development of health information systems as well as the context in which health information is implemented [5]. In this regard, commentators have begun to draw specifically on socio-technical approaches to health information [6,7]. Socio-technical theory is gaining ground among many commentators in this area largely because it accounts for not only the technical aspects of health information but also the policy context and the people involved in the day to day execution and running of systems. Indeed, the experience of countries such as the UK [8] highlights that successful implementation of national health information systems *require* that not only the technical issues associated

with health information technology be considered, but also the personal, social and organisational. The value of socio-technical theory particularly as it applies to health recognises the complexity of health care and the associated challenges in generating good health data. Coiera [9] goes so far as to suggest that because health care systems are so dependent on complex human and organisational structures that they seem particularly suited to socio-technical analysis. Other writers [10,11] observe that in a short period of time the discipline of health informatics has evolved from a primary focus on computers to one in which people and organisational issues are important.

With one or two exceptions [12,13], there is very little evidence of a socio-technical perspective on health information in an Irish context. This is despite the fact that there are non-health examples of socio-technical theory and its application in the Irish literature [14]. The research examines how socio-technical approaches can help us gain a better understanding of the growing importance of health information in Ireland.

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2. Research design

2.1. Methods

Using socio-technical theory as a framework, qualitative methods including documentary analysis and semi-structured interviews were adopted for this study. The documentary analysis was undertaken by sourcing published government reports and peer-reviewed journal articles. Interviews were then conducted with experts in the health information area in Ireland. Respondents included both those who have a focus on policy and strategy in relation to health information and those in organisations involved in day to day management and delivery of key health data. Twelve respondents were interviewed in total; 6 from each category. Results were anonymised but attributed to either the policy group (POL) or practitioner group (PR). Fieldwork took place between July 2014 and February 2015.

2.2. Data collection

A non-probability approach was used in the selection of respondents. This approach was adopted because there is in fact a small pool of identifiable experts in health information in Ireland and all of these were included to reduce the likelihood of selection bias [15]. Criteria for selecting interviewees was based on their elite status within the health information area and their capacity to articulate what they thought about the state of health information at a national level.

2.3. Data analysis

The method of constant comparison [16] was used, and key themes were identified and developed from the transcripts.

3. Health information in Ireland

In Ireland, there are three different types of healthcare providers (the Health Service Executive (HSE) hospitals, voluntary public hospitals and private hospitals). Recent figures show that health expenditure as a share of GDP is 7.8 percent in Ireland; as opposed to 9.0 percent for the OECD 35 countries' average [17]. Health information management is the responsibility of a number of national agencies and health information systems have developed over a long period in an *ad hoc* manner, usually in response to particular service needs. This is in part due to the fact that until the establishment of the HSE in 2005, there was no national planning structure for health care and no strategic thinking until 2001 when the first major health strategy was published [18]. This was followed in 2004 by publication of a National Health Information Strategy [19] and in 2007, the establishment of a health information regulatory body, the Health Information and Quality Authority (HIQA). Prior to this, there had been very little attention afforded to health information.

4. Results

4.1. Comparing the health information systems: Ireland, Australia, Canada, England and USA

A review of health information policy and practice in other countries highlights that there are a variety of approaches to health care provision and, as a consequence, health information and its use and reporting varies widely. What is a strong feature of all countries, however, is the drive for good data governance policy and practice. In addition, data sharing and linkage capability are important dimensions of the infrastructure being promoted in a number of countries. For example, in Australia national health information has been the responsibility of the National Health Information Agreement since as far back as 1993. The Agreement was established to coordinate the

strategic direction of health information, including the development of national data standards as well as governance arrangements for information [20]. Similarly, Canada's well-developed health care system is mirrored in its approach to health data; as with Australia, since the early 1990s it has been developing its approach to health information. In Canada, Health Canada and the Canadian Institute for Health Information are leading agencies charged with the overall responsibility for health information. With regard to its legislative approach, Canada, as a federal state, does not have a national framework for health information. Instead, the focus has been on developing a sound health information infrastructure, mainly through the development of an electronic medical record [3].

In 1996 in England, a National Health Service (NHS) number was introduced as an identification mechanism for all health care settings and the NHS's *Information for Health* document [21] set out a strategy for developing the health information infrastructure in the UK. The National Programme for Information Technology initiative was established in 2003 within the NHS to deliver a national information technology infrastructure across health care settings and to provide a basis for integration and sharing of patient information but research has shown that its implementation has been problematic [8,22].

In the United States, much of the development to date has been driven by the Health Information and Technology Act (2009), which came into law in 2009. Under the Act, every hospital is able to buy and use electronic health records with a view to creating a platform for the 'meaningful use' of Electronic Health Record adoption. The focus in the US is on how health data can drive improvements in health care provision as well as a greater emphasis on consumer involvement in the management of their own health information and recent strategies reflect this [23,24].

Compared with other countries then, Ireland has indeed been a late comer as its national strategy for health information was only published in 2004 and so action in this area has been slow when we compare with other countries (see Table 1).

4.2. Perceptions of the state of health information system in Ireland

To interrogate and to validate the findings of the documentary analysis, qualitative interviews explored views of experts about the state of health information in Ireland and how that compares with other countries. All of those interviewed were in a senior position within their organisations. They were selected because they occupied key roles and had a national remit with regard to the determination of policy and strategy in the area of health information or with the management and delivery of national health information.

There was a clear view that the current landscape for health information in Ireland is fragmented. The responses of those with a negative impression of the health information landscape can be categorised in three broad sub-themes; i) fragmentation and duplication; ii) lack of strategic coherence and iii) slowness of implementation. One respondent attributed our fragmentation to the fact that there are many

Table 1
Overview of Health Information Policy Aspects of Five Countries.
Sources: [3,4,8,19–23].

	Canada	Australia	England	US	Ireland
- Legislative framework	X	X	√	√	X
- Regulatory control	√	√	√	X	√
- Strategic approach	√	√	X	√	√
- Single point of contact	X	X	√	√	X
- Standards/guidelines	√	√	√	√	√
- Investment in health ICT	√	√	√	X	X
- Health informatics personnel	√	√	X	X	X
- Integration of systems	√	√	X	X	X

√ shows the existence of the item, while X means the lack thereof.

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