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Everyday Ethical Dilemmas Arising With Electronic Record Use in Primary Care

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Abstract. The introduction of electronic medical record systems (EMRs) into primary care settings alters work practices, introduces new challenges, and new roles. In the process of integrating an EMR into a primary care setting, clinic staff faced ethical challenges in their everyday work practices resulting from workarounds undertaken to compensate for a poor fit between system design and work practices, issues related to system access, and governance gaps. Examples of these issues are presented, and implications for system design are discussed.

Keywords. Electronic Health Records, Electronic Patient Records, Healthcare Policy Issues, System Implementation and Management, Security and Privacy

1. Introduction

In recent years, primary care practitioners, governments and health advocates have increasingly turned towards computerization of primary care settings in an effort to improve continuity of care [1], service delivery through enhanced chronic disease management [2], and to support population health initiatives and improve monitoring of practice service delivery and quality [3, 4]. Health researchers, payers and policy makers have sought access to data collected and organized through electronic medical records (EMRs) in primary care settings in an effort to answer varied questions about topics such as the relationship between primary care interventions and health outcomes, access to services, achievement of health management targets for the practice, etc.

The introduction of EMRs into primary care settings has altered work practices in clinical settings [5,6], and in some cases, has led to new roles (e.g., for technical support staff or consultants required to maintain a practice's computer system). Amidst the emergence of new work practices which have accompanied EMR use, primary care clinics often face new ethical dilemmas. In this paper, we provide an overview of some of the ethical dilemmas that arose for staff working in a community based primary health care centre, in relation to the clinic's use of an EMR. We learned of these dilemmas through ongoing work with the clinic over several years, during which time we adopted an interventionist research role in relation to the clinic [5, 6, 7, 8, 9]. Members of our team conducted in depth ethnographic observations at the clinic, while we provided support to the clinic (e.g., documenting EMR meetings [9]; providing technical support [8, 9]). In this paper, we identify three types of ethical issues which emerged in relation to the use of the EMR: issues related to a poor fit between the EMR

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and work practices; issues related to system access, and issues related to gaps in governance. After a brief overview of our study site and data collection methods, examples of each type of issue are presented and discussed. We conclude the paper with a discussion of implications for design and related actions.

2. The Research Site: Computerization of an EMR in a Community Health Centre

We followed a community health centre (CHC) in their use of an EMR system, which was introduced to support multiple goals, including prevention and management of chronic diseases. In the CHC, clinical staff (six physicians, one clinical pharmacist, and one nurse practitioner) work together with medical office assistants (MOAs), a medical office administrator, and the executive director. The clinic also employs and trains students for clinical and administrative tasks. The EMR system has been used since its implementation in 2004 which we have written about elsewhere [5]. The system supports storage and retrieval of administrative and clinical information (diagnoses, medication, lab results, etc.), documentation of patient encounters, and appointment scheduling and billing. Research reported here draws on the clinic's recent efforts to utilize advanced features of their EMR system, particularly those involving secondary use of data collected through the EMR.

2.1. Methods of Data Collection

Our research has followed a socio-technical approach [10], and used ethnographic research methods. We began working with the clinic in 2003, before they had implemented an EMR. Our work with the clinic has continued through a succession of grants, the most recent of which had a specific action research (AR) focus. Designed to bridge the gap between theory, research, and practice [11], AR generates research about a social system while trying to change it [12]. As a planned part of the AR orientation of the project, a researcher assumed responsibility for IT support in a broad sense, while simultaneously conducting participant observation and informal interviews. A concluding round of formal interviews with clinical and administrative staff was conducted. The analysis in this paper draws on data collected by researchers between August 2008 and December 2010. One researcher spent an average of nine days a month at the CHC for nine months. A second researcher averaged four days a month at the CHC over eighteen months. Research staff were integrated into ongoing clinic activities, and interacted constantly with all clinic staff.

The focal point of researchers' observations and interviews were health care practitioner and support staff use of electronic records, and the issues and challenges clinic staff faced as they worked to incorporate secondary use of clinical data into the clinic's work practices. Research reported here was approved by a university research ethics board, operating within the guidelines of Canada's Tri-Council research ethics guidelines. All study participants—support staff and practitioners at the CHC—were aware of the study and consented in writing to participate in the study, where participation consisted of being observed using the electronic record system outside of clinical encounters, and being interviewed about use of the electronic record system.

3. Results: Ethical Issues Arising in EMR Use

In identifying ethical issues, we rely on an understanding of ethics as a situation where “two or more valid ethical requirements or legitimate interests conflict and consensus does not exist as to how it should be resolved” [13]. Ethical issues which arose in our primary care study site can be grouped into three areas, which are discussed below.

3.1. Ethical Issues Arising as a Result of Work Practice Changes

That new computer systems play a significant role in changing work practices is a well documented phenomenon [14, 15]. In the clinic in which our research was carried out, we observed several instances in which the EMR system, if used as intended, altered work practices in a manner which caused problems for staff. In order to maintain a workflow which worked for staff, staff collaboratively developed workarounds, which solved the workflow issues, but also created ethical dilemmas. For example, the EMR system was designed so that only doctors could add information to a patient’s record. However, in our clinical setting, normally MOAs collected some information (such as a patient’s height and weight and some vital signs) before patients are seen by a doctor. In a paper based system, they could simply record the information in a chart. However, with the EMR, access permissions could not be altered on the computer to allow the MOAs to enter such information into the chart. As all staff in the clinic were in agreement that it was desirable for the MOAs to collect and record this information, a workaround was developed. A computer id for a fictitious doctor was created, for use by all of the MOAs, who could, using this id, enter the information they had always collected, into the patient’s chart. However, because the id was shared (reflecting licensing of the product which was billed by number of user ids created), it would not be possible to accurately audit which of the MOAs had entered information, which was identified as a problem and presented an ethical dilemma for some.

3.2. Ethical Issues Related to Access

Numerous ethical issues arose in relation to who should have access to what information, in what format, and under what circumstances. Some of these issues related to the emergence of new roles related to EMR use, while other issues related to either work practices or technical affordances, or both. The most challenging issue our research team faced had to do with emergence of new roles related to our explicit action research focus. Part of the challenge related to a conflict between the provincial medical association’s views of privacy; that no one other than a patient’s physician should see any information about a patient, and realities associated with using an EMR in a clinical setting, e.g., software allowed MOAs to see some patient information,[2] and resolution of technical problems often required technical support staff to come into incidental contact with patient records. As the EMR system stabilized and the clinic began pursuing advanced features (such as practice searches, which allowed the clinic to identify all patients with a particular attribute, such as diabetes), the fact that we were engaged in research (though not about patients or using patient data) caused one staff member to suggest that researcher involvement with practice searches (undertaken to support the practice) contravened the medical association’s privacy policy. Together,

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[2] Interacting with patient data had always been part of the MOAs practice and was viewed as acceptable.

we decided the researcher should not assist with practice searches. As researchers, we understood the need to protect patients from unauthorized use of patient data, yet at the same time we remained perplexed about what made it alright for a technician to see data, but not a researcher. As researchers, our activities were scrutinized from a different vantage point than the same activities undertaken by support staff. This conflict—related to our explicit role as action researchers—brought issues about who should have access to patient data under what circumstances into clearer view, and underscored a need to develop policy to govern new roles (be they technicians, consultants or action researchers) which emerge in relation to implementation of EMRs.

Several of the ethical issues related to access we observed also existed in a paper-record based world and were brought back into view in relation to privacy concerns concerning the EMR. For example, in one instance, a computer terminal froze during a clinical encounter in a consultation room. The clinician, frustrated, left the consultation room to seek help, and, because the system was non-responsive, remained signed onto the system (leaving the potential for the patient who remained in the room to access the system, if it began working again). In contrast to leaving a paper file in a room, this left access to the entire clinic's patient population potentially exposed. In another instance, a doctor working from home was surprised to find that as she went to access the clinic records, no password or user id were required. It was eventually determined that this had occurred because on a prior occasion, she had checked the "save user id and password" option, which effectively created open access to the clinic's records for anyone using that computer. Again, this would have been similar to the security risks associated with taking a paper based file home, with the exception that an unauthorized user of a doctor's computer would have potentially had access to all clinic records.

3.3. Ethical Issue Related to Governance Gaps

Some ethical issues which arose related to gaps in governance. For example, the clinic would like to support e-mail contact with patients, but remains concerned that an absence of governance instruments pertaining to the status of e-mail communication between clinicians and doctors will leave the clinic legally exposed, in the event of a problem. The province's failure to develop governance measures for anticipated uses of computers in clinical settings means the clinic must either curtail services (e.g., not offer e-mail communication) or leave themselves exposed to legal risk.

4. Discussion

The ethical issues which arose in the practice setting observed suggested that there is an ongoing need to monitor systems in order to insure that a poor fit between system design and use does not result in workarounds that compromise ethical standards. Workarounds should not interrupt the ability to audit systems accurately, which can be partly addressed by accommodating further customization in permissions for different types of users, which will accommodate more varied workflows. In addition, licensing software by log-ons (for example, rather than the number of full time equivalent staff) is also likely to result in practices which can diminish audit accuracy.

Privacy and security remain a concern for EMR users. Care providers must trust the security of systems they are required to upload data to. Several instances from our fieldwork suggest there is a need to maintain ongoing oversight of electronic systems, in order to identify both technical and user error which can compromise privacy as well as care. In some instances, ethical issues related to EMRs existed prior to the advent of the EMR, but the potential for harm was amplified through use of EMRs. In other cases, the use of EMRs brought existing issues (e.g., viewing patient data incidentally while supporting operational needs vs. while supporting research needs) into clearer view. Privacy and ethical guidelines should address the variety of issues practitioners face.

To support clinicians interested in pursuing new forms of interaction and care made possible with the advent of EMRs, strategies for developing anticipatory governance tools (e.g., to address the medico-legal status of e-mail communication between providers and patients) need to be developed. In addition, governance structures must be responsive to emerging roles (e.g., technical support personnel and researchers who may not be able to carry out their work tasks without coming into incidental contact with patient data) or changing access needs (e.g., accountability in relation to medical data entered by MOAs), and physicians and other care providers need to know where to turn for policy guidance about emerging practice issues.

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