Title: Mapping textually-mediated information practice in clinical midwifery care

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1. Introduction

The role of documents in clinical care has long been recognized. In particular, the clinical record has been analyzed extensively since Garfinkel's observation that "[r]eporting procedures, their results, and the uses of those results, are integral features of the same social orders they describe" (Garfinkel 1967, 192). Studies of documents in clinical settings have considered the ways that the clinical record contributes to medical work (Berg 1996), its role in the social construction of the patient or client (Berg and Bowker 1997, Bowler 1995, Macintyre 1978) and the constitution of the work of care providers (Berg and Bowker 1996), the narrative structure of operative reports (Pettinari 1988), and the accomplishment of accountability in radiological records (Yakel 2001). Researchers have studied the affordances of the paper medical record (Heath and Luff 1996, Fitzpatrick 2000) and have analyzed how this and other clinical records are used and the implications of these uses for the creation of electronic clinical documents (Gorman et al. 2000, Reddy et al. 2002). Three studies (Fitzpatrick 2000, Gorman et al. 2000, and Reddy et al. 2002) looked at the role of a variety of information sources in clinical decision-making and problem solving. These included documents and bundles of documents ranging from formal paper and electronic records to informal documents such as sticky notes affixed to the record and notes scrawled on gauze dressing wrappers.

Despite their differing perspectives, these studies all share a focus on texts as actively constructing and in turn being constructed by a social setting. The present work seeks to contribute to this discussion by exploring the relations between texts and people in everyday local settings by focusing on "the interaction and intersection of the diverse texts that constitute work in a given domain" (Davenport and Cronin 1998, 266).

I adopt Dorothy Smith's perspective on documents within a social setting. Smith argues not only that texts are active, but that they reveal the social organization of their creators and users.

> Texts are not seen as inert extra-temporal blobs of meaning, the fixity of which enables the reader to forget the actual back and forth work on the piece or pieces of paper in front of her that constitute the text as a body of meaning existing outside time and all at once. […] The text is analyzed for its characteristically textual form of participation in social relations. The interest is in the social organization of those relations and penetrating them, discovering them, opening them up from within**, through the text**. The text enters the laboratory, so to speak, carrying the threads and shreds of the relations it is organized by and organizes. The text before the analyst, then, is not used as a specimen or sample, but as a means of access, a direct line to the relations it organizes (Smith 1990, 3-4, emphasis in original).

Although a sequence of social action may begin with the activities of individual

participants in a local setting, these activities can be traced through the text to the extra-local sites of power to which they extend. Analysis therefore begins from the standpoint of the individual in her everyday/everynight life, and the activity of each local subject is studied as a component of the more extended social relation. As part of this process "the researcher must discover and map the missing pieces of the social relation" (Campbell and Gregor 2002, 44). The primary purpose of this chapter is therefore to map the local and extra-local participants in clinical midwifery visits through an analysis of the texts used: to consider information sources not just as resources for participants, but as constituents of a larger social order.

Such a mapping is complemented by a consideration of the ways that the *activation* of texts, or "the human involvement in the capacity of texts to coordinate action and get things done in specific ways" (Campbell and Gregor 2002, 33), can accomplish the goals and objectives of extra-local interests in local settings. This chapter's second purpose is to provide specific examples that illustrate "the socially organized practices, including sequences of talk, that are integral to the discursive process" (Smith 1990, 215) of the prenatal clinical visit. I make use here of Smith's definition of discourse, which

> refers to a field of relations that includes not only texts and their intertextual conversation, but the activities of people in actual sites who produce them and use them and take up the conceptual frames they circulate. This notion of discourse never loses the presence of the subject

> who activates the text in any local moment of its use (DeVault and McCoy 2002, 772 note 2).

Although Smith's institutional ethnography method has been used in a variety of professional and human service disciplines, particularly education and nursing, her work has not yet been widely adopted in library and information science. To date two dissertations have taken institutional ethnography perspectives on the study of librarians' work (Lundberg 1991, Stooke 2004). Lundberg's has not resulted in publications but Stooke's, completed only four months before the submission of this chapter, will likely result in at least one article geared specifically for an LIS audience.

An analysis inspired by institutional ethnography offers much to the study of information behaviour. In particular, it permits a study of the ways that "information" is negotiated and constituted through the actions of individuals within a broader social context, whether or not they are present in the local setting. In this chapter I take this opportunity to go beyond even Wilson's broad definition of *information behaviour*

> those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information" (1999, p.249).

to seek a more inclusive understanding of information *practices* situated within broader social practices. This orientation requires working at the edges of Spink and Cole's (2004) definition of *information behaviour* (See also Case 2002).

2. Methods

This chapter is based on an ongoing study of communication and information exchange in midwife-client visits in the Canadian province of Ontario. The research has been funded by the Social Sciences and Humanities Research Council of Canada and a pilot study co-researched by Jacquelyn Burkell was funded by the Faculty of Information and Media Studies of The University of Western Ontario.

Midwifery is a licensed and publicly-funded profession in Ontario. Midwives provide primary prenatal care, attend home or hospital births for low-risk women, and provide six weeks of postpartum follow-up. In this regard prenatal midwifery visits stand in sharp contrast to the high-risk critical-care environments investigated by Gorman et al (2000) and Reddy et al. (2002). High-risk midwifery cases involve a consultation with or a transfer of care to an obstetrician (Hawkins and Knox 2003). The midwifery model of care is based on the client's right to make informed choices about all aspects of her care. The exchange of information is integral to midwifery practice and the clinical midwifery visit is therefore a rich field for studying several facets of information behaviour.

Data collection for this study involves two phases. First, I record, but am not present to observe, a clinical midwifery visit. Second, I conduct a separate follow-up interview with

each willing participant in which she responds to several background questions and then listens to the audiotape of the visit and provides her comments on it. Data collection is ongoing. To date 31 midwife-client pairs have participated from a total of 11 midwifery practices in 7 southern Ontario communities. The communities constitute a stratified purposive sample. Seven clinical visits took place in the city of Toronto (3 practices, with a community population of over 2 million and access to a number of tertiary-care teaching hospitals), 9 visits took place in large-city practices (2 practices, 300 000-900 000 people and access to one or more teaching hospitals), 10 visits took place in practices located in smaller cities (4 practices, 100 000-300 000 population and no teaching hospital) and 5 visits took places in practices located in small towns and villages (2 practices, population under 50 000, with a small local hospital or access to a hospital in a neighboring community only). Recruitment has taken place on a regional basis. For each period of data collection, I identified a single geographic region containing communities representing one or more strata and approached all midwifery practices in the region. Within each region, I recruited a convenience sample of willing practices, then willing midwives within each practice, and finally willing clients of those midwives. Some practices refused, and even once practices and midwives agreed to participate there were cases in which no clients were willing.

Data collection and analysis conform to ethical guidelines on research on human subjects of The University of Western Ontario and the Social Science and Humanities Research Council of Canada. In order to protect anonymity and confidentiality, codes

are used throughout. The same code is used consistently to represent the same participant.

Of the visits recorded to date, two have been postpartum visits and the other 29 prenatal, with clients ranging from 14 to 40 weeks pregnant at the time of the recorded visit. All were repeat visits rather than the lengthy initial "booking" visit in which the pregnant woman is introduced to the midwife, the midwifery practice and often to the midwifery model of care, gives her complete medical and obstetrical history and may have a full physical examination. This chapter analyzes evidence from the 29 prenatal clinic visits of the use of documents within those visits.

Many studies of the role of records in clinical practice have had access to those records (e.g., Berg 1996, Bowker and Berg 1997, Fitzpatrick 2000, Heath and Luff 1996, Pettarini 1988, Yakel 2001). Findings are therefore based on an analysis of the records themselves in conjunction with observation and/or interviews. The present analysis is based on evidence available from audiorecordings of prenatal clinical visits at which the researcher was not present. One of the properties of paper is that its use is often audible: a rhythmic sound indicates a systematic turning of pages while rustling and shuffling sounds suggest rummaging through papers and files. When combined with dialogue and other contextual clues, the sounds of paper can prove instructive in analyzing the use of documents in prenatal clinical practice.

I present two forms of analysis. I created document maps using the model function in QSR N-Vivo, version 2.0 163. The maps depict the range of documents whose use is evident in the recordings of the prenatal visits. Most documents described in this way were physically present, although others were simply mentioned without being present. Figures 1 to 4 each represent a portion of the full map (Figure 5) of all of the documents and the various individuals and agencies to whom they provide connections. While these maps provide a starting place for the analysis of the contributions of texts to the information work of midwives and pregnant women in the clinical context, they are far from complete. The more detailed textual analysis of specific examples related to each figure serves as a beginning step in the more complete analysis allowed by the adoption of Smith's perspective on textually mediated practice. Excerpts were therefore chosen not for their representativeness but because they provided clear examples of textually mediated information practices and because they illustrated the contributions of extra-local actors.

3. The clinical context

At its most fundamental, a prenatal clinical visit is an interpersonal transaction between the midwife and the pregnant woman. Indeed, much of the research on communication and information behaviour in this context focuses on that interaction (see, for example, Levy 1999, Linell and Bredmar 1996, McKenzie 2004, Olsson and Jansson 2001). The 29 prenatal visits involved anywhere from two to five people. Clients came alone or were attended by a male or female partner or some other support person, for

example a mother or sister. In many cases the client's child or children also came along. On occasion, one or more midwifery students participated in prenatal visits as part of their clinical training.

The considerable interpersonal communication and exchange of information was mediated in a variety of ways by documents. Practices of reading and writing

> in which the record is turned to, leafed through, read, used for jottings, communicated through, dispatched, form a crucial site in the sociotechnical organization of medical work. Without these practices, the record would be dead, disconnected, without any relevance. These activities are what bring it to life – and what allow it to have its mediating role in the organization of medical work. Without the interrelation of people and paperwork, in other words, doctors could not be doctors and nurses could not be nurses (Berg 1996, 501).

Like the hospital environments observed by Gorman et al (2000) and Fitzpatrick (2000), the midwifery clinics housed a variety of documents. The examining rooms in which prenatal visits took place varied in size, layout, and contents between and within practices. In some clinics each room was used exclusively by one midwife while in others two or more midwives shared an examining room. Each room had a desk and chair for the midwife, two or more chairs for the client and her support people, and an examining bed. Walls of some examining rooms were hung with educational posters, for example illustrating fetal development. The midwife's desk housed the day's pile of

client file folders. File drawers or the desk surface held forms and handouts, and if a single midwife made exclusive use of the room, all of her client charts might be located in a locked drawer there. Bookshelves above the desk might house the midwife's personal collection of professional books, which included volumes such as textbooks on anatomy, physiology, nursing, or midwifery practice, the Canadian pharmacopeia, and books on natural or herbal remedies. In some practices, a staff room held an integrated professional collection of such materials for the entire practice.

A number of other documents were present in the clinic. Most practices held a client library consisting of one or more bookshelves bearing books, videos, and/or DVDs relating to pregnancy, childbirth, parenting, and holistic health. Waiting areas displayed pamphlets, flyers, and business cards from local businesses and agencies. The practice administrator's desk housed a large desk calendar, commonly with a column for each midwife. Current client files and business records might also be kept there as well as educational handouts for clients.

Figure 1 illustrates the kinds of documents whose consultation of or referral to was evident from the recordings of the 29 prenatal visits. In all figures, rectangles represent people, organizations, or agencies and ovals represent documents. Dark grey shapes with black borders indicate people or documents physically present in every prenatal visit. Light grey shapes represent those that may or may not be present, and white shapes bordered in light grey indicate documents or people contributing to the visit but

not physically present in any of the prenatal visits.

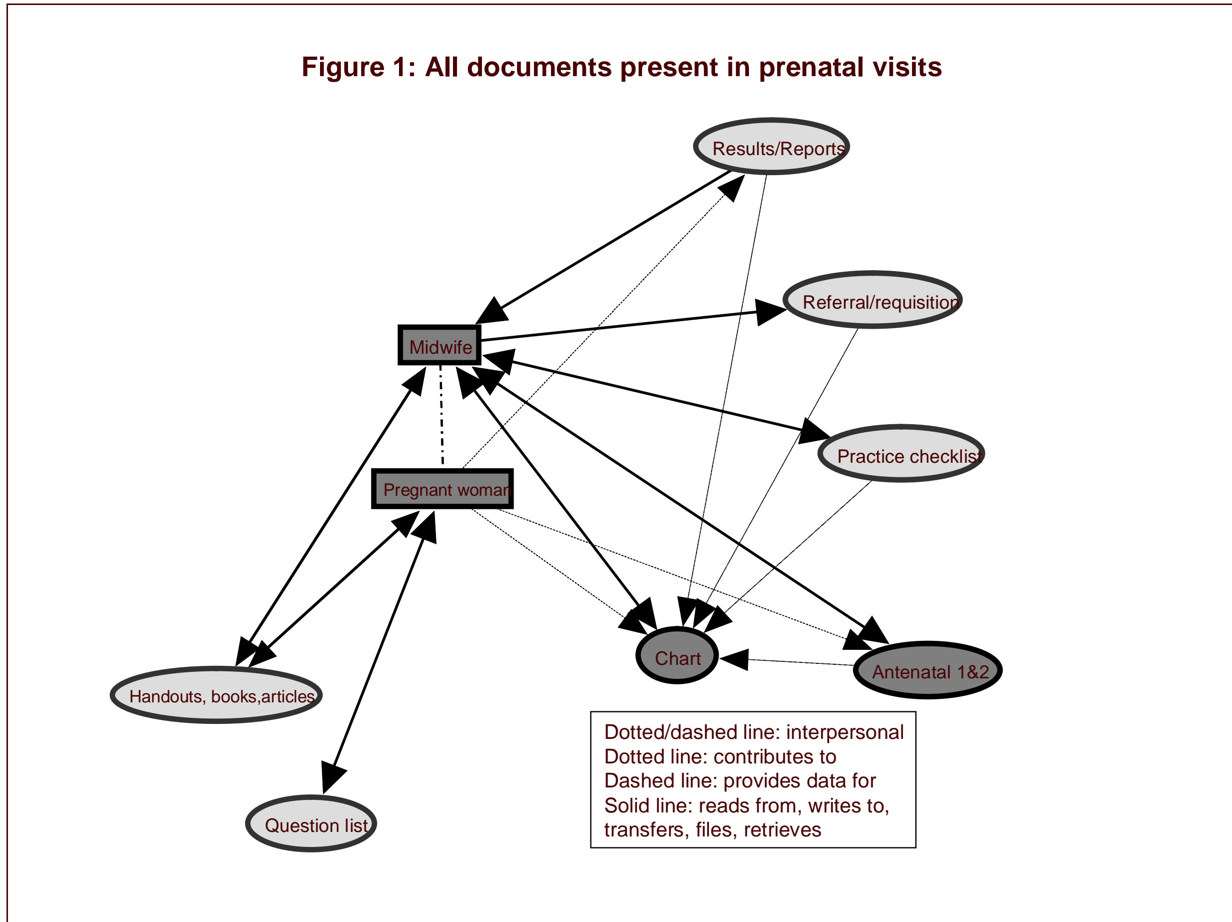


Figure 1: All documents present in prenatal visits

First, midwives gave clients handouts, such as a detailed information package introducing the philosophy and scope of midwifery care in this practice or a selection of articles on a topic on which the woman would make a decision. These were compiled of locally-written texts and/or photocopies of published articles and other documents.

> **Midwife 19:** I'll just pass that to you [Partner], some sheets about newborn medication

Handouts were given to the client under various circumstances, either if she requested

them or at specific times during the pregnancy. For example the introduction to midwifery care might be given at the initial booking visit.

Second, the recordings provided evidence of documents of outside authorship being brought to the discussion by a participant. The documents themselves may have been present in the visit, as in this example in which a midwife and client jointly consulted a source from the midwife's professional library that was located on the shelf above her desk:

> **Midwife 13:** There's an actual, [rustling noise, some banging of movement] not a, medical condition, it's more like a state of the body and it's called acidosis. And, it is, brought on and, people that are not pregnant as well, by, a diet that's high in acid and low in alkaline foods. [sound of pages turning, client coughs]. **So.** We can make a copy **for** you, before you go if you like cause it **lists** the foods that are acid-forming and alkaline-forming... And I think **that** might be the ticket. [pages rustling].
>
> **Client 13:** Hmm. [sounds of pages turning, no talking for several seconds.] ((inaudible)) **Shell**fish is even that acid-forming? Wow. **Poul**try?[...]
>
> **Midwife 13:** Well I can photocopy that for you. [paper rustling]
>
> **Client 13:** Yeah, thanks. Acidosis.

Although the physical presence of a document provided the opportunity to analyze the sounds made by the document's use, a text did not have to be physically present to contribute directly to the visit. For example, there are several examples of reader's advisory. After asking the pregnant woman if she planned to breastfeed, the midwife offered the following suggestion:

Midwife 19: There are some good [breastfeeding] resources in our library

Client 19: Mhmm

Midwife 19: *The womanly art of breastfeeding*, *Bestfeeding*, *Jack Newman's guide to breastfeeding*. The La Leche League resources, some medical-based resources and *Bestfeeding*'s a nice big **basic** book.

Client 19: Okay

In the next case, the pregnant woman recommended a novel to the midwife, one featuring a midwife as the protagonist. The participants went on to discuss the book at some length:

Client 7: I'm reading *The baby catcher*. Did you read that yet?

Midwife 7: No

Client 7: Oh my God. It's --

Midwife 7: Is it good?

Client 7: Yeah.

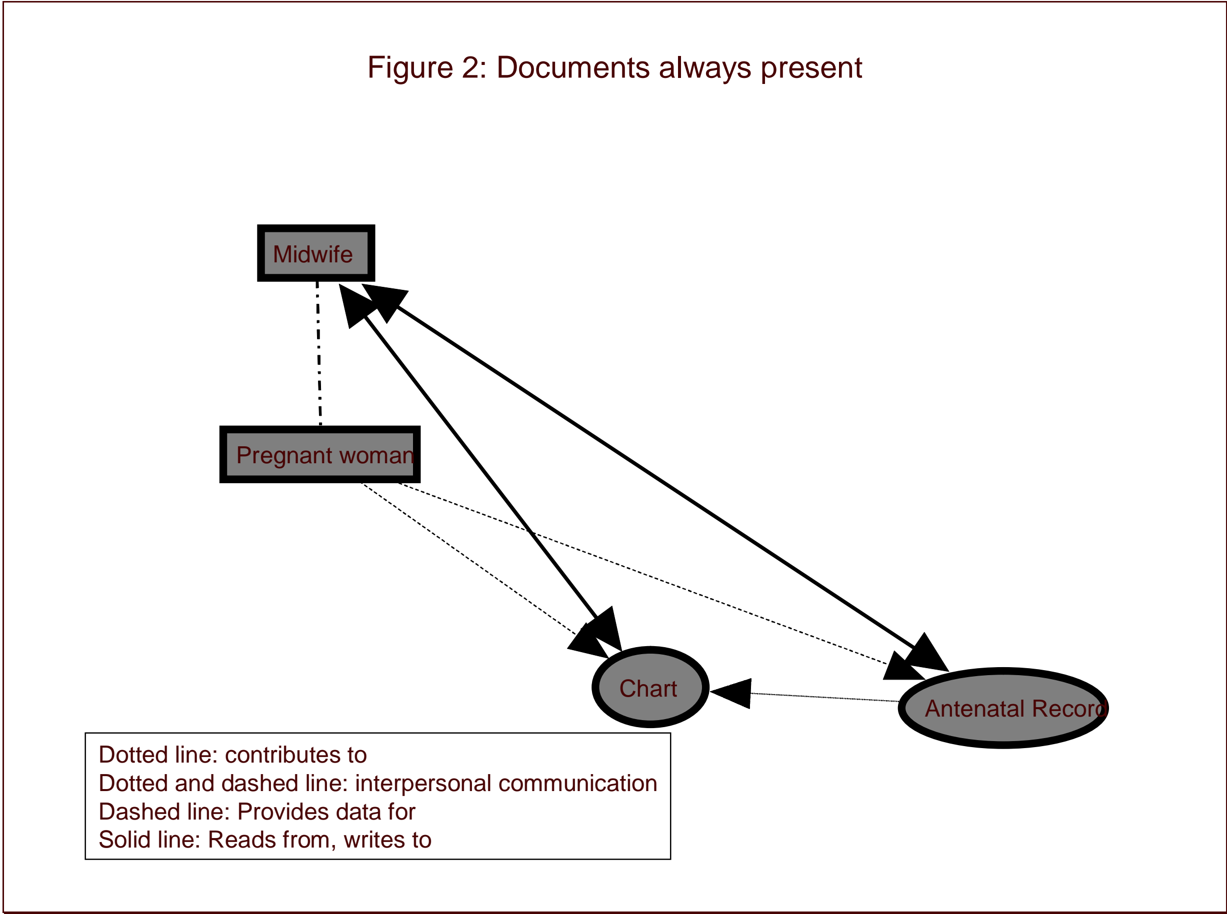
A variety of documents of outside authorship played a significant role in the work of

midwives and pregnant women in prenatal visits. The remainder of this chapter will consider those documents that were created or inscribed within the visit itself or were created for use there. It is in these documents that the ties to the broader social order are most evident.

4. Local practices of inscription

A small number of documents were mentioned and used at every prenatal visit. These are illustrated in Figure 2.

Figure 2: Documents always present



The pregnant woman's chart was uniformly housed in a file folder, often of a colour with

a particular organizational significance. For example, all charts might have the same colour, or a different colour might be associated with each midwife's client charts. Although the contents of the client files varied from woman to woman and from practice to practice, all practices made use of the Ontario Antenatal Record (Ontario Ministry of Health and Long-Term Care 2000). Part I of the record is used at the booking visit to record the woman's history and assessment, and Part II is used at subsequent visits. References to the Antenatal Record in this chapter therefore refer to Part II. In addition, each practice used practice-specific tracking sheets and checklists of various types. The checklist is used to make notes and record discussion topics. It complements, supplements, or replaces the lists of discussion topics on the Antenatal Record.

The Ontario Antenatal Record (Ontario Ministry of Health and Long-Term Care 2000) deserves particular attention for the ways it shapes the information exchange between the midwife and pregnant woman. For example, the general structure of prenatal visits mirrors in large part the structure of the record (Davies and McKenzie 2004). Prenatal visits generally begin with a recording of the date, the gestational age of the fetus, the woman’s weight, and the results of her urine test. From there discussion commonly moves to matters of concern to the pregnant woman and proceeds to issues related to the stage of pregnancy, particularly those on which the pregnant woman will need to make decisions. The visit commonly finishes with a physical examination and a brief discussion of the next appointment (Hawkins and Knox, 2003, 91-2).   In other terms,

“participants in local settings find their actions coordinated by the requirements of working with the text” (Campbell and Gregor 2002, 32).

As the hub of the pregnant woman’s file, the Antenatal Record co-ordinates and records the work of the various participants and functions in several ways as a boundary object—an object with “different meanings in different social worlds but [whose] structure is common enough to more than one world to make them recognizable, a means of translation” (Star and Griesemer 1989, 393). The Antenatal Record serves as a standardized form on which a participants with potentially different goals can communicate the information needed by all, an ideal type describing standard features of a pregnancy (for example fetal size at various weeks’ gestation), a repository housing and coordinating data from other records, and a temporal boundary object, coordinating multiple temporalities as well as multiple communities of practice (Davies and McKenzie 2004).

The Antenatal Record is in turn shaped by the visit as details are negotiated, recorded, or left unrecorded. Central to the study of textual practice is the inscription of documentary traces (Smith 1990, Latour and Woolgar 1986) during the process of doing the work. Filling out a form, however, is “not a neutral undertaking, but one in which organizational policy and a variety of taken-for-granted assumptions are brought into the helping relation. In that sense, the activation of the text in question is a procedure both for conducting a health care program and for exercising organizational

power" (Campbell and Gregor 2002, 34).

The act of filling out the form "accomplishes the objectification of the client" (Campbell and Gregor 2002, 35) in ways that have material consequences. Macintyre (1978) and Bowler (1995) found that record makers' stereotyped views of pregnant women affected the ways in which they asked questions and recorded answers on forms. For example, the question of whether the pregnancy was planned was presented differently to married and unmarried women, and the companion question of whether the woman was happy to be pregnant was asked differently (or not at all) depending on the response recorded for the first question. Married women were therefore much more likely to be documented as being happy about their pregnancies than were single women, regardless of whether they had actually been asked this question. The forms filled out in this manner then went on to provide clues to the woman's identity and attitudes for later care providers. The routine practices of record makers "could be consequential not only for the statistics produced from the records but also for the pregnancy careers and experiences of individual women" (Macintyre 1978, 602).

In the following example, the pregnant woman is reporting on her urine test, taken with a dip-strip that changes colour in the presence of glucose or protein. In midwifery care, the client routinely conducts this test herself and interprets the result, which she reports orally to the midwife.

Midwife 4: Did you do your urine today?

Client 4: Yeah. So [glucose] was um, [sighing] nor–, it was normal and slightly trace for the protein.

Midwife 4: Okay

Client 4: But

Midwife 4: More normal?

Client 4: More normal

Midwife 4: O.k. Often they kind of spill together

Client 4: Yeah

Midwife 4: just kind of around the edges a bit

Client 4: Yeah

Midwife 4: between the green and the yellow. We'll call it normal.

Of note here is the fact that the Antenatal Record was not developed by midwives, but rather by a subcommittee of the Ontario Medical Association which included representatives from a variety of medical specialties (obstetrics and gynecology, general and family practice, pediatrics, anesthesiology, and rural medicine), and from the OMA's Board of Directors and Committee on Women's Issues. The Record is "widely used throughout the province" although its use is "not mandatory" (OMA subcommittee 2000). It was evident in every practice I visited and no midwife described its use as optional. Sharpe characterizes its use as "required" (2004, 160. See the passage quoted below in the conclusion).

Thus, the form does not “ appear from nowhere…” but

> should rather be understood as having been produced to intend the interpretive practices and usages of the succeeding phases of the relation. The text-reader moment is contained as a potentiality in the text itself.... [I]f we are to analyze textual materials for their properties as organizers of social relations, methods of textual analysis are required which explicate the active power of the text as it is realized or activated by a competent reader (Smith 1990, 222).

A competent reader would, therefore, read and inscribe the record in possession of considerable contextual knowledge. By recording this potentially ambiguous result as “normal” rather than “trace” the midwife's reading and writing demonstrates competence with regard to several issues: the specificity of the urine test strips, the acceptable tolerance for “normal” in various communities, and the consequences of recording one assessment or the other. Although the midwife may informally remind herself or her colleagues to reconsider this reading in light of later tests (either by making a mental note to herself or by attaching a sticky note to the client's record), she has chosen not to include an anomalous result on the official record. This client's Antenatal Record will be seen and used by other midwives in the practice and, if complications develop, by the obstetricians with whom the client consults or to whom her care is transferred. When seeing a care provider who has access to the records created by others, “the patient already, to some extent, *is* what the records say she is.” (Macintyre 1978, 607).

Rather than seeing this as an example of sloppy or inaccurate charting, it is more useful to regard this example as evidence that, in addition to clinical competence, the midwife must possess competence in all of these contextual matters in order to inscribe and interpret the record.

> [C]linic records, such as they are, are not something clinic personnel get away with, but… indeed, the records *consist of procedures and consequences of clinical activities as a medico-legal enterprise* (Garfinkel 1967, 198, emphasis in original).

As Berg and Bowker (1997) have found, medical records represent both the patient and the work done on the patient. They can inscribe the patient into certain prescribed procedures and temporalities (e.g., Berg 1996). "The social relation of which the [client and the practitioner] are part originates outside the room where the interview takes place. [The document] carries the organizational aspect of the relation into the interaction….' (Campbell and Gregor 2002, 35). An example of this can be seen in the following excerpt:

> **Midwife 25:** [rustling papers] You're right on 50th percentile, we'd expect about a seven and a half pound baby.

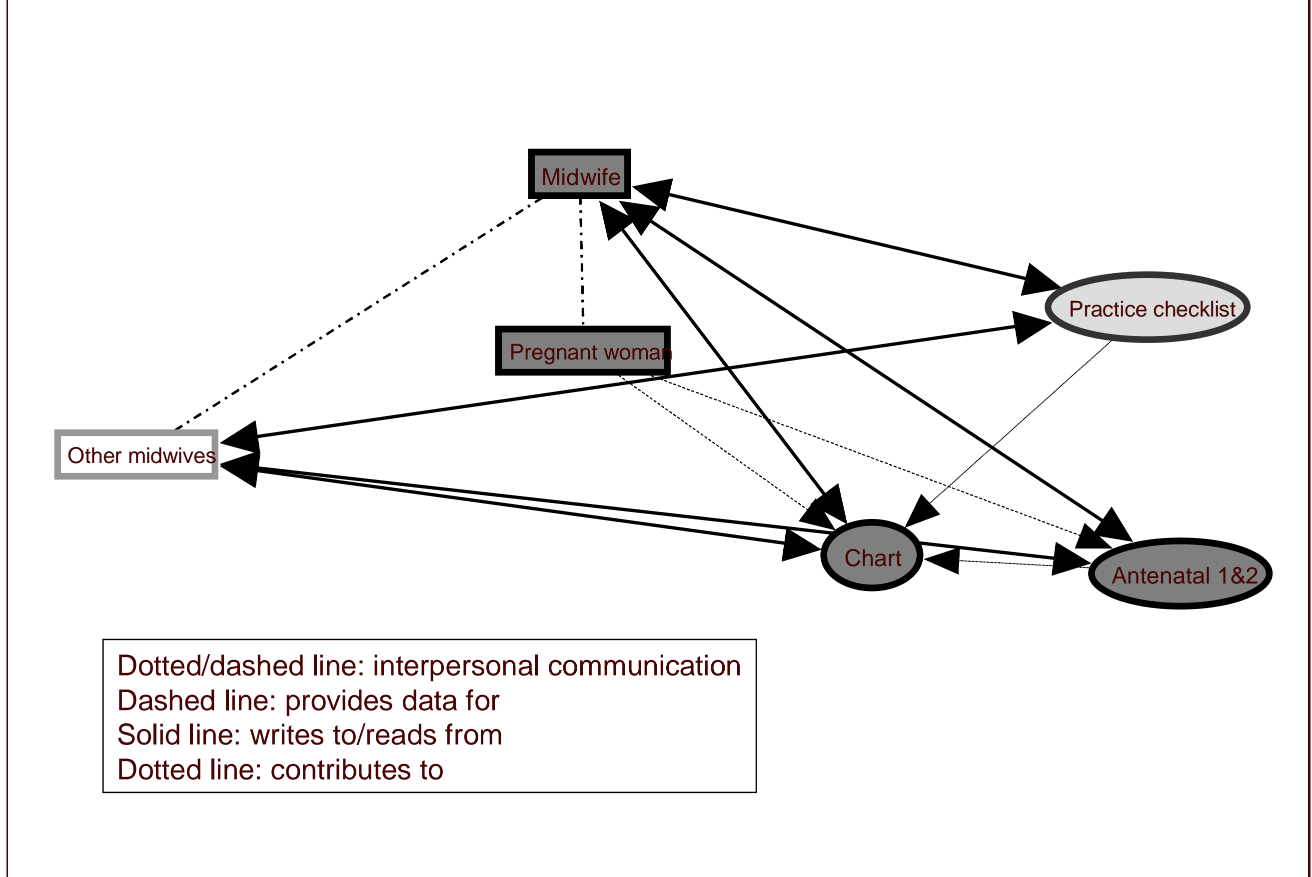
The Antenatal Record contains a *Symphysis fundus height diagram*, a chart for estimating the size of the fetus by measuring the size of the woman's abdomen: " At each visit after 20 weeks, the symphysis fundus height in cm may be plotted on this

graph. Discrepancies in growth should be evaluated" (OMA subcommittee 2000). This linkage of size and time in a graphical format functions as a standard, allowing the woman's current measurement to be compared to a norm, as in this case, and also to her own previous measurement. The rule of thumb--that the symphysis fundus height in centimeters is approximately equal to the number of weeks gestation--is illustrated graphically on the chart, although the source of the normative data is documented neither on the Record itself nor in the instructions for its use. The inclusion of percentile lines on the chart means that the midwife can follow and predict a trend, using past measurements to infer a pattern likely to persist into the future. (Davies and McKenzie 2004). In this way, data recorded at this visit are linked to norms and standards developed elsewhere and themselves persist beyond the local setting and are carried through the record into the succeeding phases of the relation.

5. The extra-local use of local inscriptions I: within the clinic

Documents created or inscribed within the local setting may move physically and organizationally beyond its temporal and spatial boundaries in several ways. The client's clinical records follow her from visit to visit regardless of which midwife she sees. The documents within it play a pivotal role in the communication between the current midwife and the other midwives who have provided or will provide care for the client. Figure 3 illustrates the relationships observed between the current midwife, past and future midwives, the client, and her records.

Figure 3: Clinical records in midwife communication



The transcripts provided several examples of the discussion of inscriptions made by midwives who had seen the current client previously but were not present at this visit. In the first case, this is the client's first visit with this midwife. Until now she has been seeing the midwife who was present at her previous birth.

> **Midwife 11:** I think we need to expect that [your labour] **will** be fast? Because, I mean, what she's written here is "five hours."

In order to read and understand the contents of a clinical document, a clinician requires knowledge of the author(s) of the report as well as knowledge of tacit documentary practices and the relationship of entries to one another (Garfinkel 1967, 206; Heath and Luff 1996, 338):

> The very *possibility* of understanding the record's entries is based on a shared, practical, and entitled understanding of common tasks, experiences, and expectations. The entries' brevity and (seeming) incompleteness "works" since the reader knows the specifics of the writer's situation, what (s)he is concerned with, or requires. (Berg 1996, 513, emphasis in original.)

Identification of other writers by their handwriting provides contextual information; for example, that person's history, experience, and charting practices. Knowing the author of the inscription, the midwife is able to infer a shared meaning of a "fast labour" that corresponds to standards accepted by different kinds of practitioners (Martin 1987, Thomas 1992).

As Fitzpatrick (2000) observed, the official chart is not the full working clinical record. Although it provides the focus,

> it does not represent the totality of the record at work; the working record is made up of an evolving complex network of relationships among the multiple parts and the people who use them. Various degrees of formality

co-exist in this working record. Some parts are formally sanctioned forms that will end up in the archived version of the record…. Others are forms that have been developed locally to meet specific needs.

As the Antenatal Record was designed by physicians, its list of suggested discussion topics does not include those topics particular to midwifery care. For example, the principal midwife at each birth is assisted by a back-up care provider. The Antenatal II does not include this item in its checklist of topics for discussion. In the next example, the previous midwife has attached a note to the record to alert the current midwife to discussion topics not listed on the form.

Midwife 9: I got a little note here, and I'm trying to read what this says... [sound of paper rustling] I can nearly

Client 9: [reading] Role of, [says letters] b, u

Midwife 9: back up midwife.

The sticky note functions as an adjunct to the record, extending its use in ways that correspond to the needs of the local users. Midwives provided many more examples and descriptions of the various uses of sticky notes and similar communications in follow-up interviews.

Conversely, inscriptions made in the course of the current visit will extend forward in time to contribute to the next visit. Prenatal midwifery visits routinely ended with a trip to see the practice administrator to book the next visit:

Midwife 14: So, we'll book you to come in in a month. Let's just go to the

front and I'll book you in.

The midwife's statement here demonstrates an awareness of the standard visit frequency--once per month for the first 26 weeks of pregnancy, once every two weeks until week 36, and then once a week until the birth (Hawkins & Knox, 2003, 91-2)--and of the gestational age of this client's pregnancy. The Antenatal Record would provide the midwife with the gestational age, which she has combined with her knowledge of the standard and translated into a date for the next visit.

Booking an appointment involves writing the client's name in the practice calendar, on the correct date and in the column for the midwife she will see next. This task is usually undertaken by the practice administrator but sometimes by the midwife, as in this case when the administrator was away from her desk. In addition, midwives and clients had personal datebooks into which they wrote dates and times for upcoming appointments. This particular inscription moves the next visit from something belonging solely to the practice, to something to be accounted for in the overall lives of the midwife and client.

This act of booking a visit ties the client visit back to the organizational management of the practice itself. In some practices the administrator would prepare for each new clinic day by photocopying the day's calendar page for each midwife and highlighting the names of that midwife's clients with a fluorescent marker. I observed these calendar photocopy pages on midwives' desks, fastened with an elastic band to the top

of her stack of the day's client charts. In this way, the post-visit inscription into the practice calendar is transformed into the midwife's pre-visit planning tool and reminder list for the next visit. (For a similar example, see Fitzpatrick 2000). Taken further, the act of booking can be seen to be linked to documents concerned with the deployment of human resources in the clinic: from practice vacation schedules to the regulatory documents governing midwifery caseloads. This seemingly simple act of writing a name in a calendar in a particular location in fact provides a "direct line" to the broader social order.

6. The extra-local use of local inscriptions II: beyond the practice

Physical movement may take records beyond the clinic itself. Several practices encourage the pregnant woman to carry her records as she approaches her expected due date.

> **Client 23:** I forgot my folder. Sorry.
>
> **Midwife 23:** That's okay, we just have to remember to update since those are the originals you have

In addition, some forms are filled out within the confines of the visit with the intention that they will be used elsewhere. A prime example is the case of referral to another care provider or a requisition for a test or procedure. These forms serve as boundary objects (Star and Griesemer 1989) which are used by some external care provider who then communicates back to the midwife and thereby to the client through a result or a

report. Figure 4 illustrates this relationship:

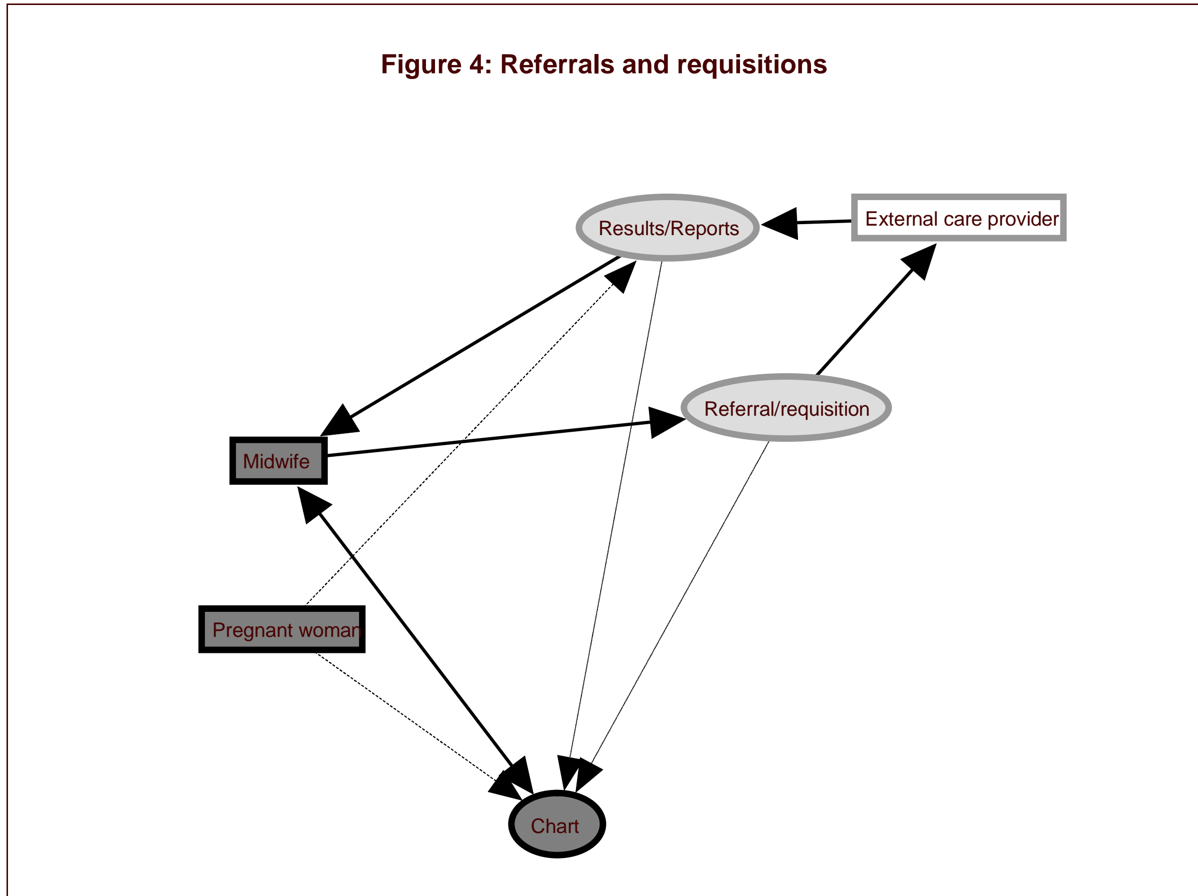


Figure 4: Referrals and requisitions

The inscription of a requisition may set into motion an entirely new set of documentary practices for the external care provider, of which the local participants in the clinical midwifery visit may not be fully aware. Both the interpretation of clinical images and the creation of reports

> are bounded by the generation of records. A radiological requisition begins these processes and a signed radiographical report signals their completion. During the course of the interpretation of an image, other records and information are created and used. These records include the

new images, indexes to displayed images, preliminary book entries, prior images, previous reports, and various temporary notes that the radiologists make for themselves (Yakel 2001, 236).

Different levels of competence in the practices of reading and writing these reports can result in barriers in the midwife-client interaction:

Midwife 6: It's pretty brief what they, what they actually wrote, sometimes they're a lot more, umm, verbose, ah, this one just says, uh "single fetus in a cephalic presentation," so head-down, "placenta posterior and clear of the os, fluid volume"

Client 6: What's "clear of the os" mean?

Midwife 6: Clear of the os is clear, the os is the opening. So,

Client 6: Oh, okay!

Midwife 6: So

Client 6: That's good then. Yeah

Midwife 6: there's, the placenta is nowhere near the opening,

Client 6: Okay.

Midwife 6: so that's great.

Midwife 6: And fluid volume is normal, the measurements are all, what you'd expect […]

Midwife 6: It says it's "a routine anatomic survey. Complete and appears within normal limits."

Client 6: Okay. All right.

Midwife 6: No concerns […]

Client 6: I was just kind of worried about, you know, they checked, for the brain, and

Midwife 6: Yes!

Client 6: how things stand?

Midwife 6: Yes, they check all those things

Client 6: all that stuff?

Midwife 6: They have no ((inaudible))

Client 6: No signs of Down's Syndrome, or anything like that?

Midwife 6: They look for, they measure the nuchal folds,

Client 6: Ummhmm

Midwife 6: and that's one of the indicators that they look for Down's. They look at the heart and the structure and, you know, sometimes there's heart problems that go along with Down's. They check the brain, they check for three-vessel cord because that sometimes goes with some kidney problems and other things. They check for the kidneys, the stomach, the bladder, all those things are what they routinely check for, and sometimes they will list everything that they looked at, this time it just says that, "a routine survey, complete

Client 6: Right

Midwife 6: and within normal limits."

This interchange demonstrates the differences between the radiologist writing the report, the client, and the midwife, in terms of “what the subject knows how to do as a reader and what the subject knows how to do in reading, and in so doing also displays the organizing capacity of the text, its capacity to operate as a constituent of social relations” (Smith 1990, 5). The radiologist has made use of descriptive economies that “exploit the reader's ability to draw the necessary inferences from particular items and their configuration within the entry” (Heath and Luff 1996, 356). In radiological reports in particular, such parsimonious language may be used as a strategy to create conservative and risk-averse reports (Yakel 2001, 242).

When different types of health care professionals all use the same records, “the brevity and conciseness *required* for the record to work at the same time necessitates continuous repair work” (Berg 1996, 514). Here, the midwife is demonstrating familiarity with both the conventions of the radiologists writing the report and with the exigencies of communicating with a client. She intervenes immediately to reassure the client of the meaning of normal values and benign findings and she explains radiological reporting conventions. This work is most evident when it becomes clear that the terms “routine anatomic survey, complete and appears within normal limits” did not for this client rule out the potential for abnormalities, in particular Down's syndrome. The midwife responds to the client’s concerns by explaining the radiologists’ definition of “routine anatomic survey” and demystifying the meaning of “normal.”

Frontline human service workers such as midwives are often required in this way to serve as intermediaries between systems and people. In this role, “they negotiate the disjuncture between rational, impersonal ‘ways with words’ and embodied, personal ‘ways with words’ many times during a workshift. Indeed, they do not necessarily experience the disjuncture as one ‘line of fault’ but rather as a network of recurring, disorienting fractures” (Stooke 2004, 41).

In the next case, the mere physical absence of a document provides evidence of extra-local practices. This client is pregnant for the second time. She received her previous prenatal care from another midwifery practice, and gave birth by Caesarian section at Hospital A. Between 1996 and 1999, the province of Ontario's Health Services Restructuring Commission “directed that 33 public hospital sites no longer be used as hospitals as well as recommending to the Minister of Health that six psychiatric hospital sites and six private hospital sites be closed.” (Ontario. Health Services Restructuring Commission 1999, 9). Hospital A was one of these.

> **Midwife 12:** I had uh, some difficulty getting your, um operative report from, the midwife.. At the clinic?. The midwife, it’s [midwife name],
>
> **Client 12:** Mhmm
>
> **Midwife 12:** right? She’s on leave
>
> **Client 12:** Mhmm
>
> **Midwife 12:** for a while and um the folks over at her clinic thought it would

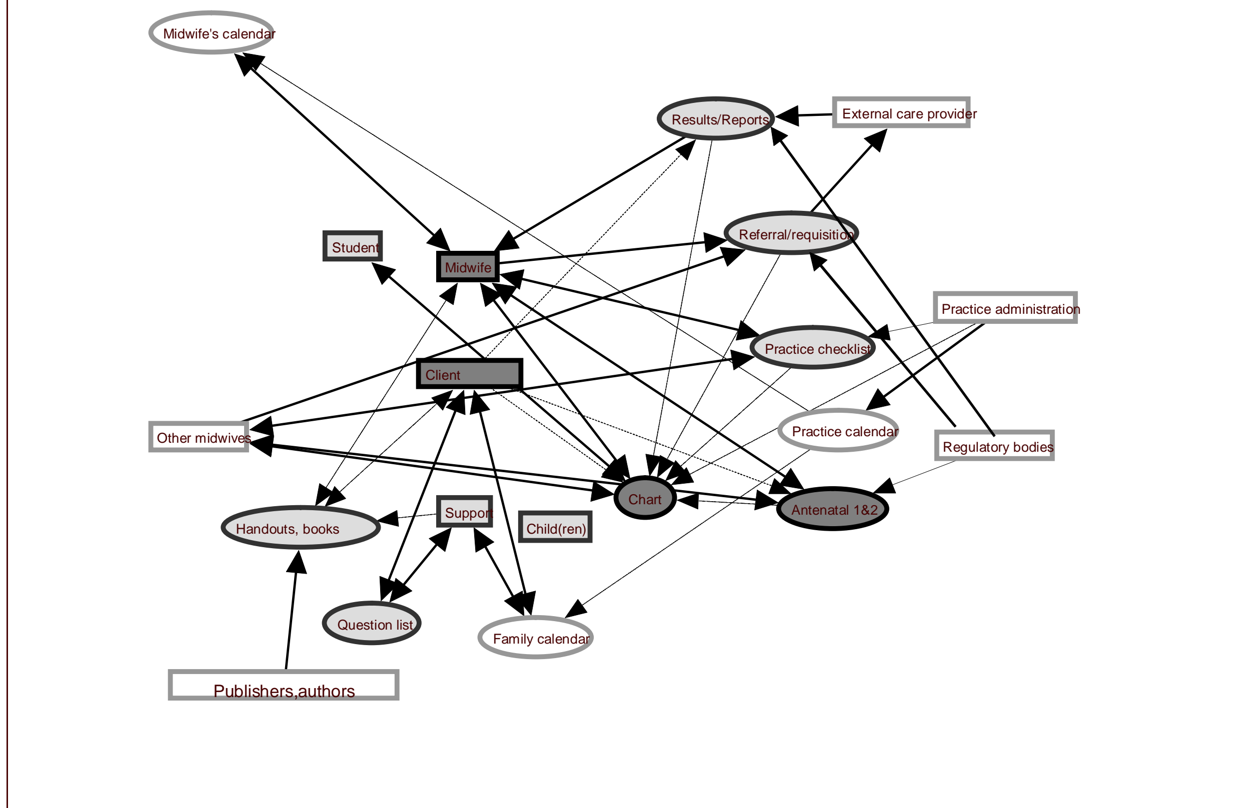
be too much trouble to look through boxes to look for the operative report. So, my next place to check is [Hospital B] and hopefully the records from [Hospital A] have been transferred there

What manifests itself to local participants as an information seeking barrier in fact carries the threads of a large number of social relations. For example, it hints at the relationships between midwifery clinics, the need for leaves and holidays including midwife burnout, illnesses, and midwives' own maternity leaves, the relationship between midwives and hospitals, and the restructuring of hospital services and the implications for hospital records management. All of these relationships and more are made visible through the absence of a single document.

7. Conclusion

This chapter has shown how audiorecordings can provide evidence of the uses of documents in local clinical settings. Figure 5 provides a complete map of the documents explicitly used or mentioned in the 29 prenatal clinical visits and illustrates the extra-local actors whose participation in the local setting is effected through the documents.

Figure 5: Textually-mediated relationships evident in visit transrcipts



Other relationships clearly exist but are not documented here because the recordings did not provide explicit evidence of them, for example the relationship between the midwife and various regulatory bodies, the role of regulatory bodies as authors and publishers of handouts and books, or the role of support staff in physically managing and filing documents and transferring them from one professional to another. This diagram will continue to evolve as more data are gathered and analysis proceeds. There is evidence in field notes, for example, that midwives' diplomas and current College of Midwifery registration certificates were prominently displayed in the practice.

These documents and their particular placement are indicators of a variety of relations, regulations, and conventions.

While mapping the individuals and documents contributing in various ways to the antenatal visit is a necessary prerequisite to understanding the broader social relations, it is not in itself sufficient. Further analysis using Smith's approach to the role of texts in mediating social relations will uncover more subtle and farther-reaching relationships than the mapping of documents alone provides.

For example, a practicing midwife observed that, because the Antenatal Record was developed by the Ontario Medical Association, “as government regulated registered midwives, we have become implicated in [obstetrical] discourse by the required use of the Antenatal 1 and Antenatal 2 forms” (Sharpe 2004, 160). The follow-up interviews with midwives provide much more data regarding midwives' actual use of these documents. During the interviews several midwives pulled out charts, forms, and records and described and demonstrated how they work with them. Further analysis will identify the ways in which midwives function as agents of the extra-local biomedical agenda and the means by which they resist and comply with this function in their roles as information providers and information seekers.

Although the analysis in this chapter has focused mainly on the midwife as an information provider and the client as an information seeker, the client is likewise

implicated. Her own reading and use of parent advice books and other texts will shape both her information needs and the ways that she approaches the relationship with her midwife. Extra-local actors, brought into the pregnant woman's life through texts and other means, may provide models and templates of acceptable information behaviour. The woman must likewise negotiate within the constraints imposed by these models in the information work in which she engages (McKenzie 2003).

Further analysis of documents will reveal more completely the elements of the social relations whose contributions to the local setting are both mediated and afforded by the presence, absence, structure, and use of those documents. By providing an understanding of the web of texts and social relations within which individual information-seekers in local contexts are located, the study of textual mediation can further reveal the broader contexts of information behaviour in local settings.

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