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**KNOWING HEALTH CARE / GOVERNING HEALTH CARE:
EXPLORING HEALTH SERVICES RESEARCH AS SOCIAL PRACTICE**

ERIC MYKHALOVSKIY

A thesis submitted to the Faculty of Graduate Studies in
partial fulfilment of the requirements
for the degree of
Doctor of Philosophy

Graduate Programme in Sociology
York University
North York, Ontario

November 1999



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Knowing Health Care / Governing Health Care:
Exploring Health Services Research as Social Practice

by Eric Mykhalovskiy

a dissertation submitted to the Faculty of Graduate Studies of
York University in partial fulfillment of the requirements for the
degree of

DOCTOR OF PHILOSOPHY

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Abstract

This dissertation contributes to sociological research on the governance and restructuring of health care services. It is made as an effort to understand certain of the social relations through which health care reform is being made in the province of Ontario. The empirical focus of the thesis is health services research (HSR). HSR is an applied multidisciplinary field of research on health care services that has recently emerged as an important source of expertise within sites where health policy is made and health services delivered.

Existing critical scholarship on health care reform generally overlooks the knowledge relations that suffuse contemporary health care restructuring efforts. By contrast, this dissertation targets for inquiry the ways that a new mode of health science is implicated in contemporary transformations in the organization of health care services. Rather than treating HSR as a technical remedy for health care cost problems, or subsuming discussion of HSR within more established disciplinary problematics such as the professional status of medicine, my dissertation explores how HSR is a part of what organizes new ways of knowing and acting on health care. Overall, it formulates an empirical sociology of knowledge and governance in health care, one that treats an important knowledge form as an active constituent of health care reform.

My analysis of HSR is organized as an institutional ethnography that explores the production, promotion and use of research put forward by health services researchers at the Institute for Clinical Evaluative Sciences, an important HSR institute based in

Toronto. In exploring the Institute's intellectual production, I have sought to underscore how HSR operates as a social practice. More specifically, my analysis of how HSR helps shape restructuring processes is developed in the thesis as an investigation of text-mediated social relations. Each substantive chapter of the thesis addresses a different text of HSR and explores text-based forms of health governance. What ensues is an explication of social relations of evidential knowledge in health care. Particular attention is given to how HSR constitutes governable versions of health care, how health services researchers contribute to the evidential transformation of clinical medicine and how HSR is drawn upon in projects of standardizing and remaking hospital care.

The thesis raises important questions about researching modes of health science in ways that foreground the social organization of health care reform. It should appeal to those interested in the empirical analysis of textual practices and to those concerned to take seriously the operation of new modes of knowledge in the analysis of health care restructuring.

Acknowledgments

Memories of two important people helped sustain me during the most difficult moments of writing this thesis. George Smith was an activist and a sociologist. In the early nineties, we worked together in the AIDS movement. George was a mentor, colleague and friend. He introduced me to institutional ethnography and convinced me to return to the academy to do graduate work in sociology. The dissertation began in conversations with George about changes in the social organization of medical knowledge. I hope he would have approved of the direction it has taken. Anna Michalowski emigrated to Canada in the early 1930's. A gifted seamstress, she was an activist in the Ukrainian Canadian women's movement and something of a family matriarch. While she understood little about the university she was an exemplar of spirit and encouraged me in my work as only a babtsia could. Vichnaya Pamyat!

I am very fortunate to have worked with a supportive and generous supervisory committee. Pat Armstrong was, quite simply, an extraordinary supervisor. Even at my worst she was encouraging. Throughout the writing of my thesis, she met with me regularly to discuss the substantive and practical issues I was encountering. When I was most buried in the detail of my interview data, Pat would remind me of political economy and suggest "ways out." She guided my writing with gentle queries about narrative and audience. Lorna Weir's scholarly excitement and engagement with my work helped me complete my dissertation. She gave generously of her time, meeting with me regularly to discuss draft versions of chapters. Lorna's carefully considered comments and detailed feedback pushed me in new directions and helped me grow intellectually. I am extremely grateful. I first met Karen Anderson as an undergraduate student in the mid-eighties. Her provocative and challenging lectures were an important part of what "sold" me on sociology as a young student. It was a pleasure to reconnect with Karen during my doctoral work and to benefit in my writing from her encouragement and support.

During the time I wrote the dissertation I was lucky to be a part of a vibrant community of graduate students in the Department of Sociology at York University. Gamal Abdel-Shehid, Rob Gill, Sara Leiserson, Sheila Cavanagh and Renuka Sooknanan were supportive fellow dissertation writers. Warm thanks, for their encouragement, also go to Lachlan Story, Mary-Jo Nadeau, Katia Rukszo, Cherie Bova, Kelly Train, Patti Philips, Suzanne Peters, Martin Cannon, Tara Milbrandt, Beth Jackson, Mark Lede, Kate Anderson, Rebecca Raby, Clarice Kuhling and Mark Thomas.

I would also like to thank the administrative staff at the Department of Sociology at York University for making easier, the life of a graduate student. Thanks to Ursula Kruger, Audrey Tokiwa, Myrna Mathewson, Roselaine Shemtov, Jackie McConnell and Ouma Gill.

While I wrote my dissertation I was fortunate to be a part of two research groups and a reading group. Our meetings not only helped to break the isolation of thesis writing, they offered places for intellectual exchange within which the analytic work of my dissertation took shape. Thanks go to the Making Care Visible research team: Liza McCoy, Darien Taylor, Craig McClure, Michael Bresalier, Lorelee Gillis, and Michelle

Webber; the Happy Theory in Health Reading Group: Patti Phillips, Michael Bresalier, Lorna Weir, Lachlan Story and Fiona Miller; and to the ever-unnamed group of health researchers: Pat Armstrong, Hugh Armstrong, Jerry White, Ivy Bourgeault, and Jackie Choiniere.

I would like to specifically record my gratitude to three friends who read and commented on my work. Carol-Anne O'Brien did a careful copy-edit of early chapters and my references. Michael Bresalier took great care in reading early versions of the thesis. His insightful comments helped improve the work and have left me with questions to continue exploring. Liza McCoy was a constant colleague throughout my writing. She listened patiently to my doubts and uncertainties and offered generous analytic and practical advice. The thesis registers the influence of my many conversations with her.

Of course, this thesis would not have been possible without the generosity of my research participants. I would like to thank the people who organized research access to ICES and Roxborough Memorial Hospital as well as all those who gave of their time to be interviewed.

Writing this thesis was made easier by the support of family and friends. I would like to thank my sister, Adrienne Mitchell, for her tremendous encouragement. My parents, Christine and Raymond Mitchell, helped me through the long process of doctoral training with patience and confidence. Alexis Holynsky was more than generous. Thanks also to Bohdan Holynsky, Laryssa Holynsky, Henryk Varju and Ian Esquivel. My life and work has been made richer by loving friends who have helped me throughout my doctoral work. It is not possible here to do full justice to the depth of their support. Mary Louise Adams was a caring friend who inspired confidence. Mark and Missy Halman and Scott and Fancy Bowler were encouraging throughout my writing. I would also like to thank Sean Lung, Bruce Martin, Danny Firestone, Joel Rotstein, Frank Chester, Steve Kyriacopolous, Darien Taylor, Carol-Anne O'Brien, Doug Weatherbee, Kate McKenna, Sarah Forer, Diane Cameron, Dennis Findlay, Ian Lumsden, Heather Low, Joyce Barnett, Ed Nyman, Richard Willis, Paul Pereira, Rick Douglas, James Adeney, Kathryn Church, Sharon Rosenberg, Michael Bresalier, Liza McCoy, Rob Young, Waimin Wang and Rita Kanarek.

Lastly, I would like to thank my partner, Alan Boutilier, for his enduring support and gentle spirit, and for his outstretched hand while I went through the final stages of writing.

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Chapter One

Introductory Remarks

1.0 Introduction

For the first time since medicine achieved prominence in health care in the industrialised world (about 100 years ago) the buyers of care, both public and private, are beginning to question the quality of that care. The critical questions today include how much of current medical intervention is warranted.... In other words, research findings, not new but still accumulating, which question the cost efficiency of many medical interventions have now entered the public debate on health care reform and are being accepted as never before (Chappell, 1993:494-495).

The Medical Research Council [of Canada] has recently launched a major thrust in these areas [health services research and clinical epidemiology], the National Health Research and Development Program remains active and in virtually all Canadian provinces there is now some formal technology assessment or utilization research capacity geared to dealing with this problem of how we make sure we are doing what we ought to be doing given the affordability crisis in Canadian Medicare today (Naylor, 1995).

We don't have a health system we have a non-system. And the reality is that the Ministry has been for years in the tough position of trying to impose some kind of public management on what has largely been an uncoordinated network of private nonprofit hospitals and private for-profit physicians... (Naylor, 1995).

The remarks quoted above express important changes in the organization of health care. They point to and reflect a set of social relations, largely of knowledge, through which health care systems have become objects of particular forms of applied intellectual scrutiny and of pragmatic transformative action. In Chappell's remarks these relations find articulation as a change in public debate, one marked by a form of questioning focused on the quality and efficiency of clinical medicine. Naylor suggests

health care services of one sort or another is being produced and brought into relation with government funders as an aide in health care reform. His declaration of a health “non-system” further expresses some of the characteristic forms in which health care, under new evaluative gazes, becomes constituted as a site of irrationality and potential waste. New questions, new knowledge arrangements, new ways of knowing health care, all of these suggest practices of health care reform configured through a nexus of knowledge and assessment.

This thesis is concerned with the goings on that have been variously described as an information revolution in health care (Millenson, 1997), a new era of assessment of medicine (Relman, 1988), and a new evidence-based practice of health care reform (Institute for Clinical Evaluative Sciences, 1997). Commentary on health policy has become increasingly animated around such developments, forming a site for the expression of enthusiasm about the capacity of new modes and uses of knowledge to remedy problems of health care delivery.

New forms of population-based health information have been generally positioned in the medical literature and elsewhere as a source of rational practice and as a mechanics of harmony. In the United States, for example, initiatives to develop research on the effectiveness of medical practices by harnessing the Medicare database were met with a distinctive ebullience. Thus, Roper et al. (1988:1197) refer to such research as a “public good” that “everyone can support.” In his much quoted Shattuck Lecture, Ellwood (1988:1551) likens research on the outcomes of medical interventions

to a “central nervous system” spreading throughout the health care system-cum-organism a common, rational language of decision-making. Repeated throughout both early and more recent forms of commentary on population-based health information is its positioning as a guarantor of health care quality. Health information, we are told, provides data that guides mutually reinforcing, rational decision-making on the part of physicians, patients and payers (Relman, 1988; Ellwood, 1988; Eisenberg, 1998; Starr, 1997).

This thesis engages a way of understanding the play of health knowledges in the assessment and reform of health care that is quite different from that offered by Roper, Ellwood and other enthusiasts of population-based information on medical events. The primary source of this difference does not lie in a more sober assessment of the potential of such information to increase quality, reduce costs, or transform clinicians’ and others’ decision-making, of which there are now many articulations (see Davis and Howden-Chapman, 1996; Carr-Hill, 1995; Frankford, 1994; Belkin, 1997). Nor does it rest in concerns about a less harmonious use of medical effectiveness research. The use of such information in projects for standardizing clinical judgement that threaten medical professionalism, or to control costs rather than improve quality have both been duly remarked upon (Rappolt, 1996, 1997; Coburn et al., 1997; Feinglass and Salmon, 1994).

Rather, an important source of the particularity of my research obtains from a critical stance that, instead of chiming in with words of enthusiasm or simple reproach, gives pause to reflect on the popularity of modes of health information. Such a pause

opens up opportunities to explore, examine and pose questions about transformations in the rationalities and practices that govern choices in matters of health (Foucault, 1988:173). For some time, I have wondered about what is afoot in health care, what all the fuss is about the circulation of new evaluation-based knowledges. I have wondered about how such knowledges work and, perhaps most importantly, how they are a part of changes in the organization of the governance of health care. For a while now, it has seemed to me that the widespread use of population-based knowledges of medical events signals changes in the intellectual procedures through which health care is known and questions about it posed, as well as in the practical strategies employed to make judgements about what health services are provided to whom.

This thesis is developed as a project that would investigate some of these developments. It articulates what I like to call an empirical sociology of knowledge in health care. What distinguishes the inquiry, is an interest in the relationship of the operation of new modes of health science and health care restructuring. I want to understand knowledge as an active constituent of health care reform. The specific empirical focus of the thesis is health services research (HSR), a growing field of research on health care practices that grounds a good deal of contemporary efforts at medical assessment. Drawing on the work of a leading health services research centre, the Institute for Clinical Evaluative Sciences in Ontario, I try to explore something of how HSR works in the restructuring of health care in Canada. My work centers on matters of evidence and evidential relations, posing questions about how HSR offers

particular versions and ways of knowing health care, how health services researchers participate in projects for the evidential transformation of clinical medicine, and how HSR is drawn upon in projects of standardizing and remaking hospital care.

2.0 Why Health Services Research?

My interest in exploring health services research has many sources. Perhaps primary among them is a simple curiosity, a wish to know more about what appears to me to be an important knowledge form. Health services research is a highly applied, often statistically-based field of research that focuses on medical events such as surgical services, and that contributes and responds to the managerial problematization of health care. It is an important discursive ground of contemporary concerns about variations in the forms and outcomes of medical care.

As Naylor's remarks above suggest, those who make HSR are enjoying a period of considerable commitment of institutional resources to their work. HSR is now firmly ensconced in university training programmes and has become extremely popular in health policy circles, to the point where one might consider it the primary intellectual resource informing contemporary restructuring initiatives in health care. My interest in exploring health services research is a wish to better understand the developing intellectual technology of health care reform.

Of course, I did not commit to the inquiry I make here out of curiosity alone. My decision to undertake an empirical investigation of health services research was encouraged by a sense that it was a knowledge form that had not received the critical

attention it warrants. My work thus responds to a need for a close analysis of health services research that seems called for by the present state of scholarship on the restructuring of health care.

In Canada, much of the critical scholarly work on health care reform is informed by political economy perspectives. Political economists have explored health care restructuring as a terrain of shifting and contested boundaries between the state and the market (Armstrong and Armstrong, 1996; Drache and Sullivan, 1999). Political economy investigations are based in conceptual strategies that attend to transformations in state/market relations and to the implications of cost-containment and privatization initiatives that introduce market principles into the organization of a public welfare service (Appleton, 1999; Sonnen and McCracken, 1999). From such perspectives, the reform of health care is understood as a substantiation of neo-conservative ideology, as a form of corporatization and/or as a moment of a more general retrenchment from the welfare state. One of the most important features of political economy research on health care is its political commitment. Political economists have offered the most important scholarly countervoice to recent preoccupations with business practices as solutions for health care problems and are the leading source of intellectual defence of Canadian Medicare (Armstrong and Armstrong, 1996; Armstrong et al., 1997; Drache and Sullivan, 1999; Evans, 1999; Appleton, 1999; Harden, 1999).

Important as political economy critiques have been, they have only partly illuminated the power relations that operate in contemporary health care reform. While

their analytic frameworks are useful for explicating state/capital/professional relations, they are less well-suited for shedding light on the circuitry of knowledge relations that suffuse contemporary programs of health care restructuring including, for example, the projects of medical assessment and evaluation that have found such favour in recent years.

Health reform is not simply a matter of the movement of the great engines of the state and the market. Initiatives to integrate health care services and programmes for managing health care delivery rely on relatively new forms of population-based information about health care practices. If the critique of health care restructuring is at all concerned with the social organization of reform, then forms of inquiry that attend to the play of formal knowledges in health care are required. Political economy has begun to take steps in this direction in, for example, the important ideology critiques of population health offered by Poland et al. (1998) and Robertson (1998). However, in addition to formal critiques of the content of health knowledge, analyses are required that explore knowledge at the level of social practice (Hopwood and Miller, 1994).

My investigation of HSR is intended as just such an inquiry. In exploring how a particular health science is implicated in the restructuring of health services, I want to draw attention to forms of social organization of reform, namely relations of expertise, that have been largely overlooked by existing work on health care restructuring. My interest in health services research is an interest in contributing to efforts to understand how health care reform is occurring. I want to contribute to the critical language through

which sociology and other social science disciplines make sense of the changes taking place in the organization of health care.

3.0 Theoretical Location and Methodological Resources

My focus on health care reform as consequent upon the operation of forms of expertise such as HSR locates my work within traditions of scholarship that are concerned with the interplay of relations of knowledge and of governance or rule (Smith, 1987, 1990, 1990a, 1999; Foucault, 1980, 1982, 1991; Miller and Rose, 1990; Rose, 1996; Barry, Osborne and Rose, 1996). In exploring HSR, I have been broadly influenced by work on contemporary forms of power that emphasizes the centrality of formal discourses of knowledge for the latter's organization. My work shares with that of others an understanding of rule or governance as not reducible to the formal legislative or other activities of "governments" (Hunt, 1996: 411). Like much other contemporary work on the organization of power, I take interest in how discourses, forms of expertise, techniques of calculation, and other mundane practices are drawn upon both in producing objects of governance and in forming the practices of their regulation.

Of course, there is theoretical specificity in contemporary programs of inquiry of the organization of governance, a specificity that places limits on theoretical bricolage. One cannot simply mix and match theoretical perspectives at whim or carelessly combine approaches with distinct ontological presuppositions. The specificity of contemporary approaches to the analysis of rule can present difficulties of negotiation for one who would hope to produce an analysis that is not narrowly orthodox or theoretically closed

down. The trick as I see it, involves making some form of theoretical commitment, while borrowing and appropriating conceptual resources from elsewhere that support a given program of inquiry. In my own case, this has involved a grounding of my work in Smith's writings on the relations of ruling within contemporary capitalism. Smith's work operates as a kind of 'intellectual home' for my analysis. It is the terrain of my 'theoretical commitment,' the place that I operate from and return to in my efforts to converse with other approaches to the investigation of contemporary forms of power including, most notably, studies of governmentality (Barry, Osborne and Rose, 1996) and social studies of science (Latour, 1987).

Smith's work puts forward a project of inquiry of ruling relations as an alternative to conventional sociological practice. Institutional ethnography, as it has come to be known (Smith, 1987:151-179; Campbell and Manicom, 1995; Grahame, 1999; McCoy, 1999), is specified, in part, by the problematic of the everyday world as a point of departure for inquiry. Rather than beginning investigation from within the established categories of sociological discourse, institutional ethnography begins with actual people, located in actual settings of activity and practice. Its purpose, unlike conventional ethnography, is not to describe the activities of everyday life, but to explicate their social organization. Institutional ethnography is empirical investigation of how people's activities are organized within "courses of action" or social relations that extend beyond a given local setting (Smith, 1990a:215; 1987).

As institutional ethnography, my analysis of health services research offers detailed empirical descriptions of a set of institutional relations in which HSR is implicated. My discussion does not formulate a self-referencing theoretical conversation for sociology. Rather, it begins in the social world of which I am a part and engages a critical impulse that would speak in response to an active world of social processes and experiences. My dissertation starts in my own recognition of traces of health services research and its project of assessing medical practice, and is organized as an empirical investigation of how HSR, as knowledge form, works. My discussion of HSR explores how health care reform is organized by relations of knowledge-making.

In a recent discussion of her work, Smith (1999) further specifies institutional ethnography as a form of investigation that treats the 'social' as its object. Here is one important point of difference between governmentality perspectives and institutional ethnographic research and work in the social organization of knowledge more broadly. The governmentality literature generally eschews forms of sociological realism and treats the 'social' nominalistically. For theorists of governmentality, the social is a category of discourse, a terrain of governance invented in the late nineteenth century, at risk of disappearing in a post-social world of neo-liberal governance (Rose, 1996a).

Not so for institutional ethnographers. Institutional ethnography involves a commitment to a materialist ontology, to an actual world of real people, engaging in day-to-day, ongoing activities (Smith, 1987:123). More than that, it treats as its analytic focus the "ongoing concerting and coordination of individuals' activities" (Smith, 1999:6).

Smith refers to such forms of concerted action as “the social.” For institutional ethnography, the social does not operate as the shifting discursive terrain of governing practice. Rather, it is an analytic or methodological category that directs inquiry at people’s organized and coordinated actions. Institutional ethnography explicates the social as relations that organize and extend beyond local settings, as the ongoing processes and practices that shape people’s everyday actions (Smith, 1987).

As developed in my dissertation, institutional ethnography orients my exploration of health services research and governance as a matter of a particular form of analysis of its social character. One established approach within social science emphasizes knowledge as social in the sense that it is perspectival, created by individuals or organized groupings of individuals and so, reflective of their interests and social locations (Swidler and Ardit, 1994). My own approach is rather different.

My exploration of health services research as social, emphasizes how it is a part of new ways of understanding, organizing and delivering health services. Coupled with work on the social practice of scientific knowledge-making (Latour, 1987; Latour and Woolgar, 1986) and recent Foucauldian work on accounting as a social and institutional practice (Hopwood and Miller, 1994) institutional ethnography’s emphasis on the social as concerted action invites me to investigate HSR through metaphors that emphasize its active and productive character. I want to explore health services research as a practice of reform, as implicated in forms of coordination of people’s actions across time and place. My dissertation explores HSR as a governing practice in ways that foreground

how a knowledge enters into and helps shape restructuring processes. It underscores how HSR is active in varied sites of health care practice.

Given the empirical terrain of my inquiry—a knowledge that evaluates medical practice and that seeks to organize clinical and managerial activity in health care—I have found certain features of work in governmentality useful. Notions of an exercise of power organized as action on the actions of others, as promoting subjects' self-governance and as involving forms of regulated freedom (Rose and Miller, 1992; Osborne, 1993; Hunt, 1996) resonate with my empirical observations of how HSR is produced, promoted and used. Neither health services research nor its makers operate by compelling physicians and health care managers to do very specific things. The various empirical discussions of HSR that I make in the thesis are at least suggestive of what have been called neo-liberal practices of governance. These are governing efforts that would encourage certain actions or shape their possibilities, while harnessing individuals' capacities for self-regulation.

I have also found governmentality theorists' discussions of problematization to have a particular heuristic value for my work. In the governmentality literature, problematization grounds an analysis of governance that poses questions about what forms of problems are deemed amenable to what forms of regulation by what authorities (Miller and Rose, 1990). It further registers the productive character of expert discourse, suggesting processes of inscription and calculation that render objects in conceptual forms that welcome certain forms of intervention (Miller and Rose, 1990:5). I have

found problematization useful for describing certain formal discursive properties of health services research (chapter three). I have also appropriated the term to describe how making things up as problems deserving of particular forms of attention is part of the practical everyday work of health services researchers (chapter four) and of hospital managers (chapter five).

More important for my analysis than conceptual resources borrowed and modified from the governmentality literature, is my exploration of the active character of health services research as textual practice. My empirical work on HSR emphasizes its existence as text, as well as the fundamentally textual processes of its activation. This organizing interest in textuality derives from a further distinguishing feature of institutional ethnography.

Part of the innovative character of institutional ethnography, and of Smith's work more broadly, is its analytic focus on the materiality of texts. Institutional ethnographic research draws attention to what has been elided in traditional sociological inquiry--the organizing capacities of textual processes. Texts are treated not simply as repositories of meaning, but as active constituents of ruling relations. Texts are understood to coordinate actions as their standardized form is activated in different places by different people "at the same or other times" (Smith, 1999:7).

As developed by Smith and others, exploring textually-mediated social relations is not a way of thinking about ruling practices as somehow determined by texts or as involving texts that act on their own account. Rather, it emphasizes how ruling

processes, that is, processes of executing, controlling, ordering, informing and so on that go on in various institutional, governing, managerial and discursive sites (Smith, 1990a:212) are accomplished and coordinated through work carried out on, with, and in relation to texts. Smith is particularly interested in texts as repositories of objectified knowledge and as grounding constituents of an organizational mechanics for transposing people's actual experiences into terms actionable within professional discourses and sites of ruling. As mentioned above, she is also interested in how the circulation of texts as standardized forms of words or images and their activation in various local settings at the same or other times coordinate and concert people's activities.

I have found Smith's invitation to treat texts as constituents of social relations a valuable resource for my analysis of health services research as an active knowledge form. My empirical work on HSR has been organized around specific instances of its textual expression. Thus, each substantive research chapter of the thesis deals with a specific text of HSR and in different ways explores text-based forms of health governance.¹ Attending to the materiality of texts offers a way into explicating how HSR enters into and helps shape some of the work being done to reorganize how medical care is delivered in Ontario. Focusing on how HSR is implicated in relations of health care governance through textual practices results in an empirical exploration of the social relations of evidential knowledge in health care. As a whole, the thesis offers an analytic description of part of the complex of social practices through which HSR is produced,

¹ The publisher's approval to reprint portions of these texts appears as Appendix 1

promoted, and used within initiatives to assess health care services and make their delivery more evidentiary.

The texts addressed in the thesis have all been produced by faculty, researchers and staff at the Institute for Clinical Evaluative Sciences in Ontario (ICES). My empirical focus on the intellectual production of ICES is not incidental. Based at Sunnybrook and Women's College Health Sciences Centre and established in 1992 with funding from the provincial government, ICES is the most important institutional site in Ontario for the production of health services research. The Institute's research agenda is focused on the active dissemination of HSR considered to contribute to the efficiency, effectiveness and quality of medical care in the province (Institute for Clinical Evaluative Sciences, 1993, 1995). ICES senior scientists are important policy advisors for the Ministry of Health and the Institute's research has been widely disseminated within the province's hospital system. While not a strict case study of the Institute, my research does suggest some of the ways a group of researchers has come together and produced a knowledge for transformation of health care in Ontario. It attends to some of the more important forms of intellectual production of HSR in the province and the relations of restructuring HSR enables and enters into.

My dissertation research draws upon multiple methods including the close analysis of texts, research interviews, and participant observation at health services research and health policy conferences. Of these, research interviews have proven to be the most significant, grounding much of what I have to say in chapters four and five. In

all, I conducted 22 interviews with 20 individuals. Most of these interviews were conducted in the summer and fall of 1997; twelve were with people who worked at ICES and eight were with people working at a local community hospital. The two remaining interviews were conducted with a representative from the Ontario Health Care Evaluation Network and with a physician/health services researcher not formally connected with ICES.

Following interview strategies associated with institutional ethnography, (see Campbell and Manicom, 1995) I oriented to my interviews as focused conversations. Interview participants were treated as competent knowers of the daily work activities in which they were engaged and interviews were carried out with a view to producing talk about how they went about doing the work of writing, researching, managing and so on. Rather than following a rigid question and answer format, I began interviews with areas of work that I hoped to hear about. A good deal of my own work of interviewing involved attending to the character of our dialogue as it was co-produced. I tried to encourage and support forms of conversation that had as their ground of speech the actual work people did day to day. I also tried to focus conversation around moments of talk that suggested how people's work activities were hooked into extended courses of action.² Thus, for example, I was interested in conversations about the processes through which texts of HSR had entered into the hands of local users, and with discussions of how particular texts of HSR were produced in ways that intended particular forms of use. In trying to

² I thank Liza McCoy for this articulation of what is involved in doing institutional ethnographic interviewing.

produce a dialogue in which peoples' work would unfold in its location within sequences of action, at times, I would invoke conversational moves that 'directed talk' away from speculation about what others did, for example, or away from forms of conversation that relied too heavily on the categories of managerial discourse.

All interviews were semi-structured and typically lasted between 60 and 90 minutes. All were tape-recorded and transcribed in part or full. I followed standard informed consent procedures in my interview research. A sample of the information sheet and consent form used at the community hospital appear as Appendix 2. In an attempt to guarantee the confidentiality of interview participants I have used an institutional pseudonym for interviews conducted at the community hospital. Job titles identify interview participants from ICES only when a number of individuals hold the same position. Other measures used to maintain confidentiality are described in the chapters themselves.

4.0 Chapter Breakdown

The narrative argument of the thesis is carried forward in three successive empirical chapters that form its core. Prior to these, I offer a chapter that discusses the field of health services research as well as the Institute for Clinical Evaluative Sciences. The chapter orients readers to contemporary population-based health services research on variations in health care patterns. It offers a critique of existing scholarly approaches to the analysis of health services research and provides an analytic discussion of the Institute's research activities.

The first substantive research chapter of the thesis, chapter three, deals with the formal discursive character of health services research. In it I use the first principal research document produced by ICES, the *ICES Practice Atlas* (Naylor, Anderson and Goel, 1994), as an empirical ground for exploring the constitutive conventions of HSR. In the chapter, the active character of HSR is explored as the inscriptive practices through which HSR produces governable versions of health care. Drawing on Smith (1999:45-69), I argue that one important way HSR is implicated in the governance of health care is through the constitution of health care practices, in text, in forms that enable and are required by contemporary relations of ruling.

The discussion I offer in the chapter is based on a close textual analysis of the inscriptive conventions of the *Atlas*. My interest is in describing the forms of inscriptive work that provide the textual conditions of a particular evaluative, expository and problematizing way of knowing health care. The chapter contributes to analyses of scientific communication that emphasize the centrality of the co-deployment of prose and visual displays (Lemke, 1998). I argue that such prose/display interfaces are fundamental to the constitution of the *Atlas's* primary discursive object--the health care pattern--of which trends and variations in the rates of surgical practices are of particular significance. I further detail the rhetorical strategies through which patterns are made particular kinds of managerial problems, problems that are inscribed within an intended form of indirect, evidential governance of health care.

In chapter four my discussion moves from the textual surface of the *Atlas* and the inscriptive practices which give it a particular discursive character to efforts undertaken at ICES to promote health services research and biomedical science among practicing physicians. The chapter explores what is referred to within HSR discourse as research transfer. Research transfer initiatives seek to increase the practical use of research findings in a range of work contexts. When focused on clinical medicine, such initiatives typically go under the name evidence-based medicine. Proponents of evidence-based medicine are preoccupied with establishing the medical research literatures as a determinative ground of physicians' clinical decision-making. Their work has become something of a cause célèbre of contemporary health care reform.

My exploration of ICES's research transfer efforts is based on interviews with ICES staff and on participant observation of evidence-based medicine conferences. It is further organized around a text called *informed*,³ a newsletter produced by ICES and targetted at Ontario family physicians. In discussing *informed*, I make a case for understanding contemporary efforts to remake medicine in the name of science as efforts at governing reading. The particular textual configuration of *informed* is made in relation to specific ways of problematizing both the relationship of science and clinical practice and the nature of physicians' routine reading practices. *informed* is further organized as a translation initiative that reconstitutes scientific discourse in terms that are deemed clinically relevant. *informed*, then, demonstrates ICES staff and researchers at work

³ The title of the newsletter is not capitalized in the original.

intervening in physicians' work/text relations. Their production of *informed* aims to scientize medicine by making biomedical literature into a form that physicians might enjoy reading and find clinically useful. My discussion of the newsletter illuminates a text-based governing practice executed as the social organization of interpretation.

Chapter five moves beyond work going on at ICES to consider how HSR is implicated in governing practices as it is drawn upon in locally enacted ways of knowing and transforming health care services. In the chapter, I explore the knowledge making practices of ICES at their intersection with a care pathway initiative used to reform and standardize hospital care. Drawing on interviews carried out with people working in the cardiac care division of a community hospital, I offer an analytic description of how an ICES working paper was used in processes of transforming the care received by patients who have had heart attacks.

Overall, the chapter opens up for view the complex world of textually-mediated relations of hospital management. Drawing on my interview research, I argue that health services research is productive in local settings of reform as an evidentiary resource used to respond to the problem of managing physicians' involvement in hospital reform. Most accounts of clinical standardization emphasize managerial control over physicians and the curtailing of their professional autonomy. On the basis of my interview data, I offer a contrastive analysis, one that describes the organization of physician governance at the community hospital as a delicate text-mediated technology of enlisting their participation in the pathway initiative.

The chapter raises questions about how research documents are used in practical settings of managerial work. Once again arguing from my research data, I emphasize that HSR ‘comes alive’ at the hospital through intertextual relations of problematization of cardiac care. More specifically, my discussion of how people engaged with the ICES working paper offers an analysis of the textual mechanics through which patient care is made observable as inefficient. Here the chapter speaks to my discussion in chapter three of the comparative textual mechanics of the *Atlas*, describing how visual displays of standardized numerical length of stay data for heart attack patients are mobilized by actual readers of HSR in ways that produce local care as inefficient and open to remedy by an initiative such as a care pathway. Moving away from an analytic framework privileging an individualized reader/text relation, I draw on Smith (1990a:221-224) to argue that the use of the report is best understood as a socially organized discursive practice, one shaped by new relations of knowledge and accountability taking hold at the hospital.

As my chapter outline suggests, the primary rhetorical character of the thesis is explicative. My dissertation offers detailed analytic descriptions of institutional relations that foreground how HSR enters into new ways of thinking about and managing health care services. Made in relation to questions about the relation of knowledge and governance, discourse and action, the thesis charts a mode of inquiry of HSR that contrasts with the main applied thrust of much social science research on health care.

As I discuss in chapter two, the most common textual presence of health services research within social science literature is as a conceptual resource, rather than as an explicit object of analysis. Such forms of applied social science do not pose questions of health services research, but draw on its conceptual apparatus in parallel efforts to problem-solve one health care crisis or another. My own work is made as a countervoice to such forms of applied scholarly engagement with HSR. I do not want to remedy problems of cost escalation in health care or otherwise engage in an analysis of repair.

Instead of formulating a sociology *for* health services research, I want to put forward a sociology *of* health services research. The purpose of such an endeavour is not simply to colonize yet another object of analysis for sociology, but to reflect on how forms of health science are a part of the way health and health care are governed. The project is not one that asks how to make health care less costly or more efficient, for example, but that explores how a formal discourse of knowledge shapes ways of knowing and acting on inefficient health care. As developed in my dissertation, it is a program of inquiry that attends to some of the mundane practices through which HSR is bound up in projects of evidential assessment and transformation of medical care.

Chapter Two

Orientations

1.0 Introduction

Before developing my empirical analysis of HSR and text-mediated relations of health care reform, some orienting remarks about the research field and the Institute for Clinical Evaluative Sciences are in order. Neither ICES nor health services research is likely well-known outside of health sciences and policy circles. In order to aid readers' consideration of later chapters of the dissertation I offer here a discussion of the nature of health services research and the main forms of it produced at the Institute.

The chapter begins with a discussion of the field of health services research. Through an autobiographical research narrative, I explore some of the key moments that have contributed to my understanding of health services research as a particular kind of knowledge. My discussion explores some of the historical commentary on the development of HSR as a research field. It also outlines features that distinguish contemporary health services research, including its applied and multidisciplinary character and its emphasis on the assessment of population-based patterns of health care.

In the next section of the chapter I offer a brief review of the small body of scholarly literature that addresses health services research as a primary object of analysis. My discussion includes commentary on the possibilities and limitations of political economy approaches to the critique of HSR. It further suggests some of what specifies the analysis of HSR that I make in the dissertation. To close the chapter I draw on

research publications, sources from the secondary literature, and my research interviews to offer an account of the research activities of the Institute for Clinical Evaluative Sciences. While ICES produces various forms of health services research, the core of its work is research on variations in aggregate medico-statistical events. I suggest some of the character of this work, the principle vehicles of its dissemination, and briefly explore some of the relations that organize its production.

2.0 Health Services Research--What Is It?¹

I became interested in health services research long before I knew of its formal existence. I remember years ago reading newspaper articles on health care that I found peculiar. I still have the clippings I took then; scratches, circles and underlining mark the prose that caught my attention, much of it to do with topics like unnecessary surgical procedures and performance ratings for hospitals. It didn't take long for me to realize that there was a good deal of talk going on about the inefficiencies of Ontario's health care system, about wasteful health care, ineffective medical interventions, and the like. All of this talk seemed important.

I was particularly intrigued by the new conceptual resources I was being exposed to in my casual reading--geographic variations in surgical interventions, hospital stays that were unnecessary or too long, medical practices that had outcomes attached to them. I remember thinking that I had caught on to something. It seemed to me that behind all the discussions about hospitals and health care reform there was more happening than the

¹ This subtitle is taken from Navarro (1993).

transfer of business practices or ‘logics’ to the public sphere. Some knowledge form, some way of construing health care as a particular kind of knowable object appeared to be at work. With time I came to realize that I had indeed encountered the discourse objects of such a knowledge, one that I later learned to call health services research.

Understanding that a more or less coherent form of expertise called health services research exists as such was a formative moment in the development of my dissertation research. It was a complex process of ‘coming to know,’ a mixture of happenstance and investigation that took me from reading ICES material, to attending conferences, to discovering a broader HSR literature. Through these occasions of reading and observation, I encountered a teeming world of textual and discursive forms only traces of which were visible to me in my newspaper reading. I learned about the discursive practices that mark out a knowledge form and came to understand something of its historical and institutional development. I also came to understand health services research as a knowledge organized around the assessment of health care practices. Let me take you through some of how all this occurred.

2.1 Early Encounters with Health Services Research

Getting a conceptual hold on health services research is no simple matter. Disputes about the nature of health services research have been a recurring feature of practitioners’ self-justificatory efforts since the term first became widely used in the United States in the 1960s. The methodological practices and research objects of health services research are diverse, making it difficult to speak in a facile way about an

internally homogenous HSR. The field is also multidisciplinary. Health services research groups together the conceptual and methodological resources of a variety of applied disciplines such as health economics, medical sociology, epidemiology, statistical science and management studies (Shortell, 1997; Pittman, 1995; Fox, 1991).

One important and early research experience that contributed to my understanding of HSR was my encounter with the *ICES Practice Atlas*, a document I explore in detail in the next chapter. In the *Atlas* I encountered a highly applied, population-based knowledge of regional and temporal variations in surgical practices, lengths of hospital stay and other medical events. Here was a document that offered a particular way of knowing health care, that constituted health care as a patterned, numerically-based terrain and that posed questions of its effectiveness on the basis of the observance of variations.

The many references included in the *Atlas*--to research on the appropriateness of hospitalization in pediatric hospitals (Gloor et al., 1993), to work on regional variations in the treatment of breast cancer (Farow et al., 1992), and to research on the lengths of stay and outcomes of surgical practices (Cleary et al., 1991) among others--suggested that the *Atlas* was not a unique text. Other researchers were doing related and similar work; the *Atlas* itself gestured to a body of inquiry of which it was a part. I came away from reading the *Atlas* with an inchoate understanding of health services research as a characteristic way of knowing health care put forward in various sites, of which the *Atlas*

was one instance. This developing understanding of HSR was reinforced by my attendance at health policy conferences.

2.2 Attending a Conference or Two

The use of conferences as a research site has been suggested as one means of shifting the site and topical focus of ethnographic research on science beyond the laboratory-based construction of facticity. Conferences have also been recommended for the access they provide to research communities and, thus, to some of the processes through which scientific discourses are reconstructed and circulated (Hess, 1992). For the most part, I attended health care policy and research conferences that featured presentations by ICES scientists or that were sponsored by the Institute.² These were moments that opened up to view a social world of health care research activities, ways of talking, forms of research and their presentation, relationships between producers and users of scientific information, institutional sites of knowledge making and so on.

They were also moments when I first encountered the term health services research. Some of the advertisements, pamphlets and other literature describing the

² The conferences I attended as part of my dissertation research included: "International Symposium on Health Management," McMaster University, Hamilton, Ontario, November, 1994; "Working with the Evidence: Turning Evidence into Practice," Ontario Health Care Evaluation Network, 4th Annual Symposium, Toronto, November, 1996; Annual Convention, Ontario Hospital Association, Toronto, Ontario, November, 1996; "Evidence-based Clinical Guidelines; Making them work for the Decision Maker," London Health Sciences Centre, London, Ontario, March 1997; "Third Annual Health Policy Conference: Integrated Delivery Systems: Why the Rush to Judgement?" Toronto, Ontario, March, 1997; and "'The Party of the First Part...' Contracting in Health Care," Centre for Health Economics and Policy Analysis, 10th Annual Health Policy Conference, Hamilton, Ontario, May, 1997.

conferences used the term to designate what the meetings were about. At the conferences themselves, I entered an active world of policy deliberation and artful scientific representation grounded in a form of knowledge that was being called health services research and that reproduced much of what I had encountered in the *Atlas*. Many of the conference presentations I attended and the posters I read called for the use of research evidence in planning and delivering health care services. Much of the research posed questions about the performance of hospitals and of health care systems as a whole, recommending or engaging in practices of assessment of health care patterns in ways similar to that found in the *Atlas*. I had come upon a name for what I had read in the *Atlas* and seen traces of in newspaper articles. There were people 'out there' who produced a knowledge form known as health services research.

2.3 Exploring the Health Services Research Literature

With a new term in hand, I began to explore the literature. I discovered books that discussed and reviewed HSR as well as journals that collected instances of it. Reading work on health services research as well as examples of it brought to light the range of research that constitutes the field, as well as some of the social relations that help organize its contemporary form. It also suggested the value of thinking about HSR as an enterprise historically located within disciplinary efforts to render health care administratively knowable.

Academic journals dedicated exclusively to the publication of health services research are one of the most important vehicles for its dissemination. Three of the most

important of these are *Medical Care*, *Health Services Research*, and *Inquiry*. All were established in the 1960s, suggesting that HSR began to emerge as a coherent and distinguishable field of investigation at this time (Institute of Medicine, 1995:28; Bice, 1980). Health services research is also routinely published in clinical journals such as the *Canadian Medical Association Journal*, the *New England Journal of Medicine* and in management journals such as the *Journal of Health Care Management*.

Recent contributions to *Health Services Research*, the official journal of the Association for Health Services Research, provide some indication of the kind of work being done in the field. At the time of writing, the past two issues of the journal included articles of the following sort: a report of survey research on the financial performance of rural hospital networks (Chan, Feldman and Manning, 1999), a study exploring the relationship between sociodemographic variables and the use of drug treatments among people with HIV disease (Smith and Kirking, 1999), an assessment of the quality of primary care practice in a large HMO (health maintenance organization) (Grumbach et al., 1999), a report of the results of a randomized clinical trial testing the impact of a community care model on inpatient hospital service use (Salkever et al., 1999) and a discussion of how diagnostic and demographic variables can be used to develop predictive models of outcome for patients in mental health outpatient treatment programs (Hendryx et al., 1999).

Even this small grouping of work points to some of the characteristic features of HSR. As the many efforts made in the literature to delineate its specificity make clear,

(Flook and Sanazaro, 1973; IOM, 1979; 1995, DeFries, 1989; Crombie, 1996; White et al., 1992) health services research does not designate a specific discipline, but an area and programme of empirical inquiry. Health services research is not clinical research proper, but research into the delivery of clinical services (Crombie, 1996). The topics it addresses are wide-ranging and include such issues as the structure, processes, and organization of health care services, their use, quality and relationship to health status, access to services, the efficiency and effectiveness of health care services and the uses of medical knowledge (Crombie, 1996; Institute of Medicine, 1995).

Health services research is further distinguished by its highly applied character (White et al., 1992). Health care comes to be known through HSR as a practical, actionable object, something to be known not through philosophical or theoretical reflection, but as an object of a practical rationality that would seek to change or improve it. The field's applied character and engagement of methodological and conceptual resources from a range of disciplines further make for blurry boundaries. Among other commentators, the Institute of Medicine (1995:20) notes that it can be difficult to distinguish the field of health services research from "arenas" such as health care management and health policy-making.

Blurred boundaries and multidisciplinary notwithstanding, current work in health services research has an internal consistency that makes it easily recognizable. Much of the contemporary work is population-based research that engages statistical methods to address applied questions about medical services. Health services research

traffics in aggregate data sets made available by the installation of large-scale administrative databases and computing facilities in health care sectors in the years leading up to the 1970s (Andersen and Mooney, 1990). It has a strong numerical base. In addition, the field's sensitivity and contribution to health policy concerns reinforces forms of research that focus on the performance, quality, effectiveness and efficiency of health care services.

2.4 Health Services Research as an Evaluative Knowledge

A careful exploration of the relations that produce the forms of intelligibility of health care typical of contemporary HSR is beyond the scope of this dissertation. Scholarly historical analyses of how health services research has come to take the form it does, have yet to be written. The commentary on the development of HSR that does exist has been written primarily by U.S. health services researchers. For the most part, it suggests a growth in HSR that proceeds as a more or less uninterrupted maturation and refinement of capacities, knowledge and techniques (Fox, 1991; Ginzberg, 1991; Flook and Sanazaro, 1973).

A particularly common rhetorical device of such accounts is the naming of pioneers or antecedents of HSR, most often in the figures of William Petty, William A. Guy, Florence Nightingale and Avery Codman (see Paul-Shaheen, Clark and Williams, 1987; White et al., 1992; Thompson, 1981), from which HSR springs forth as an increasingly sophisticated set of efforts to evaluate health services. Commentary of this kind is characterized by narratives of progress and improvement. It tells a story of the

consolidation of HSR through accounts of its funding base, the establishment of foundations and professional associations, an expansion of research and journal activity, a growing sophistication of methods, a diversification of the field's areas of study and an increase in its policy relevance.

More theoretically interesting than standard historical narratives of progress is the attention paid in the literature to HSR's development in relation to state concerns about health and health care. HSR has been generally understood as a response to state demands for a better understanding of how health care services are "organized, financed and delivered and with what consequences" (IOM, 1995:25). Health services research follows upon problematizations of the health of populations, but also of health care services. It develops alongside and contributes to its object. As health care services expanded and became more complex, HSR emerged as a site for systematic inquiry about 'health care systems' and practices, how they contribute to health and what makes them costly. In respect of the United States, the problematic of cost is offered as the primary impetus behind the development of health services research. Both Ginzberg (1991) and the IOM (1979), for example, suggest that the emergence of HSR as a coherent field of research in the 1960s obtained from the U.S. federal government's increased role in financing health care services and its interest in reducing rising health care costs that followed the introduction of Medicare and Medicaid.³

³ Tracing the development of HSR in Canada would need to take into account early efforts at the systematic inquiry of health care services undertaken for the Hall Commission on universal health insurance and for later provincial commissions and task forces on the costs of health care services. For a review of some of these initiatives and

Of course, health services research is about more than a simple reflex of health care cost concerns or other state policy interests. Its development is a matter of the coalescing of forms of rationality and of disciplinary techniques and resources in a coherent project for knowing health care. Its distinct forms of intelligibility of health care arise out of the convergence of developing modes of knowledge and health science--of biostatistics, epidemiology, economics, and so on. Understanding HSR in ways not overdetermined by state practices or given to the march of progress involves foregrounding its development as a relatively distinct way of knowing health care. It also involves understanding health services research as organized within relations of governance marked by the significance of numerically-based forms of expertise for interpreting, directing, and administering social practices (Rose, 1991).

Work on the origins of health services research can aid such an understanding by locating it within a trajectory of evaluation-based inquiries of medicine and health care. Codman and Nightingale certainly put forward unique projects located within particular social, political, institutional and disciplinary relations and distinct forms of medical practice and concepts of health. Thinking about HSR in relation to them, however, brings into view the kind of knowledge it is. Health services research does not simply reply to questions posed by the State. Nor is it simply a research field that documents features of the delivery of health care services. Health services research is one of a number of ways in which medicine and health care are brought into thought as they are

their reports see Mhatre and Deber (1992).

problematized in different historical moments and under specific administrative gazes. It is an evaluative knowledge, a social practice that enters into remaking health care services and that is thus implicated in what it describes.

3.0 How Has Health Services Research Been Thought About?

Since its consolidation in the 1960s, health services research has enjoyed considerable institutional success. Professional health services research associations, journals and granting bodies have been established. In university settings, the field is now routinely taught in graduate programmes in health policy, administration, clinical epidemiology and public health (IOM, 1995). Under the aegis of the problematic of health care costs and their containment, health services research has also been installed as the primary intellectual and justificatory base of contemporary health care policy. Witness, for example, the report of the National Forum on Health (1997), one of the most important health care policy documents produced in Canada in recent years. In calling for the assessment of health care outcomes, in recommending the establishment of accountability indicators for health care programmes, and in its concern for geographic variations in health care practices, the report recommends a programme of health care reform conceptually coordinated by many of the principal discourse objects of HSR.

In addition, in Canada, health services research institutes funded largely by provincial governments and committed to producing knowledge about the effectiveness,

efficiency, and appropriateness of health care services abound.⁴ Health services research institutes and health services researchers are linked one with another and with the public and private sectors through HEALNet, established in 1995 as one of Canada's Networks of Centres of Excellence. Most recently, in 1997, the federal government committed \$65 million to help establish the Health Services Research Fund, administered by the Canadian Health Services Research Foundation.

Given the considerable popularity and institutional success of health services research both in Canada and elsewhere, one might expect an established scholarly inquiry of the relation of expertise, knowledge, discourse and health care restructuring processes to have formed around it. Unfortunately, this has not been the case. The applied character of much social research on health care is such that the most common textual presence of HSR within the literature is as a conceptual resource rather than as an explicit object of analysis. Much of this sort of work is done by social scientists who, while not engaging in studies of medical outcomes, variations in medical practices, or other formal HSR initiatives, draw on its named or unnamed premises to formulate policy-oriented assessments of health care reform (see Chappell, 1993; Evans, 1992). In so doing they give shape to a technical narrative of health services research, one that

⁴ These include The Institute for Clinical and Evaluative Sciences in Ontario; The Centre for Health Services and Policy Research, University of British Columbia; The Manitoba Centre for Health Policy and Evaluation; Saskatchewan's Health Services Utilization and Research Commission; The Centre for Health Economics and Policy Analysis, McMaster University; The Population Health Research Unit, Dalhousie University; The Institute for Health and Outcomes Research, University of Saskatchewan; and The Centre for Health Evaluation and Outcomes Sciences, St. Paul's Hospital, Vancouver.

understands its relationship to health care restructuring in terms of a putative capacity to remedy problems of cost escalation.

3.1 Scholarly Analyses of Health Services Research

Fortunately, policy-based narratives that constitute HSR as little more than a technical fix for current health care woes, or that try to deflate assertions about its policy relevance (Evans, 1990) do not exhaust the currently available frameworks for understanding its political significance. While far from well-developed, a scholarly discussion that treats HSR as a central object of analysis has begun to appear in the literature. This discussion departs from the scientistic claims of health services researchers and the relevances of policy-based discussions. It begins to pose questions about health services research and generally avoids its representation as a neutral technique for guiding health care restructuring.

Much of this discussion has taken place in the United States where HSR is well-developed and closely tied with the development of managed care (Belkin, 1997). Political economists and others working in the United States have begun to write in ways that treat seriously the character of health services research as a knowledge form. The primary analytic framework organizing their consideration of HSR is the critique of professional power. Tanenbaum (1994, 1996), for example, offers an immanent critique of claims made about the relevance of outcomes research for clinical and policy decision-making. While arguing that clinical decision-making is fundamentally interpretive and therefore irreducible to research findings, she suggests that the political significance of

outcomes research rests in the relations through which it is epistemologically privileged over what practicing physicians know.

Concerns about how HSR can over-run the judgement of individual practicing physicians are also raised by Belkin (1994, 1997). For Belkin, the ascendancy of HSR is but one expression of a “technocratic wish.” Belkin describes the technocratic wish as a “history of how democratic societies rely on an objectivity of standardized measures to broker disagreement, rather than rely on individual expert judgment” (1997:511). Drawing on the history of science and medicine, he raises questions about how authority over physicians is justified by processes through which knowledges that rely on “objective” measures come to be authorized and considered “truthful.”

3.2 Political Economy Approaches

Political economy perspectives have also been drawn upon by work that treats HSR as a knowledge form deserving of explicit critique. Like the analyses of Tanenbaum and Belkin, work on health services research informed by political economy is framed by questions about medical autonomy (see Rappolt, 1996). At the same time, it seeks to locate HSR within a broader social, political and economic context of health care reform and makes suggestive remarks about its association with related forms of measurement, calculation and evaluation. One of its more distinctive features is a stance toward health services research that emphasizes its character as an objectifying discourse. Here, the tendency is toward analyses of HSR that rely on a negative theory of power (Foucault, 1979; 1980a). By negative theory of power I mean, following Foucault’s

critique of it, ways of conceptualizing power as a repressive, constraining, and limiting quantity. The recent work of Navarro (1993) and Frankford (1994) suggests some of the possibilities and limitations of this form of critique of HSR.

Navarro offers an analysis of the nature of HSR based on his response to an important anthology (White et al., 1992) that draws together previously published health services research dating from the years 1913 to 1991. Navarro's critique of the text and of HSR more broadly is framed within a social determinants of health perspective. He notes that the relatively exclusive focus of health services research on clinical medicine prevents an examination of the broader relations that shape both the delivery of health care services and the nature of health problems faced by most individuals. He further argues that its emphasis on "conjunctural details" to the exclusion of the structural determinants of health and health care serves to reflect and reinforce the interests of the "health policy establishment" (1993:1).

In a more complex argument,⁵ Frankford, (1994: 784) likens health services research to a "new form of Taylorism in which data collection and analysis will supposedly lead to optimal processes of diagnosis and treatment." Drawing on the critical theory of Habermas, he critiques HSR as a form of scientism and economism. For Frankford, health services research enters into contemporary relations of health care reform as an objectifying discourse. In his view, by representing reality as consisting

⁵ Frankford notes certain productive features of HSR including its promotion of the conception of a cost crisis in health care and its furnishing of a "data-driven" language that reinforces the assessment of technologically-based clinical medicine.

only of “phenomena that can be quantified and measured” HSR operates in ways that obscure the fullness of human activity in relation to health and the body (1994:774).

3.3 Toward an Alternative

The analyses offered by Navarro and Frankford shed light on an important property of discourses of knowledge—how they constrain or limit possibilities of thought. Their discussions are suggestive of how HSR negates the complexity of people’s interactions with health care providers, by textually transforming them into a set of standardized and objectified rates and averages of medical events.

At the same time, there are problems with how Navarro and Frankford treat health services research as a knowledge form implicated in health care restructuring. For example, the use of Taylorist metaphors to describe health services research is at risk of projecting a history and set of social relations unique to industrial capitalism onto contemporary health care developments that have a distinct development and social form. In the American political economy literature, Taylorism appears as a common rhetorical device in discussions linking population-based, medico-administrative data and control of the medical profession (Salmon et al., 1994, Feinglass and Salmon, 1994).

However, the social relations through which contemporary medical practice has become an object of investigation and constructed as a site of inefficiency and ineffectiveness, and the work practices that organize its assessment are different from those that shaped Taylorist scientific examination and management of industrial labour processes. While both forms of assessment share in the use of statistical and calculative

techniques, the contemporary evaluation of medical practice is concerted with the construction of the patient as a rational consumer and the furnishing of a knowledge for use in government, hospitals and other sites of professional work to manage new problems of inefficiency. This is not the same process as the monitoring of labour that appeared during the heyday of industrial capital.

Inscribing the social character of HSR in terms of its support of “interested positions” as Navarro does, also has analytic shortcomings. Health services research is not part of a master plan of rule. Its support of political interests cannot be read off the surface of its texts. Feminists and midwives, for example, have used data on regional variations in hysterectomy rates as part of a challenge to the organization of health care services that is not contained by the relevances of cost-reduction (see Ferris and McMain-Klein, 1995).

In addition to missing the contradictory uses of health services research, the perspectival approach to knowledge that grounds statements of how HSR supports this or that interest limits the analytic terrain of the category ‘social.’ The main problem is how an inquiry concerned with the specificity of HSR and the significance of its calculative practices for shaping the way health care services are understood and organized is disaffirmed by such approaches. Understanding HSR only as reinforcing the interests of a “health care policy establishment” treats health services research in a derivative fashion. It comments on a new way of knowing in ways that expatiate an established scholarly discussion about the relative power of physicians, the state and capital. The

risk of such an analytic strategy is that health services research appears as significant for health care reform only as a resource or tool in a contest for power that is the main object of analysis. Within this analytic framework, the burden of exploring HSR as a practical exercise of power, as an activity that helps order action in health care through people's engagement with its particular configuration of calculative practices, narrative strategies, textual forms and broader forms of intelligibility of health care does not present itself.

But this is precisely what I have tried to do in this work. I am not concerned with health services research as an opportunity to participate in applied analysis of the direction that health care reform should take. Nor am I interested in pondering its policy relevance. Instead, I want to fashion a reflexive inquiry of a knowledge form, an inquiry that pauses to wonder about and explore how health services research, in its particular discursive and textual configurations, is consequential for relations of power in health care. Rather than folding HSR into the existing analytic contour of discussion about health care restructuring, as in its appearance within debates about the professional status of medicine, I want to give it its analytic due.

Treating health services research as a principle object of analysis requires careful empirical investigation of it. One way this dissertation is distinguished from existing scholarly work on HSR is in the sensitivity of its inquiry of the discursive character of HSR and of the text-mediated relations through which it is promoted and used in health care settings. I make few grand statements here that would either lionize or disparage health services research. Instead, I offer detailed discussions of specific texts of HSR and

how they participate in and organize governing practices. I want to emphasize in ways not done before, the significance that the particular textual reality of HSR has for how it is a part of the way health care is being restructured.

4.0 The Institute For Clinical Evaluative Sciences In Ontario

The texts that I address in subsequent chapters of this dissertation have all been produced at the Institute for Clinical Evaluative Sciences (ICES). Many of the research interviews I conducted were with people who worked there. Given the empirical significance of the Institute for my dissertation, some orienting remarks about it are called for. In this section I begin with basic background information about ICES. I then turn to an account of the health services research produced at the Institute. I emphasize the applied and population-based character of the core program of ICES research. I also offer examples of some of the publications produced by ICES scientists and describe the main textual forms for the dissemination of the Institute's research. I close with a suggestive discussion of how ICES research is produced. Here, my remarks focus on relations of state funding, on the relations through which medico-administrative numbers are made, and on the organization of collaborative work forms.

4.1 Institutional Background

The Institute for Clinical Evaluative Sciences is an independent, provincially-funded research institute committed to the production of health services research on Ontario's health care system. Housed in a small building located on the grounds of the

Sunnybrook and Women's College Health Sciences Centre, the Institute was established in April 1992 with funding from the provincial government for a five year period. In 1997, the Ministry of Health renewed its funding commitment to the Institute in the amount of roughly 5 million dollars per year until 2003.

ICES pursues a rigorous program of applied health care research, guided by an agenda focused on the active dissemination of research considered to contribute to the efficiency, effectiveness and quality of medical care in the province (Institute for Clinical Evaluative Sciences, 1993, 1995). Currently, some 90 individuals work at the Institute. They include ICES scientists, most of whom are University of Toronto faculty members trained in medicine and/or clinical epidemiology; research coordinators with a range of backgrounds that include clinical as well as post-graduate training in epidemiology, demography, and quantitative research methods; research transfer staff whose work focuses on the communication and dissemination of ICES research; biostatisticians; computer programmers; administrative staff; research fellows and graduate students.

ICES is one of the most important centres for the production of applied health care research in the province, if not the country. The Institute is well known in sites of health care policy development and delivery; its health services research circulates widely and is taken seriously. Among the Institute's senior scientists are close advisors to the Ministry of Health and Ontario's Health Services Restructuring Commission.

4.2 Health Services Research at ICES: Forms of Inquiry and their Textual Embodiment

While I did not carry out a formal participant observation or case study of ICES, I did meet with and interview a number of the people who work there. Many were quite enthusiastic about the work they were doing and the place they were doing it in. A number spoke with excitement about participating in a novel, applied research endeavour. For example, in explaining why she had come to work at the Institute, one of the research coordinators I interviewed spoke about ICES as a

place where there is leading edge thinking being done about not only the type of research we do, but about what we do with it at the end to change the way health care is delivered to people. Not only to make it cheaper...but to give people efficient, effective health care that maximizes their health.

(Research Coordinator 05/97)

The research coordinator's remarks are suggestive of the practical relevances that organize ICES research. Like much other health services research, the Institute's intellectual product is applied knowledge about health care. One articulation of such applied relations of knowledge is "putting research into practice," an important guiding principle of the Institute's work. Not only does it appear as the title of one of ICES's annual reports, it informs the work of ICES research transfer staff and was an often spoken phrase in my interviews with Institute scientists and researchers. Intending practical uses of research is part of what shapes ICES investigators' relationship to their work. It helps organize the research efforts of the Institute's many researchers as a collective enterprise, one marked by the production of knowledge that might guide

policy-makers, health providers and others in their work of organizing and delivering health care services.

The coordinator's remarks further suggest some of the specificities of the type of applied knowledge produced at ICES. At the Institute, making practicable knowledge about health care is not a free for all. Not any actionable knowledge will do. The research coordinator's comments about efficiency and the maximization of health care, however faintly, the privileged location within the Institute's intellectual programme, of research that seeks to know features of health care delivered to populations as a whole.

At ICES, such population-based health services research is largely statistical in orientation and focused on documenting and problematizing patterns of health care. It draws on large-scale databases including those used for epidemiological surveillance of health care (the Ontario Health Care Survey, Vital Statistics, Statistics Canada census information, etc.) and those designed for administrative purposes (the Canadian Institute for Health Information database of hospital discharge abstracts, the National Physician Database, which compiles data from the provincial health insurance plans, the Ontario Drug Benefit Claims File, etc.) to describe and pose questions of regional and temporal variations in aggregate medical events. Among the most popular of such medico-statistical events are rates of surgical procedures, average lengths of hospital stay and rates of readmission.

While work on patterns and variations in health care practices is a mainstay of ICES research activity, it is not the only form of health services research undertaken at

the Institute. In the years since ICES was established, its researchers have carried out a wide range of research studies on many aspects of the organization and delivery of health care and published papers and reports covering a wide range of topics. The Institute has participated in and funded studies of the implementation of clinical practice guidelines such as the Ottawa Ankle Rules (Stiell et al., 1995). ICES faculty have conducted research projects on physicians' prescribing practices (Hux, Levinton and Naylor, 1994) and developed patient decision aides for breast cancer and other health problems (Institute for Clinical Evaluative Sciences, 1997:10-11). They have explored the economic impact of cardiovascular disease (Chan, Coyte and Heick, 1996) and written about the relationship of wife abuse and HIV transmission (Degani, Ferris and Norton, 1997). Methodological work on the use of administrative data in health services research (Hawker, et al., 1997; Cohen, 1993) and on the development of appropriate measures of health outcome (Goodwin and Llewellyn, 1994; Orkin et al., 1993) has been conducted by ICES researchers, as has work on the organization of long term care services (Coyte and Young, 1997) and on the societal factors that relate to differences of access to health care services (Wen, Goel and Williams, 1996; McIsaac, Goel and Naylor, 1997).

These are but a few examples of an impressive body of research carried out by those who work at a highly successful centre for the production of research texts. A recent ICES publication called *In Print* provides a selective listing of some of the more than 500 published journal articles written or co-written by ICES scientists since the Institute was established. They include contributions to a number of the leading health

services research and medical journals. In addition to published research articles, the Institute produces ‘corporate products’ available to the public free of charge or on a cost recovery basis.

ICES research is made available to the public in a number of textual forms the most important of which are working papers, briefing notes, the publication *informed*, and the series of research documents known as the ICES Practice Atlases. ICES working papers are short research reports, many of which are revised for formal academic publication. In chapter five I explore how one such working paper was drawn upon in the reform of hospital care. Briefing notes are short descriptions of ICES research reports written for a lay audience. *informed* is a quarterly newsletter that reconstitutes biomedical and health services research for its physician/readers. It is the empirical focus of chapter four. The Practice Atlases are the most widely recognized and important of ICES’s research publications. They are a showpiece for the Institute’s research on variations and are designed to provide comprehensive overviews of patterns of health care delivery in Ontario. The series includes volumes that focus on specific medical conditions, as well more general volumes that explore a wider range of medical interventions. Chapter three offers a careful examination of the volume that inaugurated the series.

4.3 The Production of Health Services Research at ICES

Of course, behind the pages and pages of research text produced by the Institute are complex forms of work organization, divisions of labour, relations of funding, and of

knowledge production. How ICES research is made is a complex research problem that deserves a separate, detailed investigation. While my discussions with people at ICES addressed the question of how ICES research is produced, they only begin to open up for consideration the complex relations involved. Below, I sketch out some of the funding relations, forms of data production, and collaborative work relations that shape the organization of research at the Institute.

4.31 Relations of Funding

I have already noted that ICES is funded by the provincial government. Scholarly accounts of the formation of the Institute further point to its emergence as part of changes in the early 1990's in the relationship between the state and the medical profession (Rappolt, 1996; Coburn, Rappolt and Bourgeault, 1997). In Ontario, these were marked by new forms of shared responsibility between the provincial government and organized medicine for the management of the health care system. They were realized in early initiatives such as the Scott Task Force on the Use and Provision of Medical Services and were given formal expression in the Framework Agreement between the Province of Ontario and the Ontario Medical Association (OMA).⁶

⁶ The Scott Task Force was established in 1988 and included membership from the OMA and the Ministry of Health. Its mandate was to "examine utilization data for the determination of practice patterns, the development of clinical guidelines and systems for monitoring compliance, technology assessment, and the assessment of factors affecting the demand for medical services (Task Force on the Use and Provision of Medical Services, cited in Rappolt, 1996). Among its many initiatives were clinical and policy studies of lithotripsy, hip and knee replacement, and osteoporosis; the production and dissemination of cholesterol and thyroid testing guidelines; and research on hospital utilization, walk-in clinics, fee-for-service vs. alternative funding mechanisms, and the

ICES was initially established as a research arm of the Joint Management Committee (JMC). A committee of the OMA and the Ministry of Health (MOH), the JMC was established under the Framework Agreement and provided an organizational forum for policy discussions that focused primarily on physician “manpower” management and on the utilization of medical services (Rappolt, 1996: 157-159). Rappolt argues that while there was considerable ambiguity about the role ICES would take, early expectations among MOH bureaucrats and OMA executives were that ICES would produce research toward the development of clinical practice guidelines. These expectations were not realized; while ICES has participated in and supported guidelines initiatives they are hardly the focus of its research activities.

While the JMC was disbanded in the mid-1990’s, ICES continues to produce applied health care research that is funded by the provincial government, even as it seeks to enter into complex relations of health care management involving multiple actors including ministry officials, the Ontario Hospital Association, individual hospital boards, committees, and administrators, practicing physicians, and others. ICES does not simply produce research for use by its funder. At the same time, state funding creates certain pressures and forms of accountability that bear upon the Institute’s work.

misappropriation of OHIP codes (Rappolt, 1996:155-156). Under the terms of the Framework and Interim Economic Agreement, April, 1991, the OMA gained the right to represent and collect mandatory dues from all Ontario practicing physicians (Rappolt, 1996:208). Coburn et al. (1997) note that the Agreement provided the OMA greater input into health care policy through fora such as the JMC. They further point out that in exchange for formal recognition of its bargaining role, the OMA agreed to share the cost of increased utilization of medical services (1997: 8-9).

In a discussion with one of the Institute's senior managers it was made quite clear to me that internally funded research activities and extramurally funded projects that consume ICES resources must meet its mandate. The Institute is enjoined to produce research that is relevant to the contemporary health care policy concerns of the provincial government. It must also do work considered to contribute broadly to 'good management' of the health care system. Beyond that ICES must be 'productive:'

We do have accountability built in.... In order to maintain our funding and to ensure a renewal and to have access to resources we...have to have highly visible products that are not only circulating but are deemed credible and important. And I think all the scientists appreciate that... If we don't have a basic level of productivity we won't, it won't happen.

(Senior Scientist 06/97)

4.32 ICES, Health Services Research and Medico-administrative Numbers

As I mentioned above, ICES meets its research mandate through a focus on population-based health services research and particularly through the study of patterns of health care practices. The Institute emphasizes a program of research on geographic and temporal variations in medical events. This form of research and the numerically-based forms of representation of health care that it proffers, rely on a complex of social practices that produce aggregate, administrative numbers about health care.

The research activities that go on at ICES involve further manipulation of such numbers by biostatisticians and the production of texts that bring numbers and words into relation with one another. While ICES documents clearly have a life beyond the Institute, in hospitals, government offices and other institutional sites where they are

modified and incorporated into still more texts, they do mark an important moment of the assimilation of administrative numbers into report forms and textual genres that circulate widely in sites where health care is delivered, planned and managed. The work going on beyond the Institute that produces the numbers its scientists draw on in making health services research is extremely complex. Let me offer a few remarks that register the significance of the social relations of administrative number-making for the forms of knowledge produced at ICES.

In the health services research literature, the field's reliance on administrative numbers such as those found in the Canadian Institute for Health Information's discharge abstract database (DAD)⁷ finds expression as discussions about the quality and reliability of administrative health care data (Williams and Young, 1996). Health services researchers are concerned with the numerical foundation of their truth claims,

⁷In 1994, the Hospital Medical Records Institute, the MIS Group, the Health Information Division of Health Canada and the Health Statistics Division of Statistics Canada were consolidated within a single organization—the Canadian Institute for Health Information (CIHI). CIHI is responsible for developing, coordinating, and maintaining Canada's "comprehensive health information system." (Health Canada, 1998). Its major activities include developing and promoting data standards, protocols and systems of classification; maintaining and operating 16 national databases and registries; providing analysis tools to assist hospitals in managing patients, health care treatments and facilities; producing reports on hospital utilization trends and variations on the basis of the data it collects. CIHI's Discharge Abstract Database (DAD) collects data on hospital discharges nationally. The database contains clinical, demographic and administrative data on patient discharge including most responsible physician/diagnosis, principal procedure, patient gender, date of birth, admission category, length of stay and so on. CIHI's activities in respect of its DAD help shape a network through which participating health care facilities contribute coded data that CIHI aggregates, classifies and remits in the form of reports on hospital resource utilization that are both facility-specific and that compare like facilities one with another (Canadian Institute for Health Information, 1999).

particularly with its clinical sensitivity. However, when considered from outside their structure of relevance, these methodological anxieties offer something of a glimpse at the artefactual character of HSR.

Concerns about enforcing coding standards and so on suggest how the versions of health care constituted by health services research draw on numbers that themselves have been made up through a complex of work and activity. These activities, which the textual surface of HSR seeks to eliminate from view, include the charting activities engaged in as part of the day-to-day text-mediated organization of clinical work, a host of coding practices through which patient's clinical data is translated into the administrative categories of standardized databases, the generation of classification systems and guidelines and protocols for their use, the collection and aggregation of data in an administrative center (CIHI), and so on.

Drawing attention to the forms of "invisible work" that take place within networks (Star, 1991:33) for the generation of numbers, points to the Institute's location within a particular set of relations. As developed at ICES, health services research is a knowledge form produced through the concerting of clinical, managerial and research-based relations. It is enabled by work practices occurring beyond ICES through which clinical inscriptions are produced, transformed into medico-administrative information, and aggregated, calculated and otherwise worked on at CIHI.

The relations involved are not innocent. When, for example, medical records staff translate clinical inscriptions into the relevant categories of CIHI's DAD they

understand that they are entering the hospital's clinical work into the standard forms of a developing funding technology, one that is being used to reorganize hospital remuneration in ways based on the number and type of cases treated. However, rather than viewing coding practices made with an awareness of their resource implication as a methodological problem for HSR, one might do well to consider how HSR is a way of knowing organized within a text-mediated intersection of clinical and managerial relations. Health services research is a form of knowledge that draws on data whose social relations of production and use accomplish routine medico-administrative practices in health care settings. It is also a knowledge form that reconfigures that data within a social organization of research-based assessment of health care.

4.33 Collaborative Work Relations

The health services research produced at ICES is also made through relations of collaboration. It is a cooperative endeavour made possible by inter-institutional collaboration and an elaborate division of labour internal to the Institute. Many of the research projects undertaken by ICES scientists involve participation on the part of researchers working in other organizations. Some of these individuals are adjunct faculty of ICES, others are not. The University of Toronto Centre for Bioethics, the University of Ottawa, the Arthritis Society, Ontario Division, the Joint Policy and Planning Committee, the Ontario Heart and Stroke Foundation, CIHI, the Canadian Cancer Society, Ontario Division, the Ontario Medical Association—these are but a few of the

many organizations with which ICES scientists have established working relationships as part of conducting their research. Establishing such ‘institutional linkages’ is an important feature of how ICES produces HSR. It is reported on regularly in the Institute’s annual reports and arose in my interviews as part of discussions about how ICES tries to ensure that its work is “put into practice.”

Collaborative work relations within the Institute are also important to the production of its health services research. The basic work organization through which HSR is made at ICES is the research project. Within the Institute, carrying out research projects involves bringing together varied research staff within a division of labour with definite lines of authority. It also involves using management practices for monitoring the progress of ICES research projects, both individually and as a whole.

ICES researchers work together in complex ways that vary from project to project. Roughly speaking, however, projects are typically headed by ICES scientists. As principal investigators, they assume responsibility for projects and are often the primary writers of research reports. Research coordinators, most of whom are women, conduct literature searches, compile bibliographies, administer surveys, conduct focus groups and engage in writing tasks. Technical team members--biostatisticians and computer programmers--produce the statistics that appear as the core findings of ICES research, but do not generally engage in report writing.

At any one time, ICES scientists, research coordinators, and technical staff work on a number of research projects simultaneously, each with a potentially different

composition of research ‘team members.’ As such, part of the work organization at ICES involves establishing managerial practices for matching research coordinators and technical staff who have different skills and ‘personalities,’ with the particular research needs of a given project and with the ‘personalities’ of its principal investigator. It also involves developing reporting procedures for monitoring the progress, costs and staff time used on the Institute’s various research projects. At the time of my interviews such reporting procedures had only been recently introduced at ICES, with consequences that were described as a “culture clash.”

Initially it was a culture clash among the faculty and among the scientists and all the staff.... I don’t know what your research shop’s like but we’ve gone, some of us come from an academic environment where you just work on your own. You did your projects and no one monitored and that’s the environment I’m from. And now we’re working you know, funded by the Ministry and we’re very accountable and becoming more and more so. There’s, its been a difficult transition.

(Research Coordinator 05/97)

4.4 Toward the Next Chapter

This chapter has set the stage for an exploration of health services research as a social practice of health care reform. My central aim has been to provide readers a degree of familiarity with health services research, both generally and as developed at the Institute for Clinical Evaluative Sciences. Thus, I have outlined the population-based character of contemporary HSR, discussed its relationship to earlier forms of health care assessment and explored some of the relations of production of ICES research. In discussing and critiquing scholarly analyses of health services research, I have also tried

to identify the problematics that distinguish my own work. Chief among them is an interest in HSR as an active knowledge form and a concern with the relationship between its textual and discursive configurations and its implication in health care governance.

The next chapter builds on the account of health services research provided here, in an analysis that begins a series of more careful investigations of the textuality of HSR and relations of governance in health care. The remarks I have made so far about the population-based research pursued at ICES provide some indication of its discursive form. The health services research made at ICES is applied, it focuses on patterns of health care, and it is statistically-based.

Like other discourses of knowledge it is not innocent. Health services research makes truthful statements; it seeks to persuade its readers to a version of the problematic nature of health care services and what should be done about it. In the next chapter I flesh out the rhetorical character of health services research. Drawing on a text analysis of the *ICES Practice Atlas* (1994) I direct careful attention to the formal discursive properties of population-based HSR. By carefully exploring the textual surface of HSR, I want to show readers what kind of knowledge it can be. Most importantly I want to examine the constitutive conventions through which it produces governable versions of health care.

Chapter Three

The Constitutive Conventions of Health Services Research

3.0 Introduction

The contemporary governance of health care involves more than efforts to cut health care costs, more than the introduction of market relations in the delivery of health services, more than shifts in the deployment of resources within health care. It involves important and inchoate transformations in how health and health care are understood; the development and circulation of new knowledges beyond biomedicine that are drawn upon in governing strategies that concern matters of health. These knowledges ground new initiatives for securing health and new ways of planning, managing and making judgements about health care services.

In a recent article, Robin Bunton (1998) argues that systems for the care of ill people are being remade as systems for monitoring the health and welfare of populations. Health services research is an intellectual technology that figures prominently in this transformation. The broad brush strokes of the previous chapter indicated certain prominent discursive features of HSR, including its focus on variations in medico-statistical events. This chapter extends the earlier one by drawing closer attention to the form of medico-administrative rationality proffered by population-based health services research on variations in health care. By medico-administrative rationality I mean the

complex of concepts, objects of discourse and intellectual procedures that form a coherent system of thought about the nature and reform of health care.

The purpose of the chapter is not simply to catalog the discursive properties of the peculiar rationality of health services research. Rather, it is to make an argument about one form of text-mediated governing practice that HSR is bound up with. Following other work that accords discourse a productive or generative capacity (Smith, 1999; Foucault 1980, 1982; Miller and Rose, 1990; 1994; Barry, Osborne and Rose, 1996), I argue that HSR is implicated in relations of governance through its constitution of a particular version of health care. Health services research does not simply report on health care practices in an unmediated fashion; it enters health care into thought as an object of managerial reflection. Health services research participates in and enables relations of rule in health care by ‘producing’ health care in governable terms.

The chapter is further organized by an emphasis on the modes of knowing health care proffered by health services research as vested in the texts of which it is constituted. Health services research inscribes health care within relations of governance that are produced and reproduced as its readers operate its conceptual practices. As such, my concern is not only to make claims about the productive capacity of expertise, but to explore the inscriptive mechanics that underwrite it.

The chapter engages in a particular type of text analysis. Like other substantive chapters of the dissertation, my discussion is focused on a particular document and engages forms of analysis sensitive to textual form and relations of textual engagement.

Unlike later chapters, however, my present remarks do not empirically explore how HSR actually helps organize new ways of acting within and upon health care in a managerial way. These are matters dealt with in chapter four, which addresses how HSR is reformulated at ICES in efforts to encourage evidence-based medical practice and chapter five, which examines how local hospital managers take up health services research in their efforts to restructure patient care.

Instead, the form of analysis I carry out here is preoccupied with textual surface. Following Smith (1999:45-69), I want to explore the constitutive conventions of health services research. My interest is in the particular inscriptive practices that produce health care in a form that permits and is required by contemporary practices of planning, managing, and restructuring health care services. My discussion is empirically based on a document produced by ICES scientists called *Patterns of Health Care in Ontario: ICES Practice Atlas, First Edition* (Naylor, Anderson and Goel, 1994). It contributes to my earlier discussion of how HSR at the Institute is produced, by drawing attention to forms of inscriptive work--writing, organizing data visually and connecting prose with graphical elements--that both constitute health care as a medico-administrative object and that provide the textual conditions of a particular evaluative and problematizing way of knowing health care.

The constitutive conventions of medico-administrative rationality that I investigate ground HSR as an expository and problematizing discourse. They include ways of making up health care as kinds of patterned objects by interrelating forms of

prose with specific visual organizations of numerical data. Comparative gestures such as those that problematize local health care patterns by relating them with patterns observed in other jurisdictions are a further discursive mechanics that ground the *Atlas's* medico-administrative rationality. Another convention is the deployment of evidence in efforts to explain variations in health care in ways that draw on the discourse object 'practice style.' The articulation of an indirect strategy for the evidential governance of health care delivery is a further discursive feature that grounds a managerial stance toward health care. In concert, such ways of inscribing health services research create health care as an object of a particular medico-administrative or managerial rationality.

Rather than isolate such conventions in an analysis that disengages them from the text, I have tried to fashion a discussion that preserves the form of their rhetorical deployment in the *Atlas*. This has involved basing my analysis on a small section of the *Atlas* entitled "Cholecystectomy"¹ which is reproduced as Figure 1. This approach is in keeping with various textual analyses of scientific knowledge that offer careful readings of small portions of published research (Bazerman, 1988; Lemke, 1998; Lynch, 1990). Reproducing the text under investigation presents certain analytic advantages. It makes

¹ A cholecystectomy is the surgical removal of the gall bladder. An open cholecystectomy involves the gall bladder's removal through a major incision made in the muscle of the abdominal wall. A laparoscopic cholecystectomy is performed with surgical instruments and a laparoscope with a mounted camera that are inserted into small puncture incisions made in the abdomen (Marshall, 1991). The authors of "Cholecystectomy" do not distinguish between the two procedures. Cholecystectomies are performed for patients who develop complications arising from cholelithiasis (gallstones) (e.g. severe pain, inflammation, cancer, jaundice) (Marshall, 1991). For a further clinical discussion of cholecystectomy see Figure 1.

Figure 1

“Cholecystectomy.” *ICES Practice Atlas* (1994), p. 94-97.

Cholecystectomy

Gallstone disease is one of the most common medical conditions in developed countries. Surveys of general populations have found that at least 25% of white women have gallstones,⁵⁶ but more than 50% of those surveyed were unaware that they had them (“silent” gallstones).⁵⁷⁻⁵⁸ The causes of gallstones are still poorly understood. Increased body mass index,⁵⁹ taking estrogens or oral contraceptives,⁶⁰ rapid weight loss⁶¹ and possibly high-energy diets⁶² promote gallstone formation. Gallstone disease is more common among women, especially those of middle years, and aboriginal populations.⁶³

Expert panels agree that an operation is appropriate for patients with complications such as acute cholecystitis, obstructive jaundice or cancer of the gallbladder.⁶⁴⁻⁶⁵ As well, the panels agree that surgery is inappropriate for chronic gallstone disease if the patient has no symptoms because the rate of biliary pain developing is about 1% to 2% per year, decreasing over time.⁶⁶ Nonspecific symptoms such as heartburn, indigestion, nausea and vomiting were also considered not a good indication for surgery.⁶⁴⁻⁶⁵ One study followed up patients with these symptoms and found that 1 year after surgery, 30% to 50% of them had persistent vague symptoms and that one-third suffered from abdominal pain.⁶⁷ The proportion of patients who would have remission of symptoms without surgery has not been studied.

Analysis of Cholecystectomy in Ontario

The age-sex adjusted cholecystectomy rates were 316/100,000 in 1981/82 and 335/100,000 in 1991/92 (Exhibit 5.20). For both sexes, the rates remained fairly stable, with a slight decline from 1981/82 to 1988/89. Thereafter, there has been a steady increase in rates from 1988/89 to 1991/92. The age-adjusted rates for men have been essentially unchanged over the 11-year period; for women, the rates have seen a definitive rise after 1988/89. Rates in women fall after age 75, whereas those in men level off. Rates of surgery are accordingly higher for women than men at all ages except the very elderly.

Geographic variations

As suggested by the narrow range across quintiles on the map (Exhibit 5.21), cholecystectomy rates are high, but the degree of regional variation is smaller than for many other procedures. Although 15 regions were significantly above and 7 were below the provincial average, even relatively small differences from the provincial average are likely to be statistically significant because of the high numbers of procedures (Exhibit 5.22).

Kenora and Rainy River had the highest rate of 492/100,000; the lowest rate, 220/100,000, was in the City of Toronto. The ratio of highest to lowest rate for Ontario in 1989/90-1991/92 was 2.2. This ratio is low compared with that for other procedures, but the absolute difference in rates between the highest and lowest rate region is large (272/100,000). Using other statistical measures, we would assess the overall variation in cholecystectomy rates as moderate (Appendix A5.1). Over time, the area rates appeared stable; the correlation for 1985/86-1987/88 county rankings against the most recent period (1988/89-1991/92) was 0.76.

Comment

The rates of cholecystectomy have declined since the 1970s, were stable in the early 1980s and have begun to increase in the 1990s. Our study has confirmed previous findings of higher surgical rates in women than in men and has shown a moderate degree of variation across counties. The highest rate was in a remote region with a substantial aboriginal Canadian population. However, high areas were also seen in counties with low aboriginal populations (e.g., Lambton, 445/100,000).

Data from the 1960s and 1970s showed that the rate of cholecystectomy in Canada was five times higher than that in the UK.⁶⁸ More recent data suggest that these international differences are persisting. The rates in other countries were 8.2/10,000 in Denmark in 1977-85,⁶⁹ 7.7/10,000 in Israel in 1986,⁷⁰ 2.2/10,000 in Sweden in

1982⁷¹ and 9.6/10,000 in Scotland in 1981,⁷² compared with 26/10,000 in Quebec in 1985-88⁷³ and 27/10,000 in Ontario (for all ages).

The reasons for the three- to four-fold differences between Canada and Europe are not known. Some of the variation might be explained by ethnic differences or use of abdominal ultrasound or x-rays for other purposes that reveal silent gallstones. At least part of the issue is different practice styles owing to uncertain indications for gallbladder surgery. Expert panels have been convened to set criteria for cholecystectomy.^{64,65} With the panel's recommendations, the records from four Israeli hospitals for 1986 were reviewed for appropriateness of cholecystectomy;⁷⁰ 29% of cholecystectomies were performed for less than appropriate reasons, and 17% to 36% were judged inappropriate. In a similar study in the UK, 41% of cholecystectomies were deemed appropriate when evaluated with criteria set by a panel comprising a mixture of specialists; appropriateness ratings increased somewhat, to 52%, with criteria set by a panel consisting solely of surgeons.⁶⁵

Further study is needed to determine why the Ontario rate of gallbladder removal has been consistently higher than European rates. As a starting point, comparisons of the indications across countries and possibly reviews of surgical records in the light of current accepted indications would be useful. Although the risks of surgery are relatively low, the operation is very common, and its frequency, if anything, may increase with the growing use of laparoscopic cholecystectomy in Ontario. Accordingly, we believe that there is merit in a review of the current practice patterns for cholecystectomy.

Exhibit 5.20: Overall and age- and sex-specific cholecystectomy rates per 100,000 population aged 20 and over in Ontario - 1981/82-1991/92

Year	Overall rate	Age-specific rate									
		20-34		35-49		50-64		65-74		75+	
		Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
1981/82	316	326	46	421	159	567	315	589	431	458	498
1982/83	324	317	51	447	166	574	327	597	488	461	441
1983/84	326	325	49	430	169	581	344	602	486	466	451
1984/85	313	307	42	418	162	579	316	573	470	438	490
1985/86	318	317	42	410	167	571	326	609	492	460	489
1986/87	318	316	42	416	157	572	328	618	493	448	512
1987/88	311	320	39	403	153	570	312	594	462	433	486
1988/89	299	318	41	386	151	537	302	551	457	395	448
1989/90	311	344	46	398	150	567	305	587	453	395	443
1990/91	318	362	45	412	154	587	299	566	462	407	455
1991/92	335	383	50	436	163	605	324	610	496	371	475

Source: Hospital Medical Records Institute/Ontario Ministry of Health

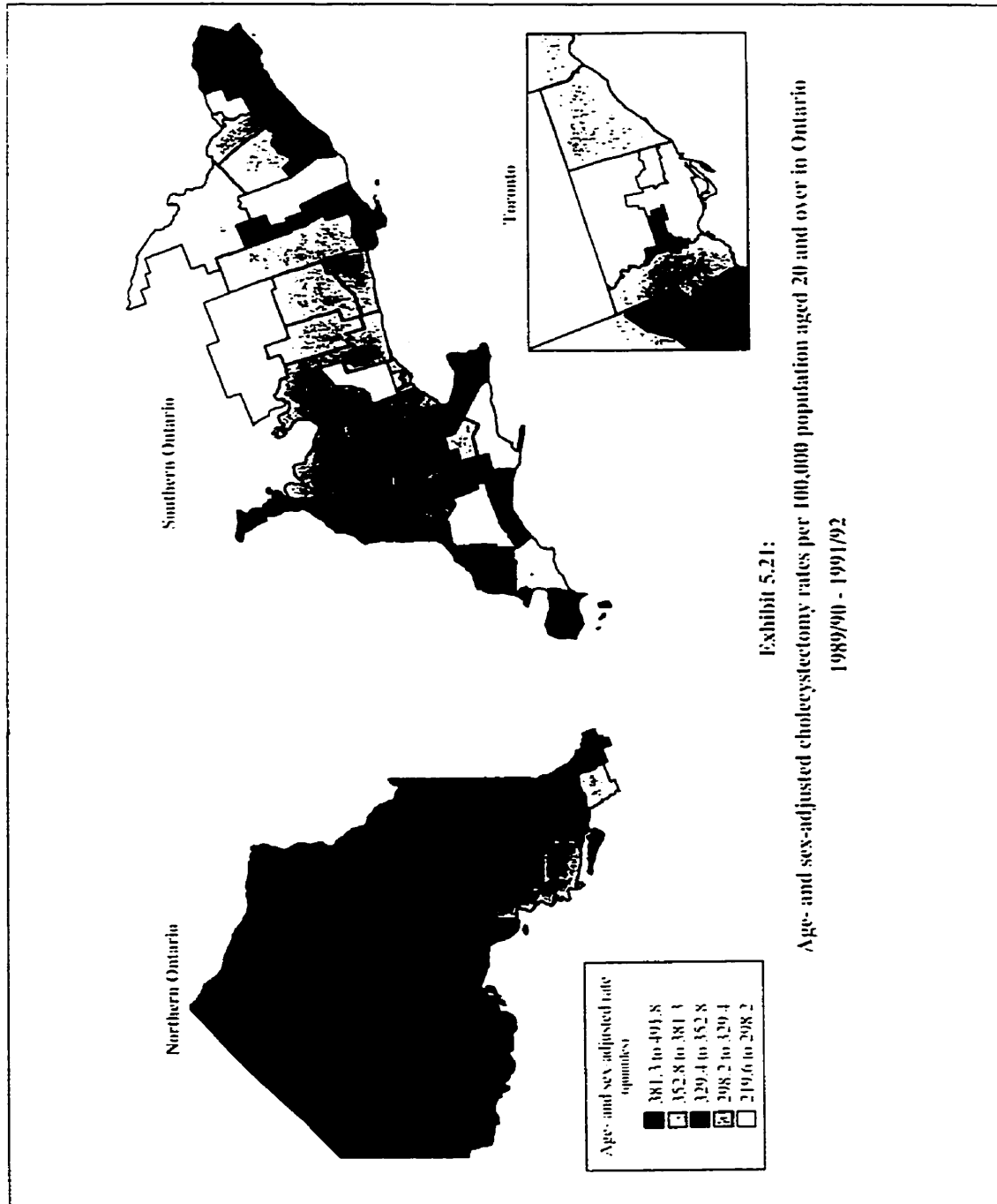


Exhibit 5.22: Age- and sex-adjusted cholecystectomy rates per 100,000 population aged 20 and over by city, country or region in Ontario - 1989/90-1991/92

City, county or region	Number of procedures / Year	Age- & sex-adjusted rates per 100,000	Rank	p-value
Algoma	329	365	16	*
Brant	292	366	15	*
Bruce	151	330	30	
Cochrane	266	424	4	***
Durham R.M.	817	316	36	
Elgin	205	386	8	*
Essex	927	391	6	***
Frontenac	278	294	41	
Grey & Dufferin	279	321	34	
Haldimand-Norfolk R.M.	263	379	11	**
Halton R.M.	700	319	35	
Hamilton-Wentworth R.M.	1183	351	21	**
Hastings	310	362	18	
Huron	150	345	23	
Kenora & Rainy River	261	492	1	***
Kent	283	363	17	
Lambton	412	445	2	***
Lanark	143	355	19	
Leeds & Grenville	261	381	10	**
Lennox, Addington & Prince Edward	151	338	26	
Middlesex	721	272	46	***
Muskoka & Haliburton	133	283	43	
Niagara R.M.	981	330	29	
Nipissing & Timiskaming	306	344	25	
Northumberland	177	310	39	
Ottawa-Carleton:				
City of Ottawa	702	264	48	***
East Region	249	267	47	**
West Region	389	321	33	
Oxford	280	424	3	***
Parry Sound	110	370	13	
Peel Region:				
City of Brampton	522	314	37	
City of Mississauga	953	331	28	
Perth	163	325	32	
Peterborough	321	353	20	
Renfrew	248	374	12	*
Simcoe	657	329	31	
Stormont, Dundas, Glengarry, Prescott & Russell	478	387	7	***
Sudbury R.M., Sudbury & Manitoulin	578	413	5	***
Thunder Bay	428	382	9	***
Toronto, Metropolitan:				
Borough of East York	245	286	42	
City of Etobicoke	786	312	38	
City of North York	1225	275	45	***
City of Scarborough	1132	298	40	*
City of Toronto	1069	220	49	***
City of York	377	346	22	
Victoria	175	368	14	
Waterloo R.M.	844	333	27	
Wellington	378	345	24	
York R.M.	859	279	44	***
Total Ontario	23146	321		

* Significant at 5% level ** Significant at 1% level *** Significant at 0.1% level

Source: Hospital Medical Records Institute/Ontario Ministry of Health

visible the textual sequencing of discursive conventions that ground a rationality. It also has the effect of bringing something of “what kind of thing [a] knowledge” (Bazerman, 1988:18) is to readers, while offering them an opportunity to consider a given analysis in light of their own reading of the reproduced text.

At the same time, it presents certain disadvantages. Most notably, it involves a form of analysis that can be extremely detailed and technical. Exploring the constitutive conventions of discourse as they are realized in a small portion of text necessitates a dense discussion that can appear overly concerned with textual minutiae. I have tried to respond to this problem by suggesting moments within “Cholecystectomy” that are illustrative of more general features of the *Atlas*. Even at those times when my discussion is focused on the particularities of how numbers are assembled or how words come together in a particular rhetorical form, it is put forward in the spirit of an analysis concerned with the inscriptive grounding of an important form of governing knowledge.

Before getting to my discussion of “Cholecystectomy,” I provide suggestions for why one might want to explore the textual surface of HSR. In putting these forward, I briefly discuss existing work on the discursive character of health services research. These remarks are followed by an autobiographical narrative that describes my early encounters with the *Atlas*. Here I underscore its evaluative character and lay out some of its basic textual characteristics. Next I outline further constitutive features of the *Atlas*, review some of the theoretical resources I enlist in my analysis of “Cholecystectomy”

and frame my text analysis by locating the *Atlas* in its broader disciplinary and political context. I then offer my text analysis of “Cholecystectomy” proper.

3.1 Attending to the Textual Specificity of Health Services Research

My interest in providing a place within the thesis that deals principally with the textual character of HSR has many sources. Of course, primary among them is my research interest in textually-mediated relations of governance. Understanding people’s actions as coordinated through their activation of texts requires that attention be directed at the material character of those texts. At the same time, my primary analytic concern in this chapter is with the inscriptive grounding of HSR’s constitutive capacity. Claiming that HSR’s production of health care as governable object is a textual affair calls for forms of analysis that display and illuminate the textual mechanics involved.

I further intend my text analysis of the *Practice Atlas* to intervene in the character of scholarly discussion of HSR’s implication in relations of governance. Critical analyses that attend carefully to health services research as a form of knowledge or that investigate its discursive form are rare. As mentioned in the previous chapter, most scholarly discussion of HSR is derivative. Thus, what little attention the *Atlas* has received has taken the form of illustrative remarks made as part of analyses that focus either on the changing nature of state-medicine relationships in Ontario (Coburn et al., 1997; Rappolt, 1997) or the differing uses of health services research in Canadian and U.S. policy-making (Tanenbaum, 1996). As we have seen, this situation also holds for work that deals with HSR in general.

Those analyses that do deal more centrally with HSR as a knowledge form emphasize its disabling or negative features. As discussed earlier, Navarro (1993) argues that health services research prevents an understanding of the broader social, political, and economic relations that shape the delivery of health care. In a related argument, Frankford emphasizes how it operates in a repressive fashion, negating and overwhelming alternative medico-humanist ways of knowing health care

Analyses of this sort leave me dissatisfied. Cursory descriptions of health services research as a numerically-based and objectifying knowledge fail to accord its discursive character the specificity of analysis required for a careful consideration of how it is a part of relations of governance in health care. The treatment of HSR as epiphenomenon, as a resource or tool in a more central struggle between the state, capital, and organized medicine (Navarro, 1993; Rappolt, 1996) or its elaboration as an instance of something that it is not, most notably Taylorism (Frankford, 1994), fails to recognize that health services research organizes and participates in relations of rule as health services research.

How HSR goes to work, the relations which it enables and is a part of, is a matter of what it is, which in a fundamental way is a grouping of texts. HSR exists as text. It has distinctive textual forms that record particular calculative practices, constitutive conventions and forms of argumentation through which health care is made known as an applied, managerial object.

Treating health services research as an objectifying discourse that only negates and effaces is a limited analytic endeavour. It misses out on thinking about how the textual configurations of HSR mark a distinct way of constituting and knowing health care. It also misses out on the way these textual conventions facilitate how documents such as the *Atlas* enter into and organize relations of health care management. Addressing HSR as an explicit object of analysis invites a refocusing of one's analytic gaze on the obvious. Careful scrutiny of the textual character of HSR can help ground a shift from a derivative analysis of HSR to one that takes seriously the operation of new modes of knowledge in health care reform.

3.2 The Practice Atlas – First Encounters

The *Practice Atlas* was the first major research document produced by the Institute for Clinical Evaluative Sciences. It received unprecedented attention in both the lay and medical press (Priest, 1994, 1994a; Benedetti, 1994; Mickleburgh, 1994; van Rign, 1994; Noble, 1994; Borsellino, 1994) and generated more controversy than any other ICES research publication since released. The *Atlas* is an edited collection of original research that draws on epidemiological and administrative data to provide what is claimed to be a comprehensive overview of population-based patterns of health care in Ontario. Early chapters offer an assessment of the 'performance' of the Ontario health care system based on statistical analyses of the state of health of the population and of temporal and regional variations in the utilization of broad areas of health service delivery such as acute hospital care, physician services and prescription drugs.

In later chapters, the focus on broad areas of service is replaced with an emphasis on specific medical events of two types: surgical services such as appendectomy and breast cancer surgery, and the duration of patients' hospitalization, referred to as a length of stay. In these chapters, assessment is made through consideration of temporal and geographical variation in medical events, given statistical expression as rates of surgical practices and average lengths of stay for particular medical conditions or surgical procedures.²

The publication of data in the *Atlas* that openly identify hospitals and regions and that depict widespread variations in surgical care is the primary source of its evaluative character and of the controversy it generated upon its public release. Media coverage of the *Atlas* reproduced some of its findings about inexplicable regional variations in surgical care including, for example, a three-fold province-wide variation in hysterectomy rates and four-fold differences in the rate of breast conserving surgery

² For the *Atlas*'s table of contents, see Figure 2.

Figure 2

ICES Practice Atlas (1994), Table of Contents

Acknowledgements	x	Radical Prostatectomy <i>Laurence Klotz, Teresa To, Neill Iscoe, C. David Naylor</i>	107
CHAPTER 1. Introduction <i>C. David Naylor</i>	1	Orchidectomy as a Treatment for Prostate Cancer <i>Laurence Klotz, Teresa To, Neill Iscoe, C. David Naylor</i>	111
CHAPTER 2. Overview of Health Status of Ontario Residents <i>Karey Iron, Vivek Goel</i>	7	Transurethral Resection of the Prostate <i>Marsha Cohen, Wendy Young</i>	115
CHAPTER 3. An Overview of the Use of Acute Care Hospitals, Physician and Diagnostic Services and Prescription Drugs <i>Geoffrey M. Anderson</i>	21	Hysterectomy <i>Marsha Cohen, Ruth Hall</i>	116
CHAPTER 4. Reported Utilization of Health Services and Health Status: Results from the Ontario Health Survey <i>Vivek Goel, Warren McIsaac, Karey Iron Edward Brown, Keyi Wu</i>	47	Conclusion <i>C. David Naylor</i>	124
CHAPTER 5. Variations in Surgical Services Over Time and By Site of Residence Introduction <i>C. David Naylor</i>	69	CHAPTER 6. Hospital-specific and Regional- level Utilization Information on Cesarean Section, Appendectomy and Breast Cancer Surgery Cesarean Section: Regional and Hospital-specific Rates <i>Geoffrey M. Anderson</i>	137
Total Hip Replacement <i>Marsha Cohen, Don DeBoer, Wendy Young</i>	72	Appendectomies in Ontario: Outcomes and Recent Hospital-specific Utilization Patterns <i>Shi Wu Wen, C. David Naylor</i>	143
Total Knee Replacement <i>Marsha Cohen, Don DeBoer, Wendy Young</i>	76	Breast Cancer Surgery <i>Neill Iscoe, Vivek Goel</i>	150
Abdominal Aortic Aneurysm Repair <i>Marko Simunovic, Teresa To</i>	79	CHAPTER 7. Use of Hospital Resources <i>Antoni Basinski</i>	165
Carotid Endarterectomy <i>Marko Simunovic, Teresa To</i>	83	CHAPTER 8. Patterns of Use of Specific Drugs in the Elderly Stomach Ulcers and Esophagitis <i>Geoffrey M. Anderson</i>	307
Peripheral Vascular Disease Procedures <i>Marko Simunovic, Teresa To</i>	87	Hypertension and Heart Disease <i>Geoffrey M. Anderson</i>	310
Coronary Artery Bypass Graft Surgery <i>Anne-Marie Ugnat, C. David Naylor</i>	88	Prostate Cancer <i>Teresa To, Neill Iscoe, Laurence Klotz, C. David Naylor</i>	314
Cholecystectomy <i>Marsha Cohen, Wendy Young, Marc Theriault</i>	94	CHAPTER 9. Conclusions and Reflections <i>C. David Naylor, Geoffrey M. Anderson, Vivek Goel</i>	319
Primary and Incidental Appendectomy <i>Shi Wu Wen, Marsha Cohen, Brian Kenney, C. David Naylor</i>	95	INDEX	327

provided within Toronto (Priest, cited in Rappolt, 1996:167).³

Rappolt suggests that the medical profession's response to such publicity ranged from cool to hostile. In describing her interviews with physicians following the report's release, she writes that "some surgeons were squirming in embarrassment and fuming with resentment in response to the data published in the *Atlas*" (1996:168). In her view, academics and political leaders within organized medicine found the *Atlas* "humiliating for individual and regional outliers and for the profession at large" (168). Clearly, not only did the *Atlas* furnish a knowledge that evaluated medical practice, it sparked

³ Openly identifying hospitals in data on variations in lengths of stay and other measures of 'performance' was an important feature of a series of manuals of management information launched in 1994 by the Joint Policy and Planning Committee (JPPC) (1994, 1994a, 1994b). (The JPPC was established in 1992 as a partnership between the Ontario Ministry of Health and the Ontario Hospital Association. Its mandate is to "facilitate the implementation of hospital reform in Ontario." (Joint Policy and Planning Committee, 1998). The *Atlas*, however, marks the first time that Ontario hospitals were openly named in a text of health services research that sought to comprehensively survey the province's health care system. The identification of hospitals within the textual form of an atlas, certainly facilitates a comparative use of the text. It also grounds its evaluative potential. The observance of wide-spread geographic variations in surgical rates not accountable by the socio-demographic make-up of regions often has been treated as evidence of potentially unnecessary or inappropriate care. One of the contributors to the *Atlas* that I met and spoke with offered the following comments about the *Atlas*: "We said okay, we have approximately 200 acute care hospitals and here are the numbers, with hospitals named, and then all of a sudden that alerted the hospitals to the fact that somebody was monitoring what they were doing.... All the hospitals are funded under a global budget.... Nobody has really looked at what they are doing with the money. It has been for each hospital to decide the services that they would provide for the most part... And nobody really paid attention and we said, not only, 'here's what hospitals are doing,' but 'here's how they compare with their peers.' And the comparisons are really what draw people's attention and all of a sudden we put the numbers in the *Atlas* and then there were questions from the press, there were questions from the ministry, there were questions from organized medicine. Why are your numbers high? Why are your numbers low? What's going on here?"

relations of public shaming of the medical profession. Exploring how the *Atlas* is put together as a text can provide insight into the textual underpinning of complex relations of medical assessment.

Intended for use by hospital administrators, clinicians, and health care policy makers, the *Atlas* is a weighty document, over 320 pages long. With seven substantive research chapters that combine research narratives with varied forms of numerical data and some 20 contributors including ICES faculty and associate faculty, research coordinators, technical team members, and research collaborators, the *Atlas* is a densely packed text with a near encyclopedic feel.

I first encountered the particular textual version of health care supplied by the *Practice Atlas* at a Ministry of Health policy forum held in February 1995.⁴ The forum itself was a moment of promoting the intellectual project of ICES and in particular the recently published *Atlas* among the physicians, surgeons, researchers, hospital administrators, ministry officials and others present in the audience. As David Naylor, CEO of ICES at the time and one of the editors of the *Atlas*, spoke, its peculiar mode of objectifying health care met our eyes and ears and, after the meeting, likely circulated beyond the room in one way or another in the ongoing health care work of those who were present.

⁴ The title of the presentation was “Patterns of Health Care in Ontario—ICES *Practice Atlas*.” All quotes from the presentation are based on my transcription of a tape recording of it.

The mode of knowing that was on display at the forum and which we were being invited to participate in is decidedly applied and evaluative. It is one in which health care comes into knowledge as a practical, actionable object, something about which one wants to know because one wants to ‘improve’ it. What I saw enacted at the policy forum was a statistical knowledge that furnishes conceptual resources for objectifying health care evidentially, primarily through evaluative practices that compare surgical rates across regions and/or time.

Naylor’s talk was organized as a slide presentation. While the full text of the *Atlas* was not present at the meeting, certain elements of it projected onto a screen were the focal points of his remarks. As tables, diagrams and shaded maps of the province appeared for view, Naylor spoke about some patterns, temporal trends in carotid surgery, for example, as evidence of physicians “doing the right thing,” while others, such as “inexplicable” widespread geographic variations in hysterectomy were represented as “area[s] of concern.” Along the way we were introduced to various of the *Atlas*’s discursive objects and their rhetorical deployment. Thus we learned about “practice styles,” and “large variations,” about the need for “more uniform patterns,” and about “low rates areas [that] tend to stay low” and “high areas [that] also stay high.”

In his talk, Naylor further located the *Atlas* within a set of political relevances organized around cost reduction. His presentation began with an account of an affordability crisis in health care, what he described as the “unhappy” context for current efforts to evaluate medical care. The nature of the *Atlas*’s contribution to such efforts, in

turn, was as an initiative in effectiveness research. As Naylor put it, effectiveness research

tells us about whether we are doing what we ought to be doing... It tells us about how our procedures--prescribing, test ordering, performing surgery and every other domain of practice--depart from those that ideally might be expected of us.

I left the policy forum excited at having witnessed an effort to organize health care policy and management around the *Atlas*'s peculiar way of constituting health care. I was intrigued by the promotional form of that effort, by the circulation of the *Atlas*'s conceptual resources, and by the invitation to participate in understanding and responding to variations in health care practices in a "blame-free fashion." I was also intrigued by the mysterious, semi-present *Atlas*. I wanted to move beyond the slide projections we had seen of the *Atlas* and learn more about its textual form. I wanted to explore the inscriptive ground of the mode of knowing health care that I had encountered.

3.3 The *Practice Atlas* at a Glance

Some months after the forum I finally obtained a copy of the *Atlas*.⁵ It sat on my shelf for quite awhile before I read it; the *Atlas* is a bit of a daunting text, not something one would pick up for light reading. Slowly, however, I came to familiarize myself with the text. Over the past two years, I have read, thought about, and reread the *Atlas* and portions of it a number of times. There was a period, for example, when for a month or

⁵ I thank Doug Weatherbee for providing me a copy of the *Practice Atlas*.

so I sat holed up in a carrel office, taking detailed notes on chapter five, reading each paragraph and pausing to write about the discursive mechanics that underpinned my experience of the text.

Some of the ways I have come to understand the textual character of the *Atlas* have emerged slowly over time. It has only been with this writing, for example, that I have come to fully appreciate how comparison is used in the *Atlas* to give shape to and pose questions of the patterned character of health care practices. Of course, my efforts to make sense of the formal discursive features of the *Atlas* have been made alongside other research activities, readings, and readers' responses to earlier versions of this chapter, all of which have helped shape my understanding of how the *Atlas*, as text, is put together.

When I first began reading the *Atlas*, I found the text's self-positioning to be quite similar to that offered by Naylor at the policy forum that I attended. The *Practice Atlas* is a text that intends a particular applied politics and practice of health care reform. Thus, the introduction positions the *Atlas* as a response to a particular set of crises in health care. These include not only the crisis of affordability described by Naylor in his speech, but an information crisis or, more particularly, a scarcity of information that can be used by "policy-makers, managers and clinicians...to make tough choices necessary to maintain or improve the [health care] system in a period of fiscal duress" (Naylor, 1994:2).

The *Atlas* positions existing policy responses to rising health care costs as inadequate to the task of helping administrators and clinicians meet the challenge of organizing and providing care in the context of diminishing resources (Naylor, 1994:2). As such, the text is to be read as an intervention in this problem, one specified by the provision of effectiveness research that defines the “‘is’ in health service delivery” (1994:2).

As suggested by its introduction, the *Atlas* provides a form of realist, expository discourse that claims to tell “what is actually being done” in health care (1994:2). Of course observations about the ‘is’ of health services are not provided for their own sake, but in order to ground what the text presents as a somewhat abstract and simplistic calculus of health care reform. It is a practice of reform in which decision-makers use comparative information on patterns of health care to “learn from each other” and to stimulate local efforts to understand and change patterns of medical practice (Naylor, 1994:3-4). As represented in the *Atlas*, health care reform is a collaborative evidence-based process of “shifting practice patterns so that actual care more closely approximates ideal care” (Naylor, 1994:2).⁶

On the many occasions when I have read the *Atlas*’s substantive research chapters to understand just how the text makes up the “‘is’ in health services delivery,” I have encountered a textual mechanics not fully suggested by what I encountered at Ministry of

⁶ The *Atlas* describes this practice of reform as located at the “interface of ‘is’ and ‘ought’” (Naylor, 1994:2). The “is” is supplied by research such as that offered by the *Atlas*, while the “ought” comes from clinical trials research.

Health policy forum. The various maps and tables and diagrams we were shown are certainly present in the text. In fact, they are one of its most prominent features. In a document 329 pages long I count over 220 visual displays of all sorts. Pie charts of Ministry of Health expenditures for different health care services in different years adorn chapter three; chapter seven is filled with lists that provide hospital-specific data on average lengths of stay, benchmark length of stay⁷ and other measures for a host of medical conditions and surgical procedures; full-page geographic maps showing regional variations in age- and sex-adjusted surgery rates are found throughout chapter five.

These displays have a commanding presence. They left me with initial impressions of a text constituted by numerical data. But the *Atlas* is also made up of extended passages of prose. Words did not visually appear at the policy forum except as titles or minor elements of visual displays. In the *Atlas* proper, they have a significance not suggested by what we saw of the text in Naylor's presentation. According to the self-evident presence of words and sentences in a text of HSR may seem somewhat banal. However, it was in recognizing the presence of words or, more particularly, their relationship with the visual organization of statistical data that I moved to more fully understand the constitutive textual practices that underwrite the *Atlas's* realist discourse.

⁷ The standard rhetorical deployment of benchmark in the HSR literature is as "the best or most outstanding level of performance" (Basinski, 1994:166). In the *Atlas*, a length of stay benchmark for a procedure or diagnosis is defined such that 25% of all patients in the given group of hospitals under study received care for an average duration that met or was shorter than the benchmark (Basinski, 1994:166). A benchmark defines a top level of performance met by 25% of cases.

The *Atlas* as expository discourse, that is, as a knowledge form preoccupied with the display and presentation of health care as ‘is,’ relies on an interplay of prose and visual displays of numerical information to substantiate health care as a patterned object. My analytic notes made in my carrel office register this textual feature of the *Atlas* in the form of reminders and notes to myself:

There is something powerful about how numbers are visually organized here. All through the chapter numbers are arranged in ways that make it possible for you to see patterns of health care. But it’s not just the numbers. Its true the *Atlas* is statistical, but that isn’t the only thing it is. The *Atlas* is numbers, but the numbers are always accompanied by words.

As I moved to build on these initial observations, my efforts continually fell short. Somehow the numbers always managed to get in the way. In my early accounts of the *Atlas*, I tended to privilege numerical information, according it a primary status while treating words as merely elaborative. Reading through work that explores scientific discourse as textually grounded in an integration of words and visual displays helped change the terms of my analytic description of the text.

This work has been made as part of a growing literature that explores scientific knowledge through careful attention to its textual specificities (Bazerman, 1988; Lemke, 1998; Lynch and Woolgar, 1990; Martin and Veel, 1998). One recurring feature of the literature is its recognition of the significance of visual representation for scientific modes of communication (Rudwick, 1976; Lynch, 1990; Baigrie, 1996; Lemke, 1998; Veel, 1998). In a particularly well-developed formulation of the matter, Lemke (1998) argues that scientific texts are fundamentally “multi-media genres.” They are, as he puts

it, “semiotic hybrids” organized not simply as linear, verbal text but as texts that “combine, interconnect, and integrate verbal text with mathematical expressions, quantitative graphs, information tables, abstract diagrams, maps, drawings, photographs and a host of unique specialised visual genres seen nowhere else” (1998:88). Lemke’s discussion of scientific texts as involving a co-deployment of verbal and non-verbal textual semiotic systems has helped me express my experience of the *Atlas*’s constitutive conventions. In my text analysis of “Cholecystectomy” it helps focus my discussion of the comparative gestures through which verbal and nonverbal text co-produce health care as a patterned thing.

Paying closer attention to the form of prose found in the *Atlas* also opens up for consideration the discursive mechanics through which the text constitutes patterns of health care as particular kinds of problems. The *Atlas* does not simply describe or map out patterns of health care. It engages particular forms of argumentation—ways of treating certain patterns as in need of explanation, of explaining them, and of suggesting how they might be remedied—that help enter health care into thought as an object of managerial reflection. The *Atlas* treats variations in surgical rates and other health care patterns as particular kinds of problems, as bases from which the wayward features of health care can be ‘uncovered’ and brought into line through evidence-based managerial strategies that promise to eliminate ‘wasteful’ and ‘inappropriate’ forms of care.

I have found recent work in governmentality helpful for my efforts to think about the problematizing character of the *Atlas*. Governmentality theorists have drawn upon

and extended Foucault's discussion of problematization⁸ (Foucault, 1988a; Castel, 1994) in their analyses of the contemporary exercise of power. As developed in the literature, problematization grounds an analytic stance to governance that privileges concerns about how various authorities have posed questions about the nature of rule and its objects. It orients by suggesting for inquiry the significance of the emergence, development, use of, and response to particular ways of thinking about what constitutes a 'proper' problem and by what form of authority a given problem should be addressed (Miller and Rose, 1990).

My analysis of the *Atlas* is not concerned to explore governance as unfolding in the realm of thought. Still, discussions of problematization have helped me articulate how forms of narrative and argumentation deployed in the *Atlas* constitute health care as an object to be managed in particular ways. I have always been struck by the indirect quality of the *Atlas's* narration. Even as it seeks to respond to the problems of contemporary health care policy in an applied way, the *Atlas* operates not through direction, in the sense of providing specific research-based solutions to questions, but through the promotion of a way of understanding health care, what I like to call a managerial or medico-administrative rationality. The various research accounts found

⁸ In his later writings and interviews, Foucault uses the term problematization as a way of distinguishing history of the present from other forms of historical research. By problematization, Foucault means "how and why certain things (behaviour, phenomena, processes) became a problem: (1988:17). More specifically, he employs the terms as a referent for the processes through which certain forms of behaviour came to be classified and known in particular ways, as madness or delinquency, for example, while other similar forms of behaviour were not.

throughout the *Atlas* treat health care as a particular kind of problem, one whose essential features are detectable and potentially resolvable through evidential means. In my text analysis of “Cholecystectomy,” I offer an account of the rhetorical techniques that formulate a strategy for governing health care and that intend particular forms of entry of the *Atlas* into relations of health care management.

3.4 The *Practice Atlas* as Constitutional Text

My decision to use the *Practice Atlas* as the empirical base for my text analysis was deliberate. The *Atlas* is not just any research document, it is a “constitutional” or “foundational” text (Smith, 1999:54-55). This does not mean that it is fully unique or original.⁹ The textual form of the *Atlas* owes much to earlier work in health services research focused on the observance and problematization of variation. Some twenty years prior to the *Atlas*’s publication, health services researchers in Canada (Vayda, 1973; Vayda, Morison, and Anderson, 1976, Stockwell and Vayda, 1979; Roos et al., 1977; Roos and Roos, 1981) and the United States (Wennberg and Gittlesohn, 1973; Wennberg and Gittlesohn, 1975) had begun to use large scale administrative databases to produce population-based analyses of medical practices. Their work established geographic variations, primarily in surgical rates, as objects of an evaluative, medico-administrative rationality. Wide discrepancies in surgical rates were not treated as innocent observations, but as evidence of something gone awry in health care. For

⁹ *The Dartmouth Atlas of Health Care in the United States* edited by Wennberg and Cooper (1996) is a similar publication.

Vayda, Roos, Wennberg and others, variations signalled the possibility of inequities in medical care delivery or, more commonly, of inappropriate or unnecessary service provision.

The *Atlas* also borrows a host of textual conventions from epidemiology. Most prominent among them is the text's use of maps to make visible, spatial patterns of surgical practice. Maps of disease have been an important textual device of epidemiology since the early 19th century when they were deployed as resources in debates about the etiology of yellow fever (Coleman, 1987). In the more immediate context of Ontario health care policy, maps showing the distribution of cancer rates have been brought together in an atlas (Marret, Swift, Reynolds and Clarke, 1991) to ground a discussion of population-based planning of health care resources. The surgical maps that appear in the *Atlas* are not a unique textual device but a technology of knowledge that transfers epidemiological conventions for representing the geographic distribution of disease to the representation of geographic variations in health care practices.

While the inscriptive mechanics found in the *Atlas* are not fully unique to it, they do establish a set of "constitutive conventions" or "methods of writing [health care] into texts" (Smith, 1999:46) that have been reproduced in subsequent ICES publications. The *Atlas's* focus on variations in medical practices, its use of visual displays that interface with prose, its open identification of hospitals in data on lengths of hospital stay, its problematizing narrative forms, rhetoric of comprehensive mapping and other inscriptive

techniques provide a store of conventions for producing health care in an objectified and governable form.

These have been reproduced, modified, embellished and added upon in a second edition of the *Atlas* (Goel et al., 1996), as well as in a series of conditions specific *Atlases* focused on cancer (Iscoe et al., 1997) arthritis (Badley and Williams, 1998), and diseases of the heart (Naylor and Slaughter, 1999). As such, exploring the inscriptive mechanics of the *Atlas* provides insight into a set of textual maneuvers for producing governable versions of health care that are typical of the broader program of health services research advanced by ICES.

3.5 A Textual Analysis of “Cholecystectomy”

Having discussed some of the textual features of the *Atlas* in general, I now want to explore more carefully the conventions through which it constitutes health care as a medico-administrative object. My discussion draws on “Cholecystectomy” a section of chapter five of the *Atlas*. The largest of the *Atlas*’s chapters, chapter five deals with regional and temporal variations in surgical services. In twelve sections, each with its own group of authors, the chapter addresses four surgical classes: lower limb joint replacement (total hip and total knee replacement), cardiovascular procedures (abdominal aortic aneurysm repair, carotid endarterectomy, peripheral vascular disease procedures and coronary artery bypass graft surgery), abdominal surgery

(cholecystectomy and appendectomy) and single-sex procedures (radical prostatectomy, orchidectomy, transurethral resection of the prostate and hysterectomy).¹⁰

My discussion of “Cholecystectomy” is informed by an approach to text analysis developed by Smith in her work on the constitutive conventions of objectivity in sociological discourse (1999:45-69). Smith offers a way of engaging with texts that explores the inscriptive practices that produce an objectified reality. It is an approach that attends to the textual forms that constitute the social according to conventions that enter it and us as readers of texts into relations of rule (1999:47).

In my engagement with Smith’s approach, I have tried to develop an analytic description of a piece of health services research that takes readers through the text in sequence. My analysis draws attention to conventions that textually ground a medico-administrative rationality of health care as they are deployed in “Cholecystectomy.” My hope is that my text analysis will bring to light how the *Atlas* ‘speaks’ health care in ways that produce a world of medical events as objects of managerial reflection and action. This is a world in which people’s experiences of ill health, of seeking care for their illness, of providing care, of working in hospitals and so on, are eclipsed and statistically refracted through the performative relevancies of efficiency and effectiveness. In place of people’s experiential ground of encounters with health care providers one finds in the *Atlas* a discursively constituted “objectified world-in-common” (Smith, 1999:50), expressed as problematic numerically-based patterns of surgical practice.

¹⁰ The chapter also includes an introduction and conclusion written by C.D. Naylor.

My analysis begins with an account of the textual organization of “Cholecystectomy” that outlines the main forms of report found in the section, as well as the primary sites of its written text/visual display interfaces. Next I explore how an external literature on cholecystectomy is used to provide an evidential framing for the section. This is followed by a discussion of the textual conventions that constitute health care as numerically-based patterns. Here I consider how temporal trends and geographic variations in rates of gall bladder surgery are produced in “Cholecystectomy” through a mechanics of comparison. This involves a relationship between visual displays organized in ways that make numerical comparison relatively easy, and complex verbal textual statements of comparison that select out features of visual displays for readers’ attention and that substantiate them by drawing on evidence from an external HSR literature.

My discussion of “Cholecystectomy,” closes with an account of how patterns of cholecystectomy are further substantiated and elaborated by prose that positions them as focal points for an evaluative and problematizing way of knowing health care. Specifically, I explore some of the rhetorical procedures through which cholecystectomy rates are treated as objects in need of explanation as well as the enlistment of statistical rationality in their explanation. Turning to the section’s deployment of the discourse object ‘practice style’ I begin to lay out how an evaluative mode of knowing in “Cholecystectomy,” and in the *Atlas* more broadly, is organized around matters of evidence. My discussion of the section closes with an exploration of how patterns of

cholecystectomy as medico-administrative or managerial objects are inscribed through a call to action. Here I emphasize how the section articulates an intended approach to health care management by offering up variations in cholecystectomy as problems of thought and as things to be tackled by readers through still further deployment of health services research.

3.51 The Textual Structure of “Cholecystectomy”

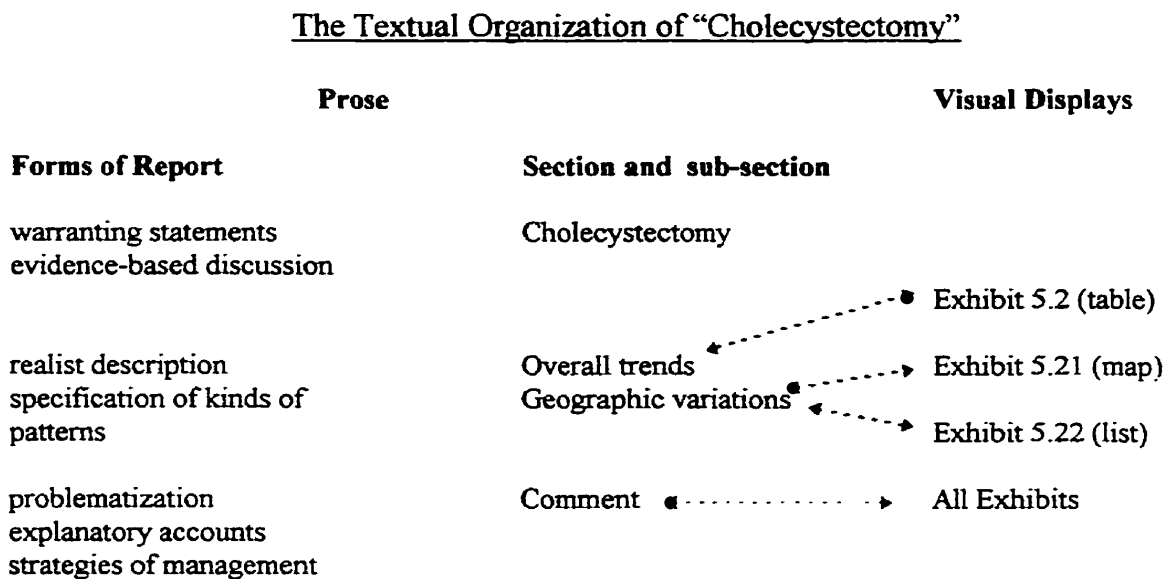
A quick glance at “Cholecystectomy” (Figure 1) indicates features of its textual structure. Like other sections of chapter five, it is made up of two main textual elements: prose and visual displays. The prose in “Cholecystectomy” is written in side-by-side columns and organized as a textual sequence with paragraphs falling under various headings and subheadings. The section’s three visual displays are a table (Exhibit 5.20), a map (Exhibit 5.21) and a list (Exhibit 5.22). For the most part, these two basic elements do not stand in the section as discrete or autonomous textual components. Rather, they are mutually elaborative, such that prose is made complete when read in relation to visual displays, the full significance of which are realized only when read in relation to prose.

Figure 3 offers a schematic representation of the textual organization of “Cholecystectomy.” It draws attention to the relationship and contents of the primary textual units of the section. The primary forms of narrative report found in “Cholecystectomy” and the subsections where they occur are indicated in the figure under the title “Prose.” Due to a copy-editing error, the subheading “Overall trends”

which appears in the figure, has been omitted in the text of “Cholecystectomy.” It should have appeared directly above the third paragraph. As Figure 3 indicates, the narrative sequence of “Cholecystectomy” begins with a warrant and an evidence-based discussion of the procedure, moves to a description of temporal and geographic patterns in cholecystectomy rates, and closes with commentary that problematizes variations in cholecystectomy rates by querying their source and suggesting courses of action to remedy them.

One of the most important textual conventions of the *Atlas* is the production of health care as patterned through a bringing together of words and numbers. Figure 3 indicates the forms of relationship or interface between written text and visual displays that occur in “Cholecystectomy.” Arrows that link subsections with a visual display are meant to indicate the presence, within prose, of statements that gesture toward a map, list, or table. These statements are of two main types. The first involves instances in which visual displays or elements thereof are directly mentioned within written text, such as when the name of an exhibit is given in parenthesis in a sentence. The second involves statements about health care patterns that, while not directly referring the reader to a specific visual display, still gesture toward them and in a sense require them for their meaning to be complete. The distinction between these two types of interface is made clearer later on in my discussion.

Figure 3



The darker arrows indicate that a particular subsection is a textual site in which both forms of interface are enacted. Thus, as indicated by the figure, interfaces of prose and visual display are a textual device used predominantly in the work of substantiating kinds of health care patterns. The lighter arrow indicates the presence of only the second form, which is characteristic of the text’s “Comment” subsection. Arrowheads point in both directions to indicate that the constitution of health care as patterned, medico-administrative object involves a “joint co-deployment” (Lemke, 1998:110) of visual images and written text.

The overall textual structure of “Cholecystectomy”—the warrant / description / problematization prose sequence, the use of specific graphical elements, and the textual location of particular written text/image interfaces—is a more or less standard feature of

all sections of chapter five. This type of repetition of textual form and content creates certain kinds of reading effects. Some of my own early readings of the chapter took on an almost rehearsal- or drill-like character as I read section upon section that handled its subject matter in roughly the same fashion. There was a kind of cumulative effect as each reading of each section brought to life, resounded, and reinforced a particular way of thinking about health care and a particular set of health care problems.

At the same time, reading the chapter placed me in a relationship with an almost faceless author. Sections are written so similarly that it was difficult to have a sense of their distinct or individual authorship. Considered as a whole, then, an important discursive feature of chapter five is repetition. Chapter five reads as an ‘institutional text’ one seemingly written by ICES rather than distinct authors, with sections that echo off one another, repeating a story told in much the same way about one surgical practice, then the next, then the next.

3.52 Frame-setting

Having described the basic textual structure of “Cholecystectomy,” let me now turn to a more careful analytic characterization of its constitutive mechanics. My approach is to follow through “Cholecystectomy’s” various subsections of prose in sequence, raising points about forms of argumentation, use of visual displays, etc., that contribute to the production of health care as a medico-administrative object. Let’s begin with the section’s opening statements.

The opening paragraphs of “Cholecystectomy” operate as frame-setters. They introduce the analysis of variations in cholecystectomy rates in ways that privilege population-based forms of thought about disease and evidence-based approaches to medical treatment. The section’s first paragraph offers an example of the textual hybridity of HSR. It is interesting for how it enlists epidemiological discourse in the work of warranting the section’s investigation of patterns of cholecystectomy. As a knowledge form based largely in statistics, HSR follows upon the constitution of the population as an object of governing practice. As a whole, the *Atlas* is a text concerned with population-based health and health care phenomena. What we have in the first paragraph, then, is more than a simple epidemiological account of gallstone disease. We have a reason for being concerned with variations in its treatment that is based on the prevalence of gallstone disease within general populations and segments of them.

One of the peculiarities of the first paragraph of “Cholecystectomy” is the absence of statements that justify the selection of a particular surgical practice for analysis in terms of an explicit economic rationality. Many of the other sections in chapter five begin by linking a population-based burden of illness with the costs of the surgical procedure under investigation. Thus, in the section on total hip replacement, we learn that it “is one of the more common major elective surgical procedures in Ontario” and that “the rising use of the procedure among the elderly poses definite challenges to hospitals because of resource limitations” (Cohen et al., 1994a:72). While framing the investigation of variations in surgical practices as an exercise that can contribute to the

reduction of health care costs is an overall feature of chapter five, it is a warranting strategy that is somewhat muted in the section on cholecystectomy.

The second paragraph of “Cholecystectomy” is an evidence-based discussion of the procedure. It does what many of the early paragraphs of other sections of chapter five do, which is to offer a clinically-based discussion of the surgical procedure under analysis. Of course, not just any sort of clinical discussion will do. The *Atlas* is a text that traffics in evidence, both its own and that produced elsewhere. Paragraph two represents a characteristic gesture of chapter five in which an external literature on a surgical procedure is imported into the text to underscore the evidential character of clinical practice. Here, the focus is on expert opinion concerning appropriate indications for cholecystectomy.

Gesturing toward this literature provides linkages between the forms of evidence on practice patterns provided by the section and current evidence-based discussions of cholecystectomy in biomedicine. This meeting of kinds of evidence produces health care within an evidential frame and intends possible uses of the text. Read in light of the section’s later suggestions to compare indications across counties as a way to ameliorate errant cholecystectomy rates, paragraph two operates as a kind of invitation. It records places in the literature that readers might turn to in assessing evidentially the appropriateness of gall bladder surgery provided in the hospitals or geographical areas where they work.

3.53 Making up Health Care Patterns through Words and Numbers

The next three paragraphs of “Cholecystectomy,” the beginnings of the subsection “Analysis of Cholecystectomy in Ontario,” are analogous to the findings or results sections of a scientific research text. They are moments within “Cholecystectomy” in which the narrative moves from frame-setting to a rhetoric of empirical demonstration. Paragraphs three to five provide one instance of a textual mechanics that underlies a general rhetorical feature of the *Atlas*, its realist discourse. The *Practice Atlas* is a text structured around textual practices of demonstration, of showing and mapping. As a whole, it is positioned as a documentary resource that engages observational and descriptive methods to define “the ‘is’ in health service delivery” (Naylor, 1994:2). A good portion of the *Atlas* is committed to a rhetoric of authoritative exposition, to ways of displaying health care patterns and outcomes as they occur in “actual practice” (Naylor, 1994:2).

Of course such efforts to describe ‘what is’ involve constitutive discursive moves. Patterns and outcomes or rates and variations for that matter are not health care activities, nor do they exist as directly observable phenomena in the ‘real’ world. They are textual constructs. Paragraphs three to five display some of the inscriptive work that goes into producing a basic discourse object of the *Atlas*, the numerically-based health care pattern. At work are a set of textual conventions that render health care into thought as a mathematical terrain of temporal trends and geographic variations in surgical rates. Central to such a mechanics are ways of connecting numbers and words and of

establishing comparative forms. In “Cholecystectomy” and in the *Atlas* more broadly, health care as patterned object emerges through a mutually constitutive interface between comparative statements about numbers and particular ways of visually organizing numerical information.

3.531 Visual Displays as Inscriptive Technology

Paragraph three suggests some of how all of this works. It is the first moment in “Cholecystectomy” in which an association between a group of sentences and a particular visual display is made. The visual display of concern is Exhibit 5.20. While the exhibit may appear as little more than a mundane table, one might better understand it as a technology of inscription that helps make health care as a patterned universe thinkable. The table is not simply any odd assembly of numbers; it is a highly crafted visual display with numbers carefully arranged for comparison such that health care patterns become observable.

Perhaps the most striking feature of the exhibit is the chronological organization of numbers in columns. When the chart is made active through its reading from top to bottom, temporal trends emerge as numbers increase and decrease. So, for example, one can ‘see’ a pattern of increase, decrease, stabilization, and increase in the overall rate for cholecystectomy when the successive numbers below “316” are compared one with another. A further feature of the exhibit is the disaggregation of yearly overall rates into gender-specific, age-based categories. This columned, side-by-side display of cholecystectomy rates for men and women in different age groups permits a host of

comparisons to be made. When the table is read horizontally as well as vertically, various age- and gender-based patterns in the rate of cholecystectomy become visible. Like other visual displays in the *Atlas*, then, Exhibit 5.21 does not simply display numbers, it operates as a technology of inscription that makes health care visible as a numerically-based, patterned terrain.

3.532 Bringing Numbers and Words Together: Comparison and the Constitution of Health Care Patterns

Exhibit 5.20 can be read as a stand-alone visual display. It has a title which tells us what kind of numbers we are reading. The words appearing above columns further help us to make sense of the table by indicating the categories to which numerical values belong. To treat the table as a potentially self-sufficient piece of text, however, would be to miss how it is presented in “Cholecystectomy” as something to be read through prose. The first sentence of paragraph three begins this pairing of visual display and verbal text: “The age-sex adjusted cholecystectomy rates were 316/100,000 in 1981/82 and 335/100,000 in 1991/92 (Exhibit 5.20).”

Here is a compact sentence that does many things. Perhaps most obviously, it is a declarative statement that qualifies the value of particular rates for cholecystectomy by drawing on numbers that already appear in the table. In this sense, it represents a particular kind of verbal text/visual display interface, one in which numbers are entered into prose. At the same time, through its parenthetical reference to Exhibit 5.20, the opening sentence makes an invitation for printed text and visual display to be read

conjointly. While the remaining sentences of the paragraph do not import elements of the table into written text directly they are related to it as statements which direct attention to and qualify certain features of the table.

Most of these sentences are statements of comparison. Thus, in the first sentence one number is compared with another, in ways already suggesting a temporal trend. A good many of the remaining sentences compare rates for men with those for women. Like the table, these statements can also stand alone. The sentence, "Rates in women fall after age 75, whereas those in men level off," can successfully operate on its own in ways that tell about the nature of a health care pattern. In the overall context of the first paragraph, however, there is a sense in which it beckons or calls for reference to the table for its completion.

Indeed, the various sentences of the first paragraph are not simply statements that present the real, they are modifiers of the table, selecting out from among the wealth of possible numerical relationships it affords, qualified features for our attention. The table thus completes the sentence even as the sentence delineates the table. It is this mutually-reinforcing relation of written text and visual image that underlies the demonstrative rhetoric of the paragraph. Health care becomes a particular object of knowledge through a pairing of words and visual images. Out of a mechanics of interplay, it emerges as a patterned, numerically-based thing—a rate that one can 'see' remains "fairly stable," has a "slight decline," or is "higher for women than men."

3.533 More Health Care Patterns: Geographic Variations and Statistical Rationality

In paragraphs four and five, the textual drawing together of writing and visual display of numerical information is extended. In this case, however, the patterned character of health care so constituted takes the form of geographic variations in rates of cholecystectomy, rather than temporal trends. In these two paragraphs, the rhetoric of empirical demonstration draws on epidemiological techniques of mapping disease, but modifies them to offer a topological representation of variations in health care practices. Once again, however, it is through an interface of writing and visual display that health care is rendered into thought as a patterned, numerically-based object.

The visual displays addressed in the two paragraphs are Exhibits 5.21 and 5.22. The two exhibits are textual companions, meant to be read in relation to one another. This is enabled by an acetate key of counties and cities found in a pocket on the back cover of the *Atlas*. When overlaid on the map it identifies the various counties and regions of the map by name, thus permitting one to move back and forth from map to list, matching up the list's numerical values with the shaded units of the map.

The main elements of Exhibit 5.21 itself, are three maps (Northern Ontario, Southern Ontario and Toronto) and a boxed key in which shades and colours that are more or less progressively darker are associated with increasing numerical values. One of the most interesting features of the exhibit is the graphical importance it accords to the political centres of the province of Ontario. While Southern Ontario and the province's capital, Toronto, are both geographically smaller than Northern Ontario, they take up

more than half of the visual space of the page. In addition to focusing attention on politically significant areas of the province, the 'dissection' of the standard topological representation of Ontario into these three areas augments the forms of comparison and types of patterns that can be made intelligible by reading the exhibit. When the visual key is brought to bear on the maps, scanning them produces patterns in cholecystectomy rates both within and across the three areas. Thus, for example, one can note that Southern Ontario, with its variously coloured and shaded counties and regions, has cholecystectomy rates that are lower but with a higher degree of variation than the darker and more universally shaded Northern Ontario.

Exhibit 5.22, on the other hand, has something of the structure of a league table. Its listing of geographical units alphabetically rather than by rank helps facilitate self-identification and comparison rather than the observance of a pattern. The intended reading practice would seem to be one in which readers of the text locate 'themselves' through the geographic site of their work and come to know 'their' 'performance' by taking note of the region's rank and by comparing its rate with those of other areas.

In paragraphs four and five, the constitutive and comparative textual mechanics through which verbal text and visual images are brought together are quite similar to those of paragraph three. Once again prose incorporates and gestures toward visual displays, selecting and qualifying certain features of them in ways only fully completed by reference to the maps and list. Once again, statements of comparison are a primary ground through which the patterned character of health care is substantiated.

One of the more distinct features of the two paragraphs is how the objectification of health care is accomplished through statistical rationality. In particular, the second of the two paragraphs displays a set of discursive mechanics through which multi-dimensional comparative statements are folded into a statistical language to give substance to health care as variation. Thus, the first sentence of the paragraph begins with a simple, declarative comparison of the highest and lowest rates drawn from Exhibit 5.22: “Kenora and Rainy River had the highest rate, of 492/100,000; the lowest rate, 220/100,000, was in the City of Toronto.” The next sentence then numericalizes the expression of the comparative relationship between the two rates in the form of a statistical object, a ratio.

This ratio, in turn, becomes a focal point for still further comparisons in the next sentence. Here it becomes a specific kind of ratio, one that not only tells that a given rate is twice that of another, but that itself is low in comparison with ratios for other surgical practices and that speaks the nature of variation in ways different than that articulated by other calculative procedures such as the absolute difference in rates (which suggests that the variation is large). The next sentence makes an important move from the discussion of ratio to variation by offering an authoritative, statistically-embedded qualification of the “overall” variation as moderate. The final sentence provides still further stability to patterns of variation in cholecystectomy rates by delineating them within the additional terms of temporal comparison.

Producing the ‘thing-like’ form of variations by describing a constancy of relative rankings in regional rates over time is a powerful device repeated throughout the sections of chapter five. Thus, in respect of rates of abdominal aortic aneurysm repair, we learn that the “rankings of counties and cities have changed little over time (Simunovic and To, 1994:80),” while in the case of coronary artery bypass graft surgery, that rankings “have remained much more consistent over time than would be expected by chance alone” (Ugnat and Naylor, 1994:91). Here is a powerful way of inscribing the solidity of the patterned character of health care. In the case of cholecystectomy, the temporal consistency of regional rates is given expression in decidedly statistical fashion. The practice of comparing rankings over time is not expressed in prose in an explicit way. Instead, we are simply told that rates appear stable, after which the constancy of rankings is expressed statistically as a correlation of 0.76.

Paragraph five thus displays a particular discursive technique for rendering health care into knowledge as variation. At work is a subtle rhetoric of empirical demonstration. In part, it involves a fairly standard set of interrelationships between written text and visual displays. At the same time, it involves the successive elaboration of rates within progressively more complex forms of comparison. In our example the movement is from simple numerical comparison, to the comparison of ratios, to the temporal comparison of relative rankings. Alongside this elaboration, the explicit textual expression of comparison is subsumed within a statistical objectification which produces

ratios as low or high and variations as small, large or in the case of cholecystectomy, moderate.

3.534 'Kinds' of Patterns as Anchors of Medico-administrative Rationality

While paragraph five may be specified by the importance of statisticalization in its constitution of health care, like the section as a whole it goes to work in ways that make health care knowable as a particular kind of thing. Whether rendered into thought as a temporal trend or a geographic variation, what is common throughout paragraphs three to five is a demonstrative rhetoric which makes up health care as solid, stable, numerically-based patterns.

These three small paragraphs suggest some of the ways in which HSR is consolidated in textual form through the production of specific discourse objects-- trends, and variations--that come to operate as its ontological ground. What one sees here is a rhetoric of empirical demonstration that takes shape through a proliferation of conceptual objects expressed in nominal form (Halliday and Martin 1993). More than simple nominalization, however, "Cholecystectomy" gives rise to a way of knowing grounded in particular kinds of things.

It yields not simply rates and variations, but rates that are increasing or decreasing, and variations that are small or large in degree. These 'kinds,' act as categories of discourse that help realize a medico-administrative rationality of health care. Descriptions of increasing rates, or of surgical practices with large degrees of variation are textual moments that hold, reproduce and create relevances of cost-control

and efficiency. They invite particular kinds of questions. One can wonder, for example, about what makes a rate increase and how to slow it. In the end, then, “Cholecystectomy” offers a rhetoric of empirical description of health care that sets the stage for its particular problematization as medico-administrative object. It furnishes a language of description that produces health care as a stable patterned object, further qualified through categories that can realize the broader political and strategic relevances of the *Practice Atlas*.

3.54 Questioning, Explaining and Acting

In the final subsection of “Cholecystectomy” entitled “Comment,” the narrative of the text shifts from empirical presentation of findings to a rhetoric of explanation and action. I like to think of the subsection as realizing the incipient managerial problematization of surgical practices made in their earlier substantiation as increasing rates and moderate geographic variations. Moving from a concern to show or tell what health care ‘is,’ the narrative of paragraphs six through nine explicitly takes up health care as an object of managerial curiosity.

As was the case with “Overall trends” and “Geographic variations,” “Comment” displays textual mechanics that ground a more general feature of the *Atlas*’s rhetorical character. The *Atlas* seeks not only to persuade its readers about the reality of health service delivery, but about the practice of health care reform. It does not simply constitute health care as a numerically-based terrain of patterns, it treats such patterns as particular kinds of problems. The *Atlas* is a profoundly applied text that seeks to provide

information for use in ameliorating wayward patterns of medical practice. Throughout its many pages, variations in surgical rates and lengths of hospital stay are treated as evidential problems. They are not presented as the given and natural state of health service delivery, but as phenomena subject to human influence. In the *Atlas*, patterns are treated as starting points for further scrutiny, research, and evidence-based efforts at transformation.

“Cholecystectomy” suggests some of the discursive mechanics that underpin this managerial way of knowing and acting on health care. Its Comment subsection displays some of the ways that health care is rendered problematic through forms of rhetoric that establish surgical rates as in need of explanation, that explain them, and that suggest modes of action that might ameliorate them. Such forms of discussion organize an applied, evidential assessment of patterns of surgical practice. They further articulate an indirect strategy for managing health care that positions the text’s imagined readers as kindred evidence-based actors on health care.

3.541 Making Up Rates of Cholecystectomy as a Problem

In “Comment,” the narrative of “Cholecystectomy” begins to articulate a problematizing mode of knowledge. A good deal of the discussion in the subsection raises questions about variations in rates of cholecystectomy, particularly their source and potential remedy. Prior to such forms of commentary being made, however, rates of cholecystectomy need to be constituted as a problem. Work needs to be done to set them

up as applied objects, as things that not only call for an explanatory account but a suggested remedy as well.

The most immediate textual site of this work is paragraph seven. Here we find that occasioning an explanation of cholecystectomy rates involves extending the forms of comparison through which kinds of patterns were made intelligible in the preceding subsection. We come to the need to explain and remedy cholecystectomy rates by way of noticing that Ontario's and Canada's are three to four times larger than those for a range of other countries. In "Cholecystectomy," explanation and action follow on the heels of the observance of international rate variation.

The external HSR literature is an important rhetorical resource drawn upon in the paragraph to move the text through to explanation and action. Thus it begins with a statement that draws on Vayda's early work (1973) to establish that 30 years ago the Canadian cholecystectomy rate was five times greater than that in the U.K.. Additional references are entered into the text to organize an interface of words and numbers that positions the Ontario rate in relation to a series of other rates and that produces their relationship as evidence of an enduring international difference.

Thus the external literature operates as a device for extending the text's comparative mechanics outward. We are no longer looking at regional rate differences within Ontario, but at differences across national jurisdictions. Accompanying this outward move is a certain slippage between discussion of the Ontario rate and a more general Canadian rate, indicating a move to a higher level of abstraction. Overall, the

rhetorical effect is one of producing important international differences that are weighty, temporally stable, 'big' and that thus warrant explanation.

This particular way of occasioning explanation in Comment subsections is typical of a number of the analyses of surgical practices in chapter five. The Comment subsections of "Coronary Artery Bypass Graft Surgery," "Transurethral Resection of the Prostate," and "Hysterectomy" all include early discussions in which the external HSR literature is used to compare Ontario surgical rates with those of other provinces, countries, or U.S. states. In these instances it is persistent patterns of difference in the form of higher Ontario rates that are treated as a problem in need of explanation and action. This way of establishing the requirement to account for surgical patterns builds a medico-administrative way of thinking by producing a terrain of potential managerial action. It directs attention to a problem (high rates) that if ameliorated (lowered through harmonization with rates of other regions) can contribute to the amelioration of the 'cost crisis' in health care.

3.542 'Practice Styles' and the Textual Mechanics of Evidential Explanation

In "Cholecystectomy," the move from establishing international differences in rates as in need of an account, to the work of explaining them is made in paragraph eight. The paragraph opens with a sentence that states that the reasons for differences between Canadian and European cholecystectomy rates are not known. What follows is an explanatory account that further grounds a medico-administrative way of knowing health care by producing health care patterns as evidence-based managerial problems.

Readers familiar with the discursive conventions of statistical rationality will find in paragraph eight a customary form of explanation. Explanation is structured in the paragraph as a consideration of various factors or variables that might partly account for variations in cholecystectomy rates. Thus, mention is made of the ethnic composition of regions and of variations in diagnostic practices. Other factors drawn upon in explanatory commentary in chapter five include patient preferences (Klotz et al., 1994), diagnostic improvements leading to increased detection of a medical condition (Simunovic and To, 1994), and differential access to technology and specialized services (Ugnat and Naylor, 1994).

At the same time, paragraph eight has rhetorical features that are more complex than simple speculation about contributing factors. While there is a certain indeterminacy to the explanatory account offered, there is also a definite privileging of ‘practice styles’ as the most important source of explanation. Thus a listing of possible factors closes with a reference to varied practice styles associated with uncertainty. What follows is a discussion that supports an emphasis on practice styles as an explanatory resource by citing external research that points to large proportions of cholecystectomies performed in various jurisdictions for inappropriate reasons. Following this discussion, “Cholecystectomy” is brought to a close by a proposal for action on Ontario rates in the form of further research that would compare indications across counties and review hospital surgical records.

While never precisely defined in the *Atlas*, the notion of practice style suggests physicians' choice or use of different treatment approaches for patients with the same medical condition in situations where "there is 'no one best method'" (Naylor, 1994b:70). The term was popularized by Wennberg (1984) and implies clinical discretion or more carefully, the possibility of using different processes of care to achieve similar outcomes for patients facing similar medical problems (Chen and Naylor, 1993:7).

As deployed in "Cholecystectomy," practice style conjoins explanation with assessment, generating a way of knowing that produces rate variations as problems that can be managed through evidence. Paragraph eight makes an explicit link between practice style and uncertainty. It also makes judgements about the evidence-based character of gall bladder surgery. The references to expert panels, for example, suggest that variations in cholecystectomy rates have to do with differences in the ways doctors treat gallstone disease in a context of uncertainty about appropriate indications for the procedure. While the references pertain to surgical practices in Israel and the UK, they are mobilized in the text to imply that some portion of the variation in Ontario cholecystectomy rates owes to inappropriateness. Local variations thus come to signal an evidential deficit; information about appropriateness does not exist, is not reaching, or is not being used by Ontario surgeons.

Elsewhere in chapter five, 'practice style' operates in a similar discursive fashion, appearing as a preferred explanatory variable that structures a way of thinking about, and

about acting on, surgical patterns evidentially. The typical narrative sequence is one in which variations in rates are understood to arise out of situations of evidential uncertainty. Ameliorative responses, in turn, are structured around evidence-based strategies for reforming medical practice such as the production of clinical practice guidelines.

Rather than operating simply as one more explanatory variable, then, the notion of practice style locates surgical patterns within a form of rationality organized by questions of evidence. Its deployment in “Cholecystectomy,” and elsewhere in chapter five effects a curious elision whereby numerically-based patterns in the rate of a given surgical practice become understandable as practice styles or patterns of practice grounded in a relation with scientific evidence. Through such commentary, temporal trends and geographic variations in surgical rates come to be understood as practice-based responses to information. What before were statistical patterns accountable by a variety of factors now become traces of physicians’ practice styles, phenomena understandable as the effect of different evidential states—of uncertainty, of relative clarity, and so on.

In the end, practice style is an important instance of a constitutive textual mechanics that produces health care practices as evidential phenomena or objects. The capacity of practice style to draw together related concepts of evidence, information and un/certainty helps formulate a particular way of knowing health care as an abstract text-mediated world of evidential patterns and aggregate, numerically-based information.

Given that in chapter five, uncertainty and lack of information come to be associated with high degrees of variation in surgical rates, practice style helps constitute the chapter's aggregate patterns of health care as practicable problems. It is part of the grounding of a constitutive discursive mechanics through which health care patterns become known as a particular kind of actionable problem. Through explanation oriented around "practice style," surgical patterns become matters that are to be managed by rejigging the relationship of clinical practice and scientific evidence.

3.543 Governing through Evidence: Medico-administrative Rationality and Managerial Action on Health Care

The constitution of geographic and temporal variations in surgical rates as a problem of evidential management is brought to a close in the final paragraph of "Cholecystectomy," where such patterns are offered up as a terrain of action for the imagined policy-maker-, manager-, and clinician-readers of the *Atlas*. After empirically describing kinds of numerically-based patterns through an interface of prose and visual display and offering explanations of them that privilege the relationship of evidence and clinical practice, the discursive mechanics of "Cholecystectomy" come to an end with recommendations for ameliorating problematic patterns evidentially.

These recommendations are framed as a call for further studies of the sort that "Cholecystectomy" itself demonstrates. Thus, Cohen, et al. (1994) suggest further comparative research on indications for cholecystectomy as a next step in understanding why Canadian rates of gall bladder surgery are higher than European rates. Overall, the

paragraph articulates a form of action on rates that takes the form of an ongoing program of health services research on patterns of cholecystectomy. Evidence-based strategies of response to variations in rates of surgical interventions are the most popular recommendations made in the various sections of chapter five. In addition to the local audit of surgical records they include the production and use of outcomes research to assess the significance of variations in surgical rates (Simunovic and To, 1994a), the comparative use of ICES information and other HSR by clinicians and managers to formulate a range of acceptable rates for a given procedure (Ugnat and Naylor, 1994), and the production of decision aids and clinical guidelines to guide physicians' decision-making (Klotz et al., 1994; Simunovic and To, 1994, 1994a).

The proposals for action offered in paragraph nine are interesting for a number of reasons. For example, the call for further research displays what one might think of as a formal property of HSR discourse, as a particular organization of knowledge production is suggested as a solution for problems that it itself renders into thought. More than that, however, paragraph nine begins to suggest some of the ways in which the analyses of surgical patterns made in chapter five of the *Atlas* intend an indirect, evidence-based strategy of governing health care.

At the heart of this strategy is the *Atlas*—the text itself—which is offered up to its readers as an authoritative resource for them to use in the local work of responding to the patterns of health care that it makes intelligible. The articulation of this imagined text-reader relation is made most explicit in the introduction and conclusion to chapter five.

Here readers are invited to engage in a collective project, one in which variations in surgical rates are “best seen as inadvertent experiments that allow providers and institutions to learn from each others’ experiences” (Naylor, 1994b:71). Elsewhere readers are encouraged to collaborate with one another in “developing and assessing hypotheses about causes of variations” (Naylor, 1994a:124). Such work might involve studies that ICES would “welcome the opportunity” to participate in, but whose specific nature would be left to “local and regional groups” (Naylor, 1994a:124).

When read in light of such reading instructions, the recommendations for action made in “Cholecystectomy” become one textual moment of a broader collective evidential pedagogy promoted by the *Atlas*. They extend the problematizing medico-administrative rationality of the *Atlas* by presenting the text’s original evidence on surgical patterns as a starting place for further questioning about the arithmetic of surgical care on the part of its readers. Rather than positioning evidence simply as a point of closure, or as a discrete solution to a problem, “Cholecystectomy” and other sections of chapter five present evidence-based problems to be resolved locally through further evidential means.

In this hoped for approach to managing health care problems, an authoritative text maps out the “‘is’ in health care delivery” and seeks to coordinate readers through the production of a common set of questions to be posed of a common object of their regard. This bears traces of what Nikolas Rose (1994) calls the generosity of expertise. Rose suggests that contemporary relations of expertise be understood not as a monopolization

or shoring up of knowledge but as involving an outward spread or proliferation of expert vocabularies and conceptual resources. Of course, following Smith, one would not want to read such relations off of the textual surface of a piece of the *Atlas*. How ICES research and its conceptual categories do or do not get taken up by health care professionals is a matter of careful empirical research.

However, what one can do with an analysis of textual surface is display the rhetorical expression of such a strategy. One of the constitutive conventions of HSR as put forward in chapter five of the *Atlas* is a fairly explicit articulation of an imagined form of indirect, evidential governance of health care. The *Atlas* encourages readers to take up the rationality it expresses. In a manner similar to other sections of chapter five, “Cholecystectomy” does not formulate directive recommendations. It is not prescriptive in the sense of putting forward particular appropriate rates of cholecystectomy for the province of Ontario or its various regions. The imagined relation of reader and text it articulates is not one in which readers are informed what to think specifically, but how to think. Rather than being told what a particular rate or degree of variation for a surgical practice should be, chapter five invites readers to think about health care as a set of patterned rates and to continue the work of improving the delivery of health care services through the use of health services research.

As a whole, the chapter expresses a kind of ‘how to’ reasoning, much the same as the one I encountered in Naylor’s presentation of the *Atlas* which I described at the beginning of this chapter. Individual sections of the *Practice Atlas* are written as

exemplars of a way of thinking about and acting on health care that might be reproduced by readers. As suggested by my analysis of “Cholecystectomy,” this organization of textual surface rests in a set of inscriptive conventions that produce health care as an applied object of a managerial way of knowing that is offered up to readers to operate and enact. In the *Atlas*, medico-administrative rationality is self-promoting. One of the text’s central discursive features is its presentation as a resource that might structure the manner of readers’ engagement with the work of improving health care.

3.6 Toward the Next Chapter

This chapter has offered a discussion of the textual mechanics that underwrite HSR’s peculiar evaluative and problematizing medico-administrative rationality. Drawing on a close textual analysis of the *ICES Practice Atlas*, I have tried to demonstrate how health services research is implicated in the governance of health care through the constitution of medical practices, in text, in forms that render them governable by its particular expertise.

Based in a concern to introduce the textual specificity of HSR into discussions of its involvement in the governance of health care, I explored, in the chapter, the inscriptive practices that ground the *Atlas*’s expository and problematizing character. My hope is that readers have been made familiar with not only the textual form of HSR, but with the immediate inscriptive mechanics that constitute its particular objectified version of health care.

My analysis emphasized the importance of interfaces between written text and visual displays as well as a series of comparative moves for the production of health care as numerically-based patterns. As part of my discussion I further noted how efforts to explain health care patterns made in the *Atlas* treat variations as evidential problems that can be remedied by remaking the relation of science and clinical practice.

The next chapter explores such remedial endeavours. It moves the site of my investigation of HSR and governance to the efforts made by health services researchers to ameliorate the evidential deficits of clinical medicine. From a concern with the textual surface of population-based research, it turns analysis to a highly pragmatic terrain of HSR practice—to the work health services researchers at ICES do to encourage the practical use of research findings in medical decision-making.

Chapter Four

Health Services Research, Research Transfer and the Social Organization of Interpretation

1.0 Introduction

The reform of health care often brings to mind transformations of a grand scale: government funding cutbacks, hospital closures, the privatization of health care services, the transfer of care to community agencies, and so on. While transformations of this sort receive much attention in the academic literature and elsewhere, they are not the only form of reorganization of health services currently taking place. Systems for delivering health care to people who are sick are being remade in ways that might be considered more subtle than those abrupt and majestic changes that so often capture public and scholarly attention.

One such set of less ‘dazzling’ transformations that deeply implicates health services researchers involves new research-based ways of thinking about and providing medical care. Alongside years of HSR that scrutinizes the efficiency and effectiveness of medical service delivery, have arisen initiatives to enter the findings of research into medical practice. In recent years, delivering ‘quality’ medical care has been made a matter of providing care that is guided by research evidence from the biomedical and, in some instances, health services research literatures.

Research transfer, the generic term for endeavours that promote the applied use of research is something of a specialty among health services researchers. Over the past

decade or so, HSR has emerged as an important site of expertise for efforts to ‘put research into practice’ in health care settings. These efforts have dovetailed with a burgeoning interest in evidence-based medicine (EBM). EBM is a project of therapeutic transformation. It announces a new clinical science, distinguished by the transfer of epidemiological and biostatistical principles to the bedside and by the establishment of the medical research literature as a determinative ground of physicians’ clinical decision-making (Sackett et al., 1991; Evidence-based Medicine Working Group, 1992; Sackett and Rosenberg, 1995).

While enthusiasts of research transfer and EBM would make of them little more than earnest attempts to encourage up-to-date, effective health care delivery, their implications go beyond their immediate ameliorative potential. Weir (1996:5-6), for example, notes that EBM and clinical epidemiology mark a recomposition of clinical reason. They transform clinical rationality from a “positive knowledge of the individual patient,” (see Foucault, 1994) to a form in which “the individual patient is seen as a member of a group, [with] group membership fixed by all its members having the same diagnosis.” Both EBM and research transfer further promote marked changes in the subjectivity of health care providers and the processes through which they deliver health services. Putting research into practice is about producing evidential practitioners and evidential relations of health care provision. It is about increasing the presence and purchase of scientific rationality within clinical medicine and other caring practices.

More than facilitating quality care, then, research transfer involves the reorganization of health care delivery as evidential practice. It puts in place relations of scientization, remaking work/text relations such that practical activity and decision-making in health care come to be guided by the cumulative findings of scientific research. In recent years, evidence-based decision-making has moved beyond the clinic. Evidence-based nursing has recently emerged (Mulhall, 1998), as has evidence-based management and policy, both within and beyond health care (Gray, 1997). At stake in research transfer is the “dominance and spread of [scientific] knowledge into more and more areas of life” (Gordon, 1988:258).

The main thrust of scholarly critique of research transfer and EBM has been organized in relation to the moral preoccupations of humanistic medicine. Physicians and others have expressed concern that the artful practice of medicine is at risk of being squashed by the standardizing impulses of certain approaches to promoting the use of scientific research in clinical work (Carr-Hill, 1995; Marshall, 1995; Iggo, 1995). Many fear that interventions that are not easily quantified and expressed as numerical facts will be overlooked by efforts to scientize clinical medicine (Smith, 1996; Bradley and Field, 1995). Still others fear that the formal codification of medical therapeutics through clinical practice guidelines or other protocols places the clinical autonomy of medical practitioners at risk of external, bureaucratic control (Grahame-Smith, 1995; Berg, 1997). When health services research is among the sciences being promoted, concern has also focused on the implications of basing individual medical judgements on a numerically-

based knowledge form that intends the efficient management of care for large populations (Belkin, 1997; Frankford, 1994). The quality of care promoted by research transfer can be based in economic as well as, or in addition to, scientific rationality.

The critique of research transfer that I make in this chapter takes a somewhat different form. My interest is not to debate the merits of medicine as art versus medicine as science. I am not trying to vilify the promoters of evidence-based medicine, nor is it my intention to empirically explore the transformation of clinical medicine¹. Rather, my concern is to suggest the significance of the activities of a new group of knowledge makers for the reform of health care. In exploring research transfer, I want to shed light on the organization of practices that provide for a particular approach to encouraging practicing physicians to use scientific research that has been developed at ICES. I want to contribute to an analysis that underscores how health services researchers actively engage in restructuring health care, in this instance, by promoting evidential relations of clinical work.

The empirical focus of my discussion is *informed*, a chatty, evidence-based newsletter published by ICES and targetted at Ontario family physicians. In offering an analytic discussion of the newsletter, my approach is in keeping with the dissertation as a whole: it focuses on a particular text and through investigation of it seeks to explicate certain features of the text-mediated relations of governance of health care. Of course,

¹ Despite much enthusiasm, programmes of research transfer in medicine have had a spotty record of achievement. The extent to which physicians actually have become evidence-based in their clinical work is not well known.

the investigative tools and analytic approach that I employ in the chapter are distinct. For example, my discussion is less concerned with the textual surface of *informed* than was my analysis of the *Atlas* made in the previous chapter. I do not offer here, a close text analysis of the content of *informed*. Rather, I draw on interviews conducted at ICES to explore some of the work practices through which the newsletter is made. The organization of my analysis, then, proceeds from an initial curiosity with the unique textual character of *informed*, to a program of interview-based inquiry that seeks to understand some of what might account for its particularity as a research transfer initiative. Overall I want to explicate some of the relations that produce *informed* as a particular text-based approach to governing medical practice, one that goes to work by introducing a new form of text into the context of physicians' daily clinical activities.

My analysis of *informed* emphasizes the organization of conceptual and inscriptive work that coordinates the making of the newsletter as an initiative that translates or recontextualizes science in clinical terms. It thus opens up for consideration practices through which scientific knowledge is reshaped in ways that intend particular forms of interpretive practices and clinical action.

informed and its making further suggest a governing practice organized to treat reading as an object of rule. The makers of *informed* seek to 'put research into practice' by working at physicians' work/text relations. More specifically, they hope to shape a terrain of potentially contested and variant readings of scientific research by providing physicians a text that traffics in the clinical 'bottom line' of scientific research. *informed*

is a practice of interpretation. Exploring its making draws attention to health services researchers at work trying to shape how physicians do their clinical work by circumscribing reading. My discussion of the newsletter points to forms of social organization of interpretation that run counter to certain psychologistic imaginings of reading as a free field of individual accomplishment (see Leitch, 1995:40-44).

I begin the chapter with a brief orienting discussion of investigations within health services research that focus on research transfer. While I deal principally with the broad HSR literature, I also outline work in the area done by ICES scientists in the past few years. As part of this discussion I reflect, autobiographically, on some of what informs my critique of research transfer. Next I offer an account that contextualizes *informed* within the broader activities of ICES's Research Transfer Unit (RTU). *informed* is not a formal research project of ICES. Rather it is an initiative of the RTU, a distinct organizational unit established within the Institute to promote and disseminate ICES research.

After locating *informed* in the context of work carried out at ICES's RTU, I turn to my analysis of the conceptual practices that coordinate its making. My discussion focuses on the significance of practices of problematization for shaping *informed* as a specific text-based research transfer initiative. Through comparison with a related evidence-based medicine strategy called critical appraisal, I suggest that the chatty and informal character of *informed* partly follows from how people, in their daily work at ICES, come to know about physicians as ambivalent readers. I further suggest that the

strategic choice to organize research transfer as a text-based, clinical recontextualization of science follows from how, at ICES, science and therapeutics are routinely problematized as distinct cultures or rationalities.

To close the chapter I offer a discussion of some of the inscriptive practices—ways of choosing topics and of writing—that organize *informed* as a particular type of recontextualization of science. Drawing closer attention to the content of the newsletter I suggest it is best understood as a type of patient management information. I argue that *informed* gets made through forms of writing that intend the newsletter's use within the daily rhythms of clinical work. The makers of *informed* hope to produce an active text (Smith, 1990a:120-158) by writing for the clinical setting; that is, by entering clinical relevances such as routine diagnostic and therapeutic practices in what and how science gets written.

2.0 Research Transfer: Some Orienting Remarks

Research transfer, particularly the transfer of findings from biomedical science and health services research into clinical practice is a central preoccupation of health services researchers. The phrase 'putting research into practice' expresses well the sentiments that health services researchers and their colleagues in the applied health sciences bring to questions about the uses of research. Perhaps more than in other disciplinary contexts, health services researchers have posed for themselves and others practical questions about how to encourage the use of biomedical and health services research among health care providers, particularly physicians.

Health services researchers are committed to exploring, identifying and promoting mechanisms that facilitate “the successful and consistent use of research results to support health care decisions” (Sibbald and Kossuth, 1998:2). Their efforts have produced a highly applied terrain of practical action and research, an admixture of formal research projects and more informal programmatic interventions, such as workshops and demonstration projects, through which they seek to understand and mold both the users and the social conditions of use of health research information.

Through their work in research transfer, health services researchers have installed themselves as experts in the evidence-based medicine movement. They, and their research, have become important sources of practical response to questions about how to make physicians more evidential. Indeed, much of the work in the area reads as a series of seemingly unending suggestions about interventions that might prove most successful in guiding physicians to use science in their clinical work. Health services researchers draw on a wide variety of disciplinary sources in their search for the best programme of behaviour change, including adult learning theory, social marketing and management studies, industrial psychology, and sociological research on the diffusion of technological innovations (Lomas, 1994; Rogers, 1995:38-95; Greer, 1977, 1988). They have used such resources to theorize the physician as information user, provide him a motivational structure, locate her within collegial networks and broader institutional contexts and to devise, discuss, test and re-test strategies for encouraging her clinical use

of scientific information (Dunn et al., 1994; Ellrodt, 1997, Lomas, 1993; Schroeder, 1987; Davis et al., 1995).

The systematic codification of scientific research in the form of evidence-based clinical practice guidelines—texts that, on the basis of scientific research, outline the most ‘effective’ course of clinical action to take for a given clinical problem in a specific group of patients (Eddy, 1982; Dixon, 1990; Field and Lohr, 1990)—and the host of efforts to promote their use are perhaps the best known of research transfer initiatives in health care. Much of the current literature calls for multi-faceted interventions for influencing physicians’ use of clinical practice guidelines and/or the scientific literature more generally. These interventions draw from a stable of approaches that includes critical appraisal, academic-based detailing, reminder systems, the use of local opinion leaders, media campaigns, and patient-mediated interventions (Lomas, 1994; Oxman, et al., 1995; Davis, 1994).²

² Critical appraisal is explained in section 4.1. The use of opinion leaders involves recruiting local physician/leaders to act as “educational influentials” who encourage the use of particular research findings among physicians in a given community (see Lomas et al., 1991). Academic-based detailing is an approach to research transfer that borrows from the activities of pharmaceutical “detail men.” It involves training individuals to do outreach among physicians, generally providing them print information and specific suggestions that help implement particular research findings (see Avorn and Soumerai, 1983). Research evidence is entered into clinical practice through reminder systems by prompts incorporated into physicians’ paper or computerized documentation and prescribing systems (see Haynes and Walker, 1987). Oxman et al. (1995:1425) define patient-mediated interventions as “any intervention aimed at changing the performance of health care providers for which information was sought from or given directly to patients by others (e.g., direct mailings to patients, patient counselling delivered by others, or clinical information collected directly from patients and given to the provider).”

A number of ICES scientists have conducted or participated in studies in the area of research transfer. The prescribing practices of physicians have been a particular focus for the Institute's work in this area. For example, two recent ICES studies used an experimental design to test the impact of multifaceted educational interventions on physicians' prescribing practices for antibiotics (Hux, 1996) and heart drugs (see Institute for Clinical Evaluative Sciences, 1998:50-51). Institute scientists have also participated in the development of clinical practice guidelines and other decision aides in such areas as breast cancer (Institute for Clinical Evaluative Sciences, 1998:46-49), domestic abuse (Ferris, et al., 1997), hypertension and heart failure (see Institute for Clinical Evaluative Sciences, 1998:50-51). ICES scientists have also published in the area of medical decision-making (Detsky et al., 1997).

Recent feminist suggestions for inquirers of scientific knowledge to explicitly locate themselves in their analytic writings (Haraway, 1988; Traweek, 1992) present an opportunity for me to suggest some of what has shaped my critique of research transfer. My own analysis of research transfer is made as a counter to its applied zeal. Of all the areas of health services research, work in research transfer is perhaps the most boldly applied. Much of the work is narrowly programmatic and marked by a spirit of social engineering.³ In it, the health services researcher-cum-social engineer is positioned as a

³ I would note that the people who work at ICES's Research Transfer Unit that I met and spoke with have a more tempered attitude toward their work and its possibilities than what I found in the formal literature.

kind of benevolent experimenter working away at trying to bring along his/her information user to where they should ideally be.

As a governing project, research transfer colonizes relevance in health care research, delineating the terms of significance of knowledges about health within the boundaries of applied thought. In a recent article, for example, a group of prominent Canadian health services researchers propose to encourage the practical use of research through an “evidence-based decision-making trade show.” Such a “bazaar of research-based evidence” would be a place for “packag[ing]” and “sell[ing]” “good research” to “prospective decision-making clients,” a setting in which “arcane academic debate...would be out of place” and “actively discouraged” (Lewis et al., 1998:211). In the literature on research transfer, the valorization of applied sensibilities and the burden to fix extend to more sociologically-oriented work. For example, in a much quoted article, Clark et al. (1991) develop a sociological analysis of research transfer that inscribes the social as a missing explanatory/operational factor. Their work tries to recuperate the social as an object of programmatic reflection, such that “social structural influences” are promoted as a factor to be reckoned with in designing strategies for influencing medical decision-making.

My own response to the formulation of research transfer as a governing initiative and the positioning of sociology as its resource has been varied. At times I have felt overwhelmed by the colonization of relevance by health services researchers. At other

times I have become impatient with their self-assuredness and seeming arrogance.⁴ More than anything I have become uneasy with application, mistrustful of happy contributions to the ‘obvious’ business of getting on with ameliorating health care problems. I want to work against the structuring of my own analysis of research transfer as something that must contribute to the applied project of putting research into practice. I want to make a space for the “arcane,” feeling confident that something of significance can be spoken about research transfer that is not applied.

Thus, I write about research transfer more or less unfettered by concerns of practicality. In exploring *informed*, in particular, I have no interest in contributing to the evidential problematization of clinical practice. I am not concerned with helping the goal of research transfer, with evaluating the effectiveness of the publication or with providing suggestions for its improvement. Rather than contributing to relations of application I want to explore them. My concern is with social relations of governance or rule; I want to investigate some of what goes into making a particular text-based initiative for shaping physicians’ practice of medicine.

3.0 *informed* and ICES’s Research Transfer Unit

At the time I conducted my interviews at ICES,⁵ the formal ICES research projects in research transfer that I noted above had only recently gotten under way.

⁴ I am not alone in this response. A recent *Lancet* editorial chastised the leaders of evidence-based medicine for their “confidence,” “lack of finesse,” and tendency to “notoriously exaggerate their claims” (Editors, 1995:785).

⁵ My discussion of *informed* is empirically based on a series of interviews conducted in the summer of 1997 with ICES senior scientists, senior management, research

Research transfer had not yet been well established as an object of formal research and investigation at ICES. Rather, much of the talk about research transfer that I heard about focused on the practical activities being carried out by the Institute's newly established Research Transfer Unit.

informed is one of the most important initiatives of ICES's Research Transfer Unit. It is a chatty, easy to read newsletter focused on the clinical relevance of biomedical research. Produced on a quarterly basis, the newsletter is intended for a readership of practicing physicians. Individual issues of *informed* tend to run between eight to ten pages in length and generally focus on three or four clinical problems, most of which are dealt with in two pages or less.

informed has an easy, appealing textual appearance. Its written prose reads as hybrid clinical/research narrative, marked by interview quotes from noted experts rather than by the details of scientific investigations. The conventions of desktop publishing are a central feature of the newsletter's presence; bold headings in different fonts, boxed text, cartoons, and graphic images appear frequently in its pages. The publication's tone is suggested by the titles and images of recent articles. Paired with a cartoon image of a mustachioed chef reading from a book called "new guidelines," the title "Recipe for

coordinators and research transfer staff members. At the time of my research, the members of ICES's Research Transfer Unit included its director, a graphic designer, an administrative secretary, an evaluation coordinator, a communications officer and an informatics officer. To protect the confidentiality of interview participants, I do not identify individuals who work at the Unit by job title. I refer only to "members" or "staff" of the research transfer unit and identify their inset quotes by the designation RTU. While not technically a member of the Unit, in the interest of confidentiality, I refer to the editor of *informed* as a member as well.

Success” announces a recent article on clinical practice guidelines for the management of diabetes (see Figure 4). “The Truth About Fibbing” is the title of an article from the September 1996 issue. The article focuses on the potential benefits of anticoagulation for patients with atrial fibrillation and is animated by graphic images of a cartoon ‘heart as student’ writing out “I will not FIB” on a blackboard.

informed is an interesting example of a text-based research transfer initiative that harmonizes the Institute’s concern to promote the use of scientific research in clinical medicine, with practicing physicians’ concerns to provide patients good care. The mechanics of this harmonization are textual. *informed* bridges science and medical therapeutics by providing physicians a text that offers an interpretation of the clinical significance of scientific research. It putatively operates by translating dull, clinically irrelevant scientific research into terms that clinicians find interesting and useful for their daily work.

The production of *informed* raises important questions about the analysis of the promotion of HSR and the social relations of evidential knowledge in health care more broadly. One of these concerns the relation of HSR to other forms of knowledge. I came to think and write about *informed* with questions about the promotion of the Institute’s HSR in mind. *informed*, however, offers its readers more in the way of biomedical research than formal health services research. In its pages, HSR has a muted presence, commingling with biomedical research proper. Occasional reports of practice variations stand alongside a main focus on clinical trials research in what becomes an

Figure 4

“Recipe for Success. ” *informed*, Vol. 5, No. 1, p.1

Recipe for Success

Clinical Practice Guidelines for the Management of Diabetes Mellitus

Currently, about 5% of Canadians—roughly 1.5 million people—know that they are diabetic. And that number is expected to rise to 2.2 million by the year 2000. The Canadian Diabetes Association has recently published in the Canadian Medical Association Journal evidence-based clinical practice guidelines for the management of diabetes. Consult the guidelines for all the details, but here are the highlights:

Diabetes Mellitus (DM) is a serious health problem—the major cause of coronary disease, the leading cause of kidney failure and new onset blindness. It adversely affects pregnant women and their babies, disables sufferers prematurely and can shorten life expectancy dramatically. Diabetes not only carries a high personal cost; it is costly to society, as diabetics have poorer health in general and spend more of their income on managing the disease. We don't know the actual economic burden of illness in Canada, but we know from American studies that one in seven health care dollars is spent on diabetes or on the management of the complications of diabetes.



J. Sherman

CLASSIFICATION

The guidelines recommend the use of the terms 'Type 1' and 'Type 2' diabetes, rather than "insulin dependent" (IDDM) and "non-insulin dependent" (NIDDM). The old terminology was thought to be confusing, as it was based on treatment rather than pathogenesis. Since patients with any form of diabetes may require insulin treatment at some stage of their disease, the use of insulin shouldn't be the classifier. Type 1 diabetes is characterized by those whose disease is a result of pancreatic β -cell destruction and who are ketoacidosis-prone. Type 2 diabetes is characterized by insulin resistance.

DIAGNOSTIC CRITERIA

There are major changes here. The level of fasting plasma glucose for the

THE MAJOR CHANGES TO THE DIAGNOSTIC CRITERIA:

Diagnostic fasting plasma glucose level has been reduced from 7.8 to 7.0 mmol/L.
The recommended diagnostic test is fasting plasma glucose (FPG).

diagnosis of diabetes has been reduced from 7.8 mmol/L to 7.0 mmol/L.

The old diagnostic criteria for asymptomatic DM (fasting glucose >7.8 mmol/L, with 2 hour PC 75g glucose load >11.1 mmol/L) left an estimated 50% of diabetics undiagnosed. A fasting glucose of 7.8 mmol/L actually

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interdiscursive terrain. As a strategy for intervening in physicians' clinical practice, *informed* is interesting for how it combines population-based HSR which, in the words of one RTU member, "look[s] at the big picture" with clinical research. *informed* provides one instance of how the promotion of evidence-based medicine involves a textual interface of HSR with related knowledge forms.

informed is also an interesting site for research because of its smallish and unremarkable character. Conventional analyses of health care restructuring, even if focused on evidence-based medicine or research transfer, would likely bypass a publication whose appearance suggests it as something doctors might read in their spare time. As with many things, however, *informed's* more obvious appearance belies its significance. Its chatty titles, cartoons, and graphics, its gentle and encouraging rather than commanding tone are textual traces of a particular approach to governing physicians' clinical behaviour developed at ICES.

3.1 *informed*, Relations of Medical Autonomy and the Techniques of Social Marketing

My analysis of *informed* emphasizes how its textual configuration follows from ways of problematizing physicians as readers and the relationship of science and practice that are enacted at ICES. As an initiative of the Research Transfer Unit, however, *informed* is also organized by the broader relations that shape the Unit's work. The research transfer activities of ICES's RTU form a terrain in which the programmatic work of encouraging the applied use of research mixes with other managerial processes

and objectives. My interviews with people who work at the Unit suggest that its efforts to manage the Institute's relationship with the medical profession and the organization of its work by social marketing techniques form important relations that shape *informed* as a particular approach to research transfer.

ICES's Research Transfer Unit was established in 1995 in partial response to an external review of the Institute recommending a more proactive dissemination of its research findings (RMC Resources Management Consultants, 1995). The Unit is a distinct organizational entity within the Institute's formal structure, staffed by six individuals. RTU members, many of whom have training in media work and corporate communications, engage in a variety of activities designed to promote the practical implementation of the Institute's research. These include the regular evaluation of ICES publications, the implementation of demonstration projects to assess strategies for promoting the use of clinical practice guidelines, and a thorough program of work in media-related research transfer.

My discussions with members of the Unit about how it got started put into view the significance that the Institute's relationship with the medical profession has for the organization of its research transfer initiatives, including *informed*. The activities of the Research Transfer Unit did not spring forth as an application of a rational master plan to 'put research into practice.' Rather they were a response to a set of political tensions and relations that ICES faced in its start-up phase.

In the previous chapter, I noted the controversial nature of ICES's population-based research on medical practice variations. While ICES was established with the co-sponsorship of the Ontario Medical Association [OMA], its evaluative research on geographic variations in medical events had, and continues to have, critical implications for the medical profession. The critical purchase of ICES research was perhaps most greatly felt in respect of the much anticipated 1994 *Practice Atlas*, its first major research publication. Despite the controversial nature of ICES research, during its first few years of operation matters of research communication do not appear to have figured prominently within the Institute. As one member of the RTU put it:

The Institute was just publishing. Bam, bam, bam. 'Too many of this, too many of that, too much variation here' and it kind of just landed. And the medical profession felt very defensive... And I think they were wondering 'why was ICES set up?' And, you know, 'what are we doing?' 'We're supposed to be sponsoring them and here they are shooting us in the back.

(RTU 04/97)

The problems that ICES's early approach to disseminating its research created for its co-sponsor were further described to me in a more specific account of the pre-release of information from the *Practice Atlas*. Here is one version of the events:

The first *Atlas* was being put together in late 1993. And one of the scientists presented some material on breast cancer surgery at a symposium not realizing there was a journalist in the audience. I mean, who knows, there's no point in pointing fingers at this stage of the game. Anyway she wrote a story in the [Toronto] Star the next day and actually went up to [the scientist] after the session, and of course he'd never had any experience with media before, and asked him 'if you were a woman how would you feel about these numbers.' And he said that 'I'd be shocked and appalled.' The story was quite provocative about all these women who were getting mastectomies when they didn't need them and all this kind of stuff... It really pissed off the medical community,

particularly the surgeons, understandably... So I think in the first couple of years a bit of a dynamic got established that was quite negative and partly why a director of research transfer was hired was to try and see whether we could sort some of that out... So once we [the Research Transfer Unit] started working more closely with the [Ontario] Medical Association and we, you know, we spent more time thinking through what the impact of what we're saying was. So if we're going to release a bunch of data on regional variation, which is kind of scary, then we have an obligation to talk about the reasons why some of these variations are perfectly legitimate, not just assume it's all bad.

(RTU 04/97)

The remarks excerpted above are interesting for how they disrupt the abstract representations of research transfer that typify the HSR literature. Health services researchers' formal writings on research transfer tend to outline neat and tidy programmes for governing the contemporary relation of medical science and clinical practice. When, however, such programmes are explored in ways that attend to the actual and particular contexts of their development, research transfer emerges as a more complex terrain of practice.

The research transfer activities of ICES's RTU are not simply about putting research into practice. ICES research presses at the historic forms of clinical autonomy enjoyed by the medical profession. A good part of the Unit's work involves managing ICES's public institutional identity and, in particular, its relationship with organized medicine. Rather than simply encouraging practitioners to use research in their work, the RTU actively manages the political tensions associated with that encouragement, thus, the Unit's careful work in media-related research transfer. The delicately written press releases translating the Institute's work into media language, the careful work of training

scientists how to “talk at a certain level and in a certain way” at press conferences—these and other activities are not simply attempts to disseminate ICES research to a broad audience. They are part of a corporate communications strategy designed to promote the corporate entity itself—ICES. Even more importantly, they are an effort to organize an interface of ICES research and its representation in the media in ways that prevent the types of ‘misrepresentation’ that created such difficulties for the Institute’s relationship with the OMA following the release of information from the *Practice Atlas*.

If the RTU’s general work is organized within relations of tension with the medical profession, so too is its production of *informed*. The Unit’s careful and adroit efforts to encourage physicians to use research evidence in their clinical work partly takes shape as the deployment of social marketing techniques. In the quote above, these techniques are suggested by the speaker’s remarks about reflecting more carefully on the impact of ICES research. By the time I had arrived and carried out my interviews at ICES, the Unit had put in place a dissemination strategy that had moved away from what was described as “a set template” to the consideration of publications on a case-by-case basis. Rather than simply producing a journal article, sending a draft of the research report to the sponsor, “sticking a cover” on the working paper and mailing it out, Unit members now consider health services research a product, the promotion of which needs to be reflected on and designed in respect of the characteristics and needs of specialized audiences. As I point out later, social marketing conventions that position practicing

physicians as particular kinds of readers are an important part of what organizes the textual specificity of *informed*.

The difficulties the RTU negotiates in trying to make more evidentiary, physicians, whose professional association has co-sponsored ICES and whose clinical work is an object of the Institute's research-based assessment is also a feature of the making of *informed*. The newsletter does not have a commanding presence. It does not clobber its readers with injunctions about the use of scientific research in clinical decision-making. Rather, it presents light narratives that suggest clinical uses of scientific research.

Later I argue that the textual character of *informed* is conceptually coordinated by ways of producing particular 'problem spaces' that are deemed in need of response by the initiative. Suffice it to say here that the delicate character of *informed* is also organized more broadly by relations of medical autonomy. RTU members are in no position to compel physicians to practice medicine evidentially. While ICES certainly contributes to research-based relations for assessing and monitoring medical practice, the medical profession is not answerable to the Institute. *informed*, then, involves a more tempered form of governing practice. The newsletter gently encourages and coaxes physicians to consider scientific research when making clinical decisions. It presents evidence-based medicine as something physicians would take up on their own account, either for their own good, the good of their patients, or the good of the health care system more generally.

4.0 *informed* and the Clinical Recontextualization of Scientific Research

Having located *informed* within the broader relations that shape the work of ICES's Research Transfer Unit, I now want to discuss the organization of conceptual and inscriptive practices that provide for its particularity as an initiative for making clinical practice more evidential. In making this discussion I draw on a comparison between *informed* and a related research transfer strategy called critical appraisal. Before developing my remarks on practices of problematization and their relationship to *informed*, I offer a brief discussion of critical appraisal.

4.1 Governing Reading: Critical Appraisal and the Ontario Health Care Evaluation Network

Developed as a central component of clinical epidemiology by members of McMaster University's Faculty of Health Sciences and others, critical appraisal aims to reposition the presence and use of 'best evidence' in the work of delivering health care. Critical appraisal is quite popular among evidence-based medicine circles. It has something of the status of 'business as usual' within efforts to put research into medical practice. While the makers of *informed* are quite familiar with the principles of critical appraisal, their own response to the problematic relationship of research evidence and clinical decision-making takes a somewhat different form.

I first encountered critical appraisal at a workshop on evidence-based clinical guidelines offered by the Ontario Health Care Evaluation Network (OHCEN) in March

1997.⁶ Prior to the workshop, participants received a package of documents that included, among other material, two guidelines published in the medical literature (Hay et al., 1996; Spence, 1995), two articles about reading and using clinical practice guidelines written for *The Journal of the American Medical Association (JAMA)* by the Evidence-based Medicine Working Group (Wilson et al., 1995; Hayward et al., 1995) and two worksheets called “Critical Review Forms” that listed questions about the guidelines that we were to have answered in advance of the workshop.

At the workshop itself, I participated as student in a pedagogy of evidential reading that focused on a particular approach to assessing the merit of guidelines. Much of our time was spent reviewing our worksheets and discussing the ‘internal validity’ and evidential character of guidelines. Thus we learned that discerning the value of a guideline meant raising questions about the quality of evidence it is based on (randomized controlled trial vs. uncontrolled trial vs. observational data vs. case reports, etc.), the timeliness of its evidence, the transparency with which it reports on the procedures used to identify, select and aggregate evidence, the specificity of outcomes reported, and the results of formal tests of the guideline.

⁶ The workshop was entitled “Evidence-based Clinical Guidelines: Making Them Work for the Decision Maker.” OHCEN was established in 1993 with start-up funds from ICES. Through initiatives such as EBM workshops, annual symposia, a health research database, and other internet resources, OHCEN brought together Ontario health services researchers and promoted their work to a host of “decision makers” including health care providers, administrators and policy makers. Not long after the workshop I attended, the Network folded owing to its failure to secure ongoing funding.

Had I been more familiar with critical appraisal, I might have been less surprised by the efforts put forward at the workshop to govern work/text relations in health care by shaping how people read science. The various exercises we participated in were a more or less direct translation of the principles of critical appraisal. Critical appraisal responds to a particular construction of the relationship between scientific research and medical therapeutics. The medical literature is positioned as unruly, ever-growing and filled with methodologically weak bad apples. Those charged with the practice of medicine thus face the constant threat of “becoming out of date,” a predicament aggravated by the “hurly burly of clinical practice” that leaves precious little time for clinical reading (Sackett et al., 1991: 305, 359).

In response to these problems, critical appraisal offers a host of reading strategies--codified sets of questions to pose of different kinds of research articles, techniques for evaluating databases and ‘tracking down’ evidence electronically, methods for deciding which journals to read, how to read them, etc.--that help organize a set of interpretive practices through which readers make sense of the medical literature. Critical appraisal contributes to particular forms of text-mediated clinical practice by promoting reading strategies through which physicians can negotiate the medical literature.

Critical appraisal is a popular strategy for research transfer. Its principles are routinely taught to students of medicine and applied health disciplines at universities such as McMaster. The techniques for taming the medical literature it advances have also been published as a series of reports in *JAMA* under the title “Users’ Guides to the

Medical Literature.” The series offers an abundance of ‘how to’ articles that explore reading strategies for different types of scientific publications.

informed shares much with the project of critical appraisal. It too is based on a presumption that something is wrong with the relationship of medical science and clinical practice. It too targets the work/text relations of clinical activity and the reading practices of physicians. Unlike critical appraisal, however, *informed* targets the other end of the text-reader relation; it is an initiative that translates the textual character of science. Rather than creating among physicians new capacities to read science as is, *informed* organizes interpretation by offering physicians a reframing of biomedical literature as ‘newsy,’ readable, evidence-based, and clinically relevant information. My research suggests that these strategic differences between critical appraisal and *informed* stem from ways of problematizing both physicians as readers and the relationship between science and clinical practice that have developed at ICES.

4.2 Problematizing Physicians as Readers

As a translation effort designed to enlist physicians in a project of evidential clinical activity, *informed* intends particular reading practices. The specific textual form of the newsletter and thus its possibilities for intervening in physicians’ work/text relations, follow upon work done at ICES to understand how physicians go about their clinical reading. This knowledge about physicians as readers has been developed at the Institute through a variety of related activities. It grounds an assessment of physicians’ reading capacities that is quite different from that put forward in the critical appraisal

literature and is an important part of what accounts for the strategic character of *informed*.

The project of critical appraisal treats clinicians' extant reading practices as a problem. Within the clinical epidemiological and EBM literatures there is a tendency to emphasize the difficulties that physicians have keeping up with their clinical reading, their failure to adequately assess the evidential basis of research articles, their need to develop skills for negotiating a burgeoning literature, and so on (Sackett et al., 1991; Hayward et al., 1995; Dunn et al., 1994). Coupled with such problematizations of physicians' reading is the figure of the physician as an active and interested reader. While s/he may be troubled with the rapid growth of medical knowledge, with a little help s/he can be made a competent reader of the medical literature.

Like the broader project of EBM, *informed* is an initiative that involves practical thought about the nature of physicians' reading capacities. Part of the way of thinking about physicians and their reading that circulates at ICES was put into view for me in a conversation with a research coordinator about how to make clinical research practical:

...you have to think about how you're going to use that information [clinical findings] that you have generated through research and either put it all together or work at it in pieces and remodel it so that it does help to promote change. And...particularly with something like *informed* it was looking at how physicians read, like basic things. Like how much time in a day can they have to read? How well do they process information? Do they read those learned articles or do they, do they do better if they get blurbs? Do they do better if they read it in short group sessions where they can talk about it? Do they have time for that? You have to recognize that a physician can be an individual and has other demands on his time other than patients.... So what's he going to prioritize as far as new

learning or reading research or understanding changes? And how are you going to influence that?

(Research Coordinator 05/97)

In her remarks, the coordinator is quite clear that producing clinical research that acts on and in the world is a matter of its recontextualization, or as she says, its remodeling. What I find interesting about her comments is how the examination of physicians' reading is treated as a site that helps realize the recontextualization of clinical research. In order to make actionable research, one must understand how physicians read. Knowing about reading, then, is important for those who produce *informed*. It helps guide their efforts at scientific translation.

The coordinator's comments further indicate some of the questions posed about physicians' reading that produce it as an object of governance. Asking and answering questions about how physicians read and how to maximize their reading potential renders a terrain that research transfer staff seek to act on and harness in their effort to promote evidence-based clinical decision-making.

The many questions raised by the research coordinator also suggest some of the efforts that go on at ICES to piece together a knowledge about how physicians do clinical reading. This knowledge is not exclusively formal or technical but, instead, is created through an admixture of research, disciplinary responses, social marketing conventions and practical experience. Formal research on how to influence physicians' clinical work has been carried out at ICES. Many of the research transfer staff I interviewed spoke about how their work on *informed* was guided by ICES research on the development of

clinical practice guidelines for sore throat and PSA testing.⁷ In addition, members of ICES's Research Transfer Unit conducted a pilot project on Ontario physicians' use of MEDLINE as part of planning their physician-targetted research transfer activities.⁸

Some of the practical thought about physicians and their reading that I encountered in my conversations at ICES also developed in critical response to the assumptions of clinical epidemiology. Below, a RTU staff member expresses this critique in terms that underscore the institutional specificity of the Institute:

To hope that every physician is going to be able to dial into MEDLINE, find the latest abstract for whatever is facing them across the desk and follow the treatment protocol, I think, is lunacy. I mean not to say that the work that's being done at Mac [McMaster University] and other places [OHCEN] is not important... I don't want to be critical but I think [OHCEN is] by and large, it is a group of academic-based physicians. So they, I'm not sure that they have a good feeling for you know, what the local physician in Sarnia is up to or what their resource capacity is or what their level of interest is. We're just in a different environment than the OHCEN folks. We're not in the university... We really don't have time to do the longer term mind-set change. We've got to get people to stop doing what they are doing tomorrow.

(RTU 04/97)

One might consider the interview excerpt as offering a narrative moment that positions ICES in respect of the academy. In the speaker's remarks, ICES is made distant from the academy through descriptions of OHCEN that bring to mind 'pointy-

⁷ The prostate-specific antigen (PSA) test is a test used to screen for prostate cancer.

⁸ In 1996 through an arrangement with OVID technologies, a distributor of the MEDLINE database, ICES secured 2500 free accounts for access to MEDLINE for Ontario physicians for a one year period. A few months after the project was initiated, some 1950 passwords had been distributed. However, an RTU member noted that after an assessment at three months, only one quarter of those physicians who had received passwords had actually "signed on" to MEDLINE. These results confirmed Unit members' skepticism of critical appraisal.

headed”⁹ academics who are ‘out of touch’ with the day-to-day realities of small-town physicians. But there is more than self-representation at work in this quote. ICES’s distance from the academy does shape its pursuit of physician-based research transfer. The production of *informed* is less circumscribed by the formal rationality of university-based disciplinary practices such as clinical epidemiology. With this greater distance come new opportunities for thinking about the physician as subject.

At the same time, a more informal knowledge of physicians made, in part, through social marketing practices has been operative at ICES. The Institute’s RTU staff have drawn on their media training and media-related research transfer in ways that produce knowing about physicians and their reading activities as a matter of knowing what their ‘needs’ and ‘wants’ are. The people I interviewed often spoke about this knowledge as “common sense” or as “hunches.” However, it was also based in marketing conventions, such that physicians were treated as a niche market, the characteristics of which needed to be understood in order to influence it. Such market-based understandings further combined with an experiential knowledge of the nature of clinical work. At ICES, knowing how the clinical setting operates and what physicians can and cannot do in respect of reading derives, in part, from the physician/researchers who work there, many of whom continue to practice medicine on a part-time basis.

⁹ The term “pointy-headed” was used more than once in my interviews to establish distance between the applied research concerns of ICES and the more academic or “pure” forms of research going on in university settings.

Through a variety of sources and practices a knowledge about who physicians are in their reading, quite different from that of critical appraisal and its presumed physician/reader, has been produced at ICES. The physician as subject that conceptually coordinates the work of making *informed* is not the avid and interested reader of critical appraisal. Rather, the makers of *informed* have organized their work in relation to a problematization of the physician as a begrudging or indifferent reader.

E: Can we talk about the critical appraisal workshop ICES offered last August?

P: Yea, but that wasn't really designed for doctors. It was designed more for planners, hospital administrators, DHC [district health council] staff, provincial association staff.

E: So why was that the focus?

P: Because we didn't think, I mean just, doctors wouldn't come.

E: Why not?

P: They don't have the time. It's not something they think they should be able to do.

E: To go through the medical literature?

P: Yes. They're there to treat patients. You know, they've been to medical school, they've been taught the stuff, they keep current. Their whole capacity to stay current is really through collegial interaction, rounds in the hospital, some CME [continuing medical education] sessions now and then. Maybe they go to a conference or two now and then, but they really don't have the time or inclination to read the journals. So I mean we just accept that as fact instead of trying to change it.

(RTU 04/97)

Like many others with whom I spoke at ICES, the research participant in this exchange offers a more tempered assessment of physicians' reading proclivities than that underpinning critical appraisal. Time and again in my conversations with them, people involved with *informed* noted that physicians are not interested in rigorous clinical

reading. Our discussions of reading tended to involve explanations of how the organization of physicians' work discourages ardent reading. Thus, for example, I heard about how physicians lack the time and resources to negotiate an overwhelming medical literature.

The figure of the physician as an indifferent reader presents the makers of *informed* with a set of problems that they take into account in their work of promoting the use of biomedical and health services research in clinical work. Providing physicians with new reading skills with which to tackle the biomedical research literature is a strategic option that does not work well on the begrudging reader. Rather than bringing the reader to the text, at ICES, the evidential governance of clinical work involves bringing a new kind of text to the reader.

Part of what organizes this recontextualization of HSR and of biomedical science is a concern to make *informed* interesting. The makers of the newsletter seek to intervene in the work/text relations of the languid, begrudging physician/reader through a particular text-mediated strategy of governance. It is a strategy that harnesses physicians' extant reading practices in its service. Rather than fundamentally transforming how physicians read science, it transforms the science they read, offering them an interesting text that can be quickly and easily read. At ICES, then, the work of recontextualizing science involves efforts to enter evidence into practice by making science interesting:

The second way [to put research evidence into clinical practice] is to make it a little bit interesting so people actually look at it. Because what happens is even if you're a journal reader and you get a bunch of journals and it's a lot of dense reading and, I don't know, your night table kind of piles up and dust balls grow and then eventually you just kind of toss it all

out and let it grow again, 'cause you just don't have the time or inclination to do it. So the idea behind this [*informed*] was that it was really short. It's eight pages. It's kind of fun, there's a few cartoons. It's got something snappy at the beginning that draws you in. And you're going to read it when you get it. And that's what they [physicians] do.... My feeling was you had to compete. Not with medical journals like the *New England Journal of Medicine*, but you had to compete with *Time Magazine* and *The Toronto Star* and the comic section and whatever's on TV that night. And so, to compete in that world for people's attention, you have to make something that's engaging and interesting. The old dry medical writing is losing people.

(RTU 05/97)

4.3 Problematizing the Relationship of Science and Clinical Practice

Of course, *informed* is about more than interesting science. Even a casual acquaintance with the rhetorical forms of medical literature is enough to suggest the text's distinctive character. *informed* is curiously intertextual. It combines tables and other visual displays found in scientific literature with the textual conventions of media discourse—cartoon drawings, excerpts from interviews, photographs, headlines—and 'newsy' reports of research findings that emphasize the clinical relevance of biomedical research. While this particular way of recontextualizing science seeks to act on a disinterested reader, it also represents a particular response to the problematization of science and its relationship to clinical practice.

Practical thinking about the relation of biomedical science and medical therapeutics enters into the making of *informed* in a manner similar to the production of the physician as indifferent reader. Like the begrudging physician/reader, the constitution of science and medical practice as worlds split apart or distinct cultural

spaces defines a problem area for the makers of *informed*. People's ways of thinking about the failure to use research evidence in clinical practice helps bring to light how health services researchers and others at ICES are engaged in constituting the relation of science and medicine as a specific kind of problem around which a particular set of programmatic interventions can be put forward.

The evidential problematization of clinical care that the makers of *informed* participate in and contribute to draws on conceptual resources that have a life outside of the immediate setting of their work. The HSR and EBM literatures, in particular, are important sites where the project of 'putting research into practice' and its presupposition of an absence or at least a deficient presence of science in clinical medicine gets articulated. In these literatures one finds mobilized time and again the trope of the science/therapeutics gap (Rosenberg and Donald, 1995; Komaroff, 1982). Medical practice is alarmingly out of date with the state of current biomedical research we are told (Slawson et al., 1994). Too often medical practitioners fail to clinically incorporate medical interventions that have been deemed efficacious, or they stick with interventions that have shown to be of little clinical value (Williamson et al., 1989; Lau et al., 1992). There is too much inappropriate care going on--physicians are at risk of making "ineffective, or even harmful decision[s]" (Rosenberg and Donald, 1995:1122). In support of assertions that medical practice is insufficiently informed by biomedical research, commentators site, amongst other investigations, the growing body of HSR that

points to inexplicable widespread geographic variations in medical interventions (see Dunn et al., 1994).

Scholarly critiques of EBM further suggest that its particular ways of representing the relationship of science and clinical medicine are but the latest in a series of efforts to make convincing, medicine's claim to a scientific basis (Willis and White, 1998). In her important analysis of clinical epidemiology, for example, Gordon (1988) locates the central preoccupations of EBM within a history of assessment of medical practice and the profession's response. She also suggests that current proposals to expand "scientific rationality into medical practice" are one expression of a long-standing tension within medicine between two different forms of knowledge and bases of its authority—clinical science and clinical expertise.

Medicine as art and/or science has been an object of interest within the medical profession and without, particularly among sociologists and historians for some time (see Freidson, 1970; Becker et al., 1961; Bynum, 1994; Berg, 1995). As historical research on medicine has indicated, the forms that medical science has taken and the nature of its relationship to clinical therapeutics have varied and changed over the course of medicine's development (Foucault, 1994; Bynum, 1994). Even within the postwar period, a variety of notions about the scientific character of medical activity have circulated within the profession. For example, in an analysis of medical editorials, Berg (1995) challenges the self-representation of EBM as a project of gradual, but steady transformation of medicine from art to science. He notes (1995:438) that

there was no single, unilinear process in which a previously ‘unscientific’ practice became ‘scientific.’ Likewise, there was no single, stable realization of ‘a problem’ which has for 30 years guided such a process. Rather, the ‘medical practices,’ ‘problems’ and ‘solutions’ spoken of in editorials and textbooks *were* conceptualized *differently* within different discourses. What ‘scientific’ medical practice *is* according to medical authors, and, concurrently, what medical practice’s problems *are*, took on different forms in different times and contexts.

Historical and sociological analyses of the relation of science and medicine historicize and complicate the claims put forward by enthusiasts of evidence-based medicine. They also suggest how concerns about the “weak scientific basis of medical practice” (Gordon, 1988:261) operate not simply as representations of the status of clinical medicine ‘as is,’ but as an important ground of its problematization. Drawing attention to these analyses and to the claims of EBM itself, delineates the broader discursive terrain within which problematizations of science and medical practice are formulated at ICES.

Of course, I do not mean to suggest that the people who make *informed* somehow mechanically apply, in their work, ideas about science and medicine culled from the literature. Rather, I want to underscore that talk about science and medicine as ‘separate spheres’ was an important and recurring feature of my conversations with them about their engagement with the newsletter. A certain way of knowing the relationship of clinical practice and scientific research is typical of the work of making *informed* and is an important part of what organizes the newsletter as a specific kind of governing initiative.

These problematizations are not discrete ideas or concepts that fall from the sky, they emerge as part of people's practical work experience:

Well, from my point of view of a practicing physician, I was interested in research and I was here doing some research, just after I did a course and a few projects here and I felt like the research wasn't really relevant to practicing physicians. Research wasn't making it into the field. And I could see as a practicing physician that you just did what you did and the research world seemed a million miles away and had nothing to do with you. So my view was to make it [*informed*] useful. To put it in a format that would be not only relevant but interesting, that would get people to pick it up and look at it and see how the stuff could fit into their practice.

(RTU 05/97)

This excerpt is typical of the forms of talk through which problematizations of the relationship of science and clinical practice were articulated in my interviews. Not once did a member of ICES's Research Transfer Unit speak in ways that suggested they thought in a discrete or isolated way about this relationship. As one person noted, "I didn't do that, I didn't deeply philosophize at the time." Instead, their notions about how science and therapeutics are related one with another were expressed within accounts of their work activities. Thus, in a discussion about e-mails she received from physicians who had read *informed*, a research coordinator I interviewed noted:

The important part was the doctors that were reading this, they didn't want big, long lists of references. They didn't want the measured and stepped arguments. What they were hoping you were going to give them was 'tell me what to do.' 'Give me a little bit of background information so I can answer the patient's questions, but just tell me how to handle this.'

(Research Coordinator 05/97)

People at ICES come to know about the relationship of science and clinical medicine through their varied everyday work involvements. Scientific research evidence and clinical decision-making become known as worlds apart, as part of their experiences of doing research at ICES, for example. Such problematizations emerge as they think about this research in light of their clinical experiences, as they engage in writing up their research, as they converse with one another and with the physician/readers of *informed*, and so on.

While the two interview excerpts above suggest the embodied and processual character through which science/practice problematizations are made, they further point to some of their distinctive content. In my interviews with the Institute's RTU staff, HSR and biomedical science were not treated merely as separate from clinical therapeutics. People's primary concern was not with a simple science/practice split or, for that matter, with clinical decision-making that was insufficiently guided by research evidence. Rather, the relationship of science and therapeutics was made problematic through a specification of science and clinical work as culturally specific domains, as distinct rationalities. Consider the following remarks:

...he has got a real creative way of being able to put things in a context that a physician would understand. You know, 'I'm a doctor sitting at the desk and you're a patient sitting with me.' 'How do I think about this [clinical problem]?' 'I don't think about it in terms of research information, I think about it in terms of my patient sitting here and what are they saying.' So he really helps us write *informed* in ways that doctors respond to.

(RTU 04/97)

The individual referred to as “he” in the excerpt is an editor of *informed*; the excerpt itself is part of a broader discussion about his work activities. In these remarks, the speaker is trying to give an account of the unique contribution made by the editor to the publication. The nature of that contribution lies in his capacity to help produce a form of writing that, ostensibly, physicians can understand, that they “respond to.” At work in the remarks is a notion of a distinct clinical rationality, expressed by the speaker as a spatial relationship between physician and patient and as the physician’s thought about the patient and his or her speech. This rationality, this way of understanding that is unique to physicians, is sought after by the newsletter’s makers. *informed* intends the practical rationality and work forms of clinical medicine.

Even as they delineate a specific clinical rationality, the speaker’s remarks about writing *informed* imply a comparison. The statement, “I don’t think about it in terms of research information,” gestures, in its negation, towards a way of knowing clinical problems that stands in contrast to physicians’ clinical reasoning. In the account, thinking in terms of research information operates as an unelaborated contrastive object; it names a way of knowing that the physician as clinician does not mobilize. As such, the implied contrast that grounds the account is between medicine as art—clinical experience and clinical rationality, and medicine as science—formal scientific rationality as expressed in the texts of biomedical and/or health services research.

Problematizing the relationship of science and clinical medicine as one of distinct cultural spaces was typical of the conversations I had with people who make *informed*.

One individual, for example, spoke about how scientists and physicians “think differently,” how they speak “different languages” and have different sets of “concerns.” Often, distinguishing science and clinical medicine as involving unique modes of reasoning was made as part of discussions about writing. In talking about the writing she does for *informed*, one research coordinator noted her tendency to “write in the scientific mode” in contrast to “doctor-speak.” A member of the RTU spoke about how scientific articles typically lack direct clinical significance, about how they are too long, too academic and too concerned with “scientific rigour.” Another noted that *informed* offers an alternative to scientific research by giving the “practical approach to things” and the “gist of what’s there.”

Conversations about *informed* in which science and clinical medicine are constituted as distinct realms of activity with unique concerns, languages and modes of reasoning suggest a research transfer initiative specified by its organization in relation to a distinct problematization of the relationship of medical practice and scientific research. While *informed* acts on the physician/reader, its primary and most immediate object of transformation is the discursive form of health services and biomedical research. Unlike critical appraisal, which intervenes in the reading repertoire of physicians, *informed* offers physicians an interesting and easy-to-read text that articulates scientific research literatures in a language that is clinically relevant. *informed* is a text-based exercise in the clinical recontextualization or translation of science. It does not seek to shape the interpretive practices of physicians by teaching them new ways to sort, sift, prioritize and

make sense of a burgeoning scientific literature. Rather it works through physician/readers' extant ways of reading, operating on them by entering a new form of text into their daily work. The most relevant and distinctive feature of this text is its effort to speak science clinically.

4.4 The Inscriptive Practices of Recontextualization: Producing Hall-Side Conversation or 'Give Us the Meat'

Most work on the recontextualization of scientific discourses in health focuses on the physician/patient nexus. Often drawing on the resources of ethnomethodology, such work presents recontextualization as a matter of spoken language, as something produced in face-to-face interaction. Thus, for example, a growing body of research has begun to explore the deployment of the concept of risk in physicians' encounters with patients (Gifford, 1986). In one example, Adelswärd and Sachs (1998) examine how, through the talk that is made in patient/physician interaction, risk is translated from epidemiological findings into clinical knowledge and into lay understandings and experiences of health.

informed offers an opportunity to investigate scientific recontextualization in a different way. Exploring the making of *informed* as the inscriptive practices of translating scientific literature into clinically relevant forms displaces 'talk' as the privileged analytic site for the analysis of recontextualization. It also shifts the empirical site of such an analysis from the physician/patient encounter to the relations of expertise and governance that obtain between health services researchers and practicing physicians. Rather than exploring recontextualization as the co-production of knowledge

in clinical settings, attention is turned to text-mediated practices for governing the evidential character of medical therapeutics.

Translating scientific research literature in ways that provide for a clinical relevance often absent from its initial form is a complex undertaking. Given my research interest in exploring the organization of practices that enable a particular way of governing medical practice evidentially, I close this chapter with a discussion of some of writing practices through which *informed* is produced.

4.41 A Brief Overview of Making *informed*

In my discussions with them, the people involved with *informed* described their work on the publication in ways that suggest a highly creative, time-consuming and varied process. The overall direction of the newsletter is fixed by the editor who plays a central role in setting its topical focus, writing and editing the publication. As a whole, however, like other ICES projects, the undertaking is a collective one. Various people at ICES—members of the research transfer unit, research coordinators, the librarian—are involved in one form of work or another that goes into the publication's making: conducting literature searches, reading articles, summarizing research evidence, writing, and copy-editing.

Individual articles are written by different individuals in what are, likely, different ways. At the same time, a certain division of inscriptive and other labour appears to mark the publication's making. Most people who work on *informed* are involved in suggesting topics for it to address. Much of the time-consuming work of reckoning with

the literature, of searching out appropriate articles and reading them, of focusing in on clinically relevant areas and of producing drafts of articles is done by research coordinators. Final versions are created through consultation with the editor, RTU staff and others. All articles are also vetted, both internally by senior scientists at ICES and externally by clinical and research experts in the relevant fields. Overall, a good deal of work is involved in producing *informed's* chatty, 'easy' appearance:

I: How long does it take to produce?

P: Well it depends on the topic, you know. Herbs [an article on herbal medicine], oh God, we spent almost six months putting herbs together because it was such a desperate topic area. You know, oh, polarization of thoughts and that sort of stuff. And, I mean, the cardiovascular stuff [a special issue of *informed* on the care of patients who have had heart attacks] was all together in about three months but we needed to have that so thoroughly vetted. You know, it had seven external reviews, you know, by experts. Exercise, cardiovascular rehab, experts in da, da da, da da... And you know the thing that is so, it always makes me laugh at the end of the day. *informed* looks so easy, you know, like it looks like 'here's the thing, guys,' you know. And it sort of belies the tremendous amount of work that goes into making it look that simple.

(Research Coordinator 05/97)

4.42 Selecting *informed's* Topical Foci

Part of how *informed* shapes its physician/readers' relationship with scientific literature is by putting forward particular clinical issues for their attention. It shares with other texts that abstract or review medical research, a structuring of interpretation that proceeds as the selection or screening of the materials that readers encounter.¹⁰ From

¹⁰ Two important medical journals that are organized as abstracting initiatives are the *ACP Journal Club* of the American College of Physicians and *Evidence-Based Medicine*. The editorial committees of the journals regularly screen a select number of journals,

among the many issues addressed in the HSR and biomedical research literature, only those that can be made clinically relevant find their way into the pages of *informed*.

My discussions with people about how they make decisions about what to write about in *informed* suggest the collective and somewhat informal character of making the publication. As one individual put it:

Well, we sit around and brainstorm and, you know, ‘Have you seen any good stuff? What’s relevant?’ ...Me and a couple of other people here [ICES], we just kind of figure it out. We had a few suggestions the odd time from somebody writing a letter, whatever.

(RTU 05/97)

The tone of the remarks reflects that characteristic moment in research interviews when the questions of the interviewer seem odd or nonsensical to the interview respondent. The remarks were made after a number of rather unsuccessful attempts on my part to ask about how decisions about the content of *informed* were made. The individual’s comments about relevance finally broke a ‘we just do it’ pattern of response, providing a point of entry for further discussion about the process of deciding upon the newsletter’s content.

For its makers, deciding about what to write about in *informed* proceeds in terms of the notion of a ‘topic.’ People variously spoke about liking a particular topic and not another, about looking for topics and reading about topics. Their judgements about potential topics, in turn, are framed by consideration of their relevance, where the latter

choose articles from among them and print a rewritten abstract of the article. Expert commentary that foregrounds the clinical significance of biomedical research in the area often accompanies the abstract.

is shaped by notions of physician subjectivity. However, in respect of topic selection, it is not so much the physician as reader that is significant, but the physician as practitioner immersed in a clinical setting with its characteristic daily rhythm of patient complaints. Knowing who the physician is as clinician guides the choice of what to write about in *informed*.

The people I interviewed spoke about this knowledge as, once again, accruing from the application of marketing principles. As they see it, the task is one of knowing the needs and wants of the publication's target audience, where needs and wants are tied to the specificity of clinical work. In selecting writing topics then, their concern is to focus on common clinical problems and new therapeutic innovations. It is the clinician's relevances that preoccupies them:

I want to know that [a topic] is common. It's not something I'm never going to see in my life... No rare syndromes, [but] something I really deal with. And I want to know that there's something new here, that I wouldn't have learnt about earlier... you know discovery that drug x is better than drug y or whatever.

(RTU 05/97)

Overall, the selection of topical foci for *informed* suggests a certain practice of screening for clinical relevance. The topics selected from the scientific literature or the topics for which literature searches are conducted are those deemed relevant for medical diagnosis and therapy. As such, *informed* recontextualizes science through efforts to write *for* a particular work context. The publication is a text-based strategy for governing clinical decision-making through a clinical organization of scientific discourse. *informed* is a particular kind of interpretive endeavour or meaning-making exercise in which the

hoped for work of the text is provided for by writing practices that locate the relevances of the site of clinical work in what is written about.

4.43 Recontextualizing Biomedical Research: Patient Information, Clinical Messages and ACE Inhibitors

The writing practices that make *informed* produce the newsletter as a kind of patient management information marked by the articulation of clinical messages. *informed* offers physicians a resource that they can draw on in dealing with the patients and patients' complaints that they encounter in their clinical work. As mentioned earlier, this effort to put research into practice is partly made in response to the perceived clinical irrelevance of most biomedical research writing. An example of this shortcoming of the literature is offered in the following description of the problems associated with the standard scientific write-up of a clinical trial:

The New England Journal of Medicine. You look at it, will have several different types of articles. The majority are primary research. So somebody says 'what is the best drug for this?' And then they'll test two drugs against each other, as an example, and say drug A is better than drug B 'cause more people survive on drug A. Okay? It doesn't tell you how to diagnose the disease or manage it or when you should use the drug. It gives you some information if you carefully read the fine print which almost nobody does, and people look at the conclusion drug A is better than drug B. It's important, but it's not how do you use that in your practice.

(RTU 05/97)

In response to these problems, the makers of *informed* write in ways that articulate medical research evidence within the broad activities of medical therapeutics. They seek to intervene in the work/text relations of clinical medicine by writing a

publication that ‘matches up’ with the relevances and activities of physicians’ daily work. An important device drawn upon in this effort to recontextualize science is the articulation of unambiguous clinical messages. This involves a type of writing that assembles and foregrounds a set of interpretations of scientific literature that emphasize its implications for clinical practice. It is a form of ‘writing for transparency,’ in which the ‘hidden’ clinical significance of the medical literature is brought forward and given shape through direct, easy to read prose. The people I interviewed referred to such inscriptive efforts as “talking about what [the science] means,” writing “the gist of what’s there,” and giving the readers of *informed* “the meat.”

An example of this type of clinical recontextualization of science is provided by a recent *informed* article called “Doctors, Play your ACEs,” that draws from the clinical trials literature on the use of ACE inhibitors for heart failure (see Figure 5). Organized into three sections: a central research narrative, a boxed offset entitled “Starting ACE Inhibitors in Heart Failure” and a section of text organized as a Questions and Answers series, the article is an effort to evidentially shape physicians’ prescribing practices for patients who have had heart attacks. It is structured in terms that emphasize time and again, the clinical value of prescribing ACE inhibitors for patients who have had, or who are at risk of having heart attacks. The article presents science translated as clinical message; the “meat” or bottom line of the article is to use ACE inhibitors:

So the message was there, play your ACEs. And then the article was ACE inhibitors are fantastic for heart failure, you should use them. And then another bunch of details, but the main message was right there in front of you from research.

(RTU 05/97)

Figure 5

“Doctors Play your Aces.” *informed*, Vol. 2, No. 3, p.1, 3, 5

informed

using research in your practice

Doctors, Play Your "ACEs"!

Using Angiotensin-Converting Enzyme (ACE) Inhibitors to Treat Patients with Heart Failure

When it comes to treating patients with heart failure, there is a new way to play cards. It's not that one has to throw away the old cards we've been using — like digoxin and diuretics — it's just that the deck has been shuffled and the "ACEs" have surfaced at the top.

"ACE inhibitors have become the drug of first choice for most patients with heart failure," says Dr. Malcolm Arnold, a cardiologist and professor of medicine at the University of Western Ontario.

ACE-inhibitor therapy not only improves symptoms, but also reduces mortality by up to one-third.¹ "In fact," says Arnold, "the worse the heart failure, the greater the benefit."

Further, ACE-inhibitor therapy may help keep patients at home. Major trials have shown that this kind of therapy decreases the need for repeat hospitalization for heart failure by one-third — a potentially significant factor, since patients with a diagnosis of heart failure account for 3 to 4% of all hospital admissions in Ontario.

This is not to say that the old mainstays of treatment for heart failure aren't useful. According to Arnold and the

¹ Trials estimate a 17% to 36% reduction in mortality, with greater benefits in more severe heart failure.

Canadian Cardiovascular Society guidelines, if a patient with heart failure is on ACE inhibitors and is still symptomatic, the next step is to add a loop diuretic, like furosemide, and a salt-restricted diet to the regimen. If the patient is still symptomatic after this, then the second step is to add digoxin. If the patient doesn't respond to all of this, then he or she will require specialized fine tuning, usually by a cardiologist, who will probably add a second diuretic or vasodilator.

So significant are the benefits of ACE inhibitors that even patients with heart failure who are already well controlled on digoxin or diuretics (or both) will benefit if ACE inhibitors are added to their regimen. But you

shouldn't necessarily stop the digoxin if your patient is already on it — some patients may get worse if it is withdrawn.

Treating Asymptomatic Patients

Clinical trials have shown that the benefits of ACE inhibitors also extend to patients with asymptomatic heart failure. These are patients who are

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Doctors, Play Your "ACEs"!*(continued from page 1)*

not bothered by symptoms but whose heart failure was discovered because of signs detected on physical examination, or because an abnormal chest X-ray showed cardiomegaly or vascular redistribution. When these patients have findings suspicious of heart failure, an echocardiogram (or radionuclide ventriculogram) to study left ventricular ejection fraction (EF) can confirm the diagnosis. If the EF is low (less than 35%), the diagnosis of asymptomatic heart failure is confirmed, and ACE-inhibitor therapy is recommended to prevent or delay further deterioration to overt heart failure.

Treating Post-MI Patients

The same goes for asymptomatic post-myocardial infarction (MI) patients. "Following an MI, patients should be assessed for heart failure," says Arnold. "If the patient had symptoms of heart failure in hospital, or if the ejection fraction is less than 40%, treatment with ACE inhibitors is a good idea and may be started in low doses during the first couple of days." In fact, trials have demonstrated a one-fifth reduction in rehospitalization, a similar reduction in mortality, and a reduced risk of another MI in such patients who are taking ACE inhibitors.

One caveat: if a patient does have significant symptoms typical of heart failure, such as shortness of breath or peripheral edema, but the ejection fraction is well maintained, this suggests the so-called predominantly "diastolic dysfunction". In this case, hold your cards; a diuretic might be needed initially, but the best treatment may ultimately be any of a number of medications, and the patient probably needs expert assessment by a cardiologist.

Finally, Arnold believes that the best is yet to come. "ACE inhibitors have opened the doors to a new understanding of the pathophysiology of heart failure. There are now new therapies on the horizon that will lead to even more dramatic improvements over the next decade." As these new drugs are proven, get ready to shuffle the cards again. ■

*see Fax Back on page 4***WHEN: TOLECHOZAPHOT**

Echocardiograms (or other tests to determine ejection fraction, such as radionuclide wall-motion studies) are recommended for the initial assessment of any patient in whom heart failure is suspected. The tests are also useful to detect low ejection fraction when deciding whether patients (especially post-MI) will benefit from ACE-inhibitor therapy. However, the routine use of sequential tests to monitor otherwise stable patients is not recommended and is unlikely to be helpful in managing these patients.

*Adapted from the Guidelines for the Management of Heart Failure***Starting ACE Inhibitors in Heart Failure**

- Thus far, the ACE inhibitors captopril, enalapril, lisinopril, quinopril,trandolapril and ramipril appear largely interchangeable. Each is effective, and none has a clearly superior side effect profile. (See next page for fax-on-demand doses and prices.)
- If you are starting an ACE inhibitor in a patient with symptomatic heart failure and the patient is already on digoxin, don't stop the digoxin: these patients may get worse if the digoxin is withdrawn.
- If you are starting an ACE inhibitor in a patient who is already on a diuretic, reduce the dose of the diuretic to avoid hypotension. Also try separating the timing of the doses of each drug. If drug doses must be decreased, decrease the dose of the diuretic, not of the ACE inhibitor.
- Side effects include cough, which leads to discontinuation in 3 to 4% of patients, angioedema, rash and taste disturbances. As well, renal function can worsen and hyperkalemia can occur in those with underlying renal dysfunction.
- To check for renal side effects, patients with normal baseline serum creatinine and potassium levels should usually have these tests repeated once, one month after treatment has been started. If the repeat test result remains normal, further routine testing is generally unnecessary, unless the patient develops new symptoms or gets worse.
- Patients with elevated urea and creatinine levels may still benefit from ACE-inhibitor therapy. A rough rule of thumb is that patients with creatinine levels as high as 200 µmol/L or even 250 µmol/L can safely try the medication, as long as they are monitored more closely.

If you haven't received the new 1996 Guidelines for the Management of Heart Failure, edited by Judy Carter and Dr. Geoff Arnold of NCS, you can get it from Publications Ontario (416) 324-3500 or 1-800-463-6868. This informative booklet contains valuable "pearls" for the diagnosis and management of heart failure.

Questions & Answers

ACE Inhibitors in Heart Failure

Q: Should all patients with heart failure be treated with ACE inhibitors, regardless of the cause of their disease?

A: Virtually all patients with left ventricular ejection fractions less than 35% to 40% may benefit from ACE-inhibitor therapy, whether they are symptomatic, asymptomatic or post-MI. Of course, it is always important to determine the underlying cause of the heart failure, and treat the cause if possible. About 65% of cases are caused by ischemia or infarction, 20% by idiopathic/viral dilated cardiomyopathy, and the rest by valvular, hypertensive or rarer diseases.

Q: Which ACE inhibitors should be prescribed for patients with heart failure?

A: While future studies may prove newer ACE inhibitors to be effective, so far only captopril, enalapril, lisinopril, quinopril, trandolapril and ramipril have been

shown to reduce the morbidity and mortality associated with heart failure.

Q: Many patients who take ACE inhibitors for heart failure complain of cough. Should the drug be discontinued if this side effect occurs?

A: Because of the marked benefit of ACE inhibitors, it is important not to discontinue this therapy automatically in patients afflicted with a cough. Physicians can encourage most patients to stay on the medication by explaining that the cough is not harmful and by stressing the benefits of the therapy.

Changing to another ACE inhibitor is unlikely to help. It is also important to remember that up to 40% of heart-failure patients complain of cough at some point, making it more likely that the symptom is due to worsening heart failure than to the medication. In fact, in some controlled trials, cough was a side effect almost as often in the placebo group as the group taking the drug, a further indication that the

drug is not always responsible for the cough. Further management of heart failure may be effective in reducing a patient's cough.

Q: Where does losartan "fit" in the treatment of patients with heart failure?

A: Losartan is a new agent which blocks the angiotensin II receptor and does not appear to cause cough to the same degree as ACE inhibitors. However, no studies to date have shown that it reduces morbidity or mortality rates in heart failure or after myocardial infarction. Therefore, it cannot yet be considered interchangeable with the ACE inhibitors for the treatment of heart failure.

Fax Back

2310 ACE inhibitors and other drugs used for heart failure; dosages and prices

2311 Salt-restricted diet instructions

2312 Patient education handout

2313 Heart failure admissions in Ontario by county

2314 References and sources

In Ontario...

✓ Three to four percent of all hospital admissions in Ontario in 1992 involved patients with a diagnosis of heart failure; these admissions accounted for 740,000 acute care bed days. ✓ More than 40% of patients admitted with heart failure are readmitted for the same reason within a year.



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Fax Back

1010 About ICES

1000 Listing of topics



While health services research on hospitalization for heart failure does appear in the article, most of the evidence being presented to readers draws from biomedical, clinical trials research.¹¹ The clinical recontextualization of research evidence from clinical trials is apparent throughout the article. For example, in its main section, which is the most ‘research-heavy,’ one finds a simple articulation of research findings that emphasizes their clinical implications. Thus, we read that ACE inhibitors can reduce mortality, improve symptoms and keep patients at home. There is no formal condensation of the findings of clinical trials research here, no reportage on changes in clinical markers for study subjects receiving this or that ACE inhibitor, no discussion of the duration of trials, of the size of control groups, or of the statistical significance of trial results.

Rather than simply summarizing the findings of scientific research, the article rearticulates them as clinically relevant information, emphasizing how ACE inhibitors can be used to treat patients. Thus, the article’s main section offers a brief evidence-based discussion of when to augment ACE inhibitors with other therapies. It is further subdivided into sections on the benefits of using ACE inhibitors to treat asymptomatic vs. post-MI patients. The organization of prose as clinically-relevant message is quite clear in these subsections. In the first of them, for example, research evidence is rearticulated in the simple form of ‘good news:’ clinical trials show that patients with asymptomatic

¹¹ Health services research appears in the third paragraph of the main research narrative in remarks emphasizing the success of ACE inhibitors in reducing readmission for a condition that accounts “for 3 to 4% of all hospital admissions in Ontario.” Similar data are restated in a short section that appears below the Q. and A.

heart failure benefit from ACE inhibitors. Such prose simultaneously enters the text into relations of clinical relevance, while seeking to organize evidence-based clinical practice. Rather than detailing the results of clinical trials on the new therapy among subjects with asymptomatic heart failure, it outlines the diagnostic procedures physicians can use to identify such patients and underscores the therapy's value for preventing further heart deterioration among them.

The other sections of the article provide further examples of a form of clinical information marked by the translation of scientific research evidence. The article's Q. and A. section, for example, offers short pieces of prose that draw on clinical trial results to authorize responses to questions about the clinical use of ACE inhibitors. The offset provides the clearest example of research evidence recontextualized as clinical message. Here, overt references to clinical trials are elided in a form of writing that presents a series of 'rules of thumb' for initiating ACE inhibitors. As one bullet reads, "If you are starting an ACE inhibitor in a patient with symptomatic heart failure and the patient is already on digoxin, don't stop the digoxin: these patients may get worse if the digoxin is withdrawn."

Overall, "Doctors, Play your 'ACEs,'" recontextualizes scientific research by entering it into forms of clinically relevant discussion. The article does not summarize scientific research but selects features of it, that are recontextualized into a form of clinical discourse. It provides readers with the clinical 'bottom line' of scientific research while offering them an opportunity to further investigate the science itself

through ICES's fax back service.¹² In a chatty fashion, characteristic of *informed* as a whole, the article provides a kind of patient management information that draws on research evidence to articulate clinical messages about the clinical use of ACE inhibitors. Drawing on the "play your ACEs" metaphor, it presents ACE inhibitors as a clinical resource that physicians should use in the care of heart attack patients. As new drugs are developed, physicians should "get ready to shuffle the card again." In the meantime, the article offers a current, informal evidence-based guide for using ACE inhibitors in clinical practice.

The form of information presented in "Doctors Play your ACEs" is similar to that found in most of the articles written in *informed*. The newsletter seeks to 'put research into practice' through writing that recontextualizes research evidence as patient management information. It presents science written for the clinic. Thus, most issues of *informed* highlight articles that deal with common clinical problems such as sore throat, hypertension, or heart attack. In dealing with these clinical problems articles typically lay out a course of action or approach to managing the condition that extends well beyond evidence of the efficacy of drug therapies. Much of the discussion is organized around clinical matters such as how to counsel patients, the importance of nutritional and

¹² *informed's* fax-back service is an interesting technology for entering evidence into physicians' clinical practice. It attends to the interested reader of science without disrupting *informed's* chatty style. Readers of *informed* who are particularly interested in the scientific research that it recontextualizes are provided an opportunity to access it. By dialing a 1-800 number on their fax machines and entering a four digit code, they can receive a free copy of the journal articles and research materials drawn upon in a given *informed* article.

lifestyle change, how to diagnose conditions, when to use certain drugs, how to monitor their effects, and so on.

informed, then, is a research transfer initiative that enters research evidence into clinical practice by offering physicians hybrid research/clinical narratives that intend their practical daily work of dealing with patients. The generous use of quotations from clinical experts, interspersed with commentary on research evidence marks this hybridity, even as it produces a complementarity of clinical and research expertise. Scientific research is given a muted, but careful, presence in the newsletter. There are few technical terms found in its pages and little of the density of scientific writing. Instead, the text mimics what one person I interviewed called physicians' "hall-side conversation." Another counterposed the writing found in *informed* to that of the formal "do xyz" of clinical guidelines in the following way:

It [*informed*] takes in a whole variety of factors, not just the disease portion of the patient's life. So there's other things they [physicians] need to worry about in terms of a patient's family life, their work situation, their ability to manage on their own or not, and so the chatty style that sort of says there's a bunch of things you need to talk with the patient about tends to reflect more I think what the physician sees.

(RTU 04/97)

Producing clinically relevant hall-side conversation that is evidence-based involves careful inscriptive work. On the surface, *informed* appears as a chatty newsletters for physicians to read in their spare time. Upon closer examination it provides an interesting example of a highly crafted effort to govern physicians and their practice of medicine in the name of evidence.

Much goes into organizing its particularity. In a manner reminiscent of the problematization of physicians as readers, the remarks quoted above suggest how a practical reasoning about physicians' clinical work enters into a characteristic way of rewriting science. The makers of *informed* write evidence in ways that intend clinical practice. They hope to transfer scientific research into clinical medicine by reformulating it within the terms of an interesting, straightforward and message-driven clinical language.

Like other EBM initiatives, *informed* pins its hopes for clinical reform on the place of reading in clinical work. Unlike the project of critical appraisal, the problematization of physicians as ambivalent readers and of the relation of science and practice as distinct cultures or modes of reasoning calls for techniques that let alone the basics of how physicians read. The makers of *informed* hope to change how physicians practice medicine by working at what they read, by providing a level of interpretation of the clinical significance of biomedical research texts not present in their original form. Imagining the clinical setting is an important resource for a writing project that seeks to bridge the gap of science and practice while reshaping the latter. Indeed, one of the most interesting features of *informed* is how it seeks to harness the real of the clinic in a project of its transformation.

4.5 Toward the Next Chapter

Moving beyond the textual surface of HSR, this chapter has explored some of the conceptual practices and techniques that provide for a particular way of governing the

relationship of scientific research and clinical work. Investigating *informed* as a research transfer initiative builds upon my discussion of how health services research is implicated in the governance of health care. Health services research is active not only in the sense of its constitution of health care in governable, numerically-based forms. It is an important base of expertise for a host of initiatives that seek to reorganize health care by making clinical practice more scientific.

In exploring these relations of scientization, I have emphasized the fundamentally text-based character of one of ICES's research transfer initiatives. The process of making *informed* shows health services researchers at work trying to enter evidence into clinical practice through a particular recontextualization of biomedical science. The conceptual and inscriptive practices that lie in back of the newsletter involve a kind of anticipation of physicians' typical encounters with scientific texts with a view to remaking them through the provision of a textual alternative to dry, clinically irrelevant science. *informed* is an interpretive practice that organizes physicians' textual encounters with scientific research.

The next chapter moves forward from this one by investigating how HSR becomes active in local settings of health care reform through processes of its textual engagement. While my discussion of *informed* has focused on the work of trying to shape people's text-reader conversations, in chapter five I explore how HSR is activated in people's actual encounters with it. From the textual surface of the *Practice Atlas*, to efforts at research transfer put forward at the Institute, my analysis of HSR and health

care governance turns next to the circulation of ICES research into the hands of people who draw upon it in restructuring health services.

Chapter Five

On the Use of Health Services Research: Troubled Hearts, Care Pathways and Hospital Restructuring

1.0 Introduction

At a meeting on care pathways and other innovations in patient care practices held at the Ontario Hospital Association Annual Convention in 1996 I heard the following words spoken:

Given Naylor's report, [Roxborough Memorial] Hospital¹ identified that there was room to improve efficiency in how we were managing the AMI² population. This moved us forward to looking at quality of care initiatives and the integration of a care pathway.

(Director of Patient Care, Cardiac Care, Roxborough Memorial Hospital)

I had come to the convention with my Ph.D. research in mind. Having recently decided that research on ICES, health services research, and health care reform might make a suitable dissertation topic, I reasoned that traces of the Institute's significance for the restructuring of health care might appear in people's remarks, papers, and presentations. Hearing the director speak, I had found what I was looking for.

¹ Roxborough Memorial Hospital is a pseudonym. RMH is a large community hospital located in a suburb of Toronto that provides care to patients from diverse ethnic and racial backgrounds. Among the forms of care provided at the hospital are inpatient and outpatient nephrology services, women's and children's care, emergency care, inpatient and outpatient mental health services, and surgical care.

² AMI or acute myocardial infarction is an area of dead tissue in the myocardium caused by a sudden insufficiency of blood supply. The middle layer of the heart, the myocardium consists of muscular tissue and, often, is referred to simply as the heart muscle. In lay speech an AMI is a heart attack.

Among the comments she made were the two prosaic statements quoted above. The first suggests a relationship between an ICES working paper (Chen and Naylor 1993)³ and the pursuit of efficient management of care for a group of patients; the second positions the working paper as agent, moving the speaker and others into the development of a care pathway. Lasting all of some thirty seconds, her brief remarks occasion the analysis of the use of health services research that I offer here. It's a good thing I was paying attention.

This chapter closes my empirically-based discussion of health services research and the governance of health care. Like other chapters of the dissertation, it focuses on a specific text, in this case, a working paper written by Chen and Naylor. Unlike other chapters, however, it deals exclusively with how those who manage and provide health care services draw upon HSR in their efforts to restructure health care. Having explored the textual surface of HSR and investigated efforts to promote evidence-based clinical practice, I end my analysis of health services research and governance with a discussion of how HSR gets used in local settings of health care reform.

I draw on two main conceptual resources to put forward my discussion. First, Smith's notion of the text-reader conversation (1999a) provides a backdrop against which to explore people's textual engagement with the working paper. While I employ the term

³ In her OHA remarks, the director refers to Naylor's report. Technically speaking, the document is a working paper. Throughout the chapter I use the terms working paper and report interchangeably. The first author of the report is Erluo Chen. The full reference to the document is Chen, E. and C.D. Naylor (1993) "Hospital-specific data on length of stay for patients with acute myocardial infarction in Ontario during fiscal 1991." Institute for Clinical Evaluative Sciences in Ontario, Working paper #21.

‘use’ to describe readers’ relationship to the working paper, I do so primarily as a matter of rhetorical convenience. In my analysis of how the working paper comes to bear on local efforts at the reform of hospital care, I try to move beyond arguments about individualistic textual appropriations or instrumental uses and readings. Elaborated in section 3.0 of the chapter, the text-reader conversation guides me in this analytic move.

Second, drawing loosely on Latour (1987) I orient to the director’s OHA remarks as a “black box.” Latour wants to develop an analysis of science in the making. To this end he recommends that inquiry be directed at scientists at work in moments of controversy and uncertainty—at points during which the facts and artifacts of science have yet to emerge as unproblematic black boxes. For Latour, opening up the black boxes of science is a way of penetrating its inner workings in order to display how the resources and results of scientific inquiry come to have their taken-for-granted character.

I share Latour’s concern with ‘getting at’ a world of activity and practice and like him organize an analysis that begins with questions posed about the unquestioned. One might say that I am exploring what makes it possible for the patient care director to speak so routinely about the relationship between ICES research, the pursuit of efficiency and the development of a care pathway. My additional interest, however, is to pass through the black box, to explore forms of social organization that are held in her remarks, but only the traces of which they make visible.

As such, rather than understanding the OHA director’s comments as simply rhetoric or ‘proper’ evidence-based conference talk, I treat them as suggestive of a set of

relations of knowledge that can be investigated. The director's remarks stand before me as a point of entry, as something that through analysis can 'open up' onto a world of the circulation, interpretation and use of research texts in the daily managerial work done in hospitals. Thus, the chapter treats health services research as an active knowledge in the sense of its deployment within and organization of text-mediated relations of hospital and patient care management.

To develop my discussion, I draw principally on research interviews conducted with people who work at Roxborough Memorial Hospital. Over the months of September and October of 1997, I carried out a total of eight interviews, two with the patient care director, and one each with the hospital's manager of health records, a nurse, a cardiologist, two care pathway coordinators and a vice-president. As at ICES, my interviews at Roxborough explored participants' actual work activities. Their particular focus was people's involvement in the AMI pathway project, their engagement with the Chen/Naylor report and their ongoing uses of ICES research and medico-administrative information. These interview conversations are the primary empirical basis for my investigation of the interface of HSR and textual practices of hospital management.

My analysis emphasizes two forms of textual engagement with the working paper in the efforts undertaken at RMH to reorganize patient care. One form involves the director's use of the report as an evidentiary resource in the work of securing physicians' participation in the AMI pathway project. Here, the working paper's authority as scientific evidence on the safety of shortened lengths of stay for AMI patients is

mobilized in the delicate matter of managing physicians' involvement in hospital reform. The use of the report and other scientific research within a technology of enlistment suggests the penetration of everyday hospital work by evidential practices.

The second form concerns how the report enters into the comparative practices through which the director and her colleagues come to understand the care of Roxborough's AMI patients as a problem of inefficiency. Here the report gets activated as part of a textual ground through which managers' knowledge about hospital care becomes organized around the discourse object 'length of stay' (LOS). This is a way of knowing with constitutive features; it is an important part of what makes hospital care actionable or open to remedy by an initiative such as a care pathway.

While I deal with both forms of use of the working paper in the chapter, the bulk of my analysis is focused on its use in coming to know the 'inefficiency' of the care provided to AMI patients at Roxborough. This discussion enters into conversation with more established forms of critique of efficiency that have been put forward in sociological research on health care restructuring. These generally identify efficiency as a constituent of strategies of reform drawn from industry or the private sector and transferred to the site of health care. Discussions of this sort illuminate how market relations have entered into the organization of health care services. They further draw attention to how, under the requirements of efficiency, the treatment of hospital workers and of patients is at odds with the requirements of caring work (Diamond, 1991; Armstrong et al., 1997; Armstrong and Armstrong, 1996)

My analysis contributes to this discussion by suggesting how formal discourses of knowledge such as HSR are a condition of possibility for the understanding of health care as inefficient. More specifically, I offer an analysis of the textual mechanics of observability of inefficiency in hospital care and its relationship to a particular reform initiative. In this instance, opening up the black box of use of HSR becomes a matter of trying to understand just how the Chen/Naylor report was drawn upon in an efficiency-based problematization of the care provided to patients at RMH.

In my analysis I try to suggest that the practices at hand go well beyond an individual reading of an individual research text. Much of my time is spent in an effort to describe ways of knowing patient care as an intertextual relation of use of the Chen/Naylor report. Exploring forms of inter-institutional comparison that employ standardized texts of numerical data as a form of social organization is a major part of this effort. So too is thinking about the report's use as a moment of relations of power that are coordinated across time and place. Overall, I argue that employing the Chen/Naylor report to 'see' inefficiency is part of a socially organized discursive practice. It is a general and generalizable form of management activity that both organizes and is organized by new relations of knowledge and accountability that are taking hold in hospital settings.

The chapter contributes to my analysis of HSR, governance and the social relations of evidential knowledge in health care in a number of ways. Most importantly, it develops a central theme of my dissertation--the operation of HSR as a productive

exercise of power. Drawing attention to the movement of texts of HSR into local sites where they are brought into use in ways that cannot be fully predicted or controlled by those who work at ICES helps to decenter the Institute in an analysis of HSR and the governance of health care. More importantly, it brings medico-administrative rationality 'to life' so to speak. Rather than exploring HSR as a formal rationality, known as such on the basis of considering its formal textual expression (chapter three), in this chapter I investigate how it enters into locally enacted ways of knowing and doing. In this way, HSR comes to be understood for where it goes and what (through its textual negotiation) it gets done there. By demonstrating how HSR is part of what organizes new text-mediated relations of management, the chapter forms an important part of my analysis of how it is an active knowledge.

I begin the chapter with a discussion that specifies the terrain of managerial relations that are explored in the chapter. I briefly discuss care pathways as a particular approach to utilization management and outline features of Roxborough's AMI pathway. I then discuss the theoretical resources that I employ in reorienting the applied character of social science research on the use of HSR. These include Smith's notion of the text-reader conversation, Foucauldian approaches to the analysis of accounting and recent work on intertextuality. Next I describe the Chen/Naylor working paper and locate it within the context of hospital reform at RMH. From there, the chapter unfolds as an analysis of the text-mediated relations of engagement of the report in remaking the care of AMI patients. This analysis begins with a discussion of the report's involvement in

securing physician participation in reform and then turns to a discussion of how it grounds the discursive constitution of care as inefficient.

2.0 Opening up One Black Box of Use of HSR: Care Pathways and the Reform of Hospital Care

There are many ways to think about the use of health services research and certainly many forms of its use. In Ontario, where recent reform efforts have focused largely on the hospital sector (Anderson, 1997; Shamian and Lightsone, 1997; Decter, 1997; McLeod-Dick, 1997) HSR has been operative in a number of ways. For example, health services research produced at ICES and elsewhere has been engaged as the primary intellectual technology informing the hospital closures, mergers and other directives of Ontario's Health Services Restructuring Commission.⁴ The recent emphasis on making hospitals accountable for their services also relies fundamentally on HSR. For example, the Ontario Hospital Association initiative to review hospital performance on an annual basis draws principally on research on small area variations in surgical practices to assess the utilization and outcomes of hospital care (Ontario Hospital Association, 1998). More broadly, the use of HSR to discern the health care needs of

⁴ The Health Services Restructuring Commission (HSRC) was established in April, 1996 by the Tory provincial government to "facilitate and accelerate the implementation of hospital restructuring" (Ministry of Health, cited in McLeod-Dick, 1997:8). Under the provisions of Bill 26 the HSRC received broad powers to merge and close hospitals across the province (Harden, 1999:212). Charged with the responsibility of realizing the government's objectives of an 18% reduction in hospital spending budgets, the HSRC has "targetted approximately 20% of the province's beds for closure" (McLeod-Dick, 1997:9). The Commission's activities have provoked incredible controversy within the hospital sector and promoted trade union and grass-roots health care activism

populations and to monitor efforts to meet them figure prominently in recent proposals to regionalize and integrate hospital and other health care services in Ontario (Leatt, Pink, and Naylor, 1996; Metro Toronto District Health Council, 1996; Pink, 1996; Glynn, 1996).

The forms of activation of HSR that I explore in this chapter are located within these relations of institutional transformation. They are of a particular kind, however. My discussion is focused on the point of intersection of ICES research and local efforts to remake the nature of hospital care through a particular utilization management initiative. Specifically, I am investigating the process through which a group of individuals working in the cardiac care division at Roxborough Memorial Hospital drew on an ICES working paper—the Chen/Naylor report (Chen and Naylor 1993)—in the work of developing an AMI care pathway.

In order to contextualize this analysis I offer some orienting remarks on care pathways as a particular approach to utilization management. These are followed by a discussion of the pathway developed at Roxborough for heart attack patients. Since my central concern is not the clinical use of the pathway, but the involvement of HSR in its development, my comments are focused on describing the material character of the pathway and on sketching out some of the relations of coordination and standardization of care that it enables.

2.1 Care Pathways and Utilization Management

Developed over the past thirty or so years, utilization management involves the use of hospital statistics to measure, understand and reduce the use of hospital services (Payne, 1987). While the services under question can include laboratory and emergency services, it is the hospital bed and its temporal use by patients that forms the primary object of scrutiny for utilization management.⁵ Anderson et al. (1990) further note that a given programme of utilization management typically draws on one or more of three approaches: prospective screening of patients, concurrent review of the appropriateness of patients' hospital stay and retrospective review of patient data post-discharge.

Utilization management has been promoted in Ontario since at least the late 1980s when it emerged as a popular object of Canadian health care policy (Anderson and Lomas, 1988; Anderson et al., 1990; Wade, 1990; Harrigan, 1992; Working Group on Health Services Utilization, 1994). Through its redefinition of acuity and the appropriateness of inpatient hospital stays, utilization management does more than reduce costs or improve efficiency; it contributes to processes of questioning the very place of hospitals in managing major medical illnesses (see Working Group on Health Services Utilization, 1994:11).

Care pathways are among the initiatives for 'improving bed use' that have been put forward within utilization management. Others include the concurrent review of

⁵ For an interesting historical discussion of the changing place of the hospital bed within efforts to remake hospital care see Armstrong, 1998.

patient care, clinical practice guidelines, pre-admit labs and day-surgery.⁶ Care pathways are ‘active’ documents around which are built a text-based technology for organizing and managing the delivery of hospital-based care. Also known as clinical pathways or care maps, care pathways set out a particular course of action or ‘path’ of care for a defined group of patients. Such paths of care typically take the form of a series of timed multidisciplinary interventions that take place over the course of a standardized length of hospital stay (Zander, 1992; Crummer and Carter, 1993; Johnson, 1997).

Care pathways were initially developed in the U.S. in the 1980’s in partial response to the introduction of prospective, DRG-based payment⁷ for hospitalized Medicare patients (Spath, 1994; Zander, 1990). By fixing the duration of hospital stay for specific DRGs, pathways offered hospital administrators a method to control hospital costs and provide care that matched or fell below the rate of DRG reimbursement. From

⁶ Concurrent review is a process for determining the appropriateness of a patient’s ongoing ‘bed use.’ It typically involves the use of software programs such as the Intensity of Service, Severity of Illness and Discharge Screen to assess whether a patient’s condition meets the clinical criteria required for ongoing hospitalization. Pre-admission clinics reduce pre-operative length of hospital stay by providing pre-operative testing, and patient education prior to hospital admission. Day surgery involves the admission, treatment and discharge of a patient within the same day (Working Group on Health Services Utilization, 1994:19-20, 23).

⁷ Diagnosis-related groups (DRGs) are units of patient classification that form the technical heart of the payment system for Medicare patients in the U.S. called the Prospective Payment System (PPS). PPS was introduced as a cost-saving device by the U.S. federal government. It is a “per-case reimbursement scheme” in which each “DRG is paid a unique price set in advance of treatment” (Frankford, 1993:273). DRGs were initially formed out of 23 mutually exclusive principal diagnosis areas (divided into medical and surgical groups) that were “further differentiated as necessary according to the criteria of age, sex, complication or comorbidity, specified secondary diagnoses or surgical procedures and discharge status” (Frankford, 1993: 288).

their early beginnings, then, pathways were pursued as a particular managerial strategy of cost control, one bound up with changing state-hospital funding relations and with the introduction of new medico-administrative systems of patient classification.

Care pathways continue to operate as devices for controlling hospital costs by reducing lengths of hospital stay. At the heart of such reductions is the identification of patients as an instance of a medico-administrative category. In Ontario, this means that individuals come to be known as having a fractured femure (CMG 356)⁸ or a heart attack (CMG 194) that can be clinically enacted as an episode of a particular set of caring interventions. The mechanics through which patients' hospital stays are reduced and standardized through pathways involve two primary sites of work. The first of these is clinical care, where the daily use of pathways by nurses helps to coordinate and standardize interdisciplinary courses of clinical action. The second of these is formal management, where the statistical aggregation of completed pathways post-discharge helps identify and facilitate action on 'systemic' variations in expected clinical actions that prolong lengths of stay.

⁸ CMGs or Case Mix Groups are units of a patient classification system used in Canadian hospitals. CMGs refer to both specific categories as well as to the overall methodology for grouping hospital patients' records within such categories. Simply put, CMGs provide a system for classifying health information that aggregates patients with similar clinical and resource utilization characteristics on the basis of coded patient data submitted to the Canadian Institute for Health Information by health care facilities that participate in its discharge abstract database network. The CMG system is the technological base for contemporary hospital utilization management in Canada, providing a means to know the patient profile of a given institution and the estimates of resources required to treat that profile.

2.2 Roxborough's AMI Care Pathway

I have reproduced the AMI care pathway developed at Roxborough as Figure 6. The AMI pathway is a four-page folio. The face sheet names the hospital, calls for identifying information (type of infarct, admission date, etc.) and provides a coding key and guidelines for the pathway's clinical use. The two facing pages which form the interior of the folio set out a five-day path of care. The back page provides a variance tracking form, used to identify the date and time of occurrence of the variation from the path of care, its nature, the actions taken to correct it, and the recorder's identifying information.

Like other care pathways (see Jarrell, 1994; Pringle, et al., 1994), Roxborough's AMI pathway adopts a grid format to substantiate its path of care. Individual cells of the grid are formed out of the convergence of temporal units (horizontal axis) and aspects of care (vertical axis) and most contain words that have to do with some kind of action or clinical event, for example, "home medication log completed" (see Day 1/Medications).⁹ An important feature of the document is the pairing of individual cells with blank lines that appear to their right that act as a textual beacon for inscriptions made in relation to the words that appear within cells. Completing the blank lines is a matter of following the codes set out in the face sheet key, such that a pathway 'properly' completed by nursing staff would indicate which events and actions have been met or unmet.

⁹ The pathway specifies a variety of interventions and can be difficult to read. For a narrative transliteration of it see Figure 7.

Figure 6

AMI Care Pathway, Roxborough Memorial Hospital

[illegible]

Figure 7

Narrative Transliteration of AMI Care Pathway

Like other pathways, the AMI care pathway at Roxborough provides a particular form of textual representation of an episode of care for a particular category of patient. The expected or standard course of events that the pathway both represents and helps produce goes something like this: The patient is admitted to the cardiac care unit from the emergency room, preferably within three hours of his/her arrival at hospital (see Day 1/Clinical Indicator). He or she is placed on appropriate medication as ordered by the physician responsible for the pathway. On the first day of the pathway, blood tests are carried out and the patient is hooked onto an electrocardiogram (Day 1/Diagnostic Tests). The regular monitoring of temperature, pulse, respiration and blood pressure is begun (Day 1/Treatments/Monitoring). Oxygen is administered for a 24-hour period and intravenous fluids commenced (see Day 1 and 2/ Medications and Fluid Balance). The patient is placed on a low cholesterol no added salt diet (Day 1/Nutrition). He or she also receives a package of patient information and is oriented to the expected path of care (Day 1/Patient Education). A social worker is contacted for discharge purposes if need be (Day 1/Discharge Planning).

Medications continue to be administered and adjusted over the course of the patient's five-day stay. Antiarrhythmics may be discontinued on Day 2 and heparin on Day 4, 24 hours prior to the performance of a stress test (see Days 2 and 4/Medications).

The monitoring of the patient's heart by ECG continues until Day 3 when it is discontinued (see Day 3/Monitoring/Treatments,) while vital signs are monitored until discharge. Intravenous is changed to a saline lock on Day 3 (Day 3/fluid Balance). The patient is progressively ambulated—activity 1, for example, consists of bathing at the bedside with a water basin, with assistance from a nurse and sitting up in a chair during bedmaking, while activity 5 involves having a shower and walking the hospital corridor (See Activity/Safety). The patient participates in a series of educational initiatives. These draw on previously distributed patient information materials and involve individual instruction and/or attendance at classes covering topics such as use of medications, proper diet, stress management, and planning for daily activities after discharge. On Day 5 a stress test may be performed prior to discharge.

Accompanying the pathway as an insert, is a separate document called physician's orders. Usually completed by the pathway's responsible physician on Day 1 of the patient's stay, the orders operate as a coordinative device by creating documentary conditions that permit nursing action in respect of a number of clinical activities that are potentially standardized. The top half of the orders provide spaces for noting patients' removal from the pathway.¹⁰ The bottom half lists nine activities that are also found on the pathway. These activities are potentially standardized in the sense that physicians can either mark them on the orders as checked, in which case the actions are to be carried out as set out on the pathway, or introduce a variation from the path of care by leaving the numbers on the orders unchecked or by writing out alternative instructions.

Roxborough's care pathway coordinators routinely use statistical reports drawn from aggregated pathways to monitor fluctuations in length of stay, to track outcomes, and to identify physicians whose practice is at variance with expected courses of clinical action. In respect of AMI, however, these managerial practices were not an important source of insight into actions that could be taken to further reduce length of stay. Rather, the AMI pathway acted to shorten the duration of patient's care primarily through its use in clinical contexts. My interviews suggest that the processes at hand involve text-

¹⁰ At Roxborough, all patients who have had MI's are initiated on the AMI pathway. They can be removed from the pathway by the responsible physician who, upon assessing them shortly after their admission, deems them to be complicated cases. Reasons for this designation include persistent chest pain, arrhythmia, or the presence of comorbid conditions.

mediated practices of coordination and standardization of interdisciplinary care. Let me suggest some of how this works.

The AMI care pathway provides a textual organization of clinical interdisciplinarity. While most of the clinical actions it specifies are nursing functions, the work of other health care providers is visible throughout: discharge planning on the part of social work staff on Day 1, nutritional counselling by a registered dietitian on Day 3, physicians' management of medications throughout, and the work of the pharmacist on Days 2 and 4. By locating the work of multiple actors within a given sequence, the pathway helps organize relations of clinical practice through which care providers, in consulting the document, come to know who is to carry out what action, when. The pathway helps produce standardization by pulling together people's work and putting it into view in a textual form that can be held in common.

More than that, the pathway provides a technology that shortens patients' lengths of stay through a text-mediated coordination of clinical work. This is partly visible through the interface of physician orders and the pathway. The orders help prevent 'delays' or 'time lags' in the provision of care by organizing into one documentary moment, physicians' inscriptive practices that otherwise might be dispersed at different times and that would have to be secured by nurses in order for them to carry out various actions. If, for example, the physician checks number eight on the orders, the nurse providing care will not have to wonder whether or when a stress test should occur and will not have to track down the physician to find out or arrange for an order to be filled.

On Day 1 she knows that a stress test is to be carried out on Day 5. She can plan her care in anticipation of the test and can ensure that it takes place when it should, by ordering it for Day 5 on Day 1.

The pathway itself facilitates interdisciplinary coordination as a feature of the documentary practices of day-to-day nursing.¹¹ As I have indicated, a number of the cells of the pathway's grid are statements of action to be taken by health care professionals other than nurses, e.g. "Prescription for discharge meds to be written" (Day 4/Medications) or "Pharmacist to review meds with patient" (Day 4/Education). Charting these actions as met or unmet, enters nurses into interprofessional work relations as coordinators and recorders of others' work. In some instances this is a matter of intertextual reference—of consulting the patient's chart to determine whether the home medication log has been signed by the pharmacist, for example. In other instances, nurses are enjoined to enter into direct relation with other health care providers in an effort to bring about the expected clinical intervention and chart it as met.

In back of marking other provider's actions as completed, then, is the work of reminding them about what they have to do, of contacting them when the action hasn't been completed and so on. The requirement to chart variances from the path of care further encourages anticipation of actual or potential instances of departure from the expected course of events and action to bring about the expected (Timmermans and Berg, 1997). Through a host of textual mechanics, nursing work becomes the primary site for

¹¹ While other health disciplines do chart on the pathway, by far, most documentation on it is done by nurses.

the daily accomplishment of new relations of standardization and coordination of health professionals' work and thus, of shortened lengths of patient stay.¹²

At Roxborough, the AMI care pathway was an important part of what contributed to a dramatic reduction in length of stay for the hospital's heart attack patients. In 1994, prior to its introduction, the average length of stay for patients with AMI was 8.4 days. In September 1996, some 10 months after the pathway was introduced, average length of stay fell to 5.3 days.

My brief sketch of the AMI pathway and its use at Roxborough should put into relief the terrain of managerial relations attended to by my analysis. Exploring how the Chen/Naylor report was engaged in the development of Roxborough's AMI care pathway is a way of examining the interface of a particular form of health science with a particular approach to utilization management. The kind of managerial use of HSR addressed in this chapter is one in which health services research is concerted with a response to 'costly' hospital care that targets 'bed use' as a problem, that helps organize relations of standardization and coordination of clinical care and that ties such care to its management through specific textual practices.

I would like to emphasize that these various relations should not be seen as peculiar to RMH. Reporting on the results of a 1995 survey of 187 U.S. hospitals, Spath

¹² The nurse I interviewed drew attention to an important critique of the AMI care pathway put forward by some of the division's nursing staff. It focused on: (1) the burden of having additional charting responsibilities, (2) the possibility of patient readmissions due to shortened lengths of stay, and (3) concerns about providing nursing care, particularly patient education, in shorter time frames than was previously the case.

(1997:1) notes that 81% of responding hospitals indicated that they were currently using clinical pathways. In Ontario, hospitals have been slower to introduce pathways, but the extent of their implementation has been impressive. In 1998, the Ontario Hospital Association reported that 61% of hospitals in Ontario had developed a clinical pathway in at least one of the following six clinical areas: asthma, heart attack, stroke, caesarean section, joint replacement surgery and pneumonia (Ontario Hospital Association, 1998). Recently, some hospitals with considerable experience in pathway development, such as London Health Sciences Centre, have begun marketing their pathways as part of start-up kits that aid novice institutions in pathway development. Exploring the use of HSR in respect of care pathways is a way of reflecting on a rapidly developing organization of managerial practice in Ontario hospitals.

3.0 Reframing the Analytics of the Use of HSR

People with heart attacks who become patients at Roxborough Memorial typically leave the hospital within five days. How was HSR a part of the process of developing the textual technology that enables this organization of patient care? In this section I offer a discussion that delineates the specificities of my approach to responding to this question.

Following the lead set in earlier chapters of this thesis, my exploration of the relations of use of HSR within hospital reform works against the grain of established applied scholarship on health services research. In the previous chapter we saw how one current of this scholarship attends to the use of health services research through a problematic structured as the articulation and refinement of strategies for transferring

research into clinical settings. A related body of work, begun in the 1970s but continuing to shape more contemporary thoughts on HSR, specifically addresses the relationship of HSR to policy-making (Lewis, 1977; Last, 1977; Shortell and LoGerfo, 1978; Spitzer, 1977; Myers, 1973; Eichorn and Bice, 1973).

Much of the early discussion within this literature was stimulated by a broadly based reassessment of the practical utility of social science research and by more specific concerns on the part of government funders of HSR about its usefulness for policy-making (Bice, 1980; Institutes of Medicine, 1979). A good deal of the discussion took the form of criticism or defense of HSR, combined with a diagnostics of blame for faulty research-policy connections and various proposals for improving the research field's practical value for policy-makers. Detractors asserted an absence of relationship between health services research findings and specific policy initiatives (Myers, 1973; Lewis, 1977), while supporters argued that its value was to be found in its provision of a conceptual field within which policy-making comes to be articulated (Mechanic, 1978). These forms of argumentation have survived in recent work that either lauds HSR by establishing a direct link between specific policy decisions and specific research findings (Eisenberg, 1998), or that opts for a health services research that has, at best, a "shaping" role in policy deliberation" (Brown, 1990:39).

My own approach to questions about the use of HSR departs considerably from such applied deliberations. Unlike those who have previously written about the use of HSR, I am not concerned with its policy utility. I do not want to make HSR more

practicable for people who are making care pathways. My interest is not in structuring remarks that in one way or another are resolvable to considerations of how well or in what form HSR does, does not, or can be made to contribute to health care policy and reform.

Instead, I orient to the notion of ‘use’ as a device that encourages analysis of how HSR is an active knowledge form. In exploring how the Chen/Naylor report was brought to bear on the AMI pathway project, I want to contribute to an understanding of formal discourses of knowledge as active constituents of hospital reform. I am not trying to contribute to the use of HSR, but to forms of analysis that explore how discourses of knowledge operate as social practices. Use helps focus my analysis around the problematic of discourse and action. It helps me engage in questions about how HSR is part of the way things get done in health care.

I have been aided by a variety of theoretical and methodological resources in putting forward this effort, including most principally the approach to sociological inquiry developed by Smith, recent Foucauldian research on accounting, and work in discourse analysis focused on intertextuality.

I orient to the analytic work of this chapter as an empirical project that in generating analytic descriptions of relations of hospital reform explores how HSR is an active knowledge form. As such, Smith’s work on the social organization of knowledge and the organization of contemporary relations of ruling has been fundamental to the analysis of the use of HSR I put forward here (Smith, 1987a, 1990, 1990a, 1999).

Smith's consistent emphasis on the social as a terrain of concerted and coordinated human action has helped me to understand the social character of HSR not in terms of its support of interested positions, but in terms of the mechanics through which it brings people into relation with one another and helps organize their activities.

Her approach to textual analysis has also been the primary means through which I have sought to understand how the Chen/Naylor working paper is active in the work of developing the AMI care pathway. Health services research enters the site of remaking care for patients with heart attacks at Roxborough in textual form, as the Chen/Naylor report. Following Smith, I have tried to explore the use of the working paper in ways that attend to the materiality of texts—to their ongoing presence within and organization of daily social action. This has involved positioning people's engagement with the working paper at RMH as one moment of more generalized text-mediated social relations. It has also involved understanding their textual encounters as involving a two-sided conversation, what Smith calls a text-reader conversation. On the one side are readers who operate the report through interpretive strategies which are not idiosyncratic but socially organized (Smith, 1990: 221-224). On the other side is the report, which although unable to respond to readers' interpretations of it, speaks to them in their reading of it through its definite and particular assembly of words, figures and visual displays.

In addition to Smith's work, I have found recent analyses of accounting that draw on governmentality perspectives a helpful resource in thinking through the social

relations of use of HSR in hospital reform. At a broad level, my efforts to understand how the Chen/Naylor working paper entered into a local setting and helped open up rather than foreclose possibilities for modes of managerial response is broadly informed by Foucault's discussion of power as a productive capacity (1977, 1982). At a more specific level, recent Foucauldian work on accounting has provided me an example of a somewhat kindred analytic endeavour that treats a numerically-based knowledge form not as a neutral representational device, but as a social practice that is constitutive of social relations (Miller and O'Leary, 1987; Miller, 1994, 1992; Robson, 1992, 1993; Chua, 1995; Preston, Chua and Neu, 1997). While this body of work does not treat people's actual engagement with expert knowledges as a generative terrain for analysis as does mine, I appreciate its effort to investigate accounting as a set of institutional practices with consequences for modes of organizational action and for the subjectivities of the people who engage them. I have also found the accounting literature's engagement with the notion of action at a distance an interesting basis for dialogue with Smith's work on forms of coordinated rule. I take up this dialogue in my discussion of the Chen/Naylor working paper and inter-institutional comparison which closes the chapter.

Finally, I have found work on intertextuality a helpful resource in thinking about an analytics of the use of HSR. One common way that intertextuality has been understood within discourse analysis is as a property of textual surface; texts of various sorts are understood to be constituted by threads and elements of other texts, discourses

and discursive conventions (Fairclough, 1992). A second popular approach to the exploration of intertextuality is the analysis of intertextual chains—processes through which texts are reconstituted as they move through sequences of organizational action (Cicourel, 1968; Jönsson and Linell, 1991; Ravotas and Berkenkotter, 1998).

While informed by these approaches, my own concern with intertextuality is linked with a different set of research interests. My concern is not with the problematic of textual constitution or transformation, but with the problematic of the actual use of texts within specific settings. Thus, I orient to intertextuality not as a device for understanding how texts are made up of other texts, or how they come about through a process of sequential reworking, but as a resource in understanding relations of textual use.

People at RMH did not engage with the Chen/Naylor report as a singular discrete text. They took it up in their work alongside other documents. These include, first, other texts of HSR on length of stay for AMI alongside which the report was used to enlist physicians' participation in the pathway initiative and, second, comparative CIHI and Joint Policy and Planning Committee (JPPC) data on lengths of stay alongside which it was used to problematize the care of AMI patients at RMH as inefficient. The form of intertextuality that concerns me then, is one which emerges as a feature of the actual use of texts. I use intertextuality to understand how the entry of the Chen/Naylor report into a particular institutional setting involves a process through which the report is made

active as an intertext, that is, through its relationship with a set of other texts with which it shares a functional relation.

4.0 The Chen/Naylor Working Paper and the Context of Hospital Reform at Roxborough Memorial Hospital

Before exploring the intertextual relations of use of the Chen/Naylor report, a few comments on the nature of the report itself are in order. In her work on contemporary relations of ruling, Smith argues for forms of text analysis that take into account the materiality of texts. Part of how texts ‘go to work’ in particular settings of their reading has to do with the particular configuration of words, numbers and images of which they are constituted. Roxborough’s patient care director could not have used a phone book to convince physicians about the safety of reducing LOS through a care pathway initiative. Nor could she and her colleagues have used an anthology of poems to problematize the efficiency of care at RMH as she could the Chen/Naylor report. Part of the possibilities of the report’s use lies with the text itself.

My analysis of the AMI pathway project at RMH accords a special significance within the process of the pathway’s development to the Chen/Naylor report. This emphasis is not meant to suggest that creating the pathway was simply a matter of the use of the report and its textual companions. I am not arguing that the report somehow caused or directly led the patient care director and her colleagues to produce the pathway, or that the pathway’s development involved only work done in relation to the Chen/Naylor working paper.

Instead, I argue that the report was drawn upon as part of a process of intertextual problematization and enlistment that rendered hospital care at RMH amenable to reform by a pathway initiative. Before turning to these intertextual relations of engagement, I offer a brief discussion of the working paper itself. Drawing attention to how the pathway project is about much more than the simple ‘use’ of the Chen/Naylor working paper, I locate the project within the broader relations of institutional transformation taking place at RMH. I then briefly describe the range and complexity of work that went into developing RMH’s AMI care pathway.

4.1 The Working Paper

“Hospital-Specific Data on Length of Stay for Patients with Acute Myocardial Infarction in Ontario During Fiscal 1991” is a 23-page ICES working paper written by Erluo Chen and C. David Naylor. It is a document that enters into the possibilities of a given text-reader conversation as a particular assemblage of words and numbers organized as scientific knowledge, or more specifically as health services research. The report is structured in a form that is recognizable as a working paper. It begins with an executive summary, and proceeds with an introduction, methods section, results section, a discussion section and references. A further feature of the basic structure of the report is its provision of seven visual displays of the sort that identify characteristics of patients included in the study as a table, or that represent the distribution of different ranges of LOS for AMI for Ontario hospitals as a bar graph.

As a working paper, Chen and Naylor (1993) contributes to an ongoing program of ICES research on lengths of stay for AMI. This program of research is typical of HSR in its focus on the study of variations in length of hospital stay and in its emphasis on the relationship between LOS and patient outcomes. An ICES working paper published earlier in the same year used hospital discharge data from 1990 to explore inter-hospital variation in LOS for AMI and its relationship to in-hospital fatality rate (Chen and Naylor 1993a). The Chen/Naylor report builds on this earlier work by using more recent 1991 data and by exploring outcomes in a different way, as patients' rate of readmission. A further feature of the more recent Chen/Naylor report is its deployment of a particular textual form, a visual display of numerical data and words that openly identifies hospitals in institution-specific lists of length of stay, statistically adjusted in various ways (see Table 1).

As we shall see later, this type of textual organization of data on LOS is a feature of the report mobilized by the patient care director and her colleagues in a problematization of the efficiency of care provided to Roxborough's AMI patients that is text-mediated and that proceeds from practices of comparative reading. I mention it here to suggest a particular discursive feature of the Chen/Naylor report. The working paper does not simply present scientific research findings.¹³ It articulates them in terms that seek to intervene in the organization of hospital-based managerial practices and that

¹³ The report points to wide variations in hospital specific LOS for AMI with upper and lower limits of 6.6 and 12.6 days for crude LOS and 7.1 to 13.2 days for adjusted LOS (1993:5). It further concludes that no relationship exists between LOS and rate of readmission (1993:7).

Table 1

Length of Stay Data, Chen and Naylor (1993)

Table 2. The Age-Sex Adjusted LOS and their 95% Confidence Intervals

Institution	Volume	Crude LOS Mean (95% CI)	Outliers	Adjusted LOS Mean (95% CI)	Outliers	Rank A	B
Plummer Memorial Public (SSM)	123	8.8 (8.27-7.01)	lower	8.7 (8.06-7.28)	lower	1	1
Ottawa General	156	8.7 (8.26-7.13)	lower	8.8 (8.26-7.34)	lower	2	2
York County (Newmarket)	189	7.1 (8.78-7.45)	lower	7.1 (8.58-7.62)	lower	3	3
Brockville General	56	7.3 (8.58-7.95)	lower	7.4 (8.54-8.35)	lower	4	5
Peterborough Civic	109	7.4 (8.86-7.89)	lower	7.3 (8.68-7.98)	lower	5	4
Scarborough Grace	113	7.5 (8.98-7.99)	lower	7.5 (8.90-8.17)	lower	6	7
St. Joseph (Peterborough)	59	7.6 (8.88-8.28)	lower	7.5 (8.62-8.38)	lower	7	6
Humber Memorial	160	7.8 (7.37-8.30)	lower	7.7 (7.21-8.28)	lower	8	8
Hawkesbury & Dist. General	51	8.2 (7.40-8.91)	lower	8.2 (7.26-9.15)	lower	9	10
Stratford General	86	8.2 (7.48-8.86)	lower	8.1 (7.33-8.79)	lower	10	9
Victoria (London)	173	8.3 (7.77-8.82)	lower	8.3 (7.82-8.85)	lower	11	11
Kitchener-Waterloo	165	8.4 (7.99-8.73)	lower	8.4 (7.83-8.88)	lower	12	12
Lennox and Addington Cty General	50	8.4 (7.67-9.21)	lower	8.4 (7.47-9.38)	lower	13	13
Collingwood General and Marine	54	8.5 (7.58-9.42)	lower	8.6 (7.67-9.51)		14	16
Markham Stouffville	75	8.5 (7.80-9.24)	lower	8.6 (7.83-9.39)	lower	15	19
The Greater Niagara General	118	8.6 (7.85-9.25)	lower	8.6 (7.98-9.23)	lower	16	17
St. Thomas Elgin General	104	8.6 (7.91-9.25)	lower	8.5 (7.86-9.19)	lower	17	15
Queensway General	192	8.6 (8.07-9.09)	lower	8.5 (7.96-8.94)	lower	18	14
St. Joseph (North Bay)	75	8.6 (7.91-9.28)	lower	8.6 (7.83-9.39)	lower	19	18
Belleville General	135	8.7 (8.18-9.13)	lower	8.7 (8.08-9.25)	lower	20	20
Kingston General	138	8.7 (8.16-9.24)	lower	8.7 (8.09-9.24)	lower	21	21
Sunnybrook Health Science Centre	168	8.8 (8.21-9.34)	lower	8.7 (8.21-9.25)	lower	22	22
Ross Memorial (Lindsay)	71	8.8 (8.00-9.68)		8.9 (8.12-9.72)		23	28
Centenary (Scarborough)	193	8.8 (8.18-9.43)		8.9 (8.38-9.35)	lower	24	26
Salvation Army Grace (Windsor)	57	8.8 (8.08-9.55)		8.7 (7.84-9.63)		25	23
Chatham Public General	77	8.9 (8.32-9.47)		8.9 (8.09-9.63)		26	25
Wellesley	81	8.9 (8.01-9.86)		8.9 (7.99-9.72)		27	24
Cobourg District	58	8.9 (8.00-9.89)		8.9 (8.02-9.83)		28	29
St. Joseph's (London)	152	9 (8.38-9.53)		8.9 (8.35-9.45)		29	27
Woodstock General	74	9 (8.33-9.64)		9 (8.19-9.76)		30	31
St. Catherine's General	124	9 (8.40-9.60)		9.1 (8.46-9.67)		31	33
Montfort	78	9 (8.28-9.74)		9 (8.26-9.79)		32	32
St. Mary's General (Kitchener)	133	9.1 (8.48-9.84)		8.9 (8.35-9.52)		33	30
Samia General	71	9.1 (8.41-9.81)		9.2 (8.38-9.99)		34	36
Ottawa Civic	200	9.1 (8.64-9.60)		9.2 (8.68-9.64)		35	35
Toronto East General	215	9.1 (8.68-9.59)		9.1 (8.61-9.53)		36	34
McKellar General (Thunder Bay)	64	9.2 (8.36-9.95)		9.3 (8.42-10.11)		37	39
Etobicoke General	209	9.2 (8.76-9.57)		9.3 (8.85-9.78)		38	40
Chedoke-McMaster	103	9.2 (8.48-9.96)		9.2 (8.55-9.89)		39	37

Institution	Volume	Crude LOS Mean (95% CI)	Outliers	Adjusted LOS Mean (95% CI)	Outliers	Rank A	B
Royal Victoria (Barrie)	111	9.2 (8.64-9.81)		9.2 (8.61-9.89)		40	38
Peel Memorial (Brampton)	204	9.3 (8.77-9.80)		9.4 (8.95-9.89)		41	47
Hotel Dieu (Kingston)	116	9.4 (8.67-10.03)		9.4 (8.73-9.98)		42	42
North York General	244	9.4 (8.95-9.82)		9.4 (8.97-9.83)		43	45
St. Joseph (Hamilton)	143	9.4 (8.64-9.98)		9.3 (8.75-9.88)		44	41
Hotel Dieu (St. Catharines)	98	9.5 (8.72-10.20)		9.4 (8.68-10.04)		45	43
Northwestern General (Toronto)	100	9.5 (8.89-10.13)		9.4 (8.71-10.07)		46	44
Credit Valley	163	9.5 (8.97-10.06)		9.6 (9.05-10.11)		47	48
Mount Sinai	74	9.5 (8.63-10.43)		9.4 (8.62-10.19)		48	46
Queensway-Carlton	137	9.6 (9.02-10.17)		9.7 (9.08-10.24)		49	51
Scarborough General	221	9.6 (9.12-10.13)		9.6 (9.18-10.09)		50	50
St. Michael's	72	9.6 (8.80-10.49)		9.7 (8.94-10.63)		51	52
Oshawa General	172	9.7 (9.22-10.20)		9.9 (9.34-10.37)		52	57
York Central (Richmond Hill)	118	9.7 (9.27-10.21)		9.9 (9.25-10.50)		53	58
St. Joseph's Health Centre (Toronto)	169	9.8 (9.16-10.37)		9.6 (9.08-10.10)		54	49
Tilsonburg District	50	9.9 (8.88-10.84)		9.8 (8.88-10.79)		55	54
Welland County	112	9.9 (9.14-10.64)		9.8 (9.20-10.47)		56	55
Cornwall General	50	9.9 (9.02-10.78)		9.9 (8.97-10.88)		57	59
Orillia Soldier's Memorial	105	9.9 (9.16-10.67)		9.8 (9.17-10.49)		58	53
University Hospital (London)	81	9.9 (9.09-10.76)		9.8 (9.09-10.59)		59	56
Hotel Dieu (Cornwall)	96	9.9 (9.20-10.68)		9.9 (9.26-10.64)		60	60
Cambridge Memorial	110	10 (9.29-10.64)		10.1 (9.49-10.78)	upper	61	65
Joseph Brant	155	10 (9.41-10.58)		10 (9.47-10.55)	upper	62	62
Brantford General	158	10.1 (9.61-10.68)	upper	10.1 (9.58-10.64)	upper	63	64
Grey-Bruce Regional Health Centre (Owen Sound)	130	10.1 (9.48-10.82)	upper	10 (9.45-10.63)	upper	64	63
The Toronto Hospital (Toronto Western)	85	10.2 (9.37-10.98)		10 (9.24-10.71)		65	61
The Toronto Hospital (Toronto General)	129	10.2 (9.41-10.95)		10.2 (9.58-10.75)	upper	66	66
Mississauga	224	10.2 (9.65-10.78)	upper	10.2 (9.76-10.68)	upper	67	67
Ajax and Pickering General	67	10.3 (9.49-11.04)	upper	10.4 (9.61-11.28)	upper	68	73
York-Finch General	117	10.3 (9.65-10.93)	upper	10.4 (9.78-11.03)	upper	69	72
Guelph General	125	10.3 (9.57-11.12)	upper	10.2 (9.64-10.85)	upper	70	68
Windsor Western Hospital	71	10.4 (9.41-11.35)		10.3 (9.48-11.06)	upper	71	69
West Lincoln Memorial (Grimsby)	73	10.4 (9.55-11.25)	upper	10.4 (9.61-11.19)	upper	72	70
Henderson General Division	208	10.4 (9.91-10.90)	upper	10.4 (9.94-10.87)	upper	73	71
Oakville Trafalgar	128	10.6 (9.95-11.24)	upper	10.6 (10.03-11.23)	upper	74	74
Norfolk General	105	10.7 (10.21-11.27)	upper	10.7 (10.07-11.39)	upper	75	78
Branson (North York)	188	10.8 (10.31-11.34)	upper	10.7 (10.16-11.15)	upper	76	75
Hotel Dieu of St. Joseph (Windsor)	93	11 (10.35-11.65)	upper	10.9 (10.22-11.62)	upper	77	77
Metropolitan General (Windsor)	131	11.1 (10.84-11.65)	upper	11.2 (10.58-11.78)	upper	78	79
Hamilton General Division	187	11.2 (10.60-11.72)	upper	11.1 (10.64-11.62)	upper	79	78
General Hospital of Port Arthur	53	11.7 (10.62-12.74)	upper	11.7 (10.77-12.62)	upper	80	80

Institution	Volume	Crude LOS Mean (95% CI)	Outliers	Adjusted LOS Mean (95% CI)	Outliers	Rank A	B
Riverside Hospital of Ottawa	78	11.8 (10.98-12.68)	upper	11.9 (11.10-12.63)	upper	81	82
Huron District (Midland)	52	11.8 (10.58-13.13)	upper	11.8 (10.83-12.71)	upper	82	81
Sudbury Memorial	107	11.9 (11.32-12.65)	upper	12.1 (11.46-12.76)	upper	83	84
St. Joseph's General (Thunder Bay)	60	12 (10.95-12.98)	upper	11.9 (11.05-12.80)	upper	84	83
Sudbury General	69	12.6 (11.61-13.54)	upper	12.6 (11.81-13.44)	upper	85	86
Leamington District Memorial	53	12.6 (11.80-13.34)	upper	12.4 (11.49-13.35)	upper	86	85

Ranking: A is for crude LOS and B is for adjusted LOS. The hospitals were sorted by crude length of stay

intend particular relations of use of the report and particular interpretive practices on the part of its readers.

The early pages of the Chen/Naylor report provide a set of descriptions of the substance of managerial practice that locates the report as a resource to be used by hospital managers in their restructuring efforts. Thus, in the introduction, the authors write that as “fiscal pressure on Canadian general hospitals mounts, administrators and clinicians have grappled with the issue of defining an appropriate length of stay for common medical and surgical conditions” (Chen and Naylor, 1993:1). They go on to describe an organization of managerial practice in which the appropriateness of lengths of stay is determined through benchmarking exercises, whereby hospital administrators use information from the Hospital Medical Records Institute (now CIHI) to “review their length-of-stay data against the performance of comparable institutions” (1993:1).

The working paper, itself, is positioned as a document that can complement such practices by providing LOS data that are more clinically sensitive than those found in HMRI reports¹ and by facilitating comparison through the open identification of LOS by individual hospital. The further relations of use that the report intends are held in suggestions that comparative analysis of LOS data can stimulate discussion about how to

¹ Unlike HMRI reports produced at the time, the data presented in the Chen/Naylor working paper are statistically adjusted to control for differences in the age, sex, complications and comorbid conditions of patients. By attending to clinical characteristics that HMRI data do not and by excluding patient differences from the explanation of interhospital LOS variations, the institutional comparisons made in the working paper are understood to be more clinically credible than those of HMRI documents (Chen and Naylor, 1993:1)

shorten LOS and that such reductions can lead to decreases in hospital costs without compromising outcomes (1993:7,9). The Chen/Naylor report, then, is not simply a text of scientific research findings. It is an applied piece of HSR that, like the *Practice Atlas* and other ICES research, seeks to organize evidential relations of hospital restructuring and management.

4.2 Its Institutional Context

The entry of the Chen/Naylor working paper into RMH and its engagement as part of the process of developing the AMI care pathway occurred as part of a set of relations of institutional transformation at the hospital that included, most principally, decreases in hospital funding, the installation of information technologies and new relations of managerial accountability. Like other hospitals in Ontario, RMH has faced the challenge of providing hospital care in the context of shortfalls in provincial funding. Most of the people I spoke with at the hospital understood the pathway project as an effort to control hospital expenditures. For example, the cardiologist I interviewed spoke about “financial reasons” and “money” as the “driving force” behind the AMI care pathway. The patient care director of the cardiac division spoke candidly about 5% yearly decreases in the division’s budget and her turn to pathways as a means to make up the shortfall by reducing patients’ lengths of stay:

...And so part of my savings came from calculations on, okay we can keep our length of stay down and possibly lower it. How can we, how many estimated beds can you save and translate that into dollars. And that was part of my budget reduction. So when we presented it, I didn’t decrease

staff. I didn't want to lose any staff, so you have to bring in those efficiencies.

(SGH 09/97)

The AMI pathway, itself, was part of a number of initiatives occurring roughly at the same time at RMH that sought to lower costs, shorten lengths of stay and produce hospital efficiencies. These other initiatives included the introduction of multi-skilled workers, a move to day surgery and the use of computerized audit tools for the concurrent review of patients' hospital stays.

It would be a mistake, however, to see the AMI pathway as simply a reflex of funding cutbacks. The pathway was one of the hospital's first utilization management initiatives. As such, it was tied to a newly expanded circulation within the hospital, of texts of medico-administrative information on hospital care. In my conversations with them, both RMH's manager of health records and its vice-president stressed that the hospital was slow to take advantage of managerial possibilities that follow from the use of statistical information produced by organizations such as CIHI. The pathway was produced as part of an impetus on the part of senior management to change this situation.

The very possibility of a pathway as a reform initiative follows upon forms of visibility of care, particularly its length of stay, that are made possible by the production of texts of statistical information on hospital care. An important part of the context within which Roxborough's AMI pathway was produced are new relations of knowledge, marked by the increasing purchase of medico-administrative information within the daily work of the hospital's middle level managers. As the patient care director explains:

E: You talked about a change where before you used to do your management of care but you didn't really think of the length of stay. It wasn't really something you did. Can you tell me more about that change?

P: Well I guess because we have the tools. I guess we always did have the CMGs but at the time when we began the pathway those were new tools that we used. I mean they were always there but that was as a manager who primarily, at that time, was focused on patient care and not really utilization management per se. They're new in terms of a way of looking at things for us. I imagine at the VP level they had that information, but we started to work with those tools. And now, I mean I guess because we're working with them, now it's just become a, I don't know, part of the, its all part of the utilization management.

(SGH 09/97)

As the director's remarks imply, working with new tools of information have consequences not only for what managers see and understand, but for what their responsibilities come to be. The saturation of managerial work by texts of medico-administrative data is not simply an advance in information technology, it is part of a reorganization of relations of managerial accountability. Roxborough's AMI care pathway was produced at a time when a new organizational structure was being put in place at the hospital. Social work, nursing and other professional departments were being replaced by divisions of care (e.g. cardiac, surgical services, oncology) each managed jointly by a medical and patient care director. These newly hired directors were charged with new responsibilities for managing the quality, performance and costs of care delivered within their divisions. As length of stay data and other forms of hospital statistics produced both at CIHI and within RMH began to circulate throughout the hospital, they formed the currency with which directors would enter into new forms of accountability for clinical activities.

5.0 Making Roxborough's AMI care pathway

My interviews at Roxborough not only put in place some of the broader institutional context of the AMI pathway project, they shed light on the complexity and range of work that went into the pathway's making. While engaging with the Chen/Naylor working paper and its accompanying texts of HSR and of medico-administrative data was an important part of the work of developing the AMI pathway, much else was involved. As a particular reform initiative, the pathway followed upon earlier work done at the cardiac care division that introduced a particular technology for improving the 'quality' of hospital care.² Continuous quality improvement, as it is often called (see Berwick, 1989; Berwick, Godfrey and Roessner, 1990), draws on interdisciplinary collaboration, committee work, and the use of numerically-based measurement, all features of the work process through which the pathway was produced.

The overall pathway project was coordinated, if somewhat clandestinely, by the division's patient care director. She brought people together, scheduled meetings, did much of the groundwork and kept the process going. As she put it: "I kind of acted as the chairperson, though we said Dr. Kerenyi was. So I did the behind the scenes work but that's okay because that's how you get the work done."

² Roxborough's first CQI initiative explored the delivery of thrombolytics or clot-busting drugs to patients with heart attacks. Its focus was the length of time that transpires between a heart attack patient's admission to emergency and his/her receipt of thrombolytic therapy. As a result of the project, "time to thrombolytics" was reduced to 30 minutes.

The work to which she is referring involved collaboration among members of a committee composed of the director and individuals drawn from the various disciplines involved in the care of patients with AMI (medicine, nursing, social work, nutrition, pharmacy). Meeting regularly over a number of months, committee members' work began with the development and administration of a survey of physicians and staff used to identify practice patterns and barriers to early discharge for AMI patients. At roughly the same time, the patient care director carried out a literature search on pathways and on lengths of stay for AMI. In conjunction with his own clinical experience, the results of the survey and literature search were drawn upon by one of the participating physicians to set out a staging of clinical interventions around which the full interdisciplinary path of care was developed.

Other work, done primarily by the nurses on the committee, included the development of accompanying documentation for patients.³ The pathway coordinator and director carried out educational sessions about the AMI pathway and accompanying patient information with nursing staff and physicians. Once it was completed, the pathway was 'piloted' for some months, during which time nursing staff's compliance with pathway documentation was monitored and lengths of stay calculated by the patient care director and others. After the pilot period, the committee made revisions to the pathway.

³ The AMI patient package includes booklets on nutrition and on "life after a heart attack," a patient version of the AMI care pathway, a post-discharge activity guideline, a short true or false test that reviews information provided in the booklets and a sheet outlining the progressive activities the patient can undertake during his/her hospital stay.

Sketchy as this review of the process is, it should provide some sense of the work involved in producing the pathway. Having discussed the Chen/Naylor report, broader institutional relations within which the development of Roxborough's AMI pathway was located and some of the particulars of its making, I want now to turn to the main focus of my analysis, the intertextual relations of use of the Chen/Naylor report.

6.0 The Chen/Naylor Working Paper as Evidential Warrant: Securing Physicians' 'Buy-in.'

As I have already noted, my interviews at RMH suggest two broad ways in which the Chen/Naylor working paper, as intertext, was drawn upon in the process of creating the AMI pathway. For the time being, let me set aside the question of how the report entered into practices of constituting the inefficiency of care provided at RMH to explore how it was used as part of a technology of enlisting physicians' participation in the AMI pathway project.

Most critiques of the introduction of practice guidelines or other forms of standardization into settings of clinical practice emphasize managerial control over physicians (Coburn, Rappolt and Bourgeault, 1997). Within such work, which often draws on the American experience, administrators are located in relations of contest with physicians over the content of medical practice. They are further positioned on the winning side of such struggles, as one form or another of clinical standardization is foisted upon physicians, limiting their scope of practice and curtailing their clinical autonomy, while contributing to savings on health care costs. At the same time, a second

body of work has begun to critique the mechanics of introduction of such forms of clinical standardization by focusing analytic attention on the principles of interdisciplinary participation which inform them. Addressing CQI-related management practices, researchers such as Armstrong et al. (1997) have drawn on a political economy tradition to fashion an analysis of participation based in ideology critique. Such work points to a disjuncture between claims made by CQI proponents of wide-spread participation by hospital staff in CQI-led reform initiatives and what actually happens in practice.

My research at RMH points to a different way of engaging with questions about the relationship between doctors and managers in the context of the reform of hospital care. In exploring the use of the Chen/Naylor report at Roxborough, I offer an account of how one textual constituent of HSR was drawn upon to respond to the problem of managing physicians' participation in the AMI pathway initiative. In so doing, I am not trying to argue that the process of making the AMI pathway was fully democratic or participatory. Rather, I want to suggest how the report and a group of related texts of HSR formed a textual ground that was used in a strategy of governing physicians that sought to secure their participation.

My focus, then, is on intertextual relations through which participation is made an object of governance. The mechanics involved in this exercise of power are not those of heavy-handed administrative control over physicians and their clinical work in hospital settings. Instead, a more delicate form of governance is at work, one which intends the

production of physicians as “active subjects” of hospital reform (Rose, 1996a). In exploring this form of governance I emphasize the centrality of HSR within its textual organization. I further underscore how, through the Chen/Naylor report and its textual companions, HSR organizes evidential relations that shape both the AMI pathway initiative and those who implemented it.

By the time I had arrived at RMH to conduct my interviews, a formal programme, staffed by two care pathway coordinators had been established as the central site for developing and implementing pathways throughout the hospital. The coordinators had put in place a formal process for developing pathways that was integrated with the hospital’s governance structure, that drew on its resources in health records, and that engaged a participatory committee structure at the divisional level. When I interviewed them, the pathway coordinators had ushered in some fifteen care pathways. They had also begun to exploit their data potential, using aggregated pathway information to monitor patients’ duration of stay in hospital and, by extension, the degree of efficiency of performance of the physicians responsible for patients’ care.

The AMI pathway was made well before any of these work relations were put in place. It was Roxborough’s first care pathway, developed prior to the establishment of the hospital’s pathway programme at a time when few individuals at the hospital had had any direct experience with care pathways. As a novel reform initiative for Roxborough, the AMI pathway was made within certain relations of tension. On the one hand, members of senior management at the hospital were eager for a successful initiative that

could be promoted throughout the institution. On the other hand, physicians who were concerned about the implications of standardization on clinical autonomy and about the safety to patients of shortening lengths of stay, were more wary of the initiative.

My interviews suggest how these tensions were addressed through a set of practices for organizing the pathway project that privileged the question of physicians' relationship to the AMI pathway, that sought to address their concerns and needs, and that focused on the problem of managing their participation in the pathway's making. One of the peculiar features of the accounts given by the patient care director and the care pathway coordinator about their work was a particular way of talking about physicians. Time and again I heard physicians spoken about in ways that positioned their participation in reform as an object of managerial work. Thus, it was impressed upon me that in order for an initiative like a care pathway to be successful, "physician champions" needed to be identified, physicians had to be "brought on board" and their "buy-in" secured. Here is an extended example of such talk spoken by one of the hospital's pathway coordinators:

If you don't get the physicians buying into it then it doesn't matter how good the process is. Because if the physicians don't buy into it, then it's not going to work. So it was a real selling job to them about what the value of this whole thing [the AMI pathway] was, why we were doing it... They were very new into it... There was some concern too... that you're conforming to this theory of cookbook medicine, that you're going to be forcing people, that you're not going to give them that flexibility, which is certainly not what we're doing... And just enforcing the idea that there is that flexibility, that they all have input into what they would like the design to be. So it's not like a person [saying] 'this is what the practice is going to be and this is how we're going to go from there...' And for some of them it's actually getting them involved. Like what I'll do right now. I'm actually no longer in this role but when I was doing it, what you

would do is that you would get somebody who had some real interest with it. You would explain what the whole concept of care pathways was. You would get some buy-in from it there. And then from that step on I mean there would sometimes be some physicians who initially would not be interested and its more 'okay let me see the process work first and then I might buy into it.' And its more you know when they do see the value of it and they see for example that, you know, everybody has an understanding of what this patient's care is going to be. Even the patient's got a better understanding because they have a patient version of the pathway.

(SGH 09/97)

One of the interesting features of the pathway coordinator's description of her work both in relation to the AMI pathway and pathways in general, is how it records a particular administrator/physician relationship. The coordinator's remarks certainly describe a mode of managing physicians, but its substance is hardly what one might expect from the accounts of administrative control over physicians found in the literature on clinical standardization. My concern here is not to suggest that such forms of control over physicians' work are not taking place. I simply want to point to their ill-fit with what at RMH is a very different organization of physician governance. The coordinator's remarks do not inscribe a relation of control or power over physicians. Instead, they suggest a rather delicate technology that introduces reform of patient care in ways that are highly sensitive to physicians' needs and that try to secure physicians' support for such reform by involving them in the process of its making.

This technology of 'reform through participation' is a major feature of the health services research literature. The HSR advice literature on research transfer generally counsels that evidence-based hospital reform initiatives, such as clinical practice

guidelines, are most successful when developed locally by interdisciplinary committees rather than imported ready-made from afar, and when introduced with the explicit support and involvement of physicians (Lomas, 1994; Dixon, 1990; Grimshaw, et al., 1995; Horne, 1996). The importance of treating physicians' participation as something to be cultivated and cared for when introducing hospital reform was underscored for the director through her experience with the time to thrombolytics initiative, for which she had secured physician 'buy-in' from the outset. It was also something she came to know about through her reading of the HSR literature.⁴

Other places in some of the literature that we read, [a pathway] was developed by nursing and then given to the physicians, and their reports weren't that positive... They didn't include physicians. And I think that's really, really key because they've always been seen as kind of driving the practice. If you try to change their practice without having them involved, they will just, it will be very difficult. Maybe the word isn't buy-in but I believe that this is a good thing.

(SGH 08/97)

The organization of the pathway initiative in terms of a technology of participation is suggested by physicians' active involvement in the project. Two physicians sat on the AMI pathway committee. Prior to the committee being established, the patient care director, with assistance from the hospital's chief of staff, identified one of them as what she called a "physician champion." This is a common term of the HSR literature on research transfer used to refer to a locally respected physician who will support a given reform initiative and advocate for or 'champion' it among his/her

⁴ The term "buy-in" is a component of managerial discourse that circulates widely in both public and private sector settings. The HSR literature was likely not the only source of the director's familiarity with it.

colleagues (Ellrodt, 1997; Lomas et al., 1991). Physicians were also involved in the pathway through their participation in a survey which sought their advice on what the average length of stay should be for AMI, how the then current length of stay at RMH could be lowered, and what the barriers to such reduction were. The physician I interviewed, also the project's 'physician champion,' referred to the survey as an important part of a broader process of coming to know what physicians wanted, "of kind of getting a sense about how they felt about the situation... the kinds of investigations⁵ they wanted, and what their ideas were about the care of patients." The development of the pathway, then, involved a variety of strategies for incorporating physicians' involvement in various forms.

One might think of the further work of securing physicians' 'buy-in' for the project as involving a process of producing the AMI pathway and representations of it and the project as something aligned with the concerns and interests of physicians. This involved responding to concerns about cookbook medicine by incorporating flexibility and discretion into the care process set out by the pathway. Thus, only a small portion of medical care provided for AMI patients is actually standardized by the pathway. The pathway does not set out the type of medications to be prescribed, for example. Physicians can also modify the staging of clinical interventions by altering the physician orders which accompany the pathway. It also involved representing the project and its standardization and harmonization of care as in everyone's best interest. Suggested by

⁵ By investigations, the cardiologist means diagnostic tests as well as clinical indicators such as a stress test.

the final comments made by the pathway coordinator in the quote above--“when they do see the value of it...for example that...everybody has an understanding of what this patient’s care is going to be”-- such forms of representation are echoed in the patient care director’s assertion that “we’ve made it more, we’ve made it easier for the physician. [The AMI pathway] streamlines their work.”

Producing the AMI care pathway as an initiative that physicians could support and ‘buy-into’ also involved the use of the Chen/Naylor report to allay their concerns about the safety of the pathway. As one of RMH’s first efforts to systematically reduce length of stay, the hospital’s cardiologists were understandably concerned about the potential impact of the AMI care pathway on patient care. As the patient care director explained to me:

So again, we didn’t have pathway coordinators at all. All we had was the information that [the vice-president] had presented and we had the ICES report...and then I guess the other literature, studies.... And the physicians were really concerned that if they had a process in place that was okay. But they wanted to make sure it was validated...The physicians were saying, ‘if there’s documents’--this is what you call evidence-based medicine--‘if there’s clear evidence out there that we can decrease our length of stay by x number of days without compromising our patients, without increasing our readmission rate, then that’s fine. But I want to see your documents...’ So when they saw the report that kind of swayed them into saying yea, ‘okay we’ll look at our practices.’

(SGH 08/97)

What the patient care director’s remarks help put in place is how physicians’ concerns about safety and their call for documentation enters the pathway initiative into evidential relations. Within this set of relations, the Chen/Naylor working paper is activated both by the director and physicians as an evidential warrant for the pathway

initiative. It is the report's character as scientific research and an authority it derives from being a publication of an important research institute, that help make possible its use as a textual resource in the work of enlisting physicians' support and participation.

The working paper does not, however, enter this work effort alone. The "other...studies" the director mentions in her remarks are those she found in her literature search. Most of the studies she located were pieces of health services research on the consequences of shortening length of stay for AMI that were published in the medical literature in the early 1990's. They included work by Fisher et al. (1994) and Sanz, Betriu, and Oller (1993). It is in concert with these other scientific texts that the Chen/Naylor report comes to have its full weight as an evidential text. The report, as intertext—as member of an intertextual group—can be brought to bear on the project in ways that satisfy skeptical physicians, as it locates the AMI pathway within a trajectory of well-documented initiatives in which LOS for patients with AMI was safely reduced.

One important use of the Chen/Naylor report, then, is its anchoring of a reform initiative introduced into RMH by a strategy of governance through participation. The report helped secure physician 'buy-in' by providing a textual resource that was used by the patient care director and others on the AMI pathway committee to represent the project in terms that could be supported by physicians. An important feature of this use is the significance a particular form of evidence, HSR, comes to have in shaping people's judgements about proceeding with the project. This type of engagement with the report

is just one moment of a broader set of evidential relations both organizing and organized by the initiative.

The AMI pathway project involved not only creating a pathway, but establishing a set of procedures from which could be developed the forms of representation of the project expected by physicians, managers, and others at Roxborough. In producing the conditions of visibility of the project, the patient care director and her colleagues hooked themselves and their efforts into forms of rationality typical of health services research. Thus, HSR acted as the primary discursive source for a set of practices of enlistment enacted within the project. In the particular form of the Chen/Naylor report and its scientific, textual companions, it further operated as the project's evidential warrant.

More broadly, HSR provided a certain organizing framework for the project. From the outset, Roxborough's AMI pathway project was organized in ways that would make possible a further contribution to the HSR literature on AMI and lengths of stay. In my conversations with her, the patient care director stressed that she knew early on that she would be speaking about the project at fora such as the OHA convention I attended and fully intended to write up the project for publication. This meant that the project was organized through practices of self-monitoring that made the project knowable within the relevances of HSR. The careful monitoring of readmission rates during the pilot phase of the AMI pathway project and beyond provides one example of a set of documentary practices used to judge the 'effect' or 'impact' of the pathway in ways that privileged HSR's peculiar medico-administrative way of knowing.

As such, the patient care director and her colleagues did not simply restructure care at RMH, they restructured it evidentially. The AMI pathway project was made at a time at RMH when ICES research and other instances of HSR began to emerge as a resource for managerial practice and thinking. The use of the report to secure support for the AMI pathway initiative is one example of the forms of practice referred to in the previous chapter as research transfer. More specifically, it suggests one moment of the penetration of evidence-based decision making into managerial work forms in a hospital setting.

In taking up evidence as part of her daily work—as a technology for making judgements, for example, or as a resource for enlisting physician participation in reform—the patient care director was participating in what have become routine managerial practices at Roxborough. This routine use of HSR in hospital reform shapes not only how managerial work is done, but who people become in its doing. Behaving evidentially would appear to be no longer simply a clinical injunction. At Roxborough and elsewhere, I suspect, managers have become evidential subjects.

7.0 Health Services Research and Practices of Problematization

Moving from the director's OHA remarks to the interview conversations I had with people at Roxborough Memorial, already the black box of use of HSR begins to be opened. Having considered my discussions with the director and others at RMH, it becomes clear that the report is used in the pathway initiative as an evidential warrant,

grounding a text-mediated effort to govern physicians as active participants of hospital reform.

But there are other ways in which the Chen/Naylor working paper was used to identify “room to improve efficiency” in the care of RMH’s heart attack patients. Further engaging with my research interviews, I now turn to a detailed analysis of how the report was drawn upon to problematize that very care. This involves opening up the black box of use in ways that put into view another set of textual relations, those through which patient care at Roxborough is constituted as inefficient and thus in need of remedy by a pathway initiative.

As with my analysis of the report as evidential warrant, I am concerned here with intertextual relations of use. However, the textual companions alongside which the report is drawn upon to problematize efficiency are not the scientific documents previously noted, but statistically-based medico-administrative texts used in utilization management.

In exploring intertextual relations of problematization, my discussion moves from what one might call the particular to the general. I begin with remarks made by the patient care director about her encounter with the report, which I explore as a moment within generous relations of expertise. I then try to locate the practices of comparative reading through which she engaged with the working paper as a socially organized interpretive practice. Moving beyond the working paper and the AMI pathway initiative I further draw attention to the variety of text-mediated practices of inter-institutional

comparison taking place at Roxborough that were suggested to me in my interviews. This sets the stage for a closing discussion that explores how the use of the Chen/Naylor report to problematize hospital care is part of a complex organization of coordinated relations of power. As in my discussion of the Chen/Naylor report and physician governance, I investigate HSR as active in relations of problematization in ways that focus on how it shapes the conduct, objects and subjects of management.

7.1 Seeing Inefficiency Through Comparison: Activating the Chen/Naylor Working Paper within Relations of Generous Expertise

My analysis of how the AMI care pathway follows from and responds to an intertextual problematization of efficiency at RMH relies on people's talk about their work with texts. In my conversations with them, I asked people at Roxborough about how they worked with documents. When appropriate, I asked them how they came to understand the problematic character of hospital care. Not wanting to presume its significance and mindful that people were recalling a textual relation that had occurred some years before our conversation, I was somewhat wary to impress upon them a topical focus on the Chen/Naylor report. While I preferred to follow up on its more spontaneous emergence in people's talk, when needed I did ask pointed questions about people's engagement with the working paper. I did not directly ask about intertextuality.

One of the few instances of extended talk made in our conversations that is specifically focused on the Chen/Naylor working paper and the AMI care pathway is quoted below. The main speaker is the director of patient care for RMH's cardiac care

division. This particular moment of talk occurred midway through our second interview. We had been discussing the hospital's budget cuts and the introduction of utilization management at Roxborough. The director had just spoken about a new emphasis at the hospital on efficiency and on the possibility of providing care more quickly and had referenced the AMI pathway project as one of the starting points of such new managerial concerns. When I asked whether budget cuts were part of what prompted her to take action around reducing lengths of stay, a turn in our conversation occurred:

R: But that's going back to the ICES report. That's what Naylor was saying all along, saying you're, I mean that was the basis for it although maybe he didn't say, I think he did. He did say that the number of beds could be saved. So that was way back in 1991 he was saying that, that we could do it. And it took us a couple of years.

EM: Well it's not that long.

R: We were a little slow. I mean when we looked at the bench-marked hospitals, some hospitals had already got there.

EM: Right, so it seems then that the report was actually putting forward an approach to respond to some other broader problems, or broader budgetary crises at the hospital.

R: Well, they didn't talk about pathways in that report. They just said you can decrease your length of stay, the readmission rates will not, you know, 'from the data we've collected the readmission rates will not increase.' The report said that there were wide variations in length of stay in those hospitals. All of that. But it didn't say how to do it. They just provided the base line data--'this is what we see and we know that as hospitals you can do better.'

(SGH 09/97)

I like to think of this quote as a moment that begins to suggest how the efficiency-based problematization of care at Roxborough proceeds through a textual mechanics involving practices of comparative reading. Part of how this understanding begins to be

put in place, is through the director's correction of the kind of text-reader conversation I suggest she entered into in using the Chen/Naylor report in the AMI pathway project.

The correction occurs midway through the exchange. It follows my suggestion that the report put forward a particular response to reductions in hospital budgets: "Right so it seems then that the report was actually putting forward an approach to respond to... problems, or... budgetary crises...." My remarks were formulated within the relevancies of our talk. We had been speaking about hospital budget cuts and utilization management. The director had earlier located the report within hospital reform by suggesting its purpose was to demonstrate that bed utilization could be reduced. I was trying to advance our conversation by locating the report within a possible relation of use.

It is a kind of textual engagement that readily comes to mind when we think of research reports, namely, that of following programmatic recommendations. I had thought that the director's encounter with the report had taken the form of following its recommendations to institute care pathways as a cost and utilization saving device. The director's resistance to this suggestion occasions an alternative account of how the report speaks. Directly following my comments she picks up from some of her opening remarks and begins to describe what the report talks about in ways that suggest a different form of engagement with it.

As mentioned earlier, the notion of text-reader conversation shapes analysis of textual processes as an exploration of the interaction of text, in its materiality, with socially organized interpretive practices. I understand the director's comments about

what the Chen/Naylor report “was saying” in the quote above as traces of just such an interaction. They are not simply comments about the report’s contents. They are an articulation of an alternative interpretive strategy made to correct my suggestion about following recommendations. The director’s comments about content, then, open up for view both the text and its activation.

The director was right about the textual absence of care pathways in the Chen/Naylor report. Not once in its 23 pages are care pathways or, for that matter, any other specific hospital reform initiative mentioned. Its contribution to the text-reader conversation is of a different order. You will recall that one of the distinguishing features of the Chen/Naylor working paper is its explicit expression of the interpretive practices it intends. Peppered throughout its early pages are no less than three moments of commentary in which the authors position the report as a resource to be used by managers in their restructuring efforts. These all point to a set of relations in which managers’ judgements and actions proceed from their use of medico-administrative texts to compare ‘their institutions’ with others. Here are two such moments drawn from the report’s executive summary:

To assist hospitals in making comparisons with sister institutions, we also provide a detailed institution-specific list of length of stay...

Despite this weakness in the database, the amount of discrepancy in length of stay attributable to complications of acute myocardial infarction is, in general, far too small to account for the degree of difference among institutions. Simple comparisons of the age/sex-adjusted length of stay data can highlight an opportunity for many hospitals to reduce bed utilization for this common condition.

In pointing to this form of commentary within the Chen/Naylor report, I am not trying to read the director's use of the working paper from its textual surface. Nor am I arguing that her engagement with the report was somehow shaped directly and singularly by her reading of such instructions. I simply mean to suggest that the report explicitly contributes to the text-reader conversation a method of interpretation that the director knows how to engage as a matter of its competent reading.

I want to further suggest that features of this reading are visible within the director's remarks in the dialogue excerpted above. Her comments on the working paper's contents form a pedagogic moment; they are intended to show me how to properly operate a research text within the context of managerial efforts at hospital reform. As she makes clear, activating the Chen/Naylor report is not a matter of adopting a specific recommended initiative for reform. Rather, it is a matter of responding to the report's generosity.

The director's manner of speaking about what the report 'says' positions her use of it as one moment of what might be called relations of generous expertise. The generosity of expertise is a notion put forward by Nikolas Rose in his work on advanced liberalism (1994). Rose uses the term to depart from more established approaches to the critique of expertise which emphasize relations of exclusivity and monopolization in favour of analyses of expert knowledge that attend to its widespread promotion and proliferation.⁶

⁶ Rose suggests the generosity of expertise as among the most significant features of the contemporary relation of expert knowledge forms and political power. He uses the term

As implied by the director's remarks, activating the Chen/Naylor report involves responding to the invitation it makes to use its data as a ground of intelligibility—"But it didn't say how to do it. They just provided the base line data--this is what we see..." Rather than reading the report for a recommendation to establish a care pathway or some other initiative, the operative interpretive strategy involves using it as an evidential resource through which the problematic character of hospital care as locally delivered is known. Within such a text-reader conversation, the report is positioned as a text of encouragement that acts something like a 'coach,' urging action to be taken as part of a common project. Thus, the motivational metaphors used by the director in her recollection of what the report said—"...he was saying that, that we could do it," "we know that as hospitals you can do better."

Responding to the report as coach, taking up its invitation, so to speak, also involves engaging in practices of comparative reading, much like the authors of the report would have it. The director provides a glimpse of how this worked in her own engagement with the text, in her comments about looking at bench-marked hospitals: "We were a little slow. I mean when we looked at the bench-marked hospitals, some hospitals had already got there." Here is a comment that gestures toward a text-mediated way of knowing inefficiency through a process that is fundamentally comparative.

to draw attention to the proliferation of experts--lawyers, doctors, psychologists, etc.--who "freely" offer up their knowledges to others--social workers, probation officers, teachers, managers, etc.--for use (1994:361).

In the director's remarks, the place to which some hospitals had "already got" is a length of stay at or below the bench-marked level. At the time the director consulted the report and examined its list of lengths of stay (see Table 1), RMH had not "got there." Local inefficiency thus emerges as an accomplishment of a particular kind of interpretive strategy. Efficiency is not a reading effect in the sense of something that becomes known through its direct observance by the report. Like care pathways, inefficient hospital care is never explicitly mentioned in the pages of the working paper. Instead, the report is made active through an interpretive practice that takes shape as a comparative reading of LOS made within relations of generous expertise. The operative text-reader conversation is one in which inefficiency is produced as an actionable problem through a reading of the report's contents that points to a set of possibilities: "the number of beds could be saved," "you can decrease length of stay," "the readmission rates will not increase," "we know that as hospitals you can do better."

7.2 Reading Length of Stay Data Comparatively: an Intertextual and Socially Organized Discursive Practice

My analysis of the director's remarks in the previous section should make clear that using the Chen/Naylor report to problematize the care of AMI patients at Roxborough involved its activation through a comparative reading of length of stay data. What it does not yet fully suggest, however, is how this form of interpretive practice is more than idiosyncratic. Making the report active through comparative interpretive practices is not simply a matter of the director's individual reading of an individual text.

There is still some road to travel, more of the black box of use to open up in order to understand the relations of problematization through which the report is implicated in the AMI pathway project. This section draws on interview conversations about how the Chen/Naylor report entered into RMH and found its way into the hands of the cardiac care division's patient care director to underscore how reading LOS data comparatively proceeds as an intertextual and socially organized discursive practice.

In my discussions with them, both the vice-president and the patient care director for cardiac care at RMH told common origin stories about the AMI care pathway project. In their accounts, they linked the development of the pathway with a new emphasis emerging at the hospital in the early 1990's on examining lengths of stay, or as the vice-president put it "on performance relative to peers." An important institutional moment of this new 'emphasis' at RMH was a planning retreat organized by the vice-president. At the time it was organized, the vice-president had already accumulated years of experience with hospital statistics and utilization management, based largely on his involvement with the JPPC.

I like to think of the retreat as one point of introduction and reproduction of medico-administrative rationality and its textual constituents throughout Roxborough Memorial Hospital. The vice-president had become concerned about RMH's response to reductions in funding and particularly to inchoate relations through which such funding would be tied to hospital performance on standardized measures such as LOS, and wanted to prompt local action. As part of the planning that went on at the retreat, the

senior medical and managerial staff who had been gathered together were given an overhead presentation of comparative data on LOS derived from a recently published JPPC report.

These overheads presented data for some 12 “high volume,” “high variation” CMGs including, for example, stroke, cesarean section, and AMI. Each slide dealt with a different CMG and presented RMH-specific data on number of cases, average length of stay, beds used and in some instances practitioner variation. Each slide also indicated RMH’s relative position for LOS within its peer group as well as LOS data for a select group of peer hospitals. Thus for angina, RMH’s LOS was 5.31, compared with 3.92 for one of its peer hospitals.

At the retreat, discussion was organized around the data in ways that produced for those in attendance an understanding of “where we are,” in the words of the patient care director. As told by the vice-president, a good part of the discussion also focused on efforts at standardizing care that could be undertaken at RMH to improve its relative position. I thus understand the retreat as a particular mobilization of texts of medico-administrative data within an organization of managerial accountability. A senior manager—the vice-president—put in place a problem by enacting a text-mediated practice of comparative reading. Those in attendance were being called upon to work with the texts presented at the meeting to understand their local situations and take action upon them.

The patient care director's encounter with the Chen/Naylor report was organized within this intended course of events. In attendance at the planning retreat, she soon after met with a group of cardiologists to discuss Roxborough's poor performance in respect of AMI as reflected in the LOS data presented at the retreat. In her words: "Dr. Merton. said to me 'I think we really should do this. Evidence shows that we are, at this point we are only mediocre.' Now nobody wants to be mediocre and particularly I was the manager of the area and I want my area to be the best that it can. So you just get on with it and do it."

For the director, an important part of getting "on with it" was requesting copies of the statistical information presented by the vice-president at the planning retreat. When she received it, accompanying the JPPC data, now in photocopied rather than overhead form, was some additional information from CIHI, as well as the Chen/Naylor report. The report, then, did not enter the director's hands as a free-standing document. From the outset, she was engaged with it not as a singular or 'solo' text, but as one already associated with documentary forms that provide comparative hospital-based medico-administrative data. Encompassing both research and non-research texts from various sources--JPPC, CIHI, ICES and RMH itself--the documents of concern are all marked by a particular visual organization of numerical information.

In the context of the present example, the appearance of such documents as a whole, as what the patient care director referred to as a "package of background material," is part of what organizes for them a functional similarity. The director's work

of problematizing care at RMH did not involve a singular engagement with the Chen/Naylor report, but an engagement with it as part of a group of related texts--as an intertext. Through the relations of use which activate it, the report is aligned with a textual form that has as its most important operative feature a visual organization of data on LOS that makes possible inter-institutional comparison.

This is not meant to suggest that the report ever loses its status as an instance of scientifically based health services research. It simply underscores how the use of the working paper to question the efficiency of care for AMI at RMH involved its appearance and circulation as part of new relations of knowledge marked by the distribution of medico-administrative information among middle-level managers at the hospital. In my interviews at RMH, ICES reports, CIHI and JPPC data were time and again spoken about almost interchangeably as sources of data used in day-to-day managerial work. At the time of my interviews at the hospital, division directors and senior medical staff had become quite accustomed to such textual forms. At the time the pathway was developed, however, they would have been much newer to them.

For the director, then, reckoning with the Chen/Naylor report was part of reckoning with a new kind of documentary form that was being circulated within the hospital at the time. The interpretive strategies she brought to bear on it were not idiosyncratic and not directed at it as a singular text, but as one functionally tied with medico-administrative texts produced by, or drawing on data from, CIHI and JPPC. The comparative strategies of reading through which the report was activated are socially

organized. They were enacted at the planning meeting by the vice-president and others and were thus a part of the social relations through which the report was introduced into the hospital. Strategies of textual interpretation that engage comparative practices of reading were a part of the “package of texts” received by the director. They are a feature of the initiatives to decrease LOS at RMH that followed from the planning retreat and are themselves a practice of hospital reform.

7.3 Intertextual Problematization Through Comparison: A Generalized Managerial Practice at RMH

Locating the director’s use of the Chen/Naylor report within an intended sequence of hospital reform puts into relief its socially organized character. This section builds upon the previous one by moving beyond the report, relations of problematization of care and the AMI pathway initiative, to explore text-mediated practices of inter-institutional comparison as a general organization of managerial work at Roxborough. It further opens up the black box of use of HSR by exploring interview conversations I had with the hospital’s manager of health records and care pathway coordinators. As I engage with their descriptions of their work, I try to describe some of the ways in which HSR, in concert with CIHI and JPPC data, helps shape new ways of doing managerial work as well as new ‘kinds’ of managers. Let me begin in the hospital’s main floor, in the health records department.

My discussion with the manager of health records was framed by what she described as new concerns at RMH focused on efficiency, utilization and competition.

She further traced this new emphasis to the activities of the province's Health Services Restructuring Commission, including its promotion of comparative LOS data as a marker of hospital performance. As she described the work she had been doing over the past few years, what came into view was an important part of the local practices that established the conditions of visibility of care at RMH. The director and those who worked with her were fast at work putting in place the textual ground through which Roxborough's managers would come to know patient care.

The manager understood the activities of her department as a kind of service provided to hospital administrators, particularly division directors, that helped them meet new responsibilities for monitoring and improving the efficiency of patient care. Hospitals were now in competition with one another for limited resources. As she put it "each hospital wants to be the one that survives." Within these new relations of funding and competition, division directors needed to "be up to date on everything that's happening in their division, how efficient they are being, how they compare to all of Ontario..."

For the manager, helping division directors know what is "happening in their division" was largely a matter of establishing a system for producing and distributing a new set of medico-administrative documents--what she called reports. Often tailor-made for particular uses and needs of division directors, reports typically draw on CIHI and the hospital's own MEDITECH data to represent patient care in comparative medico-administrative terms. One type of report that the manager hopes to make a standard for

all divisions takes the form of a one-page visual display that provides comparative information on Roxborough's top 40 CMGs as defined by number of cases.⁷ In addition to producing reports of various kinds, the manager was engaged in a pedagogy that would establish them as the basis through which managers made Roxborough's patient care intelligible. As she suggested, "I can give them reports with these CMGs and compare them, but they have to understand what that means. I am trying to increase their knowledge."

While most of the activities taking place at the health records department involved work done in relation to CIHI data, the manager also discussed HSR as an important documentary resource for text-mediated practices of comparison that she both engaged in and hoped to promote. In a set of remarks quoted below, she extends my discussion of how the Chen/Naylor report was engaged in practices of problematization by drawing attention to related ways in which ICES research is engaged in the work of assessing RMH's care and of knowing its management as work done well:

If you can show that your outcomes, that you're on the top of the list of one of ICES's studies and it's a good thing to be on the top of the list instead of a bad thing, then you can show that out of all of Canada we've got the best outcome. And that's how ICES helps us to analyze the outcome of what we're doing. I don't have the capability to do that kind

⁷ To be produced on a monthly basis, each report lists the 40 CMGs in rough rank order in the left hand column of a five-columned table. For each CMG, the report provides information on typical, atypical and total cases, organized as three columns. Moving from left to right for a given CMG, the type of data included within these columns includes the number of cases, Roxborough's average length of stay (ALOS), the provincial benchmark and ALOS, the average resource intensity weight and the number of weighted cases. A fifth column positioned at the right hand side of the table provides data on the number of days saved for a given CMG if Roxborough's ALOS meets either the provincial benchmark or the provincial ALOS. For an example, see Table 2.

Table 2

Report, Roxborough Memorial Hospital

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of study... So they help us do that as well as pinpoint those hospitals that need improvement.

(SGH 10/97)

Here, once again, ICES research is positioned as a companion (albeit a more sophisticated one) to medico-administrative texts of utilization management, in managerial work. More than that, the manager's remarks provide a glimpse into the organizing potential of HSR within relations of managerial knowledge and accountability. Her comments suggest some of the ways that the results of local managerial efforts are made known and displayed publicly by locating 'oneself' within a visual display of comparative data. They further point to how HSR and interpretive practices associated with it help organize taken-for-granted features of managerial practice including, for example, the possibility of taking up a stance to one's work as an outcome relation, or of understanding the substance of improvement as a calculable matter of lengths of stay, readmission rates or some other rankable statistical object.

A second example of a more general use of ICES research in intertextual processes of problematization and comparison arose in my conversation with one of RMH's care pathway coordinators. At one point during our discussion, the pathway coordinator I was interviewing began speaking about a portion of RMH's standard process for developing and implementing care pathways—what she called the examination of practice phase. What followed was an interesting account of the organization of managerial practice at RMH. In particular, her remarks suggest how HSR, in concert with medico-administrative texts from CIHI, is active in reshaping

managerial practice through its grounding of a text-based technology of comparative benchmarking:

A lot of times we practice [provide clinical care] sometimes because this is the way we've always practiced and you continue to do so. This [the examination of practice] allows you to step back, take a real, do a critical view of how you have been practicing. To look at it. To look at practice guidelines and say, you know, 'Is there room for improvement? Is there room for efficiency in how we are doing things here?' And benchmarking yourself against, you know, we look at the CIHI data and you're able to pick up there, where you're looking at lengths of stays, you want to look at readmissions patterns. And the information from ICES actually was useful too when we looked at that information to help us--'is there, based on that, is there room where we could improve how we were managing the care of our patients either from the standpoint of quality or efficiency.'

(SGH 09/97)

I find this account remarkable for how it describes managerial activity as a visually organized practice enabled by specific textual maneuvers. As she tells it, what allows the pathway coordinator and others to "look at" clinical practice is a particular intertext consisting of practice guidelines, CIHI data and unspecified ICES research, that is positioned in her account as a resource in coming to know patient care and transform how it is delivered.

The coordinator's comments shed light on one moment of a routine technique for reorganizing clinical practice, a moment in which that practice is problematized evidentially. Clinical practice is already located within the terms of intelligibility of HSR in the account, as physician practice style, a rationality of clinical practice that is self-referential--"...we practice...because this is the way we've always practiced." As articulated by the coordinator, moving beyond habitual practice involves new ways of

looking at “how we have been practicing” that produce the possibility for providing care differently, particularly more efficiently.

These new forms of intelligibility of clinical practice are fundamentally text-based. They take shape as a particular kind of scrutiny of clinical activity, one in which established clinical care is made problematic by knowing it textually. As suggested by the pathway coordinator’s remarks, medico-administrative texts produced by CIHI and ICES are among the documents drawn upon in such work. These documents carry into the local site—the site of their reading—a source of ‘difference’ in the simple form of a number that suggests a length of hospital stay lower than that currently in place locally. Once again we find ICES research and CIHI data paired in managerial practices of problematizing the efficiency of care. The textual mechanics and interpretive practices implied by the pathway coordinator’s account are not unlike those activated by the patient care director in developing the AMI pathway. Overall, her account shows how standard managerial practices at RMH are organized as textual work. It further displays HSR actively engaged as an intertextual resource in a process of forming managerial judgements about which CMGs at Roxborough are most problematic and, thus, best candidates for a pathway project.

A conversation with another of RMH’s pathway coordinators brought to my attention still further ways in which managerial work at RMH is organized around the use of medico-administrative data. Earlier, I discussed the work done by Roxborough’s manager of health records to put in place the textual conditions of visibility of the care

provided at the hospital. I then explored how ICES research and CIHI data are drawn on by RMH's care pathway coordinators in a phase of pathway development through which clinical practice is scrutinized evidentially. Below I comment on how reports produced by the health records department at RMH are used by pathway coordinators in related efforts to create care pathways.

We actually have a data analyst here now who's wonderful... And she'll actually generate a report. If I say to her you know, I think we want to do a pathway on C-sections, she'll actually pull our hospital length of stay, compare it with the peer group, we're in a peer group of 8 hospitals, show where we rank with our length of stay, who ranks the best...And that's been really helpful because it also allows us to sway the [nursing] staff's opinions. About that particular area, I know the staff quite well and I went to them to say, we're going to be shortening our length of stay, how do you think we can do it? And the survey came back that 90 percent of staff said, 'don't shorten length of stay, increase it.' Well we know we couldn't do that because we're at the bottom of our peer group performance. You know 8 out of 8 is not very good standing. So I actually went back to the staff and did a couple of inservices to say 'I know you don't want us to be doing this, but now I want to share why we need to be doing this. We're one of the last hospitals that have cut our lengths of stay, we need to if we're going to stay competitive.'

(SGH 10/97)

Here is a set of remarks, made by one of RMH's care pathway coordinators, that points to medico-administrative rationality in action. Her account displays how texts of comparative length of stay data circulate from the hospital's health records department to its pathway coordinators and through them to nursing staff. As they circulate, they help coordinate ways of thinking and forms of action that intend the reduction of lengths of hospital stay through the implementation of a care pathway.

I find the quote interesting for how it shows the coordinator using textual practices of comparison as a warrant in her efforts to persuade nursing staff of the need for a particular restructuring initiative. The interprofessional relations at work here are hardly those through which the patient care director sought to secure 'buy-in' from physicians in the AMI pathway project. In the instance at hand, science is not being mobilized to reassure medical practitioners about the safety of a restructuring initiative or to delicately enlist their participation. The process is much less gentle, more blunt and rough-edged. In response to nurses' resistance to the prospect of shortened lengths of stay, the coordinator harnesses a report from health records in a way that structures her relationship with them around the display of inefficiency and the encouragement of competition.

The report, as warrant, 'shows' in a decidedly economic fashion how things are and where they must go. A textual mechanics that involves practices of comparison of self with others is fundamental to the process. As she uses the text to convince nurses, the coordinator mobilizes comparative data to produce with and for them the limits of possible response to the delivery of care in their unit. Roxborough is at the bottom of the list—seven other hospitals have 'better' lengths of stay. Within the competitive environment that hospitals now operate in, what else can be done but cut length of stay?

The examples I have provided above suggest something about how text-mediated practices of inter-institutional comparison are a generalized managerial practice at RMH. My first encounter with such an organization of managerial activity was the patient care

director's engagement with the Chen/Naylor report alongside JPPC and CIHI data in ways that problematized the care of AMI patients through a comparative reading of LOS data. Further opening up the black box of use of HSR, moving beyond the report and the AMI pathway to consider further managerial uses of HSR by others at the hospital helps to locate the director's engagement with the Chen/Naylor working paper within a broader set of text-mediated relations of managerial practice.

It also helps to suggest some of the additional ways in which HSR helps to shape how hospital management gets done and who managers become in the doing of their work. Part of the active character of HSR was put in place by my discussion of the use of the Chen/Naylor report as an evidential warrant within a technology of reform that targetted physician participation as an object of management. Moving to a new form of use of the report, one in which its engagement through a comparative reading helps produce care as inefficient and thus in need of amelioration by a pathway, suggests other features of its organizing potential. When the comparative reading practices underlying the report's use in problematizing care are understood as a social and general practice of management, HSR's implication in the organization of hospital reform becomes more fully apparent.

Through its association with practical texts of utilization management, ICES research provides the conditions of visibility of care provided at RMH and helps anchor a set of textual practices that come to be enacted as managerial practice. Increasingly, at RMH, the management of care has involved engaging with numerically-based texts of

medico-administrative data. A particularly striking if mundane feature of the circulation of such texts is their activation through practices of comparison. At the time I conducted my interviews, the comparative use of LOS data was a fundamental feature of Roxborough's efforts at utilization management. In the examples I have provided in this section, I have tried to display how comparing 'self' with 'other,' through the intertextual use of ICES research and CIHI data, has become a routine technology of managerial practice. It is a technology used to monitor the hospital's performance, make judgements about which pathways to develop, bring nurses into line, and more generally, to know care, observe its efficiency, problematize its character and otherwise open up grounds for action.

Working with HSR texts, with documents from CIHI, JPPC and elsewhere, also holds implications for managers' subjectivities. As utilization management takes hold at RMH through the circulation of new documentary forms and the development of new reporting structures, the patient care director, pathway coordinators and others at RMH come to orient to a world of health care held in common and constituted as medico-administrative discourse. As they become concerned with "new opportunities for improvement" made visible through comparative statistical information, with how the hospital or division is doing "length of stay-wise," and with "making a difference in your statistics," they enact new ways of understanding hospital care that position them in relation to it as agents responsible for the institution's financial viability. Such relations of accountability increasingly involve forms of self-monitoring. At RMH, division

directors, pathway coordinators, and even some physicians and nurses have come to be concerned with how their own performance or the performance of their units or divisions are reflected “in the numbers.” It would appear that managers at RMH have become not only become evidential subjects but calculating subjects (Miller, 1992) as well.

8.0 The Chen/Naylor Working Paper, Health Services Research and Coordinated Relations of Power

Trying to make sense of and write about my conversations with people who work at Roxborough Memorial Hospital and who engaged in its AMI pathway initiative has proven an interesting analytic journey. Along the way, a good deal of the social relations of hospital reform only hinted at in the statements that sparked my investigation have been fleshed out. The black box of use of HSR has been opened up; if not fully, at least far enough to understand how the report’s association with the pathway initiative is a part of new relations of knowledge, of accountability, and of text-mediated managerial practice that have taken hold at the hospital.

The patient care director’s OHA remarks matter-of-factly announce an association of the Chen/Naylor working paper and the pursuit of a pathway initiative. Through my engagement with the people involved in the pathway’s making, I have explored the use of the report as a moment of a complex set of intertextual relations that shape managerial practice and the conduct of hospital reform. These relations involve much more than an individual’s reading of a report. They involve practices of physician governance and of intertextual problematization. They involve mobilizing interpretive

practices that are socially organized and a daily feature of managerial work at Roxborough Memorial. They also involve entering into, producing and reproducing a characteristic relation of power. Let me close this chapter by exploring how mobilizing the Chen/Naylor report in the seemingly mundane work of comparing 'self' with 'other' organizes relations of hospital reform that transcend the temporal and spatial limits of the report's local reading.

When the patient care director activates the Chen/Naylor report in such a way that local inefficiency becomes observable by comparing Roxborough's LOS for AMI with that of its peer hospitals or with a provincial average or other benchmark, she is engaged in a fairly uncomplicated text-reader conversation. But in knowing and responding to hospital care through such comparisons, she is also participating in more complex forms of coordinated governance or rule through which the delivery of care and its management at RMH is brought into relation with care and management happening elsewhere.

Such forms of coordinated power have become a central preoccupation of contemporary analytic work on political rule. Smith explores them as text-mediated social organization. Hers is a project of explication, of "recover[ing] those forms of concerting people's activities that are regularly reproduced" (Smith, 1999:7). The possibility of such forms of reproduction is, in turn, linked with the distribution of texts, whose "standardized form of words or images...can be read/seen/heard in many other settings by many others at the same or other times" (Smith, 1999:7). Power here

involves forms of coordination through which people are brought together and into courses or sequences of action through their textual engagements (Smith, 1999:79).

For their part, governmentality theorists understand contemporary coordinated forms of governance as a kind of rule at a distance (Miller and Rose, 1990), a formulation that draws from a convergence of Foucault's discussion of the art of government as action on action (1982) with Latour and Callon's work on action at a distance (Callon and Latour, 1981; Callon, 1986; Latour, 1987). As deployed in the literature, rule at a distance is theorized as a central feature of neoliberal government and is understood to involve a particular relationship of expertise and central political authority. It is further taken up in ways that emphasize how forms of expert knowledge enable the exercise of indirect authority, at the same time, over people and events that are geographically and temporally dispersed (Robson, 1992).

The relations of indirect government that governmentality theorists have stressed as central to action at a distance seem at least a partial analytic resource for making sense of the relations through which the Chen/Naylor report was brought to bear on the development of RMH's AMI pathway. In the governmentality literature, an association between length of stay data and indirect relations of government has been made by Preston, Chua and Neu (1997). In respect of the United States, they argue that accounting-based data and calculations derived from the introduction of a DRG-PPS-based system of reimbursement for Medicare help operate decentralized relations of allocation. Through the production and use of DRG-based accounting knowledge in local

hospitals, decisions about who is to receive what forms of care and under what conditions are made by local decision-makers, thus enabling the rationing of health care to occur without direct involvement on the part of central government (Preston, Chua and Neu, 1997).

In Ontario, the rationing of hospital care has involved both direct and indirect relations of government. It is difficult, for example, to imagine the hospital closures and other directives of the Health Services Restructuring Commission as occurring at full arms' length from the provincial government. At the same time, however, the restructuring of health care in Ontario is occurring through relations more complex than those which would have central government directly telling hospitals how to save on costs and which services to provide. The work that went on at Roxborough Memorial to establish a care pathway for AMI is one of a range of local, hospital-based efforts through which the kind and duration of care that patients receive is being altered. The processes at work are complex. They involve an interplay of disciplinary and managerial expertise, changes in organizational structures, new forms of clinical practice and judgement, changing relations of accountability and, as I have underscored, the circulation and production of new documentary forms.

The mechanics through which the Chen/Naylor report was activated in the AMI pathway's making suggest further features of action at a distance as developed by governmentality theorists. For example, the very movement of the report into the hands of the patient care director involved a set of relations of restructuring in which upper

management enacted an intertextual display of hospital inefficiency, but left the nitty gritty of how to rectify inefficient care a responsibility of individual division directors. As the vice-president said of the director and her colleagues: “they really did it on their own.” In a parallel fashion, the report itself is mum on the programmatic particularities of hospital reform. The text-reader conversation that the director enters into through her engagement with the report is not one of following a specific recommendation for this or that utilization management initiative. Rather, it is one of acting within a “field of possible responses and reactions” (Miller, 1992:63) framed by the report through its problematization of inefficient care as a matter of length of stay variances. Lastly, at a broader level one can understand how forms of medico-administrative data alongside which the report is read give shape to new “distantiated” relations of accountability. On the basis of the widespread production and circulation of such data provincial funding of hospital care can now be tied to the performance of hospitals made visible through numerical values such as length of stay.

When, however, the report is considered from within the director’s more specific work of problematizing and acting remedially on RMH’s care, that is from within her work of rendering RMH at variance with its peers through a comparative reading of LOS, the centre-periphery metaphor grounding the notion of action at a distance presents problems of ill fit. When the director engages the Chen/Naylor report alongside CIHI and related information and notes RMH’s relative inefficiency, she is not trying to act on hospitals located at a distance from the site of her work. She does not participate in

relations through which a center acts upon the actions of others in far away places; she does not hope to influence what goes on in other hospitals in ways that preserve their autonomy of action.

Instead, the intertextual relations of problematization with which she is implicated involve a form of action on the local that engages information about distant places. The terrain that HSR opens up as a ground for action is the local setting of health care delivery at Roxborough. As such, the peculiar and powerful feature of how the Chen/Naylor report as intertext operates in the local hospital setting, involves its enabling of managerial practices through which local care is associated with care delivered elsewhere and remade. Following Smith, I want to emphasize the textuality of this process, something which those who work with governmentality perspectives do not fully exploit in their analyses of power and expertise (see Robson, 1992; Chua, 1995).

In their discussions of contemporary relations of power, governmentality theorists link the constitutive feature of expert knowledge forms with numericalization. This is particularly true of work on accounting which underscores how domains of experience are rendered objects of government at a distance through their transformation into numerical values. Numbers make things governable from afar by giving them a form that is highly mobile, calculable, stable and combinable (Robson, 1992). In the context of the Chen/Naylor report, the complexity and particularity of health care as it is delivered in hospitals across the province are denuded by its inscription in the simplest and most economic of expressions: the single figure—length of stay. Hospital care is

pulled into the local setting of the report's reading through its transformation into numbers, an inscriptive form that permits certain forms of comparison and that enables further chains of calculative work. The numerical representation of care provides for an economy and simplicity of judgement that would be difficult to achieve were care to be represented through narrative words alone. Expressed numerically, the director can compare the care provided at RMH with that delivered elsewhere and know it as better or worse within the terms of economic rationality. She can see variation. She can also begin to make calculations about how many beds and therefore how many dollars might be saved at RMH should a lower length of stay be achieved.

Numbers and numericalization are thus important for the organization of power as action coordinated across time and place. When, however, analysis of the operation of expert knowledge forms is grounded in people's accounts of how they actually work with formal discourses of knowledge, the governmentality literature's rhetorical constitution of the power of numbers, of government by numbers, or of the power of numbers qua numbers is unsettled (Robson, 1992; Miller, 1992). In their work of developing the AMI care pathway, the patient care director and her colleagues at RMH did not simply engage with numbers, they engaged with numbers vested in texts. Knowing the care of AMI patients at RMH as inefficient through its comparison with care delivered at other hospitals was a textual as well as numerical affair. It was not simply a matter of the power of numbers, but of the organization of numerically-based information--of numbers

combined with words—in recognizable textual forms that began to circulate throughout the hospital and around which managerial practice came to be organized.

The engagement of a research text—the Chen/Naylor report—alongside CIHI data or the reports generated by the manager of health records—texts that do not include the narrative structure of scientific research—in the common work of problematizing the care of AMI patients suggests that it is a particular textual assembly of numbers in ways that make them easily comparable that anchors the processes of coordinated power at hand. Documents including or produced as these kinds of visual displays have become extremely important constituents of the daily work of hospital management. They help coordinate new possibilities for knowing and managing care that proceed as and from inter-institutional comparison of medico-administrative objects of discourse such as length of stay. Such ways of knowing care and doing management were not in place prior to the widespread production and distribution of such documentary forms.

Managerial practice becomes expressed as new ways of seeing care and proceeding with its remaking as new relations of knowledge take hold within hospital settings. These relations have a textual ground, of which health services research such as the Chen/Naylor working paper and reports of CIHI and JPPC data are fundamental constituents. As documents that compare institutional care numerically come to be taken up throughout the province's hospitals, those who activate them are brought into relation with one another through a reproducible form of social organization. Separated by time and place but working with similar documentary forms, managers and others reproduce a mechanics of hospital reform that engages a kind of normalizing judgement. Seeing and

responding to inefficiency of hospital care through textual comparison of medico-administrative data becomes installed as a characteristic social practice of management. Comparing self with others in more or less the same fashion, managers reproduce a way of doing management through which the care for which they are responsible comes to be harmonized and brought into line with provincial averages or with benchmarks set by peer hospitals. Coordinated practices of governance, then, involve not only the power of numbers but the organization of managerial activity around a new traffic in texts of medico-administrative data.

Chapter Six

Closing Remarks

This thesis has explored the social organization of health care reform through a reflexive analysis of health services research as social practice. Much of the work of developing the analysis has been made in a relation of tension with the applied preoccupations of HSR. I have been careful to distinguish my work from the policy-based relevances of contemporary health services research and have tried to write in resistance to the relations that produce a knowledge for ruling health care.

While written from an analytic stance located outside the routine conceptual practices of HSR, like HSR in its broadest sense, the thesis is a form of research on the organization and delivery of health care services. My work highlights the significance of a group of knowledge makers for reshaping medical care evidentially. It points to important relations of knowledge through which the delivery of health care services in Ontario is being restructured.

While I stop short of thinking of my research as a “counter-HSR,” it should speak to health services researchers, giving them pause to think about their activities. The written corpus of HSR is rather silent about the organization of health services research activities within relations of power in health care. In the HSR literature, producing and promoting health services research tends to be inscribed as the ‘matter of fact’ or ‘earnest’ business of getting on with making a better health care system out of ‘good’

research. The thesis invites a reconsideration of this positioning of HSR and health care restructuring.

A central goal of my analysis has been to suggest new ways of understanding how HSR is implicated in contemporary relations of health care reform. The technical, policy-based narratives of applied social science suggest that health services research enters health care restructuring as a resource for ameliorating the escalation of health care costs. They position HSR as a kind of technical fix. Drawing on a negative theory of power, established political economy approaches emphasize that health services research works as an obfuscating discourse that negates more politicized or embodied ways of understanding health care and its reorganization. Political economy perspectives further inscribe the social character of HSR as its support of a given ruling interest.

The alternative approach offered in the thesis treats HSR as a productive or active discourse of knowledge. My concern has been to explore the social practices through which HSR operates as an active constituent of health care reform. This approach to the analysis of health services research underscores how HSR ‘goes to work’ in health care. It foregrounds the problematic of social organization, directing attention at the ‘translocal’ relations--the forms of coordinated action across time and place--that HSR helps organize as it is produced, promoted and used in particular local settings. Rather than focusing on what HSR prevents or represses, or how it supports a coherent, organized interest, my work explores the social character of HSR as intellectual technology. This has involved an effort to explicate how health services research shapes

both the way health care and its problems come to be known, and the form of solutions to these problems that are proposed and enacted by health services research and hospital managers.

Following Smith's work, my way into investigating HSR as active knowledge form is based in the materialist analysis of textual processes. What I have offered in the thesis is a discussion of how HSR is a part of text-mediated relations of evidential governance of health care. My discussion of the *Practice Atlas*, for example, drew attention to the discursive conventions through which HSR constitutes health care, in text, in governable form. Rather than underwriting the verity and objectivity of health services research and its discourse objects, my analysis of the *Atlas* suggested their artifactual character. It explored the inscriptive mechanics through which health care is made intelligible and problematized as medico-administrative object. In so doing, the chapter contributes an understanding of how the constitutive conventions of a health science supply health care policy and management with objects and conceptual practices of rule.

In exploring *informed*, my analysis shed light on one initiative to ameliorate the evidential deficits of clinical medicine, so thoroughly problematized in the *Atlas*. It opened up for discussion a central preoccupation of health services researchers--research transfer. Rather than trying to contribute to the project of encouraging the practical use of research findings in clinical medicine, as health services researchers do, my analysis pointed to the fundamentally text-mediated character of such work as it is carried out at

ICES. In exploring *informed* as a governing initiative, my discussion emphasized the conceptual and writing practices that organize a particular effort to clinically recontextualize biomedical and health services research. It showed health services researchers at work trying to ‘influence’ clinical medicine at the various sites where it is practiced by primary care physicians. Working with a knowledge of who physicians are as readers and rewriting science in a clinically relevant form, the makers of *informed* play at physicians’ work/text relations, hoping to produce an “active text” that encourages physicians to incorporate research results into their clinical work. The chapter highlights a unique and innovative textual form within biomedicine and contributes to work on the social organization of interpretation.

Lastly, my discussion of the Chen/Naylor working paper explored how HSR enters into processes of hospital restructuring through its intertextual engagement. Drawing on Smith’s notion of the text-reader conversation, my discussion argued for understanding the local use of the report as a socially organized discursive practice. The chapter detailed how inefficient hospital care was made observable through the comparative reading of the report’s standardized medico-administrative data. More than that, it opened up for investigation the complex world of text-mediated hospital management and restructuring. The engagement with the working paper as part of producing the AMI care pathway is a moment organizing and organized by new text-mediated relations of competition and accountability in Ontario hospitals. It is also a moment of coordinated or concerted practice, a reproducible form of managerial practice

that rests fundamentally on the comparative practices enabled by texts of standardized, numerically-based information on hospital care.

My investigation of the *Atlas, informed* and the Chen/Naylor report is not a series of discrete analyses of independent textual processes. Rather, it sheds light on the more general character of ruling practice in which HSR is implicated. Organized as an institutional ethnography, my work directs attention to the textual specificity of HSR. It explicates how the production, promotion and use of texts of HSR involve a ‘hooking up’ of what people are doing in a given local site into courses of action that coordinate “multiple local sites where others are active” (Smith, 1999:7). The making of a constitutive text that objectifies health care and proffers readers a medico-administrative rationality for knowing and responding to health care problems, the efforts of ICES’s research transfer members to encourage evidential practice among physicians by producing and distributing a novel textual form, the coordination of hospital reform at RMH with efforts going on elsewhere through the intertextual problematization and harmonization of the length of time heart attack patients stay in hospital, all these processes point to the organization of the social as concerted action.

My analysis also points to the complexity of governing medical practice. ICES research problematizes health care as wasteful and ‘irrational’ and provides evidential strategies for its remedy. At the time of my research, much of the Institute’s work was focused on hospital care and, in particular, on surgical services. ICES research poses questions about the management of health care, critiquing, however gently, the work of

ministry officials and of local hospital administrators. At the same time, its primary object of investigation is surgical care. ICES research most directly problematizes the medical care provided to patients in hospitals, which it targets for evidential transformation. It treats both medicine and its local management as objects of governance.

Of course, governing medical practice is no simple feat. ICES has no legal authority to compel physicians to practice medicine in any particular way. State-centred initiatives for producing clinical guidelines have met with considerable resistance from the medical profession and have been relatively unsuccessful (Rappolt, 1996). The very location of the Institute within a teaching hospital suggests a strategic positioning within a set of conflicting tensions. ICES is not located within the university proper. Nor is it a simple research arm of the government. Rather, the Institute tries to occupy 'neutral' ground, a location that lends itself to negotiating the tensions of clinical and academic medicine, the Ministry's turbulent relationship with the Ontario Medical Association, and the competing policy imperatives of cost containment and the maximization of population health.

Lacking 'power over' medicine, ICES governs through liberal techniques of freedom (Osborne, 1993). The Institute's research texts organize a kind of evidential pedagogy of reform. Thus, the makers of the *Atlas* hope to provide readers a distinct way of knowing health care and a technology of restructuring that invites and requires their use of research in local reform initiatives. While ICES research promotes forms of

normalization through the translation of health care activities into objectified, numerically-based forms such as surgical rates and average lengths of stay, its work does not have disciplinary force. Few ICES research texts articulate specific recommended numerical norms or standards of practice. Rather, they offer readers a textual 'work up' of health care in terms that incite local action on the part of hospital managers, physicians and others. One example of such a translocal, text-mediated relation is the comparative shaming practices explored in my analysis of the Chen/Naylor report. As my investigation makes clear, ICES does not and, in fact, cannot govern clinical medicine with a heavy hand. The Institute's research texts are fundamental to the organization of tempered, liberal practices of governance in which it is implicated.

Of course, one would not want to make the error of suggesting that health services research is necessarily bound up with liberal strategies of ruling. Health services research involves a variety of research objects, methodological approaches, calculative strategies and textual forms. It enters into, organizes and is organized by varied social relations of health care research, management and delivery. How it goes to work, what it gets done, the relations it organizes and is a part of, are all a matter of careful empirical research.

This thesis has offered an example of a way of doing research on health care restructuring that can be drawn upon in such efforts. Beyond its specific empirical analysis of health services research, it suggests how one can research modes of health knowledge in ways that foreground the social organization of contemporary relations of

governance. Formulated as an empirical sociology of governance in health care, it presents a form of inquiry that 'gets at' the ways in which health sciences enter into and help shape restructuring processes. It records one approach to an analysis of health care restructuring that takes seriously the social character of new modes of knowledge.

Understanding how health and health care are now governed requires further work on the operation of formal discourses of knowledge in health care. Health care reform involves important, growing, and rapidly changing forms of application of population-based health research and related knowledges and information technologies. Understanding the social organization of health care reform requires their investigation.

ICES researchers, for example, have taken health services research in new directions in the short time that has passed since I conducted my interviews. Their growing interest in producing information targetted at patients and based on the findings of health services research merits inquiry. So too does the increased use of ICES research in population-based programmes for planning and managing the care provided to patients with specific diseases.¹ Beyond ICES, the complex of inscriptive, calculative

¹ The Cardiac Care Network of Ontario (CCN) offers an important example of this development. The CCN was established in 1990 following concerns expressed in the media and elsewhere about patients dying while waiting for cardiac surgery and about excessively long waiting lists and wait times for cardiac care. The CCN is funded by the Ministry of Health and includes all Ontario hospitals that perform cardiac catheterization and/or cardiac surgery as well as a coordinating body, a number of committees, and a central management office (Cardiac Care Network, 1999). The CCN acts as a provincial advisory body. It also coordinates the delivery of cardiac services across the province, largely on the basis of a computerized patient registry for cardiac surgery. ICES scientists conduct research in partnership with the CCN and carry out regular analyses of data from its registry. The Network's efforts to rationalize and plan cardiac care through the use of population-based demographic, procedural and clinical data present an

and other practices through which health services research and related forms of knowledge are produced awaits investigation. We also need to better understand how health sciences enter into government policy-making processes. More broadly, we need more empirical analyses that can aid an understanding of how, and with what consequences, health services research and related discourses of knowledge are taken up in the work of managing and delivering hospital care, in community and public health work, in primary medical care, private industry and other sites where health and health care are produced and managed.

important opportunity for exploring health services research and text-mediated relations of health care reform.

References

- Adelswärd, V. and L. Sachs. 1998. "Risk discourse: Recontextualization of numerical values in clinical practice." *Text*. 18(2):191-210.
- Andersen, T.F. and G. Mooney. 1990. "Medical practice variations: Where are we?" In *The challenges of medical practice variations*, eds. T.F. Andersen and G. Mooney, 1-15. London: Macmillan.
- Anderson, G. 1997. "Hospital restructuring and the epidemiology of hospital utilization." *Medical Care*. 35(10):OS93-OS101, Supplement.
- Anderson, G., S. Sheps and K. Cardiff. 1990. "Hospital-based utilization management: A Cross-Canada survey." *Canadian Medical Association Journal*. 143(10):1025-1030.
- Anderson, G.S. and J. Lomas. 1988. "The development of utilization analysis: How, why and where it's going." In *Conference proceedings: First annual health policy conference--reviewing utilization: The methods and promise of utilization analysis for the Canadian health care system*, 5-39. McMaster University, Hamilton, Ontario.
- Appleton, B. 1999. "International agreements and national health plans: NAFTA." In *Health reform: Public success, private failure*, eds. D. Drache and T. Sullivan, 87-104. London and New York: Routledge.
- Armstrong, D. 1998. "Decline of the hospital: Reconstructing institutional dangers." *Sociology of Health and Illness*. 20(4):445-457.
- Armstrong, P. and H. Armstrong. 1996. *Wasting away: The undermining of Canadian health care*. Toronto, New York, Oxford: University of Oxford Press.
- Armstrong, P., H. Armstrong, J. Choiniere, E. Mykhalovskiy and J. White. 1997. *Medical alert: New work organizations in health care*. Toronto: Garamond Press.
- Avorn, J. and S.B. Soumerai. 1983. "Improving drug-therapy decisions through education outreach." *New England Journal of Medicine*. 308(24):1457-1463.
- Badley, E.M. and J. I. Williams. eds. 1998. *Patterns of health care in Ontario: Arthritis and related conditions. An ICES practice atlas*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.
- Baigrie, B.S. ed. 1996. *Picturing knowledge: Historical and philosophical problems concerning the use of art in science*. Toronto: University of Toronto Press.

Barry, A., T. Osborne and N. Rose. eds. 1996. *Foucault and political reason: Liberalism, neo-liberalism and rationalities of government*. Chicago: University of Chicago Press.

Basinski, A. 1994. "Use of Hospital Resources." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 165-306. Ottawa: Canadian Medical Association.

Bazerman, C. 1988. *Shaping written knowledge: The genre and activity of the experimental article in science*. Madison: University of Wisconsin Press.

Becker, H.S., B. Geer, E.C. Hughes and A. L. Strauss. 1961. *Boys in white: Student culture in medical school*. Chicago and London: University of Chicago Press.

Belkin, G. 1994. "The new science of medicine." *Journal of Health Politics, Policy and Law*. 19(4):801-808.

Belkin, G. 1997. "The technocratic wish: Making sense and finding power in the 'managed' medical marketplace." *Journal of Health Politics, Policy and Law*. 22(2):509-532.

Benedetti, P. 1994. "Health statistics raise questions." *Hamilton Spectator*. (May 26):B3.

Berg, M. 1995. "Turning a practice into a science: Reconceptualizing postwar medical practice." *Social Studies of Science*. 25:437-476.

Berwick, D.M. 1989. "Continuous improvement as an ideal in health care." *New England Journal of Medicine*. 320(1):53-56.

Berwick, D.M., A.B. Godfrey and J. Roessner. 1990. *Curing health care: New strategies for quality improvement*. San Francisco: Jossey-Bass.

Bice, T.W. 1980. "Social science and health service research: Contributions to public policy." *Milbank Memorial Fund Quarterly/Health and Society*. 58(2):173-200.

Borsellino, M. 1994. "Controversial 'practice atlas' finally available to doctors." *Medical Post*. (June, 7):2.

Bradley, F. and J. Field. 1995. Letter to the Editor. *Lancet*. 346(8978):838-839.

Brown, L.D. 1991. "Knowledge and power: Health services research as a political resource." In *Health services research: Key to health policy*, ed. E. Ginzberg, 20-45. Cambridge, MA: Harvard University Press.

- Bunton, R. 1998. "Inequities in late modern health." In *Health matters: A sociology of illness prevention and care*. eds. A Petersen and C. Waddell, 23-41. St. Leonards: Allen & Unwin.
- Burchell, G., C. Gordon and P. Miller. eds. 1991. *The Foucault effect: Studies in governmentality*. Hemel Hempstead: Harvester Wheatsheaf.
- Bynum, W.F. 1994. *Science and the Practice of Medicine in the Nineteenth Century*. Cambridge, Mass.: Cambridge University Press.
- Callon, M. 1986. "Some elements of a sociology of translation." *Power, action and belief: A new sociology of knowledge?*, ed. J. Law, 196-229. London: Routledge and Kegan Paul.
- Callon, M. and B. Latour. 1981. "Unscrewing the big leviathan: How actors macro-structure reality and how sociologists help them to do so." In *Advances in social theory* eds. A. Cicourel and K. Knorr-Cetina, 277-303. Boston and London: Routledge and Kegan Paul.
- Campbell, M. and A. Manicom. eds. 1995. *Experience, knowledge and ruling relations: Explorations in the social organization of knowledge*. Toronto: University of Toronto Press.
- Canadian Institute for Health Information. ed. *Canadian Institute for Health Information*. Hp. 1999. [copyright]. Online. Available: <http://www.cihi.ca/wedo.do.htm>. Accessed 15/08/99.
- Cardiac Care Network of Ontario. ed. *Cardiac Care Network*. Hp. 1999. [copyright]. Online. Available: <http://www.ccn.on.ca>. Accessed 14/10/99.
- Carr-Hill, R. 1995. "Welcome? to the brave new world of evidence based medicine." *Social Science and Medicine*. 41(11):1467-1468.
- Castel, R. 1994. "'Problematization' as a mode of reading history." In *Foucault and the writing of history*, ed. J. Goldstein, 237-252. Cambridge: Blackwell.
- Chan, B., R. Feldman and W.G. Manning. 1999. "The effects of group size and group economic factors on collaboration: A study of the financial performance of rural hospitals in consortia." *Health Services Research*. 34(1): 9-31.
- Chan, B., P.C. Coyte, C. Heick. 1996. "Economic impact of cardiovascular disease in Canada." *Canadian Journal of Cardiology*. 12(10):1000-1006.

Chappell, N.L. 1993. "The future of health care in Canada." *Journal of Social Policy*. 22(4):487-505.

Chen, E. and C.D. Naylor. 1993. "Hospital-specific data on length of stay for patients with acute myocardial infarction in Ontario during fiscal 1991." ICES Working Paper #21.

Chen, E. and C.D. Naylor. 1993a. "Variation in hospital length of stay for acute myocardial infarction in Ontario, Canada, during fiscal 1990: A population based analysis. ICES Working Paper #003.

Chua, W.F. 1995. "Experts, networks and inscriptions in the fabrication of accounting images: A story of the representation of three public hospitals." *Accounting, Organizations and Society*. 20(2-3):111-145.

Cicourel, A. 1968. *The social organization of juvenile justice*. New York: John Wiley.

Clark, J.A., D.A. Potter and J.B. McKinlay. 1991. "Bringing social structure back into clinical decision making." *Social Science and Medicine*. 32(8):853-866.

Cleary, P.D., S. Greenfield, A.G. Mulley, S.G. Panker, S.A. Schroeder, L. Wexler and B.J. McNeil. 1991. "Variations in length of stay and outcomes for six medical and surgical conditions in Massachusetts and California." *Journal of the American Medical Association*. 266(1):73-79.

Coburn, D., S. Rappolt and I. Bourgeault. 1997. "Decline vs. retention of medical power through restratification: An examination of the Ontario case." *Sociology of Health & Illness*. 19(1):1-22.

Cohen, M.M. 1993. "Using administrative data for case-control studies: The case of the Papanicolaou smear." *Annals of Epidemiology*. 3(1):93-98.

Cohen, M., W. Young and M. Theriault. 1994. "Cholecystectomy." In *Patterns of health care in Ontario. ICES practice atlas - first edition*. eds. C.D. Naylor, G. M. Anderson and V. Goel, 94-95. Ottawa: Canadian Medical Association.

Cohen, M., D. DeBoer and W. Young. 1994a. "Total Hip Replacement." In *Patterns of health care in Ontario. ICES practice atlas - first edition*. eds. C.D. Naylor, G. M. Anderson and V. Goel, 72-76. Ottawa: Canadian Medical Association.

Coleman, W. 1987. *Yellow fever in the north: The methods of early epidemiology*. Madison: University of Wisconsin Press.

Coyte, P. and W. Young. 1997. "Reinvestment in and use of home care services." ICES Technical Report #5.

Crombie, I.K. 1996. *Research in health care: A practical approach to the design, conduct and interpretation of health services research*. New York: John Wiley & Sons.

Crummer, M.B. and V. Carter. 1993. "Critical pathways—The pivotal tool." *Journal of Cardiovascular Nursing*. 7(4):30-37.

Davis, D.A. 1994. "The dissemination of information: Optimizing the effectiveness of continuing medical education." In *Disseminating Research/Changing Practice*. eds. E.V. Dunn, et al., 139-150. Thousand Oaks: Sage.

Davis, D.A., M. A. Thomson, A.D. Oxman and R.B. Haynes. 1995. "Changing physician performance: A systematic review of the effect of continuing medical education strategies." *Journal of the American Medical Association*. 274(9):700-705.

Davis, P. and P. Howden-Chapman. 1996. "Translating research findings into health policy." *Social Science and Medicine*. 43(5):865-872.

Decter, M. B. "Canadian hospitals in transformation." *Medical Care*. 35(10):OS70-OS75, Supplement.

DeFries, G., T.C. Ricketts and J.S. Stein. eds. 1989. *Methodological advances in health services research*. Ann Arbor: Health Administration Press.

Degani, N. L.E. Ferris and P.G. Norton. 1997. "Are wife abuse and HIV transmission connected?" *Canadian Family Physician*. 43:13-15.

Detsky, A.S., G. Naglie, M.D. Krahn, D. Naimark and D.A. Redelmeier. 1997. "Primer on medical decision analysis: Getting started." *Medical Decision Making*. 17:126-135.

Diamond, T. 1992. *Making gray gold: Narratives of nursing home care*. Chicago: University of Chicago Press.

Dixon, A.S. 1990. "The evolution of clinical policies." *Medical Care*. 28(3):201-220.

Drache, D. and T. Sullivan. eds. 1999. *Health reform: Public success, private failure*. London and New York: Routledge.

Dunn, E.V., P.G. Norton, M. Stewart, F. Tudiver, M.J. Bass. eds. 1994. *Disseminating Research/Changing Practice*. Thousand Oaks: Sage.

Eddy, D.M. 1982. "Clinical policies and the quality of clinical practice." *New England Journal of Medicine*. 307:343-347.

Editors. 1995. "Evidence-based medicine, in its place." *The Lancet*. 346(8978):785.

Eichorn, R.L. and T.W. Bice. 1973. "Academic disciplines and health services research." In *Health services research and R. & D. in perspective*, eds. E.E. Flook and P.J. Sanazaro, 136-149. Ann Arbor: Health Administration Press.

Eisenberg, J.M. 1998. "Health services research in a market-oriented health care system." *Health Affairs*. 17(1):98-108.

Ellrodt, G. 1997. "Improving practitioner performance: What works?" Paper presented at "Evidence-based Clinical Guidelines; Making them work for the Decision Maker," London Health Sciences Centre, London, Ontario, March.

Ellwood, P.M. 1988. "Shattuck lecture — outcomes management: A technology of patient experience." *New England Journal of Medicine*. 318(23):1549-1556.

Evans, R. 1999. "Health reform: What 'business' is it of business." In *Health reform: Public success, private failure*, eds. D. Drache and T. Sullivan, 25-47. London and New York: Routledge.

Evans, R.G. 1990. "The dog in the night-time: Medical practice variations and health policy." In *The challenges of medical practice variations*, eds. T.F. Andersen and G. Mooney, 117-152. London: Macmillan.

Evans, R.G. 1992. "Canada: The real issues." *Journal of Health Politics, Policy and Law*. 17(4):739-762.

Evidence-based Medicine Working Group. 1992. "Evidence-based medicine: A new approach to the teaching of medicine." *Journal of the American Medical Association*. 268(17):2420-2425.

Fairclough, N. 1992. *Discourse and social change*. Cambridge: Polity Press.

Farow, D.C., W.C. Hunt, J.M. Samet. 1992. "Geographic variation in the treatment of localized breast cancer." *New England Journal of Medicine*. 326(17):1097-1101.

Ferris, L.E. and M. McMain-Klein. 1992. "Small-area variations in utilization of abortion services in Ontario from 1985 to 1992." *Canadian Medical Association Journal*. 152(11):1801-1897.

Feinglass, J. and J.W. Salmon. 1994. "The use of medical management information systems to increase the clinical productivity of physicians." In *The corporate transformation of health care, part II: Perspectives and implications*. ed. J.W. Salmon, 139-161. Amityville N.Y.: Baywood.

Ferris, L.E., P.G. Norton, E.V. Dunn, E.H. Gort, N. Degani, with the Delphi Panel and the Consulting Group. 1997. "Guidelines for managing domestic abuse when male and female partners are patients of the same physician." *Journal of the American Medical Association*. 278(1):851-857.

Field, M.J. and K.N. Lohr. 1990 eds. *Clinical practice guidelines: Directions for a new program*. Washington: National Academy Press.

Fisher, E.S., J.E. Wennberg, T.A. Stukel and S.M. Sharp. 1994. "Hospital readmission rates for cohorts of Medicare beneficiaries in Boston and New Haven." *New England Journal of Medicine* 331(5):989-995.

Flook, E.E. and P. J. Sanazaro. eds. 1973. *Health services research and r & d in perspective*. Ann Arbor: Health Administration Press.

Foucault, M. 1979. *Discipline and punish*. New York: Vintage Books.

Foucault, M. 1980. *The history of sexuality. Volume I: An introduction*. New York: Vintage Books.

Foucault, M. 1980a. "Two Lectures." In *Power/Knowledge: Selected interviews and other writings, 1972-1977*. C. Gordon (Ed.) Brighton: Harvester.

Foucault, M. 1982. "The subject and power." *Critical Inquiry*. 8(Summer): 777-795.

Foucault, M. 1988. "Social Security." In *Politics, Philosophy, Culture: Interviews and Other Writings, 1977-1984*, ed. L.D. Kritzman, 159-177. New York and London: Routledge.

Foucault, M. 1988a. "On problematization." *History of the present*. (Spring):16-17.

Foucault, M. 1991. "Governmentality." In *The Foucault effect: Studies in governmentality*, eds. G. Burchell, G., C. Gordon and P. Miller, 87-104. Hemel Hempstead: Harvester Wheatsheaf.

Foucault, M. 1994. *The birth of the clinic: An archaeology of medical perception*. New York: Vintage Books.

- Fox, D.M. 1991. "The *Milbank Quarterly* and Health Services Research, 1977-1990." *The Milbank Quarterly*. 69(2):185-197.
- Frankford, D.M. 1993. "The Medicare DRGs: Efficiency and organizational rationality." *Yale Journal on Regulation*. 19:273-346.
- Frankford, D.M. 1994. "Scientism and economism in the regulation of health care." *Journal of Health Politics, Policy and Law*. 19(4): 773-799.
- Freidson, E. 1970. *Profession of medicine: A study of the sociology of applied knowledge*. New York: Dodd, Mead & Company.
- Gifford, S.M. 1986. "The meaning of lumps: A case study of the ambiguities of risk." In *Anthropology and Epidemiology*, eds. R. Craig et al., 213-246. Dordrecht: Reidel.
- Ginzberg, E. 1991. "Health services research and health policy." In *Health services research: Key to health policy*, ed. E. Ginzberg, 1-19. Cambridge, MA: Harvard University Press.
- Gloor, J.E., N. Kissoon, and G.I. Joubert. 1993. "Appropriateness of hospitalization in a Canadian pediatric hospital." *Pediatrics*. 91(1):70-74.
- Glynn, P. 1996. "Integrated delivery systems: Are they good for Ontario's health?" Paper presented at the Ontario Hospital Association Annual Convention, Toronto, November.
- Goel, V., J. I. Williams, G.M. Anderson, P. Blackstien-Hirsch, C. Fooks and C.D. Naylor. eds. 1996. *Patterns of health care in Ontario. ICES practice atlas - Second edition*. Ottawa: Canadian Medical Association.
- Goodwin, P.J. and H.A. Llewellyn-Thomas. 1994. "Outcome measurement in oncology." *Annals of the Royal College of Physicians and Surgeons of Canada*. 27(3):175-178.
- Gordon, D.R. 1988. "Clinical science and clinical expertise: Changing boundaries between art and science in medicine." In *Biomedicine Examined*, eds. M. Lock and D.R. Gordon, 257-295. Dordrecht: Kluwer Academic Publishers.
- Grahame, K.M. 1999. "Feminist organizing and the politics of inclusion." *Human Studies*. 21:377-393.
- Grahame-Smith, D. 1995. "Evidence-based medicine: Socratic dissent." *British Medical Journal*. 310(6987):1126-1127.
- Gray, J.A. 1997. *Evidence-based health care*. New York: Churchill Livingstone.

Greer, A.L. 1977. "Advances in the study of diffusion of innovation in health care organizations." *Milbank Memorial Fund Quarterly/Health and Society*. 55:505-532.

Greer, A.L. 1988. "The state of the art versus the state of the science: The diffusion of new medical technologies into practice." *International Journal of Technology Assessment in Health Care*. 4:5-26.

Grimshaw, J., N. Freemantle, I. Russell, S. Wallace, B. Hurwitz, I Watt, A. Long and T. Sheldon. 1995. "Developing and implementing clinical practice guidelines." *Quality in health care*. 4(1):55-64.

Grumbach, K., J.V.Selby, J.A. Schmittdiel and C.P. Quesenberry, Jr.. 1999. "Quality of primary care practice in a large HMO according to physician specialty." *Health Services Research*. 34(2):485-502.

Halliday, M.A.K. and J.R. Martin. 1993. *Writing science: Literacy and discursive power*. London: Falmer Press.

Haraway, D.J. 1988. "Situated knowledges: The science question in feminism as a site of discourse on the privilege of partial perspective." *Feminist Studies*. 14(3):575-599.

Harden, J.D. 1999. "The rhetoric of community control in a neo-liberal era." In *Health reform: Public success, private failure*, eds. D. Drache and T. Sullivan, 204-222. London and New York: Routledge.

Harrigan, M. 1992. *Quality of care: Issues and challenges in the 90s: A literature review*. Ottawa: Canadian Medical Association.

Hawker, G.A., P.C. Coyte, J.E. Paul, J.G. Wright and C. Bombardier. 1997. "Accuracy of administrative claims data in assessing patient characteristics and course in hospital for knee replacement surgery." *Journal of Clinical Epidemiology*. 50(3):265-273.

Hay, J.A., E. Lyubashevsky, J.Elashoff, L. Maldonado, S.R. Weingarten and A.G. Ellrodt. 1996. "Upper gastrointestinal hemorrhage clinical guideline--Determining the optimal hospital length of stay." *American Journal of Medicine*. 100(3):313-322

Haynes, R.B. and C. Walker. 1987. "Computer-aided quality assurance: A critical appraisal." *Archives of Internal Medicine*. 147(7):1297-1301.

Hayward, R.S. M.C. Wilson, S.R. Tunis, E.B. Bass, and G. Guyatt for the Evidence-Based Medicine Working Group. 1995. "Users' guides to the medical literature. VIII. How to use clinical practice guidelines. A. Are the recommendations valid?" *Journal of the American Medical Association*. 274(7):570-574.

Health Canada, ed. *Health Canada Inventory of Activities of Health Information Centres in Canada*. Hp. 1998 [copyright]. Online. Available http://www.hc-sc.gc.ca/ohis/english/invactchpt4_e.html. Accessed 22/08/99.

Hendryx, M.S., D.G. Dyck, and D. Srebnik. 1999. "Risk-adjusted outcome models for public mental health outpatient programs." *Health Services Research*. 34(1):171-195.

Hess, D.J. "Introduction: The new enthnography and the anthropology of science and technology." *Knowledge and society: The anthropology of science and technology*. 9:1-26.

Hopwood, A.G. and P. Miller 1994. *Accounting as social and institutional practice*. Cambridge: Cambridge University Press.

Horne, M. 1996. "Involving physicians in clinical pathways: An example for perioperative knee arthroplasty." *Journal on Quality Improvement*. 22(2):115-124.

Hunt, A. 1996. "The governance of consumption: Sumptuary laws and shifting forms of regulation." *Economy and Society*. 25(3):410-427.

Hux, J.E. 1996. "Modifying prescribing of regulated analgesics." *Canadian Medical Association Journal*. 154(7):152-157.

Hux, J.E., C.M. Levinton and C.D. Naylor. 1994. "Prescribing propensity: influence of life expectancy gains and drug costs." *Journal of General Internal Medicine*. 9(4):195-201.

Iggo, N. 1995. Letter to the Editor. *Lancet*. 346(8978):839.

Institute for Clinical Evaluative Sciences. 1993. *Annual report, 1992-93*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.

Institute for Clinical Evaluative Sciences. 1995. *Putting research into practice: Annual report, 1994-95*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.

Institute for Clinical Evaluative Sciences. 1997. *A measure of success: Annual report, 1996-97*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.

Institute for Clinical Evaluative Sciences. 1998. *Off the press: A catalogue of ICES products and publications*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.

Institute of Medicine. 1979. *Health services research: report of a study*. Washington, D.C.: National Academy of Sciences.

Institute of Medicine. 1995. *Health services research: Work force and educational issues*. Washington, D.C.: National Academy Press.

Iscoe, N., T. To, E.H. Gort and M. Tan. eds. 1997. *Cancer surgery in Ontario: Cancer surgery practice atlas*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.

Jarrell, K.B. 1994. "Clinical paths at Columbia/HCA Chippenham Medical Center." In *Clinical paths: Tools for outcomes management*, ed. P.L. Spath, 109-126. Chicago: American Hospital Publishing.

Joint Policy and Planning Committee. 1994. "Moving to Outpatient surgery: How do you compare? A resource manual for Ontario hospitals." Toronto: JPPC.

Joint Policy and Planning Committee. 1994a. "Reducing length of stay: How do you compare? A resource manual for Ontario hospitals." Toronto: JPPC.

Joint Policy and Planning Committee. 1994b. "Moving to ambulatory care: How do you compare? A resource manual for Ontario hospitals." Toronto: JPPC.

Joint Policy and Planning Committee. ed. 1998. *Joint Policy and Planning Committee*. Hp. 1998. [copyright]. Online. Available: <http://www.jppc.org/jppc/index.htm>. Accessed 05/08/99.

Johnson, S. 1997. "What is a pathway of care?" In *Pathways of care*, ed. S. Johnson, 15-24. London: Oxford.

Jönsson, L. and P. Linell. 1991. "Story generations: From dialogical interview to written reports in police interrogations. *Text*. 11(3):419-440.

Klotz, L., T. To, N. Iscoe and C.D. Naylor. 1994. "Orchidectomy as a treatment for prostate cancer." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 111-115. Ottawa: Canadian Medical Association.

Komaroff, A.L. 1982. "Algorithms and the 'art' of medicine." *American Journal of Public Health*. 72(1):10-12.

Knorr-Cetina, K.D. and M. Mulkay eds. 1983. *Science observed: Perspectives on the Social Study of Science*. London: Sage.

Last, J.M. 1977. "Health services research: Does it make a difference?" *New England Journal of Medicine*. 297(19):1073.

- Latour, B. 1987. *Science in action*. Cambridge, MA: Harvard University Press.
- Latour, B. and S. Woolgar. 1986. *Laboratory life: The construction of scientific facts*. Princeton: Princeton University Press.
- Lau, J.L., E.M. Antman, J. Jimenez-Silva, B. Kupelnick, F. Mosteller and J.C. Chalmers. 1992. "Cumulative meta-analysis of therapeutic trials for myocardial infarction." *New England Journal of Medicine*. 327(4):248-254.
- Leatt, P., G.H. Pink and C.D. Naylor. 1996. "Integrated delivery systems: Has their time come in Canada?" *Canadian Medical Association Journal*. 154(6):803-809.
- Leitch, V.B. 1995. "Interaction between text and reader ." In *Readers and reading*, ed. A. Bennet, 32-65. New York: Longman.
- Lemke, J. 1998. "Multiplying meaning: Visual and verbal semiotics in scientific text." In *Reading science: Critical and functional perspective on discourses of science*, eds. J.R. Martin and R. Veel, 87-113. Routledge: London and New York.
- Lewis, C.E. 1977. "Health services research and innovations in health care delivery: Does research make a difference? *New England Journal of Medicine*. 297(8):423-427.
- Lewis, S., C.D. Naylor, R. Batista, F. Champagne, J. Lomas, D. Menon, E. Ross and D. de Vlieger. 1998. "Canada needs an evidence-based decision-making trade show." *Canadian Medical Association Journal*. 158(2):210-212.
- Lomas, J. 1993. "Retailing research: Increasing the role of evidence in clinical services for childbirth." *The Milbank Quarterly*. 71(3):439-475.
- Lomas, J. 1994. "Teaching old (and not so old) docs new tricks: Effective ways to implement research findings." In *Disseminating research/changing practice*, eds. E.V. Dunn, P.G. Norton, M. Stewart, F. Tudiver, M.J. Bass, 1-18. Thousand Oaks: Sage.
- Lomas, J., M.W. Enkin, G.M. Anderson, W.J. Hannah, E. Vayda and J. Singer. 1991. "Opinion leaders vs. audit and feedback to implement practice guidelines: Delivery after previous cesarean section." *Journal of the American Medical Association*. 265(17):2202-2207.
- Lynch, M. 1990. "The externalized retina: Selection and mathematization in the visual documentation of objects in the life sciences." In *Representation in scientific practice*, eds. M. Lynch and S. Woolgar, 153-186. The MIT Press: Cambridge, MA. and London.

- Lynch, M. and S. Woolgar. eds. 1990. *Representation in scientific practice*. The MIT Press: Cambridge, MA. and London.
- Mahtre, S. L. and R. Deber. 1992. "From equal access to health care to equitable access to health: A review of Canadian provincial health commissions and reports. *International Journal of Health Services*. 22(4):645-668.
- Marret, L.D., M.B. Swift, D.L. Reynolds and E.A. Clarke. 1991. *Geographic distribution of cancer in Ontario. Vol. 1 Atlas of cancer mortality. 1976-1985*. Toronto: Ontario Cancer Registry.
- Marshall, D. 1991. "Gallstone therapies." Ottawa: Canadian Coordinating Office for Health Technology Assessment.
- Marshall, T. 1995. "Evidence-based medicine." *Lancet*. 346(8983):1171.
- Martin, J.R. and R. Veal. eds. 1998. *Reading science: Critical and functional perspectives on discourses of science*. Routledge: London and New York.
- McCoy, L. 1998. "Producing 'what the deans' know:' Textual practices of cost accounting and the restructuring of post-secondary education." *Human Studies*. 21:395-418.
- McIsaac, W.J., V. Goel and C.D. Naylor. 1997. "Socio-economic status and visits to physicians by adults in Ontario, Canada." *Journal of Health Services Research Policy*. 2(2):94-102.
- McLeod-Dick, I. "Health care reform in Ontario hospitals during 1994 to 1996." Schulich School of Business, York University. Unpublished Manuscript.
- Mechanic, D. 1978. "Prospects and problems in health services research." *Milbank Memorial Fund Quarterly/Health and Society*. 56(2):127-139.
- Metro Toronto District Health Council. 1996. *Creating integrated delivery systems for Metropolitan Toronto*.
- Mickleburgh, R. 1994. "Ontario health care varies vastly: Surgical statistics soar in some areas, study finds." *Globe and Mail*. (May, 26:A1-A2.).
- Millenson, M.L. 1997. *Demanding medical excellence: Doctors and accountability in the information age*. Chicago and London: The University of Chicago Press.

- Miller, P. 1992. "Accounting and objectivity: the invention of calculating selves and calculable spaces." *Annals of Scholarship*. 9(1/2):61-86.
- Miller, P. 1994. "Accounting as social and institutional practice: An introduction." In *Accounting as social and institutional practice*, eds. A.G. Hopwood, and P. Miller, 1-39. Cambridge: Cambridge University Press.
- Miller, P. and T. O'Leary. 1987. "Accounting and the construction of the governable person." *Accounting, Organizations and Society*. 12(3):235-265.
- Miller, P. and N. Rose. 1990. "Governing economic life." *Economy and Society*. 19(1)1-31.
- Mulhall, A. 1998. "Nursing, research and the evidence." *Evidence-Based Nursing*. 1(1):4-6.
- Myers, B.A. 1973. "Health services research and health policy: Interactions." *Medical Care*. 11(4):352-358.
- Myers, G. 1990. "Every picture tells a story: Illustrations in E.O. Wilson's *Sociobiology*." In *Representation in scientific practice*, eds. M. Lynch and S. Woolgar, 231-265. The MIT Press: Cambridge, MA. and London.
- National Forum on Health. 1997. *Canada health action building on the legacy: Synthesis reports and issues papers*. Ottawa: National Forum on Health.
- Navarro, V. 1993. "Health services research: What is it?" *International Journal of Health Services*. 23(1):1-13.
- Naylor, C.D. 1994. "Introduction." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 1-5. Ottawa: Canadian Medical Association.
- Naylor, C.D. 1994a. "Conclusion." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 124. Ottawa: Canadian Medical Association.
- Naylor, C.D. 1994a. "Introduction." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 69-72. Ottawa: Canadian Medical Association.
- Naylor, C.D. 1995. "Patterns of health care in Ontario: ICES practice atlas." Presentation given to Health Strategies Office Policy Forum, February.

Naylor, C. D., G. M. Anderson and V. Goel. eds. 1994. *Patterns of health care in Ontario. ICES practice atlas - First edition*. Ottawa: Canadian Medical Association.

Naylor, C.D. and P.M. Slaughter. eds. 1999. *Cardiovascular health and services in Ontario: An ICES atlas*. Toronto: Institute for Clinical Evaluative Sciences in Ontario.

Noble, M. 1994. "New practice atlas outlines variations in health care provided across Ontario." *Canadian Medical Association Journal*. 151(2):218-219.

Ontario Hospital Association. 1998. *The Hospital report '98: A system-wide review of Ontario's hospitals*. Toronto: Ontario Hospital Association.

Orkin, F.K., M.M. Cohen and P.G. Duncan. 1993. "The quest for meaningful outcomes." *Anesthesiology*. 78(3):417-422.

Osborne, T. 1993. "On liberalism, neo-liberalism and the 'liberal profession' of medicine." *Economy and Society*. 22(3):345-356.

Oxman, A.D., M. Thomson, D.A. Davis and B. Haynes. 1995. "No magic bullets: A systematic review of 102 trials of interventions to improve professional practice." *Canadian Medical Association Journal*. 153(10):1423-1431.

Paul-Shaheen, P.H. Deane Clark and D. Williams. 1987. "Small area analysis: A review and analysis of the North American literature." *Journal of Health Politics, Policy and Law*. 12(4):741-809..

Payne, S. 1987. "Identifying and managing inappropriate hospital utilization: A policy synthesis" *Health Services Research*. 22(5):709-769.

Pink, G.H. 1996. *Integrated delivery systems: Providing a continuum of health care*. Toronto: Hospital Management Research Unit, University of Toronto.

Pittman, M. 1995. "HSR: Past present and future." *Health Services Research* 30(1):3-5.

Poland, B., D. Coburn, A. Robertson, J. Eakin and members of the Critical Social Science Group. 1998. "Wealth, equity and health care: A critique of a 'population health' perspective on the determinants of health." *Social Science and Medicine*. 46(7):785-798.

Preston, A.M., W. Chua and D. Neu. 1997. "The Diagnosis-related group-prospective payment system and the problem of the government of rationing health care to the elderly." *Accounting, Organizations and Society*. 22(2):147-164.

Priest, L. 1994. "Surgery rates vary widely: Study finds big differences at Ontario hospitals." *Toronto Star*. (May, 26):A1.

Priest, L. 1994a. "Surgery-rate figures create puzzle: Question is why big differences exist at hospitals." *Toronto Star*. (May, 28): A15.

Pringle, C., S. Baker, D. Martch, S. Bray and M. Holbert. 1994. "Clinical paths at Douglas Community Hospital." In *Clinical paths: Tools for outcomes management*, ed. P.L. Spath, 99-107. Chicago: American Hospital Publishing.

Rappolt, S. 1996. "In the name of science: The effects of the clinical guidelines movement on the autonomy of the medical profession." Ph.D. diss., University of Toronto.

Rappolt, S. 1997. "Clinical guidelines and the fate of medical autonomy in Ontario." *Social Science and Medicine*. 44(7):977-987.

Ravotas, D. and C. Berkenkotter. 1998. "Voices in the text: The uses of reported speech in a psychotherapist's notes and initial assessments." *Text*. 18(2):211-239.

Relman, A.S. 1988. "Assessment and accountability: The third revolution in medical care." *The New England Journal of Medicine*. 319(18):1220-1222.

RMC Resources Management Consultants. 1995. "Report of our operational review of ICES." Toronto: RMC Resources Management Consultants Ltd.

Robertson, A. 1998. "Shifting discourses on health in Canada: From health promotion to population health." *Health Promotion International*. 13(2):155-165.

Robson, K. 1992. "Accounting numbers as 'inscription': Action at a distance and the development of accounting." *Accounting, Organizations and Society*. 17(7):685-708.

Robson, K. 1993. "Governing science and economic growth at a distance: Accounting representation and the management of research and development." *Economy and Society*. 22(4):461-481.

Rogers, E.M. 1995. *Diffusion of Innovations*. New York: Free Press.

Roos, N.P., L.L. Roos and P.D. Henteleff. 1977. "Elective surgical rates—Do high rates mean lower standards? tonsillectomy and adenoidectomy in Manitoba. *New England Journal of Medicine*. 297(7):360-365.

Roos, N.P., and L.L. Roos. 1981. "High and low surgical rates: Risk factors for area residents." *American Journal of Public Health*. 71(6):591-600.

Roper, W.L., W. Winkenwerder, G. Hackbarth and H. Krakauer. 1988. "Effectiveness in health care: An initiative to evaluate and improve medical practice." *The New England Journal of Medicine*. 319(18):1197-1202.

Rose, N. 1991. "Governing by numbers: Figuring out democracy." *Accounting, Organizations and Society*. 16(7): 673-692.

Rose, N. 1994. "Medicine, history and the present." In *Reassessing Foucault: Power, Medicine and the Body*, eds. C. Jones and R. Porter, 48-72. London: Routledge

Rose, N. 1996. "Governing 'advanced' liberal democracies." In *Foucault and political reason: Liberalism, neo-liberalism and rationalities of government*, eds. A. Barry, T. Osborne and N. Rose, 37-64. Chicago: University of Chicago Press.

Rose, N. 1996a. "The death of the social? Re-figuring the territory of government." *Economy and Society*. 25(3):327-356.

Rose, N. and P. Miller. 1992. "Political power beyond the state: Problematics of government." *British Journal of Sociology*. 43(2):173-205.

Rosenberg, W. and A. Donald. 1995. "Evidence based medicine: An approach to clinical problem-solving." *British Medical Journal*. 310(6987):1122-1126.

Rudwick, M. 1976. "The emergence of a visual language for geological science 1760-1840." *History of Science*. 14(25):148-195.

Sackett, D.L. and W.M. Rosenberg, 1995. "The need for evidence-based medicine." *Journal of the Royal Society of Medicine*. 88(11):620-624.

Sackett, D.L., R.B. Haynes, G.H. Guyatt and P. Tugwell. 1991. *Clinical epidemiology: A basic science of clinical medicine*. Boston: Little Brown.

Salkever, D., M.E. Domino, B.J. Burns, A.B. Santos, P.A. Deci, J. Dias, H.R. Wagner, R.A. Faldowski and J. Paolone. 1999. "Assertive community treatment for people with severe mental illness: The effect on hospital use and costs." *Health Services Research*. 34(2): 577-601.

Salmon, J.W., W.D. White and J. Feinglass. 1994. "The futures of physicians: Agency and autonomy reconsidered." In *The corporate transformation of health care, part II: Perspectives and implications*. ed. J.W. Salmon, 125-138. Amityville N.Y.: Baywood.

- Salmon, J.W. ed. 1994. *The corporate transformation of health care, part II: perspectives and implications*. Amityville N.Y.: Baywood.
- Sanz, G., A. Betriu, G. Oller et al. 1993. "Feasibility of early discharge after acute Q wave MI in patients not receiving thrombolysis." *Journal of the American College of Cardiology*. 22(7):1795-1801.
- Schroeder, S.A. 1987. "Strategies for reducing medical costs by changing physicians' behavior: Efficacy and impact on quality of care." *International Journal of Technology Assessment in Health Care*. 3(1):39-50.
- Shamian, J. and E. Y. Lightstone. 1997. "Hospital restructuring initiatives in Canada." *Medical Care*. 35(10):OS62-OS69, Supplement.
- Shortell, S. 1997. "Shaping the future." *Health Services Research* 31:6, 655-658.
- Shortell, S.M. and J.P. LoGerfo. 1978. "Health services research and public policy: Definitions, accomplishments, and potential." *Health Services Research*. 13(3):230-237.
- Sibbald, W.H. and J.D. Kossuth. 1998. "The Ontario Health Care Evaluation network and the Critical Care Research Network as vehicles for research transfer." *Medical Decision Making*. 18(9):9-16.
- Simunovic, M. and T. To. 1994. "Abdominal aortic aneurysm repair." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 79-83. Ottawa: Canadian Medical Association.
- Slawson, D.C., A.F. Shaughnessy and J.H. Bennett. 1994. "Becoming a medical information master: Feeling good about not knowing everything." *The Journal of Family Practice*. 38(5):505-513.
- Smith, B.H. 1996. "Evidence based medicine: Rich sources of evidence are ignored." *British Medical Journal*. 313(7050):169.
- Smith, D.E. 1987. *The everyday world as problematic: A feminist sociology*. Toronto: University of Toronto Press.
- Smith, D.E. 1990. *The conceptual practices of power: A feminist sociology of knowledge*. Toronto: University of Toronto Press.
- Smith, D.E. 1990a. *Texts, facts and femininity: Exploring the relations of ruling*. London and New York: Routledge.

Smith, D.E. 1999. *Writing the social: Critique, theory and investigations*. Toronto: University of Toronto Press.

Smith, D.E. 1999a. "Texts and large-scale organization." Keynote address presented at "Social transformation and activism: The application of institutional ethnography." Arizona State University West, Phoenix, March.

Smith, S.R. and D.M. Kirking. 1999. "Access and use of medications in HIV disease." *Health Services Research*. 34(1):123-143.

Sonnen, C. and M. McCracken. "Downsizing, passive privatization and fiscal arrangements." In *Health reform: Public success, private failure*, eds. D. Drache and T. Sullivan, 225-244. London and New York: Routledge.

Spath, P.L. 1994. "Clinical paths: An outcomes management tool." In *Clinical paths: Tools for outcomes management*, ed. P.L. Spath, 1-22. Chicago: American Hospital Publishing.

Spath, P.L. 1997. "Taking clinical quality improvement beyond paths." In *Beyond clinical paths: Advanced tools for outcomes management*. ed. P. L. Spath, 1-6. Chicago: American Hospital Publishing.

Spence, R.K., for the Blood Management Practice Guidelines Conference. 1995. "Surgical red blood cell transfusion practice policies." *American Journal of Surgery*. 170(6A Suppl.):3S-15S.

Spitzer, W.O. and B. Starfield. 1977. "Health services research can make a difference!" *New England Journal of Medicine*. 297(25):1046.

Star, S.L. "Power, technologies and the phenomenology of conventions: On being allergic to onions." In *A sociology of monsters: Essays on power, technology and domination*. ed. J. Law, 26-56.

Starr, P. 1997. "Smart technology, stunted policy: Developing health information networks." *Health Affairs*. 16(3):91-105.

Stiell I.G., G.A. Wells, A. Laupacis, R. Brison, R. Berbeek, K. Vandemheen, and C.D. Naylor for the Multicentre Ankle Rule Study Group. 1995. "Multicentre trial to introduce the Ottawa Ankle Rules for the use of radiography in acute ankle injuries." *British Medical Journal*. 311:594-597.

Stockwell, H. and E. Vayda. 1979. "Variations in Surgery in Ontario." *Medical Care*. 17(4):390-396.

Swidler, A. and J. Ardit. 1994. "The new sociology of knowledge." *Annual Review of Sociology*. 20:305-329.

Tanenbaum, S. 1994. "Knowing and acting in medical practice: The epistemological politics of outcomes research." *Journal of Health Politics, Policy and Law*. 19(1):647-662.

Tanenbaum, S. 1996. "'Medical effectiveness' in Canadian and U.S. health policy: The comparative politics of inferential ambiguity." *Health Services Research*. 31(5):517-532.

Thompson, J.D. 1981. "Epidemiology and health services administration: Future relationships in practice and education." In *Health services research, planning, and change*. ed. J.B. McKinlay, 120-142. Cambridge, Mass: MIT Press.

Timmermans, S. and M. Berg. 1997. "Standardization in action: Achieving local universality through medical protocols." *Social Studies of Science*. 27:273-305.

Topper, D. 1996. "Towards an epistemology of scientific illustration." In *Picturing knowledge: Historical and philosophical problems concerning the use of art in science*, ed. B. Baigrie, 215-249. Toronto: University of Toronto Press.

Traweek, S. 1992. "Border crossings: Narrative strategies in science studies and among physicists in Tsukuba Science City, Japan." In *Science as practice and culture*, ed. A. Pickering, 429-465. Chicago: University of Chicago Press.

Ugnat, A. and C.D. Naylor. 1994. "Coronary artery bypass graft surgery." In *Patterns of health care in Ontario. ICES practice atlas - first edition*, eds. C.D. Naylor, G. M. Anderson and V. Goel, 88-94. Ottawa: Canadian Medical Association.

van Rijn, N. 1994. "Health-care study merely a 'snapshot,' hospitals say it isn't meant as a critique of current methods, officials say." *Toronto Star*. (May, 27:A12).

Vayda, E. 1973. "A comparison of surgical rates in Canada and in England and Wales." *New England Journal of Medicine*. 289(23):1224-1229.

Vayda, E., M. Morison and G.D. Anderson. 1976. "Surgical rates in the Canadian provinces, 1968 to 1972." *Canadian Journal of Surgery*. 19(3):235-242.

Veel, R. 1998. "The greening of school science: Ecogenesis in secondary classrooms." In *Reading science: Critical and functional perspective on discourses of science*, ed. J.R. Martin and R. Veel, 114-151. Routledge: London and New York.

- Wade, J. 1990. "Putting it to work: Utilization management for quality care. Resource allocation and regional planning." In *Utilization management: A tool for informed decision making. Proceedings of the national congress on utilization management*, 52-55. Edmonton, Alberta.
- Weir, L. 1996. "Epidemiological risk and social antagonism in the Ontario antenatal record." Paper presented to the workshop on new forms of governance. Centre of Criminology, University of Toronto, October.
- Wen, S.W., V. Goel, J.I. Williams. 1996. "Utilization of health care services by immigrants and other ethnic/cultural groups in Ontario." *Ethnicity and Health*. 1(1):99-109.
- Wennberg, J.E. 1984. "Dealing with medical practice variations: A proposal for action." *Health Affairs*. 4:6-32.
- Wennberg, J.E. and M. M. Cooper. eds. 1996. *The Dartmouth atlas of health care in the United States*. Chicago: American Hospital Publishing.
- Wennberg, J.. and A. Gittelsohn. 1973. "Small area variations in health care delivery." *Science*. 182(117):1102-1108.
- Wennberg, J.E. and A. Gittelsohn. 1975. "Health care delivery in Main. I. Patterns of use of common surgical procedures." *Journal of the Maine medical association*. 66(5):123-149.
- White, K.L., J. Frenk, C. Ordonez, J. Maria Paganin, B. and B. Starfield. eds. 1992. *Health services research: An anthology*. Washington: Pan American Health Organization.
- Williamson, J.W., P.S. German, R. Weiss, E. Skinner and F. Bowes. 1989. "Health science information management and continuing education of physicians: A survey of US primary care practitioners and their opinion leaders." *Annals of Internal Medicine*. 110(2):151-160.
- Willis, E. and K. White. 1998. "Evidence based medicine and the sociology of medical knowledge." Plenary paper presented at the Australian and New Zealand Sociological Association Annual Conference, Health Sociology Section, University of Queensland, Brisbane, December.
- Wilson, M.C., R.S. Hayward, S.R. Tunis, E.B. Bass and G. Guyatt for the Evidence-Based Medicine Working Group. 1995. "Users' guides to the medical literature. VIII. How to use clinical practice guidelines. B. What are the recommendations and will they

help you in caring for your patients?" *Journal of the American Medical Association*. 274(20):1630-1632.

Working Group on Health Services Utilization. 1994. *When less is better: Using Canada's hospital efficiently*. Conference of federal/provincial/territorial deputy ministers of health.

Zander, K. 1990. "Managed care and nursing management." In *Patient care delivery models*, eds. G.G. Mayer, M.J. Maddin and E. Lawrenz, 37-61. Rockville: Aspen Publications.

Zander, K. 1992. "Critical pathways." In *Total quality management: The health care pioneers*, eds. M.M. Melum and M.K. Sinioris, 305-314. Chicago: American Hospital Publishing.

Appendix 1

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Friday, 11 June, 1999

C. David Naylor, M.D.
Institute for Clinical Evaluative Sciences in Ontario
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Dear Dr. Naylor,

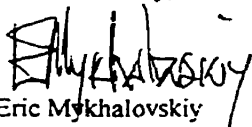
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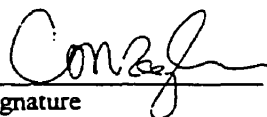
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FACULTY OF ARTS

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Tuesday, 07 December, 1999

Kathy Chapeskie
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M4N 3M5

Dear Ms. Chapeskie,

I am completing a doctoral thesis at York University entitled "Knowing Health Care / Governing Health Care: Exploring Health Services Research as a Social Practice." I would like permission to allow inclusion of the following material in the thesis and permission for the National Library to make use of the thesis (i.e., to reproduce, loan, distribute, or sell copies of the thesis by any means and in any form or format).

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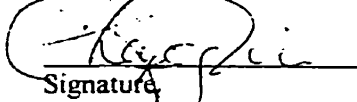
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If these arrangements meet with your approval, please sign this letter where indicated below and return it to me in the enclosed return envelope. Thank you for your assistance in this matter.

Yours sincerely,


Eric Mykhalovskiy

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:


Signature

KATHY CHAPESKIE
Print Name

Jan. 7/2000
Date

Appendix 2

Sample Information Sheet and Consent Form

Information Sheet

TITLE OF RESEARCH: Toward a Sociology of Health Services Research: Exploring the Governance of Health Care in Ontario

INVESTIGATOR: Eric Mykhalovskiy (tel. 416-538-3147)

1. The Study

I am conducting a qualitative study that explores the role that health services research plays in contemporary health care reform in Ontario. My research looks at the relationship between new forms of evidence-based knowledge about medical practices and ways of managing health care problems. It focuses on the Institute for Clinical and Evaluative Sciences (ICES), the main producer of health services research on Ontario's health care system. I am interested in speaking with people who have had first hand experience working with and/or promoting the kind of information produced by ICES. My interest is in better understanding how such information is associated with ways of understanding what are relevant health care problems, with decision making practices, and with ways of responding to health care problems.

2. Interviews

My research design involves interviews with informed individuals who work in the health care sector. Interviews will last 30 to 60 minutes, will be tape-recorded and will be transcribed in whole or in part. **These interviews are confidential.** Your name and other information that may personally identify you will be deleted from transcripts and from publications based on the research. **Your participation in interviews is completely voluntary.** You may stop the tape-recording or decline to answer any question. You may withdraw your participation from the study at any time. The tapes and transcripts will be kept in a location to which only I have access. Three months following the completion of the study, the tapes will be erased. A transcript or tape-recording of your interview can be made available to you upon request.

3. Risks and Benefits

This research has been classified as minimal risk student research in accordance with York University's policy for ethics review for research involving human participants.

Although interviews are kept confidential there is a small risk that readers with a highly specialized knowledge of the field and of its relevant social actors may guess the identity of some participants. This risk will be minimized by the exclusion of identifying information from the dissertation and subsequent publications. The benefits associated with participating in this study include the opportunity to contribute to socially beneficial knowledge about the role of health services research and evidence-based medicine in contemporary health care reform.

Thank you very much for your interest. Please feel free to contact me should you have any comments or questions about the research.

Consent Form

TITLE OF RESEARCH: Toward a Sociology of Health Services Research: Exploring the Governance of Health Care in Ontario

INVESTIGATOR: Eric Mykhalovskiy (tel. 416-538-3147)

I acknowledge that the research procedures described on the attached information sheet, of which I have a copy, have been explained to me and that any questions I may have about the research have been answered to my satisfaction. I also understand the benefits of joining the research study. The possible risks have been explained to me. I understand that I may ask further questions about the research at any point during the study's duration.

I have agreed to have the interview tape-recorded. I understand that I may refuse to answer any questions that I choose not to answer. If I wish to withdraw my participation from the study at any time, I may do so.

I understand that this interview is confidential. My name will be excluded from interview transcripts and publications, as will other information that reflects my identity. The organization at which I work will also not be identified.

I am aware that the data produced in this interview may be used in Eric Mykhalovskiy's Ph.D. dissertation and in other professional and scientific publications.

I hereby consent to participate.

Signature of Respondent _____ Date _____

Signature of Researcher _____ Date _____