Disagreement, controversy and conflict will always remain—to varying degrees—in the scientific realm. The complexity of the health policy process poses particular challenges to managing these uncertainties while remaining accountable to, and legitimized by, the public. This paper presents the three traditional models of the science-policy interface, in addition to the Pragmatic Enlightened Model. A brief discussion of the “mammography wars” case study begins to dissect whether a shift away from technocracy is desirable and feasible in health policy decision-making. While acknowledging that there is no one clear path to a “correct” health policy process, the paper considers potential gains and pitfalls accompanying a shift towards the Pragmatic Enlightened Model of the science-health policy interface.

Introduction

Writing in 1970, Habermas examines the “second stage” of Weber’s rationalization: the scientization of politics (62). Once dependent on law and administration, new scientific technologies and strategies have incited a structural transformation of power within bureaucracy. Habermas presents the implications of this power shift for the policymaking process in three different models: the decisionist model, the technocratic model, and the pragmatic model. The pragmatic model presents one method of compensating for science’s Achilles heel, uncertainty, by actively engaging with the public. However, the desirability and feasibility of applying this model to a complex field like health—traditionally dominated by a close partnership of medical technocrats and bureaucracy—requires a serious, national conversation.

In this paper, I will briefly present the case study of the “mammography wars” to demonstrate how managing a public-inclusive process may be necessary for preserving the legitimacy of
health care decisions. However, shifting away from a traditionally technocratic health system towards a pragmatic model creates tensions. Calls for patient-empowerment in health care decision processes may demand that the science-policy interface be restructured to form a new system—one that equips the public to handle uncertainty—or these calls may be deemed too difficult to reconcile within the health context.

Models of the science-policy interface

Habermas’ three models of the science-policy interface differ primarily in assignments of power. The decisionist model leaves formulating policy objectives and policy implementation to policy actors, in accordance with their own value judgments, consulting the sciences only for technological means. The technocratic model holds scientists responsible for both defining objectives and deciding upon the means to achieve these objectives, entrusting policymakers only with implementation. The pragmatist model rejects these separations of powers and emphasizes interactions between scientific actors, political actors and the public and is “dependent on mediation by the public as a political institution for success” (Habermas 1970, 69).

While Habermas critiques this model as inapplicable to “modern mass democracies” due to an inability to translate scientific knowledge into laypeople’s terms and laypeople’s questions into scientific language, it best reflects the view of policymaking as an “incremental muddling through” (Edenhofer and Kowarsch 2012, 7), rather than a clean and comprehensive problem-solving process. Edenhofer and Kowarsch offer the “Pragmatic Enlightened Model” (PEM) as a solution to the collapse of the fact-value dichotomy: As logical positivism is more unattainable than once believed, the best way to approach the science-policy interface is through enabling public dialogue in a transparent and accessible process.

How can policymakers strike a balance between a closed, efficient process and a loose, networked approach complicated by conflicting opinions? What are the most appropriate and effective tools of public engagement and what role can scientific assessments and reviews play? How can this view be differentiated from critiques of neopluralism, under which the most organized, powerful and elite groups capture policymakers’ attention? While the pragmatist model can be appreciated for allowing diversity of knowledge and rationalities, how and by whom do these rationalities become weighted? As the pragmatist model demands “rational discourse between sciences, policymakers and the public about policy ends” (Edenhofer and Kowarsch 2012, 6), how such discourse can be achieved is ripe with unanswered questions.
The science-policy interface and health policy trends: Shifting from technocracy to the Pragmatic Enlightened Model (PEM)

Evans (2006) contends that the success of technocracies depends on public belief that they are maximizing consensual values or facts (Evans 2006, 227). Critics of today’s health care system can argue that medical progress in primary health care since the 1928 invention of penicillin has been limited. Optimism regarding the “knowability” of the human medical condition, and thus the ability to cure human disease, has not translated into the tangible gains expected. Hence, the technocratic model of health has been subject to critique by a disenchanted public: “[P]atients are no longer prepared to be ‘dealt with’ or ‘processed’ by technicians in applied bioscience” (Miles and Loughlin 2011, 534). Health Canada has responded, in part, to these challenges by publishing a 75-page guide for decision-making, covering extensive processes for risk management, communication and public involvement. However, the document carefully notes that, “while implementation of the framework will help to ensure that risks are addressed in a consistent and comprehensive manner, its application is not intended to be rigid or prescriptive” (Health Canada 2000, 12). On more contentious health risks, like 2011’s “mammography wars,” the Government of Canada can defer the issue to the recently re-instated Canadian Task Force on Preventive Health Care (CTPHC).

The mammography wars

The mammography wars, ignited and fueled in part by the Cochrane Review, help illustrate what happens when scientists disagree and there is a lack of scientific evidence. In 2008, an updated review found that not only is the magnitude of the effect of mammography uncertain, but for every 2000 women screened over ten years, one will have her life prolonged, ten healthy women will be diagnosed as a breast cancer patient and be treated unnecessarily and more than 200 women will experience months of psychological distress because of false positive findings (Olsen and Gøtzsche 2001). The CTPHC performed their own review (2011) and found results similar to the Cochrane Review. Based on these results, the group released recommendations that included screening from age 50-74 every two to three years, instead of annually from age 50 to 69 as per their 2001 recommendation. Despite producing a number of high-quality, comprehensive materials for laypeople to explain the recommendations, the announcement provoked immediate backlash from the public fueled by media reports featuring the adamant positions of those in favour of mammography.

1. According to the 2011 Deloitte survey of health care consumers in Canada (Deloitte), only 45% of Canadians trust in Health Canada and pharmacies and only 26% trust in provincial health care delivery.

2. Cochrane Reviews are the primary output of the Cochrane Collaboration, an independent, international not-for-profit research organization of over 27,000 contributors from more than 100 countries (including Canada). Considered to be comprised of world leaders in evidence-based health care, the Collaboration’s primary objective is to help health providers, practitioners and patients make health care decisions based on the most reliable and relevant sources of information.
as a screening tool. Writing for the Globe and Mail, Weeks argues that instead of resolving the mammography wars as it was tasked to do, the panel “has only inflamed the debate and left women—and their doctors—even more confused” (2011). MPs interviewed in the House of Commons were divided on the issue. The co-leader of imaging at the Ontario Institute for Cancer Research, Dr. Martin Yaffe, described the new guidelines as disastrous: “I would estimate that in the next ten years if this were to happen and women in their forties were not screened, about 2,000 women in Canada will die from breast cancer” (Ogilvie, 2011). The College of Family Physicians of Canada and the Canadian Cancer Society endorsed the guidelines, while the Canadian Breast Cancer Foundation vehemently challenged them, arguing that routine screening of women in their forties would reduce mortality from breast cancer by 25% (Ibid.).

While public debate may be welcomed, it can be criticized for being hampered by conflicting and confusing messages. Further, given that the revised guidelines were in fact not dramatically different than the original guidelines set by most provincial governments, little policy change resulted.³

The desirability of a shift towards the Pragmatic Enlightened Model: The pitfalls of technocracy and challenges of public involvement in health care

Addressing scientific uncertainty

Masked disagreement and a lack of separation between technocrats and organized interests are two arguments in defense of shifting away from technocracy. Abraham and Shepphard found that in the case of UK medicine regulations, the “vast majority of experts believed that the [technocratic] system of British medicine regulation work[ed] very well…[primarily because] disagreements between the experts are rare (1997, 146). When scientists do not agree, or there is a lack of information upon which to agree, the technocratic model shifts to the decisionist model and leaves the final decision to government agencies (which are often either comprised of or in close consultation with representatives from the medical community). However, the transition from a purely technocratic model to a decisionist model can hide “uncertainty”. In the interest of maintaining public trust in the policy process, when is it necessary to disclose uncertainty and risk? Further, public understanding of risk levels may be a necessary prerequisite to lobby for alternatives, should the level of risk be deemed unacceptable.

³. British Columbia, the only province to recommend all screening from age 40 plus (British Columbia Screening Program), has yet to endorse the guidelines.
Diffusing interest group power

Technocrats working in health policy are often members of larger professional interest groups, such as the Canadian Medical Association or the Canadian Society of Diagnostic Medical Sonographers. Regardless of a technocrat’s ability to separate oneself from broader interests at stake, a closed, technocratic process is more likely to reproduce the status quo and appease existing interests. Quanstrum and Hayward point out that, “it is only in health care, after all, that the same group that provides a service also tells us how valuable that service is and how much of it we need” (2004, 1078). Interest group bias in health care policy may be more likely to be overlooked in the absence of accountability to the public.

The complexity of health issues

That said, the challenges with following the Pragmatic Enlightened Model in a health policy context must be acknowledged. Many proponents in both the medical and patient communities would argue that efforts to involve the public in rather complex discussions of treatment options is simply too confusing. For example, in “Lessons from Mammography Wars”, Quanstrum and Hayward propose using thresholds to determine treatment: a lower threshold where the patient should not receive treatment, an upper threshold where the patient should receive treatment, and a middle region between the two in which patients can exercise their own discretion. A physician’s response to this proposal disputes the practicality of this suggestion: “How will the public deal with an approach that is much more complicated than a simple yes or no? In the end, if the patient is confused, everyone will suffer” (Burke 2010, 2569). The public’s reaction to the CTFPHC, which did not propose radical changes, illustrates the velocity with which health care issues can accelerate into citizen upset. These reactions support Beck’s (1992) argument that experts view science as determining risk while the general population is a perceiver of risk. Disagreement between the two positions results from a communication problem and the extent to which we can resolve this communication problem is uncertain.

Health care as an individual versus public experience

With this point, it is important to recognize that the health care context is different from other science-policy issues in that health is a personal, emotional experience that can carry with it a great deal of stress. One can argue that challenges to the technocratic model may only represent a fraction of the population—there are still those who wish to defer to the experts, regardless of scientific limitations. Thus, while discussion of risks with the public may result in more clear and honest policymaking, it may not be what is best for an individual’s health care. Given that macro-level conversations surrounding health will take place regardless of a patient’s personal preference, a resolution to this problem is likely only possible at the micro-level via interactions between doctor and patient. Doctors could
establish their patient’s preference from the outset, for instance, and conduct all subsequent conversations and treatment accordingly.

Simply in transition?
Of course, while the public’s ability to digest different intervention alternatives is in question, this confusion may be representative of a “transition” phase from technocracy to a more democratic way of making health policy decisions. Setting aside cognitive bias, public confusion may be expected after forty years of a relatively closed process—until recently, citizens have not been conditioned to think analytically about health care. In the meantime, the practical question of public confusion may be answered by devolving these discussions to doctors and patients, as the CTFPHC is careful to advise in its publications.

Convoluting the process and endangering ‘evidence-based’ policy
As Health Canada implicitly suggests in its Framework for Decision-Making, mandating a public consultation process will create a lengthier, and potentially more distorted decision-making process. The argument stands that leaving decisions to be made based on murky evidence necessitates an expert. Of course, while experts will always be present in the science-policy interface, deferring exclusively to experts necessitates an expectation of uninformed trust. However, at technocracy’s base is the assertion that laypeople are simply not equipped to participate in scientific decisions. As initially stated, achieving the PEM demand of rational discourse between scientists, policymakers and the public is at question.

Conclusion
The challenge remains—how can science be incorporated within the health policy process in such a way that deals effectively with uncertainty and, perhaps more importantly, in a way that politics does not trounce science? While acknowledging that there is no one clear path to a “correct” health policy process, this paper has attempted to highlight the opportunities and challenges to opening up the process and shifting towards a Pragmatic Enlightened Model of the science-policy interface. After laying out the technocratic model as compared with the decisionist and pragmatic models, and briefly considering the case study of “mammography wars”, this paper considers the tradeoffs of shifting away from technocracy in a health context. In matters of science, there is a knowledge gap between politicians, the public and experts with which to contend. While the Canadian government has recognized the need for external review and stakeholder consultation, the frequency and the process by which this is managed deserves review. Empowering citizens to think analytically about their own health will be a key component in successfully managing a shift from technocracy and to further incorporating the public into the complex decision-making process of health policy.
References


