RESOURCE WITHDRAWAL FROM MEDICAL SERVICES
DEVELOPING A BETTER UNDERSTANDING OF RESOURCE WITHDRAWAL FROM MEDICAL SERVICES THROUGH EXAMINATION OF ITS CHARACTERISTICS, GOVERNMENT POLICIES AND AN INITIATIVE

Mark Embrett, M.A.H.S.R., BSc.

A Thesis Submitted to the School of Graduate Studies in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy

McMaster University ©Copyright by Mark Embrett, October 2016
Current governments pay for unnecessary medical services, leading to suboptimal patient health outcomes and a waste of public resources. Several researchers and organizations have proposed methods to identify and assess medical services to determine if they are unnecessary; however, governments have been slow to adopt such methods on a routine basis. It is clear that evidence is rarely sufficient to motivate governments to withdraw resources from unnecessary medical services. Instead, governments are often influenced by social and political factors when they make such decisions. Through a better understanding of these factors, we may be able to find ways to incorporate evidence into governments’ decisions to withdraw resources from medical services. Qualitative methods were used to investigate how resource withdrawal is defined, factors influencing government resource withdrawal decisions in Ontario, and the effectiveness of Choosing Wisely Canada, an initiative led by the medical community to reduce unnecessary services.
Abstract
Resource withdrawal from unnecessary medical services is an important issue as the cost of health care continues to rise. In many countries, resource withdrawal is primarily determined by government policies that remove, restrict, reduce, or limit the availability of publically insured medical services. Ideally, resource withdrawal is the result of a careful assessment of clinical and economic evidence regarding a service’s safety and effectiveness in order to ensure that it is the most efficient use of resources. Despite advocacy for a routinized and systematic approach to the withdrawal of resources from medical services, research has indicated that political and social factors often influence government, resulting in decisions that are neither consistent nor transparent. In this dissertation I seek to understand factors that may influence resource withdrawal decisions in an attempt to promote a more routinized and systematic approach. In order to understand the resource withdrawal landscape and provide greater conceptual clarity, the first study in this dissertation identifies and explores its characteristics (antecedents, attributes, and outcomes). Definitions of two prominent terms, disinvestment, and rationing are proposed. In the second study, a qualitative analysis of two examples of resource withdrawal reveals how the characteristics of problem frames affect the shape and timing of government resource withdrawal policies. Findings support the proposition that the complexity of the story told within the problem frame affects the shape of the policy; while visibility affects the timing. In the third study, I analyzed the perspectives of key informants about the Choosing Wisely Canada (CWC) campaign, which has the aim of reducing unnecessary services by encouraging a discussion between physician and patient. Findings reveal that CWC was designed to address pressures from government, patients, and the public. However, CWC was not designed in a way that is expected to
address the underlying reasons unnecessary services are provided, including limited
time in the clinical encounter, patient demands, uncertainty in the care pathway, and
physician fear of litigation. Results from all three studies help establish a common
language, identify influences on government led resource withdrawal and reasons why
CWC is unlikely to reduce unnecessary services. Together this thesis provides insights
into some of the factors affecting resource withdrawal from medical services, and
findings may be used to help assess ways to improve the formulation of resource
withdrawal policies.
Acknowledgements

I would like to thank my supervisor, Dr. Glen Randall, for all the support and guidance he has provided me throughout my doctoral studies. When I looked back that I realize the full learning impact of the opportunities he has offered me and other fellow students.

In addition, I would like to thank my other committee members, Michelle Dion and John Lavis, for their insights into my research ideas and for the helpful feedback on my papers. The lessons learned from Michelle and John, whether in class or as an advisor, will have an everlasting impact on my current and future successes. Thank you, Glen, Michelle, and John, for sharing your experiences and knowledge with me throughout our time working together. You have demonstrated exemplar mentorship which has helped me through the rougher times these past five plus years.

I would like to thank all my professors and colleagues for their support. A special thanks to my fellow doctoral students - I have learned so much from all of you. My studies would not have been as enjoyable without my thesis support group – thanks Leigh-Anne, Francesca, Liz, Daniel, among others for getting through courses, comps and the thesis together. Neil, Ellie (Sharon), Xin, and Marjan for all of your friendship and support. You are some of the most brilliant and selfless people I have ever met. I hope we will get a chance to work together in the future so I can continue learning from you. Thank you also to all the support staff at CHEPA.

I am especially grateful to all my family and friends. I would be nowhere without all of your love and support. Mom, Russell, and Dad, you have always inspired me to go further. Ryan and Mathew, thank you for your friendship and support throughout my academic career. I could not have done it without you.
Contents

Chapter 1: Introduction................................................................. 1

Chapter 2: Identifying and clarifying resource withdrawal from medical services: A systematic qualitative synthesis of resource withdrawal characteristics and terms ........................................ 19

Chapter 3: How do characteristics of problem frames influence the shape and timing of government led resource withdrawal from medical services? A qualitative analysis of Ontario examples.................................................................................. 64

Chapter 4: Perspectives on Choosing Wisely Canada as an Approach to Reduce Unnecessary Medical Care: A Qualitative Study ........................................................................................................ 102

Chapter 5: Conclusions ........................................................................ 140
List of Figures

Chapter 2
Figure 1: Systematic Review Process .........................................................62
Figure 2: Characteristics of government led resource withdrawal from medical
services ...........................................................................................................63

Chapter 3
Figure 1: The progression of problem frames in the the policy process ............97
Figure 2: Characteristics of problem frame's influence on decision frames........98

List of Tables

Chapter 2
Table 1: Example of the overlap between the definitions of disinvestment and
rationing ...........................................................................................................61

Chapter 3
Table 1: Examples of resource withdrawal from medical services in Ontario (2004-
2014) ...............................................................................................................99
Table 2: Select examples of Oxycontin problem frames ..................................100
Table 3: Select examples of blood glucose test strip problem
frames ..............................................................................................................101

Chapter 4
Table 1: Characteristics of recruitment .........................................................138

List of Appendices

Chapter 1
Appendix 1: Characteristics of resource withdrawal terms used in the literature....163
Appendix 2: Table of definitions used for resource withdrawal term ..............167
Appendix 3: References for the figure 1: Characteristics of resource withdrawal....186

Chapter 4
Appendix 1: Semi-structured interview guide ...............................................191
Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABIM</td>
<td>American Board of Internal Medicine</td>
</tr>
<tr>
<td>BGTS</td>
<td>Blood glucose test strips</td>
</tr>
<tr>
<td>CADTH</td>
<td>Canadian Agency for Drugs and Technology in Health</td>
</tr>
<tr>
<td>CDA</td>
<td>Canadian Diabetes Association</td>
</tr>
<tr>
<td>CER</td>
<td>Cost effectiveness research</td>
</tr>
<tr>
<td>CMA</td>
<td>Canadian Medical Association</td>
</tr>
<tr>
<td>CW</td>
<td>Choosing Wisely</td>
</tr>
<tr>
<td>CWC</td>
<td>Choosing Wisely Canada</td>
</tr>
<tr>
<td>EBM</td>
<td>Evidence-based medicine</td>
</tr>
<tr>
<td>HTA</td>
<td>Health technology assessment</td>
</tr>
<tr>
<td>HTAi</td>
<td>Health technology assessment international</td>
</tr>
<tr>
<td>HTR</td>
<td>Health technology reassessments</td>
</tr>
<tr>
<td>ICES</td>
<td>Institute for Clinical Evaluative Sciences</td>
</tr>
<tr>
<td>IVF</td>
<td>In vitro fertilization</td>
</tr>
<tr>
<td>MOHTLC</td>
<td>Ministry of Health and Long Term Care</td>
</tr>
<tr>
<td>MP</td>
<td>Member of Parliament</td>
</tr>
<tr>
<td>MRI</td>
<td>Magnetic resonance imaging</td>
</tr>
<tr>
<td>NGO</td>
<td>Nongovernment organization</td>
</tr>
<tr>
<td>NPA</td>
<td>National Physicians’ Alliance</td>
</tr>
<tr>
<td>NSAA</td>
<td>Narcotics Safety and Awareness Act</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PBMA</td>
<td>Program budgeting and marginal analysis</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
</tbody>
</table>
Declaration of Academic Achievement
I, Mark Embrett, declare that this thesis titled, “Developing a better understanding of resource withdrawal from medical services through examination of its characteristics, government policies and an initiative” and the work presented in it are my own. I confirm that I conceptualized each study’s idea with input from my supervisor and committee members. I designed the protocols for each study along with help from my supervisor and committee members during meetings. I independently collected, analyzed, and interpreted all the data for the following studies. I wrote the first draft of each chapter in its entirety and then received several rounds of feedback from my supervisor and committee members on how to improve the chapters.
Chapter 1: Introduction

This doctoral dissertation follows a ‘sandwich thesis’ format and is composed of an introductory chapter, which provides an overview and broad context, three original research chapters, which present new knowledge generated through three distinct research studies, and a concluding chapter, which highlights the new knowledge generated and the contributions to the field of health policy. This introductory chapter provides an explanation of the current gaps are in the field of resource withdrawal from medical services and how the dissertation topic, *developing a better understanding of resource withdrawal from medical services through examination of its characteristics, policies, and an initiative*, aims to address these gaps. First, I review the current literature on resource withdrawal and identify the gaps. Next, I discuss proposed approaches to resource withdrawal and their limitations. Finally, I describe the research objectives for each of the three research studies and explain how each contributes to filling the gaps in the literature.

Current literature on resource withdrawal from medical services

Many governments express significant concern over the rising costs of their health systems and the growing evidence that they receive low value for resources spent on some medical services (Arah, Westert, Hurst, & Klazinga, 2006; Haas, Hall, Viney, & Gallego, 2012). In particular, medical services that are unnecessarily provided (Liu, 2003; O’Kane et al., 2012; Brien, Gheihman, & Tse, 2014) or do not have clear evidence regarding their effectiveness (Kaul, Kirchhoff, Morden, Vogeli, & Campbell, 2015; Naylor, 1995; R. Smith, 1991). For example, research indicates that only 20% of medical practices delivered in the United States have well-supported evidence of
effectiveness (Banta & Thacker, 1990), up to 40% of patients receive treatments of proven effectiveness, and up to 25% of patients receive treatments that are unnecessary or harmful (Elshaug, Hiller, Tunis, & Moss, 2007). Together, this accounts for as much as 30% of healthcare expenditures (Berwick & Hackbarth, 2012).

Withdrawing resources from unnecessary medical services is one approach to increasing the likelihood that evidence-based care is delivered to people when they need it, and that the care provided will be safe and effective. I define resource withdrawal as the direct or indirect reduction, restriction, or denial of public entitlement to government-funded medical services. I define unnecessary medical services as those services that have evidence indicating they are: (1) harmful (may hurt patients); (2) clinically ineffective (do not help patients); (3) comparatively ineffective (not the best option for patients); or (4) cost ineffective (lower value as compared to other services).

I define government decisions as equivalent to government policymaking, which Liu (2003) describes as having the following four characteristics: aligns with issues on the government agenda; based on formally articulated decisions stated in a legal document; affects members of the public (equivalent to public policy); and has rules for operation and guidelines for implementation. In relation to healthcare, decisions are in the form of regulation in which government make decisions regarding coverage, financing, remuneration of providers, access of providers to healthcare markets, access
of patients to service providers, and the benefits packages of medical services (Bohn, et al., 2012). These decisions may be made at a state level or a ministrial level through government’s authoritative power. During the last decade, there has been growing interest in understanding, developing, implementing and evaluating evidence-based processes for withdrawing resources from unnecessary care in order to improve health system performance, but none have been formally adopted by government (Elshaug, Watt, Moss, & Hiller, 2009; Gerdvilaite & Nachtnebel, 2011; National Health Committee, 2012). Several papers have described decision support tools to identify and assess which medical services are the most appropriate for being targeted for resource withdrawal. For example, Elshaug and colleagues (2009) propose a ‘multi-platform’ approach to sampling research evidence including a systematic search of the peer-reviewed literature, a targeted database search of the gray literature, and opportunistic sampling of other sources. Evidence from across the search platforms is used to identify potential candidates for resource withdrawal. A plethora of other decision support tools have also been designed to assist in clinical decision-making (Fischer, 2012), patient safety/ preference (Ratcliffe et al., 2009), resource allocation (Guindo et al., 2012), priority setting (Baltussen et al, 2006) and ethics (Loyens & Maesschalk, 2010). These decision support tools have been designed using various methods such as multi-criteria decision making (Thokala, Duenas, & The, 2012), and program budgeting and marginal analysis (Edwards et al., 2014; Mitton, Dionne, Damji, Campbell, & Bryan, 2011) and others (García-Armesto, Campillo-Artero, & Bernal-Delgado, 2013; Ibargoyen-Roteta, Gutiérrez-Ibarluzea, & Asua, 2010).
Even though withdrawing resources from unnecessary medical services seems reasonable, governments have struggled to adopt routinized, evidence-based approaches to the withdrawal of resources from such services. The limited use of these decision support tools for resource withdrawal has been attributed to several factors including a lack of research evidence, disagreement and confusion among experts about the ideal type of evidence for assessing the outcomes of resource withdrawal (Robinson, Glasby, & Allen, 2013), a lack of top-down support, resistance from clinicians, and financial and human resource limitations (Mackean et al., 2013). The lack of research evidence and disagreement about appropriate evidence is a substantial problem for resource withdrawal from existing medical services because a large proportion are based on historical practices and experiences and do not necessarily have adequate research evidence. This absence of clinical evidence for many medical services makes it difficult to objectively determine which services are the most appropriate to publicly fund (Banta & Thacker, 1990; Prasad & Ioannidis, 2014).

Instead of using transparent, evidence-based processes, governments have a history of withdrawing resources from these unnecessary medical services only when other reasons support such a decision. This raises the question, if evidence does not drive government decision making around resource withdrawal then what factors and circumstances do help explain these decisions? There are several political and social factors that influence these decisions in various ways, such as ethical and administrative dilemmas (Giacomini, 1999), stakeholder support or health system dynamics (Giacomini et al., 2000), self-interest of government and public actors
(Klein et al., 1995), organizational characteristics (Daniels et al., 2013), administrative processes or resources (Elshaug et al., 2007), blame avoidance (Ham & Coulter, 2001), as well as the framing and local context of decision making (Russell, Swinglehurst, & Greenhalgh, 2014).

It is important to identify influences on government resource withdrawal decisions if we are to move toward achieving a more evidence-based system that removes or reduces unnecessary care. The lack of government implementation of transparent, evidence-based processes may be due to several factors which have not yet been fully explored, but that this dissertation will investigate.

**Identify the current gaps in understanding resource withdrawal and the struggle with current approaches**

In reviewing the literature on resource withdrawal, it is clear that numerous gaps exist regarding what may be influencing government’s decisions to withdrawal from unnecessary medical services. Much of the current work in resource withdrawal recognizes the importance of using the best evidence to identify and assess candidates for resource withdrawal (Elshaug, Watt, Mundy, & Willis, 2012; Nuti, Vainieri, & Bonini, 2010; Polisena et al., 2013). Some of this research discusses the challenges of identifying candidates, deciding the magnitude of resource withdrawal (partial or full) or assessing what kind of patients and in what situation a service should be withdrawn from (Edwards et al., 2014; García-Armeto et al., 2013). At the same time, there is much less work that explains the impact of other factors influencing a decision to
withdraw resources. Although some research has identified a lack of political, clinical and administrative will as a barrier to implementing resource withdrawal decisions (Haas, Hall, Viney, & Gallego, 2012), it is evident that a more thorough analysis of resource withdrawal decisions is needed to identify possible influences and explain their impact.

**Overarching research objectives**

The dissertation brings together three studies that address specific gaps in the literature to achieve the overall objective of developing a better understanding of what influences resource withdrawal to progress towards the reduction of ineffective medical services. Taken together the three studies in this dissertation contribute to understanding elements of government led resource withdrawal and what may be influencing it providing insights into theory and research (study 1), public policymaking (study 2) and practice (study 3). First, establishing a consistent language that all stakeholders can use will facilitate communication around resource withdrawal antecedents, process, and outcomes (study one). Once a common use of terms is established, I identify the impact of how the framing of the resource withdrawal problem relates to the timing and shape of the chosen policy intervention (study 2). This will help stakeholders approach how to present resource withdrawal ideas. Finally, I reveal reasons behind the design features of a campaign aimed to reduce unnecessary care, the CWC campaign, and investigate whether or not key informants perceive that the design will address drivers of unnecessary care (study 3).
The objectives of the dissertation are:

- Identify and organize characteristics of government led resource withdrawal from medical services (Chapter 2);
- Present refined definitions for relevant terms related to government led resource withdrawal from medical services (Chapter 2);
- Describe how terms related to government led resource withdrawal from medical services interrelate (Chapter 2);
- Determine how characteristics of problem frames relate to the timing and shape of resource withdrawal decisions pursued by government (Chapter 3);
- Explain the rationale for CWC campaign’s design (Chapter 4); and
- Analyze stakeholder perceptions regarding the features of CWC aimed to reduce unnecessary care (Chapter 4).

**Introduction of the three research studies, their associated methods and underlying theoretical approaches, and the connection between them to answer the primary research question**

**Study 1**
Researchers have recommended tools to support systematic evidence-based resource withdrawal decisions, but none have been formally adopted by government. One reason may be related to the lack of clarity around what even constitutes resource withdrawal. Researchers cannot even agree on common definitions in discussions of resource withdrawal (Daniels, Williams, Robinson, & Spence, 2013; Gallego, Haas,
Hall, & Viney, 2010; Haas et al., 2012; Haines et al., 2014; Robinson, Glasby, & Allen, 2013). Inconsistent use of resource withdrawal terms has created a less than ideal landscape for communicating scope, reasons, processes and outcomes of resource withdrawal from medical services among researchers, advocates and policymakers (Daniels, Williams, Robinson, & Spence, 2013; Gallego et al., 2010; Gerdvilaite & Nachtnebel, 2011; Haines et al., 2014; Robinson, Glasby, & Allen, 2013). Several terms have been used to label resource withdrawal activities, such as rationing, disinvestment, delisting, deinsuring, and many others. However, there is a lack of clarity in how these terms differ in their approach, processes and outcomes, which perpetuates some confusion over the manner through which governments may withdraw resources to improve health system performance. For example, Rooshenas (2015) claims disinvestment is a poorly defined term that elicits a wide range of different understandings and reactions. Many stakeholders will even try to avoid using the term in discussion of resource withdrawal. Other terms, like rationing, create similar reactions among stakeholders.

Efforts of clarifying concepts have a long and substantial history in social science and policy research (Gerring, 2014b; Sartori, 1970). A clear, bounded concept is often necessary to facilitate communication among stakeholders. Public stakeholders, such as patients, as well other invested stakeholder such as healthcare providers, should have clarity about resource withdrawal implications on their health and the health of their patients. In other words, it is important to understand and agree on what government is doing to understand its consequences better. The goal of chapter two is
to address these gaps.

The academic and gray literature provides historical and current insight into how experts in the field of resource withdrawal and related areas (priority setting and resource allocation) use resource withdrawal terms, as well as how the use has changed over time. To analyze the terminology, I conduct a systematic search of the academic and gray literature with a qualitative synthesis approach to data analysis. This provides a systematic but flexible approach to the collection and analysis of data, which allows for insight into the current use of the terms by identifying disagreement, confusion, overlap, and unique characteristics of each term.

**Study 2**

The second gap addressed in this dissertation relates to the lack of policy concepts employed in the analysis of government resource withdrawal. Governments have made and continue to make resource withdrawal decisions that determine whether and under what conditions individuals may receive care. Thus far in resource withdrawal research, quantitative approaches have insufficiently addressed the context and causation that are paramount to understanding what influences policy decisions (Byrne, Olsen, & Duggan, 2009). One reason for this may be that quantitative approaches do not adequately integrate policy concepts into their analysis. Policy theory and concepts are critical to gain insight into what influences the shape and timing of government led resource withdrawal decisions. For example, governments may view the withdrawal of funding from many unnecessary medical services as
politically risky or not important enough to put it on their political agenda. Instead, some governments, such as the province of Ontario, have implemented one-off decisions for removing medical services such as delisting eye exams (Kiran et al., 2013). Use of policy concepts may help understand what factors influence the shape and timing of such decisions by providing insight into events that precede the decision, such as political debate and media discourse.

The second study addresses the second gap by carefully analyzing the role problem framing has in resource withdrawal decisions made by the Ministry of Health and Long-Term Care (MOHLTC) in the Canadian province of Ontario. This leads to a better understanding of how problem framing influences the MOHLTC choice of policy decisions of resource withdrawal. Examination of the framing may help explain why and how certain outcomes of withdrawal occur. The underlying assertion is that problems themselves do not demand political action; instead, it is through the strategic use of language by influential actors that a problem is interpreted as requiring a response (Stone, 1989, 2012). Importantly, although governments have a plethora of policy options to choose from when responding to a problem, they are often consistent in selecting similar tools to address similar problems. In other words, there is often an observable pattern between the framing of a problem and choice of policy solution (Peters, 2005). This relationship between the framing of the policy problem and the selection of the policy decision is central to many aspects of policy reform (Trebilcock & Hartle, 1982).
To understand how the use of problem frames affects resource withdrawal decisions, I analyze the construction of problem frames employed in examples of resource withdrawal in the Ontario provincial government. In study two I develop a novel framework for analyzing problem frames in public policy debates over time. The framework incorporates well-established theories of how and why policy issues turn into policy problems, applied to the topic of withdrawal resource (Dery, 2000; Rein & Schon, 1996; Rochefort & Cobb, 1993; Stone, 1989). I develop a two by two table that describes four quadrants in which a problem frame may exist and how it may influence a government’s policy decision frame. This conceptual framework is then used in the analysis of two examples of resource withdrawal in Ontario. Specifically, I analyze data from various media, parliamentary and policy documents to present a comprehensive account of the chronological development of each policy solution to explain how problem framing may be used to explain the shape and timing of resource withdrawal policy decisions. I employ an embedded case study of two MOHLTC resource withdrawal examples, Oxycontin and blood-glucose test strips.

**Study 3**

A third gap addressed in this dissertation relates to understanding the rationale for the design of an initiative aimed to reduce unnecessary care at the clinical level. In 2012, the Choosing Wisely (CW) campaign began in the US, led by the American Board of Internal Medicine, as an initiative aimed to reduce unnecessary services at the point of care. The campaign arose as a response to concerns that the delivery of unnecessary care may be partially attributed to physician behaviour (Brody, 2010; Fisher, Bynum,
& Skinner, 2009). CW uses expert opinion, combined with research evidence, to develop “do not do” lists that include services unlikely to benefit patients in certain situations. These lists are promoted to encourage physicians to have a discussion with their patients regarding whether or not to provide services on the list. CW targets physician behaviour because the decision to determine the appropriateness of healthcare resources is to a large degree the physician’s decision (Levinson & Huynh, 2014). CW attempts to change physician behaviour in the clinical encounter. Little is known about whether physicians will adopt the strategy in their practices and if adopting it will have the desired effect of reducing unnecessary care. Understanding the rationale for the design of a CW campaign example, Choosing Wisely Canada, will contribute to revealing what physicians consider pressures them to provide unnecessary services in the clinical encounter and whether CW initiatives will address these pressures.

The third study is designed to ask key informants to explain the rationale for the CWC campaign’s design and to analyze whether the features of CWC aimed to reduce unnecessary care are expected to address reasons physicians provide unnecessary care. Guided by procedures of the grounded theory approach to data collection and analysis, I analyzed data from key informant interviews to achieve the study objectives. Study three presents explanations for CWC’s design and offers the perspectives of physicians involved in CWC regarding the potential of CWC to reduce unnecessary care. What emerges from the findings contributes to our understanding of what is driving unnecessary care at the clinical level and how we may better develop policies
to address it.
References


http://doi.org/10.1056/NEJMp1415160


http://doi.org/10.1186/1471-2458-14-837


Chapter 2: Identifying and clarifying resource withdrawal from medical services: A systematic qualitative synthesis of resource withdrawal characteristics and terms

Abstract

Context: Characteristics of and terms related to government led resource withdrawal from medical services, including rationing and disinvestment, lack clarity, which may hinder effective communication and evidence-based decision-making for resource withdrawal from ineffective and unsafe medical services. The objectives of this study are to clarify resource withdrawal characteristics, identify related terms, and propose definitions of foundational terms.

Methods: A systematic qualitative synthesis of characteristics and terms found through a search of the academic and gray literature was conducted. This approach involved extracting data about resource withdrawal characteristics and categorizing them as antecedents, attributes, or outcomes, identifying commonly used resource withdrawal terms, and comparing term usages.

Findings: Findings from an analysis of 106 documents demonstrated that characteristics, particularly antecedents and attributes, are used interchangeably among many authors but are differentiated by others. Our analysis resulted in a framework that organizes characteristics within their respective category. Furthermore, terms used to describe resource withdrawal are inconsistently defined and applied. In an effort to enhance precision, these terms were classified as either policy options or patient health outcomes and refined definitions for rationing and
disinvestment were developed. Rationing is defined as resource withdrawal that
denies, on average, patient health benefits. Disinvestment is defined as resource
withdrawal that results in, on average, improved or no change in health benefits.

**Conclusion:** Agreement on resource withdrawal’s foundational characteristics and
terminology is required before government led resource withdrawal becomes
routinized. The current synthesis presents definitions of resource withdrawal terms
that will promote consistency, benefit public policy dialogue, and health
policymaking. Results of this synthesis can also help promote accountability among
governments, organizations, and individuals responsible for resource withdrawal
decision-making by establishing clear categories and definitions of resource
withdrawal terminology.
Introduction

Many governments have expressed significant concern over the rising costs of healthcare (Arah, Westert, Hurst, & Klazinga, 2006; Haas et al., 2012). Public spending on unsafe, ineffective and inefficient medical services continues to contribute to rising health care costs. Such spending patterns contribute to the widespread belief that health systems receive low-quality outcomes in exchange for the resources invested into medical services (Arah et al., 2006). Direct government intervention through the modification of publicly funded health care coverage is one avenue for addressing inappropriate care. Researchers and health professionals have recommended mechanisms for resource withdrawal; however, the complexities associated with these processes are not well understood, particularly surrounding terminology, which has been independently defined (Daniels, Williams, Robinson, & Spence, 2013; Gallego, Haas, Hall, & Viney, 2010; Haas et al., 2012; Haines et al., 2014; Robinson et al., 2013). Rationing and disinvestment, among others, are examples of terms that have been independently defined without consensus. For this reason, clarification of terminology is necessary to accurately describe the situations in which resource withdrawal occurs, understand which factors influence resource withdrawal outcomes, and communicate resource withdrawal information effectively in research (Rodgers, 2000).

Background

During a time of unparalleled health expenditure, there exists a widespread belief that health systems achieve a poor return on investment. Empirical evidence indicates that...
only 20% of insured medical services have well-supported evidence regarding treatment effectiveness (Banta & Thacker, 1990), only 40% of patients receive treatments with proven effectiveness, and as much as 25% of patients receive treatments that are unnecessary or harmful (Elshaug et al., 2007). These findings suggest that there are many instances of patients receiving inappropriate care (Brien, Gheihman, & Tse, 2014) and that resources are going to waste. Medical care may be considered appropriate if, on average, the probability of benefits of providing a service sufficiently exceed the probability of harm (Shekelle, 2004).

As health technology assessment (HTA) becomes routinized in many high-income countries, researchers and health care organizations recommend that governments embrace an explicit, evidence-based, routinized process for resource withdrawal from inappropriate services. Proponents of evidence-based medicine (EBM), cost-effectiveness research (CER), and HTA have echoed these recommendations (Banta & Thacker, 1990; Mackean et al., 2013; Polisena et al., 2013; Robinson, Williams, Dickinson, Freeman, & Rumbold, 2012; Watt, Elshaug, Willis, & Hiller, 2011). Broadly speaking, resource withdrawal refers to the reduction, restriction, or removal of public entitlement to insured medical services (drugs, devices, diagnostics, and surgical procedures).

Through recent systematic reviews (Watt et al., 2011), geographical service utilization analyses (García-Armesto et al., 2013), health technology reassessment (HTR) (Mackean et al., 2013), and other studies (Elshaug et al., 2012), several proposals on
the most effective way to identify inappropriate services have been made. Despite calls for action, resource withdrawal from inappropriate services using such an explicit, evidence-based approach has not yet become routine within most countries. A lack of these formal mechanisms results in the continuation of funding for inappropriate services that are: (1) unsafe or harmful; (2) clinically ineffective; (3) comparatively ineffective; (4) cost ineffective (Ibargoyen-Roteta et al., 2010; Mitton et al., 2011; Nuti et al., 2010; Rumbold, Allen, & Harris, 2008a; Watt, Willis, Hodgetts, Elshaug, & Hiller, 2012).

Developing routine processes and mechanisms for resource withdrawal remains a challenge for governments for several reasons, including the fact that a large proportion of insured medical services are based on historical practices and experiences rather than their clinical efficacy and cost effectiveness (Banta & Thacker, 1990; Prasad, Cifu, & Ioannidis, 2012). There is also difficulty in distinguishing between different health care services to remedy an ailment, categorizing and organizing particular healthcare services for priority setting, and assessing services in a way that is both evidence-based and socially fair (Giacomini, 1999).

Governmental reluctance towards developing a process for withdrawing resources is often influenced by the political implications associated with the explicit removal of resources from health services. Contributing to this political difficulty is the absence of well-defined resource withdrawal terms, a void which leads to heightened levels of
confusion among medical professionals, policy makers, health organizations, politicians, patients/taxpayers, and other stakeholders (Daniels et al., 2013; Gallego et al., 2010; Gerdvilaite & Nachtnebel, 2011; Haines et al., 2014; Robinson et al., 2012). Heightened confusion may, in turn, lead to disagreement regarding various aspects of government policies targeting resource withdrawal, which contributes to the resistance towards developing explicit, routinized processes.

**Objectives: Clarifying concepts**

Before advancing a common understanding of how governments can successfully develop a regime for evidence-based resource withdrawal, the definitions of important terminology must be clarified. Unclear definitions make analyzing the value and implications of subject-specific terms difficult (Braveman & Gruskin, 2003; Uijen, Schers, Schellevis, & Van den bosch, 2012). When unclear definitions exist, further analysis is needed to provide clarity and enhance communication regarding the specific topic area, which in this case is government led resource withdrawal from medical services. To this end, the objectives of the present study are: (1) to identify shared and distinct characteristics (attributes, antecedents, and outcomes) related to government led resource withdrawal; (2) to identify terms related to government led resource withdrawal from medical services; and (3) to develop definitions for prominent terms used in the government led resource withdrawal literature to provide conceptual clarity.
Methods

Procedure of systematic qualitative synthesis

This study conducted a systematic qualitative synthesis, described by Saini & Shlonsky (Saini & Shlonsky, 2012), to collect and analyze the use of resource withdrawal characteristics and terms within academic and gray literature. The entire synthesis consists of eleven steps, the first of which was setting objectives (described above). This approach to qualitative synthesis methodology is intended to enhance understanding of how different concepts connect and interact with one another. Under this methodology, the lead researcher’s (ME) task is to utilize secondary analysis of the existing literature as data on the subject (resource withdrawal from medical services) to investigate relationships between terms and define important terms using their characteristics, provided sufficient data exist. The result of the synthesis is the researcher’s interpretation of the findings of the original eligible studies (Zimmer, 2006). In this way, the primary comparative data for the present analysis is the description and interpretation of the use of resource withdrawal terms’ characteristics in the academic and gray literature.

Characteristics (antecedents, attributes, outcomes) of the terms include the antecedents, attributes, and outcomes. Each are defined in the following manner (Rodgers, 2000):

1) An antecedent is an event that is reported to have logically preceded the resource withdrawal.
2) An attribute is an inherent quality or feature of the resource withdrawal process.

3) An outcome is an occurrence that results from resource withdrawal at the service (e.g., reduced, restricted, or denied), patient (e.g., improved, maintained or reduced health outcome) or health system (e.g., efficiency, spending) level.

The analysis orients around these characteristics, similar to a concept analysis approach, which is often used in nursing research (Baisch, 2009; Hupcey & Penrod, 2005; Morse, 1995). Patterns of characteristics’ use that emerged in the analysis were used to help synthesize characteristics and meanings of specific terms identified as important through iterative analysis of the literature.

**Eligibility/scope of research.** Establishing the breadth of the research was step 2 in the systematic qualitative synthesis. Given the review focused on government led resource withdrawal from medical services, we included articles that used resource withdrawal terms related to government regulation of resources used on medical services. Articles and policy documents were included if they:

1) described/interpreted a resource withdrawal activity (e.g., delisting, rationing, disinvesting, decommissioning) that is related to medical service(s) (drugs, devices, diagnostics and surgical procedures);

2) described/interpreted the role of government (national/ subnational/ local) in
the process of resource withdrawal;

3) focused on the Organization of Economic Cooperation and Development (OECD) countries; and

4) published in English

OECD countries were chosen to focus on countries with health systems in which government have a well-developed role in regulating medical services.

**Information sources.** Step three included undertaking searches and information retrieval. Academic electronic databases provided the platform for searching scholarly papers. The gray literature included government policy reports and nongovernment organization (NGO) reports. Gray literature was obtained through websites that were originally identified using the Canadian Agency for Drugs and Technology in Health (CADTH) advice for searching health-related gray literature (Canadian Association for Drugs and Technologies in Health, 2014). Specific articles were also identified through reference chaining and the provision of alerts from electronic databases advising that newly published articles matched search criteria.

Relevant studies were identified through a search of the following eight electronic databases and platforms: CINAHL, Embase, HealthSTAR, Medline, ProQuest, PsycINFO, Scholar Portal, and Web of Science. The search was conducted in November 2014. Keywords related to resource withdrawal (disinvest OR divest OR decommission OR delist OR ration OR deinsure OR displace OR replace OR retract
OR restrict) and health service type ("health service" OR "healthcare service" OR "medical service” OR “drug therapy” OR “diagnostic service” OR “laboratory service” OR technology) were used. Truncations of terms were searched separately within each database in order to capture all possible iterations of keywords in the literature. The search identified articles that had the listed terms in the title, abstract, or keywords. The same set of terms was used to search the gray literature.

Data screening extraction. Step four included screening each article’s title and abstract for eligibility. As articles were screened, eligible articles were classified by study type (step 5). After title and abstracts screening, each eligible article’s full text was reviewed to further determine if the paper was eligible (step 6). During full text review, the primary researcher (ME) extracted the following data from all eligible articles: definition, antecedents, attributes, outcomes on service, patient, and health system, and medical service type. Characteristics of the studies were also extracted, including study country, objective, policy strategies, findings, methods, and implications (Step 7). If a term’s definition was explicitly stated, it was copied to the data extraction table. If the articles did not explicitly provide term definition but implied it, the primary investigator developed a definition based on the original study’s implications.

Step eight (quality assessment) was not conducted in this study because a significant majority of the studies were commentaries, essays or opinion pieces with not methods or results to assess. Furthermore, because the objectives were to extract definitions of
terms and not report the results of the study, quality assessment was not deemed necessary. After the primary investigator reviewed an initial set of articles at the full text stage, both the primary investigator and a second researcher extracted data from these articles. Results from both researchers’ data extractions were compared for all articles. There were no significant discrepancies to report between the data extractions.

**Data synthesis.** Data comparison and synthesis were conducted iteratively throughout the analytic process by the primary investigator (ME) (step 9). Throughout the extraction of relevant data, information was consistently and thoroughly reviewed and analyzed to produce preliminary descriptions of patterns found in the studies. The primary investigator explored relationships both within and among the antecedents, attributes, and outcomes described in the literature. The primary investigator proceeded to identify and extract the ways in which characteristics were associated with prominent terms. Characteristics were then integrated into a synthesis table, where overlap and differences could be more readily identified and described. Review and analysis of the terms, and how their characteristics were described, was conducted in order to synthesize categories for resource withdrawal terms with definitions of prominent terms (step 10). Due to the nature of the review, analyzing researcher and policymaker use of resource withdrawal terms (as opposed to results of their analysis), quality appraisal of studies was deemed unnecessary. Step 11 was disseminating the results, which has not been completed as of this writing.
Results

Figure 1 illustrates the steps for the literature search and screening of both academic and gray literature databases. The academic literature search uncovered 4407 articles across all databases. Each database was reviewed sequentially, which meant duplicates were not removed until the full text review stage. Title and abstract screening resulting in 146 eligible articles. At this stage all eligible articles were combined and 13 duplicates were found and removed, leaving 133 articles for full-text review. Of these, 33 articles met eligibility criteria. Reference checking was used to identify another 36 eligible articles. Periodic updates of newly released articles that met search criteria from the electronic databases resulted in 11 additional eligible. As a result, 80 academic articles were included. The CADTH tool for searching gray literature resulted in 385 articles, of which 26 were eligible for inclusion. In total, 106 articles met the eligibility criteria and were included in the analysis.

Appendix 1 details how authors have used the same characteristics to refer to different resource withdrawal terms. From these results, it is evident that there has been extensive overlap of, confusion surrounding, and contradiction between two prominent terms: (1) rationing and (2) disinvestment. The remaining terms identified in appendix 1 and 3 have been categorized as policy options, and will be discussed below.

Resource Withdrawal Characteristics

Findings from the present study help categorize various resource withdrawal characteristics into antecedents, attributes, and outcomes. Figure 2 depicts all the
prominent descriptions of resource withdrawal found in the literature and organizes them into their associated characteristics (antecedent, attributes, outcomes). Within each column, the prominent description of each resource withdrawal characteristic is identified. The process began with antecedents that have been identified to logically precede resource withdrawal, which was followed by the various processes that governments have used to identify medical services and the policy options that they have to withdraw resources. Finally there were the outcomes of withdrawal, which we have categorized as either patient or health system outcomes. The main components of each characteristic that were identified in the table are described in each section below.

**Antecedents to resource withdrawal.** Antecedents, often referred to as ‘triggers for resource withdrawal’, are events that proceed, and logically lead to, resource withdrawal. Appendix 1 includes all antecedents found in the search. It is important to note that the articles described many of the antecedents as potential precursors, but lacked analysis aimed at uncovering the underlying reasons for resource withdrawal. Antecedents were characterised into one of three categories: (1) emergence of new research evidence, (2) introduction of a new technology, or (3) budget restrictions.

**Emergence of new research evidence.** Articles described research evidence as a theoretical trigger for resource withdrawal. Having said this, the present analysis did not find a clear example of resource withdrawal initiated by the emergence of new evidence. Authors identify the following evidence-based antecedents have the
potential to precede resource withdrawal: discovery that a service is unsafe or harmful; discovery that a service is ineffective; discovery that a service is effective but has poor cost-effectiveness; discovery that a service is comparatively ineffective; or discovery that there is evidence of regional variation in the use of a medical service (Elshaug, Watt, et al., 2009; Gerdvilaite & Nachtnebel, 2011; Moreira, 2011; Robinson et al., 2012; Rumbold et al., 2008a; Schubert, Sean, Aiken, & Geest, 2012; Walker, Palmer, & Sculpher, 2007). The observed lack of examples demonstrating resources withdrawal that resulted from the emergence of evidence may be attributed the ‘black box’ that encompasses much of public policy decision making surrounding government led resource withdrawal (Karnon, Carlton, Czoski-Murray, & Smith, 2009; Mitton & Donaldson, 2002). This possibility speaks to the difficulty of evidence-based decision-making in resource withdrawal, and the ambiguity found in evidence for clinical effectiveness (Naylor, 1995). Although this search failed to identify an explicit example of emerging evidence immediately preceding a process that led to government led resource withdrawal, emerging research evidence was considered by many to be the standard gateway to an explicit identification, assessment, and implementation of resource withdrawal.

Introduction of a new technology. New technologies that were adopted into benefits packages for publicly insured services, whether more cost-effective or not, were viewed as an important prompt to replace existing technologies. Recent evidence from Prasad (Prasad et al., 2013; Prasad & Ioannidis, 2014) indicated that a large proportion of new technologies replace existing ones, despite the lack of clinical evidence that the
novel technologies are superior. Prasad identified over 140 medical services that have been superseded by new technologies despite evidence that the previous service was more clinically effective. Adopting a new technology with a lack of supportive evidence illustrates the pressure health systems are often under to adopt the ‘latest and greatest’ technologies and services. Perhaps most importantly, the introduction of new technology may lead to an implicit disinvestment from existing services, also referred to as obsolescence, rather than explicit policy-led withdrawal.

**Budget restrictions.** Budgetary events were the most cited trigger for resource withdrawal. This category included financial considerations that influence withdrawal including a reduction in the overall health care budget, overspending, and spending audits. Many researchers viewed cost savings as a likely goal of resource withdrawal (Daniels et al., 2013; Karnon et al., 2009; Polisena et al., 2013), and some measured potential cost savings (Nuti et al., 2010). None, however, reported measured cost savings within the health system. Many of the services targeted for resource withdrawal for budgetary reasons were services who’s medical necessity was contested, for example cosmetic breast surgery’(Russell et al., 2014) and in vitro fertilization (IVF) (Giacomini, Hurley, & Stoddart, 2000; Redmayne & Klein, 1993b; Watt et al., 2011). Importantly, cost was rarely the sole reason for service removal. Instead, cost-effectiveness was often used as a measure to help support withdrawal decisions.

**Attributes for identifying services for resource withdrawal.** Attributes of resource
withdrawal relate to the process of implicitly or explicitly identifying and assessing services for withdrawal. The process has several phases, none of which are clearly detailed in execution of government led resource withdrawal. Despite lack of detailed examples, recommendations for optimizing evidence based approaches are made throughout the literature. Approaches that have been recommended for identifying services well-suited for resource withdrawal include assessments of clinical effectiveness from EBM, CER, value assessment (HTA/HTR) and stakeholder consultation (Haines et al., 2014; Ibargoyen-Roteta et al., 2010; Martin, 2015; Nuti et al., 2010; Russell et al., 2014). Henshall (Henshall, Schuller, & Mardhani-Bayne, 2012) reports that experts from the health technology assessment international (HTAi) policy forum recommended that services be prioritized using robust evidence regarding their impact on patient health. Other scholars recommend engaging in resource withdrawal from services that have ‘low value’ in the health care system. The latter measure may be problematic, since the threshold for what constitutes as ‘low value’ may differ between health systems (Elshaug et al., 2012). Involving stakeholders throughout the withdrawal process, especially members of the public and health care service providers, was viewed as an essential factor in determining the success of a given resource withdrawal (Daniels et al., 2013; Elshaug, Hiller, & Moss, 2008; Polisena et al., 2013; Robinson et al., 2013; Watt, Hiller, et al., 2012).

Processes were described as either explicit or implicit, with much of the research acknowledging government conducts mostly implicit resource withdrawal, while recommending explicit processes. Explicit processes of resource withdrawal include
decisions made concerning the amount and forms of resources that are available, the recipients of resources, and the conditions under which resources will be received (Mechanic, 1997; National Health Committee, 2012; Pearson & Littlejohns, 2007). In the reviewed literature, explicit resource withdrawal was expected to involve significant political resistance because of its traceability (Ham & Coulter, 2001; Mechanic, 1997). Implicit decision-making, on the other hand, typically occurs at the micro- or meso-level, without involving direct government decisions regarding resource withdrawal from a specific service (Klein, Day, & Redmayne, 1995a). Instead, governments will often enact policies that encourage implicit, indirect withdrawal at an organizational or provider level, and these processes are frequently driven by changes in medical practice or reductions in the budget over time (Martin, 2015).

**Attributes of policy options for resource withdrawal.** Many of the resource withdrawal terms used in the literature are associated with policy options for withdrawal. In some cases, terms such as decommissioning, delisting, and de-insuring were used interchangeably with each other (Gerdvilaite & Nachtnebel, 2011; Rumbold et al., 2008a; V. a. Schmidt, 2008). The policy option chosen will directly affect the overall impact of resource withdrawal on the system and patient, but the policy options do not represent the final consequence of the resource withdrawal. To clarify the use of the terms, we classify policy options into the following categories: (1) defining insured services; (2) incentives; and (3) information.
Firstly, policy options may involve the complete or partial withdrawal of resources, which can be considered absolute and relative withdrawal, respectively (Kingsland, 1993; Mackean et al., 2013; Polisena et al., 2013; Russell et al., 2014; Watt, Willis, et al., 2012). Full withdrawal refers to the complete removal of governmental resources from a service, thereby eliminating the service’s availability through public provision or insurance. Partial withdrawal involves a reduction in resources provided to a service, thus reducing, without not entirely eliminating, accessibility of the service through public provision or insurance. Whether a given instance of resource withdrawal is categorized as full or partial depends largely on the policy option selected for implementation.

**Defining insured services (explicit/partial or full withdrawal).** In the literature analyzed, the most frequently referenced policy option was ‘defining health services’. Defining insured services is a direct, explicit method of resource withdrawal because it alters the manner through which public funds are provided for a particular service. Many of the terms used in the literature search were associated with defining insured services. These include the terms delisting, decommissioning, deinsuring, and restricting. Defining insured services may include:

- Removal of services from the public benefits;
- Replacement of the service with an alternative
- Reduction of the amount of service allowed to be provided
- Restricting provision or remuneration for a service to a specific patient or disease characteristic(s); and
Restricting provision or remuneration of a service to a specific type of healthcare providers and healthcare settings.

**Incentives.** Two categories of policy option incentives were identified in relation to resource withdrawal: (1) incentivizing patients and (2) incentivizing providers. Both types of incentivizing are implicit, partial withdraw approaches because the choice of providing or using services remains in the hands of the provider or patient. Patients may be incentivized to avoid accessing services through user charges, co-payments, or waitlisting. Many countries have already instituted increased user charges for pharmaceuticals, primary care, specialist care, emergency care, inpatient care, and long-term care. Despite these changes, the extent to which these disincentives are applied to ‘low value’ or inappropriate services is unclear (Thomson, Figueras, & Evetovits, 2014). Provider behaviour may be incentivized through altering remuneration levers, especially through the modification of billing amounts for specific services (Elshaug, Watt, et al., 2009). ‘Gating’ is another way to disincentivize providers by increasing the administrative difficulty associated with providing a given service. One example found of gating included removing items from a laboratory checklist, in a way that would require providers to manually request the test, was selected as a means of decreasing lab tests for vitamin B12 and serum ferritin (Paprica, 2013).

**Information (for policy makers, providers, and the public).** The provision of information to certain stakeholders has the potential to dissuade them from using
targeted medical services. Forms of information provision aimed at implicitly withdrawing resources include:

- The provision of guidelines for providers to follow while delivering care. Violating specific guidelines, whether mandatory or recommended, may result in serious repercussions beyond the denial of reimbursement. Guidelines are not generally mandatory, but provide a critical informational source for best practice (Elshaug, Watt, et al., 2009; National Health Committee, 2012; Russell et al., 2014; Thomson et al., 2014).

- The education of the public and providers about inappropriate and ‘low-value’ care effectiveness in order to reduce service reliance is not addressed in the articles analyzed, although others have reported its futility (Xingzhu Liu, 2003). Providing information on best practices and formal training, on the other hand, has resulted in an increased reliance on higher quality care (Thomson et al., 2014); and

- The monitoring of medical service use, including HTR, in order to evaluate the existing services further and provide additional information on best practice.

**Resource withdrawal outcomes: Impact on system and patient**

**Impact on the health care system.** The impact that resource withdraw ultimately has on a given health care system will depend on where, if anywhere, the withdrawn resources are reallocated to. There is limited evidence that deliberate reallocation of withdrawn resources occurs (Elshaug, Watt, et al., 2009; Gallego et al., 2010; Gerdvilaite & Nachtnebel, 2011; V. a. Schmidt, 2008). One process that aims to
reinvest resources through a systematic process is program budgeting and marginal analysis (PBMA) (Mitton & Donaldson, 2002; Mortimer, 2010; Polisena et al., 2013). However, results are mixed (Mortimer, 2010). Reallocation of withdrawn resources was primarily associated with the term disinvestment. Although resource withdrawal may actually benefit the system by reallocating resources to more efficient service, the more likely scenario is that the withdrawal ‘frees up’ resources for use elsewhere, but fails to predetermine where those resources will go (Mackean et al., 2013). In this scenario, it is impossible to determine if the resources will be used for more cost-effective services, or if they end up being reallocated at all. It will be important for future research to examine whether resource withdrawal from inappropriate services achieves some form of improve in health system performance.

**Impact on the patient.** The impact of resource withdrawal on the patient may be the most critical outcome. Patient health can, in essence, be conceptualized as the ‘ultimate dependent variable’, since improving the health of patients is the overall goal of the health care system (Porter, 2005; Starfield, 1974). The impact that resource withdrawal has on patients’ health depends largely on the clinical effectiveness of the specific service, and the presence, or lack thereof, of a suitable alternative service. There are three potential outcomes of providing a service to a patient: (1) no change in patient health, (2) improvement in patient health or (3) deterioration in patient health. Resource withdrawal from a service that is inappropriate, or expected to do more harm than good, will ultimately benefit a given patient’s expected health outcomes. Resource withdrawal from a service that is appropriate, or expected to do more good
than harm, will withhold potentially beneficial care from the patient, thus worsening their health. Exceptions exist when a medically optimal alternative service is made available.

Resource withdrawal terms

Terms that had sufficient description and application to synthesize are included in appendix 2, along with their associated definition, attributes, antecedents, outcomes, and health service type (when identified). Information in this appendix demonstrates the plethora of definitions used for several resource withdrawal terms. Twenty-three different definitions were found for disinvestment, 21 for rationing, four for decommissioning, four for delisting, three for HTR, one for de-insuring, and one for de-implementation.

As Table 1 demonstrates, the terms rationing and disinvestment have had overlapping definitions used to describe them, with certain characteristics included in some definitions and excluded from others. Some researchers, for example, have described disinvestment as a form of rationing. Elshaug and colleagues (2007) states, “for the clinician there is often concern that disinvestment represents a blunt instrument of rationing”. Decision makers involved in determining healthcare funding arrangements have also used the terms interchangeably (Rooshenas et al., 2015).

Several of the terms identified have been organized into the characteristics of resource withdrawal. De-listing, decommissioning, de-insuring and de-implementation have
been organized as attributes of government policy options that redefine public health insurance packages, as displayed in Figure 2. HTR is organized as an attribute in the process for identifying existing medical services.

**Defining prevalent resource withdrawal terms**

The final objective of the present study is to refine definitions of prevalent, commonly used resource withdrawal terms. As appendix 2 illustrates, rationing and disinvestment are two foundational terms that represent the outcomes of resource withdrawal, as opposed to interventions for identifying services (e.g., HTR) and policy options (e.g. de-listing). Table 2 provides examples of the prominent definitions of the two terms and illustrates the extensive overall between their uses. Our approach to refine the definitions of these foundational terms was to synthesize their most common characteristics to form the basis for their respective definitions.

As described in the majority of literature, rationing has the underlying presumption of scarce resources; therefore rationing involves the prioritization of resources resulting in some services being excluded from public funding thereby denying people potentially beneficial services. In other words, if there were unlimited resources there would be no need to ration. In comparison, disinvestment has arisen as an approach to reducing ineffective, harmful, or ‘low value’ medical services to improve the health of patients. Definitions ought to focus on these defining characteristics of rationing and disinvestment: the ultimate impact either type of resource withdrawal has on patient health. In order to determine the ultimate impact on patient health, the clinical
effectiveness definition of appropriate care will be employed. This definition defines a service as appropriate if the benefits of providing a service sufficiently exceed the risks associated with the treatment (Shekelle, 2004). Given this, the following definitions are suggested:

- **Disinvestment**: the full or partial withdrawal of resources from a medical service that it is clinically expected, on average, to result in a patient achieving health benefits or no change in health benefit.
- **Rationing**: the full or partial withdrawal of resources from a medical service that it is clinically expected, on average, to result in a patient achieving diminished health benefits.

There are various methods to measure either condition specific or patient specific health outcomes and it is beyond the objectives of this study to propose an ideal measure. Hundreds of specific tools have been developed to measure health outcomes such as disease progression, patient survival time, patient satisfaction, and quality of life. Using these definitions, if resource withdrawal worsens any of these health outcomes, it is an example of rationing healthcare. If resource withdrawal does not worsen an outcome, then it can accurately be defined as disinvestment. Mapping whether or not resource withdrawal from a specific medical service affects all of these categories requires the application of a complex model which may not be fully established yet. Despite this, existing measurements of particular health outcomes for medical services will indeed be sufficient until new ones become available.
Discussion

This study addressed the confusion between the use of government-led resource withdrawal characteristics and terms found in the academic and gray literature. In addition to Figure 2, which encapsulates prominent descriptive characteristics of resource withdrawal, we have provided clarifying definitions of two of the most prominent and confused resource withdrawal terms: disinvestment and rationing. A key finding of our results is that characteristics of resource withdrawal have been associated with various terms in such a manner that none of the terms hold a consistent meaning for any of the characteristics. Although this finding is concerning, it is not unusual for terms and their associated characteristics to change over time, or between different contexts (Gerring, 2014a). Changes may serve as a way to map shifts in research trends that occurred when disinvestment emerged as a resource withdrawal term in health care.

Much of the inconsistent use of resource withdrawal terms has resulted from the differences between the traditional understandings of rationing and the emergent characteristics of disinvestment. Until approximately 2006, nearly all resource withdrawal activities described in the literature were considered a form of rationing. Disinvestment became increasingly popular in 2004, after the National Institute of Clinical Evidence (NICE) identified it as a priority activity for reducing spending and improving health care efficiency through the provision of appropriate care (Donaldson, 2005). Some scholars attribute this term’s rise in popularity to the
prominence of HTA (Gallego et al., 2010; Gerdvilaite & Nachtnebel, 2011; Watt et al., 2011). As illustrated by the results of the present study, the use of disinvestment has been far from consistent, and it is evident that the term borrowed some of the characteristics previously assigned to rationing, including some researchers defining it as an evidence-based process and a cost cutting procedure (García-Armesto et al., 2013).

A second key finding is that much of the existing literature primarily defines resource withdrawal terms, specifically rationing and disinvestment, based on either its antecedents or its attributes (see appendix 1 and 2). Resource withdrawal is a public policy decision (Burgoyne, 1997; Kinnunen, Lammintakanen, Myllykangas, Ryynänen, & Takala, 1998; R Klein, 1994, 1995), therefore, we argue that using these two characteristics as part of the definition will lead to more confusion because public policies have many contextual factors, beyond research evidence, which influence political decision making (Dobrow, Goel, Lemieux-Charles, & Black, 2006; Dobrow, Goel, & Upshur, 2004). Clinical and economic evidence is rarely enough to put issues onto a governmental agenda. Instead, a myriad of factors affect the likelihood that certain of public policy decisions will be prioritized (Black, 2001). The stated reasons for any government decision may not reflect the true policy objectives, but instead represent a strategic use of language. As a result, there may be many underlying ‘true’, but unstated, motivations. For example, a specific instance of resource withdrawal may be the result of a disagreement between various stakeholders on costs and benefits (Stone, 1989, 2012). This may be exacerbated by the perception
that withdrawing resources from medical services is a risky political decision (Elshaug, Watt, et al., 2009; Gerdvilaite & Nachtnebel, 2011; National Health Committee, 2012).

Furthermore, the use of process characteristics within the definition of a resource withdrawal term may also lead to continued confusion, especially since the process occurs at a public policy level. As our findings suggest, processes for assessing and recommending services for resource withdrawal are rarely straightforward (García-Arnesto et al., 2013) and many resource withdrawal decisions are politically or socially motivated. Influences, which can range from stakeholder input to interest group advocacy, become increasingly important in public policy decisions compared to clinical decision making (Dobrow et al., 2004). Protocols and guidelines for decision making fail to invariably predict outcomes, and often omit important contextual influences on the outcome (Porter, 2010). Countries also have different institutional structures that have a high level of influence on which decisions end up on the government’s agenda and how they these decisions are eventually formulated (Immergut, 1992; Roberts, 2009). For these reasons, the same withdrawal decision may indeed be made through a different process. If different processes can be used for a single definition, then the term no longer has clear boundaries and will likely not be consistently applied.

**Strengths and limitations**

**Strengths.** The primary strength of this study is the breadth of gray and academic
literature that it analyzed, which provided a plethora of documents from a variety of disciplines, countries, and sources. The literature analyzed included qualitative and quantitative studies, essays, editorials, and literature from HTA, priority setting economics, and other social science disciplines. Many of the reviews that were included in the present study focused on resource withdrawal from inappropriate or low value services (Elshaug, Watt, et al., 2009; Gallego et al., 2010; Leggett et al., 2012), which excluded some government led resource withdrawal from services that may be beneficial but not a high enough priority to be included in public benefits package (Aaron & Schwartz, 1990; Russell et al., 2014). The present study included all times of government led resource withdrawal, which provided additional literature to analyze.

**Limitations.** The present study is limited in that it only used one researcher to review the papers, with the exception of a small initial subset of articles for extraction comparison. The present study is limited to government led resource withdrawal associated with medical services specifically, and excludes withdrawal related to system reforms, organizational withdrawal, and clinical decisions regarding withdrawal. Many reforms that include redistribution of resources were not included in this study, including home care reform and mental health reform. Therefore, caution should be exercised if results are interpreted in other resource withdrawal contexts (i.e., beyond medical services per se). There is also a language bias, as only English studies are included. Furthermore, only OECD countries were included in analysis, therefore implications may not apply to non-OECD countries. We were not
interested in the results of each study included in the review, instead we were interested in their use of terms and characteristics, therefore the objectives of the study did not require the collection and reporting of AMSTAR (Shea et al., 2007) items including listing all studies that were not eligible, assessing the quality of evidence, and combining findings from studies. Furthermore, the results are based on a limited range of resource withdrawal decisions and should not necessarily be applied to resource withdrawal implementation without further study. Policy decisions should not be automatically considered implemented, as several other factors are known to influence implementation (Walt & Gilson, 1994), which this study did not explore.

**Implications for research**

The major implication of our findings is the suggestion to researchers to define resource withdrawal using the impact that a given service has on patient health. This will help set a standard for resource withdrawal terms, and focuses on ‘value’ for the patient. The definitions presented here do not require measurement of the expected health benefit gained or denied, which would mandate a choice of measurement to determine threshold (ex. quality adjusted life years). Instead, these revised definitions require evidence that the withdrawn service were expected to provide some benefit or not (through EBM) or to provide the most benefit from a set of alternatives as determined by CER. Two general scenarios exist: (1) the service provides benefit and is withdrawn (rationing); (2) the service provides no benefit, may do harm or is inferior to an alternative service option (disinvesting).
Since this review was completed, Parkinson et al. (2015) and Niven et al. (2015) have conducted similar reviews but with varying scope and objectives. Parkinson identified several criteria that have been used in OECD countries to identify candidates for withdrawal, which are captured by the antecedents identified here including new evidence, regional variation, stakeholder input, and introduction of new technology. Budget restrictions were not identified as a criterion. They also identify several ‘types of disinvestment’ and value based purchasing strategies which we have categorized as policy options. Niven et al.’s (2015) scoping review focuses on de-adoption of services, which limited their perspective to services with a type of resource withdrawal we have labelled ‘defining insured benefits’. Niven et al.’s (2015) review also identified 43 unique terms related to de-adoption, including disinvestment but not rationing. These reviews further demonstrate the ongoing overlap of resource withdrawal terms and their inconsistent use. Integration of our resource withdrawal framework with Parkinson et al.’s (2015 and Niven’s et al.’s; (2015) may help advance our progress by providing a more robust and comprehensive picture of resource withdrawal.

**Conclusion**

Following the rise of EBM, and subsequently HTA, government led explicit resource withdrawal from medical services has attracted substantial attention. Resource withdrawal from inappropriate services may have a significant impact on the improvement of value in resource spending within healthcare systems. It is likely however, that resource withdrawal will not achieve its full potential until its
characteristics and prominent terms are used accurately and reliably. We present a clarifying framework (figure 1) that identifies resource withdrawal’s main characteristics and organizes them. Furthermore, the established definitions presented here provide a step in the direction of clarifying resource withdrawal terms that are used in academic terminology used to study policymaking. Although primarily intended as a theoretical contribution, results have some potential to promote accountability by governments, organizations, and individuals responsible for resource withdrawal decisions at each level by emphasizing the ultimate goal of the health system: providing health benefit to patients. It is known that health systems are historically resistant to system-level reform (Hutchison, Abelson, & Lavis, 2001). By focusing the discussion on potential health benefits, this analysis may help shift focus away from basing public policy decisions on cost and towards improving patient health.
References


Canadian Association for Drugs and Technologies in Health. (2014). Grey matters: A
practical deep web search tool for evidence based medicine. Ottawa.


51
Technologies in Health. Ottawa.


http://doi.org/10.1016/j.healthpol.2013.01.007


Mackean, G., Noseworthy, T. W., Elshaug, A. G., Leggett, L., Littlejohns, P., Berezanski,


http://doi.org/10.1017/S0266462313000068


http://doi.org/10.1186/1748-5908-9-1


http://doi.org/10.1136/bmj.306.6891.1521

http://doi.org/10.1017/S0143814X09990110

Robinson, S., Glasby, J., & Allen, K. (2013). “It ain’t what you do it’s the way that you do


http://doi.org/10.1146/annurev.polisci.11.060606.135342


http://doi.org/10.1177/0272989X04264212


http://doi.org/10.1093/bmb/ldm007


http://doi.org/10.1016/j.healthpol.2011.07.007


http://doi.org/10.1017/S0266462312000402

Table 1: Example of the overlap between the definitions of disinvestment and rationing

<table>
<thead>
<tr>
<th>Description of definition</th>
<th>Disinvestment</th>
<th>Rationing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A process of selecting and reducing/removing select medical service</td>
<td>The formal processes and mechanisms that are used to reduce or discontinue the use of selected procedures and treatments (Gallego et al., 2010).</td>
<td>Explicit decisions about the amounts and types of resources to be made available, eligible populations, and specific rules for allocation (Mechanic, 1995, 1997).</td>
</tr>
<tr>
<td>A process of selecting and reducing/removing only harmful/inefficient or ineffective medical services</td>
<td>The cessation or restriction of potentially harmful, clinically ineffective or cost inefficient practices (Ibargoyen-Roteta et al., 2010). Taking resources from services that provide little or no value (C. Donaldson, Bate, Mitton, Dionne, &amp; Ruta, 2010).</td>
<td>The elimination or reduction in the provision of a service based on evidence of low value (Syrett, 2003). Limiting the choice of services to provide in an area with scarce resources. Choice is decided on effectiveness, equity and patient choice (Griffiths, 2002).</td>
</tr>
<tr>
<td>A process of withdrawing resources and reallocating them to medical services of higher value</td>
<td>The processes of (partially or completely) withdrawing health resources from any existing health care practices, procedures, technologies, or pharmaceuticals that are deemed to deliver little or no health gain for their cost and thus are not efficient health resource allocations. Within this is the view to reallocation or reinvestment towards technologies, practices, and programs with greater demonstrated (cost) effectiveness (Elshaug, Watt, et al., 2009)(Elshaug, Moss, et al., 2009; Elshaug et al., 2008, 2007, 2012; Garner &amp; Littlejohns, 2011; Gerdvilaite &amp; Nachtnebel, 2011).</td>
<td>A priority setting activity where resources are removed from the service such that other more effective ones are prioritized (Carlsson, 2010).</td>
</tr>
<tr>
<td>Restriction of medical services to only those who benefit</td>
<td>Funding decision to restrict the use of a service to those who may benefit the most (Russell et al., 2014).</td>
<td>Restriction of services to those who have a higher perceived benefit (Gravelle &amp; Siciliani, 2008).</td>
</tr>
</tbody>
</table>
Figure 1: Systematic Review Process

- **Search**
  - Academic Literature: 467 academic articles found through database searching, 258 academic articles found through database updates, 76 academic articles found through reference chaining.
  - Grey Literature: 385 articles found through CADTH search tool.

- **Title and abstract screening**
  - 344 academic articles included for full text review, 62 grey literature articles eligible.
  - 4597 academic articles excluded (13 duplicates), 323 grey literature articles excluded.

- **Full text eligibility assessment**
  - 80 academic articles eligible, 26 grey literature articles eligible.
  - 64 academic articles excluded, 35 grey literature articles excluded.

- **Included**
  - 106 articles included in synthesis.
Figure 2: Characteristics of government led resource withdrawal from medical services

1 See appendix 3 for citations within the diagram
Chapter 3: How do characteristics of problem frames influence the shape and timing of government led resource withdrawal from medical services? A qualitative analysis of Ontario examples

Abstract

Context: Several evidence-based approaches to identifying and assessing medical services for resource withdrawal have been proposed in academic and gray literature. Ideally these approaches would help reduce unnecessary services and improve health system performance; however, in reality few have been adopted by governments. Perhaps these approaches are not being adopted because they do not account for realities of public policy making. To determine whether the framing of resource withdrawal problems influence government decisions, this study analyzes political debate and media coverage leading up to resource withdrawal decisions.

Methods: The Ontario government’s resource withdrawal announcements between 2004 and 2014 were identified using two public databases. A framework describing how problem frames influence government resource withdrawal decisions was used in a qualitative content analysis of public discourse surrounding two resource withdrawal examples, Oxycontin and blood glucose test strips.

Findings: Government decision making is a partial reflection of the visibility of the policy issue and complexity of the causal story told within a problem frame. By considering there two characteristics of problem frames, we can better understand the shape and timing of government’s decisions to withdrawal resource from medical
services.

**Conclusion:** Policy concepts, such as problem framing, should be better integrated into the evidence-based resource withdrawal assessments to gain further insight into the complexities of resource withdrawal as a public policy decision.
**Introduction**

While many governments have shown interest in ensuring that medical services are safe and effective, research suggests that many medical services provided in OECD countries may be ineffective, lack evidence of effectiveness or be an inefficient use of public resources (Arah et al., 2006; Elshaug et al., 2012). Resource withdrawal from medical services, including the reduction, restriction, or removal of public entitlement to insured medical services (e.g., drugs, devices, diagnostics, and surgical procedures), is a policy option for governments seeking to reduce the use of these services. Although many researchers and health organizations advocate for governments to routinely use a systematic, evidence-based approach to identifying, assessing and withdrawing resources from ineffective medical services, many governments have not yet adopted such an approach (Elshaug, Watt, et al., 2009; Gallego et al., 2010; Haas et al., 2012). Instead, governments have often made one-off decisions regarding the withdrawal of medical services (Giacomini et al., 2000; Mitton & Donaldson, 2002). A better understanding of why governments make resource withdrawal decisions will help progress toward determining how to better incorporate clinical and economic evidence into their decision making.

Governments at the federal or provincial/state level design policy interventions, including administration, regulation, and legislation, to withdraw resources from medical services (Liu, 2003). A reason some governments have been slow to routinely use a systematic, evidence-based, routinized approach to resource withdrawal interventions may be because such approaches do not account for the shape and
timing of such decisions. Policymaking is complex, with many policy issues on policymakers’ agenda and many factors affecting whether the government makes decisions regarding these issues (Kingdon, 2003). Research evidence is one potential input, but while evidence is often necessary, it is rarely sufficient to drive policy change. Another important input that is critical to understanding policy development is problem framing (Rein and Schon, 1996; Rochefort & Cobb, 1993). Problem frames mediate the ideas surrounding policy issues. Ideas about problems are continually created, changed, and fought over in the political realm (Stone, 1989). In this paper, I explain how policy issues defined by problem frames influence the shape and timing of government resource withdrawal decisions. Shape refers to how problem frames influence government’s choice of stated policy solution. Timing refers how problem framing may push a policy issue onto the government agenda and force a policy decision. This approach may help uncover how clinical and economic evidence may be better incorporated into decision making to influence government resource withdrawal decisions.

**Conceptual framework: Policy issues, problem frames, and decision frames**

Three main concepts are necessary to describe the conceptual framework: policy issue, problem frame, and decision frame. A policy issue is an idea that a policy problem exists. These are unrefined, complex issues such as ‘healthcare reform’ or ‘healthcare sustainability. Governments do not often act on a policy issue; instead, public actors construct problem frames around the policy issue to help persuade government “what needs fixing and how it might be fixed” (Rein and Schon, 1996, p.
89). Problem frames act to simplify policy issues by providing ideas about the problem’s cause and its possible solution. Problem frames are intended to influence government decisions by restricting policy options to whatever form of solution the problem frame is proposing. Finally, when governments decide on a particular course of action, they provide a decision frame to justify their public policy decision.

Decision frames usually attempt to justify the policy change by articulating how the change will address the cause of the problem. Figure 1 illustrates the policy space in which a policy issue may be refined into a problem frame where it competes with other problem frames to leverage government decision frames. Next, I explain how two characteristics of problem frames, its complexity, and visibility, are expected to influence the shape and timing of decision frames.

**Characteristics of problem frames and their influence on decision frames**

The extent to which competing problem frames influence government decision frames depends on upon three components within each problem frame: the problem’s cause (what needs fixing), a proposed solution to the problem (how to fix it), and the extensiveness of the problem (how serious is the problem) (Rochefort & Cobb, 1993).

To best describe these components and their expected influence on decision frames, I have merged important tenets of prominent problem definition theories to develop a conceptual framework for predicting how problem frames may influence the shape and timing of the decision frame (figure 2).

The causal component of a problem frame defines the origin of the problem and those
responsible (Rochefort & Cobb, 1993). A group, person, technology, or similar may be targeted as the cause, often along with negative connotations directed at the responsible party. Individuals and groups will often attempt to reframe the problem to avoid blame for the current policy problem and to shift focus to the desired solution (Stone, 1989). The proposed solution includes policy options or ideas to address the problem’s cause according to that particular frame. Influential problem frames contain a simple, logical argument that explains how the solution will resolve the problem’s cause. This argument is told through what Stone (1989) referred to as a causal story. The complexity of the causal story is represented by the horizontal axis in figure 2. Public actors hoping to influence government decisions leverage simple causal stories that will restrict government options for policy. The more complex a causal story is, with more stages and more uncertainty, the less likely its problem frame will influence decision frames (Dery, 2000).

A simple causal story does not necessarily mean the problem frame will influence a decision frame. Any actor or group promoting their problem frame must also highlight the extensiveness of the problem to heighten visibility and attract public and government attention. Visibility is represented by the vertical axis in figure 2. Rochefort and Cobb (1993) describe several characteristics of extensiveness that may increase a problem frame’s visibility, including severity, incidence, novelty, proximity, and crisis. If successful, the problem frame gains attention (becomes visible) and puts pressure on the government to make a decision. When visibility is low, public and political awareness will also be low, and there will be little pressure
on the government to react. In this case, the government will have the option to delay a decision if the benefits of waiting exceed the benefits of making an immediate decision. In contrast, if visibility is high, there is pressure on the government to propose a decision frame to address the problem, because failure to address a visible problem can have undesirable political consequences. Similarly, the number of well-constructed policy frames (those with the simple causal story and high visibility) will, in turn, raise awareness of an issue and heighten visibility. The higher the number of well-constructed problem frames in the political arena, the more competition there is among the problem frames.

**Predicting the shape and timing of decision frames**

The conceptual framework posits that problem frames may be categorized into one of four quadrants that predict the shape and timing of the decision frame. First, if the problem frame has a complex causal story and low visibility (lower left quadrant), such problem frames in this quadrant are not competitive because they are not well constructed and are thus unlikely to influence either the shape or timing of the decision frame. Instead, alternative issues are more likely to gain and maintain government attention and elicit policy action.

If a problem frame has gained public and/or political attention but has a complex causal story (upper left quadrant), then the government may feel pressure to address the problem, but there is little competition between problem frames because none have been constructed well enough to offer a reasonable solution to the problem.
Problem frames in this quadrant are likely to hasten policy decisions by raising awareness about the issue, but the government has wider latitude to shape their decision frame.

If a problem frame has a simple causal story, but the problem is not visible (lower right quadrant), then the problem frame does not create sufficient pressure on governments to react to problem frame in a timely fashion, and they may delay policy decisions. Meanwhile, governments are more restricted in their choice of solutions because competitive problem frames have provided logical solutions to causes of the problem. The choice to delay or to act may be dependent on the perceived benefit and costs of choosing the prominent problem frame. In this quadrant, problem frames are likely to influence the shape of decision frame but have little influence on the timing. Finally, the problem frame may have a simple causal story and also have high visibility (upper right quadrant). In this situation, the government is under pressure to act in a timely fashion and has limited choice in the shape of decision frame. This is the most restrictive situation governments may be in because it will be difficult to choose or create a decision frame that does not align well with a prominent problem frame. Problem frames in this quadrant are expected to influence both the timing and the shape of a decision frame.

In summary, this framework presents a manner to understand the use of language in public discourse as a specific input in the policy process that, alongside evidence, should be considered when assessing the likelihood of policy outcomes. For example,
previous studies have reported that selecting and withdrawing services from public insurance schemes in Ontario has been primarily political motivated, rather than driven by medical evidence (Giacomini, Hurley, & Stoddart, 2000; Giacomini, 1999).

Objectives

The objective of this study was to explain how characteristics of problem frames (causality, extensiveness, solution) influence the shape and timing of government decisions to withdraw resources from medical services in Ontario.

Methods

To accomplish the objective, I designed and conducted a two-stage research process. First, I identified examples of government-led resource withdrawal from medical services in Ontario, Canada and categorized them by two characteristics of the decision frames: the cause and the policy solution chosen for resource withdrawal. Second, I conducted a qualitative analysis of problem framing for two examples of resource withdrawal of a medical service to explain how characteristics of problem frames may have influenced the shape and timing of the resultant decision frame. Each stage is detailed below.

Data collection

Stage 1. In stage one I, I used the term ‘medical service’ to search the MOHLTC news release database (http://www.health.gov.on.ca/en/news/) and the OHIP bulletin database (http://www.health.gov.on.ca/en/pro/programs/ohip/bulletins/) for examples
of resource withdrawal. From these sources, I identified announcements related to resource withdrawal of a medical service between 2004 and 2014. Second, I categorized resource withdrawal announcements into types of decision frames using two criteria: the stated reasons of withdrawal and policy options chosen. The causes of resource withdrawal were categorized by the description of why services were withdrawn. Policy options were categorized as those defined in study one, including defining insured services (e.g., delisting), incentives (e.g., remuneration) and information (e.g., monitoring). Governments are well known for selecting similar policy options to address similar problems (Trebilcock & Hartle, 1982); organizing findings by cause and solution helped provide a manner to identify possible patterns between stated reasons for withdrawal and type of withdrawal chosen, as well as to serve as a population from which to sample in stage 2.

**Stage 2.** In stage two, I selected two examples from the population identified in stage 1 and analyzed their problem framing by reviewing public discourse about each example (Rochefort & Cobb, 1994). Examples had to meet two eligibility criteria: (1) an explicit resource withdrawal and (2) a single medical service. Explicit resource withdrawal refers to decisions made regarding the amount of resources that are available and conditions under which resources will be received (Mechanic, 1997; National Health Committee, 2012; Pearson & Littlejohns, 2007). I chose to analyze an example of an explicit resource withdrawal decision because such decisions involve specific changes to resources to be spent on a medical service (Ham & Coulter, 2001; Mechanic, 1997). Implicit decisions, on the other hand, occur at the micro or meso
level and do not involve government specifying the amount or extent of resource removal from a specific service (Klein, Day, & Redmayne, 1995). To reduce complexity and possible confounders in the comparison, I choose a single medical service (as opposed to a group of services or tests, such as physiotherapy services). This also helps isolate the possible influence of problem frame characteristics on the decision frame. Selection criteria from eligible services included choosing services: (1) with different resource withdrawal options, which helps broaden representation; and (2) that were expected to have the most data for analysis, based on the quantity of published material found in stage 1.

For data collection in stage 2, I used three databases to identify text related to the resource withdrawal examples. First, for analysis of media coverage, I used LexisNexis and Factiva. I considered news media to be an important reflection of competing problem frames because of interactions among the media, the public and policymakers are often at the core of public policy decision making (Soroka, 2002). I also used the Hansard database of Ontario’s parliamentary debates to search for problem frames within political debate. The dialogue in parliamentary sessions has received less attention than the media; however, the parliamentary debate has a demonstrated impact on policy outcomes (Soroka, Penner, & Blidook, 2009). I used a time frame of two years previous to the resource withdrawal decision and one year after because there is often a narrow time window for government to decide upon a policy issue (Kingdon, 2003). I considered two years an adequate time frame to analyze the problem framing that led to a resource withdrawal decisions and any
relevant discussion afterward. However, the time frame may be extended for reasons such as insufficient data or the analysis indicates insightful problem frames may be found in an extended time frame. To search each database I used the medical service’s label as the key search term (described below).

Data Analysis

Qualitative content analysis was used to analyze textual data from the sources for the problem framing analysis. Qualitative content analysis is a systematic data reduction process that allows for the flexibility of the analysis to be theory driven (Schreier, 2014). In this process, identified articles and debates were read chronologically. During the review of the text, all content related to problem framing of the resource withdrawal of the medical service were extracted. Specifically, information regarding the cause of the problem, the extent of the problem and the proposed solution were extracted and saved into a data extraction table. The type of actor explaining the problem frame was also extracted. Types of actor may include the media, health professionals, private industry public organizations, private-not-for-profit, and politicians. Once extracted, the relevant texts among the databases were organized chronologically to assess the sequence of problem framing events that preceded the resource withdrawal. Once all relevant data was extracted and organized, I analyzed the use of problem frames and how they affected the shape and timing of resource withdrawal decision frame using the conceptual framework for problem frames described above. The influence of shape was assessed by how close the components of the problem frame (cause, extensiveness, proposed solution) were aligned with the
components of the decision frame. Influence of timing was assessed by how close the announcement of the decision frame aligned with the introduction or refinement of a problem frame in public discourse.

Results

Stage one

During the first stage, 145 articles related to resource withdrawal were found in the MOHLTC Health News Bulletin website from January 2004 to March 2014. During the same time period, 342 articles were found in the MOHTLC news release database using the search term ‘medical service’. From both sets of articles, twenty withdrawn medical services were found and categorized by stated reason for withdrawal and policy option chosen (Table 1).

Although the sample is small, there were several patterns that emerged between stated reasons for withdrawal and policy solution. Delisted services tended to be withdrawn because they were deemed medically unnecessary (4) or there were safety concerns (2). Reduced remuneration was linked with new evidence (3), or stakeholder input (3). Restricted remuneration was associated with either new evidence (3) or stakeholder input (2). Remaining pairs only occurred once.

Using the eligibility criteria described above to for stage two analysis; there were six explicit, single service resource withdrawal examples to choose from (blood glucose testing strips (BGTS), Oxycontin, Oxyneo, sinus ultrasound, umbilical cord blood
testing, and blood banking). Applying the selection criteria narrowed it down to two services. First, BGTS was chosen because it was the only service that was not delisted. To choose which delisted example to review, I reviewed the published announcements in stage 1 and chose Oxycontin because was the only service with more than one publication in stage 1. Next, I provide the qualitative analysis of Oxycontin and BGTS.

**Stage two**

**Oxycontin.** The decision to delist Oxycontin was announced in February 2012. A search found 225 articles in Lexis Nexus, 41 in Factiva, and 19 Hansard documents. Five problem frames were identified during the time frame of March 1st 2010-March 1-2013. Table 2 includes characteristics of the problem frames’ causal narrative, including the nature of the problem, proposed solution, and a representative narrative example used in either parliamentary debates or the media. The primary actors in this debate were various Ontario MPs, from both the ruling and opposition parties. The MPs spoke of the situations in their constituencies regarding the use and abuse of Oxycontin.

Oxycontin is a prescription pain reliever that in 2010 was known as an inexpensive black market drug that can be broken down from its intended slow-release form such that individuals may ingest the whole dosage at once by snorting or injecting the drug to induce a ‘euphoric experience’ (Massinon, 2010). This was an initial problem frame with a known cause (the drug), but no solution was presented clearly, and it received
little attention in public discourse. Therefore this initial problem frame can be placed in the lower left quadrant of the framework.

Oxycontin abuse gained visibility in the media during March 2010 when instances of drug addicts stealing Oxycontin from pharmacies were reported to be rising which put pharmacists in danger (Hurley, 2010). This frame allowed media and parliamentary actors to position criminals as the cause of Oxycontin abuse, and the rising incidence of criminal activity demonstrated its extensiveness. Prevention and judicial avenues were proposed as a possible solution in parliamentary debate. This problem frame existed in the upper left quadrant of the framework because it had received high visibility, but it had a complex causal story because no solution was well articulated to address the cause. Therefore, the government did not act on this problem frame as it failed to compete with better-constructed problem frames, described next. Following a report on the extensiveness of Oxycontin abuse, the Minister of Health at the time, Debra Matthews, explained in an interview that:

"Those who work in the field know there are some physicians who are prescribing enormous amounts...we know there are some pharmacies that are not asking the questions they should be asking." (Toronto Star, 2010)

This quote describes the cause of Oxycontin abuse as an overprescribing problem, which identified health care providers (physicians and pharmacists) as the cause because they are the primary providers of Oxycontin. In this frame, the extensiveness of the problem expanded to include a prominent group of citizens (physicians). At this
point, there were two causes for a visible problem: criminals and physicians. However, there was no clear solution positioned in either problem frame. Mathews suggested policy options such as “educating people in the appropriate use of and prescription of these drugs” (Toronto Star, 2010). Both problem frames existed in the upper left quadrant.

A third problem frame also emerged as members of the opposition parties claimed that the cause was both overprescribing and double doctoring. Double doctoring is a situation in which a patient visits more than one doctor to get multiple prescriptions. This new frame placed blame on the health system, and indirectly the government, for allowing Oxycontin users to abuse the system. For example, as stated by member of the opposition in the Ontario legislature:

“ODB (Ontario Drug Benefit) data indicates that double and multiple doctoring and polypharmacying are occurring at a significant rate. In 2007-2008, 21% of ODB recipients visited two to three physicians and 3.1% three or more to obtain Oxycontin” (Sousa, 2010)

Furthermore, members of the medical community implied the government as a responsible party,

“Ontario needs a system-wide program to address serious problems associated with the prescription narcotics and controlled substances” (Toronto Star, 2010).
At this point in the political debate, there were three problem frames in the public discourse that focus on Oxycontin abuse: patients’ taking advantage of the system to access Oxycontin, doctors overprescribing Oxycontin, and the health system allowing for both double doctoring and overprescribing. Problem frames associated with criminal activity failed to remain competitive in the political realm, potentially due to lack of an articulated solution (complex causal story). Each frame positioned the cause on a different actor (patient, health care provider and government, respectively). The three frames existed in the upper right quadrant of the framework as each were linked to a similar solution in media coverage and political debates: the development of a prescription database for drug monitoring.

In late 2010, the MOHLTC responded to the debates by proposing the Narcotics Safety and Awareness Act (NSAA). The NSAA decision frame targeted the problems with a drug monitoring system that ensured each issue was addressed. However, a complex causal story remained, as reflected by these remarks made during legislative debate in Ontario parliament after the proposal of the NSAA:

“Ontario’s current crisis of narcotics abuse is about a lack of appropriate pain management services and a failure in this province to ensure that every Ontarian has a primary care provider. It is about addictions and a lack of treatment services. It is about the failure to institute comprehensive, secure electronic health records and electronic prescriptions. It is about the lack of inter-professional collaboration and interdisciplinary care. It is about the lack
of education, especially impartial education by non-pharmaceutical educators, for our health professionals” (Miller, 2010).

The NSAA was designed to address the latter three causes presented above in one decision frame. The bill allocated responsibility onto the physicians and patient while refocusing causality away from the government for funding Oxycontin. For example, the MOHLTC endorsed the bill to “contribute to and promote appropriate prescribing and dispensing practices for monitored drugs in order to support access to monitored drugs for medically appropriate treatment” and “identify and reduce the abuse, misuse and diversion of monitored drugs”, and finally to “reduce the risk of addiction and death resulting from the abuse or misuse of monitored drugs” (O’Toole, 2010). The Bill received Royal Assent in November 2010 and came into effect a year later. However, despite this policy solution, it was evident that those supporting the competing frames were not satisfied as debate persisted over how to address problems related to Oxycontin abuse. Debate on all three problem frames continued throughout 2011.

In February 2012, the MOHTLC delisted Oxycontin, thus directly withdrawing resources. The delisting had occurred a day before the manufacturer announced they would stop making Oxycontin. The MOHLTC stated that the drug was faulty, as it was too easily tampered with to produce a high dosage; therefore, it was removed from the drug formulary. At this point, the MOHLTC articulated a new decision frame, which switched from blaming the addicted/abuser and physicians to placing blame on the drug itself. Importantly, it had been known for years that the drug was
too easily tampered with and made into a form that was more dangerous and more likely to be abused, as reported in media (Babbage, 2010).

**Blood glucose test strips.** The terms “diabetes” and “strip” together were searched in each of the three databases because the term ‘blood glucose test strip’ did not elicit any results related to resource withdrawal. The search of Factiva provided 21 articles; LexisNexis provided 47 articles. Hansard searching identified 104 debate transcripts. Unfortunately, none of the parliamentary debates surrounding diabetes was related to the resource withdrawal of diabetic strips, until after the policy was enacted. The government’s decision frame was the first frame presented in the media databases during the time frame, while there was no parliamentary debate regarding the resource withdrawal of BGTS. Therefore, this issue existed in the lower right quadrant, with a simple causal story but low visibility.

Along with the resource withdrawal announcement, the MOHLTC defended their decision by citing three research reports from prominent organizations, the Institute for Clinical Evaluative Sciences (ICES) (Gomes, Juurlink, Shah, Paterson, & Mamdani, 2009), the Canadian Agency for Drugs and Technologies in Health (CADTH) (CADTH, 2009) and the Canadian Diabetes Association (CDA) (Miller et al., 2008), each which each recommended a lesser amount for BGTS as a solution to the larger issue of increased spending (MOHLTC, 2013). To further investigate the role that the research reports on the problem framing of BGTS resource withdrawal may have had, each database was searched for any debate during 2008-2011.
(inclusive). The revised search identified 76 articles in Lexis Nexis, 14 articles in Factiva, and 22 Hansard transcripts. Review of the documents for problem frames related to BGTS resource withdrawal revealed that there was brief coverage of the reports in the newspapers in late 2009, after the ICES report was published. However, none of the reports were mentioned in parliamentary debates, nor was resource withdrawal of BGTS mentioned in parliamentary debates. This suggests that although evidence of the unnecessary use of BGTS resulting in overspending existed, it was not visible enough to gain public or political attention. During this period problem frames regarding BGTS existed in the lower left quadrant.

Although the ICES report received some media coverage after its release in 2009, there was no mention of any reports within the two years before the decision. This finding suggests that the government had the option to choose their desired response time. The available data do not indicate why the government decided to delay the decision. One possibility may be that problem frames for other policy issues dominated the political agenda, and therefore timing of the resource withdrawal decision was delayed.

Coverage related to resource withdrawal of BGTS began on July 9, 2013, after Ontario Health Minister Deb Matthews announced that funding for BGTS would be reduced as of August 1st, 2013. She stated,

“I am absolutely committed to letting the evidence guide our decisions . . . In this
case, we can reduce our expenditures on unnecessary blood-glucose testing, and that frees up money for something that does improve outcomes for patients” (Boyle, 2013).

Table 2 describes three problem frames; one from 2009 that was presented about the ICES report and two that were published after the decision to limit BGTS. There were media reports regarding the purchasing of cheaper BGTS in 2013 when BGTS were reported as Ontario’s provincial drug plan’s third largest expense, which cost around $120 million in 2011. The cost represented more than 3% of the principal budget for the drug plan (Gomes et al., 2009). This framed BGTS as an unaffordable expense; resultantly the MOHTLC approved less expensive testing strips (Canada Newswire, 2013).

The resource withdrawal of BGTS by the MOHTLC was completed before political actors had an opportunity to present alternative frames in public discourse. The national research reports, particularly the support of the patient advocacy group CDA, preceded this frame. Therefore, there was little opposition to the withdrawal from patients, providers or media. Without controversy, there is little opportunity for opposing frames to be presented (Katikireddi, Bond, & Hilton, 2014).

**Summaries of analysis using the conceptual framework**

In the example of Oxycontin, the government was initially resistant to the framing positioned in the media and political debates. According to the framework, this was because the problem had yet to gain enough visibility and there was no clear, feasible
solution tied to the problem (a complex causal story); thus placing initial frames in the lower left quadrant of the framework. As visibility of the problem grew, there was increased pressure for the MOHLTC to respond. The emergence of several well-constructed problem frames pressured the government to respond by highlighting the extensiveness of the problem. The characteristics of these frames switched to the bottom right quadrant of the framework as the causal story simplified (overprescribing, double doctoring) and the solution (drug database and monitoring) became better articulated in a simple causal story. As visibility increased, characteristics shifted to the upper right quadrant and the MOHLTC had restrictive choices, leading to the NSAA.

The BGTS example provided a demonstration of a vague policy issue (overspending in health care) that became linked to a cause (BGTS overuse) and a solution (limiting BGTS). Before the research that identified the overuse of BGTS was published, the issue lay in the lower left quadrant. When the research was published it simplified the causal story offered an opportunity for the MOHTLC to act without competition to their decision frame. However, the problem frame existed to the lower right because it was not made visible. Therefore the government had the option to delay a policy decision. Potentially the government had alternative policies to address and may have been waiting for an opportune time to withdrawal resources form BGTS. Cost savings combined with patient advocacy support was the “golden ticket” for the MOHLTC to withdraw resources from BGTS. Highlighting empirical evidence that has a forecasting component, such as potential cost savings with no ill consequences, will
help determine the likelihood of policy solutions (Rochefort & Cobb, 1994). For example, it was expected that limiting BGTS would save the drug plan up to $300 million annually (Boyle, 2010).

**Discussion**

The findings demonstrate how problem frames promoted by public actors influence the shape and timing of resource withdrawal decisions. Specifically, I demonstrated how the complexity of the causal story within the problem frame would primarily influence the shape of the government resource withdrawal decision frame by limiting choices for decision frames. Additionally, the visibility of the problem frame exerts pressure on the government to frame a policy decision, thus primarily influencing its timing. These results support the use of the conceptual framework to help understand how the language used in public discourse influence policy decisions and also suggest a few potential patterns that align with the framework. For example, problems that have low visibility with undesirable policy solutions may be delayed until the government can create a preferred decision frame (ex. delisting of Oxycontin).

Problems that have low visibility but have a strong link between a problem’s cause and the solution may be expedited if it suits government’s preferences. The withdrawal of BGTS is an example of government using an opportunity where there are no competing frames to achieve the desired outcome (reduced spending) by framing the policy as a logical reduction in an overused service that has no benefit to patients. If visibility is high, then the government is under pressure to respond by
either creating their decision frame (in situations with the complex causal story) or align with existing problem frames that have a simple causal story. The NSAA is an example of government being pressured to make a decision to address competing problem frames of high visibility that had a simple causal story (double doctoring, overprescribing). This latter finding suggests both characteristics may interact with each other as visibility may affect policy choice by promoting particular problem frame(s), and the complexity of the causal story may affect timing by restricting government options. Finally, results suggest an important role for competition among problem frames. In a situation that has several well-constructed problem frames competing, there may be greater pressure on the government to shape a policy that addresses more than one frame (for example, the NSAA).

**Strengths and limitations**

Strengths of the current study include the extensive use of three databases to search for public discourse on each of the resource withdrawal examples, which allowed for verification of the information extracted from the sources with each other, thereby improving the trustworthiness of the results. This study also used a combination of concepts from problem framing theories to develop a novel approach to understanding the impact of problem framing characteristics on resource withdrawal. This framework may be used in future research to test and refine its reliability and accuracy. This study also has some important limitations that should be considered before interpreting the findings. The primary limitation is the lack of available data on the example of BGTS resource withdrawal. The BGTS example did not include data
on problem framing in the original search after expansion one problem frame was found. This limited the comparison between the two examples and limited the generalizability and possible implications of the results. Other methods for identifying and selecting case of resource withdrawal should be attempted in the future.

**Findings in relation to existing research**

This is a novel study that assessed the role problem framing has on resource withdrawal and supports the results of other research analyzing real world factors of decision making. In a review of current priority setting literature, Smith and colleagues (2014) suggest that evidence-based frameworks would benefit from inclusion of real world factors that influence priority setting. They identify elements within categories of interests, institutions and ideas categories to help analyze the pressures that influence decision makers (N. Smith, Mitton, Davidson, & Williams, 2014). Additional research in Canada (Giacomini et al., 2002; Mitton & Donaldson, 2002) the U.S. (Giacomini, 1999), the UK (Daniels et al., 2013; R Klein et al., 1995b; Russell et al., 2014) and Australia (Elshaug et al., 2007) to name a few, have also identified additional contextual factors that influence priority setting activities such as resource withdrawal. Contextual factors found to influence resource withdrawal decisions include stakeholder ideas, health system dynamics (Giacomini et al., 2000), self-interest of government and public actors (R Klein et al., 1995b), organizational characteristics (Daniels et al., 2013), administrative process and resources (Elshaug et al., 2007). As resource withdrawal processes continue to proliferate, it is important to combine rigorous processes for identifying and assessing candidates for withdrawal with contextual factors that influence policy processes that have been presented in this
and previous studies. For example, problem frames that support self-interest of government and public actors or stake holder ideas may be more likely to influence decision frames. Similarly, problem frames that present the self-interest of government and public figures as a problem may be less likely to influence decision frames.

**Implications for policymakers**

Policy makers interested in evidence-informed policy making will want to consider carefully how the existing evidence might be used to design a simple causal story that establishes a logical connection between the cause and solution to the problem. Furthermore, policymakers will want to consider the possible influences of other competing problem frames. Finding suggest that the more complex a policy issue, the less likely clinical evidence will play a crucial role. For example, during the initial debates over Oxycontin abuse, there was little inclusion over the medical evidence regarding addictive characteristics of Oxycontin. Instead, the debate focused on the causes of addiction and mental health, criminal activity and improper patient and physician behavior. It was not until the government delisted Oxycontin when its addictive characteristics were used as the cause of the problem that led to users tampering with it. This example demonstrates how the existence of clinical evidence may not directly lead to resource withdrawal until it government policy makers decide to use it in their decision frame. Furthermore, the BGTS withdrawal provides an example of the government leveraging evidence to support their decision frame.
Implications for future research

The current study represents a step towards incorporating theories and concepts of the policy making cycle into resource withdrawal analysis. One way in which researchers interested in health economics or evidence-informed policymaking may help further research is to focus on incorporating policy theories and concepts into their economic or clinical assessments of medical services related to resource allocation or priority setting activities such as resource withdrawal. Understanding the shape and timing of resource withdrawal decisions will serve to provide a more comprehensive picture and how resource withdrawal fits into the policy cycle.

One manner in which future research may be used to better incorporate problem framing may be to consider what causal stories could arise from the results of a health technology or resource withdrawal assessment. To assess which causal stories may emerge, interested researchers may assess what stakeholders may have interest in proposing competing frames, how each frame may be interpreted by government and public actors and which manner (shape, time) the problem frame may influence government reception of the assessment. Another option may be to identify prominent ideas and values of competing interests to determine which groups may favorable or antagonistic toward resource withdrawal decisions.

To further test the conceptual framework, more examples of resource withdrawal are necessary to analyze. Future studies could include examples of resource withdrawal from different jurisdictions to determine if the framework holds up in different
healthcare systems. Analysis of whether similar problem frames lead to similar policy outcomes though a comparative analysis of two or more examples with the same resource withdrawal outcome would help further test the framework. Comparison of each of the four resource withdrawal categories described in stage one would help further determine if problem framing effects the different options of resource withdrawal similarly.
References


Drugs and Technologies in Health. Ottawa.


Mitton, C., & Donaldson, C. (2002). Setting priorities in Canadian regional health authorities: a survey of key decision makers. Health Policy (Amsterdam,


Schwarzer, R., & Siebert, U. (2009). Methods, procedures, and contextual characteristics of health technology assessment and health policy decision making: comparison of health technology assessment agencies in Germany,

http://doi.org/10.1017/S0266462309990092


http://doi.org/10.1177/0952076714529141


http://doi.org/10.1017/S0008423909990059


http://doi.org/10.1016/0144-8188(82)90012-6
Figure 1: The progression of problem frames in the policy process

Public actors turn policy issues into problem frames through causal stories that connect three components of problem frames.

- Causes of the problem
- Solutions to the problem
- Extensiveness of the problem

Problem Frame 1
Problem Frame 2
Problem Frame #n

Prominent Frame
Competing Frame

Decision Frame
Government choice of solution to address the cause of the problem

Many actors in political arena
Few actors in political arena
Figure 2: Characteristics of problem frame's influence on decision frames

<table>
<thead>
<tr>
<th>Complexity of the causal story</th>
<th>Visibility of problem (pressure on government)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complex</td>
<td>No competitive problem frame exists to shape decision frame</td>
</tr>
<tr>
<td></td>
<td>Likely to decide in a timely fashion</td>
</tr>
<tr>
<td></td>
<td>Existing problem frames restrict options for decision frame</td>
</tr>
<tr>
<td></td>
<td>Likely to decide in a timely fashion</td>
</tr>
<tr>
<td>Simple</td>
<td>No competitive problem frame exists to shape decision frame</td>
</tr>
<tr>
<td></td>
<td>Unlikely to decide</td>
</tr>
<tr>
<td></td>
<td>Existing problem frames restrict options for decision frame</td>
</tr>
<tr>
<td></td>
<td>Likely to delay decision if problem frame is undesirable</td>
</tr>
</tbody>
</table>
Table 1: Examples of resource withdrawal from medical services in Ontario (2004-2014)

<table>
<thead>
<tr>
<th>Policy options chosen for resource withdrawal</th>
<th>Ontario Ministry of Health and Long Term Care’s policy framing of resource withdrawal from medical services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defined insured services: delisting</td>
<td>Safety (crisis, adverse event)</td>
</tr>
<tr>
<td>- Oxycontin</td>
<td>- Routine eye exams</td>
</tr>
<tr>
<td>- Oxyneo</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Provider incentive: reduced remuneration</td>
<td>provider incentive: restricted remuneration restricting payment to certain indications</td>
</tr>
<tr>
<td>(decreasing physician payment)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Provider incentive: gating (administrative barriers)</td>
<td></td>
</tr>
<tr>
<td>Provider information: education</td>
<td></td>
</tr>
<tr>
<td>Provider information: guidelines</td>
<td></td>
</tr>
<tr>
<td>Provider information: monitoring</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Select examples of Oxycontin problem frames

<table>
<thead>
<tr>
<th>Problem frame summary</th>
<th>Primary actors/groups framing issue</th>
<th>Causal responsibility</th>
<th>Extensiveness of the problem</th>
<th>Solution</th>
<th>Examples of statements made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacies are being robbed for Oxycontin.</td>
<td>Pharmacists, MPs, Media</td>
<td>Drug abusers</td>
<td>Rising incidence of criminal activity</td>
<td>Unspecified judicial solutions</td>
<td>“It’s [theft of Oxycontin] out of our hands as a retailer or an individual person to try to resolve all the crime out there,” (pharmacist), (Hurley, 2010)</td>
</tr>
<tr>
<td>Concerns about physicians overprescribing</td>
<td>Media, MPs, Canadian Medical Association</td>
<td>Prescribing physicians, Double-doctoring patients</td>
<td>Risk of addiction due to overprescribing and double doctoring</td>
<td>Clinical guidelines to reinforce proper prescribing behaviour</td>
<td>“Medical specialists in Canada have released a set of guidelines for physicians to use when prescribing opioid medications to address concerns that the drugs are being misused and abused by patients.” (Bouzanne &amp; Ross, 2010)</td>
</tr>
<tr>
<td>Concerns about double doctoring</td>
<td>Media, MPs</td>
<td>Double-doctoring patients, Health system for allowing double doctoring</td>
<td>The incidence and extensiveness of Oxycontin abuse are increasing</td>
<td>Prescription registry</td>
<td>“The registry is really an important part of the process to be able to hopefully stop the process of double doctoring…” (Elliot, 2010)</td>
</tr>
<tr>
<td>Multiple problem frames being used at once</td>
<td>MOHLTC, MPs</td>
<td>Drug abusers, Physicians, Policymakers</td>
<td>Emphasis on incidence and severity of problem</td>
<td>Narcotics Safety and Awareness Act (NSAA)</td>
<td>“People are taking those narcotic drugs, not because they want them but to sell them in the street. So it’s overprescribing and dispensing … That’s why the minister is coming out with a strategy to create the database to monitor those dispensing.” (Ramal, 2010)</td>
</tr>
<tr>
<td>Oxycontin is too easily modified for stronger dosage</td>
<td>MOHLTC</td>
<td>Oxycontin</td>
<td>A harmful and unsafe drug is allowed on the market.</td>
<td>Remove the harmful drug from the provincial drug formulary.</td>
<td>“We know that Oxycontin will no longer be manufactured by Purdue pharmaceutical and that there is a new drug that is far less likely to be used for illicit purposes (Mathews, 2012)”</td>
</tr>
</tbody>
</table>

MP= Member of Parliament; MOHLTC=Ministry of Health and Long Term Care
Table 3: Select examples of blood glucose test strip problem frames

<table>
<thead>
<tr>
<th>Problem Frame</th>
<th>Primary actors/groups framing issue</th>
<th>Causation</th>
<th>Nature of the Problem</th>
<th>Solution</th>
<th>Example extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overuse of unnecessary BGTS</td>
<td>Media</td>
<td>Overuse</td>
<td>High costs associated with BGTS</td>
<td>Cutting back on insured BGTS</td>
<td>“Ontario could save tens and even hundreds of millions of dollars by cutting back on the number of unnecessary glucose tests conducted weekly by people 65 and older who have Type 2 diabetes, Toronto researchers suggest” (The Canadian Press, 2009)</td>
</tr>
<tr>
<td>Unsustainable spending in the health system</td>
<td>MOHLTC</td>
<td>Expensive BGTS</td>
<td>Severity of increased health costs</td>
<td>Purchase less expensive strips.</td>
<td>“Blood glucose test strips are the Ontario's public drug program's third largest expense, eating up about $120 million in 2011 and more than 3% of its budget. They also represent one of its fastest growing costs. Test strip usage has increased nearly 250%, to more than 263,000 people in 2008 from 76,000 in 1997. “(MediSure Canada, 2013)</td>
</tr>
<tr>
<td>Overuse of unnecessary BGTS</td>
<td>MOHLTC</td>
<td>Overprescribing of BGTS</td>
<td>Excessive amount of BGTS being used</td>
<td>Limit the amount of BGTS funded annually by public resources.</td>
<td>“Blood-sugar test strips used too often by low-risk patients” (Toronto Star, 2013)</td>
</tr>
</tbody>
</table>

MOHLTC = Ministry of Health and Long-Term Care

BGTS = Blood Glucose Test Strips
Chapter 4: Perspectives on Choosing Wisely Canada as an Approach to Reduce Unnecessary Medical Care: A Qualitative Study

Abstract

Background: Reducing monies spent on unnecessary medical care is one possible target to improve value in healthcare systems. Regional variation in the provision of medical care suggests physician behaviour and patient expectations influence the provision of unnecessary medical care. Recently, Choosing Wisely campaigns were created by organizations within the medical community to target unnecessary medical care by encouraging greater physician and patient dialogue about care, using top five “do not do” lists.

Objective: Examine the rationale for Choosing Wisely Canada’s (CWC) design and analyze stakeholder perceptions regarding the features of CWC aimed to reduce unnecessary medical care.

Methods: Semi-structured interviews were conducted with 21 key informants, mainly physicians, who had experience with CWC. A qualitative analysis of the interviews was conducted in order to explore CWC’s design rationale and characteristics in more detail.

Principal findings: Participants reported that the CWC was the medical community’s response to three pressures: (1) demand for unnecessary medical care from patients
during the clinical encounter; (2) public perception that physicians do not always prioritize patients’ needs; and (3) ‘blunt’ government policies aimed at reducing costs rather than improving patient care. Respondents stated that involving the patient in decision-making would help alleviate these pressures by promoting the clinical encounter as the paramount decision-point in achieving necessary care. However, CWC does not address several of the key reasons for providing unnecessary medical care, including: (1) time pressures in the clinical encounter; (2) uncertainty about the optimal care pathway; (3) and fear of litigation.

**Conclusion:** This study contributes to our understanding of the perceptions of physicians regarding the CWC campaign, many of whom report that CWC does little to address the clinical reasons for unnecessary medical care. The study also suggests that CWC does little to change physician behaviours or patient expectations, and is therefore unlikely to have a major influence on unnecessary medical care.
Introduction

As the cost of health systems continue to grow, finding ways to improve value for the money spent on them has become increasingly important (OECD, 2013). Reducing monies spent on unnecessary medical care is one possible target for governments to improve value. Although resource withdrawal is a public policy issue, provincial governments in Canada have been slow to respond with substantive, routinized approaches to reducing the use of unnecessary medical care. Recently, many Canadian medical organizations (e.g., Royal College of Physicians and Surgeons of Canada) and specialty associations (e.g., Canadian Association of Pathologists) have adopted a campaign called “Choosing Wisely Canada” (CWC). The campaign, based on the United States’ Choosing Wisely campaign, encourages specialty associations to create their own ‘do not do’ lists and promote them within their specialty area to discourage physicians from providing care that are deemed unnecessary in specific situations. This study examined key informant perspectives of the CWC campaign, as an example of a Choosing Wisely approach to reducing unnecessary medical care.

Background

In 2009, clinical experts from the Institute of Medicine in the United States (US) estimated that 30% of health care costs were spent on unnecessary medical care (Fisher et al., 2009). An analysis of spending growth among US regions has revealed growing regional variations in health care costs between historically similar regions (in cost per capita spending). Similar concerns have been expressed in Canada (Hayward, Guyatt, Moore, McKibbon, & Carter, 1997). Individual physician
behaviour in the clinical encounter with patients is considered to play a substantial role in these variations (Fisher et al., 2009). Research indicates that physicians in high-cost regions are more likely to provide unnecessary medical care than physicians in low-cost regions (Anthony et al., 2009).

In 2010, various medical specialty groups in the US were called to take action on this wastefulness. A proposal was made in the New England Journal of Medicine for each specialty area to develop the top five evidence-based ‘do not do’ lists (Brody, 2010). The top five lists were expected to be “a prescription for how, within that specialty, the most money could be saved most quickly without depriving the patient of meaningful medical benefits” (Brody, 2010, p. 2). Shortly after the call for action, the National Physicians’ Alliance (NPA) initiated a ‘five things’ list for several specialties in order to promote a more effective use of health care resources.

The American Board of Internal Medicine (ABIM) Foundation and Consumer Reports built on the work of Brody and in April of 2012 the NPA formally launching the Choosing Wisely (CW) campaign in the US with top five ‘do not do’ lists from nine specialty societies, followed by 17 more societies producing lists one year later (Blumenthal-Barby, 2013). The CW campaign was designed to improve patient care by encouraging a conversation between the physician and patient at the point of care about not providing an unnecessary test or procedure on the top five ‘do not do’ list, such as distributing antibiotics for infections that are presumed to be a viral respiratory illness (Wolfson, Santa, & Slass, 2014). Unnecessary medical care may be
defined as “a diagnostic or treatment service that provides no demonstrable
benefit to a patient” (Reilly, 2009, p 270). Since its inception, the number of specialty
societies involved in CW has grown to 70. Their ‘do not do’ lists are expected to focus
on tests and procedures within specialties that have good clinical evidence of overuse,
high costs, or potential for harm (Levinson et al., 2015). Each society is free to
develop their own list in an explicit manner of their choosing (Blumenthal-Barby,
2013). Details on the development of each list are included in the appendix to its
respective list through the CW website.

Since the CWC launch, there has been some skepticism expressed regarding the
ability of CW campaigns to reduce unnecessary medical care, including physicians’
knowledge of low-value care (which the campaign is intended to address), patients’
ability to ‘choose wisely’ in the context of medical care, and the inherent conflict of
interest physicians have in choosing a low-value service that offers a high margin of
remuneration (Volpp, Loewenstein, & Asch, 2012). The argument is that if patients
are uninformed about a medical service and the physician is unaware of its value, they
will not be able to make a shared decision about whether to deliver the service.
Furthermore, in many remuneration systems physicians are effectively financially
incentivized to provide some types of unnecessary service, especially if there is a low
probability of harm to the patient; this phenomenon can be considered part of a
broader phenomenon known as supplier induced demand (Xingzhu Liu & Mills,
2007). To address these concerns, CW campaigns have framed the campaign as a
waste reduction strategy and promoted professional values and responsibilities as a
primary motivator to change physician behaviours (Wolfson et al., 2014). Several members of the medical community, however, continue to call for more effective policies from healthcare payers to reduce unnecessary medical care (Mason, 2015). Despite this skepticism about CW campaigns, many countries have begun adopting its design and developed ‘do not do’ lists to promote within their own health system.

Adopted by the University of Toronto and the Canadian Medical Association (CMA), a Canadian version of CW, the CW’s first ‘offspring,’ was initiated in April 2014. To begin, eight specialty societies developed and released their ‘do not do’ lists. At the time of writing, 25 societies have produced and published ‘do not do’ lists. CWC has the same design as CW campaigns, as well as objectives, which are to “help physicians and patients engage in conversation about unnecessary tests, treatments, and procedures, and to support physician efforts to help patients make smart and effective choices” (Levinson & Huynh, 2014, p. 5). Similar examples of CW campaigns have emerged in as many as 12 different countries, including Australia, Denmark, England, Germany, Italy, Japan, and New Zealand (Levinson et al., 2015).

This study investigated particular aspects of the CWC campaign, as an example of the larger CW approach, in regards to its aim of reducing unnecessary medical care. CWC is promoted as a physician-led initiative that targets physician behaviour because the decision to determine the appropriateness of healthcare resources is ultimately the physician’s decision (Levinson & Huynh, 2014). As mentioned above, physician behaviour and patient expectations during the clinical encounter is a key contributor to unnecessary medical care (Fisher et al., 2009). Therefore, targeting this interaction
appears to be a promising area to help reduce unnecessary medical care. While Canada and the US have different health system arrangements, physicians in both countries are primarily private contractors (Böhm, Schmid, Götze, Landwehr, & Rothgang, 2013); therefore, it is reasonable to assume that physicians from both countries have similar concerns regarding unnecessary medical care. Exploring whether or not physicians themselves believe the design and features of CWC, as an example of CW approaches, has the potential to be effective in reducing unnecessary medical care is the primary objective of this study.

**Objectives**

The perspectives of key informants were obtained regarding CWC as an example of an approach to reduce unnecessary medical care to achieve the following objectives:

(1) Explain the rationale for CWC campaign’s design.
(2) Analyze stakeholder perceptions regarding the features of CWC aimed to reduce unnecessary medical care.

**Methods**

**Recruitment**

Based on the objectives of the study, it was deemed appropriate to recruit individuals who were key members of the different medical groups associated with CWC. Therefore, members of all CWC medical groups, classified by CWC as medical specialty societies, medical organizations, provincial medical associations, and CWC sponsoring groups, were contacted to request their participation in the study because it
was expected that they have specialized knowledge about initiatives to reduce
unnecessary medical care as well as knowledge and insight into the CWC design and
features and its underlying rationale. All participants were contacted through email,
with study information provided. Telephone follow-ups were also conducted with
some participants. Consent was obtained verbally before each interview. Ethics
approval for the study was obtained through the Hamilton Integrated Research Ethics
Board.

Data collection
Data were collected through semi-structured interviews between May and September
2015. All interviews were conducted over the phone by the primary researcher.
Interviews were audio-recorded, transcribed, and then coded using the qualitative data
analysis software NVivo. The primary researcher analyzed all interview data. The
semi-structured interview guide is provided in appendix 1.

Data analysis
To achieve the objectives of this study, data collection and analysis procedures of
grounded theory study were used to develop explanations that address the objectives
of the research (Corbin & Strauss, 2014; McCallin, 2003). The components of this
qualitative analysis include methods to compare, code, and report data in order to
generate empirically grounded explanations that address the objectives. Interview data
and analytic memos were analyzed together using a constant comparative method
through three stages of coding (Corbin & Strauss, 2014). Analytic memos were
developed as records of the primary researcher’s thoughts regarding the research during the interview and analysis stages (Bloor & Wood, 2006; Corbin & Strauss, 2014). Each stage built on work from earlier stages.

The first stage of the analytic process is open coding. During this stage interview transcripts were analyzed relevant data coded based on the interpretation of the respondents’ answers (Price, 2010). Transcripts were read and reread as data related to the rationale for, and features of, CWC were extracted and coded. During this stage, the relationships among codes began to emerge. As more data were analyzed and new codes developed, iterative changes were made to the interview guide in order to better address prevalent concepts (Corbin & Strauss, 2014).

In the second stage, axial coding, the researcher wrote descriptions of the data using the initial coding from interview data and analytic memos. These descriptions serve as the basis for the results of the study. As more transcripts were read, more codes emerged, and the researcher continued to make connections between them, using NVivo software as a tool. For example, codes related to similar characteristics of CWC would be organized together. From this analysis, patterns emerging from similarities and differences in codes and categories were identified. For example, similar responses about why CWC took shape were labeled with similar codes and categorized together under a single node. As the last interviews were completed, empirically grounded explanations addressing the research objectives took full shape. These explanations were then compared against the original interview data to ensure
accuracy. This process richer, more grounded explanations to be developed.

In the third stage, selective coding, final explanations were developed by comparing and reconstructing categories (made of various but similar codes) that were developed in the earlier stages. For example, categories for the rationale were compared, and if similar, they were synthesized into a clearer, ‘thicker’ explanation (Ponterotto, 2006). During each stage, original data was revisited to verify findings and seek additional information that helped construct results. Importantly, these procedures were applied to produce explanations that address the objectives of the study, and were not intended to develop a theory per se.

Results
Twenty-one key informants were interviewed for the study. Table 1 describes the distribution of the participants using CWC organizational categories, gender, and geography. Representative example specializations of participants include internal medicine, emergency medicine, hematology, surgery, and radiology. Societies and individuals that were contacted but did not participate either did not reply to recruitment emails or declined because they had no members that were sufficiently familiar with CWC. Other than those who worked for a sponsoring agency, all participants were their association’s representatives for CWC, and many were society leaders. No important differences were identified among the participants’ responses, based on geographical location or specialty, when questioned about the reason for the CWC design and its features to reduce unnecessary medical care. Although the study
participants included medical specialists from various disciplines, all participants from these groups are broadly referred to as physicians in this paper. Of note, participants from the sponsorship agencies were generally optimistic about CWC and its potential to reduce unnecessary medical care. To elicit more critical information from these participants, follow-up questions were asked and participants were reminded that the study was not intended to empirically evaluate the CWC’s effectiveness. The Quebec Medical Association attempted to recruit a participant for the study, but was unable to recruit a member willing to participate in the interview in English. Most interviews were approximately an hour in length, with one being 30 minutes. Recruitment continued until data saturation was reached. Saturation occurred when the information provided from subsequent physicians began to repeat and no new insights into the objectives were provided. For instance, later participants provided the same information as previous participants regarding reasons for, and the characteristics of, CWC.

Notably, after several interviews with physicians, government decision makers and patient group representatives who were part of a CWC membership group were recruited to help develop a more holistic perspective of CWC. Specifically, two government and two patient representatives were interviewed (and counted among the 21 participants). However, none of the participants from either group knew enough detail about the CWC’s rationale for its design or its characteristics to contribute meaningfully to developing explanations around the objectives. Therefore, it was determined that further recruitment from these two groups would not add value to the
study. Their responses are included in the results in an effort to provide alternative perspectives that help contextualize the responses from physicians.

The findings represent the prominent explanations provided by participants and are grounded in the collected data. Not all participant perspectives are represented in each subtheme; however, when participants had a perception that conflicted with the emergent explanation, it is noted.

The findings are organized by objective. Objective one is addressed in a single section: (1) perspective on the rationale behind the CWC design. Next, objective 2 (to identify and describe the CWC characteristics with regard to reducing unnecessary medical care) is addressed in the two sections: (2) the perspectives on positive features of CWC, and (3) perspectives on what drives unnecessary medical care in the clinical setting and why CWC does not fully address them.

1.0: The rationale for the CWC design

Participating physicians reported that the medical community felt pressure to develop an initiative to reduce unnecessary medical care as a result of three factors: patient demand, public perception, and government regulation. This section describes each of these pressures and explains how the design was perceived to address them.

1.1 Patients are more informed and more demanding. All physician participants reported that patients often enter the clinical encounter with information and
expectations about care. One physician spoke of their experiences with such patient demand:

“There is a demand from patients for testing or medication or imaging that they’ve read about or they feel that they should get in order to be satisfied that they’ve been adequately cared for.” (P001)

Another physician responded that patient demands are unsustainable:

“Patients absolutely drive test ordering... Our society cannot go on with people walking into a clinic and demanding a service...” (P002)

Easily accessible search engines and online users’ experiences were reported as the source of many of the patients’ information:

“You know the rules... Google. Patients coming into a doctor's office [are] armed with printouts from the Internet. Blogs are the chief example of the way that these things are shifting.” (P003)

This respondent provides an example of patients bringing information into the doctor’s office to defend their perceived need for more care. A concern with this trend is that patients may not realize the potential for harm from over testing, such as false positives, and from overtreatment, such as complications. This reflects a patient philosophy that many physician participants felt contributes to the rise of unnecessary medical care:

“This [information seeking] feeds into the problem of screening: unnecessary screening, [the] harms that screening does, and the general perception that...
patients... are demanding screening care, not realizing that harms can be done.”
(P005)

Notably, the patient participants reported mixed perspectives concerning patient demands. When discussing their own care, patient respondents reported feeling that the doctor had their best intentions in mind and that more tests were not often desirable. One patient reported:

“I don't know that patients request a lot of extra tests because we go through a lot of tests already. From my perspective, I probably drag my heels in getting the tests that the doctor orders.” (P019)

Physician participants reported that the CWC campaign targets the clinical encounter as the optimal time to decide necessary care because patient inclusion in decision-making is expected to help reduce patient demand for an unnecessary service. One physician expected that using CWC materials would make it easier to demonstrate to patients that a service was unnecessary with CWC material:

“It is easier to argue with the patient, saying... my Choosing Wisely says I should not.” (P010)

The comment is speculative because even though physicians could envision how the patient encounter would unfold, only one participant had used CWC content in the clinical encounter. Furthermore, none of the participants had heard stories about others doing so, and many participants were unsure how many of their organization’s
members knew about the campaign. Furthermore, no physician participant reported adjusting aspects of the clinical encounter to better respond to patients’ demands for unnecessary medical care.

1.2 The Public: Perceptions of a patriarchal physician. When asked why CWC was designed the way it was, participants reported that an initiative that improved public perception of the medical community was needed. Generally, physician participants reported that many members of the public view the medical community as self-serving and motivated by factors other than patient care, such as status and remuneration. This perception has affected physicians’ relationships with patients, as reflected by earlier findings that patients are seeking and bringing information into the clinical encounter to back up their claims of a needed service. Two physicians describe their perspectives on the public perception of physicians:

“There has been a history of patronizing or patriarchal physician behaviour that hasn’t really helped doctors’ cause.” (P010)

“I think, unfortunately, doctors to some extent come to be seen as self-serving, which makes their pronouncements less effective.” (P001)

The perspectives of the physicians were once again not fully shared by the two patient participants. Both individuals, who were representatives from a patient advocacy group, offered only praise for the hard work their physicians have put into their care. However, both suffered from long-term chronic ailments that required ongoing care and frequent clinical visits, and thus had very close, long-standing relationships with
their physicians and this experience may be different from many other members of the public.

The CWC campaign attempted to address the public perception of the self-serving doctor. To do so it incorporated the patient into a shared decision-making role, and removed cost-related aspects from the campaign. Incorporating patients into shared decision-making was intended to promote a goodwill image of the physician:

“*This [engaging patients in shared decision making] is an idea whose time has come; it's very important. We’re [patients and physicians] seeing why unnecessary tests, treatments, and procedures are bad for quality care, so I think that there’s a lot of goodwill from physicians generally across Canada.*” (P003)

Promoting goodwill towards physicians was reported as a key component that informed the design of the campaign, as it positions physicians as key partners in achieving appropriate care along with patients.

Removing costs from the CWC promotional strategy was intentional. It was intended to help address some of the negative attitudes towards self-serving physicians by reducing remunerated care. Focusing on prioritizing patient safety and highlighting the risks associated with over-providing was expected to keep the patient/physician discussion focused on how less care is sometimes better care, rather than less care being a cost control measure. Many physician participants did not feel patients wanted their physician considering the cost of treatments when determining what medical care
was appropriate.

1.3 Governments: Using blunt policy tools to remove care. Physician participants felt that the government has been restricting the availability of health care with ‘blunt’ policy tools that do not take patients’ health needs adequately into consideration. Instead, policies were seen as being primarily aimed at reducing costs. A physician noted:

“There’s been certainly a lot of pressure on government to simply deny care…I think the government's role has somewhat shifted, particularly in Ontario, around being more involved and has kind of moved towards steering, not rowing.” (P003)

The preceding quote suggests that physicians perceive that the government is attempting to take too large of a role in determining what care should be provided. Another physician believed the campaign was designed to take back control over what care is provided:

“I think it's part of this broader culture shift in medicine. Government initiatives can't control what's happening at the bedside and what's happening clinically.” (P014)

Part of the pressure identified by participants came from concerns that government decision makers do not understand the clinical encounter enough to design effective policies to reduce unnecessary medical care. Some physicians commented on their mistrust for government policies because government does not understand the clinical needs of their patient:
Unless you are here doing the work, I don’t trust what you have to say.” (P008)

Participant responses suggest that the CWC campaign was also a response to governmental efforts to regulate what medical care will be supported by the public purse, and positioned physicians as the proper authority on appropriate care. Physician participants stated the medical community was in the right position to begin such a cultural shift away from government regulation and towards more self-regulation because they can have a conversation with patients about necessary medical care.

According to many physician participants, the accumulation of pressures from patients, the public, and government resulted in the need for the CWC to embody this cultural change away from government regulation of services. Leaders of the medical community adopted a strategy that would address these three pressures in one fell swoop by targeting the clinical encounter with improved patient dialogue.

2.0: Positive aspects of CWC

When asked about whether the features of CWC were expected to be useful to reduce unnecessary medical care, participant’s identified the increased role of the patient, leadership by physicians, and the simplicity of the process as potential benefits.

2.1 Patient role is increased. As discussed, a major component of CWC is the dialogue it encourages between the physician and the patient about the patient’s care. Physician participants reported that engaging the patient in a conversation during
the clinical encounter is critical to CWC achieving its set goals because an informed patient should make better choices about their medical care needs. Two physicians noted:

“I think the patient is their best advocate..., but sometimes it’s misguided... There has to be a dialogue and that, I think, is very important.” (P001)

“I think patients have a really important role; they should question physicians more frequently about the tests that are being done.” (P007)

Physician participants felt this type of bottom-up approach was a better way to reduce unnecessary medical care, rather than government imposed policies:

“Moving the conversation out of that sort of administrator [or] policy [conversation]... to something that I can deal with in [a] conversation I can have with a patient who is engaged in the conversation, rather than just doing a policy innovation.” (P014)

Both patients and government representatives agreed with the position that patients need to be more involved in their care. When asked about decisions to provide care or not, one patient representative noted:

“Ideally, it should be a shared decision.” (P019)

All participants stated that patients ought to have an important role in determining their own medical care. This was envisioned by many participants to be best done through shared decision-making in the clinical encounter, which is a key characteristic
of CWC.

2.2 Physician led initiative. For physician participants, it was important that the CWC be led by peers in the medical community, not by government, because the medical community generally perceives that government is more concerned with cost than the provision of necessary medical care:

“I think there is an inherent distrust from the physician community to government and its ability to do things.” (P005)

“[Physicians] believe most of the decision makers in [government] agencies are so far removed from patient care, that they are untrustworthy.” (P007)

Participants were clear that there would have been very little, if any, buy-in by physicians if the government had an active role in the development or implementation of CWC. One participant described their medical society’s refusal to participate in CWC until they determined that it was not a government initiative. Government participants agreed that physicians did not often agree with government policies that regulated care:

“Physicians do respond when there are kind of top-down changes to practice or kind of pushed on them by government, and that hasn’t always been positive.” (P015)

2.3 Easier access to evidence for shared decision-making. Participants reported that the format of CWC was very accessible because it provided simple messages that a physician could communicate to patients during the clinical encounter. As two
physicians noted:

“Choosing Wisely’s materials are very easy on the eye. It’s focused. This is what you need to know; this is how you are going to help explain it to your patient. It’s easy; it’s kind of sexy.” (P007)

“Choosing Wisely is not about [revealing] new evidence; it's about somehow packaging it better.” (P008)

When asked how CWC material compared to clinical guidelines, physician participants reported that CWC campaign material complemented guidelines with simpler, straightforward advice concerning what ‘not to do’ rather than ‘what to do’ in particular situations. For example:

“Nothing is stronger than saying ‘don’t do this’.... nothing is stronger than one professional society saying to another ‘Stop the madness’, right? As opposed to listing situations where something is appropriate [clinical guidelines], highlighting where it’s inappropriate is probably a little bit more attention grabbing than it being lost somewhere in the clinical practice guidelines that’s 704 pages.”(P002)

This quote highlights that participants’ view that CWC addresses some shortcomings and complications of clinical guidelines. Many physician participants stated that they did not keep up with clinical guidelines because of their length and complexity; they stated that CWC materials are much easier to use.

3.0 Shortcomings of CWC: Not Addressing the Perceived Drivers of Unnecessary medical care

Although many physician participants praised CWC as a positive initiative that may
help them address various concerns in the clinical encounter, when pressed, many also acknowledged that the campaign would likely fail to address the true drivers of unnecessary care. The analysis of the interview transcripts revealed physicians identified three main perceived drivers of unnecessary medical care. These were: time pressure in the clinical encounter; lack of knowledge about a patient’s potential pathway of care; and, fear of litigation for not providing a service.

3.1 Time pressure in the clinical encounter. Physician participants consistently reported that their work environment has immense time pressures, which limits their time with patients, and thus makes it difficult to engage patients in a conversation about their medical care. This seemingly contradicts earlier statements by physicians that they would like to engage patients in a dialogue about unnecessary medical care. Time constraints were a major contributor to providing unnecessary care:

“If I'm really busy and I have ten people in the waiting room, and if I feel pressured and overwhelmed, I can say, ‘Yep, here is a requisition for the MRI, let’s get it done and move along.’” (P018)

In a hospital setting, there is less time to spend with patients and investigate medical issues because of the number of patients waiting for care, as one physician noted:

“Overcrowding for more [medical services] is a problem.” (P008)

These statements indicate a major perceived driver of unnecessary medical care is the limited time available for the clinical encounter. Physicians report that there are too
many patients to see in a day to spend adequate time conversing with them about their respective problems. Therefore, some physicians may provide a test or treatment to move the patient visit along. One physician provides a strong example of providing an unnecessary test to a patient in order to delay spending time on them at present:

“It’s easier to order a test, and something that I think is not talked about but is done a lot is that we hide behind tests, and so we will state to the patient and their family ‘we are not exactly sure what’s going on but we are waiting on some test’ just to buy [the physician] some time. That test could be an x-ray of their left toe, and it has no impact. It’s just some time when you have no idea what’s going on, so it gives you something to hide behind.” (P002)

Another physician commented further:

“I think, in some of those areas [time in the clinical encounter], it is going to be tough to address [with CWC]. That’s particularly in clinical care, where there is a lot of imaging, and it may not be as useful as people think…” (P010)

Participants confirm that CWC should encourage physicians to engage their patients in a dialogue during the clinical encounter; however, many were unsure how they would implement it in their practice. Furthermore, if the physician is ‘not exactly sure what is going on,’ is under time constraints, and feels obligated to provide a service to a demanding patient, it is unclear whether the CWC will be beneficial.

3.2 Uncertainty in the care pathway. Physicians may provide unnecessary care at the clinical encounter to avoid stoppages further down their patient’s pathway of care. For example, many physicians do not want to see their patients held up because a specialist down the line of care requests a test that the physician thought was
unnecessary at the time of referral. However, because the specialist has a history of ordering the test, the patient’s care is held up for the test results. Although pre-emptive ordering of unnecessary tests was perceived to be a major cause of providing unnecessary care, many physician participants stated that CWC does not address it:

“One of the underlining principles is… one of my colleagues somewhere down the road is going to ask for [tests]. If this hasn’t been done, having a patient that hasn’t had a test in three years… [surgeons] cannot perform the surgery until it’s done. Surgeons are slow to cancel stuff that somebody might want sometime, and if it meant that the procedure would be cancelled or delayed and that was certainly the greater of the evil… The surest way to not worry about an abnormal test derailing your day is to do them.” (P007)

Another participant explained:

“[Specialists] may need additional information. They may need the x-ray services. They will tend to steer on the side of getting a test, even though it may be unnecessary, because they fear that they will not be able to get the patient referred.” (P010)

These examples demonstrate the uncertainty a physician may have regarding their patient’s care pathway. This uncertainty may be a result of a failure to communicate with or a lack of knowledge about the patient’s potential specialist. Generally, many physician participants reported they preferred to have a potentially unnecessary test done if there is a risk of delay further down the care pathway.

3.3 Fear of litigation. Litigation over potential mistreatment was a prominent issue for physician participants. They stated that CWC does not address litigation problems. For example, one participant stated:

“Concerns about ruling everything out and covering all their bases, concerns about
Due to some of the pressures to provide medical care, physicians often felt that they did not have enough information to say no to a potentially innocuous procedure:

“I think litigation is a problem; you miss one neck… fracture or bleed in the brain you are going to court.” (P008)

This lack of information becomes increasingly difficult when considered in the context of a demanding patient who may raise concerns that the physician may not have fully considered. Regardless of whether the concerns are well founded or not there is some obligation to investigate. One participant explains:

“Once the issue has been raised, it is difficult to back away unless you are 100% because you are responsible if you are wrong, and the test may have presented something.” (P008)

Physician participants reported that CWC does not address their concerns over possible legal ramifications of not providing a test or treatment that may provide information about a diagnosis that would otherwise remain unknown. CWC does not provide any legal support for physicians if they follow its recommendations. Coupled with the pressure from demanding patients and uncertainty in care pathway, fear of litigation puts immense pressure on physicians in the clinical encounter to provide medical care.
Discussion

Principal findings

The responses of physician participants provided several insights into perceived reasons for, and characteristics of, CWC to reduce unnecessary medical care. Participants, who included leaders of many medical specialty societies, reported that the time had come for the medical community to respond to existing pressures from patients, the public more generally, and government to address the issue of unnecessary medical care. In the absence of addressing these pressures, physicians considered themselves at risk of losing some of their autonomy, power, and reputation. Their response was a campaign that focused on the clinical encounter to promote a discussion with patients about unnecessary care. Although participants supported the initiative as an alternative to government policies, they broadly agreed that CWC does not truly address many reasons why unnecessary care continue to be provided, including time pressures in addressing patient demands, uncertainty in a patient’s care pathway, and fear of litigation. It is unclear how physicians will generate more time to engage in shared decision making with the patient regarding why, in some instances, medical care should not be provided. Rather, the results here suggest that physicians and patients preferred to opt for the safer route of providing care ‘just in case’ (for example, just in case an issue arises further down the patient’s’ care pathway).

Strengths and limitations

This is the first study, to our knowledge, that qualitatively explores the perceptions of
The study included a wide range of medical professionals from primary, secondary, and tertiary care. Therefore, perspectives from various types of healthcare providers were obtained. Furthermore, many participants were in leadership roles within their associations; this provided an excellent opportunity to receive informed insight into CWC. The insight provided serves as the foundation for our results and provides unique insight into the CWC campaign design rationale and features.

This study has several limitations that should be noted before considering its implications. First, the sample is limited in that the participants included were only those involved with the CWC, rather than physicians who were not involved in the initiative. Attempts were made to recruit members of medical specialty groups that did not have a ‘do not do’ list, but none agreed to participate. Had these groups participated, it may have provided a better-rounded perspective of CWC. In addition, researchers and system leaders were not interviewed, which may have provided a more critical perspective to the analysis. There was also limited experience with the actual application of CWC in the clinical encounter by the respondents. Although participants were able to provide valuable insights regarding the study’s objectives, there was only one participant that had an experience using the CWC material in a clinical encounter. Importantly, the majority of physicians did not have experience practicing CWC. Instead their perspectives focus on their experiences with providing unnecessary medical care and promoting CWC within their specialty. Their perspectives on CWC are perceptions based on their expert opinions of their clinical
and working environment. A potential limitation is that the interviews and the analysis were conducted solely by the primary author, although thorough procedures were followed to ensure reliability and accuracy of results. For example, analytic memos and ongoing discussions of the results with co-investigators were employed throughout the analysis.

Findings in relation to other studies

Participants reported that patient’s demands, limited time in the clinical encounter, uncertainty in the care pathway, and fear of litigation are prominent factors that influence a physician’s decisions to provide unnecessary medical care in the clinical encounter. These factors were also reflected in surveys of Canadian and US physicians that found many physicians believe unnecessary care is provided at least once a week, and over half the physicians indicate that they would provide unnecessary medical care to a demanding patient (ABIM Foundation, 2014). Similarly, a large proportion of surveyed Canadian and US physicians claim they did not have adequate time with patients or the clinical autonomy to meet patient needs (Tyssen, Palmer, Solberg, Voltmer, & Frank, 2013). US physicians also reported that fear of litigation, ‘just to be safe,’ patient demands, and lack of time were named as several reasons for unnecessary care (ABIM Foundation, 2014). Furthermore, each of the drivers of unnecessary care identified in this study has also been highlighted in the literature as contributors to unnecessary care. Investigation of patient preferences suggest that patient demand plays a small, empirically insignificant role in regional variation; instead, physician preferences dominate care decisions (Anthony et al.,
2009). In a systematic review of barriers to and facilitators of implementing shared decision making in the clinical encounter, which the CWC is advocating, time constraints were reported by physicians as the most important barrier (Légaré, Ratté, Gravel, & Graham, 2008). Uncertainty in the care pathway is well established as a contributor to unnecessary medical care, particularly given the influence of supplier-induced demand (Wennberg, Barnes, & Zubkoff, 1982), a well-known contributor to regional variation of health care (Douven, Mocking, & Mosca, 2015; Mulley, 2009). Finally, fear of litigation may result in defensive medicine, which may lead to provision of unnecessary care (Hermer & Brody, 2010; Kessler & McClellan, 1996).

**Implications for practice and policy**

These drivers of unnecessary care are distinct and substantial and each requires targeted, evidence-based interventions to truly reduce the provision of unnecessary medical care. Unfortunately, the CW campaigns are ill equipped to address these issues. The finding that only one physician participant had actually practiced the CWC in the care setting (and they had practiced it only once), further supports the assertion that CWC is insufficient to reduce unnecessary care. Furthermore, the lack of uptake of the CWC approach in the clinical encounter suggests that it has not had any substantive impact on changing physician behaviour. This is consistent with other findings that physician behaviour is a significant contributor to unnecessary medical care (Fisher et al., 2009). Of further concern is that in the present study participant physicians did not identify themselves directly as contributors of unnecessary medical care. In other words, they see other physicians as contributing to the problem rather
than themselves. If the average physician shares the view of study participants, then they are unlikely to change their practice to reduce unnecessary care due to CWC. Previous research also found US physicians were reluctant to claim responsibility for high healthcare costs associated with unnecessary care. Instead, many physicians identify pharmaceutical companies, insurers, and lawyers as the most responsible groups for rising healthcare costs (Admon & Cooke, 2014; Tilburt et al., 2013). If members of the medical community, including CWC’s designers and promoters, genuinely intend to reduce unnecessary care then they will need to find ways to address these barriers to implementation. One manner in which they may do so is through evidence-based interventions that will modify physician behaviour and patient expectation in the clinical encounter.

Findings imply that policymakers must be careful in creating policies that impact medical care delivery options because such policies may be perceived as not being in the patients’ best interest. Instead, participant believed governments will often create polices for financial reasons with the intent of reducing spending by reducing availability of care. Mistrust of top down policies, may create political resistance from the medical community, and a poor public perception of government intentions. Therefore, it may be in the best interest of policymakers to work alongside the medical community as well as patient groups to promote micro level policies that reduce unnecessary medical care at the point of care.

**Implications for Research**
The provision of medical care will often align with the preferences of providers and their patients, which regularly means more care (Douven et al., 2015; Mulley, 2009). An important consideration for future research is the how to sufficiently realign these preferences such that both parties are incentivized (in the broadest sense of that term) to decide upon appropriate care, which may often equate to less care. Considering results from this study along with previously described concerns, it is evident that CW campaigns, in general, do not realign these preferences in such a manner. As long as that remains the case, significant behaviour modification due to CWC is unlikely. Current research on shared decision making does not allow firm conclusions on most effective methods to improve adoption of shared decision making (Légaré et al., 2010). Therefore further research on how shared decision making may help reduce unnecessary medical care is a necessary first step to determining if the design of the CW campaigns will do more than address perceived pressures on the medical community. Furthermore, it will be important to understand the patient’s perspective on the CW campaign’s design and features in order to assess whether it meets their concerns in the clinical encounter, including uncertainty in their care pathway.

**Conclusion**

This study assessed key informant perspectives on CWC as an example of a CW initiative aiming to reduce unnecessary medical care. Using the perspectives of key informants involved in CWC, we sought to better understand reasons for the campaign’s design and which of its characteristics are expected to reduce unnecessary medical care. Our findings shed light on participants’ perspectives that CWC was
intended to address the pressures physicians felt to deliver unnecessary medical care, but they acknowledged the campaign leaves many reasons for unnecessary medical care unaddressed. A concerning finding was that participating physicians did not attribute responsibility to themselves in the provision of unnecessary medical care. This finding is more concerning when considering that previous research regarding unwarranted variation indicates physician behaviour is a significant contributor to unnecessary medical care. If the aim of CW campaigns is to break the cycle of overuse, then it will need to provide physicians and patients with the evidence and tools they need to know what the right care is and what is unnecessary. Physicians need to become better communicators, and patients need to become more accepting of the evidence that indicates they are sometimes better off with less care. Pressures in the clinical encounter that lead to unnecessary medical care are unlikely to be addressed simply with the provision of lists about what not to do.
References


Légaré, F., Ratté, S., Stacey, D., Kryworuchko, J., Gravel, K., Id, G., … Turcotte, S. (2010). Interventions for improving the adoption of shared decision making by healthcare professionals (Review). Cochrane Database of Systematic Reviews,


Table 1: Characteristics of recruitment

<table>
<thead>
<tr>
<th>Number of participants (total contacted): 21 (70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Sponsor organizations: 5(8)</td>
</tr>
<tr>
<td>o e.g., Canadian Medical Association,</td>
</tr>
<tr>
<td>University of Toronto, Commonwealth Fund</td>
</tr>
<tr>
<td>- Specialty societies: 11(34)</td>
</tr>
<tr>
<td>o e.g., Canadian Association of Nuclear</td>
</tr>
<tr>
<td>Medicine, Canadian Society of Nephrology</td>
</tr>
<tr>
<td>- Provincial medical associations: 1 (10)</td>
</tr>
<tr>
<td>o e.g., Alberta Medical Association, Ontario</td>
</tr>
<tr>
<td>Medical Association</td>
</tr>
<tr>
<td>- Medical organizations: 2 (6)</td>
</tr>
<tr>
<td>o e.g., Canadian Academy of Child and</td>
</tr>
<tr>
<td>Adolescent Psychiatry, College of Family</td>
</tr>
<tr>
<td>Physicians of Canada</td>
</tr>
<tr>
<td>- Patient groups: 2(7)</td>
</tr>
<tr>
<td>o e.g., Patients Canada, Canadian Arthritis</td>
</tr>
<tr>
<td>Patient Alliance</td>
</tr>
<tr>
<td>- Organizations not involved in CWC: 0 (5)</td>
</tr>
<tr>
<td>o e.g., Canadian Association of Interventional</td>
</tr>
<tr>
<td>Cardiology, Canadian Association of</td>
</tr>
<tr>
<td>Neuropathologists</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Western Canada: 6</td>
</tr>
<tr>
<td>- Central Canada: 14</td>
</tr>
<tr>
<td>- Eastern Canada: 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Female: 12</td>
</tr>
<tr>
<td>- Male: 9</td>
</tr>
</tbody>
</table>
Chapter 5: Conclusions

The overall objective of my doctoral thesis research was to develop a better understanding of resource withdrawal from medical services through an examination of its characteristics, policies, and an initiative. To accomplish this objective, I designed and conducted three research studies that contribute to such an understanding. The purpose of this chapter is to review each study’s objectives, principle findings and their contributions to knowledge. I will also elaborate on the implications of the findings for policymakers, practitioners, and researchers interested in exploring ways to improve resource withdrawal from unnecessary medical services.

Addressing the overall research objective

In this dissertation I begin to fill the gaps in understanding government decisions to withdrawal resources. To address these gaps I applied qualitative analyses to an area that has been predominately occupied with quantitative methods. While clinical and economic evidence is essential to reducing unnecessary medical services, other factors also influence public policy and clinical decisions. In three studies, I demonstrated that qualitative approaches help explain how some of these other factors influence government and nongovernment approaches to reducing unnecessary medical services. To move toward reducing unnecessary medical services, we need to better understand the current influences of the antecedents, attributes, and outcomes of these decisions. This dissertation has made strides towards understanding these influences.
Summary of objectives and principal findings for each study

In study one, I assessed the state of resource withdrawal terminology to: (1) identify shared, and distinct characteristics (attributes, antecedents, outcomes) of the terms related to government led resource withdrawal; (2) to identify terms related to government led resource withdrawal from medical services; and (3) to develop definitions for prominent terms used in the government led resource withdrawal literature to provide conceptual clarity. To achieve these objectives, I conducted a qualitative synthesis of academic and gray literature on resource withdrawal from medical services. I found varying meanings for the same resource withdrawal terms and different terms used interchangeably for the same resource withdrawal concepts.

The major overlap and inconsistency of how terms are defined are related to the similar use of an antecedent (what logically precedes the withdrawal) and attributes (specifically the process of withdrawal) across different terms. I concluded that defining resource withdrawal terms based on their antecedents and attributes is less than ideal because resource withdrawal antecedents and attributes are often politically or socially motivated. Based on this assertion, I suggested that the impact of the resource withdrawal decision on patients’ health outcome is a more appropriate manner to define two frequently overlapping resource withdrawal terms: disinvestment and rationing. These proposed definitions accurately distinguish between approaches to resource withdrawal that will improve or maintain patient health outcomes (disinvestment) and those that will deny patients health benefits of a service (rationing).
The objective of study two was to assess how characteristics of problem frames (e.g. causality, extensiveness, solution) influence the shape and timing of resource withdrawal decisions in Ontario. I chose two examples, Oxycontin and blood-glucose test strips (BGTS), for an in-depth qualitative content analysis of the discourse found in the media and parliamentary debates surrounding the resource withdrawal decision. I demonstrated how two characteristics of problem framing had the most notable influence on these policy decisions. First, the complexity of the causal story primarily influenced the shape of the government resource withdrawal decision frame by restricting government options. Second, the visibility of the problem frame put pressure on the government to make a policy decision, thus primarily influencing its timing. These two characteristics can help explain how problem frames impact decisions to withdraw resources from medical services. The two examples demonstrated the maleability of resource withdrawal decisions and provide evidence of how public actors may strategically design resource withdrawal problem frames to more effectively influence the government decisions.

The objectives of study three were to: (1) describe the rationale for CWC campaign’s design; and (2) analyze stakeholder perceptions regarding the features of CWC aimed to reduce unnecessary care. The approach I took was to interview key informants involved in the early stages and promotion of CWC. Participants were primarily leaders of their respective medical specialty society. My analysis revealed that CWC was designed as a response to mounting pressures from government, patients, and the public. Under these pressures, many physicians considered themselves at risk of losing some of their autonomy, power, and reputation. Leaders within the medical
community promoted a discussion between physicians and patients about unnecessary services using the CWC campaign.

When asked about features of CWC aimed to reduce unnecessary service participants unanimously reported that CWC does not truly address the reasons why many physicians provide unnecessary services in the clinical encounter. Participants also explained what they consider drivers of unnecessary care and why they do not expect CWC will address them. First, findings raise doubts whether an information-based campaign, like CWC, provides enough support to enact a change in the clinical encounter and thus reduce unnecessary services. CWC encourages a discussion between patient and provider but does not deal with the time pressure that inhibits such a discussion during the clinical encounter. Second, due to uncertainty in the patient’s care pathway physicians often decide to provide an unnecessary service now, rather than potentially delay the patient receiving specialized care later because a service was not provided. Finally, the fear of litigation pressures physicians to provide a service to ensure patients do not take legal action later for denying them the service. Again, this is a case of physician choosing to ‘play it safe’ and providing an unnecessary, low risk, medical service. Overall, the findings suggest that although the CWC campaign may raise awareness around unnecessary care, it is unlikely to change patient and physician behaviour during the clinical encounter and is therefore unlikely to substantively reduce unnecessary medical care.

**Contributions of the dissertation**

Together the three studies in this dissertation make methodological, substantive, and
theoretical contributions to the understanding of characteristics and influences of
government led resource withdrawal from medical services.

Study one

In study one I identify and addressed some of the confusion and disagreement over the
use of resource withdrawal terms. To achieve this I adopted a qualitative synthesis
approach to analyzing the existing literature on resource withdrawal from the past few
decades. The method was useful to provide an in-depth understanding of how
academics and policymakers use and define resources withdrawal approaches. Using
the qualitative synthesis, I was able to focus on the characteristics of resource
withdrawal (antecedents, attributes, outcomes) to identify inconsistencies and overlap
in the terms used. The results of the study validate the use of qualitative synthesis to
help understand an evolving discourse of a scientific area and to show the overlap and
inconsistency in the use of terms and characteristics. This high-level synthesis of
resource withdrawal terms and characteristics provided insights regarding what
researchers and policymakers consider as part of the resource withdrawal process.

A more holistic conceptual framework of the resource withdrawal process than is
currently found in the literature was developed. The framework identifies key
characteristics including: (1) factors that logically proceed resource withdrawal; (2)
attributes of the process including how services are defined and assessed (3) policy
options for withdrawal; and (4) the possible outcomes of withdrawal for both the
healthcare system and the patient. No other framework identified in study one’s search
arranged all of these factors into one framework. This framework allows for more of
the factors that may theoretically influence the resource withdrawal process including the use of evidence.

Along with the framework, I also provide refined definitions of rationing and disinvestment, which may help establish a foundation for a more consistent use of resource withdrawal terms. These results may be used to facilitate communication among stakeholders during a time where there is unprecedented interested in withdrawing resources from unnecessary medical care (Paprica, Culyer, Elshaug, Peffer, & Sandoval, 2015). The definitions of rationing and disinvestment presented help shifts the resource withdrawal discussion away from reasons and process of resource withdrawal, which much of the current literature has focused on (appendix 1). Refined definitions focus on the expected impact resource withdrawal has on patients’ health. The definitions of rationing and disinvestment are distinguished from the other by focusing on whether the withdrawal will results in general loss of benefit (rationing) or no loss in benefit (disinvesting) to the patient.

Study two

In study two I expanded on the existing literature regarding decision making in the policy process by applying specific example of resource withdrawal from a medical service to show how problem framing influence policy decisions. This was the first investigation of resource withdrawal from medical services using problem framing as the coding frame for the qualitative content analysis (Mayring, 2002). The study is also an original attempt to apply this concept driven analysis procedure to the public discourse of Canadian parliamentary debates (Mayring, 2002).
The findings of study two help validate the conceptual framework by illustrating how two characteristics of problem frames, complexity of causal story and visibility, influences government decision frames. The findings from the two examples add to the theory of problem framing by demonstrating how the complexity of a causal story will influence the shape of a decision frame if the story is simple. Otherwise, governments have more choice in their decision frame because there are no competitive problem frames to influence their decision. Visibility, on the other hand, influences the timing of government decisions. If actors are successful in highlighting a problem to the public, then government is under pressure to respond. If visibility is low, then governments have more choice on when to make a decision. The conceptual framework will be valuable to predict the likely affects that problem frames have on resource withdrawal decisions. Use of these policy concepts will help researchers and proponents of evidence-based resource withdrawal understand what factors influence the shape and timing of such decisions by providing insight into events that may preempt a decision.

A further contribution of this study is that it promotes the inclusion of political science and public policy concepts into resource withdrawal activities that involve public policy. Fortunately, the inclusion of more policy concepts has been gaining prominence in some areas of priority setting (Smith, Mitton, Davidson, & Williams, 2014; Smith et al., 2016) and this study highlights the need to do so for resource withdrawal. The application of policy concepts to the analysis of public policy decisions, like resource withdrawal, will help uncover what factors are influencing
these decisions and may help lead to a better understanding of how clinical and economic evidence may be used within problem frames to influence such decisions.

**Study three**

In study three I demonstrated how a small-scale grounded theory approach is useful to develop grounded explanations of an intervention that orients around clear objectives of the study. This is the first study to apply these methods to the understanding of key informants’ perceptions of the drivers of unnecessary care in the clinical encounter, which is the rationale behind the design of the CWC campaign. The results demonstrate that CWC is unlikely to significantly influence patient and physician choices about unnecessary care. The approach also helped identify reasons why participating physicians may deliver unnecessary services to patients. Results are supported by previous studies that have identified similar reasons for why physicians may provide unnecessary care (ABIM Foundation, 2014; Liu & Mills, 2007).

Methodologically, I demonstrated how procedures for grounded theory are useful in small-scale studies by allowing for an ongoing iterative analysis of participant responses to identify emerging themes which then may be used in subsequent interviews to holistically understand what is relevant to participants in the topic of interest.

Study three adds theoretical contributions to existing research regarding physician’s contributions to unnecessary care. Since findings indicate that the design of the CWC had more to do with addressing external pressures from government, patients, and the public than effectively reducing unnecessary care it is unlikely to have a substantive
impact on unnecessary care. The campaign does little to change the characteristics of the clinical encounter that contribute to unnecessary care, namely patient demand and time pressures. The campaign also does not address influences beyond the physician’s control such as uncertainty in care pathways or fear of litigation. These two drivers of unnecessary care were two reasons why many physicians prefer to ‘play it safe’ and provide medical care even if it may be unnecessary at the time. These findings contribute to our understanding of why unnecessary care is provided at the point of care.

**Implications for policy and practice**

The studies in this dissertation provide insight into important issues regarding resource withdrawal decisions that will affect the provision of medical services.

Findings from the three studies support the implications described below.

*Consistency in communication is necessary for collaboration among stakeholders*

The practical policy implications of study one are that researchers and policymakers should be consistent in their description of resource withdrawal if they wish to promote a formal priority setting process for resource withdrawal. Key stakeholders should differentiate between antecedents, process, and outcomes of resource withdrawal when describing a resource withdrawal intervention because antecedents and processes may not be evident, nor consistent across jurisdictions. Processes for assessing and recommending services for resource withdrawal are rarely straightforward (García-Armesto et al., 2013) and many resource withdrawal decisions are politically or socially motivated. Influences, such as stakeholder input
and interest group advocacy, become increasingly important in public policy decisions compared to clinical decision-making (Dobrow, Goel, & Upshur, 2004). Protocols and guidelines for decision making often fail to predict outcomes and often omit important contextual influences on outcomes (Porter, 2010). Different countries also have different institutional structures that have a high level of influence on which issues end up on the government’s agenda and how decisions are eventually formulated (Immergut, 1992; Roberts, 2009). These arguments imply that using antecedents and processes of resource withdrawal as part of the definition will lead to more confusion because public policies have many contextual factors, beyond research evidence, which influence political decision making. = Health systems arrangements of governing, funding and delivery of medical services differences between jurisdictions (Bohm, 2012); therefore it is more consistent to base the definition on expected patient health outcomes as determined by EBM. It is a more useful characteristic to base a definition on. Using the framework and the proposed definitions will help set a more stable standard for resource withdrawal terms and improve stakeholder collaboration by differentiating between the characteristics and focusing on patient health outcomes.

Public actors will use problem frames to influence resource withdrawal decisions

The implications of study two for policymakers and other politically vested groups is that if they want to reduce unnecessary care through resource withdrawal, they should consider the characteristics of framing resource withdrawal when designing and implementing formal resource withdrawal processes. In much of the current resource withdrawal literature, the influence of political debate on identifying and withdrawing resources from medical services is often written off as political will, rather than
directly addressed using an established political science theory such as problem framing. Medical services do not present themselves for resource withdrawal; interest groups or actors with various agendas put them forward. These actors will often develop problem frames that serve their agenda in hopes to influence policy decisions. Findings from study two emphasize the need to consider the content of the frames groups are constructing and how they may ultimately shape a policy decision. It also highlights that if a policy problem is not visible in the public eye, decisions may be delayed or implemented without influence from competing problem frames. To more carefully withdrawal resources from medical services using clinical and economic evidence, we need to understand why these policy issues have reached the government’s decision agenda, and what the best possible outcomes are for parties involved.

*Reducing unnecessary services may require interventions that target underlying reasons*

The main implications for practice from this dissertation stem from the findings of study three. Findings imply that CW campaigns are not ideally designed to reduce unnecessary care in the clinical encounter because they do not address the reasons physicians may decide to provide unnecessary care. If physicians share the perspectives of participating physicians, then it seems unlikely that CWC will reduce unnecessary services. Since physicians are independent contractors in many OECD countries, they can adjust various aspects of the clinical encounters, including how much time they spend with the patient. Physicians are also primarily responsible for the choice of care. Considering these two characteristics will be important for
physicians to take on the problem of unnecessary services through interventions that address the true drivers of such care. Based on the findings of study three, the lack of implementation in the clinical encounter from individuals who are expected to promote the campaign within their respective organization raises immediate concerns whether CWC will overcome the barriers to its implementation, such as time constraints in the clinical encounter.

A further implication for practitioners is that the CW campaigns, as exemplified by CWC, are unlikely to change physician behaviour and are thus unlikely to be successful. If CW campaigns can leverage characteristics of successful interventions, then they may have an impact. Furthermore, it will be essential for their success that CW campaigns keep an active role in raising awareness and educating providers and patients. CWC incorporates a system of leadership and decision support, but the level of engagement with physicians who are not actively involved with CWC activities is uncertain.

It is noteworthy to indicate that implications and lessons for policymaking will likely differ between jurisdictions, especially those with different health system arrangements. For example, in countries with fee-for-service remuneration schemes for financing physicians CW campaigns may be less likely to be practiced because physicians are incentivized to see more patients in less time and provide more services. Therefore they may be less likely to discuss unnecessary care, compared to arrangements with salaried physicians (Schmitz, 2013). Similarly, governments that provide less governance over provision of medical services may be less likely to make
resource withdrawal decisions in the same way as countries who specifically define which services are funded. It is also likely that policy implications for countries with different delivery systems may also affect resource withdrawal antecedents, attributes and outcomes. Differences in health system arrangements should be considered when assessing the implications for resource withdrawal policymaking.

**Implications for future research**

This dissertation provides a useful building point and potential pivot point for policy research on resource withdrawal from medical services. The main contributions to future research are the theoretical contributions to help guide research towards better incorporating policy concepts and theory into the study of resource withdrawal. Study one provides a conceptual framework to understand stages of resource withdrawal better and identify the various factors that may influence it. Furthermore, it helps clarify various terms to use as a foundation for future communication. Future research should examine how each of the factors identified in study one’s conceptual framework influence evidence-based resource withdrawal to identify potential barriers and facilitators of improving health outcomes through resource withdrawal. One manner to do this may be by adapting existing tools for program budgeting and marginal analysis (Edwards et al., 2014; Mitton et al., 2011), multi-criteria decision making (Thokala et al., 2012), resource allocation Guindo et al, 2012), priority setting (Baltussen et al, 2006) or ethics (Loyens & Maesschalk, 2010) to account for factors identified in study one’s conceptual framework. Doing so will help understand and potentially improve how to best address the factors in resource withdrawal decision-making. Furthermore, future research should use the proposed terms for disinvestment
and rationing to help establish a consistent basis for communication.

Study two presents a framework to help predict the influence of problem frames on the shape and timing of policy decisions that should be further tested in the analysis to identify if the framework is resilient enough to help predict the role of problem framing in other jurisdictions, medical services, and policy decisions. Further research may refine the framework, possibly by adding more characteristics, which may more precisely predict the shape and timing of policy decisions. I propose that health researchers incorporate the politics of resource withdrawal and its important concepts into their research to gain a more nuanced insight into its influences on public policy decisions. It is reasonable to expect that without a firm understanding of the factors affecting the progression of a policy problem onto the policy agenda and beyond, it is highly unlikely that there will be any substantial decrease in ineffective medical services through public policy intervention. Application of policy analysis concepts may not directly lead to more evidence-based resource withdrawal from medical services, but it may explain how resource withdrawal policy options develop, or why they did (or did not) develop.

It is clear that although many governments identify that over use of unnecessary medical services is a problem, governments also resist adopting evidence-based routinized approaches to withdrawing resources from these services. Applying the problem framing theory presented in study two to the public discourse regarding the proposed adoption of an evidence-based approach of resource withdrawal may uncover whether the causal story or visibility has influenced government decisions (or
lack of decision). Understanding the characteristics of the problem frames regarding a routinized approach to resource withdrawal may help develop a more influential problem frame that can move these approaches forward on the government agenda.

Findings from study three emphasize that future research on unnecessary medical care should build on investigations about changing provider behaviour and patient preferences such that both parties are encouraged to decide upon less care when appropriate. As discussed above, targeting shared decision-making in the clinical encounter may not be enough to address what is driving unnecessary services. Future research on unnecessary care could build upon strategies that focus on the care pathways to identify patterns where unnecessary service may happen and how shared decision-making could address them. Further examination of physician’s communication along care pathways may help determine ways to relieve this uncertainty.

The role of patients in the provision of unnecessary care is important to consider because they are one-half of the clinical encounter. Although some past research has indicated that patient preference plays a minor role in unnecessary care (Anthony et al., 2009), others have shown that patients have an influence on primary care physician prescribing behaviour (Kaul et al., 2015). Further examination of interventions to improve patient knowledge about unnecessary care, motivations for demanding care, and how to improve shared decision making will help build on these findings as well as others (Légaré et al., 2010). Currently, research on patient role suggests that patients’ value individualized approaches to care. However, they may
not have knowledge of what care is best for them and presenting information on best care may not change their mind about what care they want (Legare et al., 2008). As indicated above, interventions such as patient education (Coulter & Ellins, 2007), prompts for information provision (Arditi et al., 2012), and developing a patient-centred approach (Atkins, 2014) have had mixed results in the literature, but broadly speaking they have been successful in improving quality of care (Scott, 2009). The most successful efforts have been multifaceted (Grol & Grimshaw, 2003), therefore building on efforts of CW campaigns may be a proper next step.

**Strengths and limitations**

This dissertation’s studies have several strengths. First, while the resource withdrawal literature has a rich history, the analysis of policy influences on it has received less attention in the scholarly publications. No study has previously tried to examine the use of terms and characteristics of resource withdrawal using such a breadth of gray and academic literature as used in study one. The findings provide an array of data from a variety of disciplines, countries, and sources from which to draw. The literature analyzed included various methodologies including qualitative and quantitative studies, essays, editorials, HTA, priority setting economics, and other social science disciplines. This builds on much of the literature that focuses on resource withdrawal from inappropriate or low-value services only. However, it is evident that governments withdrawal resources from medical services for reasons other than evidence of inappropriateness, study one included government led resource withdrawal from all types of services, which provided additional literature to analyze.
The second approach to incorporating more policy concepts into the study of resource withdrawal was done in study two which included an extensive use of additional data found in media and parliamentary debates. The use of three databases to allowed for verification of the information extracted from the sources with each other, thereby improving the trustworthiness of the results. This study was the first to contribute a combination of concepts from problem framing theories to develop a novel approach to understanding the impact of problem framing characteristics on resource withdrawal. Study three presented the first study, to our knowledge, to qualitatively explore the perceptions of respondents about any of the CW campaigns, using CWC as the example. Using a wide range of medical professionals from primary, secondary, and tertiary care perspectives from various types of healthcare providers were obtained and analyzed. Furthermore, many participants were in leadership roles within their associations; this provided an excellent opportunity to receive informed insight into CWC. The insight provided serves as the foundation for our results and provides unique insight into the CWC campaign design rationale and features.

There are also several limitations that should be considered. One limitation is that each study might have been strengthened if the data collection and analysis had been conducted by more than one researcher. However, as explained above, steps were made throughout to be explicit and incorporate a variety of data into each of the studies, thus permitting the results to be based on triangulation of multiple data sources. Iterative steps of discussing findings with committee members and incorporating feedback also ensured the rigor of the studies and legitimacy of conclusions. The findings are also well aligned with outcome in the broader literature.
The primary limitation of study one is its limited focus on resource withdrawal associated with medical services specifically and excludes withdrawal related to system reforms, organizational withdrawal, and clinical decisions regarding withdrawal. This limitation suggests that caution be exercised if applying the results other resource withdrawal contexts (i.e., beyond medical services per se). The primary limitation of study two was an absence of a comparator to the Oxycontin example in the Ontario sample that may have provided richer information on how characteristics of problem frames may influence the decision frame. An example with more data to analyze may also have provided an example of how the characteristics of problem frames in each quadrant influenced the decision frame’s shape and timing too. This limited the comparison between the two examples and limited the generalizability and possible implications of the results. Importantly, the data for the two examples chosen were sufficient to demonstrate the role of problem framing our conceptual framework predicts. The primary limitation of study three is that the sample included only participants involved with the CWC but not physicians who had no experience with CWC. The inclusion of nonparticipating physicians, as well as system leaders, may have provided a more critical perspective to the analysis and provided additional reasons for the design of the campaign, as well as opinions on CWC features. However, the participants did provide critical responses to the interview questions.

Conclusion
This dissertation is comprised of three studies that when considered together have addressed several gaps in understanding of government led resource withdrawal from
government insured medical services. Each study provides its contribution toward developing more substantive, routinized approach to resource withdrawal that includes several relevant decision-making factors. Even though such an approach may improve the removal of unnecessary care, it still eludes government policy makers. This dissertation provides a basis for a common resource withdrawal language, clarifies influences of government led resource withdrawal and identified reasons why CWC is unlikely to reduce unnecessary care by revealing reasons physicians may provide unnecessary medical care at the clinical level. The establishment of a consistent language that all stakeholders can use may facilitate communication around resource withdrawal antecedents, attributes, and outcomes (study one). This joint use of terms may then be used to identify clearly what policy options government used for resource withdrawal and their results. By identifying characteristics of problem frames in study two, we have a framework that may then help understand the relationship between the resource withdrawal problem and the policy option chosen. This may help stakeholders predict and identify ways to approach how they may present resource withdrawal ideas. Finally, reasons why the CWC campaign is likely to be ineffective to reduce unnecessary services at the clinical level have been identified (study three), which may inform the design of policy options to address these reasons. Together the results establish a substantive contribution towards integration of policy concepts into the study of resource withdrawal from medical care.
References


http://doi.org/10.1377/hlthaff.28.3.864

http://doi.org/10.1002/14651858.CD001175.pub3.Copyright


http://doi.org/10.1136/bmj.39246.581169.80

Edwards, R. T., Charles, J. M., Thomas, S., Bishop, J., Cohen, D., Groves, S., …


Mitton, C., Dionne, F., Damji, R., Campbell, D., & Bryan, S. (2011). Difficult...
decisions in times of constraint: criteria based resource allocation in the
Vancouver Coastal Health Authority. BMC Health Services Research, 11(1),

From Talk To Action: Policy Stakeholders, Appropriateness, and Selective
Disinvestment. International Journal of Technology Assessment in Health Care,

Schmitz, Hendrik. 2013. “Practice Budgets and the Patient Mix of Physicians - The
Effect of a Remuneration System Reform on Health Care Utilisation.” Journal of


Scott, I. (2009). What are the most effective strategies for improving quality and

setting: Ideas, interests and institutions in healthcare resource allocation. Public
Policy and Administration, 29(4), 331–347.
http://doi.org/10.1177/0952076714529141

Smith, N., Mitton, C., Dowling, L., Hiltz, M.-A., Campbell, M., & Gujar, S. A.
Canadian Healthcare Organization: A Case Study Analysis Informed by
http://doi.org/10.15171/ijhpm.2015.169

Appendix 1: Characteristics of resource withdrawal terms used in the literature

<table>
<thead>
<tr>
<th>TERM: DISINVESTMENT</th>
<th>Efficacy on Service</th>
<th>Effect on System</th>
<th>Effect on patient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Restricted use</td>
<td>Reduced use</td>
<td>Removed</td>
</tr>
<tr>
<td>(Gallego, Haas, Hall, &amp; Viney, 2010)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Ibargoyen-Roteta, Gutiérrez- Barluzea, &amp; Asua, 2010)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Pearson &amp; Littlejohns, 2007)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Rumbold, Allen, &amp; Harris, 2008)</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>(National Health Committee &amp; Commitee, 2012)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Elshaug, Watt, et al., 2009; Elshaug et al., 2007; Elshaug, Watt, Mundy, &amp; Willis, 2012; Elshaug, Moss, et al., 2009; Garner &amp; Littlejohns, 2011; Gerdvilaite &amp; Nachtnebel, 2011)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Daniels et al., 2013)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Leggett et al., 2012)</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>(Polksena et al., 2013)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Schmidt, 2010)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Haas, Hall, Viney, &amp; Gallego, 2012)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(García-Armeño, Campillos-Artero, &amp; Bernal-Delgado, 2013)</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>(Watt et al., 2011)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Nuti, Vani, &amp; Bonni, 2010)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Reference</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>(Haines et al., 2014)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Kamran et al., 2009)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Frønsdal et al., 2010)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Hodgetts et al., 2014)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Joshi, Stahnsch, &amp; Noseworthy, 2009)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Donaldson, Bate, Mitton, Dionne, &amp; Ruta, 2010)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Robinson et al., 2013)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Mitton, et al. 2011)</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>(Russell et al., 2014)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>TERM: RATIONING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Moreira, 2011)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Martin, 2015)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Bevan &amp; Brown, 2014)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Aaron &amp; Schwartz, 1990)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(R Klein et al., 1995; R Klein, 1995; Rudolf Klein, 1994)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Meadowcroft, 2008)</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>(D. Mechanic, 1997; David Mechanic, 1995)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Gerdvilaite &amp; Nachtnebel, 2011)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Gravelle &amp; Siciliani, 2007)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Carlsson, 2010)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Giacomini, 1999)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>(Syrett, 2003)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Maxwell, 1995; Schwartz &amp; Mendelson, 1992)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Fox &amp; Leichter, 1991)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Rosenhal &amp; Newhouse, 2002)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Source</td>
<td>Term: Deinsurance</td>
<td>Term: Health Technology Reassessment</td>
<td>Term: Decommissioning</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------</td>
<td>-------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>(Giacomini et al., 2000; Giacomini, 1999)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Leggett et al., 2012)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Mackean et al., 2013)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Banta &amp; Thacker, 1990)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Robert, Harlock, &amp; Williams, 2014)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Joshi et al., 2009)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Robinson et al., 2013)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Elshaug, Watt, et al., 2009)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Prasad &amp; Ioannidis, 2014)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Gordon et al., 2007; Kiran et al., 2013; Landry et al., 2006)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(Elshaug, Watt, et al., 2009)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
(Landry et al., 2006) ✓ ✓ ✓ ✓ ✓ ✓ ✓
Appendix 2: Table of definitions used for resource withdrawal terms

<table>
<thead>
<tr>
<th>Definition of resource withdrawal concept</th>
<th>Attributes</th>
<th>Antecedents</th>
<th>Consequences/Outcomes</th>
<th>Service example (country)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Effect on service</td>
<td>Effect on system</td>
<td>Effect on patient</td>
</tr>
<tr>
<td>TERM: DISINVESTMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The formal processes and mechanisms that are used to reduce or discontinue the use of selected procedures and treatments.</td>
<td>Explicit process</td>
<td>Evidence of ineffectiveness or outside the acceptable level of cost-effectiveness</td>
<td>Reduced Removed</td>
<td>Unspecified impacts (dependent on type of service chosen for disinvestment)</td>
<td>Unspecified impacts (dependent on type service chosen for disinvestment)</td>
</tr>
<tr>
<td>The cessation or restriction of potentially harmful, clinically ineffective or cost inefficient practices</td>
<td>Explicit process</td>
<td>Evidence of: Harmfulness, ineffectiveness, cost inefficiency, lack of safety, lack of quality of health care, poor risk/benefit ratio, lack of evidence of efficacy</td>
<td>Restricted Removed</td>
<td>More efficient use of resources</td>
<td>Improved health benefits</td>
</tr>
</tbody>
</table>
An explicit process of taking resources from one service in order to use them for other purposes that are believed to be of better value.

<table>
<thead>
<tr>
<th>Two stage process</th>
<th>Evidence of comparative ineffectiveness</th>
<th>Replacement</th>
<th>More efficient use of resources</th>
<th>More beneficial care</th>
<th>Unspecified medical services (England)</th>
<th>(Pearson &amp; Littlejohns, 2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority setting</td>
<td>Evidence of ineffectiveness or cost-ineffective Budget reduction</td>
<td>Restricted (guidelines)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A policy driven process of defunding services that provide less favourable health outcomes.

<table>
<thead>
<tr>
<th>Policy driven process</th>
<th>Evidence of: Unsafe, harmful, ineffective, low health gain, or cost ineffectiveness</th>
<th>Defunding leading to a reduction of service availability</th>
<th>Release of resources for more efficient use</th>
<th>More beneficial care</th>
<th>Unspecified medical services, (New Zealand)</th>
<th>(Rumbold, Allen, &amp; Harris, 2008b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluative process</td>
<td>Evidence of comparative ineffectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explicit process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System level funding decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full or partial withdrawal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Withdraw or reduce an investment of services in order to better allocate resources to services that provide more benefit.

<table>
<thead>
<tr>
<th>Implicit or explicit process</th>
<th>Evidence of: Safety, clinical effectiveness, cost effectiveness</th>
<th>Full or partial removal</th>
<th>More efficient use of resources</th>
<th>More beneficial care</th>
<th>Unspecified medical services, (New Zealand)</th>
<th>(National Health Committee, 2012)</th>
</tr>
</thead>
</table>
The processes of (partially or completely) withdrawing health resources from any existing health care practices, procedures, technologies, or pharmaceuticals that are deemed to deliver little or no health gain for their cost and thus are not efficient health resource allocations. Within this is the view to reallocation or reinvestment towards technologies, practices, and programs with greater demonstrated (cost) effectiveness.

| Full withdrawal of services and interventions in order to use them for other purposes that are believed to be of better value | Two-stage process (withdrawal, reinvest) | Budgetary shortfalls Service reductions due to inappropriateness Benchmarking (e.g., lower cost for the same output). |
| Full or partial withdrawal of service from insurance scheme | Evidence that a service is comparatively ineffective or provides no benefit | Full withdrawal (full decommissioning of a service) Restriction of service (guidelines or fee schedule changes for patient subgroups) Retraction (investing in less of an |
| More efficient use of resources | More beneficial care | Unspecified medical services (Australia, Spain, Italy, Canada) |

(Elshaug, Watt, et al., 2009; Elshaug, Moss, et al., 2009; Elshaug et al., 2008, 2007, 2012; Garner & Littlejohns, 2011; Gerdvilaite & Nachtnebel, 2011; Daniels et al., 2013)
The removal of funding from services based on clinical ineffectiveness or financial inefficiency

<table>
<thead>
<tr>
<th>Priority setting</th>
<th>Evidence of: ineffective services or financial inefficiency</th>
<th>Removal of funding</th>
<th>More efficient use of resources</th>
<th>More health benefit</th>
<th>Unspecified medical services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two stage process (withdrawal, reinvest)</td>
<td>Stakeholder engagement (to determine best reallocation)</td>
<td>Full or partial withdrawal</td>
<td>More efficient use of resources</td>
<td>More health benefit</td>
<td>Unspecified medical services</td>
</tr>
</tbody>
</table>

The complete or partial withdrawal of resources from healthcare services and technologies that are regarded as unsafe, ineffective or inefficient, with those resources shifted to health services and technologies with greater clinical- or cost-effectiveness

<table>
<thead>
<tr>
<th>Two part process (identification and withdrawal)</th>
<th>Explicit process</th>
<th>System level funding decision</th>
<th>Full or partial withdrawal</th>
<th>More efficient use of resources</th>
<th>More health benefit</th>
<th>Unspecified medical services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgetary shortfalls Evaluation of a service that is determined to be comparatively inferior (low value)</td>
<td>Three potential options for disinvestment: 1) stop a treatment, intervention or service; 2) scale back a treatment, intervention, or service; or 3) replace a treatment, intervention or service with an alternative.</td>
<td>More efficient use of resources</td>
<td>More health benefits</td>
<td>Unspecified medical services</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Category 1: Reallocation of resources from services that are providing positive benefit to areas where greater benefit may be gained.

Category 2: Removal of interventions or services that are

<table>
<thead>
<tr>
<th>Full or partial</th>
<th>More efficient use of resources</th>
<th>More health benefit</th>
<th>Unspecified medical services</th>
</tr>
</thead>
</table>
ineffective or provide little or no value for money spent.

Category 3: Combines categories 1 and 2

Processes by which a health system or service removes technologies, without necessarily replacing them

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Implicit or explicit System level funding decision</td>
</tr>
<tr>
<td>2</td>
<td>Full or partial withdrawal</td>
</tr>
<tr>
<td>3</td>
<td>Implicit or explicit System level decision</td>
</tr>
<tr>
<td></td>
<td>Unwarranted variations in practice</td>
</tr>
<tr>
<td></td>
<td>Dropping of services from basket</td>
</tr>
<tr>
<td></td>
<td>Discourage use through guidelines</td>
</tr>
<tr>
<td></td>
<td>Limiting availability</td>
</tr>
<tr>
<td></td>
<td>Restricting indications to patient subpopulation</td>
</tr>
</tbody>
</table>

Withdrawal

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Withdrawal of funding from no or low value health interventions, with the intent to free up resources for reinvestment in superior services</td>
</tr>
<tr>
<td></td>
<td>System level decision</td>
</tr>
<tr>
<td></td>
<td>Adoption of new technology</td>
</tr>
<tr>
<td></td>
<td>Reduced/removed funding for service</td>
</tr>
<tr>
<td></td>
<td>More efficient use of resources</td>
</tr>
<tr>
<td></td>
<td>More beneficial care</td>
</tr>
<tr>
<td></td>
<td>Various low value services</td>
</tr>
</tbody>
</table>

Disinvestment

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three stage process: identification, withdraw, reinvest, EVALUATIVE</td>
</tr>
<tr>
<td></td>
<td>Cost effectiveness research</td>
</tr>
<tr>
<td></td>
<td>Reduction or removal of services</td>
</tr>
<tr>
<td></td>
<td>Improved quality</td>
</tr>
<tr>
<td></td>
<td>More efficient resource allocation</td>
</tr>
<tr>
<td></td>
<td>More beneficial care</td>
</tr>
<tr>
<td></td>
<td>ART</td>
</tr>
</tbody>
</table>

Reduction in access to potentially beneficial services

Unspecified medical services

( referee et al., 2012)

( Spain)

( García-Armesto et al., 2013)

( Watt et al., 2011)

( Australia)
services; identifying those that do not provide safe, effective or cost-effective care; and redirecting funding away from these services toward those with superior safety, effectiveness and/or cost-effectiveness profiles

<table>
<thead>
<tr>
<th>Withdrawing health resources from existing healthcare practices, procedures technologies or pharmaceuticals that are deemed to deliver little or no health benefit</th>
<th>System level process</th>
<th>Overspending Cost Control issues</th>
<th>Reduction or removal of service</th>
<th>More efficient use of resources Lowered overall spending</th>
<th>Potential denial of health benefit</th>
<th>Various medical services (Italy)</th>
<th>(Nuti et al., 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removal of resources from non-cost-effective practices, procedures, technologies, or medicines.</td>
<td>Evidence based identification and assessment Reinvestment</td>
<td>Evidence of cost-effectiveness Budget cuts</td>
<td>Removal of service</td>
<td>More efficient distribution of resources</td>
<td>Potential denial of health benefit</td>
<td>Unspecified medical services (Australia)</td>
<td>(Haines et al., 2014)</td>
</tr>
</tbody>
</table>
The freeing up of resources in order to fund another service.

<table>
<thead>
<tr>
<th>Resource allocation</th>
<th>New technology adoption</th>
<th>Expansion of new services, reduction in older service.</th>
<th>More efficient use of resources</th>
<th>More efficient use of services</th>
<th>Better health outcomes</th>
<th>ART (Australia)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive process of obsolescence</td>
<td>Adoption of new technology</td>
<td>Replacement of obsolete services</td>
<td>Stop access to unbeneficial care</td>
<td>Unspecified medical services</td>
<td>(Frønsdal et al., 2010)</td>
<td></td>
</tr>
</tbody>
</table>

Removal of resources at the end of a technological lifecycle, which begins with innovation and moves through adoption before reaching a stage where that innovation is no longer clinically or cost effective.

<table>
<thead>
<tr>
<th>System level process</th>
<th>Cost control measures</th>
<th>Reduced use Replacement</th>
<th>More efficient use of services</th>
<th>Better health outcomes</th>
<th>ART (Australia)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence based process</td>
<td>Quality control initiative</td>
<td></td>
<td></td>
<td></td>
<td>(Hodgetts et al., 2014)</td>
</tr>
<tr>
<td>The displacement of non-cost-effective technologies for resource reinvestment or reallocation.</td>
<td>System level</td>
<td>New evidence of clinical or cost effectiveness</td>
<td>Reduced use</td>
<td>More efficient use of resources</td>
<td>Better health outcomes</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Taking resources from services that provide little or no value</td>
<td>Evidence based</td>
<td>Spending audit</td>
<td>Reduction in use</td>
<td>Improved quality</td>
<td>Better health outcomes</td>
</tr>
<tr>
<td>The removal of services that were once covered by public insurance</td>
<td>Priority setting</td>
<td>Budget cutting</td>
<td>Service no longer available</td>
<td>Improved resource allocation</td>
<td>Denial of potentially beneficial care</td>
</tr>
<tr>
<td>Removing resources from a service identified as lower value than others.</td>
<td>Stakeholder driven</td>
<td>Budgetary shortcomings</td>
<td>Removal of service</td>
<td>Release of resources</td>
<td>Denial of potentially beneficial care</td>
</tr>
<tr>
<td>Funding decision to restrict the use of a service to those who may benefit the most.</td>
<td>Evidence based on social judgment</td>
<td>Priority setting activities</td>
<td>Removal of funds that restrict service availability</td>
<td>Reduced spending, More efficient use of resources</td>
<td>Improved access to those most in need, less access others</td>
</tr>
</tbody>
</table>

**TERM: RATIONING**
The use of institutional procedures for the systematic allocation of resources within health care systems.

<table>
<thead>
<tr>
<th>Priority Setting</th>
<th>Evidence of effectiveness</th>
<th>Limited availability of service</th>
<th>Improved spending</th>
<th>Denial of potentially beneficial care</th>
<th>Dementia drugs (UK)</th>
<th>(Moreira, 2011)</th>
</tr>
</thead>
</table>

The process of deciding which healthcare services are funded by government and which ones are not.

<table>
<thead>
<tr>
<th>Explicit and implicit process</th>
<th>Budget reductions</th>
<th>Defunding</th>
<th>Denying access</th>
<th>Selection/restriction</th>
<th>Deflection</th>
<th>Deterrence</th>
<th>Delay</th>
<th>Diluting</th>
<th>More efficient resource allocation</th>
<th>Denial of access to potentially beneficial care</th>
<th>Improved quality of care</th>
<th>Various medical services (Australia)</th>
<th>(Martin, 2015)</th>
</tr>
</thead>
</table>

The denial of health care that is beneficial but is deemed to be too costly.

<table>
<thead>
<tr>
<th>Cost based process</th>
<th>Budget shortage</th>
<th>Reduced access</th>
<th>More efficient spending</th>
<th>Denial of access to potentially beneficial care</th>
<th>Various services in acute, chronic and end of life care</th>
<th>(Bevan &amp; Brown, 2014)</th>
</tr>
</thead>
</table>

The denial of commodities to those who have the money to buy them in order to eliminate inefficiencies.

<table>
<thead>
<tr>
<th>Cost based process</th>
<th>Introduction of new technology</th>
<th>Reduced access</th>
<th>More efficient use of resources</th>
<th>Denial of access to potentially beneficial care</th>
<th>Unspecified services (USA)</th>
<th>(Aaron &amp; Schwartz, 1990)</th>
</tr>
</thead>
</table>
Involves the denial or dilution of something that is potentially beneficial to the patient: he or she is getting less in the way of treatment than might be thought desirable in a world with unlimited resources.

<table>
<thead>
<tr>
<th>Rationing involves depriving patients of care from which they may benefit and which they want</th>
<th>Concerned with evidence of medical necessity</th>
<th>Priority setting activities provide the parameters</th>
<th>Restricted</th>
<th>More efficient use of resources</th>
<th>Denial of potentially beneficial services</th>
<th>Unspecified medical services (UK)</th>
<th>(R Klein, 1994, 1995; R Klein, Day, &amp; Redmayne, 1995a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value laden process</td>
<td>Political event</td>
<td>Reduced availability</td>
<td>Denial of potentially beneficial care</td>
<td>Unspecified medical services (UK)</td>
<td>(Meadowcroft, 2008)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explicit decisions about the amounts and types of resources to be made available, eligible populations, and specific rules for allocation. Implicit discretionary decisions made by managers, professionals, and other health personnel functioning. Complex set of actions at various levels of health system. Implicit and explicit process. Clinical (implicit) decision on who receives care. System decision on resource.

<table>
<thead>
<tr>
<th>Explicit decisions about the amounts and types of resources to be made available, eligible populations, and specific rules for allocation. Implicit discretionary decisions made by managers, professionals, and other health personnel functioning</th>
<th>Concerned with evidence of medical necessity</th>
<th>Priority setting activities provide the parameters</th>
<th>Restricted</th>
<th>More efficient use of resources</th>
<th>Denial of potentially beneficial services</th>
<th>Unspecified medical services (UK)</th>
<th>(Mechanic, 1995, 1997)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget reductions</td>
<td>Restricted use</td>
<td>Reallocation of resources</td>
<td>Denial of potentially beneficial care</td>
<td>Queuing, reduction in services, substitution, elimination of services (UK)</td>
<td>(Mechanic, 1995, 1997)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
within a fixed budgetary allowance.

<table>
<thead>
<tr>
<th>Withholding beneficial interventions for cost reasons</th>
<th>Cost related decision</th>
<th>Budgetary reductions</th>
<th>Reduced use</th>
<th>Reduced spending</th>
<th>Denial of potentially beneficial care</th>
<th>Unspecified medical services</th>
<th>(Gerdvilaite &amp; Nachtnebel, 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restriction of services to those who have a higher perceived benefit.</td>
<td>Effectiveness based decision</td>
<td>Budget reductions</td>
<td>Restriction</td>
<td>More efficient use of resources</td>
<td>Denial of potentially beneficial care</td>
<td>Access to more beneficial care</td>
<td>Unspecified service (UK)</td>
</tr>
<tr>
<td>Rationing is a priority setting activity where resources are removed from the service such that other more effective ones are prioritized.</td>
<td>Priority setting decision</td>
<td>New evidence of effectiveness</td>
<td>Restricted use</td>
<td>More efficient use of resources</td>
<td>Denial of potentially beneficial care</td>
<td>Access to more beneficial care</td>
<td>Extending time between follow-up visits, check-ups</td>
</tr>
<tr>
<td>clinical decisions</td>
<td>The allocation of scarce resources among competing claims</td>
<td>The elimination or reduction in the provision of a service based on evidence of low value.</td>
<td>Denying some patients access to certain types of expensive but useful services.</td>
<td>Prioritizing services, which that may provide the most benefit if under a given budget.</td>
<td>(Sweden)</td>
<td>(Giacomini, 1999)</td>
<td>(Syrett, 2003)</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Priority setting</td>
<td>Priority setting</td>
<td>Evidence based process</td>
<td>Spending basis</td>
<td>Clinical and cost effectiveness assessment</td>
<td>(Sweden)</td>
<td>(Canada)</td>
<td>(England)</td>
</tr>
<tr>
<td>Resource allocation</td>
<td>Resource allocation</td>
<td>Full or partial withdrawal</td>
<td>Budget reductions</td>
<td>Budget reductions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocation</td>
<td></td>
<td></td>
<td>Adoption of new services</td>
<td>Adoption of new services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political reasons</td>
<td></td>
<td></td>
<td>Political reasons</td>
<td>Political reasons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced use</td>
<td>Reduced use</td>
<td>Removal or reduction</td>
<td>More efficient resource allocation</td>
<td>More efficient resource allocation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More efficient of resources</td>
<td>Denial of potentially beneficial care</td>
<td></td>
<td></td>
<td>Denial of potentially beneficial care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various specific examples</td>
<td>Unspecified medical services</td>
<td></td>
<td></td>
<td>Unspecified medical services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Canada)</td>
<td>(England)</td>
<td></td>
<td></td>
<td>(England)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Giacomini, 1999)</td>
<td>(Syrett, 2003)</td>
<td></td>
<td></td>
<td>(Maxwell, 1995; Schwartz &amp; Mendelson, 1992)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Fox &amp; Leichter, 1991)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table showing various methods used in clinical decisions, such as priority setting, resource allocation, budget reductions, and political reasons. The table lists examples from different countries, including Sweden, Canada, England, the UK, and the US.
<table>
<thead>
<tr>
<th>Limiting the choice of services to provide in an area with scarce resources. Choice is decided on effectiveness, equity and patient choice.</th>
<th>Explicit evidence based decision making process</th>
<th>Budget reductions</th>
<th>Restricted Removed</th>
<th>More efficient resource allocation</th>
<th>Denial of potentially beneficial care</th>
<th>Better patient care</th>
<th>Unspecified medical services (England)</th>
<th>(Griffiths, 2002)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present various definitions without claiming a correct one. Claims “the denial of non-effective or non-beneficial treatment does not constitute rationing”</td>
<td>Cost related process Resource allocation/ Priority setting decision</td>
<td>Budget reductions Evidence of cost-ineffectiveness</td>
<td>Deterrence Delay Deflection Dilution Denial</td>
<td>More efficient use of resources</td>
<td>Denial of potentially beneficial care</td>
<td>Unspecified medical services (UK)</td>
<td>(Mullen, 1998)</td>
<td></td>
</tr>
<tr>
<td>Limiting resources available to provide services.</td>
<td>Based on criteria (evidence, need, equity, low value for money)</td>
<td>Stakeholder input</td>
<td>Reduction or removal</td>
<td>Reduced spending</td>
<td>Denial of potentially beneficial care</td>
<td>In vitro fertilization (IVF) (UK)</td>
<td>(Redmayne &amp; Klein, 1993a)</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Decision on what healthcare funds will be spent on, given limited resources.</td>
<td>Rational decision making</td>
<td>Budget reductions</td>
<td>Reduction or removal</td>
<td>More efficient distribution of resources</td>
<td>Denial of potentially beneficial care</td>
<td>Unspecified medical services (New Zealand)</td>
<td>(Campbell, 1995)</td>
<td></td>
</tr>
<tr>
<td>The process by which prioritizing care is achieved through exclusion, denial, delay, termination of service or early discharge.</td>
<td>Implicit process made at the clinical level</td>
<td>Budget reductions</td>
<td>Reduction or removal</td>
<td>Reduced spending</td>
<td>Denial of potentially beneficial care</td>
<td>Unspecified medical services (UK)</td>
<td>Malone, 1998</td>
<td></td>
</tr>
<tr>
<td>Decisions about what to fund or what not to fund.</td>
<td>Principle based decision making process (patient choice, effectiveness, equity)</td>
<td>Budget reductions</td>
<td>Restriction, or removal</td>
<td>More efficient resource allocation</td>
<td>Denial of potentially beneficial care</td>
<td>Various medical services including riluzole, isotretinoin</td>
<td>(Hope, Hicks, Reynolds, Crisp, &amp; Griffiths, 1998)</td>
<td></td>
</tr>
</tbody>
</table>
Making choices about what are the most effective/efficient type of health services to provide under a limited budget.

<table>
<thead>
<tr>
<th>Evidence based (effectiveness)</th>
<th>Budget reductions</th>
<th>Reduction or removal</th>
<th>More efficient resource allocation</th>
<th>Denial of potentially beneficial care</th>
<th>IVF (England and Wales)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority setting</td>
<td>Political events</td>
<td>Replacement</td>
<td></td>
<td></td>
<td>(Plomer, Smith, &amp; Martin-Clement, 1999)</td>
</tr>
<tr>
<td></td>
<td>Social events</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Decisions about which patients should be treated and how resulting in a deprivation of possible benefits for patient.

<table>
<thead>
<tr>
<th>Resource allocation</th>
<th>Budget reductions</th>
<th>Restriction (denial, selection, deterrence, deflection or dilution) or removal</th>
<th>More efficient resource allocation</th>
<th>Denial of potentially beneficial care</th>
<th>Various medical services Including Tonsillectomy, Bariatric surgery, IVF (UK, gray literature)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority setting</td>
<td>Evidence of cost ineffectiveness</td>
<td></td>
<td></td>
<td></td>
<td>(Rudolf Klein &amp; Maybin, 2012)</td>
</tr>
</tbody>
</table>

TERM: DEINSURING

Removal of medical services from the physician fee schedule

<table>
<thead>
<tr>
<th>Full withdrawal</th>
<th>Stakeholder input</th>
<th>Removal from public insurance scheme (no longer publicly funded)</th>
<th>Less services available</th>
<th>Denial of potentially beneficial care</th>
<th>Various medical services (Canada)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy driven process</td>
<td>Evidence of ineffectiveness</td>
<td></td>
<td></td>
<td></td>
<td>(Giacomini, 1999; Giacomini et al., 2000)</td>
</tr>
<tr>
<td>System level</td>
<td>Budget reductions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TERM: Health Technology Reassessment

Health technology reassessment process includes identification, prioritization, evaluation, implementation and monitoring of health care

<table>
<thead>
<tr>
<th>Evidence based</th>
<th>Evidence of cost ineffectiveness</th>
<th>Withdrawal (full or partial of resources)</th>
<th>More efficient use of resources</th>
<th>Access to more care with an evidence base</th>
<th>Unspecified medical services (international)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification, prioritization, evaluation, implementatio n and monitoring of technology</td>
<td>Evidence of ineffectiveness</td>
<td>Replaced</td>
<td></td>
<td></td>
<td>(Leggett et al., 2012)</td>
</tr>
<tr>
<td></td>
<td>Evidence of ineffectiveness</td>
<td>Budgetary restrictions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A structured, evidence-based assessment of the clinical, social, ethical and economic effects of a technology currently used in the health care system, to inform optimal use of that technology in comparison to its alternatives.

<table>
<thead>
<tr>
<th>services</th>
<th>Evidence based process</th>
<th>Evidence of cost ineffectiveness</th>
<th>Reduced Restricted</th>
<th>More efficient use of resources</th>
<th>More education &amp; information on services</th>
<th>Unscheduled medical services (international)</th>
<th>(Mackean et al., 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy research that examines the short and long term clinical, societal, economic, ethical, and legal consequences of application of existing technologies</td>
<td>Evidence based process</td>
<td>Evidence of cost ineffectiveness</td>
<td>Reduced Restricted</td>
<td>More efficient use of resources</td>
<td>More education and information on services</td>
<td>Various medical services including Electronic fetal monitoring, hysterectomy, Episotomy, electroencephalography (international)</td>
<td>(Banta &amp; Thacker, 1990)</td>
</tr>
</tbody>
</table>

TERM: Decommissioning
The practice of replacement and removal of health care services as an evidence based practice, including the policies to remove the interventions and reconfiguring of services.

<table>
<thead>
<tr>
<th>The practice of replacement and removal of health care services as an evidence based practice, including the policies to remove the interventions and reconfiguring of services.</th>
<th>Policy driven Evidence based</th>
<th>Evidence of cost ineffectiveness</th>
<th>Replacement or removal</th>
<th>More efficient resource allocation</th>
<th>Better health outcomes</th>
<th>Budget restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To remove from service</td>
<td>Policy driven process</td>
<td>Evidence of clinical or cost effectiveness</td>
<td>Removal, or reduction</td>
<td>Reduce spending</td>
<td>Safer, more effective treatments</td>
<td>Various medical and nonmedical services including drug therapies</td>
</tr>
<tr>
<td></td>
<td>Assessment</td>
<td>Adoption of new technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Priority setting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource allocation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removing services from public payment</td>
<td>Policy driven process</td>
<td>Budget restrictions</td>
<td>Closure of services</td>
<td>Improved spending</td>
<td>Unspecified medical services (UK)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evidence of efficacy</td>
<td>Service redesign</td>
<td></td>
<td></td>
<td>(Robinson et al., 2013)</td>
<td></td>
</tr>
</tbody>
</table>

(Robert, Harlock, & Williams, 2014)
<table>
<thead>
<tr>
<th>Event Description</th>
<th>Priority setting</th>
<th>Evidence of effectiveness</th>
<th>Removal of service</th>
<th>Reduced benefit package</th>
<th>Denial of potentially beneficial care</th>
<th>Unspecified medical services (Canada)</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removal of services from an insurance schedule</td>
<td>Priority setting</td>
<td>Evidence of effectiveness</td>
<td>Removal of service</td>
<td>Reduced benefit package</td>
<td>Denial of potentially beneficial care</td>
<td>Unspecified medical services (Canada)</td>
<td>(Elshaug, Watt, et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Resource allocation</td>
<td>Introduction of new technologies</td>
<td>Medical reversal (replacement with superior service)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>De-implementation</td>
<td>Policy driven process</td>
<td>Evidence of ineffectiveness, Evidence of comparative ineffectiveness or harm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>De-List</td>
<td>Policy decision</td>
<td>Evidence of ineffectiveness</td>
<td>Removal of service</td>
<td>More efficient allocation of resources</td>
<td>Improved health benefits</td>
<td>Various medical services (US)</td>
<td>(Prasad &amp; Ioannidis, 2014)</td>
</tr>
<tr>
<td></td>
<td>Priority setting</td>
<td>Evidence of comparative ineffectiveness</td>
<td>Provision of better services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource allocation</td>
<td>Adoption of new technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The discontinuation of a public insurance for a healthcare service</td>
<td>Policy driven</td>
<td>Evidence of ineffectiveness</td>
<td>Removal of service</td>
<td>More efficient allocation of resources</td>
<td>Better health outcomes</td>
<td>Unspecified medical services (Canada)</td>
<td>(Joshi et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Outcome focused</td>
<td>Evidence of ineffectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource allocation</td>
<td>Budget restrictions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services that are partially or fully removed from public insurance scheme</td>
<td>Policy driven</td>
<td>Evidence of ineffectiveness</td>
<td>Restriction</td>
<td>Reduced spending on service</td>
<td>Reduced access</td>
<td>Physical therapy (Gordon et al., 2007)</td>
<td>(Gordon et al., 2007; Kiran et al., 2013; Landry et al., 2006)</td>
</tr>
<tr>
<td></td>
<td>Outcome focused</td>
<td>Evidence of ineffectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource allocation</td>
<td>Budget restrictions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References:
- Elshaug, Watt, et al., 2009
- Prasad & Ioannidis, 2014
- Joshi et al., 2009
- Gordon et al., 2007
- Kiran et al., 2013
- Landry et al., 2006
- Gordon et al., 2007
- Landry et al., 2006
<table>
<thead>
<tr>
<th>Services that were defined, as insured but are no longer covered.</th>
<th>Political process</th>
<th>Adoption of new technology</th>
<th>Removal</th>
<th>Improved efficiency of resource allocation</th>
<th>Reduced access</th>
<th>Various medical services (Canada)</th>
<th>(Elshaug, Watt, et al., 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full or partial removal of a service from a publicly funded insurance list.</td>
<td>Evidence based process</td>
<td>Budget restrictions</td>
<td>Reduction or restriction</td>
<td>Improved efficiency</td>
<td>Reduced access</td>
<td>Physical therapy (Canada)</td>
<td>(Landry et al., 2006)</td>
</tr>
</tbody>
</table>
Appendix 3: References for the figure 1: Characteristics of resource withdrawal

37. Schmidt D. The development of a disinvestment framework to guide resource allocation decisions in health services delivery organizations. 2010;(October).
1800.2
70. Jacobs N, Schneider H, Van Rensburg HCJ. Rationing access to public-sector antiretroviral treatment during scale-up in South Africa: implications for equity.
74. Paprica A. Reassessing Existing Funded Health Services and Products to Support Appropriate Care.; 2013. cfhi-fcass.ca.
Chapter 4
Appendix 1: Semi-structured interview guide

During this interview, I would like to discuss your perspectives on the Choosing Wisely Canada initiative to reduce unnecessary care.

**(Part 1) Background/ experiences with unnecessary care**

1. Can you start off by telling me a little bit about yourself and your professional role?

2. Can you tell me what reducing unnecessary care means to you?
   - Probe: In the context of your professional role?

3) Can you tell me about any initiative you have been involved in to reduce unnecessary care?
   - Probes:
     - Why was it necessary?
     - How was it developed?
     - How were services targeted?
     - How were decisions implemented?

**(Part 2) Experiences with Choosing Wisely Canada, its goals and characteristics**

4) Can you describe to me the purpose of the Choosing Wisely Canada Campaign?
   - Probes:
     - Describe your role in the CWC campaign?
     - Tell me about an experience you have had with the CWC campaign.
     - Was this initiative necessary? Why or why not?
     - In your opinion, what factors have led to the development of CWC?
     - How important is this initiative to reduce unnecessary services?
     - Would you consider the problem CWC is addressing to be a large or small problem?

5) Tell me about your experience in the development of the campaign.
   - Probes
     - Can you tell me about interactions with policymakers, patients, or private industry while developing or promoting the list?

6) Tell me why you think Choosing Wisely has been adopted in Canada?
   - Probes
     - Tell me why you think the strategy took the shape it did.
7) In your experience, has the CWC campaign played a role in improving patient care (for physicians in active practice)?
   - Will it reduce unnecessary care? If so, how?
   - Tell me about experiences selecting services for the campaign.
   - Tell me about a specific example of an experience in which this campaign altered your plan of care.
   - Tell me about an experience in which you communicated to a patient about an unnecessary service.
   - Tell me about implementing the campaign at your care location

8) Tell me whether you consider healthcare providers to be in the right position to implement this campaign? If so, why? Can you elaborate?

(PART 3) Role of government in reducing unnecessary services
Thinking about the role of government in healthcare, please…
9) Tell me if you consider CWC or similar strategies as an option for government?
10) Tell me about your opinion on the government role to reduce the use of unnecessary service?
   - Should government take a different role? Or maintain status quo?
   - What policies or initiatives should the government attempt?

12) In your experiences, what could governments learn from the CWC or other nongovernmental approaches?
   - What can one do that the other can’t?
     e.g., Resources, legitimacy, access to patients, control over practice