Myth Busters Teaching Resource

January 2008

Making Research *Work*

CHSRF FCRSS
Canadian Health Services Research **Foundation**
Fondation canadienne de la recherche sur les services de santé

www.chsrf.ca

MYTHBUSTERS TEACHING RESOURCE

Compiled by Jennifer Thornhill and Dave Clements

This document is available on the Canadian Health Services Research Foundation web site, **www.chsrf.ca.**

For more information on the Canadian Health Services Research Foundation, contact the Foundation at:

1565 Carling Avenue, Suite 700
Ottawa, Ontario
K1Z 8R1

E-mail: communications@chsrf.ca
Telephone: 613-728-2238
Fax: 613-728-3527

Ce document est disponible sur le site Web de la Fondation canadienne de la recherche sur les services de santé, **www.fcrss.ca.**

Pour obtenir de plus amples renseignements sur la Fondation canadienne de la recherche sur les services de santé, communiquez avec la Fondation :

1565, avenue Carling, bureau 700
Ottawa (Ontario)
K1Z 8R1

Courriel : communications@fcrss.ca
Téléphone : 613-728-2238
Télécopieur : 613-728-3527

Acknowledgements

The *Mythbusters Teaching Resource* was compiled by Jennifer Thornhill and Dave Clements and published only after expert review. The authors would like to acknowledge the support and efforts of colleagues who made this resource possible, especially Cynthia Cheponis, Jasmine Neeson, Rebecca Overall and Kelly Ripley. The Canadian Health Services Research Foundation (CHSRF) would especially like to thank our key informants and expert reviewers for their time and dedication in reviewing this teaching resource.

The key informants and expert reviewers are:

Yukiko Asada, ***Dalhousie University, Halifax, Nova Scotia***

Stephanie Buckingham, ***Malaspina University College, Nanaimo, British Columbia***

Alan Cassels, ***University of Victoria, Victoria, British Columbia***

Alba DiCenso, ***McMaster University, Hamilton, Ontario***

John Lavis, ***McMaster University, Hamilton, Ontario***

Pat Martens, ***University of Manitoba, Winnipeg, Manitoba***

Lynn McCleary, ***Brock University, St. Catherines, Ontario***

Sam Sheps, ***University of British Columbia, Vancouver, British Columbia***

Sam Shortt, ***Canadian Medical Association, Ottawa, Ontario***

Vianne Timmons, ***University of Prince Edward Island, Charlottetown, Prince Edward Island***

Table of Contents

Foreword

Whether in their own academic workplaces or in interactions with policy makers and managers, increasingly researchers are called upon to show the value of their work for informing policy and management decision-making. The primary objective of the *Mythbusters Teaching Resource* is to help instructors of graduate-level courses teach students how to write easy-to-read research summaries for policy makers, planners, managers and providers. This resource also introduces the activities of the Canadian Health Services Research Foundation and the connection between policy, management and research evidence, particularly the concept of using research evidence to inform management and policy decisions in the health services arena. With this said, the authors anticipate that instructors will use this resource to design a curriculum module to suit their goals and their students' needs.

WHY?

Research evidence is one important consideration in the decision-making process. By improving the way research evidence is presented, researchers increase the chances of having their research inform policy and management decision-making. Since the results of individual research studies are generally insufficient on their own to directly determine a decision or course of action, research summaries offer a way to pull together main messages from a number of published sources in a conversational way that policy makers, managers and others can appreciate.

WHAT?

This teaching resource features the Foundation's flagship summary product, *Mythbusters*, which uses research evidence to debunk accepted wisdom in popular Canadian healthcare debates. The resource was developed primarily through consultations with key informants, who felt this resource should be web-based (easily accessible), flexible (may be used in a variety of ways), and evolving (will include new materials as necessary). The *Mythbusters Teaching Resource* is intended for instructors of graduate-level coursework in a variety of fields – from applied health services research to epidemiology to nursing to health policy and beyond. Instructors may try a full-scale *Mythbuster* assignment (including all six components) or focus on a few steps.

ASSUMPTIONS

The authors have made a number of assumptions about the skill sets of students who will use this resource. First, we expect that students have some understanding of how to conduct a literature search. Second, we expect that students have some familiarity with how to critically appraise research evidence. Third, we assume that students know how to write clearly. And fourth, we assume that students have some understanding of the three models of knowledge transfer: producer push, user pull and exchange. Of course, if students need to further develop their research, critical appraisal or written communication skills and/or their understanding of knowledge transfer theory, creating a *Mythbusters* research summary is an excellent way for instructors to integrate learning in all of these areas.

We hope you find this teaching resource useful.

Introduction

RECOGNIZING THAT RESEARCH IS BUT ONE INPUT TO DECISIONS IS MOTHERHOOD AND APPLE PIE FOR THOSE WHO WORK IN THE HEALTHCARE SYSTEM AND INCREASINGLY EMBRACED AS REALITY BY THE RESEARCH WORLD.[1]

Still, some researchers continue to be frustrated by poor uptake of their research findings by policy makers and managers. These researchers sometimes fail to fully appreciate the world of policy- and decision-making, where research is only one important consideration. In the same way, some policy makers and managers can be skeptical about the usefulness of research evidence to inform policy and management decision-making.

The theory of "two communities" — the research community and the policy- and decision-making community — is not new.[2,3] This theory proposes the existence of two camps, unable or unwilling to take one another's realities or perspectives into account.[3] Lindblom and Cohen[4] have said that ". . . in public policy making, many suppliers and users of social research are dissatisfied, the former because they are not listened to, the latter because they do not hear much they want to listen to."

These days, this theory is commonly embraced as a reality, with researchers and decision makers facing different incentive structures in particular. One common complaint from policy makers and managers is that they have little time to read full research reports.[5] Since research results from various studies can also be contradictory, policy makers and managers may also face challenges in assessing which evidence is preferred. It is also well-known that pointing to individual studies is not particularly useful or sufficient for informing policy- and decision-making because these provide an incomplete picture in the context of the overall body of research on a given topic.

Of course, evidence suggests that linkage and exchange efforts — efforts to encourage ongoing interaction, collaboration and exchange of ideas between the research and decision-making communities — can be successful. In particular, these efforts can lead to a decision-relevant culture among researchers and a research-attuned culture among policy makers and managers.[6,7,8] However, attaining these cultures has its challenges[5] and requires much effort from both communities.

Policy makers and managers can make efforts to ensure they receive and apply research findings.[6,9] Researchers can present the research evidence in a way that is sensitive to their target audience and encourages such use.[9] To better influence policy and management decision-making, researchers should also transfer research evidence as actionable messages based on whole bodies of research knowledge.[6,9] Ultimately, both communities may work collaboratively to improve the relevance of research to policy- and decision-making.[10]

USING RESEARCH SUMMARIES TO INFORM POLICY AND MANAGEMENT DECISION-MAKING

User-friendly summaries of research evidence can be a way for researchers to effectively communicate actionable messages to policy makers, managers and others, particularly in cases where research results are unambiguous. *Mythbusters* and *Evidence Boost* are the Foundation's flagship summary products that provide the research evidence behind some of today's major debates in health services management and policy. The *Mythbusters* series was launched in 2000 in recognition of the large number of myths in the system that could be countered with research evidence. Among the most prominent myths were the theories that the aging population would overwhelm the healthcare system;

user fees would ensure better use of the healthcare system; and more money would put an end to emergency-room crunches.

The *Evidence Boost* series was created in 2004 after feedback suggested there was a need for a positive companion to the *Mythbusters*, one that summarized unambiguous research in support of taking a particular course of action where there is not already significant uptake. The first issues of *Evidence Boost* revealed that waiting lists could be managed centrally for better efficiency and that interdisciplinary teams in primary healthcare could effectively manage chronic illnesses.

WHY USE RESEARCH EVIDENCE TO INFORM POLICY- AND DECISION-MAKING?

The roots of evidence-based medicine are thought to come from the clinical world.[11,12,13] In this context, evidence-based medicine is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients."[13] And practicing evidence-based medicine involves "integrating individual clinical expertise with the best available external clinical evidence from systematic research."[13]

A little more than 10 years ago the popularity of evidence-based medicine spread beyond the clinical world to management and policy.[12] The rationale was simple: in the same way that there is a scientific *basis* to how clinicians make diagnostic and treatment decisions for patients, there was a need for health services managers and public policy makers to use research evidence to *inform* the organization and delivery of health services.[10,14,15] The shift to using the term "evidence-informed" instead of "evidence-based" decision-making was made by the Foundation in 2006 to highlight the reality that evidence is but one input to health system decisions.[1]

With explicit consideration of formal research evidence having become widely expected as part of the policy- and decision-making process,[9] researchers needed to develop tools that would be sensitive to policy makers' and managers' needs. However, "the nature of the relevant research for management and policy was sharply different from that of clinical medicine."[12] Today, researchers have many tools available for summarizing research evidence for policy- and decision-making. Two prominent tools are decision support syntheses and research summaries.

SUMMARY VERSUS SYNTHESIS: WHAT IS THE DIFFERENCE?

Although writing syntheses and summaries require similar skills, they seek to accomplish different tasks. Where a formal synthesis can be considered to be the creation of new knowledge, a summary pulls together main messages from a number of published sources. Similarly, syntheses can be rich sources of suggestions for future research as well as sources of evidence to help people make well-informed decisions about healthcare practice,[16] while summaries typically serve only the latter function and in a less-formal way.

In particular, syntheses aim to be comprehensive, seeking out *all* the relevant evidence, favourable or not, and aggregating it into an impartial summary.[12] There are many forms of syntheses, ranging from very formal systematic reviews to informal literature reviews. Among some of the most well-known systematic reviews are those produced by the Cochrane Collaboration,[17] the Campbell Collaboration,[18] the United Kingdom's Centre for Reviews and Dissemination[19] at the University of York, and the Joanna Briggs Institute[20] in South Australia. The Foundation commissions syntheses aimed at making "best practice" recommendations for a specific area of health services management or policy development.

Summaries are a less-formal way of pulling research together, generally using a more conversational tone. One example is *CRISPfacts*, a series of newsletter summaries which are an initiative of the University of New Brunswick's Canadian Research Institute for Social Policy.[21] Another example is the *Mythbusters* series, which sets out the research evidence behind public debates on current healthcare issues. These summaries are often a prescription for action and use storytelling techniques to communicate main messages.

THE MYTHBUSTERS TEACHING RESOURCE: WHAT TO EXPECT

This teaching resource builds on the *Mythbuster* model. As such, the resource incorporates all of the major steps the Foundation follows to create and share a *Mythbuster*. These steps are:

I. Spotting the Myth

II. Searching for Evidence

III. Writing the Summary

IV. Adding Visual Appeal

V. Undergoing Review

VI. Sharing Evidence-Informed Messages

The teaching resource begins with a story about Ana, a fictional character who walks readers through each of these steps.

Throughout this resource, the term "decision maker" is most often used when referring to the audience or end-user of a research summary. In *From Research to Practice: A Knowledge Transfer Planning Guide*, the authors argue that, "It's useful to think of all audiences as 'decision-makers' since 'decisions' are what might be improved with research evidence."[22] With that said, the target audience for a research summary, including a *Mythbuster*, may be any number of persons such as policy makers, planners, managers and providers.

Ana's story

Any similarity, likeness or reference to existing individuals or organizations in this story is entirely coincidental.

Ana is a health services research master's candidate enrolled at one of the CHSRF/CIHR Regional Training Centres.[i] *Having worked as a research assistant with her thesis supervisor and other university-based researchers, Ana has developed strong research skills. Just recently, Ana started a summer internship at a Canadian provincial ministry of health. Working with the director of the ministry's health policy branch, Ana hopes to gain perspective about what it's like to work with those who make decisions about our healthcare system. She also hopes to be able to share her research literacy skills to help her branch rely on evidence-informed policy decisions more often.*

It's another day on the job and Ana's boss, Louise, calls Ana into her office.

"I received a call from the minister's office today," says Louise. "The minister has been getting a number of requests for information about our stance on two-tier healthcare. He was scrummed by the national media again today on this. Journalists are asking why the ministry does not support Canadians buying services. They think a greater role for private care will reduce waits in our publicly funded system. There's likely going to be more of these requests coming up, so I'd like you to pull together some of the research on this issue."

Ana is happy to take on the request, though she's a little taken aback by it. Thinking back to one of her health policy courses, Ana wonders, does anyone really believe that a parallel private system is a cure-all for waiting lists?

SPOTTING THE MYTH

Reflecting on the task ahead, Ana begins to think back to her health policy class again. She remembers discussions about the different kinds of healthcare systems – everything from Canada's largely publicly funded healthcare system to the American two-tier system. One thought that stands out in her mind is that in England and New Zealand, which have parallel private systems, the waiting lists and waiting times appear to be longer in the public system than in Canada's.[ii] *Still, the full details are a little foggy in her head.*

Using a news database, Ana begins to scour national and provincial newspapers for some of the news stories Louise had mentioned. Using the search terms wait times, private *and* health, *Ana retrieves more than 500 newspaper articles from January 1, 2006, to September 10, 2007. A number of headlines catch her eye:*

Quebec to allow limited private health care: To apply to knee, hip and cataract operations[iii]

Use private contractors to bolster health care, CMA urges; MDs group also pushes for private insurance to cover public care[iv]

MDs launch fresh bid for two-tier care[v]

Hybrid health care system worth considering[vi]

Bring on two-tier health: Patients suing province over wait times[vii]

One letter to the editor tells the story of a patient who travelled to the Mayo Clinic in the United States to have a brain tumour removed. The tumour was pressing on her optic nerve, leading to temporary vision loss. About 10 days post-surgery, the patient's eyesight was restored. Meanwhile, if the patient had opted against paying for surgery in the U.S., she would still have a month and a half to wait before her second scheduled consultation in Ontario.[vii]

These headlines and reports have Ana second-guessing herself – Is it possible a parallel private system will shorten waits in the public system? And will for-profit ownership of facilities lead to more efficient healthcare? *With a search of the latest newspaper articles already exhausted, Ana turns to the Internet, using a common online search engine, Google. One report that arises from the search comes from the Canadian Healthcare Consensus Group and is available on the Atlantic Institute for Market Studies web site. In a 2006 paper, the group argues that strong public- and private-sector healthcare systems go "hand in hand" (p.2). The group further argues that "the virtual exclusion of the private sector from Canada's health care system has deprived Canadians of innovation, investment, best practices, choice and competitive benchmarks against which to judge the performance of all parts of the health care system" (p.2).*[viii] *In another report, this one from the Fraser Institute, the argument is strongly against a public system altogether. The authors argue that Canada's publicly funded healthcare system is headed for bankruptcy, all the while legally preventing patients from seeking treatment elsewhere and paying for it out of pocket, unless they choose to leave the country.*[ix] *These arguments are compelling and again, Ana finds herself questioning what she once thought to be true about Canadian healthcare.*

SEARCHING FOR EVIDENCE

Until now, Ana has spent time conducting informal searches in news databases and on the Internet for information about the role of the private sector in reducing wait times and leading to more efficient healthcare. Now it's time for a formal literature search, from which Ana hopes to draw research evidence from peer-reviewed scientific journals.

A search of the Cochrane Database of Systematic Reviews, including the Cochrane Effective Practice and Organisation of Care Group, comes up short. However, a search using other databases, including MEDLINE, leads to a number of credible sources. Ana comes across a couple of relevant systematic reviews that find for-profit care leads to higher mortality.[xii,xiii] *She also finds relevant health economics literature, showing for-profit hospitals spend significantly more than not-for-profits on administration for each patient day.*[xiv] *More searching confirms what Ana had learned in her health policy coursework: that waiting times in England's and New Zealand's public sectors are longer than those in Canada's single-payer system.*[ii] *Other, similar studies back up these findings: in particular, in countries where there are both public and private care, including Australia and England, the more care provided in the private sector in a given region, the longer the waiting times for public hospital patients.*[xv,xvi] *Ana's literature search also reveals evidence that finds parallel private systems may tend to "cherry pick" patients who are healthier and younger or have conditions that are easy and inexpensive to treat.*[xvii,xviii] *Ana knows she has neared the end of her search because many of the same sources keep surfacing. With so many arguments, Ana doesn't know how she'll be able to summarize her findings.*

WRITING THE SUMMARY

While working in the ministry of health, Ana has realized that writing for a policy maker audience is nothing like writing an article for an academic journal or a report for a health policy course.

Since writing a research summary for policy makers has a different objective than these, Ana knows she'll need to take a different approach.

To begin, she thinks about what her director, Louise, would want to read. Louise is not immersed in the research world, so she would likely want the findings interpreted to some degree. She's also busy, so she would only want to know about the best available evidence and the "so what" factor of every argument. Knowing first-hand how easy it is to be led astray in the debate over whether Canada should expand its role for private-sector healthcare, Ana decides that her goal in writing a summary of her findings will be to clearly distinguish myth from fact. Having become familiar with briefing notes, Ana decides she'll need to keep her summary concise, too. Of course, writing for policy makers always seems easier than it is. Ana knows she'll have to write and re-write to edit her draft down to two to three pages.

ADDING VISUAL APPEAL

Keeping her arguments short and sweet is easier said than done. But one of the ways Ana accomplishes this is by coming up with snappy headings for each section of her summary. These headings make for a helpful transition for readers and allow Ana to get straight to her point. Ana also chooses to use an Arial font throughout her summary. This clean, plain font will not distract the reader or take away from the content of the summary. Finally, Ana experiments with white space, making sure her summary doesn't look too crowded with text. Ana knows that pages of straight text can be an immediate turn-off for readers, especially those with little or no time to spare.

UNDERGOING REVIEW

Thinking back to when she started this project, Ana remembers she had a bias. At the time, Ana believed what the research evidence later supported – that a parallel private system would not lead to shortened waits and greater efficiency in the public sector. Now that her summary is drafted, Ana wonders if she may have introduced bias into her final product, instead of allowing the research evidence to speak for itself. If this article were for an academic publication, she knows a peer review would most likely be necessary. However, because this report will remain internal, Ana knows that will not be the case here. In keeping with the purpose of a peer review, as she reads through her summary, Ana asks herself critical questions: Have I considered all of the different perspectives or views that exist? Has the summary effectively captured the essence of the major issues?

SHARING EVIDENCE-INFORMED MESSAGES

Before Ana submits her research summary to her director, Louise, she wonders if what she's written may have a broader reach within the policy-making community. Ana decides to make a recommendation to her director on how to disseminate her work throughout the ministry. For starters, the ministry's research and evaluation branch has a monthly newsletter that profiles new and relevant research for health-system decision makers. Ana will suggest to Louise to start there.

The Foundation published two research summaries that are relevant to Ana's story. For more, read the *Mythbusters*, Myth: A parallel private system would reduce waiting times in the public system[xix] and Myth: For-profit ownership of facilities would lead to a more efficient healthcare system.[xx]

REFERENCES

i Canadian Health Services Research Foundation. 2007. CADRE: CHSRF/CIHR Regional Training Centres. http://www.chsrf.ca/cadre/regional_training_centres_e.php

ii Hughes Tuohy C et al. 2004. "How does private financing affect public health care systems? Marshaling the evidence from OECD nations." Journal of Health Politics, Policy and Law; 29(3): 359-396.

iii Authier P. 2006, June 9. Quebec to allow limited private health care: To apply to knee, hip and cataract operations. National Post. p. A10.

iv Foot R. 2007, July 31. Use private contractors to bolster health care, CMA urges; MDs group also pushes for private insurance to cover public care. The Ottawa Citizen. p. A1.

v Galloway G. 2007, July 31. MDs launch fresh bid for two-tier care. The Globe and Mail. p. A1.

vi Moore CM. July 13, 2006. Hybrid health care system worth considering. New Brunswick Telegraph-Journal. p. A7.

vii Shanks LM. 2007, September 8. Bring on two-tier health: Patients suing province over wait times (Letter to the editor). p. A7.

viii Canadian Healthcare Consensus Group. 2006. A call to action on health care reform: Consensus group argues that better principles equal better health care. http://www.aims.ca/library/CGStatementE.pdf

ix Rovere M and Skinner BJ. 2007. California Dreaming: The Fantasy of a Canadian-Style Health Insurance Monopoly in the United States. http://www.fraserinstitute.ca/admin/books/files/CaliforniaDreaming.pdf

x Canadian Medical Association Policy Statement. 2007. It's still about access: Medicare plus. http://www.aims.ca/library/CMA.pdf

xi Canadian Medical Association. 2007. It's about access: Informing the debate on public and private health care. http://www.cma.ca/multimedia/CMA/Content_images/Inside_Cma/Media_Release/pdf/2006/about_access_e2.pdf

xii Devereaux PJ et al. 2002. "Comparison of mortality between private for-profit and private not-for-profit hemodialysis centers: a systematic review and meta-analysis." Journal of the American Medical Association; 288(19): 2449-2457.

xiii Devereaux PJ et al. 2002. "A systematic review and meta-analysis of studies comparing mortality rates of private for-profit and private not-for-profit hospitals." Canadian Medical Association Journal; 166(11): 1399-1406.

xiv Woolhandler S and Himmelstein DU. 1997. "Costs of care and administration at for-profit and other hospitals in the United States." New England Journal of Medicine; 336(11): 769-774.

xv Duckett SJ. 2005. "Private care and public waiting." Australian Health Review; 29(1): 87-93.

xvi Besley T et al. 1998. "Public and private health insurance in the UK." European Economic Review; 42(3-5): 491-497.

xvii Schokkaert E and C Van de Voorde. 2003. "Belgium: risk adjustment and financial responsibility in a centralised system." Health Policy; 65(1): 5-19.

xviii Gonzalez P. 2004. "On a policy of transferring public patients to private practice." Health Economics; online pre-publication October 20.

xix Canadian Health Services Research Foundation. 2005. Myth: A parallel private system would reduce waiting times in the public system. Mythbusters. http://www.chsrf.ca/mythbusters/pdf/myth17_e.pdf

xx Canadian Health Services Research Foundation. 2004. Myth: For-profit ownership of facilities would lead to a more efficient healthcare system. Mythbusters. http://www.chsrf.ca/mythbusters/pdf/myth13_e.pdf

I. Spotting the Myth

An important part of a *Mythbuster* is establishing the myth's existence. A myth is a widely held but false belief.[23] The Foundation's *Mythbusters* series aims to debunk popular healthcare myths by revealing the research evidence that is contrary to accepted wisdom in Canadian healthcare debates. Spotting a myth is not impossible, but it certainly is challenging. Fortunately, this section provides insights into how to spot a myth while keeping personal biases in check.

PROPOSED OBJECTIVE

Students should be able to demonstrate a myth's existence, drawing on information from such sources as the news media, Media Doctor Canada or public opinion polls. To be an effective *Mythbuster* subject, the myth should be one that is widely believed.

LOOKING FOR MYTHS

As a former Massachusetts state legislator, John McDonough saw firsthand the beauty and peril of allowing storytelling into the policy process.[24] Despite the existence of reams of scientific evidence, McDonough found perspective often mattered more to policy decisions. Interestingly, when asked for the evidence behind these perspectives, McDonough heard many choice responses including, "I read it somewhere, but I can't remember where"; "My brother told me"; and his personal favourite, "Everyone knows that!" McDonough's experience raises a useful and powerful question that should underlie every research summary — "How do you know that?"

There are some obvious and less-obvious sources for finding myths. In an indirect way, Haines et al.[25] provide examples of how to find myths in their description of the barriers to transferring research evidence into practice. From the Foundation's perspective, some of these barriers (which follow) provide insights as to some of the reasons people *think* they know things.

- Failure of curricula to reflect research evidence
- Influence of media in creating inappropriate demands/beliefs
- Influence of social fads and trends
- Ideological beliefs that may be inconsistent with research evidence
- Dominance of short-term thinking
- Obsolete knowledge
- Influence of opinion leaders that goes against research evidence
- Beliefs and attitudes
- Perceptions or cultural beliefs about appropriate care

Perhaps the most obvious source for finding myths is the news media. When the news media (or other sources for that matter) make claims with little to no reference to research evidence or reference to poor-quality research, then the claims may be false or inaccurate. A popular example from recent years is the news media dialogue on private versus public healthcare. Among the many myths on this subject is the one that purports that a public-sector monopoly creates waiting lists.

In reality, many countries that mix public and private financing of healthcare (including England and New Zealand) struggle with even longer waiting lists in their public sectors than our own.[26]

Media monitoring can be time-consuming and fruitless, especially without access to a range of news media. Fortunately, many university libraries offer access to electronic news databases such as Lexis Nexis,[27] FP Infomart,[28] Factiva[29] and others. Nowadays, resources like Media Doctor Canada,[30] Media Doctor Australia,[31] Health News Review[32] in the U.S. and Hitting the Headlines[33] in the U.K. offer reviews of recent print news media too. There is also a body of literature that studies how the mass media (including the news media) represent health and healthcare. All of these sources can be great starting places for searching for potential myths.

Public opinion polls or perception studies are also possible sources for spotting myths, particularly when the results indicate that perceptions contradict the best available body of research evidence.

Another tactic the Foundation has used for finding myths is to ask researchers and managers for their insights. For example, to a group of researchers we have posed the question, "What really bugs you about policy and management decision-making because you know that what is practiced is contradictory to the research evidence?"

In the end, finding possible healthcare myths involves keeping a critical eye on healthcare debates. In journalism, this has been referred to as playing the role of watchdog, which involves exposing failings in how decisions are made and power is exercised.[34] However, this watchdog principle can sometimes be misunderstood to mean "afflict the comfortable."[34] Keep in mind that the goal for a *Mythbuster* is to debunk widely held myths by revealing the best available body of research evidence in a way that is a pleasure to read.

AVOIDING INTERJECTING PERSONAL BIAS

It can be tempting to use a *Mythbuster* as a venue to voice personal bias. For example, one may attempt to use a *Mythbuster* to make claims about a personal belief or opinion that is not adequately supported by research evidence. Personal biases may, in fact, motivate a person to falsely identify a given topic as a myth in the first place. Expert review (step five of this resource) is one way to ensure a research summary is solidly positioned from the point of view of the best available research evidence. However, to facilitate this review process, it is best to reflect on what factors have motivated the selection of a particular myth. In this early stage, it is wise to consider some of the review questions that arise in step five. The most important question to be asking at this stage is: "Have I considered all of the different perspectives or views that exist about the myth I have selected?" Of course, the question, "How do you know that?" is also an important question to ask when challenging a myth, with the answer necessarily being grounded in research evidence.

II. Searching for Evidence

[N]OT ALL RESEARCH IS CREATED EQUAL, AND IT REQUIRES SOME SKILL TO SORT THE WHEAT FROM THE CHAFF BEFORE MAKING THE "SUMMARY LOAF" FROM THE BEST INGREDIENTS.[12]

Searching for evidence involves many challenges. First, there is the challenge of determining appropriate search terms and research databases to find relevant references. Second — and even more challenging — is the task of evaluating the body of evidence to assess which pieces are the most appropriate to include in the final summary. Since a summary can only ever reference the best available evidence, these tasks are of utmost importance.

This section provides an overview of the "what is evidence?" debate and proposes that, where possible, summaries should rely on conclusions drawn from systematic reviews or syntheses. At the same time, all kinds of evidence have a role to play in informing policy- and decision-making, and the focus of the summary will often dictate what types of evidence are best to include.

PROPOSED OBJECTIVE

Students should demonstrate their understanding of searching for and appraising different forms of research evidence as well as provide insights into the robustness of the research they have selected to dispel a widely held health services myth.

UNDERSTANDING HIERARCHIES OF RESEARCH EVIDENCE

Not all research evidence is created equal. For example, the Foundation has proposed that medical effectiveness research is "context-free scientific evidence," while social science-oriented research is "context-sensitive." These views of evidence are not incompatible. In fact, along with the expertise, views and realities of stakeholders (sometimes called "colloquial evidence"), these forms of evidence have an important role to play in producing evidence-informed guidance for the health system.[11]

As a follow-up to the report *Conceptualizing and Combining Evidence for Health System Guidance*, the Foundation adopted the following definition of evidence:

> Evidence is information that comes closest to the facts of a matter. The form it takes depends on context. The findings of high-quality, methodologically appropriate research are the most accurate evidence. Because research is often incomplete and sometimes contradictory or unavailable, other kinds of information are necessary supplements to or stand-ins for research. The evidence base for a decision is the multiple forms of evidence combined to balance rigour with expedience — while privileging the former over the latter.[11]

When it comes to evidence, it is generally agreed that a well-designed systematic review, such as those undertaken by the Cochrane Collaboration,[17] the Campbell Collaboration,[18] the Centre for Reviews and Dissemination[19] or the Joanna Briggs Institute,[20] is the most authoritative source of evidence because the researchers have compiled an overview of primary studies that contains an explicit statement of objectives, materials and methods and has been conducted according to explicit and reproducible methodology.[35] Many systematic reviews are also regularly updated to include new evidence.[36] These updates are necessary given that systematic reviews and meta-analyses are less powerful tools for informing clinical decisions once they have begun to "show their age."[37]

Where possible, summaries should rely on conclusions drawn from systematic reviews or syntheses. While single study findings are generally insufficient for informing policy- and decision-making,

systematic reviews summarize large amounts of information, identifying gaps in medical research as well as beneficial or harmful interventions. Systematic reviews (including meta-analyses, which are mathematical syntheses of the results of two or more primary studies that addressed the same hypothesis in the same way)[35] ultimately reduce large quantities of information into palatable pieces for digestion.

In the absence of a systematic review, there are other levels of evidence to consider. And there are systems and strategies for evaluating which of these forms of evidence is of the highest quality. These are two of the systems in place to assess quality of the available evidence:

- The U.S. Preventive Services Task Force[38] has developed a system for ranking the quality of evidence about the effectiveness of treatments or screening.
- The Centre for Evidence-Based Medicine[39] at Oxford suggests levels of evidence according to the study designs and offers critical appraisal of prevention, diagnosis, prognosis, therapy and harm studies.

Even with these systems, it is important to note that the "best" evidence depends on what myth one hopes to debunk. Randomized controlled trials, for example, may not provide the best evidence to debunk certain myths. Even when they do, randomized controlled trials will not always be available to counter a widely held myth. In any case, it will be important to critically appraise each reference in a research summary to ensure the evidence is robust enough.

In *Is your evidence robust enough? Questions for policy makers and practitioners,* Shaxson[40] identifies five components of robustness and proposes a series of questions to address them. These components are:

- **credibility** – credible evidence has a clear line of argument and is the result of tested analytical methods in both its collection and analysis;
- **generalizability** – also called transferability, this refers to the extent to which evidence collected for a specific purpose can be used in a different context or to answer a different question;
- **reliability** – in evidence-based policy-making, reliability is the ability to use evidence for monitoring, evaluation or impact assessment;
- **objectivity** – objective evidence is not influenced or restricted by assumptions or values; and
- **rootedness** – also defined as authenticity, rootedness is about understanding nuance, exploring assumptions, encouraging others to question the status quo, and thinking about who uses what evidence for what purpose.

CONDUCTING A LITERATURE SEARCH

There are a number of databases available to students who wish to conduct a literature search. To identify the databases best-suited to a given query, it is wise to book an appointment with a subject or reference librarian to narrow down the most appropriate range of resources. For example, a pharmacological query might be best suited to the database EMBASE,[41] while a nursing query would bring back more relevant results in Cinahl.[42] Different databases are designed to target specific audiences with specific information. Therefore, ensuring the appropriate database selections goes a long way to promoting a higher relevancy rate in one's search results. With this in mind, it's easy to see why the tendency to default to a broader PubMed[43] search can be limiting.

Nonetheless, PubMed is a particularly popular database that includes more than 17 million citations from MEDLINE and other life science journals for biomedical articles. One of the special search tools within PubMed is preset with an interface and search algorithm that takes a specifically health services research perspective.[44] When a literature search is carried out with a targeted "hedge" like this, the resulting scholarship will tend to inherently include research that is pertinent to the audience. In this case, searches using this tool are expected to yield healthcare quality and costs literature, which is relevant to an audience of health system decision makers.

Whichever database one decides to use, it is worthwhile to take the time to figure out how it works. Not all databases operate in the same way. One should particularly never make the mistake of thinking that all search engines and databases operate like Google, a popular, publicly available search interface. Just knowing a database's basic functionality can lead to more relevant and accurate hits. Fortunately, students have a number of online tutorials available to them to help reduce the guesswork of conducting literature searches. A couple of examples are provided. However, similar tutorials are likely available throughout Canadian universities.

- The University of Waterloo[45] offers an introduction and three learning modules through its educational web site, TILT@UW (Texas Information Literacy Tutorial). This tutorial highlights fundamental concepts of information literacy that are useful for any type of literature search.
- The University of Saskatchewan offers helpful library guides to introduce and navigate a number of databases, such as Cinahl,[46] Cochrane[47] and PubMed.[48] Similarly, it offers library guides for evaluating information.[49,50]

USING "SNOWBALL" METHODS

Finding the kind of evidence for establishing the existence of and rebuttal to a widely held myth can sometimes require pursuing what has been called "snowball" methods. This technique involves "pursuing references of references."[51]

Of course, to ensure your search does not unfairly bias the final summary, formal search techniques are also necessary. It may also be wise to talk to researchers who are already doing work in the given area. These experts can guide you to (or confirm that you have found) the best available research evidence. Unlike a synthesis, a summary does not allow the luxury of showcasing all of the available evidence. Instead, summaries must only include the cream of the research crop.

FINE-TUNING THE SEARCH

Literature searches often yield broad findings at first. Finding references that get to the point will entail adapting and fine-tuning the literature search. In journalism, all stories are said to be about something and have a point.[52] But *about* and *point* are not the same thing. What the story is about involves the context (the background, facts and people involved); the point of the story is the main theme, the thread that connects each part of the story, or the "so what" factor.[52] Initial literature searches will inevitably lead you to find references that are about your topic. Finding references that get straight to the point will involve more groundwork.

It will also entail work to present the range of information policy makers and managers want about a given topic. Often times this range will be unavailable. For example, "while there may be extensive research on the effectiveness of health-care interventions, there is often less evidence on their cost-effectiveness, implementation, cultural appropriateness and effects on health inequalities, all of which are important considerations for policy making."[25] When fine-tuning the search, it is important to try to keep the wants and needs of policy makers and managers in mind. Doing so will help guide the literature search and avoid adding pieces of information to the summary as an afterthought.

REMEMBERING TO AVOID INTERJECTING PERSONAL BIAS

Section five of this resource is dedicated to expert review as a final, fact-checking process to ensure one's *Mythbuster* is firmly planted in the best available research evidence. However, it is advisable to reflect on one's personal biases throughout the *Mythbusters* exercise. This includes monitoring one's personal biases during the research and writing stages. At the research stage, it is important to ask: "Have I considered all of the different perspectives or views that exist about the myth I have selected?" In the writing stage, it is important to continue this personal reflection, also asking: "Am I missing or misrepresenting any of the research evidence in an attempt to make it more accessible?"

III. Writing the Summary

If a picture is worth a thousand words, a good story is worth many columns of statistics. Stories present ideas, conflicts, and sometimes, resolution. They have depth and dimension, drama and emotion, making them more memorable than data alone.[53]

Decision makers rarely use a regression coefficient to help them solve a particular problem. Rather, over long periods of time, ideas enlighten decision makers about a particular issue and how to handle it.[6]

Research in the form of "ideas," not "data," is what most influences managerial and policy decision-making.[6,54] Of course, these ideas or take-home messages are best considered a starting point for a discussion with policy makers and managers rather than a cookbook remedy. Summaries are intended to augment collaboration between researchers and decision makers, not replace it altogether. This section provides tips for writing an easy-to-read research summary that gets to the point for policy and decision makers.

PROPOSED OBJECTIVE

Students should be able to write actionable, evidence-based messages using lively prose and meaningful statistics.

KNOWING THE AUDIENCE

One of the underlying points of the "exchange model" of knowledge transfer is that it requires a relationship between those who generate research knowledge and those who may use it. For those involved in these relationships, the "getting-to-know-one-another" stage is often an ongoing one. For those about to undertake a *Mythbuster*, some will already have established these sorts of relationships. For others, this activity will inspire the first encounter with an audience or audiences. In any case, before considering the best ways to start or convey a summary, it is wise to ask "What is the essence of the story I am trying to tell?"[55] Similarly, one should aim to write and edit a summary with the readers' needs and habits in mind.[55] These points touch on two of the important questions that arise in the discussion of dissemination in section six. These two questions are (1) what is the message I wish to share? and (2) who is the audience to which this summary is targeted? Asking these questions at this stage will help one develop a plan that can guide the writing process. In terms of addressing these questions, please refer to *From research to practice: A knowledge transfer planning guide* for appropriate direction, as this guide already provides valuable insights.[22]

WRITING ACTIONABLE, RESEARCH-BASED MESSAGES

The research evidence strongly recommends transferring actionable messages from a body of research knowledge, not simply presenting a single research report or the results of a single study.[6] These statements should be as active as possible and limit the number of lengthy qualifiers (such as methodological and technical details) that are typical of full research reports. Caveats are important, but the research summary need not (and cannot hope to) present all of the minutiae of every piece of research. Instead, the research summary must extract clear, simple and active main messages or key implications from research results, while directing readers to the full research reports for more specific details.

GETTING TO THE POINT

Policy and decision makers will want to know why the subject you are writing about matters or should matter to them. It's essential to tell the readers quickly what the story is about and why they should keep reading. If you bury the point, you risk losing readers.

As is the case in journalism, a summary will become less reliable when "events are inflated for sensation, neglected, stereotyped, or disproportionately portrayed as negative" too.[56] Don't leave out important details and caveats for the sake of getting to the point. Writing and rewriting will help synthesize the text, so always allow plenty of time to edit.

Taking time to edit the title of a *Mythbuster* is especially important. In the news media, the headline and lead are often written by an editor, not the reporter who covered the story. For that reason, the headline can sometimes appear disjointed from the rest of the story. As a research summary evolves and gains precision, so too must the title. Often the title and subheadings of a *Mythbuster* undergo several iterations before they are finalized.

BEING ECONOMICAL BUT LIVELY WITH WORDS

Summaries, like news articles, will suffer from passive verbs, run-on sentences, mixed metaphors and clichés. In particular, "readers notice sloppy writing and they don't forgive."[55] To ensure every idea flows logically into the next, it is best to use simple declarative sentences, each sticking to one idea. This kind of writing is easier to understand and will better hold the readers' attention.[55]

When there is only a limited or fixed amount of space and text to work with (say, two pages or roughly 800-1,000 words), it may be best to use strategies that tell your reader a lot, but with few words. For example, it may help to organize and present information in charts, tables, bulleted lists or other graphics. Another technique is to pull out catchy pieces of text that are representative of the section.

Keep in mind that two pages can feel long if tables or graphs are used inappropriately or the text is written passively and without the appropriate amount of detail. To keep the summary short and sweet, writers should aim to use conversational styles.

USING STORYTELLING AND NARRATIVE TO DEMONSTRATE A SUMMARY'S FOCUS

FEW PARTS OF THE HUMAN WORLD ARE BETTER SUITED TO STORYTELLING THAN HEALTHCARE.[57]

The historian and health policy commentator Dan Fox famously commented, "The plural of anecdote is policy."[58] In a *Mythbuster*, an anecdote can be a powerful tool for introducing an issue and inspiring action. However, a *Mythbuster* must also go beyond anecdotal evidence to providing necessary details from the relevant body of research evidence. A 2006 issue of *Evidence Boost* — a series of research summaries highlighting evidence-informed healthcare management and policy options — began with the story of Jean Sauvé, a 72-year-old widower with diabetes and high blood pressure who is on several medications.[59] Introducing Mr. Sauvé allowed the Foundation to paint a picture of the "revolving door syndrome" of hospital care, which is a particular problem for Canada's vulnerable populations who have ongoing but non-urgent medical needs.[59] Not every *Mythbuster* topic will lend itself to the use of narrative. For those that do, anecdote can be a commanding tool for piquing the readers' interest and inviting them to read the research evidence.

In *Once upon a time. . . The use and abuse of storytelling and anecdote in the health sector*, the author explains the appeal of anecdotes in healthcare: "the narrative is so appealing because it is familiar and thus comfortable, like an old pair of slippers."[57] The news media in particular are well-known for their reliance on anecdotal evidence, which is often considered "the lowest rung of the evidentiary ladder in science."[60] While this may be true, narratives remain an influential means for sharing information, as Mullen[58] explains:

> Terms such as "evidence-based" and "data-driven" are the coin of the policy world today, and "the anecdote" as evidence is as much demeaned in policy circles as it is in clinical

> medicine. Yet, important as the arguments are for the use of quantitative science to inform clinical and policy decisions, the anecdote — the report of life events from an unabashedly subjective vantage point — remains a powerful tool for focusing the human mind.

When it comes to news reporting on research, Seale[61] says "[s]ome degree of simplification must be necessary if the dramatic oppositions that are the core device of story telling are to be created" (p. 514).

In Stephen Denning's work on effective storytelling, he describes the power of telling stories to transfer knowledge. While Denning's work is written for a business audience, its lessons are equally relevant to anyone interested in being more effective at sharing knowledge and inspiring action. According to his work, the key to effective storytelling is choosing the right story for one's purpose. Among the objectives of the stories Denning discusses are those intended to spark action or share knowledge.[62,63]

OBJECTIVE	THE STORY SHOULD:	THE STORYTELLER WILL NEED TO:
Spark action	Describe a successful change	Avoid excessive detail
Share knowledge	Focus on mistakes, how they were corrected and why the solution worked	Solicit alternative solutions

There are a number of other helpful resources on effective storytelling, narrative and personal essay:

- In *The story of knowledge: Writing stories that guide organisations into the future*, the authors build on the foundational knowledge developed by Denning and others, proposing that well-written stories can be a motivator for organizational change.[64]
- In *Made to stick: Why some ideas survive and others die*, the authors discuss how to nurture ideas so that they are understood, remembered and have a lasting impact by changing the target audience's opinions and behaviour.[65] The authors adopt the "stickiness" language from Malcolm Gladwell's book, *The Tipping Point*. As a complement to Gladwell's work,[65] they propose six principles of sticky ideas: simplicity, unexpectedness, concreteness, credibility, emotions and stories.

MAKING NUMBERS MEANINGFUL

Numbers can't "talk," but they can tell you as much as your human sources can. But just like with human sources, you have to ask![66]

To the untrained eye, meta-analyses, effect sizes and odds ratios may be meaningless. It is the writer's job to interpret such statistics for policy and decision makers. These days, many resources exist for beginners and advanced writers:

- In *Statistics every writer should know: A simple guide to understanding basic statistics, for journalists and other writers who might not know math*, the author provides an overview of some of the basic concepts in statistics that every writer should know.[66]
- In *Drugs in the news: How well do Canadian newspapers report the good, the bad and the ugly of new prescription drugs?*, the authors provide examples of the difference between absolute and relative risk.[67] In *Risky business: Making sense of estimates of risk* David Streiner provides further insights.[68]
- The Hayward Group Inc. has developed a helpful *What is . . . ?* series. This series answers such questions as "What is a Number Needed to Treat?" "What is cost-effectiveness?" and "What is meta-analysis?"[69]
- A number of helpful resources exist for making sense of numerical results from meta-analyses and systematic reviews.[70,71,72]

AVOIDING INTERJECTING PERSONAL BIAS

This resource has already addressed the possibility of interjecting one's personal bias in a research summary. To be an effective *Mythbuster*, the myth and the evidence debunking it must stand independent of the writer's personal convictions. In the writing stage, it is important to continue to challenge one's own thinking by asking: "Am I missing or misrepresenting any of the research evidence in an attempt to make it more accessible?"

IV. Adding Visual Appeal

Simplicity is the ultimate sophistication (Leonardo da Vinci).

Researchers are not overly preoccupied with how their research reports look, but when trying to get the attention of busy, preoccupied policy makers and managers, they need to ensure their work is clear, legible, well-organized and succinct. This section provides useful and simple tips for adding visual appeal to a research summary. Keep in mind that adding visual appeal does not require access to fancy graphic design software. Furthermore, making a summary more visually appealing should not be confused with adding unnecessary or distracting graphics or images. And finally, while adding visual appeal may improve the look of a summary, the content must be able to hold water all on its own.

PROPOSED OBJECTIVE

Students should be able to present their summary in a way that is visually appealing for policy makers and managers. This will include making use of white space, using graphics where appropriate, and following simple tips such as using bulleted points or using catchy pieces of text that get to the point of whole sections or summaries.

ORGANIZING TEXT — KEEPING IT SIMPLE

When it comes to writing text, keeping it short and sweet is easier said than done. To keep the text simple and clear, try using:

- an attention-grabbing title;
- plain, consistent (or complementary) fonts;
- indents, justification or bulleted points;
- useful numbers;
- helpful graphics with clear labels; or
- catchy pieces of text that get to the point of a section or entire summary.

Of course, the topic and content will drive which of these techniques is best used to organize the text.

USING GRAPHICS — LESS MAY BE MORE

Good graphics – such as tables, charts and images – may be a useful tool to enhance the readers' understanding of a complicated issue. In particular, graphics can make relationships clear and illustrate important scientific or economic information.[73] Here are some tips for creating great graphics:

- Every graphic must have a purpose.
- Graphs should be simple and clear. "Think of a graphic like a highway sign – it goes by fast, the driver doesn't get a chance to study it. The information has to be easily absorbed."
- Make a clear transition from text to graphics.[73]

These days, programs like Excel, Word and PowerPoint make it possible for students to create a number of different kinds of graphs and charts. When using these programs, try not to get carried away. Always start graphs at a proper zero point so as not to distort the effect size. And avoid using 3-D graphs, as they can be difficult to read and may distort the effects depending on how they are tilted.

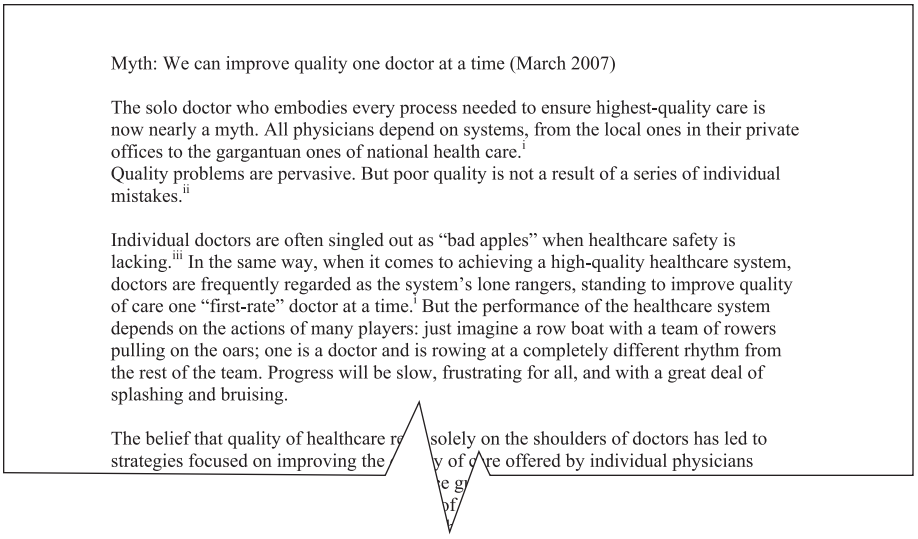
The table in the *Mythbuster*, "Myth: The risks of immunizing children often outweigh the benefits," is a particularly good example of a graphic that worked.[74] This table — comparing the effects of diseases and common vaccine side-effects — allowed a lot of information to be communicated in a small amount of space.

ADDING WHITE SPACE

White space is empty space; it is space where there is no text and no graphics.[75] At only two pages, the Foundation's research summaries already have limited space for content. But if *Mythbusters* and *Evidence Boost* used every inch of space for text and design, the look of the final product would be too heavy and, therefore, too difficult to read. Adding white space creates a "balanced, harmonious layout" that simply "feels right."[75]

Take a look at the following examples:

Example 1



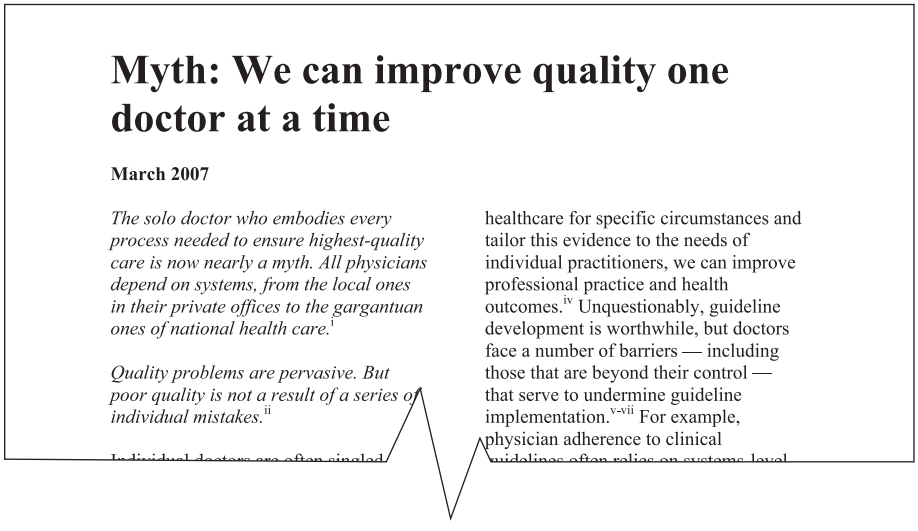
Myth: We can improve quality one doctor at a time (March 2007)

The solo doctor who embodies every process needed to ensure highest-quality care is now nearly a myth. All physicians depend on systems, from the local ones in their private offices to the gargantuan ones of national health care.[i]
Quality problems are pervasive. But poor quality is not a result of a series of individual mistakes.[ii]

Individual doctors are often singled out as "bad apples" when healthcare safety is lacking.[iii] In the same way, when it comes to achieving a high-quality healthcare system, doctors are frequently regarded as the system's lone rangers, standing to improve quality of care one "first-rate" doctor at a time.[i] But the performance of the healthcare system depends on the actions of many players: just imagine a row boat with a team of rowers pulling on the oars; one is a doctor and is rowing at a completely different rhythm from the rest of the team. Progress will be slow, frustrating for all, and with a great deal of splashing and bruising.

The belief that quality of healthcare re solely on the shoulders of doctors has led to strategies focused on improving the y of c re offered by individual physicians

Example 2



Myth: We can improve quality one doctor at a time

March 2007

The solo doctor who embodies every process needed to ensure highest-quality care is now nearly a myth. All physicians depend on systems, from the local ones in their private offices to the gargantuan ones of national health care.[i]

Quality problems are pervasive. But poor quality is not a result of a series of individual mistakes.[ii]

healthcare for specific circumstances and tailor this evidence to the needs of individual practitioners, we can improve professional practice and health outcomes.[iv] Unquestionably, guideline development is worthwhile, but doctors face a number of barriers — including those that are beyond their control — that serve to undermine guideline implementation.[v-vii] For example, physician adherence to clinical

Example 3

Myth Busters

March 2007

A SERIES OF ESSAYS GIVING THE RESEARCH EVIDENCE BEHIND CANADIAN HEALTHCARE DEBATES

MYTH We can improve quality one doctor at a time

THE SOLO DOCTOR WHO EMBODIES EVERY PROCESS NEEDED TO ENSURE HIGHEST-QUALITY CARE IS NOW NEARLY A MYTH. ALL PHYSICIANS DEPEND ON SYSTEMS, FROM THE LOCAL ONES IN THEIR PRIVATE OFFICES TO THE GARGANTUAN ONES OF NATIONAL HEALTH CARE.[i]

QUALITY PROBLEMS ARE PERVASIVE. BUT POOR QUALITY IS NOT A RESULT OF A SERIES OF INDIVIDUAL MISTAKES.[ii]

Individual doctors are often singled out as "bad apples" when healthcare safety is lacking.[iii] In the same way, when it comes to achieving a high-quality healthcare system, doctors are frequently regarded as the system's lone rangers, standing to improve quality of care one "first-rate" doctor at a time.[i] But the performance of the healthcare system depends on the actions of many players: just imagine a row boat with a team of rowers pulling on the oars; one is a doctor and is rowing at a completely different rhythm from the rest of the team. Progress will be slow, frustrating for all, and with a great deal of splashing and bruising.

The belief that quality of healthcare rests solely on the shoulders of doctors has led to strategies focused on improving the quality of care offered by individual physicians through approaches such as clinical practice guidelines. Clinical guidelines have long been regarded as key to improving quality of care; this idea is based on the notion that if we gather the evidence on appropriate healthcare for specific circumstances and tailor this evidence to the needs of individual practitioners, we can improve professional practice and health outcomes.[iv] Unquestionably, guideline development is worthwhile, but doctors face a number of barriers – including those that are beyond their control – that serve to undermine guideline implementation.[v-vii] For example, physician adherence to clinical guidelines often relies on systems-level improvements such as acquisition of new resources, facilities, and enhanced staff support.[v, viii, ix] One academic put it best when he said "There has been a preponderance of patient-level outcome studies within a biomedical paradigm which is incomplete without attention to the context within which patients receive their care."[x]

There's undeniably no "magic bullet" when it comes to improving clinical practice,[xi] and the same is true for improving quality in healthcare.[xii, xiii] A more promising strategy would bear in mind not only the evidence on effective practice, but the evidence on how to transform the healthcare system at large.

No Simple Prescription

While the popular focus is on solo doctors, we know "no person acting alone is as effective as a team to drive best practices and outcomes."[xiv] And looking beyond the clinical level, a broader team exists. It is at the macro level, where managers and policy makers drive system-wide quality improvement initiatives, including greater use of information technology, performance measurement and reporting, and integration of services.

Few would dispute the significance of interprofessional collaboration in promoting safe, efficient, and quality healthcare.[xv, xvi] Teams are less prone to making mistakes than individuals, especially when team members are well-aware of their and their team members' roles and responsibilities.[xvii, xviii] And a healthcare system that supports effective teamwork can improve the quality of care through enhanced patient safety and reduction of workload issues

CHSRF FCRSS Canadian Health Services Research **Foundation** / **Fondation** canadienne de la recherche sur les services de santé

1565 Carling Avenue, Suite 700, Ottawa, Ontario K1Z 8R1
Tel: 613-728-2238 • Fax: 613-728-3527

The first example is cramped and difficult to read. In the second and third examples, adding white space – in these cases by adding margins, increasing the font of the heading and adding breaks between lines and paragraphs – creates harmony and visual comfort.

The Foundation continues to explore strategies to make our research summaries more visually appealing. We welcome readers to consider critiquing our work. Meanwhile, for tips about how to add white space, check out *Whitespace*[75] and *How to add white space*.[76]

V. Undergoing Review

In the academic world, peer review involves subjecting a researcher's scholarly work to the scrutiny of experts in the field. Peer review is a formalized process used by scientific journals, among other structures. The Foundation uses an expert review process that is in line with the merit review process we use for reviewing proposals for research grants. In particular, we invite both researchers and decision makers to review our research summaries. We primarily ask our reviewers to ensure we have not over-simplified anything in our attempt to present research in accessible, easy-to-read language. However, to make this a feasible learning activity, the questions the Foundation asks of reviewers are suggested to guide a self-review. Of course, this is not intended to diminish the importance of expert review, especially for documents intended for circulation to a broad audience.

PROPOSED OBJECTIVE

Students should undertake a self-review to challenge the conclusions they have drawn in their *Mythbusters*. Alternatively, students within a class may review one another's *Mythbusters*.

WHY UNDERGO EXPERT REVIEW?

Some argue peer review is too time-consuming and that mistakes pass through the process. Still, from the Foundation's perspective, the benefits of undergoing expert review outweigh the costs and limitations. Someone with specific expertise or experience in an area is far more likely than someone without the appropriate qualifications to add important caveats and spot simple mistakes. Reviewers also add to the quality and credibility of research summaries. Of course, the quality of review depends on the ability to recruit appropriate experts.

The Foundation's expert review process primarily seeks a balanced perspective. In other words, we seek reviewers who can offer different perspectives or views on the same topic. For example, take the *Mythbuster*, "Myth: Early detection is good for everyone":[77] to assess the effects of screening on patients as well as the overall costs associated with this, it was important to engage a range of perspectives, including that of an epidemiologist, a family physician and a decision maker, in the review process.

REVIEW QUESTIONS

The Foundation asks reviewers to ensure we have not over-simplified anything in our attempt to present research in accessible language. In the review process, it is important to ask:

- Has the summary effectively captured the essence of the major issues and not lost critical concepts through over-simplification? Has the summary missed or misrepresented any of the research in its attempt to make it more accessible?
- A major function of a research summary is to make research accessible and in easy-to-read language, so ask "Is the summary written conversationally and in a way that is accessible to the target audience?"
- As with peer review, it is appropriate that referees inform the author of any conflicts of interest that may arise. In the same way, it may be inappropriate to select reviewers that are the authors' close friends or colleagues. So always ask: "Are there particular biases that I or any reviewer brings to the table that make it inappropriate for me to review?"
- Research summaries often require a balanced perspective, so ask "Have I considered all of the different perspectives or views that exist for this topic?"

VI. Sharing Evidence-Informed Messages

Researchers can get caught in a one-size-fits-all process of dissemination, "failing to tailor the content, timing, setting, and format of dissemination to the audience."[9] But dissemination goes well beyond simply making research available through the traditional vehicles of journal publication and academic conference presentations. It involves a process of extracting the main messages or key implications derived from research results and communicating them to targeted groups of decision makers and other stakeholders in a way that encourages them to factor research implications into their work. In fact, for knowledge translation to be effective, a number of components are necessary. Among these is the need for face-to-face contact between those who generate research knowledge and those who can use it; and the need for researchers to learn to communicate in a more user-friendly way.[78] This section provides an overview of the elements of a successful dissemination strategy. In addition, this section provides insights into using opinion leaders to disseminate and implement "best evidence" as well as measuring the impact of one's dissemination strategy.

PROPOSED OBJECTIVE

Students should prepare a dissemination plan for relaying their evidence-informed messages to their target audience(s). This plan should provide suggestions for evaluation.

PREPARING A DISSEMINATION STRATEGY

Today there is clear guidance about how to develop and implement a successful dissemination strategy. Most recently, comprehensive workbooks that guide knowledge transfer planning have surfaced to facilitate the planning process.[79,22] The most recent of these, *From Research to Practice: A Knowledge Transfer Planning Guide*, is organized around five basic principles, or questions, developed to put the theory of knowledge transfer into practice.[22] To put the five principles into action, the authors recommend asking:

- What is the message?
- Who is the audience?
- Who is the messenger?
- What is the transfer method? and
- What is the expected outcome?

Mythbusters and *Evidence Boost* were developed with the wants and needs of policy makers and managers in mind. Written in accessible language and using effective storytelling techniques, these two-page research summaries deliver actionable key messages from the best available research evidence in a way that is appropriate for these audiences. Inherently, these summaries were designed with the five above questions in mind. However, a promising dissemination strategy requires additional thought and consideration. From the Foundation's perspective, a successful dissemination strategy will ultimately aim to:

- extract clear, simple and active main messages or key implications from research results;
- identify credible "carriers" of the message;
- pinpoint key decision-maker audiences for the messages; and

- develop ways to deliver the messages that are appropriate to the audiences being targeted and that encourage them to factor the research implications into their work.

From Research to Practice: A Knowledge Transfer Planning Guide will guide those interested in developing a strategy that meets these aims.[22]

RELYING ON OPINION LEADERS TO DISSEMINATE BEST EVIDENCE

One method that holds promise as a strategy to bridge evidence-practice gaps is using opinion leaders or champions to disseminate and implement best evidence. Opinion leaders are not new. In fact, they were commonly referred to as "educational influentials" in the early research literature.[80,81] A recently updated Cochrane review that aimed to assess the effectiveness of the use of local opinion leaders in improving the behaviour of healthcare professionals and patient outcomes found that opinion leaders can successfully promote evidence-based practice.[82]

The promising findings of educational influentials and opinion leaders in influencing health professionals' clinical practice inspired the Foundation to experiment with relying on champions for disseminating research summaries to decision makers and others. The Foundation continues to rely on champions – including individuals or organizations – to disseminate *Mythbusters* and *Evidence Boost*. For example, to disseminate the *Mythbuster*, "Myth: The risks of immunizing children often outweigh the benefits," the Foundation worked with the Canadian Coalition for Immunization Awareness & Promotion, which is housed within the Canadian Public Health Association. Already well-connected in the public health arena, this coalition and its counterparts were credible messengers for disseminating the Foundation's summary. In addition to circulating the summary electronically and in print to their community of public health professionals, the coalition identified an opportunity for including the summary as an insert in delegates' packages at the 7th Canadian Immunization Conference. The timing of this conference could not have been better, as it was scheduled at the same time the *Mythbuster* was due to be released.

The process of identifying opinion leaders is often an organic process that may begin when one is getting to know the audience (see step three of this resource). Sometimes, individuals' and organizations' names continue to pop up during a literature search, too (see step two). Paying attention to these names and conducting further research is helpful in determining if these persons and organizations may be appropriate and willing sources for disseminating a research summary. Determining the strategy for dissemination is also an organic process. As in the case with the *Mythbuster* on immunization, the opportunities for dissemination came about through ongoing discussions between the Foundation and the coalition.

MEASURING IMPACT

Until recently, evaluation of knowledge transfer strategies has been a particularly under-explored area. Lavis et al.[83] suggest some possible reasons for this are a lack of infrastructure for evaluation; a lack of knowledge of how to undertake such an evaluation; the difficulties associated with undertaking an evaluation; and concern about how the findings of an evaluation will be acted on.

Today, Reardon et al.[22] recommend that anyone planning a knowledge transfer plan ought to consider what impact the knowledge transfer project will have. Considering this question helps determine not only the scope of a given plan but also the best approach to use. Impacts may be considered in three ways:

- indirect use – changes in attitudes or awareness;
- direct use – changes in policies, procedures or programs; and
- tactical use – using research to validate decisions already made.[22]

For a more formal evaluation, performance measures for knowledge transfer should be appropriate to the target audience and objectives.[83]

References

1 Lomas J. 2006. An emerging role for deliberative processes (Editorial). Links; 9(4): 1,6. www.chsrf.ca/other_documents/newsletter/pdf/links_v9n4_e.pdf

2 Caplan N et al. 1975. *The use of social science knowledge in policy decisions at the national level: A report to respondents.* Ann Arbor, MI: University of Michigan: 1-63.

3 Innvaer S et al. 2002. "Health policy-makers' perceptions of their own use of evidence: A systematic review." Journal of Health Services Research and Policy; 7: 239-244.

4 Lindblom CE and Cohen DK. 1979. *Usable knowledge: Social science and social problem solving.* New Haven, CT: Yale University Press.

5 Canadian Health Services Research Foundation. 1999. *Issues in linkage and exchange between researchers and decision makers.* www.chsrf.ca/knowledge_transfer/pdf/linkage_e.pdf

6 Lavis JN et al. 2003a. "How can research organizations more effectively transfer research knowledge to decision makers?" Milbank Quarterly; 81(Suppl 2): 221-248.

7 Huberman, M. 1994. "Research utilization: The state of the art." Knowledge and Policy: The International Journal of Knowledge Transfer and Utilization; 7(4): 13-33.

8 Roos NP and Shapiro E. 1999. "From research to policy: What have we learned?" Medical Care; 27(6): JS291-305.

9 Lomas J. 1997. *Improving Research Dissemination and Uptake in the Health Sector: Beyond the Sound of One Hand Clapping.* www.chsrf.ca/knowledge_transfer/pdf/handclapping_e.pdf

10 Ross SE et al. 2003. "Partnership experiences: Involving decision-makers in the research process." Journal of Health Services Research and Policy; 8(2): 26-34.

11 Lomas J et al. 2005. *Conceptualizing and combining evidence for health system guidance.* www.chsrf.ca/other_documents/pdf/evidence_e.pdf

12 Lomas J. 2007. "Decision support: A new approach to making the best healthcare management and policy choices." Healthcare Quarterly; 10(3): 14-16.

13 Sackett DL. 1996. "Evidence based medicine: What it is and what it isn't." British Medical Journal; 312(7023): 71-72

14 Walshe K and Rundell TG. 2001. "Evidence-based management from theory to practice in health care." Milbank Quarterly; 79: 429-457.

15 Lavis JN et al. 2002. "Examining the role of health services research in public policymaking." Milbank Quarterly; 80: 125-154.

16 Clarke L, Clarke M and Clarke T. 2007. "How useful are Cochrane reviews in identifying research needs?" Journal of Health Services Research & Policy; 12(2): 101-103.

17 Cochrane Collaboration. www.cochrane.org/index.htm

18 Campbell Collaboration. www.campbellcollaboration.org/

19 Centre for Reviews and Dissemination. www.york.ac.uk/inst/crd/

20 Joanna Briggs Institute. www.joannabriggs.edu.au/about/home.php

21 University of New Brunswick's Canadian Research Institute for Social Policy (UNB CRISP). 2007. CRISPfacts. www.unb.ca/crisp/cfacts.html

22 Reardon R, Lavis J and Gibson J. 2006. *From research to practice: A knowledge transfer planning guide*. www.iwh.on.ca/assets/pdf/IWH_kte_workbook.pdf

23 *Compact Oxford English Dictionary*. www.askoxford.com/concise_oed/myth?view=uk

24 McDonough JE. 2006. "Using and misusing anecdote in policy making." In F Mullan et al. (eds.) *Narrative matters: The power of the personal essay in health policy*. The Johns Hopkins University Press: Baltimore, Maryland.

25 Haines A et al. 2004. "Bridging the implementation gap between knowledge and action for health." Bulletin of the World Health Organization; 82: 724-732.

26 Canadian Health Services Research Foundation. 2005. *Myth: A parallel private system would reduce waiting times in the public system*. www.chsrf.ca/mythbusters/pdf/myth17_e.pdf

27 Lexis Nexis. http://global.lexisnexis.com/us

28 FP Infomart. www.fpinfomart.ca/home/home.php

29 Factiva. http://factiva.com/

30 Media Doctor Canada. www.mediadoctor.ca/

31 Media Doctor Australia. www.mediadoctor.org.au/

32 Health News Review. www.healthnewsreview.org/about.php

33 *Hitting the Headlines Archive*. www.library.nhs.uk/rss/newsAndRssArchive.aspx?storyCategory=0

34 Kovach B and Rosenstiel T. 2001. *The elements of journalism — What newspeople should know and the public should expect*. Crown publishers: New York, New York.

35 Greenhalgh T. 1997. "How to read a paper: Papers that summarise other papers (systematic reviews and meta-analyses)." British Medical Journal; 315: 672-675. www.bmj.com/cgi/content/full/315/7109/672

36 Shojania KG et al. 2007. "How quickly do systematic reviews go out of date? A survival analysis." Annals of Internal Medicine; 147: 224-233.

37 Tonks A. 2007. "Systematic reviews don't last forever." British Medical Journal; 335: 178.

38 U.S. Preventive Services Task Force. *Task Force Ratings: Strength of Recommendations and Quality of Evidence. Guide to Clinical Preventive Services*. Third Edition: Periodic Updates, 2000-2003. Agency for Healthcare Research and Quality, Rockville, MD. www.ahrq.gov/clinic/3rduspstf/ratings.htm

39 Centre for Evidence-Based Medicine. 2001. *Levels of Evidence and Grades of Recommendation*. www.cebm.net/levels_of_evidence.asp#levels

40 Shaxson L. 2004. "Is your evidence robust enough? Questions for policymakers and practitioners." Evidence & Policy; 1(1): 101-111.

41 EMBASE. www.embase.com

42 Cinahl Information Systems. www.cinahl.com/library/library.htm

43 PubMed. www.ncbi.nlm.nih.gov/sites/entrez

44 PubMed Health Services Research (HSR) Queries. www.nlm.nih.gov/nichsr/hedges/search.html

45 University of Waterloo. Texas information literacy tutorial (TILT). www.lib.uwaterloo.ca/tilt/nf/intro/internet.htm

46 University of Saskatchewan. 2005a. CINAHL. https://library.usask.ca/files/hsl/CINAHL%20OVID.pdf

47 University of Saskatchewan. 2004. Cochrane. https://library.usask.ca/files/hsl/cochrane04.pdf

48 University of Saskatchewan. 2005b. PubMed. https://library.usask.ca/files/hsl/pubmed.pdf

49 University of Saskatchewan. 2003. Critical reviews of journal articles. https://library.usask.ca/files/education/crja.pdf

50 University of Saskatchewan. No date. How to evaluate information sources. https://library.usask.ca/usered/evaluate_info

51 Greenhalgh T et al. 2004. "Diffusion of innovations in service organizations: Systematic review and recommendations." Milbank Quarterly; 82(4): 581-629.

52 Roberts M. 2006. *Finding a story's focus*. www.concernedjournalists.org/node/474

53 Mullan F et al. 2006. "Preface: About this book." In F Mullan et al. (eds.) *Narrative matters: The power of the personal essay in health policy*. The Johns Hopkins University Press: Baltimore, Maryland.

54 Weiss CH. 1991. "Policy research: Data, ideas, or arguments?" In P. Wagner et al.'s (eds.) *Social sciences and modern states: National experiences and theoretical crossroads*. Cambridge: Cambridge University Press. 307-332.

55 Dube J. 2006. *A dozen tips for writing news online*. www.concernedjournalists.org/node/470

56 Committee of Concerned Journalists. (2006). *Principles of journalism*. www.journalism.org/resources/principles

57 Canadian Health Services Research Foundation. 2003. *Once upon a time...The use and abuse of storytelling and anecdote in the health sector* – Report on the 2003 CHSRF Annual Invitational Workshop. Ottawa, Ontario: Canadian Health Services Research Foundation. www.chsrf.ca/knowledge_transfer/pdf/2003_workshop_report_e.pdf

58 Mullen F. 1999. "Me and the system: The personal essay and health policy." Health Affairs; 18(4): 118-125.

59 Canadian Health Services Research Foundation. 2006a. *Enhance discharge planning to end the revolving door of hospital care*. www.chsrf.ca/mythbusters/pdf/boost5_e.pdf

60 Johnson T. 1998. "Shattuck lecture: Medicine and the media." The New England Journal of Medicine; 339(2): 87-92.

61 Seale C. 2003. "Health and media: An overview." Sociology of Health & Illness; 25(6): 513-531.

62 Denning S. 2006. "Effective storytelling: strategic business narrative techniques." Strategy & Leadership; 34(1): 42-48.

63 Canadian Health Services Research Foundation. 2007. "Effective storytelling: Strategic business narrative techniques." Insight and Action. www.chsrf.ca/other_documents/insight_action/insight_and_action_e.php?intIssueID=16&tstrSearch=

64 Girard JP and Lambert S. 2007. "The Story of Knowledge: Writing Stories that Guide Organisations into the Future." The Electronic Journal of Knowledge Management; 5(2): 161-172. www.ejkm.com

65 Heath C and Heath D. 2007. *Made to stick: Why some ideas survive and others die.* Random House: New York.

66 Niles R. 2007. *Statistics every writer should know: A simple guide to understanding basic statistics, for journalists and other writers who might not know math.* http://nilesonline.com/stats

67 Cassels A et al. 2003. *Drugs in the news: How well do Canadian newspapers report the good, the bad and the ugly of new prescription drugs?* http://policyalternatives.ca/documents/BC_Office_Pubs/drugs_in_news.pdf

68 Streiner DL. 1998. "Risky business: Making sense of estimates of risk." Canadian Journal of Psychiatry; 43(4): 411-415.

69 Moore A and McQuay HJ. 2003. "What is an NNT?" *What is...?* series. www.evidence-based-medicine.co.uk/What_is_series.html

70 Streiner DL. 1991. "Using meta-analysis in psychiatric research." Canadian Journal of Psychiatry; 36(5): 357-362.

71 McQuay HJ and Moore RA. 1997. "Using numerical results from systematic reviews in clinical practice." Annals of Internal Medicine; 126(9): 712-720.

72 McKibbon A et al. 1999. *PDQ evidence-based principles and practice.* Hamilton, ON: BC Decker Inc.

73 NewsLab. 2006. *Guide to great graphics.* www.newslab.org/strategies/greatgraphics.htm

74 Canadian Health Services Research Foundation. 2006b. *Myth: The risks of immunizing children often outweigh the benefits.* www.chsrf.ca/mythbusters/pdf/myth24_e.pdf

75 Boulton M. 2007. Whitespace. A List Apart Magazine. www.alistapart.com/articles/whitespace

76 Bear HJ. 2007. How to add white space. http://desktoppub.about.com/cs/designprinciples/ht/white_space.htm

77 Canadian Health Services Research Foundation. 2006c. *Myth: Early detection is good for everyone.* www.chsrf.ca/mythbusters/pdf/myth22_e.pdf

78 Bowen S, Martens PJ and The Need To Know Team. 2005. "Demystifying 'knowledge translation': Learning from the community." Journal of Health Services Research & Policy; 10(4): 203-211.

79 Carpenter D et al. 2005. "Development of a planning tool to guide dissemination of research results." *In Advances in Patient Safety: From Research to Implementation. Volume 4: Programs, Tools, and Products.* Agency for Healthcare Research and Quality: Rockville MD.

80 Hiss RG, Macdonald R and Davis WR. 1978. "Identification of physician educational influentials in small community hospitals." Research in Medical Education; 17: 283-288.

81 Grzybowski S. 2000. "Identifying educational influentials for formal and informal continuing medical education in the province of British Columbia." Journal of Continuing Education in the Health Professions; 20: 85-90.

82 Doumit G et al. 2007. *Local opinion leaders: Effects on professional practice and health care outcomes (Cochrane Review).* In The Cochrane Library, Issue 1. Oxford: Update Software.

83 Lavis JN et al. 2003b. "Measuring the impact of health research." Journal of Health Services Research and Policy; 8(3): 165-170.

Additional CHSRF Resources

Communication Notes — Reader-friendly writing 1:3:25
www.chsrf.ca/knowledge_transfer/pdf/cn-1325_e.pdf

Communication Notes — Developing a dissemination plan
www.chsrf.ca/knowledge_transfer/pdf/dissemination_plan_e.pdf

Communication Notes — Self-editing: Putting your readers first
www.chsrf.ca/knowledge_transfer/pdf/cn-selfedit_e.pdf

Communication Notes — Designing a great poster
www.chsrf.ca/knowledge_transfer/pdf/poster_e.pdf

Communication Notes — How to give a research presentation to decision makers
www.chsrf.ca/knowledge_transfer/pdf/presentation_e.pdf

Communications Primer
www.chsrf.ca/knowledge_transfer/pdf/comprimer_e.pdf

Decision Support Synthesis Program
www.chsrf.ca/dss/framework_e.php

Disseminating Research
www.chsrf.ca/keys/use_disseminating_e.php

Evidence Boost
www.chsrf.ca/mythbusters/index_e.php

Health Services Research and Evidence-Based Decision-Making
www.chsrf.ca/knowledge_transfer/pdf/EBDM_e.pdf

Illustrations - Visual representations of complex linkage and exchange concepts
www.chsrf.ca/knowledge_transfer/resources_e.php

Insight and Action
www.chsrf.ca/other_documents/insight_action/index_e.php

Merit Review and Appeals Process
www.chsrf.ca/funding_opportunities

Mythbusters
www.chsrf.ca/mythbusters/index_e.php

Tools to help organizations create, share, and use research
www.chsrf.ca/knowledge_transfer/tools_e.php