Citizen Brief

Putting Evidence at the Centre of Everyday Life in Ontario

20 & 21 October 2022

McMaster University | HEALTH FORUM

EVIDENCE >> INSIGHT >> ACTION

McMaster Health Forum

The McMaster Health Forum's goal is to generate action on the pressing health and social issues of our time. We do this based on the best-available research evidence, as well as experiences and insights from citizens, professionals, organizational leaders, and government policymakers. We undertake some of our work under the Forum banner, and other work in our role as secretariat for Rapid-Improvement Support and Exchange, COVID-19 Evidence Network to support Decision-making (COVID-END), and Global Commission on Evidence to Address Societal Challenges.

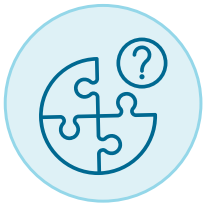
Citizen panels

A citizen panel is an innovative way to seek public input on high-priority issues. Each panel brings together 14 to 16 citizens from all walks of life. Panel members share their ideas and experiences on an issue, and learn from research evidence and from the views of others. A citizen panel can be used to elicit the values that citizens feel should inform future decisions about an issue, as well as to reveal new understandings about an issue and spark insights about how it should be addressed.

This brief

This brief was produced by the McMaster Health Forum to serve as the basis for discussions by two panels bringing together citizens from across Ontario. The brief is organized into four sections: 1) reviewing the context; 2) exploring the problem; 3) discussing solutions; and 4) identifying barriers and facilitators to moving forward. We are particularly keen to hear your views about 2, 3 and 4.

Reviewing the context



Exploring the problem

Discussing solutions

Identifying barriers and facilitatiors to moving forward

Reviewing the context

Every day, citizens are making many decisions that could be informed by the best available evidence

- Citizens make many decisions each and every day. Some are **personal decisions** for themselves or their families, while others are **decisions related to their community, their country, or the world**. (see Table 1)
- Those who are making decisions related to their community, their country, or the world may do so to:
  - **advance a "narrow" public interest**, like asking for a product recall after buying a product they purchased, improving schools for their children, or getting an expensive drug they are now paying for out-of-pocket to be covered by their provincial drug plan; or
  - **advance a "broad" public interest**, like reducing poverty, making their city safer, or addressing climate change.

Table 1. Examples of decisions that a citizen can make

Personal decisions	Decisions related to my community, my country, or the world

Decisions about:
 	
• Managing my health, safety and well-being (and that of my family's)
  ○ What is the best way to treat my condition (for example, drugs, physical therapy, diet)?
  ○ How can I get more exercise?
  ○ Should I get vaccinated to protect myself?
• Spending my money on products and services
  ○ Should my parents move in with me or into a nursing home?
  ○ Which product would give me the best value for money?
  ○ How can I best manage my money?
• Volunteering my time and donating money
  ○ What causes and charities can make the biggest change with my support?
• Supporting politicians
  ○ Should I support politicians? If so, which politicians should I support?
	Decisions about:
	
	• Reducing poverty in all its forms everywhere
	• Reducing hunger
	• Ensuring quality education for all
	• Achieving gender equality and empowering all women and girls
	• Ensuring access to clean water and sanitation for all
	• Ensuring access to affordable and clean energy for all
	• Promoting sustainable economic growth
	• Reducing inequality within and among countries
	• Making cities inclusive, safe, strong and sustainable
	• Taking action to combat climate change and its impacts
	• Promoting just, peaceful and inclusive societies

- In January 2022, the Global Commission on Evidence to Address Societal Challenges released a report.(1) Two if its recommendations could have a great impact on citizens:
  - help citizens use evidence to inform both personal decisions and decisions related to their community, their country, and the world; and
  - address the spread of false, inaccurate, and misleading information (also called 'misinformation'), which can lead to bad decisions and harmful consequences.

- This document was developed to support a discussion about **'putting evidence at the centre of everyday life.'** More specifically, it includes information about:
  - the problem, and more specifically challenges in using evidence in everyday life;
  - possible solutions to address these challenges; and
  - potential barriers and facilitators to move forward with these solutions.

Reviewing the context (cont'd)

Who are 'citizens'?

- We are all citizens (and we are all members of society).
- Depending on the kind of decisions, citizens are also consumers (consumer protection), parents (education), patients and caregivers (healthcare), residents (housing), service users (child, community and social services), taxpayers (economic development and growth), voters (citizenship), and workers (employment).

What is a decision?

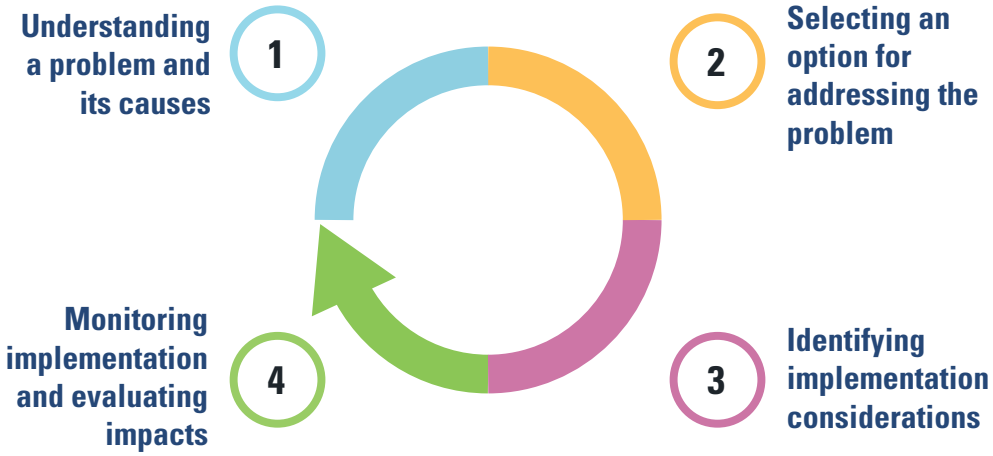
- A decision is a choice you make between different options.
- Decisions can be made on impulse (a non-conscious process driven by habits or beliefs) or be more thoughtful (a conscious process driven by information and evidence).
- Thoughtful decisions involve a series of steps (even if sometimes we skip steps or follow them out of order). (Figure 1)

What is 'evidence'?

- We use the term 'evidence' as a short form for 'research evidence.' Evidence is about information and data generated by research.
- There are different forms of evidence. Some forms can be helpful at specific steps in a decision-making process. (Figure 1)
- We recognize that there are many other types of evidence (for example, evidence that individuals themselves derive from their own lived experiences and evidence considered in a court of law) and that evidence is one of many factors that can influence a decision.

Reviewing the context (cont'd)

Figure 1. Steps in a decision-making process and how different forms of evidence can help



Steps	Related questions	Examples of helpful forms of evidence
1	**Indicators** – How big is the problem?	**Data analytics**
	Comparisons – Is the problem getting worse or is it bigger here than elsewhere?	**Data analytics** *(e.g., using administrative databases or community surveys)*
	Framing – How do different people describe or experience the problem and its causes?	**Qualitative studies** *(e.g., using interviews and focus groups)*
2	**Benefits** – What good might come of it?	**Evaluations** *(e.g., effectiveness studies like randomized-controlled trials)*
	Harms – What could go wrong?	**Evaluations** *(e.g., observational studies)*
	Cost-effectiveness – Does one option achieve more for the same investment?	**Technology assessments / cost-effectiveness evaluations**
	Adaptations – Can we adapt something that worked elsewhere while still getting the benefits?	**Evaluations** *(e.g., process evaluations that examine how and why an option worked)*
	Stakeholders' views and experiences – Which groups support which option?	**Qualitative studies** *(e.g., using interviews and focus groups to understand what is important to citizens)*
3	**Barriers and facilitators** – What (and who) will get in the way or help us in reaching and achieving desired impacts among the right people?	**Qualitative studies** *(e.g., using interviews and focus groups to understand barriers and facilitators)*
	Benefits, harms and cost-effectiveness, etc. of implementation strategies – What strategies should we use to reach and achieve desired impacts among the right people?	**Behavioural / implementation research** *See also 'selecting an option'*
4	Is the chosen option reaching those who can benefit from it?	**Data analytics**
	Is the chosen option achieving desired impacts at sufficient scale?	**Evaluations**

Reviewing the context (cont'd)

Do you use evidence to make decisions?

- What kinds of decisions?
- Where do you get your evidence?
- What kind of evidence do you use?
- How have you found these sources of evidence?

What role does evidence play (or could play) in your life?

In the following pages...

We will look at three challenges citizens face when using evidence in their everyday lives. Then, we will look at potential solutions and ask you about the pros and cons of each solution (and give you an opportunity to think about other solutions too).

Exploring the problem

Why is it challenging to use evidence in everyday life?

We have identified three reasons why it may be challenging for citizens to use evidence in everyday life:

- it is often left to individuals to find, understand and use evidence on their own;
- governments, businesses and non-governmental organizations do not set things up so that everyday choices are based on evidence; and
- we live in an era of misinformation, disinformation and infodemics.

Problem 1: It is often left to individuals to find, understand and use evidence on their own

Since the beginning of the COVID-19 pandemic, we have all heard people say: "Do your research." This seems like common-sense advice, but it's not as easy as it seems.

	Even experts need the time, motivation and capacity to find and read the right evidence.
	Some people have no or poor access to high-speed internet, which is often necessary to find evidence.
	Most people do not have access to sources of research evidence like scientific journals.
	A lot of people are limited in their ability to read and write in the languages most evidence is accessible in Canada.
	Doing your own research may also require specific types of skills: • media literacy skills (the capacity to judge the accuracy of media like newspapers and radio programs); • digital literacy skills (the capacity to use digital platforms like websites and social media and to judge the accuracy of what these platforms share); and • literacy skills in specific domains where decisions are made (for example, health, education, finances, climate action, etc.).
	It may be challenging to distinguish between strong and weak evidence (for example, is this a good study or not), which depends on many factors such as the research methods that were chosen, how the methods were applied, or whether the researchers have conflicts of interest.
	Evidence is not always relevant or applicable (for example, existing evidence may not answer your questions or does not apply to your personal circumstances).
	Evidence is not easy to understand and use • It often uses a lot of technical language • It often comes in very long reports • It may be hard to understand what the evidence means for you
	Evidence you find also competes with other things that influence your decisions (your age, where you live, your finances, your beliefs, your political views, your values, your preferences).

All this means that some people have better access to evidence than others. Over time this can increase inequalities (whether those are health inequalities, social and economic inequalities, or inequalities of opportunity) between those who have access to evidence and those who do not.

Problem 2: Governments, businesses and non-governmental organizations do not set things up so that everyday choices are based on evidence

Citizens can make decisions in many places, whether it's in front of their computer (by visiting a government website, a commercial website or social media), at the mall, at the grocery store, at the pharmacy, at the doctor's office, at a car dealership, at a financial institution, and much more.

However, governments, businesses and non-governmental organizations often do not play an active role to help us make evidence-informed decisions (or do not create favourable conditions to help us make evidence-informed decisions). We present some examples below.

	Products are commonly sold even if they do not have evidence to back up their claims (for example, a new diet to lose weight, remedies for the common cold, or a new device to prevent migraines).
	Some of these products can be found on pharmacy shelves next to other products that have been proven to be effective (which can become confusing for people).
	Big tech companies present information and products on their platforms based on your search history and profile, regardless of whether they are backed by evidence.
	Laws protecting us against advertising and selling products that may be harmful or dangerous, or about making false claims, do not apply yet to other types of information.

Problem 3: We live in an era of misinformation, disinformation and infodemics

During the COVID-19 pandemic, we started hearing the word 'infodemic.' The word reflects the parallel between the rapid spread in information and the rapid spread of the virus.

We also started hearing more of the words "misinformation" and "disinformation." They sound like the same thing, but they have different meanings. Misinformation is false information that is spread, regardless of intent to mislead. On the other hand, disinformation is the intentional spreading of misinformation. Since it is difficult to know a person or an organization's intent, the term misinformation is used more frequently.

Misinformation has ballooned to epic proportions in recent years. It includes information about health (treatments, diets, fitness programs), climate change (whether it exists, its impacts, the level of human influence, the urgency to take action), and other issues too. Misinformation is found everywhere, including:

- online (stores, websites, discussion forums);
- media (radio, television, podcasts, newsletters, streaming services); and
- social media (Twitter, Facebook, Instagram, YouTube, and other social-media platforms).

Misinformation can have serious consequences:

- it can create panic (like the panic buying we saw early in the pandemic);
- it can generate outright harm (like using treatments and products that are dangerous);
- it can be wasteful (like buying things that are not effective); and
- it can cause us to miss opportunities (like delaying or ignoring a treatment that could help or even be life-saving).

Exploring the problem (cont'd)

As the volume, pace, intensity and reach of misinformation grow, it is also contributing to an increasingly polarized world. This can stir distrust and anger, come between families and communities, and undermine democratic processes.

Do you recognize the challenges we have presented so far?

Have you ever looked for evidence but had difficulty finding it?

What do you view as the most important challenges in using evidence in everyday life?

- Challenges related to making decisions for you or your family?
- Challenges related to making decisions about your community, country or world?

Discussing solutions

To promote discussion about the pros and cons of potential solutions, we have selected four solutions that could help citizens use evidence in everyday life.

Many solutions could be selected as a starting point for discussion. We have selected the following four solutions for which we are seeking your input:

1. making evidence-based choices the default or easy option;
2. making evidence available to citizens (like you) when they are making choices;
3. helping citizens (like you) judge what others are claiming or more generally find (and receive) reliable information on a topic; and
4. engaging citizens (like you) in asking questions and answering them (with new research or with existing evidence).

We want to hear from you about the pros and cons of each solution (and give you an opportunity to think about other solutions too).

We present below the four solutions and look at what we know so far about them based on the best evidence we found. If you are curious, we included a technical appendix at the end of this document. It describes how we found the evidence and provides more details about each solution.

Solution 1: Making evidence-based choices the default or easy option

Imagine that governments, businesses and non-governmental organizations created an environment where evidence-based choices are the default option or the easy option.

This solution aims to level the playing field for all citizens. That means that citizens would not need special skills or resources to make evidence-based choices. These choices will be presented to them by default or will be the easy option for them.

This solution could include ideas like:

- 1a Adopting laws to ensure that policies, programs, services and products presented to citizens are based on the best available evidence (for example, prohibiting products that are not based on evidence, or making it illegal to spread disinformation);
- 1b Providing rewards or penalties to businesses advertising products depending on whether the products are supported by the available evidence;
- 1c Supporting big tech companies to ensure that information and products presented to citizens is evidence based (for example, use artificial intelligence to limit the spread of misinformation on social-media platforms, or have e-commerce platforms filter products based on the evidence available); and
- 1d Using "nudge" strategies to steer citizens towards evidence-based choices, but still allowing them to go look at other choices too (2; 3) — For example:
  - automatically enrolling citizens in programs that are based on evidence (like organ-donation programs or retirement saving plans);
  - giving evidence-based products and services better product placement (making them more visible and accessible than other products);
  - using symbols to identify products that are credible and evidence-based (for example, manufacturers could use symbols or 'kitemarks' to certify that their products adhere to evidence-based standards); and
  - using warnings symbols or labels on products whose claims are not based on good evidence.

Discussing solutions (cont'd)

What supports these ideas?

We used evidence to generate these ideas. More specifically, we looked for what's called 'systematic reviews.' A systematic review is an overview of all research studies that have been done on a specific topic and draws conclusion on all the results (not just one study).

For ideas 1a and 1b, we didn't find any systematic reviews about adopting laws and providing rewards (or handing out penalties) when claims are not based on evidence.

For idea 1c, we found three relevant reviews about developing search algorithms and artificial intelligence to counter misinformation. Artificial intelligence is now widely used to develop systems for detecting 'fake news' in fields like politics, health, and business.(4) One review found that artificial intelligence tools are more than 90% effective in detecting fake news on social media.(5) During the COVID-19 pandemic, artificial intelligence was widely used to detect misinformation about the virus, vaccines, treatments, and prevention.(6)

For idea 1d, there is more and more evidence that nudging strategies are promising.(2) Subtle changes to the environment in which decisions are taken can have substantial impact on citizens' behaviours, whether it is about improving food choices,(7) physical activity,(8) or vaccine confidence and uptake.(9)

Solution 2: Making evidence available to citizens (like you) when they are making choices

Imagine that whenever you are making a choice, you can have access to evidence at your fingertips.

This solution could include ideas like:

2a building more trustworthy websites that feature evidence about a wide range of choices (some already exist, like Wirecutter for shopping products, 80,000 hours for finding high-impact careers or high-impact volunteering opportunities, and GiveWell for giving to the charities that make the most of every dollar they receive; and

2b creating tools (sometimes called decision aids) like websites, videos, and brochures that explain what evidence is available about different options alongside the pros and cons of each option.

What supports these ideas?

For idea 2a, we found no systematic reviews about developing trustworthy websites that make evidence more available about different types of choices.

For idea 2b, we found a lot of systematic reviews about developing decision aids that help people make decisions related to healthcare decisions. For example, one recent and high-quality review examined the effectiveness of decision aids on people facing health treatment or screening decisions.(10) It found that people using decision aids feel more knowledgeable, better informed, and clearer about their values and the risks, and more empowered overall in their decision-making. There is more and more research finding that decision aids might help people make better choices that reflect their values.

We also found research about the effectiveness of decision aids made to help people make financial decisions.(11) It found that simply providing financial information does not usually help people, but decision aids designed to make specific decisions can be more helpful.

Solution 3: Helping citizens (like you) judge what others are claiming or more generally find (and receive) reliable information on a topic

Imagine that you have stronger skills to sort out whether a claim is true, false or misleading. Alternatively, imagine that you have stronger skills to find (or were able to receive) reliable information on a topic.

This solution could include ideas like:

3a Developing tools and training for citizens to develop their critical-thinking skills (for example, That's a Claim provides tools to help citizens assess the trustworthiness of claims made in 14 sectors, including agriculture, economics, education, environmental, health and more);

3b Publishing very short documents summarizing the best evidence on different topics using everyday language (for example, plain-language summaries like those produced by the Cochrane Collaboration or the Campbell Collaboration);

3c Promoting the use of strategies that journalists and science communicators can use to counter misinformation, such as:
- fact-checking services (for example, the World Health Organization created a 'mythbuster' series about various topics related to the COVID-19 pandemic, and many news outlets run fact-checking services);
- 'pre-bunking' strategies (for example, Google and researchers are trying to pre-emptively debunk misinformation or conspiracy theories by telling people what to watch out for);(12) or
- 'truth-sandwich' strategy (this is a technique in journalism where you present the truth about a subject before covering misinformation, then ending a story by again presenting the truth).(13)

3d Building a culture where evidence is understood, valued and used, such as:
- a dedicated week during the year that brings together politicians, policymakers, researchers and citizens to discuss how evidence helps to inform policy decisions (for example, Evidence Week hosted by Sense About Science)
- a campaign to encourage citizens to ask for greater transparency and accountability in the decisions made by governments (for example, the public campaign #AskForEvidence was created by Sense about Science to encourage people to ask for the evidence behind claims, news stories, ads and policies)
- activities to help citizens better understand uncertainty, risk and trade-offs when making decisions (for example, Sense About Science developed a Risk Know-How framework to help citizens navigate risk information, assess benefits and trade-offs to make decisions best suited to their circumstances)
- encouraging citizens and researchers to take part in public discussions about research evidence (for example, the Canadian Institutes of Health Research are funding 'café scientifique', which are events where researchers discuss with citizens their work on a current health or social issue).

What supports these ideas?

For idea 3a, we found no review about developing tools and training for citizens to develop their critical-thinking skills. However, there is a lot of research in the field of education about developing critical-thinking skills.(14)

For idea 3b, we found one review about producing very short documents summarizing the best available evidence.(15) This recent and high-quality review examined what is known about plain-language summaries to communicate evidence in an understandable way to a non-expert audience. The review identified that plain-language summaries aim to improve accessibility, understanding, knowledge, communication of research, and empowerment. However, it remains unclear what format is most effective for achieving these goals.

Discussing solutions (cont'd)

For idea 3c, we found a recent and moderate-quality review about the effectiveness of different strategies to correct misinformation in the media.(16) The review reveals that:

- correcting misinformation has a moderate influence on what people believe to be true
- correcting misinformation is trickier in politics and marketing, but easier in health
- making statements about a claim being untrue is more effective than warning people against misinformation
- correcting misinformation in a clear way works better than just telling people that the information comes from a credible source.

For idea 3d, we also found two other reviews focusing on fact-checking. A recent review revealed that correcting misinformation through fact-checking is not necessarily effective for everyone, and that corrections that come from friends and those with a mutual relationship are more effective.(17) Another recent and moderate-quality review found that a person's pre-existing beliefs, ideology, and knowledge make a big difference on whether fact-checking will influence their view about political misinformation.(18)

Solution 4: Engaging citizens (like you) in asking questions and answering them (with new research or with existing evidence)

Imagine that you have the opportunity to work in partnership with researchers, organizations that fund research, and organizations that produce evidence syntheses. You would be able to ask the questions that are important to you and other citizens like you, but also help with answering these questions with new research or with existing evidence.

This solution could include ideas like:

4a creating a website where citizens can submit their questions to organizations funding research;

4b having citizens engaged in prioritizing questions from all of those received; and

4c if a question requires new research to be conducted:
  - encouraging citizens to become partners in a research team to answer the question (for example, organizations in Ontario and across Canada are helping researchers to meaningfully engage patients as partners)

4d If evidence is already available to answer the question:
  - encouraging citizens to become partners in teams that are dedicated to summarize existing evidence on the question (for example, citizens have been actively engaged in summarizing the best available evidence to respond to the COVID-19 pandemic)

For idea 4a, we found no systematic review about creating a website where citizens can submit their questions.

For idea 4b and 4c, there is a growing body of evidence about the benefits of engaging citizens as partners in research teams. An old and moderate-quality review reveals that engaging patients increased study enrollment rates and aided researchers in securing funding, designing study protocols and choosing relevant outcomes.(19) However, it remains unclear what the best methods are to engage them.

For idea 4d, we also found an old and moderate-quality review that examined when citizens are engaged in teams that are dedicated to summarize existing evidence.(20) The review reveals that citizens can be engaged in different ways: coordinating and producing reviews, making reviews more accessible, commenting on the reviews, spreading the results of reviews, and educating people about evidence. However, there is little evidence about how citizens influence the reviews (or their 'impact').

Discussing solutions (cont'd)

What do you see as the pros and cons of each of these solutions?

Of everything that you have heard about the proposed solutions...:

- What do you like?
- What do you wish?
- What do you wonder?

What are other ways we could help citizens use evidence in everyday life? (top 3 ideas)

Identifying barriers and facilitators to moving forward

Solutions are great, but only if they can be put into action. There are often barriers in the way. Some of these barriers can be overcome. Others might be so big that we might need to rethink the solution. We have outlined some potential barriers below in Table 2. Help us identify up to three more barriers for each solution.

Table 2. Potential barriers to move forward

	Solution 1. Making evidence-based choices the default or easy option	Solution 2. Making evidence available to citizens (like you) when they are making choices	Solution 3. Helping citizens (like you) judge what others are claiming, or more generally find (and receive) reliable information on a topic	Solution 4. Engaging citizens (like you) in asking questions and answering them (with new research or with existing evidence)
Examples of barriers	• Governments may have difficulty finding a balance between this solution and protecting other things society cares about, like a free market, freedom of expression, and freedom of choice	• Some citizens may find it difficult to access and use these resources (or to determine which resources are trustworthy)	• This solution may only work for citizens who have the time, motivation and ability to develop their critical-thinking skills	• Most research projects take months or years, which may not be useful when citizens need answers right away

Identifying barriers and facilitators to moving forward (cont'd)

Solutions can benefit from a window of opportunity to make them happen. A window of opportunity could be an event that brings an issue into the forefront (a news story, a crisis, a new public opinion poll, an election, etc.). We have outlined some potential windows of opportunity below. Help us identify up to three more for each solution.

Table 3. Potential facilitators to move forward

	Solution 1. Making evidence-based choices the default or easy option	Solution 2. Making evidence available to citizens (like you) when they are making choices	Solution 3. Helping citizens (like you) judge what others are claiming, or more generally find (and receive) reliable information on a topic	Solution 4. Engaging citizens (like you) in asking questions and answering them (with new research or with existing evidence)
Examples of facilitators	• Some governments and big tech companies are taking action on misinformation • Big tech companies are working to improve their search algorithms (like Google's upcoming "trustworthiness score") (21)	• There is lots of expertise in the health sector to create decision aids, which could be used in other sectors	• Citizens and the media are more and more interested in eliminating misinformation and 'fake news'	• More and more researchers invite citizens to become research partners (and some funding organizations require it)

Identifying barriers and facilitators to moving forward (cont'd)

What might be the **biggest barrier** to these solutions?

What might be the **biggest window of opportunity** for these solutions?

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Acknowledgments

Authors:
François-Pierre Gauvin, PhD, Senior Scientific Lead, Citizen Engagement and Evidence Curation, McMaster Health Forum
Kaelan A. Moat, PhD, Managing Director, McMaster Health Forum
Maureen Smith, citizen partner, McMaster Health Forum
Alison Irons, citizen partner, McMaster Health Forum
John N. Lavis, MD PhD, Director, McMaster Health Forum, and Professor, McMaster University

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Technical appendix

Identification, selection and synthesis of evidence presented in this brief

- Whenever possible, we describe what is known about each element based on systematic reviews.
- A systematic review is a summary of all the studies that looked at a specific topic.
- A systematic review uses very rigorous methods to identify, select and appraise the quality of all the studies, and to summarize the key findings from these studies.
- A systematic review gives a much more complete and reliable picture of the key research findings, as opposed to looking at just a few individual studies.
- We identified systematic reviews in three databases that are the world's most comprehensive databases of evidence on health and social systems, as well as evidence on interventions to respond to the COVID-19 pandemic:
  - Health Systems Evidence (www.healthsystemsevidence.org)
  - Social Systems Evidence (www.socialsystemsevidence.org)
  - COVID-END (www.mcmasterforum.org/networks/covid-end)
- A systematic review was included if it was relevant to one of the elements covered in the brief.
- We summarize below the key findings from all the relevant systematic reviews.

Technical appendix
Solution 1: Making evidence-based choices the default or easy option

Category of finding	Summary of key findings
Benefits	• **Supporting big tech companies to ensure that information and products presented to citizens is evidence based** ◦ One review found that artificial intelligence tools are more than 90% effective in detecting fake news on social media.(5) • **Using "nudge" strategies to steer citizens towards evidence-based choices** ◦ There is more and more evidence that nudging strategies are promising.(2) ◦ Subtle changes to the environment in which decisions are taken can have substantial impact on citizens' behaviours, whether it is about improving: ▪ food choices;(7) ▪ physical activity;(8) or ▪ vaccine confidence and uptake.(9)
Harms	• None reported in the systematic reviews found
Cost and/or cost-effectiveness	• None reported in the systematic reviews found
Uncertainty regarding benefits and potential harms	• No systematic reviews found about the following solutions ◦ **Adopting laws to ensure that policies, programs, services and products presented to citizens are based on the best available evidence** ◦ **Providing rewards or penalties to businesses advertising products depending on whether the products are supported by the available evidence**
Key characteristics if it was tried elsewhere	• **Supporting big tech companies to ensure that information and products presented to citizens is evidence based** ◦ One review revealed that artificial intelligence is now widely used to develop systems for detecting 'fake news' in fields like politics, health, and business.(4) ◦ One review revealed that artificial intelligence was widely used during the COVID-19 pandemic to detect misinformation about the virus, vaccines, treatments, and prevention.(6)
Stakeholders' views and experiences	• None reported in the systematic reviews found

Technical appendix
Solution 2: Making evidence available to me when I'm making choices

Category of finding	Summary of key findings
Benefits	• **Creating tools (sometimes called decision aids) that explain what evidence is available about different options alongside the pros and cons of each option** ◦ A recent and high-quality review examined the effectiveness of decision aids on people facing health treatment or screening decisions.(10) It found that people using decision aids feel: ▪ more knowledgeable, ▪ better informed, ▪ clearer about their values and the risks, and ▪ more empowered overall in their decision-making. ◦ We found one non-systematic review about the effectiveness of decision aids that help people make financial decisions.(11) It found that simply providing financial information does not usually help people, but decision aids designed to make specific decisions can be more helpful.
Harms	• None reported in the systematic reviews found
Cost and/or cost-effectiveness	• None reported in the systematic reviews found
Uncertainty regarding benefits and potential harms	• No systematic reviews found about the following solutions ◦ **Building more trustworthy websites that feature evidence about a wide range of choices**
Key characteristics if it was tried elsewhere	• None reported in the systematic reviews found
Stakeholders' views and experiences	• None reported in the systematic reviews found

Technical appendix

Solution 3: Helping citizens judge what others are claiming, or more generally find (and receive) reliable information on a topic

Category of finding	Summary of key findings
Benefits	• **Publishing very short documents summarizing the best evidence on different topics using everyday language** ◦ A recent and high-quality review examined what is known about plain-language summaries to communicate evidence in an understandable way to a non-expert audience.(15) The review identified that plain-language summaries can improve: ▪ accessibility of evidence; ▪ understanding of evidence; ▪ knowledge about evidence; ▪ communication of evidence; and ▪ empowerment. ◦ However, it remains unclear what format of plain-language summaries is most effective to achieve these goals. • **Promoting the use of strategies that journalists and science communicators can use to counter misinformation** ◦ We found a recent and moderate-quality review about the effectiveness of different strategies to correct misinformation in the media.(16) The review reveals that: ▪ correcting misinformation has a moderate influence on what people believe to be true; ▪ correcting misinformation is trickier in politics and marketing, but easier in health; ▪ making statements about a claim being untrue is more effective than warning people against misinformation; and ▪ correcting misinformation is a clear way works better than just telling people that the information comes from a credible source. ◦ A recent review revealed that correcting misinformation through fact-checking is not necessarily effective for everyone, and that corrections that come from friends and those with a mutual relationship are more effective.(17) ◦ Another recent and moderate-quality review found that a person's pre-existing beliefs, ideology, and knowledge make a big difference on whether fact-checking will influence their view about political misinformation.(18)
Harms	• None reported in the systematic reviews found
Cost and/or cost-effectiveness	• None reported in the systematic reviews found
Uncertainty regarding benefits and potential harms	• No systematic reviews found about the following solutions ◦ **Developing tools and training for citizens to develop their critical-thinking skills** (note: no review focusing on citizens, but there is a lot of research in the field of education about developing critical-thinking skills among students)(14) ◦ **Building a culture where evidence is understood, valued and used**

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Technical appendix
Solution 3: Helping citizens judge what others are claiming, or more generally find (and receive) reliable information on a topic *(continued from previous page)*

Category of finding	Summary of key findings
Key characteristics if it was tried elsewhere	• None reported in the systematic reviews found
Stakeholders' views and experiences	• None reported in the systematic reviews found

Technical appendix

Solution 4: Engaging citizens in asking questions and answering them (with new research or with existing evidence)

Category of finding	Summary of key findings
Benefits	• **Having citizens engaged in prioritizing questions from all of those received** ◦ A recent review about engaging the public and patients in identifying priorities in healthcare (including in healthcare research) found that these processes were successful in setting priorities that are inclusive and objectively based, specific to the priorities of stakeholders engaged in the process, and helped to promote equity in patient voices.(22) • **Encouraging citizens to become partners in a research team to answer the questions** ◦ An old and moderate-quality review reveals that engaging patients as members of research teams: ▪ increased study enrollment rates; ▪ helped researchers in securing funding; ▪ helped in designing study protocols; and ▪ helped choose relevant outcomes.(19) ◦ However, it remains unclear what are the best methods are to engage them in research teams. • **Encouraging citizens to become partners in teams that are dedicated to summarize existing evidence** ◦ An old and moderate-quality review examined when citizens are engaged in teams that are dedicated to summarizing existing evidence.(20) The review reveals that citizens can be engaged in different ways: ▪ coordinating and producing reviews,; ▪ making reviews more accessible; ▪ commenting on the reviews; ▪ spreading the results of reviews; and ▪ educating people about evidence. ◦ However, there is little evidence about how citizens influence the reviews (or their 'impact').
Harms	• **Having citizens engaged in prioritizing questions from all of those received** ◦ A recent review about engaging the public and patients in identifying priorities in healthcare (including in healthcare research) highlighted that the risk of tokenism is high across all patient-engagement opportunities (meaning that there is only a symbolic effort to engage patients without meaningful engagement).(22)
Cost and/or cost-effectiveness	• None reported in the systematic reviews found
Uncertainty regarding benefits and potential harms	• No systematic reviews found about the following solutions ◦ **Creating a website where citizens can submit their questions to organizations funding research**
Key characteristics if it was tried elsewhere	• None reported in the systematic reviews found
Stakeholders' views and experiences	• None reported in the systematic reviews found

McMaster University | HEALTH FORUM

>> Contact us

1280 Main St. West, MML-417
Hamilton, ON, Canada L8S 4L6
+1.905.525.9140 x 22121
forum@mcmaster.ca

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