

# Communicating risk: a guide for health professionals

## 1 Choosing Wisely

Choosing Wisely is an international campaign that promotes a culture where low value and inappropriate clinical interventions are avoided, and patients and health professionals have well-informed conversations about treatment options, leading to better decisions and outcomes.

Just because tests and treatments are available does not mean we should use them all the time. Some tests, treatments and procedures have side effects – some cause harm. Choosing Wisely Aotearoa New Zealand supports reducing unnecessary tests, treatment and procedures in healthcare.

## 2 Communicating risk

Successful evidence-based practice and shared decision-making between health professionals and the public depends on effective communication about risks, harms and benefits.

There is usually more than one way to treat a problem (including the ‘no treatment’ option) and health professionals need to be able to communicate clear information about the risks and benefits of each option, to help people determine the best choice for them.

This includes decisions about:

- Diagnostic and screening tests
- Medications and surgical treatments
- Advance care plans and end-of-life decisions

## 3 Health literacy and numeracy in Aotearoa New Zealand

It is important for health professionals to consider health literacy when thinking about how to better communicate risks and benefits.

Low health literacy contributes significantly to health disparities for Māori and Pacific peoples. However, the majority (56%) of adult New Zealanders have low health literacy<sup>1</sup>. Health literacy has been described as ‘the capacity to obtain, process and understand basic health information and services in order to make informed and appropriate health decisions’<sup>2</sup>. While this definition focuses on consumers, there is a lot that health professionals and organisations can and should do to reduce the health literacy needed to understand and access good care.

This includes:

- Making it easier for patients to navigate health services, systems and processes
- Encouraging health conversations and helping people to identify and asking questions.
- Finding out what people know as the starting point of any health conversation
- Ensuring information or instructions passed on are manageable and well understood  
Checking that you have been clear when talking to a patient by asking them to "teach-back"
- Encouraging whānau involvement in health conversation
- Going through written information with patients and whānau
- Following up and monitoring prescribed medicines and instructions
- Redesigning health education resources, letters and forms so they are clear to the audience
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## 4

### How to communicate risk to consumers<sup>3</sup>

- Provide numeric likelihoods of risks and benefits. Describing risks solely with words, such as 'you have a low chance of experiencing a side effect,' is ineffective. Provide people with numerical estimates of the risks and benefits associated with treatment options.
- Work to make numbers more accessible for all individuals. Many people have low numeracy skills, and information-processing skills decrease under stress. Present information simply, using different formats.
- *Express absolute risk reductions in numbers and as natural frequencies, ahead of relative risk reductions.* Patients are unduly influenced when risk information is presented using a relative risk approach; this can result in suboptimal decisions. Thus, an absolute risk format should be used, e.g:
  - "[number] A out of 1000 people will have [outcome] Z with [intervention] X, compared with [number] B out of 1000 people without X [or with an alternative intervention]. Given [number] C people in New Zealand have [disease] D, intervention X will thus reduce the case load by [number] E over 5 years. This is an x% absolute
- Keep denominators and timeframes constant for comparisons. It is difficult for patients to compare across treatments when different denominators and timeframes are used. It is easier to understand whole numbers (e.g., 1 in 10,000) rather than fractions or decimals (.01 in 100); thus, if risks are very small, larger denominators will be necessary.
- Make the differences between baseline and treatment risks and benefits clear. Use pictographs to show baseline risks in one colour and the risks due to treatment in a different colour. There are links below to websites that can help you make your own pictograms very easily.
- Reduce the amount of information shown as much as possible. Health educators and clinicians are often motivated to provide patients with as much information as possible.

However, with more information, it is harder for patients to focus on the most critical information for their decision.

- Provide both positive and negative frames. People, particularly those who are less numerate, are unduly influenced by whether a treatment is described in positive or negative terms (e.g., survival rates versus mortality rates). Whenever possible, describe the risks and benefits using both frames. For instance:
  - *“60% of men who have surgery to treat their prostate cancer will be impotent. This means that 40% of men will not experience impotence.”*

## 5 Risk communication glossary<sup>4, 5</sup>

- Natural frequency/baseline risk = the risk of a condition or outcome in the general population or control group in a certain time period
  - *“In New Zealand, your risk of getting this cancer is around 3 in 1000 over the next 10 years.”*
- Relative risk reduction (RRR) = the percentage of baseline risk that is removed as a result of an intervention.  $RRR = ARR / \text{baseline risk}$ 
  - *“If you have this test every 2 years, it will reduce your chance of dying from this cancer by around one-third over the next 10 years.”*
- Absolute risk reduction (ARR) = the proportion of patients who are spared the adverse outcome as a result of an intervention
  - *“If you have this test every 2 years it will reduce your chance of dying from this cancer from around 3 in a 1000 to around 2 in a 1000 over the next 10 years.”*
- Number needed to treat (NNT) = the number of people who need to receive the intervention or treatment for 1 person to receive benefit.  $NNT = 1/ARR$ 
  - *“If around 1000 people have this test every 2 years, 1 person will be saved from dying from this cancer every 10 years.”*

## 6 Why is it important to talk about absolute risk rather than relative risk?

Health information framed in terms of relative risk is frequently misunderstood and is potentially deceptive. A relative risk reduction, such as 50%, sounds like a big benefit, but if the issue in question is rare, a 50% reduction in the chance of something that was already very unlikely is not as good as it sounds. Relative risk reductions may represent markedly different absolute risk reductions depending on the baseline risk.

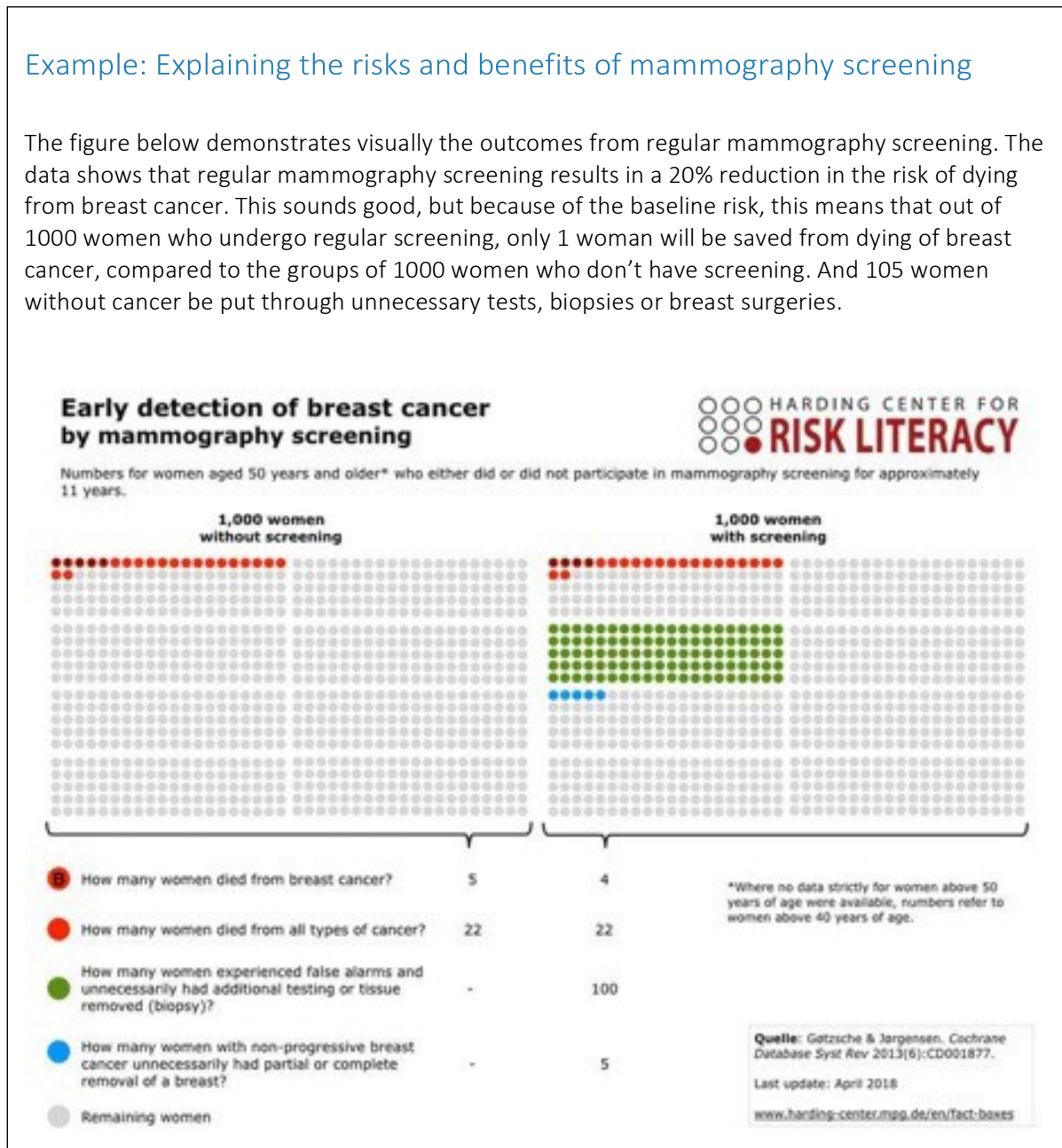
Health professionals, as well as the public, tend to over-estimate the effectiveness of an intervention when results are expressed in relative terms, because such results are naïve to the baseline risk.

Absolute risk reduction and numbers-needed-to-treat are more direct measures of the relevance of an effect than relative risk reduction and are less likely to influence medical and public decision-making to inappropriately adopt an intervention.

Relative risk has its place, but an absolute risk approach achieves a better balance between prevention and avoiding unnecessary intervention<sup>6</sup>.

### Example: Explaining the risks and benefits of mammography screening

The figure below demonstrates visually the outcomes from regular mammography screening. The data shows that regular mammography screening results in a 20% reduction in the risk of dying from breast cancer. This sounds good, but because of the baseline risk, this means that out of 1000 women who undergo regular screening, only 1 woman will be saved from dying of breast cancer, compared to the groups of 1000 women who don't have screening. And 105 women without cancer be put through unnecessary tests, biopsies or breast surgeries.



## 7 Resources that can help

Many resources are available to support health care professionals in communicating risks and benefits to health consumers.

### E-learning courses health professionals

1. [Helping patients make informed decisions: Communicating risks and benefits](#)

This is an open access version of the course developed by the Australian Commission for Safety and Quality in Healthcare to support clinicians develop and refine their skills in communicating effectively about the benefits and risks of treatment options with consumers. It is a 2-hour e-learning module.

2. [Communicating potential harms and benefits](#)

These free e-learning courses have been produced by the Australian Commission on Safety & Quality in Healthcare, the Winton Centre for Risk & Evidence Communication and the Academy of Medical Royal Colleges in the UK. There are two versions available:

- [Perioperative version](#): designed for surgeons, anaesthetists and other perioperative specialists to help them develop skills to communicate effectively with patients about the potential harms and benefits of treatment options.
- [Primary care version](#): designed for health practitioners in primary care to help them develop skills for communicating effectively with patients about the potential harms and benefits of treatment options.

### Other resources to help communicate risks and benefits

1. Relative vs Absolute risk explanation tools:
  - ["Explaining Risk Reduction"](#) [website, with visual aids] from Dr Adam Stewart, a Canadian GP
  - [Drugs & The Media: Relative vs Absolute Risk](#) [video] from [The Body of Evidence](#)
  - [Mammogram Theatre: Lazris & Rifkin's Risk-Benefit Characterization Theater](#) [video] from Kaiser Permanente: a video that uses icons and the analogy of a theatre of 1000 people to help patients to learn about the risks and benefits of mammography with a realistic depiction of pros and cons.
2. [Number needed to treat \(NNT\) reviews](#) – a handy overview of the NNTs for various treatment options in a wide range of medical areas.
3. [B.R.A.I.N. decision aid](#) [PDF, 1 page] adapted from the International Childbirth Association by the Centre for Collaboration, Motivation, and Innovation: A generic decision aid that can be used for making any important medical choice
4. [Make your own](#) Shared Decision-Making tools for NNT/NNH. An online tool that can help you create your own visual representation of risks/benefit likelihoods from data of your choosing.

5. [Icon Array](#) [website, generates web-embeddable or downloaded diagram] from The University of Michigan's [The Risk Science Center](#) and the [Center for Bioethics & Social Sciences in Medicine](#), this is a comprehensive tool for building icon arrays that could be used for shared decision-making. They offer [basic](#) as well as [advanced](#) versions, or [sets of images that allow the display of 2 or 3 risks/benefits](#). If you aren't sure how do get started, see [the examples](#).
6. [Communicating risks and benefits: an evidence-based user's guide](#) from the Food and Drug Administration, US Department of Health and Human Services, 2011.
7. [Helping Doctors and Patients Make Sense of Health Statistics](#) a helpful overview article by Gigerenzer and colleagues from 2007.
8. [Three steps to better health literacy – a guide for health professionals](#) by New Zealand's Health Quality and Safety Commission, published in 2015

## References

<sup>1</sup> Reid S, White C. Understanding health literacy. BPAC NZ Best Practice Journal 2012:45  
<https://bpac.org.nz/BPJ/2012/August/upfront.aspx>

<sup>2</sup> Kickbusch I, Walt S, Maog D. 2005. Navigating Health: The role of health literacy.  
<http://www.ilonakickbusch.com/health-literacy/index.shtml>

<sup>3</sup> List adapted from NZCPHM Choosng Wisely recommendations (2019) and [Communicating risks and benefits: an evidence-based user's guide](#) (FDA, 2011)

<sup>4</sup> Ranganathan P, Pramesh CS, Aggarwal R. Common pitfalls in statistical analysis: Absolute risk reduction, relative risk reduction, and number needed to treat. *Perspect Clin Res* 2016;7:51-3.

<sup>5</sup> Gigerenzer G, Gaissmaier W, Kurz-Milcke E, et al. Helping doctors and patients make sense of health statistics. *Psychol Sci Public Interest* 2007; 8(2): 53–96

<sup>6</sup> NZCPHM Choosing Wisely – Recommendations & explanatory statements. Reviewed November 2019  
<https://choosingwisely.org.nz/wp-content/uploads/2018/08/Choosing-Wisely-2019-Reviewed-FINAL.pdf>

## Contacts and resources

### Choosing Wisely contacts

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### New Zealand Choosing Wisely resources

- Starter kit for your Choosing Wisely campaign: an introduction to the Choosing Wisely concepts.
- **Developing Choosing Wisely Recommendations:** to assist Colleges, societies and other organisations, to develop a list of recommendations for the Choosing Wisely campaign.
- Implementing Choosing Wisely principles in a service: this guide is aimed at service delivery organisations, wanting to implement a Choosing Wisely programme, including Departments in DHBs and services in primary care.
- **Measuring the impact of Choosing Wisely:** provides basic information and tools to help you develop and measure your Choosing Wisely interventions.
- **How to write up your Choosing Wisely project:** how to record your successful implementation of a Choosing Wisely recommendation.
- A Starter Kit for implementing Choosing Wisely in hospitals which has been prepared to assist smaller hospitals with the implementation of Choosing Wisely.
- Promoting shared decision making: for information and resources on shared decision making.
- Communicating risk, a guide for health professionals: for information on risk and how to explain risk to consumers.
- Behaviour change toolkit: options for the range of tools available to implement Choosing Wisely initiatives to change health professional behaviour.
- The High-Value Care Culture Survey (HVCCS) captures specific areas for targeted value-improvement interventions and provides a pathway for health system managers to address the underlying culture within hospital divisions, practices, and training programmes.
- **A synopsis of Choosing Wisely literature:** this is a list of Choosing Wisely references arranged by year and alphabetically by author.
- A combined list of all choosing wisely recommendations: this is a list of all New Zealand Choosing Wisely recommendations on tests, treatments, and procedures health professionals should question, in one list for easy reference.

For more information:

- New Zealand <https://choosingwisely.org.nz/>
- Australia - <https://www.choosingwisely.org.au/>
- Canada - <https://choosingwiselycanada.org/>
- USA - <https://www.choosingwisely.org/>
- UK - <https://www.choosingwisely.co.uk/about-choosing-wisely-uk/>

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## Speakers' Group

Choosing Wisely has a list of leading professionals who can talk to groups about the campaign – contact the Choosing Wisely team if you need a speaker for your meeting or if you are willing to join our speakers' group.



## Thanks to our partners



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