

Better letters – evidence and considerations from the behavioural sciences



Behavioural and cultural insights
policy brief

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Abstract

Every day, thousands of letters are sent from health authorities encouraging recipients to attend an appointment, vaccinations, cancer screening, or a health check-up, or engage in other health-related behaviours. Many of these letters have the potential to be optimized for even more impact – that is, to make people act on them. Principles from communication science can help develop better letters. In addition, this document presents evidence from the behavioural sciences, which can also help develop more impactful letters.

This policy brief presents nine considerations that can be applied across the process to develop, review or evaluate letters: ensure a clear call to action; keep a letter short and simple; address the barriers to and leverage the drivers for a behaviour; draw on relevant psychological mechanisms; adapt a letter to a cultural context and consider health equity; attract a readers' attention; use the right sender and signatory; test the letter and engage with intended recipients; and combine with reminders.

KEYWORDS

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DELIVERY OF HEALTH CARE
HUMAN ACTIVITIES
HEALTH COMMUNICATION
BEHAVIORAL RESEARCH

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Abbreviations

BCI	Behavioural and cultural insights
GP	General Practitioner
RCT	Randomized controlled trial
THP	Tailoring Health Programmes

Introduction

Every day, thousands of letters are sent from health authorities to encourage various behaviours in their populations, such as attending a cancer screening, vaccination or treatment check-up; booking a visit from a home-visiting nurse; or registering for a blood or organ donation.

Many of these letters have the potential to be optimized for the biggest possible impact, that is, to make people act on them (**Box 1**). This can be either in their original development or as part of a review and evaluation process of existing letters.

Data shows that many people struggle with accessing, understanding, appraising and applying health information (1–3), and this has important negative implications in the form of poorer engagement with health services and poorer health outcomes (4). It has also been documented that the responsibility for this lies with health authorities: health information is often too complex (5–7) and not sufficiently adjusted to the recipients (8). As such, information from health authorities written in complex language may risk increasing inequities in health.



Can a letter change behaviours? A letter alone often will not, particularly if the barriers to that behaviour are complex, however, a well-crafted letter may increase the response rate among motivated people when services are easy to access. Improving a letter may also be part of a bigger effort to improve and tailor services to the needs and circumstances of a specific population group.

BOX 1.

Common problems with health letters

- They are written from the perspective of the sender rather than the reader.
- They focus on regulations or guidelines, which are more important to the sender than the recipient.
- The desired action from the recipient is not clear.
- They use complicated language or terminology.
- They are too long.
- They are not engaging.
- They do not use evidence-based techniques to stimulate positive behaviour.

Applying principles from communication science helps with addressing many challenges, such as setting communication objectives and goals for the letter; deciding on target groups, key messages, appeal, timing and dissemination; as well as applying good communication principles for the language used (9, 10).

Supplementing this, the behavioural sciences – including psychology, economics, anthropology, sociology and cognitive sciences – offer evidence and best practice which can optimize letters for maximum impact. A growing number of public health authorities are using this evidence to optimize letters, and evidence shows that taking this approach has a proven impact on the response from letter recipients (11). Understanding and adapting the letter to the cultural context and engaging the intended recipients are other valuable elements of letter development processes.

This document is intended for staff in health authorities and other institutions who send letters to patients, practitioners or the general public about health.

The document is particularly relevant if the letter has a behavioural goal, meaning a target action that the sender wants the recipient to undertake. This could include, for example, the recipient making an appointment, calling a hospital, completing a cancer screening test, or enrolling in a tobacco cessation programme. The considerations of this document are relevant, regardless of how the letter is disseminated: via post, email, protected e-box, or by a health provider handing it out manually.

The advice presented can be used to support the design of a new letter or to improve an existing letter. Many of the considerations also apply to other forms of communication, such as text messages, pamphlets, posters or social media.

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Can a letter change behaviours? A letter alone often will not, particularly if the barriers to that behaviour are complex, however, a well-crafted letter may increase the response rate among motivated people when services are easy to access.



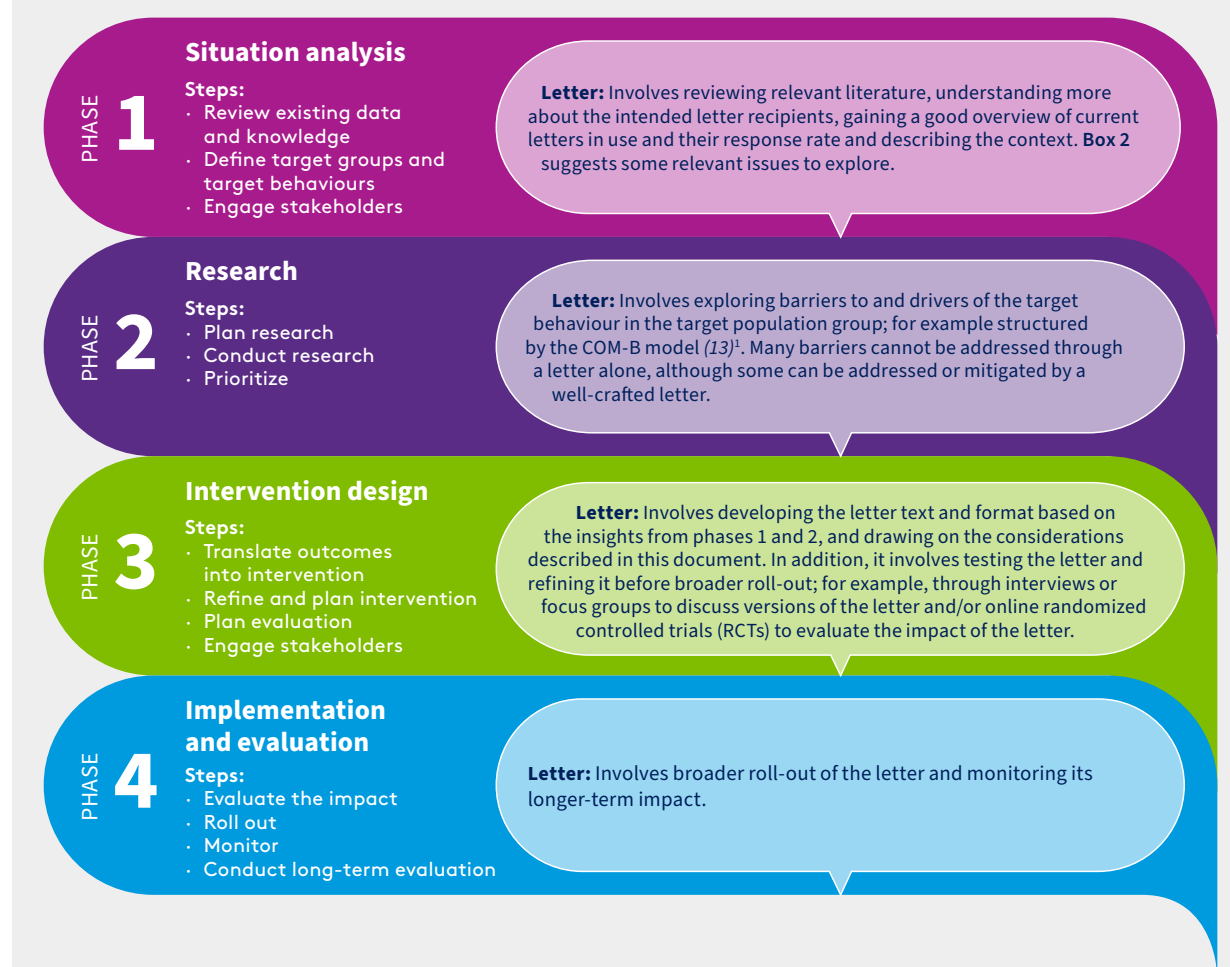
A simple or a more comprehensive approach?

If time and resources are constrained, the considerations of this document can be applied quite simply to inspire and support the (re)design of a letter.

If the health topic and the letter recipients are of high priority, additional investment in terms of time and

money may be warranted to improve effectiveness. To tailor the letter to the needs and circumstances of the recipients, it may be advisable to apply the WHO Tailoring Health Programmes (THP) approach (12), and go through all four THP phases and underlying steps (Fig. 1).

FIG. 1: DEVELOPING A LETTER USING THE THP APPROACH



NOTE: COM-B refers to Capacity, Opportunity, Motivation-Behaviour¹.

¹ The Capability, Opportunity, Motivation – Behaviour (COM-B) model can be used to structure and analyse the factors that affect a behaviour and to develop targeted interventions (13). The model proposes that three factors need to be in place for a behaviour (B) to take place: capability (C), opportunity (O) and motivation (M), and that each type of factor requires different types of interventions to be addressed.

In other situations, a letter may be part of a bigger effort to enable, support or promote a health behaviour; for example, to increase uptake of a cancer screening programme. These efforts may involve several elements in addition to the letter, such as service delivery improvements, the training of health workers and policy changes. In this case, the design of the letter may be integrated into a broader project. A broader project can also be conducted with the THP approach.

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To tailor the letter to the needs and circumstances of the recipients, it may be advisable to apply the Tailoring Health Programmes approach.



BOX 2.

Relevant issues to explore as part of the situation analysis

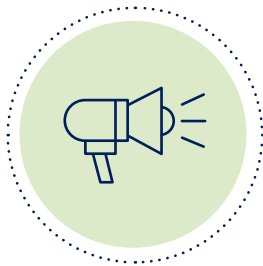
- **Evidence.** What is known about the health behaviour which the letter seeks to address? What is known about barriers and drivers? Which types of interventions/letters have been evaluated, and what is known about their impact? Which type of messages regarding the behaviour have been tested in other contexts and found (in)effective?
- **Target population.** Who is intended as recipients of the letter and what characterizes them in terms of factors like age, geography and cultural context? Are recipients homogeneous or diverse, requiring tailoring of letters to different groups? Do you have any knowledge of how recipients think and feel about the topic of the letter (e.g. cancer screening or tobacco cessation)? Is there an historic context or previous experience with reaching out to this group with health information, which should be taken into account?
- **Current letters.** How do people receive the letter (e.g. by mail or via their general practitioner)? What is the current response rate to letters – how many recipients act based on similar letters sent to this group? Are there relevant data available, for example, on how many people open the email or reply to the letter without following through with the end behaviour?
- **Context.** Is the letter part of a broader communications effort, for example, with other elements (e.g. flyer, website, social media), a service delivery change, or a policy change? Are there social, financial or political dynamics which may impact the success of the letter? Are there other events happening at the same time which may impact the success of the letter?
- **Stakeholders.** Who is essential for this type of letter to be a success and to have greater reach and impact? For example, who should refer to the letter in their interaction with patients and communities, disseminate the letter, or just be aware that the letter exists?

Considerations for better letters

The following considerations can help with designing a health letter (**Box 3**). These considerations are informed by behavioural and cultural insights (BCI). Since letters need to be developed, reviewed and evaluated in an iterative process, the considerations can be applied in different order and at various points in the process. The considerations are useful for

designing a new letter as well as for optimizing an existing one (**Box 4**).

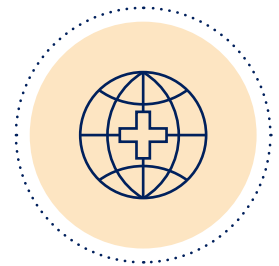
Box 3 illustrates the application of all nine considerations in one case example letter. The Checklist at the end of this document summarizes all key considerations.



ENSURE A CLEAR
CALL TO ACTION



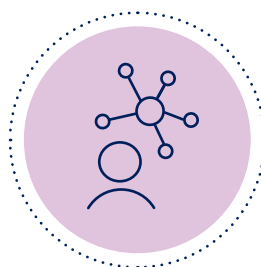
KEEP THE LETTER
SHORT AND SIMPLE



ADAPT TO THE CULTURAL
CONTEXT AND CONSIDER
HEALTH EQUITY



ADDRESS THE BARRIERS
TO AND LEVERAGE THE
DRIVERS FOR THE
BEHAVIOUR



DRAW ON RELEVANT
PSYCHOLOGICAL
MECHANISMS



ATTRACT
THE READER'S
ATTENTION



USE THE RIGHT
SENDER AND
SIGNATORY



TEST THE LETTER
AND ENGAGE WITH THE
INTENDED RECIPIENTS



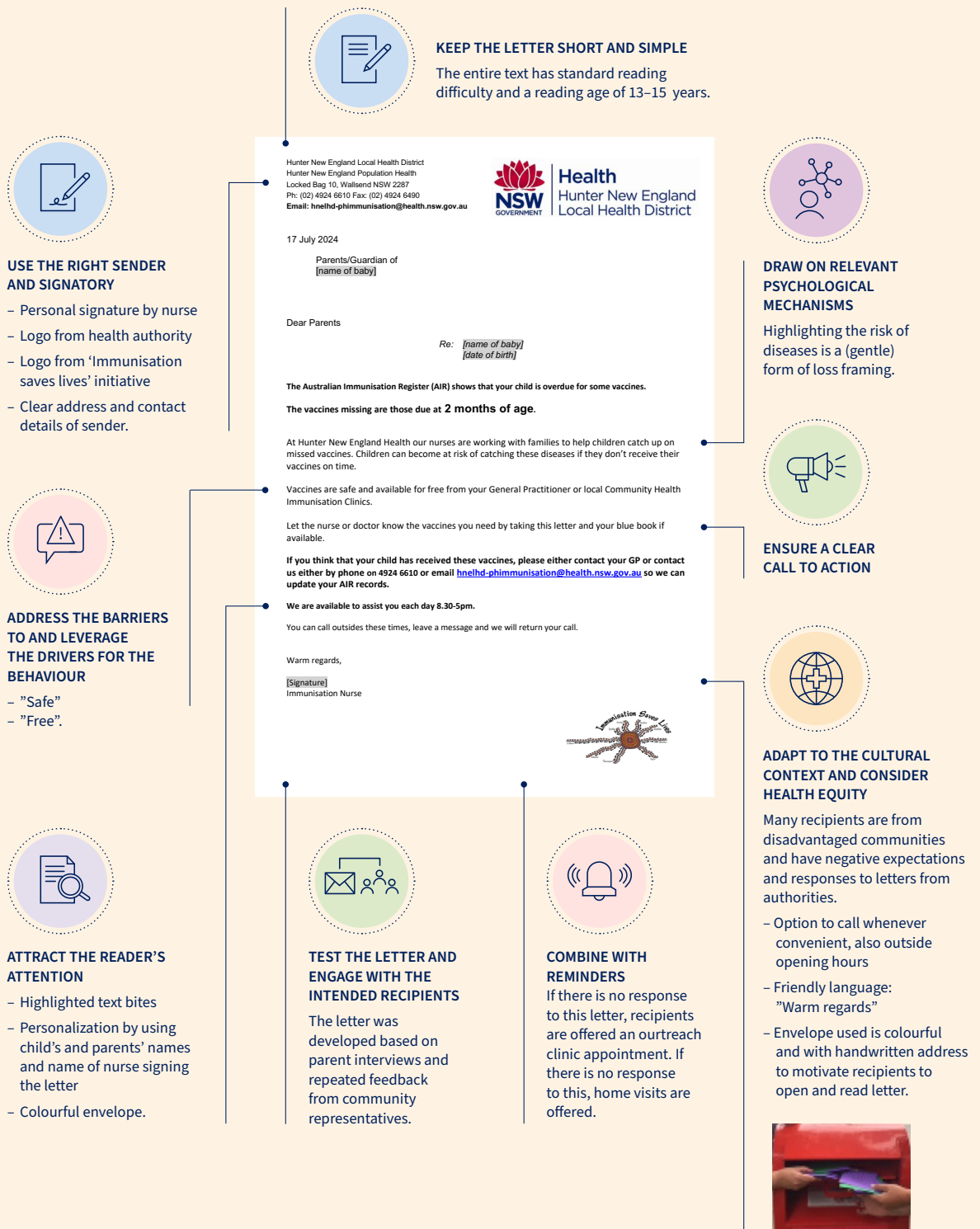
COMBINE WITH
REMINDERS

BOX 3.

Example A: The nine considerations applied in one letter

To improve immunization of 1-year-old children in a socioeconomically disadvantaged community in New South Wales, Australia, a letter was carefully designed, drawing on parent interviews and repeated feedback

from community representatives. The letter was part of a comprehensive effort which included tailoring of immunization services. The initiative was developed with the use of the WHO THP approach.



SOURCE: (14). Reproduced with permission.



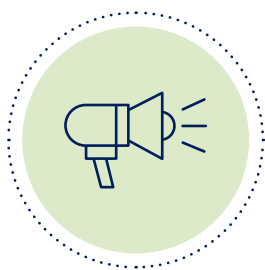
BOX 4.

Redesigning a letter

When redesigning an existing letter, it is helpful to print out the letter and:

- highlight the most important information with a yellow marker;
- cross out the information which is not absolutely necessary for the recipient;
- circle the places that use jargon, too many words or unnecessarily complex language; and
- based on this, create the simplest and shortest version of the letter, which only includes the key information and call to action. This version can then be used as the basis for further improvements, using the considerations in this document.

In addition, ask someone not familiar with the topic to review the letter, and read it quickly, as if they had received the letter through the post. Ask them what they think the key information is, and what the desired action for the recipient is. People not familiar with the topic are often better at highlighting what is missing or unclear. If resources are available, you can do this in a more formal process with a focus group with intended recipients, including asking them to read the letter (or just key sentences within it), and then to explain it in their own words.



Ensure a clear call to action

A letter will be more effective if it makes the information actionable. Before (re)designing the letter, it is advised to determine the target behaviour; that is, what action do you want the recipient to take? A clear call to action helps a recipient overcome procrastination.

A call to action should be active, clearly highlighted in the text and, ideally, include a deadline, such as, “Please call us today, on 0123 456 789 to make an appointment”, rather than “consider taking part in the future”. This ask should be at the top of the letter, including a clear indication of the phone number, their patient number and other key information.

The target behaviour may involve several steps. Breaking down complex tasks into manageable and easily digestible chunks is an effective approach (15). This involves providing instructions and describing the necessary steps for the target behaviour to be achieved (16).

Example B (Box 5) provides a call to action on the top, “Please reply to this letter”, as well as clear steps in icons and in text. “We need you to please...”. Example C (Box 7) provides a similar clear call, “Please call us”.

BOX 5.

Example B: Call for action, simplification, personalization and addressing barriers

It is good practice for hospitals to check whether patients on waiting lists are still in need of treatment. This is commonly done via so-called validation letters to patients.

Yet, it is estimated that approximately 25% of patients do not provide a response to the letters.

In Ireland, evidence from behavioural science was used to redesign and test different letter formats to encourage more patients to engage with the validation process. Through an RCT, the study found that using the redesigned letter resulted in nearly 20% of non-responders changing their behaviour and responding.

The revised letter included a call for action, simplification and personalization, and to address the barrier of annoyance among recipients it included an apology for the waiting time and explained the reason for checking waiting lists.

Following the publication of the results in 2018, the redesigned letter was adopted as the national template for waiting list validation correspondence in Ireland.

Health Service Executive

Mr Robert Murphy
Hawkins House
Hawkins St
Dublin 2

Strictly Private and Confidential

2nd November 2017

Please reply to this letter

Dear Robert

You are on our General Surgery waiting list for a procedure with Deirdre Robertson. I apologise that you are still waiting. We want to provide our valuable services to our patients as soon as we can. That is why we are checking our waiting list.

We need you to please:
1. Answer the question below and sign.
2. Return this page to us in the freepost envelope enclosed.

Please do this **even** if you have recently been in contact with the hospital. If you **don't send** us back this page by **16th November 2017**, then we will take it that you do not require this procedure and **you will be removed** from our waiting list. Your GP (family doctor) will be informed.

Question: Do you still require this procedure? (tick one box only)
☐ Yes, I still require it ☐ No, I had it done elsewhere ☐ No, other reason
If "No, other reason" please give reason: _____

Please sign: _____ Medical Record No. 12345

If you have any questions about the above, please phone 01 635 3122.
Kind regards,
Carol Taaffe, Scheduled Care Department

	Read this letter
	Fill in the form
	Return this form

SOURCE: (11). Reproduced with permission.



Keep the letter short and simple

The letter text must be as short as possible. The recipient typically wishes to spend as little time and cognitive effort as possible to read and process the letter (17). Many health letters provide detailed information, often based on good intentions to motivate people or make sure the recipient is well-informed. However, a letter writer may underestimate how complex this information is and overestimate the reading ability of recipients as well as how much time recipients spend reading such a letter.

Evidence shows that short and reader-relevant information can be more effective than extensive information. As a rule of thumb, the letter should be no longer than one page. Various tools exist to assess the readability level of a text, such as the so-called Flesch-Kincaid Grade Level (Box 6). The letter should have a grade level of 6.5 or lower.

Example B (Box 5) presents a short and simple letter with subtle use of effects, such as icons, boxes and bold text. Example C (Box 7) summarizes an experiment that compared a detailed letter to a shorter one, with the simple message being significantly more effective in addressing the target

behaviour, i.e. increasing the number of people scheduling their health check (18).

Deciding on which information to include can be based on engagement with the intended recipients and testing (see page 21). If recipients do need more detailed information to make an informed decision, the letter can refer to supplementary information resources, such as pamphlets or websites, with tailored, easily accessible and clear information.

The text should also be as simple as possible, using everyday language. Technical language and abbreviations should be avoided. In fact, jargon has been found to be one of the main barriers to effective science communication (19) and a major hindrance in doctor-patient communication (20).

While clarity and simplicity are important, letters may still retain an air of formality. Research has shown that letters that are too informal can decrease response rates (21). What level of formality is appropriate is partly cultural and needs to be considered in the context (see also page 11 regarding the cultural context and page 20 regarding the messenger effect).

BOX 6.

Resources for clear and simple writing

Aim for a maximum of one page of text and a Flesch-Kincaid Grade Level of 6.5 or lower. There are many good guidance resources with tips on clear and simple writing. Some examples are listed below.

Guidance on the use of clear and effective communication in government writing includes:

- *Plain language tool* on clear government communication, provided by the Government of the United States of America (22); and
- *The Principles of Behaviour Change Communications* provided by the Government of the United Kingdom (23).

Tools to calculate the readability levels of a text include:

- Flesch-Kincaid Calculator - Flesch Reading Ease Calculator (24)
- Readability Formulas – a free readability assessment tool (25).

BOX 7.

Example C: Simple language and clear call to action

A pragmatic quasi-randomized controlled trial was conducted to test the effect of an invitation letter. The letter related to a five-year NHS (National Health Service) Health Check with cardiovascular risk assessment and management for adults aged 40–74 years. The study involved 3511 patients and compared standard invitation letters (control) to letters developed with the use of behavioural science principles (intervention).

The intervention letter used various behaviourally informed techniques, including simpler and reduced text and a call to action with clear behavioural instructions. An implementation intention prompt in the form of a tear-off slip was intended to be completed by the recipient, indicating when and where they were going for a health check.

The trial showed that these no-cost behaviourally informed changes to the letter meant recipients were 26% more likely to attend an appointment than those receiving the control letter.

Standard letter (control)

Dear [name]

We are inviting you to attend your free NHS Health Check.

NHS Health Checks are being offered to people aged between 40 and 74 once every five years.

The check is to assess your risk of developing heart disease, stroke, kidney disease or diabetes. If there are any warning signs, then together we can do something about it.

By taking early action, you can improve your health and prevent the onset of these conditions. There is good evidence for this.

The check should take about 20–30 minutes and is based on straightforward questions and measurements such as age, sex, family history, height, weight and blood pressure. There will also be a simple blood test to measure your cholesterol level.

Following the check, you will receive free personalised advice about what you can do to stay healthy.

Take a look at the enclosed leaflet for more information about the NHS Health Check and how it could benefit you.

Please call the surgery to book your appointment on [tel no].

Yours sincerely

Dr [name]

Free NHS Health Check
Helping you prevent heart disease, stroke,
diabetes and kidney disease.

Simpler version with call to action and tear-off slip to be completed by recipient (intervention)

Dear [name]

You are due to attend your NHS Health Check.

Please call us on [tel no] to book your appointment and record the date and time on the slip below.

Take a look at the enclosed information about the NHS Health Check and how it would benefit you.

Yours sincerely

Dr [name]

Please record your appointment time and location here and stick this to the fridge

My NHS Health Check is at _____ on _____ at _____
location date time



Adapt to the cultural context and consider health equity

Cultural, social, political and historic contexts influence how recipients read a letter and respond to it. Reviewing the letter with a focus on equity, diversity and cultural sensitivity can help with achieving greater impact.

Studies suggest that highlighting shared values and identity can be a way to increase trust (26), and that possible conflicting views can be reduced by explicitly acknowledging and speaking to the recipients' worldviews. Liaising with trusted stakeholders to disseminate or even (co-)sign the letter may help increase its effect (see also page 20 regarding the messenger effect).

Conversely, if the letter contradicts deeply rooted beliefs or perceptions, this can paradoxically strengthen the recipient's worldviews rather than challenge them, and the letter can then have little or no positive effect (27).

Cultural sensitivities may relate to gender, ethnicity, age, socioeconomic status, religion, sexual orientation and other social markers. Engaging with the intended recipients and their health professionals can help identify culturally rooted opinions, beliefs and customs.

Creating several tailored letter versions for specific cultural contexts or communities may help increase equity and reach and enable the target behaviour in more people.

From an equity perspective, specific groups may need extra consideration. For example, people with vision impairment can receive a letter with extra-large font, and people with low (health) literacy may need even simpler text and more support in acting on the call to action in the letter.

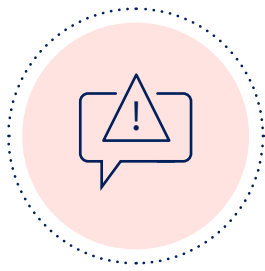
The same considerations can be done for population groups with special education needs or disabilities, including using a universal precautions approach (9), which recognizes that any recipient may have low literacy, or easy-read versions (28).

Example A (**Box 3**) shows how an effective immunization initiative for a socioeconomically disadvantaged community involved a personalized, friendly and non-judgmental letter. The letter was sent in non-official, colourful envelopes because consultation with the recipient community had shown that they generally had negative expectations to official letters, fearing they contained bills, blame or warnings.



“

Creating several tailored letter versions for specific cultural contexts or communities may help increase equity and reach and enable the target behaviour in more people.



Address the barriers to and leverage the drivers for the behaviour

The barriers and drivers, which recipients experience in acting upon a letter, vary across individuals and cultural contexts. A good understanding of these barriers and drivers can be gained through using the THP process (see page 3). To understand barriers and drivers, it may be useful to engage with the intended recipients in formal or informal ways, and to review literature related to the health behaviour. Knowledge of common psychological mechanisms can also help identify possible barriers and drivers (see page 15).

Example B (**Box 5**) addresses the barrier of annoyance, among patients on a waiting list having to confirm they still need treatment, by including an apology for the waiting time and explaining the reason for checking waiting lists. Example D (**Box 8**) provides an overview of identified barriers and drivers and how these are considered in the letter design.

A common barrier to acting upon a letter is misconceptions related to, for example, whether a service is free of cost; whether a recipient is really in the target group; how often the behaviour needs to be repeated; or whether the service is efficient or safe.

Misconceptions can be identified by consulting the intended recipient and can be addressed in short paragraphs; for example, *“It has been two years since your last screening, which means it is time for you to be screened again. Cervical cancer screening is free for all women aged 65 and above. Screening can detect problems before they turn into cancer and before you have any symptoms. If detected early, cervical cancer can be successfully treated.”*

If it has been confirmed that the barrier is a more general lack of knowledge about the topic, an information box or even appendix or brochure with more information in appealing format and with personal stories might be useful.

Misconceptions may also express themselves as simple excuses for inaction. Example E (**Box 9**) shows a way of addressing common excuses, by explicitly pointing them out and responding to them (29). A study found that this addition to the letter increased the uptake of the target health behaviour by 5.5%, compared to the standard letter (12).

The recipient's own health and well-being may be a driver for acting upon a letter, but drivers often go beyond personal benefit. Another common driver is social motivation, meaning a wish to do something for the benefits of others; for instance, protecting one's own health to support others (30).

Other drivers may be benefits to the recipient's appearance or well-being. For example, among adolescents, appearance is a strong motivator for smoking cessation (31), dietary behaviours (32) and tooth-brushing behaviour (33).

Getting clarity and clear answers from test results is a driver for some – bringing peace of mind – and a barrier for others – leading to procrastination or wish to escape reality.

For health professionals, the welfare of their patients, social or professional norms, as well as how they are perceived by their superiors or peers can be important drivers for changing behaviours based on a letter.

Not all barriers can be addressed via a letter. If the barriers are complex, and the behaviour is a priority, it may be warranted to go through a full THP process (page 3) to develop evidence-based interventions in addition to a letter.


BOX 8.

Example D: Addressing barriers and leveraging drivers

A colorectal cancer screening invitation letter in Croatia was revised as shown below. The table shows how identified barriers and drivers were addressed. When tested in an RCT, the revised letter significantly increased the number of testing kits completed.

Improving the letter is part of a comprehensive effort where interview studies with the population and health workers help to identify other opportunities for improvement.

Standard letter



Nacionalni program
ranog otkrivanja
raka debelog crijeva

Dear,

This is a reminder to participate in the National program for early detection of colorectal cancer. The program is carried out by the Croatian Institute of Public Health, under the sponsorship of the Ministry of Health. The cost of participation is covered by your mandatory health insurance.

The program is intended for all citizens aged 50 to 74. The goal of the program is, with the use of a simple test for hidden (invisible) blood in the stool, detect precancerous and cancerous changes on the colon, in the stage when there are no signs of the disease. When diagnosed early, colorectal cancer can be cured in 90% of cases.

A positive test result does not mean you have cancer, but can be a sign of changes on the colon that need to be removed, and therefore prevent the disease from occurring.

If you want to participate in the screening, please send your filled out and signed consent (on the back of this letter) in the prepaid and addressed envelope to the County Institute of Public Health. Upon receiving your consent, we will send you the test with instructions to your home address.

If you already had testing for hidden blood in the stool in the last 12 months, or are currently under treatment/were treated for colorectal cancer or are in the diagnostic process for colon disease, please make sure to indicate so at the back of the letter and send us a reply. Also, if you do not want to participate in the screening, please make sure to state your reason (at the back of the letter) and send us your answer in the enclosed envelope.

This information is important to us for the improvement of the program, and also to exclude you from the future invitations if you have a reason for a temporary or permanent exclusion.

Please read the enclosed brochure for more information on colorectal cancer, the screening test (stool exam for hidden blood) and colonoscopy as a diagnostic and treatment method. If you have any further questions, please call us at the free telephone number <county number> or write to us at the e-mail address <county email address>.

Regular participation in this program is the most efficient way to detect precancerous changes and cancer of the colon, and can protect your health and save your life.


Kind regards,

Your preventative health team

Your preventative health team from the County Institute of Public Health "Andrija Štampar"

In coordination with the Croatian Institute of Public Health and the Ministry of Health

Letter developed based on behavioural insights and research with the intended recipients



Nacionalni program
ranog otkrivanja
raka debelog crijeva

Reminder to participate in the National Colon Cancer Early Detection programme

Dear,

Please do not miss this opportunity to take the free national colorectal cancer screening home test. We aim to test everyone every two years and it is now your turn.

Should I participate?

All men and women between the ages of 50-74 should get screened. Testing will help us to detect colorectal cancer before there are any signs of the disease. When diagnosed early, colorectal cancer can be cured in 90% of cases. GPs strongly encourage their patients to take part.

A positive test result does not necessarily mean you have cancer, but it could identify early problems which can be treated to prevent the disease. Getting tested can provide you with peace of mind.

It is your choice if you want to participate:

- o **Yes, I want to participate.** Please complete the consent form and mail it back to us. We will send you a home testing kit with instructions.
- o **No, I have a good reason not to participate.** Please fill out your reason on the back of the letter and mail it back to us. That way we will be informed, and we can exclude you from this round or future rounds.

Where can I find more information?

Alongside the letter, we have included a brochure with more information. If you have further questions, please call us at the free telephone number _____ or write to us at _____.

Do not put this off until later, order the free testing kit today to protect your health and save your life.

Kind regards,

Your preventative health team from the County Institute of Public Health "Andrija Štampar"

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Type of barriers/drivers, structured by COM-B	Barriers and drivers identified	Action taken in the letter writing phase
Capability	Misconceptions that screening is not beneficial, and that colorectal cancer is a male disease.	Letter now includes simple clear information addressing these misconceptions.
	There are other perceived benefits of screening (e.g., reassurance of not having cancer, better treatment prognosis).	Letter now emphasises benefits of screening in addition to health outcomes.
Motivation	Procrastination leads to forgetting.	Letter now includes a planning prompt, clear call to action and active choice.
	People experience strong emotions such as disgust.	Letter now acknowledges that the test is not fun, but it is quick and the benefits outweigh the cost.
Physical opportunity	Preparation viewed as too difficult; lack of time.	Letter now emphasizes simplicity, points out it only takes 5 minutes, includes step by step illustrated instructions.
	The test is free.	Letter now emphasizes free test and/or follow up treatment.
	Text on the letter and instruction might be too small and complicated.	Letter now uses plain language, large font, colour and subsections.
	Envelopes are left unopened.	Letter includes a message on the envelope to emphasize importance referring to "medical information" and a "national cancer screening" logo.
Social opportunity	Lack of role models; physician recommendations to complete screening.	Letter now uses the messenger effect and emphasizes that physicians recommend their patients get screened.

SOURCE: Croatian Institute of Public Health and WHO Regional Office for Europe. Reproduced with permission.

NOTE: GP refers to General Practitioner. COM-B refers to Capacity, Opportunity, Motivation-Behaviour (13)



BOX 9.

Example D: Addressing barriers and leveraging drivers

A study in the United Kingdom (England), tested the impact of explicitly pointing out common excuses for inaction and addressing these. Compared to the standard letter, this addition to the letter increased the uptake of the target behaviour by 5.5%.

Don't let excuses get in the way of protecting your health!

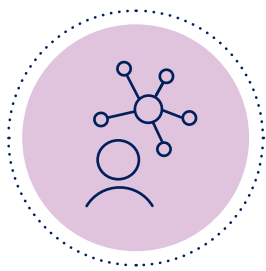
- *Excuse: I don't want to bother the NHS*

Your GP says: I want you to attend the NHS Health Check, as it can help prevent you developing more serious conditions which will take up more NHS resources.

- *Excuse: There's nothing I can do about my family history of illness.*

Your GP says: Family history plays only a small role. For example, most of the causes of heart attacks are related to how much you look after your body.

SOURCE: (29). Reproduced with permission.



Draw on relevant psychological mechanisms

Unconscious factors, such as emotions, impulses, feelings, biases and heuristics – the mental shortcuts which help people make decisions and solve problems efficiently – play a role in the recipient's response to the letter. Some of these factors can be anticipated and taken into account in the letter design.

Research in psychology and behavioural economics has sought to identify common patterns related to how humans process information and the unconscious processes that influence decision-making and behaviour. Hundreds of such psychological effects have been identified, and a few are highlighted in **Box 10**. Annex 1 provides more elaborate information and considerations for letter design.

While all of these effects are important in letter design, the sections below elaborate on three such effects and suggest effective ways to consider these in letter design: establishing social norms, bridging the intention-action gap and utilizing the framing effect.



BOX 10.

A few key points from research on psychological effects

- ✓ Emotions often have a stronger impact on behaviour than knowledge.
- ✓ Too many choices and too much information are stressful and make it difficult to make decisions and change behaviour.
- ✓ Humans tend to pay attention to what is highlighted, and behaviours are often influenced by unconscious triggers that create certain emotions.
- ✓ Clear and simple information is easy to remember, and humans tend to assess risks and make decisions based on how easily information is remembered and comes to mind.
- ✓ Humans tend to give more attention to negative information and find it more trustworthy, but fear appeals can also backfire.
- ✓ Repeated messages stick.
- ✓ Being prompted at the right time and place increases the likelihood of changing behaviours.
- ✓ Protecting others can be a strong motivator for action.
- ✓ Humans look to others to define what is acceptable and desirable and the behaviour of peers influences behaviour.
- ✓ Replacing habits with another habit makes it easier to change.

For details and considerations on how to apply this in letter design, see Annex 1.

Establishing social norms

Letting people know what other people do can encourage others to act, thereby creating positive social norms (26, 34). Social norms are a set of unwritten rules that guide individuals within a society on what is considered acceptable or desirable behaviour (35) and play an important role in shaping health behaviour (36).

For example, social norms interventions have been found successful in changing the clinical behaviours of health professionals (37), and in reducing unnecessary antibiotics prescriptions (38). However, social norms need to be communicated with care. To be successful, social norms communicated in a letter must:

- be true and documentable
- relate, at least, to the majority
- be higher than expected by the recipient
- relate to a group the recipient identifies with or finds appealing.

For example, one study found that a social norms approach can increase cancer screening rates by highlighting that eight out of ten eligible men and women participate in cancer screening. This number was true, clearly a majority, and higher than what was previously understood by the recipients (39).

Example F (**Box 11**) presents a successful intervention to reduce doctors' prescription of antibiotics by sharing that their peers prescribed less antibiotics than they did (40). This introduced a professional (social) norm where reducing prescription is desirable. It also created a social comparison and competition and provided an indirect message that antibiotic prescribing was being monitored. Advice on how to manage patient pressure for receiving antibiotics was also provided. The same approach has been successfully replicated in several other countries, including in complex settings with both over-prescribing for some population groups and under-prescribing for others (41).

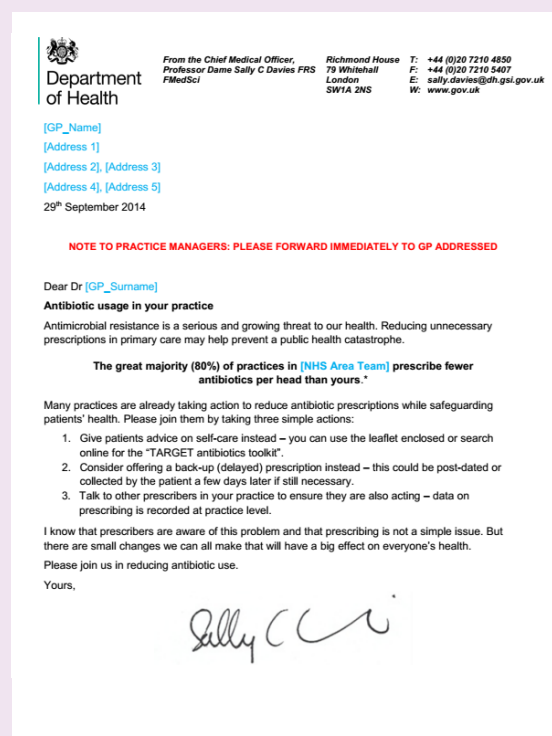
BOX 11.

Example F: Using social norms to change doctors' antibiotics prescribing behaviour

A letter trial aimed to reduce unnecessary antibiotic prescribing by General Practitioners (GP) in the United Kingdom (England). GP practices in the top 20% for antibiotic prescribing were randomly assigned to receive feedback or no communication.

The feedback involved a letter from England's Chief Medical Officer highlighting high prescribing rates and including several of the features described in this policy brief (e.g. call to action, attracting attention and messenger effects). The letter led to a 3.3% reduction in dispensed antibiotic items.

The study suggests that social norm feedback from a prominent source can effectively reduce antibiotic prescribing on a national scale at low cost, supporting antimicrobial stewardship programmes.



SOURCE: (40). Reproduced with permission.



Bridging the intention-action gap

Overcoming the so-called intention-action gap (42) is essential to behaviours: intentions and motivation do not always lead to behaviour. Forgetfulness, temptation, procrastination, habits, inconvenient or complex processes or other barriers may get in the way.

Letters and processes can be designed in ways that seek to overcome the intention-action gap. One approach is the active choice prompt, which seeks to increase commitment by framing both action and inaction as choices to encourage recipients to decide rather than procrastinate (43, 44). Example D (Box 8) uses this technique by encouraging recipients to choose between participating in the colorectal cancer screening programme or actively opting out. This is different from a default approach that seeks to make action easy by reducing decisions in the process, for example by automatically assigning an appointment time to the letter recipient. It may need to be tested in practice which approach works better for the specific target behaviour and recipient group.

Another approach is the so-called implementation intention, which involves individual plans detailing when, where and how a person will execute a behaviour, as well as which barriers they may face and how they will overcome these (45, 46). For example, implementation intentions have shown to increase physical activity (47) and healthy eating behaviours (48). Example C (Box 7) shows a trial of a successful letter that included an implementation intention element in the form of a slip where recipients could write down when and where they would go for a health check-up (18).

A third approach which has been suggested to overcome the gap is making people aware of the cost of inaction. One text message study, which indicated the health system cost of a no-show to an appointment, decreased missed appointments from 11.1% to 8.4% (49).

While the approaches suggested above have been effective in some contexts, they have been ineffective in others (50). A good knowledge of the context, behaviour and recipient is the best foundation for designing letters that help overcome these complex barriers to action, alongside pilot testing and evaluating change.

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Utilizing the framing effect

Human behaviour is notably affected by how topics and issues are presented, referred to as the framing effect. Selecting the right framing of messages is essential in letter design (51).

The most common way of framing is to select either a loss- or a gain- frame (52, 53). Gain frames focus on what the recipient gains by engaging in the behaviour (e.g. health, well-being, protecting others). Loss frames focus on the risks of not engaging in the behaviour (e.g. disease, death, disability, poorer quality of life). For example, a gain frame about cervical cancer would emphasize the lives saved through screening, and a loss frame may emphasize the potential deaths if diagnosis is not done in time.

Research suggests that loss framing overall has a bigger impact on behaviour (52). One field experiment in Italy tested the effects of gain versus loss framing in invitations for breast cancer screening. The results indicated that providing a loss-framed

message – emphasizing the risks of not undergoing mammography – significantly increased participation in the screening programme (54). However, in some contexts loss frames are less effective and can elicit strong emotional reactions, such as anger or fear, leading people to inaction or even the opposite behaviour. A meta-analysis examining the use of fear appeals in public health campaigns demonstrated that loss frames can lead to undesired responses, such as trying to avoid or resist the message (55). Which framing is better in the context can be tested with the intended recipients.

Another form of framing is collective versus individualistic framing. In some settings, framing protective behaviours as a way to keep the individual healthy may be effective; in other settings, focusing on keeping the community healthy may be more effective. For example, during the COVID-19 pandemic, health messages frequently included appeals to engage in protective behaviour to safeguard the health of vulnerable groups (56).



Attract the reader's attention

Letter recipients have a limited attention span, and letters compete for attention with other stimuli (57). Letters may remain unopened or may only be skimmed. Attracting the reader's attention at the first glance, perhaps even with the envelope or email topic, can help address this challenge.

In behavioural science, the term “salience” refers to the quality of a message in attracting attention (36, 58). Several letter features can increase overall salience as well as increase the specific salience of the most important messages of the letter (37).

The headline and first sentence in a letter can be carefully designed to convince the recipient about the relevance of the letter to them and motivate

them to read it. The strategic use of bold, highlights or visualizations have proven to have an impact on behaviours, and the use of colours can increase the response rate to letters (59). This mechanism is also important for breaking up the letter into smaller chunks of text with headings, making it easier to engage with the letter and find the most relevant parts.

The same mechanisms have been shown to be effective in studies of cigarette warning packages (60) and hand sanitizer signs (61).

Personalization is another effective way to increase salience and increase response rates (59). In a meta-analysis of the effectiveness of text messaging, the tailoring of messages and their personalization were shown to significantly increase success in changing behaviour (62).

Example B (**Box 5**) uses personalization by including the name and address of the recipient and by greeting the recipient by their first name, and it attracts attention via a table with icons and steps to take and the use of a box and bold text where relevant. Example G (**Box 12**) uses personalization by including the patient's name and address and attracts attention via a salient text box with contact details and bold text for the main message in the middle (63). Both letters remain relatively simple without extensive design features. Example A (**Box 3**) and Example H (**Box 13**) show the use of colourful envelopes.

Salience is only effective when used with care and prioritization of the few elements that need to be highlighted. Too many highlights may overwhelm or disengage the recipient (21).

Attention via means of threat or fear appeals should be used with great care (see page 17 regarding framing).



BOX 12.

Example G: Attracting attention and using the messenger effect


A study in Armenia investigated the impact of using letters to increase cervical cancer screening attendance. A total of 36 500 women eligible for cancer screening were randomly assigned to three different invitation letters (intervention) or no letter at all (control group). The three letters were designed in a similar way, all using personalization of the letter recipient to attract attention and a box with contact information. All letters also made use of messenger effects by including the GP's signature and the logo of the national health agency.

The three letters were different in terms of the framing of the bold message in the middle. The three different messages used the following “frames”:

- 1) neutral frame;
- 2) negative frame, highlighting the negative consequences of not screening; and
- 3) pro-social messages, highlighting “Go to the screening for your loved ones!”.

The letters increased participation in cervical screening by 6.3 percentage points compared to the control group, and reminders by an additional 1.7 points. All three letters were similarly effective and no difference regarding the specific message was found.

One of the letters included in the study: 3) pro-social message frame.


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Patient's Name Surname:

Patient's Address:

Dear (Patient's Name and Surname),

The Ministry of Health, in collaboration with your general practitioner implements a screening program to prevent cervical cancer. Within the program, all women aged 30-60 residing in the territory of the Republic of Armenia are invited to undertake a PAP test examination. We urge you to read this letter carefully and consult with your general practitioner.

Your family members, relatives and friends expect you to live a long and healthy life with them. Detecting and curing a potential cancer at early stages can help you fulfil their expectations. Go to the screening for your loved ones!

The cervical cancer PAP test examination is free.

Please visit your general practitioner during the dates mentioned below to undertake the PAP test examination.

General Practitioner: (general practitioner's name and surname) Address: (the address of the primary healthcare facility) Date: 3 June-7 June

Please bring this letter with you when visiting your general practitioner.

Sincerely,

(General Practitioner's Name and Surname)
General Practitioner

SOURCE: (63). Reproduced with permission.

BOX 13.

Example H: Attracting attention

The bowel cancer screening programme in the Netherlands (Kingdom of the) uses colourful purple envelopes for invitation letters sent to men and women aged 55–75 years. This is to attract attention and make sure the letter is not lost in the stack of materials received in a letter box.



SOURCE: National Institute for Public Health and the Environment (RIVM). Reproduced with permission.



Use the right sender and signatory

Trusted sources and like-minded peers have a positive influence on behaviours (64), and a health message is more likely to be followed when it comes from a person or institution that is trusted (65, 66). This is called the messenger effect.

The messenger effect applies to both the signatory and the institution sending the letter. The institution itself may have a strong messenger effect; however, sometimes a more personal messenger may be more effective. How logos, signatures and other credentials are used can impact how recipients respond.

Personal signatures can be effective, for example, from trusted health professionals (67) as identified together with the intended recipients. A meta-analysis of strategies for increasing the use of colorectal cancer screening tests that were sent by post found that a GP's signature in the letter was one of the

most effective methods for increasing uptake (67). Example A (**Box 3**) includes a personal signature.

Studies with the intended recipients had shown that they had negative expectations associated with official institutions (i.e. negative messenger effect); in this example, this barrier was mitigated by using non-official envelopes and a personal signature from a local nurse. Example F (**Box 11**) includes a signature by a well-known public figure, the Chief Medical Officer of the country. Example G (**Box 12**) includes a personal signature by the treating GP.

The messenger effect may also relate to the dissemination channel. The letter may have a different effect depending on whether it is sent by mail, email, protected e-box, or handed out by a (trusted) health professional.





Test the letter and engage with the intended recipients



All of the above considerations need to be applied in the social, political and cultural context of the recipients. It is recommended to engage with intended recipients in the development process and test the letter with them before broader roll-out.

The gold standard is to conduct individual interviews or focus groups to explore barriers and drivers before developing the letter, and then to test various versions of evidence-based letter formats, for example

in an RCT (**Box 14**). RCTs require expert evaluation knowledge and time to plan and implement but do not necessarily require much financial investment .

Trialling different messages or letter versions can be a good method of understanding what messages and effects affect behaviours the specific context. However, if resources and evaluation expertise are limited, informal conversations with recipients and their health workers can add important value as well.

BOX 14.

Guidance on impact evaluation

Letter writers that wish to evaluate the impact of letters may use the WHO publication *Evaluating the impact of interventions addressing health behaviour: considerations and tools for policy-makers* (68).

This publication presents considerations on evaluating the impact of behaviourally informed public health interventions and describes a number of practical tools to help carry out such evaluations.



Combine with reminders

The right combination of multiple communication channels can increase the response rate among recipients, including letters, phone calls and/or text messages (69, 70).

Several studies related to cancer screening attendance have shown significant effects from following up on the invitation with reminders by email and/or telephone, compared to using just one medium (62, 71–73).

Text messages have been shown to be effective, for example, for smoking cessation, medication and treatment adherence and appointment and screening reminders (62, 74, 75).

When combining letters with text messages, the considerations outlined in this document can be used for developing effective text messages as well. For example, one study tested multiple types of text messages, with the most successful texts being short and simple and involving general practitioners as messengers (76). A meta-analysis found that text messages that promote smoking cessation and physical activity were more successful when the message was personalized to the recipient, and simple language tailored to the specific target group was used (63).



Additional resources

For readers that would like to know more, other resources are available that provide behaviourally informed advice on writing better letters. See, for example, the Behavioural Science Aotearoa's guide on simplifying a message (77), the New South Wales Government's guide for reducing sludge in letters and

emails (78), and the Public Health Wales Behavioural Science Unit's guide on developing behaviourally informed communications (79). The Irish Department of Health published two useful impact evaluation reports of a redesigned waiting list letter and a redesigned hospital appointment offer letter (11).



Checklist

The following points summarize the key points presented in this document. They can be used to support the review and evaluation of existing letters or to design new ones.

For each point it is relevant to ask, “To what extent is this done?” and then discuss and consider this in the context of priorities, resources and health impacts related to the target behaviour and the target group.

Preparation

- ☐ The behavioural goal (i.e. the desired action from recipients) was determined, as well as the steps needed for recipients to conduct the behaviour.
- ☐ Current letters were reviewed to determine what could be improved, and data related to the success of these letters was reviewed.
- ☐ Studies and/or recipient engagement were undertaken to understand why the behaviour is currently not happening.
- ☐ Different interventions were considered, including whether a letter or other communication would be the most appropriate way to increase the behaviour, or whether the letter should be combined with other activities.
- ☐ Previous national and international research was reviewed to determine what was successful elsewhere, and which barriers and drivers are common.

Barriers and drivers

- ☐ The letter addresses the key barriers or misconceptions that prevent people from completing the behaviour.
- ☐ The letter utilizes people’s main motivators, whether they are health outcomes or something else, such as social motivators.

Simplicity

- ☐ The font size is appropriate for the intended recipient.
- ☐ The text fits on one page, excluding supplementary materials.
- ☐ The text is free of unnecessary jargon, technicalities or information.
- ☐ The text is written with the recipients’ needs in mind, not the sender’s.
- ☐ The text has a reading age of 12–14 years, or as low as possible.
- ☐ The information is chunked into readable sections with subheadings.

Call to action

- ☐ The desired action from the recipient (i.e. the behavioural goal) is clear in one glance, ideally at the top of the letter.
- ☐ The letter includes all information needed to complete the behaviour, and the required steps in the process.
- ☐ The call to action is simple, direct and specific.
- ☐ The call to action prompts recipients to act within a deadline or time frame.

Continued on the next page →

Attract attention

- ☐ The letter looks like something you can quickly read and understand, rather than put away for later.
- ☐ The letter uses personalization, such as the recipient's name.
- ☐ Images, flow charts and call-out boxes are used if appropriate and without over-crowding the letter.
- ☐ The letter uses bold headlines or colour to help key information stand out, while avoiding over-crowding.
- ☐ The outside of the envelope or email topic line is designed with care, for instance, by including a logo or message to encourage people to open it.
- ☐ The letter has the appropriate level of formality and professional appearance.

Messenger

- ☐ The sender of the message is trusted by or important to the recipient.
- ☐ If no personal messenger can be included, the letter is signed off by a team (e.g. "your preventative health team").
- ☐ The letter includes relevant institutional logos.
- ☐ Contact information is included as well as how the sender or health institute can be reached in case of questions, ideally both by telephone and electronic means.

Psychological mechanisms

- ☐ Common heuristics and biases (Annex 1) have been noted and taken into consideration.
- ☐ The right framing of messages has been tested and is used.
- ☐ Elements have been included to overcome the intention–action gap.
- ☐ If social norms are used, the norm highlights that, at least, a majority takes part in the behaviour.

Cultural context and health equity

- ☐ The intended recipients, and the health professionals serving them, were engaged to explore possible culturally rooted opinions, beliefs and customs related to the topic of the letter.
- ☐ The letter has been reviewed with a focus on equity, diversity and cultural sensitivity.
- ☐ The letter explicitly values and acknowledges the world views of recipients.
- ☐ External stakeholders that are trusted by the recipient community are engaged, including to disseminate the letter and perhaps even (co-)sign it.
- ☐ Several tailored letter versions for specific cultural contexts and target groups were developed and tested.

Recipient consultation

- ☐ The intended recipients have been engaged in the development process, either through an informal process or research study.
- ☐ The letter was tested with the intended recipients before broader roll-out, either through an informal process or research study.
- ☐ If and how the longer-term impact of the letter may be monitored and evaluated has been considered.

Combining with other communication forms

- ☐ Combining the letter with a follow-up or reminders via text message, phone or other has been considered.
- ☐ Developing supplementary information resources, such as pamphlets or websites, with tailored, easily accessible and clear information, has been considered.

References²

1. Baker DW. The meaning and the measure of health literacy. *J Gen Intern Med*. 2006;21(8):878-83 (<http://doi.org/10.1111/j.1525-1497.2006.00540.x>).
2. Brega AG, Freedman MA, LeBlanc WG, Barnard J, Mabachi NM, Cifuentes M, et al. Using the health literacy universal precautions toolkit to improve the quality of patient materials. *J Health Commun*. 2015;20(sup2):69-76 (<http://doi.org/10.1080/10810730.2015.1081997>).
3. The HLS19 Consortium of the WHO Action Network M-POHL. International Report on the Methodology, Results, and Recommendations of the European Health Literacy Population Survey 2019-2021 (HLS19) of M-POHL. Vienna: Austrian National Public Health Institute; 2021 (<https://m-pohl.net/Results>).
4. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med*. 2011;155(2):97-107 (<http://doi.org/10.7326/0003-4819-155-2-201107190-00005>).
5. Drury DJ, Kaur A, Dobbs T, Whitaker IS. The readability of outpatient plastic surgery clinic letters: are we adhering to plain English writing standards? *Plast Surg Nurs*. 2021;41(1):27-33 (<http://doi.org/10.1097/PSN.0000000000000356>).
6. Ferguson C, Merga M, Winn S. Communications in the time of a pandemic: the readability of documents for public consumption. *Aust N Z J Public Health*. 2021;45(2):116-21 (<http://doi.org/10.1111/1753-6405.13066>).
7. Kindig DA, Panzer AM, Nielsen-Bohlman L (editors). *Health literacy: a prescription to end confusion*. Washington (DC): National Academies Press (US); 2004.
8. Brangan S. Development of SMOG-Cro readability formula for healthcare communication and patient education. *Coll Antropol*. 2015;39(1):11-20.
9. Brach C, editor. *AHRQ Health Literacy Universal Precautions Toolkit, 3rd Edition*. Rockville, MD: Agency for Healthcare Research and Quality; 2024 (<https://www.ahrq.gov/sites/default/files/publications2/files/health-literacy-toolkit-third-edition.pdf>).
10. WHO Strategic Communications Framework for effective communications. Geneva: World Health Organization; 2017 (<https://www.who.int/docs/default-source/documents/communicating-for-health/communication-framework.pdf>).
11. Murphy R, Taaffe C, Delaney L, Lunn P, Robertson D, Ryan H, et al. The Better Letter Initiative: An Impact Evaluation of a Redesigned Waiting List Validation Letter. Research Services and Policy Unit, Department of Health, Irish Government; 2020 (<https://assets.gov.ie/216231/e42bec47-1db0-41ae-8977-7ba2684bdb91.pdf#page=null>).
12. A guide to tailoring health programmes: using behavioural and cultural insights to tailor health policies, services and communications to the needs and circumstances of people and communities. Copenhagen: WHO Regional Office for Europe; 2023 (<https://iris.who.int/handle/10665/367041>). License: CC BY-NC-SA 3.0 IGO.
13. Michie S, Atkins L, West R. *The Behaviour Change Wheel: a guide to designing interventions*. London: Silverback Publishing; 2014.
14. Thomas S, Higgins H, Leask J, Menning L, Habersaat K, Massey P, et al. Improving child immunisation rates in a disadvantaged community in New South Wales, Australia: a process evaluation for research translation. *Aust J Prim Health*. 2019;25(4):310-6 (<http://doi.org/10.1071/PY19016>).

² All references were accessed 08 September 2024.

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15. Nishida H. The influence of chunking on reading comprehension: Investigating the acquisition of chunking skill. *Journal of Asia TEFL*. 2013;10(4):163-83.
 16. Plackett R, Kaushal A, Kassianos AP, Cross A, Lewins D, Sheringham J, et al. Use of social media to promote cancer screening and early diagnosis: scoping review. *J Med Internet Res*. 2020;22(11):e21582 (<http://doi.org/10.2196/21582>).
 17. Shafran J, Jones BD, Dye C. Bounded rationality in public administration. In: *Oxford Research Encyclopedias/ Politics* [website]. Oxford University Press; 2020 (<https://doi.org/10.1093/acrefore/9780190228637.013.1460>).
 18. Sallis A, Bunten A, Bonus A, James A, Chadborn T, Berry D. The effectiveness of an enhanced invitation letter on uptake of National Health Service Health Checks in primary care: a pragmatic quasi-randomised controlled trial. *BMC Fam Pract*. 2016;17:35 (<https://doi.org/10.1186/s12875-016-0426-y>).
 19. Bullock OM, Colón Amill D, Shulman HC, Dixon GN. Jargon as a barrier to effective science communication: Evidence from metacognition. *Pub Underst Sci*. 2019;28(7):845-53 (<http://doi.org/10.1177/0963662519865687>).
 20. Thomas M, Hariharan M, Rana S, Swain S, Andrew A. Medical jargons as hindrance in doctor–patient communication. *Psychological Studies*. 2014;59(4):394-400 (<http://doi.org/10.1007/s12646-014-0262-x>).
 21. Linos E, Lasky-Fink J, Larkin C, Moore L, Kirkman E. The formality effect. *Nature Human Behaviour*. 2024; 8(2), 300-310 (<https://doi.org/10.1038/s41562-023-01761-z>).
 22. Plain language makes it easier for the public to read, understand, and use government communications [website]. Washington DC: United States government; 2024 (<https://www.plainlanguage.gov>).
 23. The Principles of Behaviour Change Communications [website]. London: GCS Behavioural Science Team, Cabinet Office, United Kingdom government (https://gcs.civilservice.gov.uk/wp-content/uploads/2021/02/The_principles_of_behaviour_change_communications.pdf).
 24. Flesch Kincaid Calculator [website](<https://charactercalculator.com/flesch-reading-ease/>).
 25. Readability Scoring System v2.0. Readability Formulas [website] (<https://readabilityformulas.com/readability-scoring-system.php>).
 26. Attwell K, Freeman M. I Immunise: An evaluation of a values-based campaign to change attitudes and beliefs. *Vaccine*. 2015;33(46):6235-40 (<https://doi.org/10.1016/j.vaccine.2015.09.092>).
 27. Lewandowsky S, Ecker UKH, Seifert CM, Schwarz N, Cook J. Misinformation and Its Correction: Continued Influence and Successful Debiasing. *Psychol Sci Public Interest*. 2012;13(3):106-31 (<https://doi.org/10.1177/1529100612451018>).
 28. How the World Health Organization in the European Region can help persons with disabilities to be healthy. Copenhagen: WHO Regional Office for Europe; 2022 (<https://iris.who.int/handle/10665/364993>). Licence: CC BY-NC-SA 3.0 IGO.
 29. Sallis A, Gold N, Agbebiyi A, James RJE, Berry D, Bonus A, et al. Increasing uptake of National Health Service Health Checks in primary care: a pragmatic randomized controlled trial of enhanced invitation letters in Northamptonshire, England. *J Public Health*. 2021;43(1):e92-9 (<http://doi.org/10.1093/pubmed/fdz134>).
 30. Banker S, Park J. Evaluating prosocial COVID-19 messaging frames: Evidence from a field study on Facebook. *Judgment and Decision Making*. 2020;15(6):1037-43 (<https://doi.org/10.1017/S1930297500008226>).
 31. Flett K, Clark-Carter D, Grogan S, Davey R. How effective are physical appearance interventions in changing smoking perceptions, attitudes and behaviours? A systematic review. *Tob Control*. 2013;22(2):74-9 (<http://doi.org/10.1136/tobaccocontrol-2011-050236>).
 32. Putterman E, Linden W. Appearance versus health: Does the reason for dieting affect dieting behavior? *J Behav Med*. 2004;27(2):185-204 (<http://doi.org/10.1023/b:jobm.0000019851.37389.a7>).
 33. Macgregor IDM, Balding JW. Self-esteem as a predictor of toothbrushing behaviour in young adolescents. *J Clin Periodontol*. 1991;18(5):312-6 (<http://doi.org/10.1111/j.1600-051x.1991.tb00434.x>).

-
34. Buttenheim AM, Asch DA. Making vaccine refusal less of a free ride. *Hum Vaccin Immunother.* 2013;9(12):2674-5 (<http://doi.org/10.4161/hv.26676>).
 35. Cialdini RB. Crafting normative messages to protect the environment. *Current Directions in Psychological Science.* 2003;12(4):105-9 (<https://doi.org/10.1111/1467-8721.01242>).
 36. Dolan P, Hallsworth M, Halpern D, King D, Metcalfe R, Vlaev I. Influencing behaviour: The mindspace way. *Journal of Economic Psychology.* 2012;33(1):264-77 (<http://doi.org/10.1016/j.joep.2011.10.009>).
 37. Tang MY, Rhodes S, Powell R, McGowan L, Howarth E, Brown B, et al. How effective are social norms interventions in changing the clinical behaviours of healthcare workers? A systematic review and meta-analysis. *Implement Sci.* 2021;16(1):8 (<http://doi.org/10.1186/s13012-020-01072-1>).
 38. Zeng Y, Shi L, Liu C, Li W, Li J, Yang S, et al. Effects of social norm feedback on antibiotic prescribing and its characteristics in behaviour change techniques: a mixed-methods systematic review. *Lancet Infect Dis.* 2023;23(5):e175-e184 ([http://doi.org/10.1016/S1473-3099\(22\)00720-4](http://doi.org/10.1016/S1473-3099(22)00720-4)).
 39. von Wagner C, Hirst Y, Waller J, Ghanouni A, McGregor LM, Kerrison RS, et al. The impact of descriptive norms on motivation to participate in cancer screening—Evidence from online experiments. *Patient Educ Couns.* 2019;102(9):1621-8 (<http://doi.org/10.1016/j.pec.2019.04.001>).
 40. Hallsworth M, Chadborn T, Sallis A, Sanders M, Berry D, Greaves F, et al. Provision of social norm feedback to high prescribers of antibiotics in general practice: a pragmatic national randomised controlled trial. *Lancet.* 2016;387(10029):1743-52 ([http://doi.org/10.1016/S0140-6736\(16\)00215-4](http://doi.org/10.1016/S0140-6736(16)00215-4)).
 41. Chappell N, Gerard C, Gyani A, Hamblin R, Jansen RM, Lawrence A, et al. Using a randomised controlled trial to test the effectiveness of social norms feedback to reduce antibiotic prescribing without increasing inequities. *N Z Med J.* 2021;134(1544):13-34.
 42. Sniehotta FF, Scholz U, Schwarzer R. Bridging the intention–behaviour gap: Planning, self-efficacy, and action control in the adoption and maintenance of physical exercise. *Psychology & Health.* 2005;20(2):143-60 (<https://doi.org/10.1080/08870440512331317670>).
 43. Beshears J, Choi JJ, Laibson D, Madrian BC. Active choice, implicit defaults, and the incentive to choose. *Organ Behav Hum Decis Process.* 2021;163:6-16 (<http://doi.org/10.1016/j.obhdp.2019.02.001>).
 44. Josephs M, Bayard D, Gabler NB, Cooney E, Halpern SD. Active choice intervention increases advance directive completion: a randomized trial. *MDM Policy Pract.* 2018;3(1):2381468317753127 (<http://doi.org/10.1177/2381468317753127>).
 45. Sheeran P, Milne S, Webb TL, Gollwitzer PM. Implementation intentions and health behaviour. *Predicting health behaviour: Research and practice with social cognition models.* 2005;(2), 276-323.
 46. Gollwitzer PM. Implementation intentions: strong effects of simple plans. *American Psychologist.* 1999;54(7):493-503 (<http://doi.org/10.1037/0003-066X.54.7.493>).
 47. Bélanger-Gravel A, Godin G, Amireault S. A meta-analytic review of the effect of implementation intentions on physical activity. *Health Psychology Review.* 2011;7(1):23-54 (<https://doi.org/10.1080/17437199.2011.560095>).
 48. Carrero I, Vilà I, Redondo R. What makes implementation intention interventions effective for promoting healthy eating behaviours? A meta-regression. *Appetite.* 2019;140:239-47 (<http://doi.org/10.1016/j.appet.2019.05.024>).
 49. Hallsworth M, Berry D, Sanders M, Sallis A, King D, Vlaev I, et al. Stating appointment costs in SMS reminders reduces missed hospital appointments: findings from two randomised controlled trials. *PloS One.* 2015;10(9):e0137306 (<http://doi.org/10.1371/journal.pone.0137306>).
 50. Lo SH, Good A, Sheeran P, Baio G, Rainbow S, Vart G, et al. Preformulated implementation intentions to promote colorectal cancer screening: a cluster-randomized trial. *Health Psychol.* 2014;33(9):998-1002 (<http://doi.org/10.1037/a0033507>).
 51. Durkin S, Broun K, Guerin N, Morley B, Wakefield M. Impact of a mass media campaign on participation in the Australian bowel cancer screening program. *J Med Screen.* 2020;27(1):18-24 (<http://doi.org/10.1177/0969141319874372>).

-
52. Ainiwaer A, Zhang S, Ainiwaer X, Ma F. Effects of message framing on cancer prevention and detection behaviors, intentions, and attitudes: systematic review and meta-analysis. *J Med Internet Res*. 2021;23(9):e27634 (<http://doi.org/10.2196/27634>).
 53. Tversky A, Kahneman D. The framing of decisions and the psychology of choice. *Science*. 1981;211(4481):453-8 (<http://doi.org/10.1126/science.7455683>).
 54. Bertoni M, Corazzini L, Robone S. The good outcome of bad news: A field experiment on formatting breast cancer screening invitation letters. *American Journal of Health Economics*. 2020;6(3):372-409 (<http://doi.org/10.1086/708930>).
 55. Witte K, Allen M. A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Educ Behav*. 2000;27(5):591-615 (<http://doi.org/10.1177/109019810002700506>).
 56. Jordan JJ, Yoeli E, Rand DG. Don't get it or don't spread it: Comparing self-interested versus prosocial motivations for COVID-19 prevention behaviors. *Sci Rep*. 2021;11:20222 (<https://doi.org/10.1038/s41598-021-97617-5>).
 57. Shafran J, Jones BD, Dye C. Bounded rationality in public administration. In: Oxford Research Encyclopedias/ Politics [website]. Oxford University Press; 2020 (<https://doi.org/10.1093/acrefore/9780190228637.013.1460>).
 58. Dolan P, Hallsworth M, Halpern D, King D, Vlaev I. MINDSPACE: Influencing Behaviour Through Public Policy. London: Institute for Government and the Cabinet Office of the United Kingdom; 2010.
 59. Edwards P, Roberts I, Clarke M, DiGiuseppi C, Pratap S, Wentz R, et al. Increasing response rates to postal questionnaires: systematic review. *BMJ*. 2002;324:1183 (<https://doi.org/10.1136/bmj.324.7347.1183>).
 60. Byrne S, Greiner Safi A, Kemp D, Skurka C, Davydova J, Scolere L, et al. Effects of varying color, imagery, and text of cigarette package warning labels among socioeconomically disadvantaged middle school youth and adult smokers. *Health Commun*. 2019;34(3):306-16 (<http://doi.org/10.1080/10410236.2017.1407228>).
 61. Tzikas A, Koulirakis G. A Systematic Review of Nudges on Hand Hygiene Against the Spread of COVID-19. *J Behav Exp Econ*. 2023;105:102046 (<http://doi.org/10.1016/j.socec.2023.102046>).
 62. Head KJ, Noar SM, Iannarino NT, Harrington NG. Efficacy of text messaging-based interventions for health promotion: a meta-analysis. *Soc Sci Med*. 2013;97:41-48 (<http://doi.org/10.1016/j.socscimed.2013.08.003>).
 63. Antinyan A, Bertoni M, Corazzini L. Cervical cancer screening invitations in low and middle income countries: Evidence from Armenia. *Soc Sci Med*. 2021;273:113739 (<https://doi.org/10.1016/j.socscimed.2021.113739>).
 64. Mols F, Haslam SA, Jetten J, Steffen NK. Why a nudge is not enough: a social identity critique of governance by stealth. *Eur J Polit Res*. 2015;54(1):81-98 (<http://doi.org/10.1111/1475-6765.12073>).
 65. Nan X, Iles IA, Yang B, Ma Z. Public health messaging during the COVID-19 pandemic and beyond: Lessons from communication science. *Health Commun*. 2022;37(1):1-19 (<http://doi.org/10.1080/10410236.2021.1994910>).
 66. Vlaev I, King D, Dolan P, Darzi A. The theory and practice of "nudging": changing health behaviors. *Public Administration Review*. 2016;76(4):550-61 (<https://doi.org/10.1111/puar.12564>).
 67. Goodwin BC, Ireland MJ, March S, Myers L, Crawford-Williams F, Chambers SK, et al. Strategies for increasing participation in mail-out colorectal cancer screening programs: a systematic review and meta-analysis. *Syst Rev*. 2019;8(257) (<http://doi.org/10.1186/s13643-019-1170-x>).
 68. Evaluating the impact of interventions addressing health behaviour: considerations and tools for policy-makers. Copenhagen: WHO Regional Office for Europe; 2024 (<https://iris.who.int/handle/10665/378765>). License: CC BY-NC-SA 3.0 IGO.
 69. Frascella B, Oradini-Alacreu A, Balzarini F, Signorelli C, Lopalco PL, Odone A. Effectiveness of email-based reminders to increase vaccine uptake: a systematic review. *Vaccine*. 2020;38(3):433-43 (<https://doi.org/10.1016/j.vaccine.2019.10.089>).

-
70. Kulhánek A, Lukavska K, Gabrhelík R, Novák D, Burda V, Prokop J, et al. Comparing Reminders Sent via SMS Text Messaging and Email for Improving Adherence to an Electronic Health Program: Randomized Controlled Trial. *JMIR Mhealth Uhealth*. 2022;10(3):e31040 (<http://doi.org/10.2196/31040>).
 71. Firmino-Machado J, Varela S, Mendes R, Moreira A, Lunet N, Carmo A, et al. A 3-step intervention to improve adherence to cervical cancer screening: The SCAN randomized controlled trial. *Prev Med*. 2019;123:250-61 (<http://doi.org/10.1016/j.ypmed.2019.03.025>).
 72. Al-Oseely SA, Manaf RA, Ismail S. A Systematic Evaluation of Methods Used and the Effectiveness of Health Education Interventions to Improve Knowledge, Beliefs, and Practices of Cervical Cancer Screening. *Mal J Med Health Sci*. 2021;17(3):259-67.
 73. Musa J, Achenbach CJ, O'Dwyer LC, Evans CT, McHugh M, Hou L, et al. Effect of cervical cancer education and provider recommendation for screening on screening rates: A systematic review and meta-analysis. *PloS One*. 2017;12(9):e0183924 (<http://doi.org/10.1371/journal.pone.0183924>).
 74. Kannisto KA, Koivunen MH, Välimäki MA. Use of mobile phone text message reminders in health care services: a narrative literature review. *J Med Internet Res*. 2014;16(10):e222 (<http://doi.org/10.2196/jmir.3442>).
 75. Schwebel FJ, Larimer ME. Using text message reminders in health care services: A narrative literature review. *Internet Interv*. 2018;13:82-104 (<http://doi.org/10.1016/j.invent.2018.06.002>).
 76. Huf S, King D, Kerrison R, Chadborn T, Richmond A, Cunningham D, et al. Behavioural text message reminders to improve participation in cervical screening: a randomised controlled trial. *Lancet*. 2017;390:S46 ([http://doi.org/10.1016/S0140-6736\(17\)32981-1](http://doi.org/10.1016/S0140-6736(17)32981-1)).
 77. Simplifying a message: A step by step guide. New Zealand Government. (<https://www.justice.govt.nz/assets/How-to-Simplify-Guide-BSA-for-website-.pdf>).
 78. New South Wales, Australia. Behavioural Insights in Action Reducing sludge in letters and emails; 2022 (https://www.nsw.gov.au/sites/default/files/2022-08/BIA_%20Reducing_Sludge_in_Letters_Emails.pdf).
 79. Developing Behaviourally Informed Communications. Public Health Wales; 2022. (<https://phwwhocc.co.uk/wp-content/uploads/2023/03/BSU-Comms-Guide-Eng-v0e.pdf>).

Annex 1

TABLE A1. UNCONSCIOUS PSYCHOLOGICAL DETERMINANTS OF BEHAVIOUR AND RELATED CONSIDERATIONS FOR LETTERS

Psycho-logical effect	What it means	Considerations for health letters
Adjustment Anchoring	Once something has been anchored in our perception in a certain way, we filter new information according to this anchor.	<ul style="list-style-type: none"> Consider the timing of the letter. If there is a risk that misinformation spreads, reach out first and establish the filter or perspective through which recipients will understand new information. Use prebunking techniques when you anticipate negative framing or anti-science information from others: make people aware about what they are likely to be exposed to and why the information is incorrect.
Affect heuristic	Emotions often have a stronger impact on behaviour than knowledge.	<ul style="list-style-type: none"> Consider the emotions your letter may evoke. Be careful with strong emotions that may hinder responses, such as a fear of death. Consider using emotional or personal stories as these can have a bigger impact than facts. Develop letter versions with different emotional appeals and test these with the intended recipients to know more about which triggers create positive and negative emotions and behaviours.
Availability heuristic	Humans are not perfect information processors. We tend to assess risks and make decisions based on how easily information is remembered and comes to our mind.	<ul style="list-style-type: none"> Use visual illustrations that are easy to understand and recall, such as graphs or pie charts. Use messages that speak to people's everyday lives, such as by using local data rather than global data. If risk perceptions are low, make a health risk concrete, relevant and tangible, for example, through personal stories (which can be in supplementary materials, such as a website).
Confirmation bias	We tend to notice, seek out, remember and trust information that is in line with what we already believe.	<ul style="list-style-type: none"> Remember that it is difficult to change people's minds, and simply stating a fact may not be sufficient. Anticipate potential information needs and offer easily accessible, evidence-based information which matches what people need and are looking for. For example, create supplementary information, such as folders or a website to supplement the letter. Listen to people's concerns and communicate in a transparent way about benefits and risk.
Familiarity backfire effect	The more often a person hears a message, the more it sticks. This means, even when attempting to call out misinformation, one may in fact reinforce the wrong message, just by repeating it.	<ul style="list-style-type: none"> Avoid using misinformation in a headline when you want to correct it. If possible, do not repeat misinformation at all. Give a positive key message without mentioning the misconception. <p><i>See also adjustment/anchoring.</i></p>
Framing effect	Our behaviours depend on how issues are presented to us, the choice of words and images, and the ordering of materials.	<ul style="list-style-type: none"> Test various message framings (e.g. loss vs gain, individual vs collective) to see which framing has the best effect on the recipient actions.
Friction cost	Sometimes, the small additional effort required to undertake a behaviour can deter us from taking action.	<ul style="list-style-type: none"> Make it easy for the recipient! Take their perspective and find ways to reduce the number of steps required to take action. Describe each step in detail and include all relevant information in the letter. Include telephone numbers, links, patient numbers and other key information, and make it easy to find.
Habits	Habits are difficult to give up. Replacing them with something else makes it easier to change behaviour.	<ul style="list-style-type: none"> Explore ways to utilize already established habits and structures and link the behaviour to something recipients already do. Encourage people to replace an unhealthy habit with a healthier one, rather than drop it altogether – for example, replacing snacking on sweets with snacking on nuts or dried fruit.
Inertia Status quo bias	We have a tendency to prefer continuity and maintaining things as they are, instead of taking action.	<ul style="list-style-type: none"> Send out prescheduled appointments with the option to change or cancel, instead of asking people to book. Present the desired behaviour as the default (e.g. "It is time for vaccination" rather than "Have you considered vaccination?").
Information overload	Receiving conflicting information and opinions, too many choices, and too much information is stressful and makes it difficult to make decisions and change behaviours.	<ul style="list-style-type: none"> Provide a clear "call for action". Make it simple to act upon the letter: when choices are easy to understand, we are more likely to change our behaviours. Avoid too much complexity, choice and background information.

Continued on the next page →

Psycho-logical effect	What it means	Considerations for health letters
Intention–action gap	Humans do not follow through often on intentions, perhaps due to forgetfulness, temptation, procrastination or habits. However, humans generally feel bound by commitments, especially if they are written down or if failing has consequences.	<ul style="list-style-type: none"> Use “active choice prompts” by encouraging people to make a deliberate choice to act. This may increase their commitment. Use “implementation intentions” by encouraging recipients to set concrete commitments, including options to write down goals or actions, with time and place, and how to overcome obstacles (e.g. “If I encounter obstacle X, I will take action Y”). Include the consequences of inaction. For example, include the cost to the health system in case of a no-show to an appointment. Pre-test the message to understand the effect on recipients.
Negativity bias	We tend to give more attention to negative information and to find it more trustworthy.	<ul style="list-style-type: none"> Be aware that negative debate (e.g. on social media) may affect how recipients perceive the letter, especially if it regards a sensitive topic. Avoid repetition of opponents’ negative messages, even when you are trying to debunk them. Balance messages related to risk, noting that people are more likely to retain the strong and negative messages than the nuances. The more sensitive the topic is, and the more public debate there is, the greater the need to test the letter with the intended recipients.
Optimism bias Overconfidence	When considering our own risk of disease and need for screening or treatment, we tend to overestimate our ability and the likelihood of success and underestimate the likelihood of a negative event.	<ul style="list-style-type: none"> Provide data and numbers which are easy to grasp and appeal to the recipients, such as using examples or local data that people can identify with. Address overoptimistic perceptions directly, for example, through listing common misperceptions and responding with facts. Measure people’s risk perceptions through surveys and show them how their perceptions compare with those of the overall population.
Priming effect Salience	We tend to pay attention to what is highlighted, and our behaviours are often influenced by unconscious triggers that create certain emotions.	<ul style="list-style-type: none"> Design various letter elements that attract attention or create positive emotional reactions among the recipients (e.g. figures, colours, letters, format) and test these with the intended recipients. Consider carefully how to use logos, institutions and signatures to trigger trust and other positive responses.
Prompt effect	Being prompted at the right time and place increases the likelihood of changing our behaviours.	<ul style="list-style-type: none"> Consider the timing of the letter and prompt the action at the right place and time when people are open to change and ready to act. For example, use the “fresh start effect” by encouraging healthier eating or physical activity at the start of a new time period (e.g. start of a new year). For example, prompt parents to stop smoking during pregnancy, or prompt people to commit to organ donation when they receive their new driver’s license.
Reciprocity	When we know that we can protect others by behaving in a certain way, and that other people can protect us too, we are more inclined to carry out the behaviour.	<ul style="list-style-type: none"> Communicate the social benefit of behaviours that advantage the community or society as a whole, thereby activating the social motivation to carry out those behaviours. For example, communicate that those who cannot be vaccinated because they are too young, old or ill rely on those who can be vaccinated to protect them – or that one person’s protective behaviours can protect peers from sexually transmitted diseases, for example. Demonstrate that the health system is making an effort to support them the best way possible and to protect them, for example by explaining what is done to make the services a success.
Social norms Descriptive norms Social comparison	The behaviour of our peers influences our own behaviour. We look to others to define what is acceptable and desirable. We compare ourselves with the people we identify with.	<ul style="list-style-type: none"> Tell people that others in their reference group (e.g. peers, community members) are undertaking a healthy behaviour (provided it is true). Be careful not to communicate that only very few people are engaging in the positive behaviour, as this may further strengthen the negative norm. If appropriate, consider adding a comparison or competition element. For example, highlight and praise regions, hospitals or communities that are doing well.
Worldview backfire effect	When we hear information that contradicts our worldview, this can paradoxically strengthen our worldview, especially if we already hold strong views.	<ul style="list-style-type: none"> If some sub-groups hold fixed negative views, prioritize the undecided minority as recipients of the letter. Reduce psychological resistance by valuing, acknowledging and speaking to people’s worldviews and make them feel less threatened as a result. Consider liaising with an external stakeholder as a messenger and signatory of the letter. Link your message with your recipients’ values – for example, loving cars, friends and fun can be linked with loving the seatbelt.

SOURCE: The references belonging to Annex 1 are provided in alphabetical order in the references section below. They provide general context and background related to Table A1. This table is adapted from: A guide to tailoring health programmes: using behavioural and cultural insights to tailor health policies, services and communications to the needs and circumstances of people and communities. World Health Organization. Regional Office for Europe; 2023 (<https://iris.who.int/handle/10665/367041>.) License: CC BY-NC-SA 3.0 IGO.

References: Annex 1

- Dickert S, Västfjäll D, Mauro R, Slovic P. The feeling of risk: implications for risk perception and communication. In: Cho H, Reimer T, McComas KA, editors. *The Sage handbook of risk communication*. Los Angeles: Sage; 2015:41–55. doi: 10.4135/9781483387918.n7
- Kahneman D. *Thinking, fast and slow*, first edition. New York: Farrar, Straus and Giroux; 2011
- Kahneman D, Tversky A. Choices, values, and frames. *Am Psychol*. 1984;39(4):341–50. doi: 10.1037/0003-066X.39.4.341
- Kahneman D, Tversky A. Judgment under uncertainty: heuristics and biases. *Science*. 1974;185(4157):1124–31. doi: 10.1126/science.185.4157.1124
- Kasperson JX, Kasperson RE, Pidgeon N, Slovic P. The social amplification of risk: assessing fifteen years of research and theory. In: Pidgeon N, Kasperson RE, Slovic P, editors. *The social amplification of risk*. Cambridge: Cambridge University Press; 2003:13–46
- Kasperson RE, Renn O, Slovic P, Brown HS, Emel J, Goble R et al. The social amplification of risk: a conceptual framework. *Risk Anal*. 1988;8(2):177–87. doi: 10.1111/j.1539-6924.1988.tb01168.x
- Lewandowsky S, Ecker UK, Seifert CM, Schwarz N, Cook J. Misinformation and its correction: continued influence and successful debiasing. *Psychol Sci Public Interest*. 2012;13(3):106–31. doi: 10.1177/1529100612451018
- Parsons JE, Newby KV, French DP. Do interventions containing risk messages increase risk appraisal and the subsequent vaccination intentions and uptake? A systematic review and meta-analysis. *Brit J Health Psychol*. 2018;23(4):1084–1106. doi: 10.1111/bjhp.2018.23.issue-4
- Penta MA, Baban A. Message framing in vaccine communication: a systematic review of published literature. *Health Commun*. 2018;33(3):299–314. doi: 10.1080/10410236.2016.1266574
- Siegrist M, Cvetkovich G. Better negative than positive? Evidence of a bias for negative information about possible health dangers. *Risk Anal*. 2001;21(1):199–206. doi: 10.1111/0272-4332.211102
- Sjöberg L, Moen B, Rundmo T. *Explaining risk perception: an evaluation of the psychometric paradigm in risk perception research*. Trondheim: Norwegian University of Science and Technology; 2004 (<https://www.yumpu.com/en/document/view/31421344/explaining-risk-perception-an-evaluation-of-the-psychometric>)
- Slovic P. Perceived risk, trust, and democracy. *Risk Anal*. 1993;13(6):675–82. doi: 10.1111/j.1539-6924.1993.tb01329
- Slovic P. Perception of risk: reflections on the psychometric paradigm. In: Krimsky S, Golding D, editors. *Social theories of risk*. Westport (CT): Praeger; 1992:117–52
- Slovic P, Peters E. Risk perception and affect. *Curr Dir Psychol Sci*. 2006;15(6):322–5. doi: 10.1111/j.1467-8721.2006.00461.x
- Sørensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z et al. Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health*. 2012;12(1):80. doi: 10.1186/1471-2458-12-80

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World Health Organization

Regional Office for Europe

UN City, Marmorvej 51,

DK-2100 Copenhagen Ø, Denmark

Tel.: +45 45 33 70 00

Fax: +45 45 33 70 01

Email: euinsights@who.int

Website: www.who.int/europe/health-topics/behavioural-insights