

The contribution of typography and information design to health communication

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abstract

This chapter is about the role that information design, and typography and graphic communication play in effective public health communication. It introduces the way that information designers work, particularly in relation to what have been called 'functional texts' – those that enable people to take some kind of action, or to better understand something. Examples of late-nineteenth- and early-twentieth-century printed ephemera are used to draw attention to the ways that language and visual presentation work together to enhance the meaning of a particular message. The role of pictures in health communication is discussed with reference to Isotype and the work of Otto and Marie Neurath.

Health communication takes many different forms: health promotion and disease prevention; and information to support treatment choices, or to improve the effectiveness of clinical care.¹ Much health-related communication supports decision making such as whether to have a child vaccinated, and whether to undergo surgery rather than an alternative route, or is procedural or instructional such as how to do exercises after an operation or how to use an inhaler. Successful health communication benefits from the application of best practice from typography and graphic communication. An information design perspective puts the reader/user at the centre and recognises that visual presentation works with language to successfully communicate with a particular audience.

Public health information can be urgent and complicated, and have several layers of meaning. To be effective, traditional editing/graphic design approaches tend not to be enough and an additional information design perspective can have a transformative effect on the way information is presented. Gui Bonsiepe (1999: 59) puts it well:

The growth of the information society and the information glut calls for a revision of the traditional view of the graphic designer as primarily a visualizer.... The infodesigner structures and arranges information elements and provides orientation aids to enable the user to find a way through the maze of information.

¹ Coulter *et al*, 1998: 3-12) provide examples of work in each of these categories, including reference to resourcing implications, user involvement, factors that influence decision making and beneficial outcomes.

Information designers are particularly concerned to produce materials (whether on paper or digital) that are relevant to a particular audience and intended use. So, if an information designer is working on a project designed to explain the implications for health of a heat wave, it is probable that they would produce different materials for the elderly, for parents with young children and for commuters. They are likely to have worked with the information provider and other stakeholders, including users, to elicit the relevant content and its most effective visual presentation. The material produced is targeted and relevant, which offers a better chance of it being effective.

Effective information design can help people understand, which can be particularly important if a message or set of messages is complicated or confusing; it can mean that people retain information that is relevant to them or their situation, and it can make the difference between taking action or not, or it can change the way people behave. But do we know how many people have taken action as a result of effective information design? Can its effectiveness be measured? There is some evidence to suggest it can.

PearsonLloyd's work on a better A & E found that 75 per cent of patients said that improved signage reduced their frustration during waiting times.² The work of research-based organisations, such as the Communication Research Institute, led by David Sless and the Centre for Information Design Research, led by Alison Black, are committed to demonstrating that good information design makes a measurable difference. Their blogs and website provide examples relevant to healthcare of one kind or another.³

Telling the public how they can improve their health and prevent disease and illness is not new. This chapter will use examples of late-nineteenth- and early-twentieth- century health communication to draw attention to good and less good practice in health communication that is relevant today. This approach is influenced by the work of Paul Stiff *et al* who used nineteenth-century documents to discuss information design principles (for example, Stiff, Esbester and Dobraszczyk, 2010). It reinforces that much health-related communication is of an everyday nature, produced in line with the conventions of the time often not by designers, but (in the past) by printers and (today) by people working on desktop computers. The illustrations are sourced from printed ephemera from late-nineteenth and early- and mid-twentieth centuries, including public health work undertaken by the Isotype Institute.⁴

Successfully communicating information about health is no different to successfully communicating information about anything. This is confirmed to some extent by

² <http://pearsonlloyd.com/2013/11/a-better-aande/>

³ <http://communication.org.au> and www.reading.ac.uk/cidr

⁴ The material used in the discussion is from the Maurice Rickards Collection and the Otto and Marie Neurath Isotype Collection at the University of Reading.

papers by James Hartley and Patricia Wright in Abraham and Kools's book *Writing health communication* (2012). Hartley's chapter, 'Designing easy-to-read text' covers basic principles of typography using as examples text from patient information leaflets found in medication. Wright's 'Using graphics effectively in text' summarises ways of using pictures effectively, drawing on health-related images to make her point. The principles and rules that Hartley and Wright articulate are applicable to clear communication in any context. Such principles have, for example, been used to good effect in particular kinds of health communication, such as Patient Information Leaflets that accompany medication (PILs or PLs), (eg van der Waarde, 1999, 2006; Spinillo and van der Waarde, 2013; Spinillo and Amarin, 2014; Dickenson, Raynor and Duman, 2001; Dickenson *et al*, 2010).

The most effective communication is produced with the needs of the intended audience in mind, which in turn provides the context for making decisions about typography and the use of pictures and text. This way of thinking is embedded in the way that many information designers work, simplified here by David Sless, 1992:9:

- define the problem
- involve all stakeholders
- observe and measure the current state of things
- develop and text prototype solutions
- iteratively develop and test prototypes until an optimum solution is found
- implement and monitor the solution in use

'Informing patients: an assessment of the quality of patient information materials', a project supported by the King's Fund in the UK, reviewed patient information materials about conditions such as back pain, depression, hip replacement and stroke and asked patients' views on the relevance and reliability of the information they received, including their quality and usefulness and the extent to which they contributed to shared decision-making between patients and health professionals (Coulter *et al*. 1998: xi). A key finding of the project, and one that supports the information design way of working, was that patients (or users) should be involved throughout the process of making the leaflets, and that their questions about a particular topic be considered as a useful starting point for the content of the material. There is also evidence in the emergent field of service design that the approach summarised by Sless is beneficial when applied. Cerne Oven and Predan (2013), for example, brought together service design and information design in several healthcare projects in Slovenia including healthy eating for people with diabetes, raising awareness of rheumatoid arthritis and stimulating elderly people with dementia. In the UK, the Centre for Information Design's work on a handbook for carers of people with dementia was developed in close collaboration with medics, carers and dementia

sufferers, who reviewed and commented on various iterations of the handbook as it was being written and designed (Black and Carey, 2014)

Functional texts

Much health-related communication falls into the category of what Wright (1999) has referred to as 'functional texts'. Such texts might be warnings, reminders, requests, or statements of legal responsibilities and rights; many provide information through statements of fact. Functional texts that enable people to take some kind of action, or to better understand something, have interested researchers and practitioners concerned with making documents (on paper and on screen), and they are of particular interest to information designers because to work effectively consideration needs to be taken of the linguistic as well as the graphic aspects of the text. Waller (2011), for example, has summarized some of the research that aligns with his definition of a 'good document', and he broke this down into: factors that make it easy for people to understand the words; the visual impact of the document and the way its design influences usability; how far the document establishes a relationship with its users; and how the content is organized to deliver the document's purpose. Gregory (2004), from the technical writing perspective, linked language and visual presentation, and compared guidelines for writing for print with guidelines for writing for the web. She concluded that many of the underlying principles apply to both media arguing that structure and design, writing concisely, scannability, splitting information into coherent chunks and understanding that readers do not read text in the same order were relevant to writing for both print and web. She cited research relevant to these issues in both media and much of this is relevant to clear and accessible writing for functional texts.⁵

Insert fig 1 (please reproduce at a size so that they text can be read)

The 'Flies and disease' notice shown in Figure 1 is not a good functional text. The most noticeable visual characteristic is the large amount of text. It reads as an essay about how flies breed and carry germs rather than a document with easily absorbed key messages. The language combines prescription ('Keep all flies out of your larder . . .'), with platitude ('Prevention is better than cure') and statements of fact ('Flies prefer close and stuffy rooms . . .'). Some sentences are short ('Flies breed in filth'); others are much longer. In addition, although bold type has been used to draw attention to some

⁵ Walker, Black and Carey (2013) summarised research relevant to writing and organising information visually on the web for gov.uk. Much of this is also relevant to what Redish (1989) has referred to as 'reading to do', thus aligning with functional texts.

parts of the text, there is a lack of visual hierarchy to direct the reader. The poster lacks structure; it doesn't help the reader to find out what is the key message. Is it contained in the numbered list at the foot of the page, or is it the sentences picked out in bold type in the body of the text?

Writing clearly and thinking about the audience

Many would agree that following principles of 'plain English' and using an appropriate tone of voice are essential to successfully communicating a particular message, whether health related or not. 'Plain English' is generic descriptor referring to a set of principles for writing clearly.⁶ The principles are:

- use short sentences and paragraphs
- don't use jargon
- use simple, everyday words rather than complex words
- be specific rather than general
- use active verbs
- think of your audience and use words that are appropriate to them

Of particular relevance to writing effective health communication is Marieke Kools's work, especially as it is both research-informed and evidence-based in that she promotes testing and iteration as integral to the process. Her 2012 paper, 'Making written materials easy to understand' summarised cognitive processes that take place when people read texts before going on to list features that writing (or re-writing) for effective health communication should contain. These included the generic Plain English principles mentioned above, but she went into more detail about textual coherence at macro- and micro- levels. Macro-level, for example, included 'use headings and first and last sentences within a sentence to predict and summarise'; and micro- level included 'explicitly state the actor in each sentence', explain difficult or unusual words and maintain a 'given-new' order of information within sentences.

An informative title, or an introductory sentence announcing the topic and perhaps specifying an intended audience, are two ways that readers' prior knowledge (of both content and structure) can influence how well they will understand new information (Spyridakis, 2000). The heading in the flies and disease notice, for example, while describing what the text is about in a short and impactful way, does not engage the

⁶ A good description of Plain English, illustrated with examples, is <http://www.clearest.co.uk/editorsoftware/plain-english/index.html>

It also has examples of savings that have been made by governments, councils, multinationals and industry bodies that have adopted plain English principles.

user. Perhaps more relevant would be the headings that addressed the reader of the poster as 'you', such as:

How you can stop flies spreading disease

or

How can you prevent disease in your home? Make sure there are no flies.

Keeping text short and to the point is one way of keeping the reader engaged and focused. The 'essence' of the Flies and Diseases notice, for example, could be as follows:

Flies cause disease

Flies live and breed in rubbish

Keep rubbish away from your house

Keep flies out of your larder

Cover food with gauze to keep flies away from food

An example of how infestation occurs: a fly lands on a manure heap, and then on a jug of milk; the milk then becomes full of germs; if you drink the milk you may get ill.

Much research indicates that using the active voice makes content livelier and easier to read and understand. The active voice makes it clear who is doing what. Research has shown that people find text written in the active voice easier to understand than the same text written in the passive voice (Street and Dabrowska, 2010). Using the active voice can also suggest a link with the reader. The formality and importance expressed through the use of capital letters in the notice in Figure 2 is mitigated through the clear and direct use of 'It is your turn' in the sentence below.

Insert fig 2

This example also demonstrates the relevance of 'tone of voice' (which is defined as the representation of the brand values of a company, service or other organisation). It works with elements of visual presentation, such as typefaces and use of typographic styles, as well as vocabulary, mode of address, and other linguistic considerations. Judy Delin (2005: 11) described tone of voice as being helpful in engaging people with content 'perhaps about products and services they wish to buy but also about benefits and services that they are invited to take part in or claims, such as pensions, tax credits, or advice, health services and screenings, safety information and more'.

Thinking about tone of voice might influence decisions about level of formality (such as use of contractions and colloquial phrases, or whether to address the reader as 'you').

Delin conducted a small survey in a UK government department, and some of her participants thought that information presented in the simplest terms was too friendly for a government agency – and therefore came across as false. They did not want to see contractions such as *you're* and *we'll*; they preferred *please call us to give us a ring*; they liked *you are likely to be entitled to a further amount* but thought that *you can get more money* was offensive because it suggested they were childish and greedy. The study participants wanted to write in ways that that were *direct but not too chatty*. They preferred, for example: *complete to fill in*; *receive to get*. This work suggested that some writers may feel that it is not appropriate to be direct and conversational, even though this might be attractive to a particular user group. However, another study has suggested that some ethnic groups may be offended by use of direct 'you' (Rose, 1981). Black and Stanbridge (2012) found users can also react negatively to a writing style that over-uses motivational features and can interpret this as patronising or inappropriate style. A balance is needed that takes into account the different levels of understanding and expectations readers bring to a text, and this may be particularly relevant in health communication.

Wright (1999), reinforcing an 'information design' approach, argued that producing effective health information requires special skills, particularly ability to consider the needs of the users of the text – who may be end-users, or the people responsible for the care of those to whom the information is targeted. This, in turn, she continued means that it is important to consider how people *read* functional texts, and provided a summary under headings of 'access', 'interpretation' and 'application'.⁷ She explained that reading functional (healthcare) texts involves a wider range of cognitive activities than reading other kinds of text due to the extent to which people's thinking and feeling affects their engagement with the documents. In producing healthcare texts, then, writers and designers need to anticipate what their readers/users need and expect. Shriver (1997) presented research looking at health education literature and how teenagers reacted to visual and verbal messages to dissuade them from taking drugs. She annotated five examples of leaflets about the dangers of various kinds of drug misuse with comments from young people about the verbal and visual aspects of them (pp. 171–207). What this reflected was the importance of and value of getting views from a target audience as well as affirming that even if readers understood the content, hierarchy and structure of a text, there may be other barriers to comprehension. She listed (p.204) the following observations of what readers may do when reading a text, and such considerations are likely to be especially relevant in health communication.

- . . . readers may
- . Construct the meanings of the prose and graphic on the basis of their thinking

⁷ See also Waller (1982): a review of how typography can enhance access and understanding.

and feeling (cognition and affect).

- . Interpret the role they are expected to take, a role established through rhetorical clues set up by the design of the prose and graphics
- . View the messenger of the text (e.g., the persona, organizational voice, or corporate identity) and the messenger's attitude about the reader
- . Feel about the way the visual and verbal message constructs them as an intended audience
- . Respond to 'the idea' of the text as a legitimate form of communication

Insert fig 3 at a size that the large type can be read

As an example, the 'Sore throats warning' in Figure 3 is a document where the readers may have different views about the 'official warning' being presented by a 'leading expert' giving a lecture. To some this may offer reassurance and validity, to others possibly intimidation or a feeling of 'what has this got to do with me'.

Legibility and hierarchy to guide the reader

Typographers and information designers use a number of techniques to make text visually accessible including headings and sub-headings; space to group and separate related and non-related items; and making sure that the type is legible and, as already noted, James Hartley is one researcher that has provide basic guidance in a health context.⁸ The term 'scannable' is used increasingly to describe material organized visually so that key words and important information are clearly distinguished at a first glance, especially in relation to information presented on the web, but it can apply equally to paper. Morkes and Nielsen (1997), for example, found that 'extremely scannable' text, that is with bulleted lists, bold highlighted key words, short text sections with headings, helped people perform tasks faster with fewer errors and better information recall.

Insert fig 4 (please reproduce at a size so that they text can be read)

In the 'Food Wanted' notice in Figure 4 the reader's attention is drawn to particular parts of the text through different degrees of typographic variation as well as the use of vertical space. The use of bold type and capital letters for key words and phrases, in different

⁸ See Hartley (2012). dos Santos Lonsdale (2014) provided a thorough review of literature on the legibility of printed text that summarised approaches taken by and findings of researchers and practitioners. Middendorp (2009), writing from a design practice perspective, paid attention to the relationship between content and its visual presentation. van der Waarde (1999) showed how general principles of typography can be applied to a particular genre of health communication – patient information leaflets in pharmaceutical products.

sizes, gets the message across leaving the reader to decide whether to engage more deeply with the information.

Much day-to-day health communication today is produced by people working with desktop computers and many do not fully understand basic typographic principles. This can result in sub-optimal presentation of information. A typical example is shown in Figure 5, a notice designed in 2004 to support a ‘Clean hands campaign’ at a Hospital Trust in the UK. The example on the right is the chapter author’s re-working to demonstrate to the Trust how typography can help to structure the information and direct the reader.

Insert fig 5a and 5b side by side

In the re-worked example, levels of heading are used to structure the text. The main message of the poster is clear – achieved through type size, colour and use of space. The left-aligned text in two columns follows legibility guidelines, and there are no extraneous features (such as the inexplicable arrows on the original). This approach uses basic principles of typography and graphic communication to facilitate design for reading and for action.

Pictures to help understanding?

Many health information texts use pictures of one kind or another in different ways.⁹ In the nineteenth and early twentieth centuries many images were reminiscent of illustrations in contemporary scientific textbooks (Figure 6). Pictures were typically used to contextualise the information by including images of a target user group, such as the healthy-looking woman in the leaflet explaining the benefits of ‘Jolly’s “Duchess” pills’ (Figure 7). Pictures may be used to explain how to take a particular medicine or undertake a medical procedure such as how to use a condom, or an inhaler; related research considers issues such as the efficacy of the use of arrows and such symbolic devices in aiding understanding; and the number of steps that are appropriate to depict in an action (see, for example, van der Waarde and Spinillo, 2013; Kools, 2012).

Insert figs 6 and 7

Houts *et al*’s (2005) comprehensive review of the role of pictures in health communication taken from the literature from health education, psychology, education and marketing, acknowledged that the effective use of pictures is influenced by the

⁹ Shriver (1997: 412–30) identified five ways to describe relationships between text and pictures: redundant, complementary, supplementary, juxtapositional and stage-setting, and provides examples of each. Research surveys such as Levie and Lentz (1982) and Goldsmith (1984) presented numerous studies about whether pictures or text are better in particular situations, or whether it is more effective to use text and pictures.

context in which they are used. For example, level of literacy skills, the extent to which they are combined with written or spoken directions, and the graphic form of the picture, for example, whether a line drawing or a photograph. They presented guidelines for health educators: include pictures; use simple drawings and photographs; simplify the language used with the pictures; guide the reader by thinking about the text/picture relationship; be sensitive to the culture of the intended audience; involve health professionals as well as designers (they use the term artist!) in the design process; and evaluate their effectiveness with the intended audience. None of these recommendations would surprise information designers today, and indeed have already been alluded to in this paper. Information designers are particularly interested in how pictures can be used to explain things, as were Otto and Marie Neurath in the 1930s and 1940s.

The distinctive visual presentation of Isotype (if a little out-dated) remains relevant today but it is the Neurath's approach to designing – including the role of the transformer – that may be particularly relevant to health communication.

'Transformer' was a term devised by the Neuraths to mean the person who worked with original and often scientific data and information to produce explanations (usually in the form of charts) that could be understood by ordinary people.¹⁰ This way of working often involved close collaboration between the Neuraths and leading scientists or medical professionals as was the case with their work for the National Tuberculosis Association in the US in the 1930s. This work involved the production of a series of large charts that explained how TB was contracted and how people with the disease should be cared for.¹¹ Neurath and his collaborator, the medic H. E. Kleinschmidt, wrote a short booklet explaining their way of working. *Health education by Isotype*, though published in 1939, advocated principles that remain relevant to health communication today. This part of the chapter draws attention to selected aspects of the Neurath's work.

Neurath and Kleinschmidt argued that attracting attention was 'a first step in health education' and that this was more easily done through pictures rather than words. They believed that explanation using predominantly pictures was more likely to be understood by more people than if it was presented in words only.

Insert fig 8

They suggested that schematic drawings (such as Isotype pictograms¹²) were well-

¹⁰ See Neurath and Kinross (2009: 77-8) and Neurath (1974: 136 for explanations of the transformer's role.

¹¹ The charts are reproduced in *Isotype: design and contexts 1925-71*, 342-8.

¹² Following Burke, 'pictogram' is used for 'the simplified, modified pictures used by Gerd Arntz and others for Isotype'. Burke, Kindel and Walker (2103: 17).

suitable to describe structure and mechanism, and as such were better than photographs to explain, for example, how TB germs were spread: ‘the schematic drawing omits the non-essentials and emphasizes the structure and phenomena it may be desirable to explain’. They suggested that pictograms were also helpful in explaining a sequence of events ‘when it is necessary to show how one situation follows another in evolutionary progress, the symbol language does the task well’ (Neurath and Kleinschmidt, 1939: 22). This is demonstrated well in the chart shown in Figure 8. The Isotype principles of comparison and contrast are particularly relevant for health communication, this too facilitated by the use of pictograms and consistent use of colour. In the example in Figure 9 Neurath explained that comparison was enabled due to identical constants that make it easy to pick out the variables – the main one in this case being advice about what to do when you leave hospital.

Despite the considered and effective use of pictograms, some of the most effective and engaging TB charts are those that use photography, either on its own or in combination with pictograms. Two of the most effective charts are shown in Figure 10. In these examples, the headings are clear and succinct, and the message is clearly and powerfully conveyed through the use of schematic images rather than text. These charts attract attention through a compelling visual narrative.

Insert fig 9

Insert fig 10a and 10 b side by side

Colour, used consistently, was a key component of the Isotype toolkit. On the TB charts produced in the USA, for example, orange was used to represent a healthy person, a healthy part of a lung, or a ward in a sanatorium where people are recovering. Neurath and Kleinschmidt (1939: 31) explained:

For health education purposes, orange is the color adopted for health, the normal or desirable. Black means sick, dead or something undesirable. Red is a good colour to use for protective measures – the doctor, immunizing agents, etc. Blue serves well for water and air, green for outdoors. Yellow is seldom used because it is a weak colour.

The chart in Figure 8 shows also how consistent use of orange (shown in the illustration as mid grey) and black in the TB charts contributed to making a clear visual explanation.

The Neuraths were acutely aware of the importance of the context within which they worked, and another example of this related to the use of colour can be found in Marie Neurath’s work in the 1950s on a number of health communication projects in the Western Region of Nigeria (Kindel, 2013). One such project was a series of ‘poster

leaflets' – illustrated wall charts that could also be folded and taken home by patients so that they could study them further. A poster-leaflet to show causes and symptoms of TB and action to be taken was produced in 1955. Kindel explained how a TB specialist, V. W. Hetreed (in consultation with a Yoruba nurse and clerk) advised on the use of colours proposed for the poster-leaflet:

yellow, in his view, had been correctly deployed to designate a healthy person; red, by contrast, should represent tuberculosis because of its Yoruba associations with danger and misfortune; blue, suggesting happiness, was appropriate for depictions of treatment and protection, and for doctors. (Kindel, 2013: 469)

This advice resulted in a different range of colours being used in the African TB material demonstrating not only the value of consultation, but also of taking account of cultural association and preferences. So, while colours were used consistently to represent different conditions in the African TB materials, the actual colours used were chosen with advice from the people in the relevant community.

Concluding remarks

This chapter has summarized issues that are likely to contribute to effective health communication from the perspective of information design, and typography and graphic communication. One thread that runs through the work is the desirability of working with experts in a particular field and with intended users. This does two things: first, it ensures that the content, whether expressed in words or in pictures, is appropriate for a particular purpose, and second, it underlines the importance of feedback and iteration as essential elements in the design process. Asking intended users whether they can read and understand the text, or whether they find a particular graphic representation helpful can provide invaluable guidance to those working towards a final solution. Putting the user first, as has been shown in some of the examples in this chapter, and engaging them in decision making in the design process gives them status as 'part-owners' of the documents that are made. This, in turn, increases the likelihood of a document's effectiveness.

Although much health communication material can be improved through the application of basic typographic guidance, there are less easy-to-define qualities that designers, through their training, understand. These include, for example, consideration of the verbal and graphic conventions that readers might expect to see in a particular document, and the impact on readers' rhetorical engagement with a document. As Kostelnick and Hassett note, conventional practice is intrinsically rhetorical:

Designers must select conventions based on their interpretation of the potential readers and the situational context in which those readers will use them. Often, designers adapt conventions to a situation by re-shaping them, and typically,

they integrate them with other conventions in the same communication. This process of selection, adaptation and integration requires rhetorical judgement. Even when a convention demands strict conformity, and the designer acquiesces to that authority, the convention carries the rhetorical weight of the community that sanctions it. In addition, readers bring the same rhetorical elements – interpretation, context, exigence, community – to bear as they ‘read’ visual language, and they do so in ways perhaps less prescribed even than designers.
pp. 6–7

Returning to the ‘Flies and disease’ notice: looking at this through 21st-century-good-practice eyes, it has not been organized into ‘rhetorical clusters’ where the graphic organization of a text complements and enhances its meaning. It was, however, produced (by a printer) according to the conventions of its time, and as such may have performed perfectly well. Within the context of this paper it serves to draw attention to the importance of getting conventional attributes right within the context of the genre and circumstances of use. Writers and designers, then, in producing successful functional texts, achieve structure and hierarchy through graphic, as well as linguistic, organization of the text, and in an effective text integrate this with reader expectation and convention.

The important point to come from the Isotype work is that health related communication should attract the attention of the intended audience. The Neuraths believed that using pictures, especially Isotype pictograms, was the way to do this. But while the Isotype charts that we have seen in this paper are visually compelling, more significant are underlying principles of consistent use of colour, comparison and contrast within the set of clearly defined rules for the way in which the well-known pictograms were organized. And aligning with the way that information designers today work, the innovation that the Neurath’s brought to their work, including health communication, was the transformer – someone who ensured that complex information was presented in a way that was accurate and readily understood by the public.

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