

COMMUNICATING ABOUT RISKS TO PUBLIC HEALTH

Pointers to Good Practice

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SUMMARY

Communicating effectively about risks to public health is of vital importance in many areas of policy and at many levels of responsibility. This document offers guidance on good practice. One key point is that communication should not be treated as an add-on, but considered whenever risks are being identified, assessed and managed. The issues are therefore relevant to all those dealing with actual or potential public health risks, including managers, administrators, medical staff and scientific and policy advisors - not only staff with specific responsibility for communications. Though concern with public health is not confined to the public sector, this document is intended particularly for staff in the Department of Health, the NHS and other Government bodies - both national and local.

Two key points thread throughout the discussion: the need to earn trust as a source of information, and the need to be clear about the aims of communicating in each specific case. More specifically, two main perspectives are brought to bear. One is that offered by research on public reactions to risk. This provides guidance as to what types of risk are most likely to be seen as unacceptable or outrageous, how information about probabilities may be understood or misunderstood, and why comparisons between different risks are sometimes seen as misleading. This psychological perspective is extended by considering the wider context - for example the role of the media in determining why some risks rather than others become major public "issues".

The second perspective considers risk communication as a decision process. From this follows the need to scan upcoming issues, to consider communication early on and to develop a clear strategy for engaging with the public and other stakeholders. This strategy needs to command full internal agreement - as does the intended message itself. Assumptions need to be made explicit and open to reexamination. Mechanisms to review and evaluate outcomes should also to be built into the policy process.

In summary, this document offers insights from well-established material that can be adapted to individual circumstances - pointers to good practice. It concludes with a brief checklist of key points. These are not a recipe for guaranteed success, but should help in avoiding some common pitfalls.

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1: INTRODUCTION

1.1: Aims of the Document

Many policy areas involve communication about risks to public health. Information must be given about the safety of foods or medicines, control of infectious diseases, risks from pollutants or natural hazards, or the dangers of a poor diet. Reorganisations of hospital facilities can require a response to fears about access to treatment. Provision of Mental Health care may raise public concerns about risk from - as well as to - patients. In all such areas, some episodes turn out to be much more problematic than others but it may be difficult to foresee where the difficulties will lie. Sometimes public concerns are triggered - seemingly out of proportion - by small-scale but newsworthy episodes. In other cases, greater risks seem to produce little reaction. These "pointers to practice" are therefore intended:

- to help identify issues likely to raise risk communication challenges, so that effort can be concentrated on those cases likely to need most care;
- to provide general guidance about risk communication strategies;
- to suggest forms of further analysis and possible sources of assistance.

This document is based mainly on published research, and also draws on experience within the Department of Health, not least to lessen the risk of lessons being re-learned from scratch. It takes a wide definition of risk communication rather than dealing purely with the preparation and release of announcements, thus dovetailing with existing guides to risk *management*. We concentrate on public rather than individual communication. However many of the same principles apply to both, and some brief comments on clinical communication are offered at Annex 1. In some settings - for example following discovery of some risk of in-hospital infection - public and individual communication can become intertwined. More generally, the course of a public health episode may depend critically on whether the individuals most affected feel they were kept properly informed, and how their feelings are reflected in media coverage.

Though we conclude with a checklist of key points, this is not a step-by-step guide to risk communication. Rather, we offer relevant background information and a set of principles to be adapted to specific settings and circumstances.

1.2: Basic Approach

Public reactions to risk sometimes seem bizarre, at least when compared with scientific estimates. Though risk may technically be defined as "probability times severity of harm", the suggestion that a hazard poses an annual risk of death of "one chance in x" may cause near-panic or virtual indifference. As will be seen however, such reactions are not totally unpredictable - or even *necessarily* unreasonable. From the 1960's onwards, an extensive body of research on reactions to risk has grown up, and some useful results have been established. Before outlining these however, it is important to note a

progressive change both in the research literature and in the practice of risk communication. Put simply, the change has been:

- *from* an original emphasis on "public misperceptions of risk", which tended to treat all deviations from expert estimates as products of ignorance or stupidity,
- *via* empirical investigation of what actually does cause concern and why,
- *to* approaches which promote risk communication as a two-way process in which both "expert" and "lay" perspectives should inform each other.

As a result, recent guides to risk management and communication - particularly in the US - pay much more attention to the existence of a variety of defensible views on risks, and the need to engage with them. To adopt this approach is not to deny that public misperceptions exist: the claim that people are often most fearful of the "wrong" hazards has some substance. *There is a balance to be struck in avoiding dogmatism while still doing justice to available scientific evidence.* Even if the aim is to change perceptions, however, one needs to understand how they arise. If expert and lay perspectives are to inform each other, there is a need both for greater public understanding of science, and greater scientific understanding of the public.

1.3: Openness and Trust

The literature presents strong arguments for "openness", not only in the sense of making information available, but in giving a candid account of the evidence underlying policy - including its inevitable uncertainties. *On purely tactical grounds - even if for no other reason - effective communication demands a presumption in favour of openness.* Where there are pressing reasons to prevent full disclosure, the reasons should themselves be made clear. Studies also repeatedly show that the response to a message depends not only on the clarity of its technical content but also on the manner of its delivery and on the perceived conduct of the sender. An important component of manner is attention to *emotional tone*: for example, to engage with an outraged audience it is first necessary to acknowledge the outrage. As for the conduct of the sender, appearing to disclose matters only under pressure can fatally undermine the most carefully-composed message. Similarly, an audience that perceives itself to have been ignored or belittled will respond with antagonism.

What is at stake here is *perceived trustworthiness*. Its importance cannot be over-emphasised, nor the point that trust will depend on how the organisation is seen to behave overall. In establishing a reputation for trustworthiness, actions often do speak louder than words. The actual release of information may thus be only a minor part of the overall message conveyed. (To use a rather nice phrase, "organisational body language" is important.) Research confirms the common-sense point that if trust has been lost, *any* information coming from that source will often be disregarded, however well-intentioned that particular message might be.

Government - in the widest sense - is not necessarily seen as a trustworthy source of information on health risks. Though this may reflect a wider decline of trust in

institutions, it seems clear that some risk communication episodes are managed more effectively than others, and that success or failure can have a cumulative longer-term impact. There is no justification for presuming that messages will always be misunderstood or disbelieved, *and that nothing can be done to mitigate this*. While it is not difficult to uncover gloomy findings,¹ research has also shown trust to be multi-faceted. Relevant factors include perceived competence, objectivity, fairness, consistency and goodwill: particular sources may score differently on these dimensions, and across different issues. Questions about who is actually trusted may be intertwined with questions about who should be held to account for problems. Indeed debates ostensibly about risk may hide quite different political and ethical disagreements. However the important practical point is that blanket judgements are not inevitable. There are plenty of cases in which a fair degree of trust has been maintained even in difficult circumstances. However re-establishing trust if it *is* lost is a long and uphill task.

1.4: Clarifying Objectives

In any communication, it is important to be clear about objectives. What is it intended to achieve, and for whom? The answers will differ from case to case: the aim may be to reassure, to warn, to inform, and so on. This is a theme pursued further in Section 3.2, but the fundamental point is that objectives should not just be taken for granted. It is also important to guard against over-ambition - particularly given a background of general scepticism. Successful risk communication will not necessarily resolve conflict or cause people to behave in ways with which one agrees. However, it can:

- clarify the nature of disagreements about risk, and restrict their scope
- help people to make more considered decisions
- minimise resentment caused by people feeling themselves excluded from decisions that affect them.

Meanwhile, the consequences of risk communication *failures* can be all too clear: warnings that fail to warn (or cause unforeseen panic), reassurances that fail to reassure, and advice that is discounted. In addition, the impact on institutional credibility damages the chances of future success.

The rest of this paper is structured as follows. Section 2 summarises relevant research findings, highlighting their implications for practice. Section 3 places risk communication within the policy process. The main text concludes with a summary checklist of key points to help improve practice. A bibliography is provided at the end of the document.

¹ Marris and Langford (1996) cite the following ordering of perceived trustworthiness: family (trusted by 87%); friends; environmental organisations; doctors (75%), scientists (60%), trade unions, religious organisations, the media, companies, government (8%). The same article refers to a survey in which nearly three-quarters of those asked agreed with the statement that "the Government knew about the risk of BSE from eating beef, but *deliberately* concealed it".

2: RESEARCH FINDINGS AND IMPLICATIONS

We summarise relevant results under five distinct but complementary headings, starting with individual perceptions of risk and then progressively setting these in wider context.

2.1: Risk Perceptions: "Fright factors"

An understanding of what triggers (or fails to trigger) alarm, anxiety or even outrage is clearly critical to risk communication - whether the aim is to make allowance for such perceptions or attempt to change them. Long-term research has established some clear rules of thumb, the most relevant being shown in Box 1.

Box 1: Fright Factors

Risks are generally more worrying (and less acceptable) if perceived:

1. to be **involuntary** (e.g. exposure to pollution) rather than voluntary (e.g. dangerous sports or smoking)
2. as **inequitably distributed** (some benefit while others suffer the consequences)
3. as **inescapable** by taking personal precautions.
4. to arise from an **unfamiliar or novel** source
5. to result from **man-made, rather than natural** sources
6. to cause **hidden and irreversible** damage, e.g. through onset of illness many years after exposure
7. to pose some particular danger to **small children or pregnant women** or more generally to **future generations**
8. to threaten a form of death (or illness/injury) arousing **particular dread**
9. to damage **identifiable rather than anonymous** victims
10. to be **poorly understood by science**
11. as subject to **contradictory statements** from responsible sources (or, even worse, from the same source).

At best, statistics on risk will thus be only one of many factors influencing people's responses. Though this can complicate matters, the more positive point is that reactions to risk are not entirely unpredictable. The list just given² can be used as an initial checklist, though strictly speaking the separate items are interdependent rather than additive. (For example, if no other fright factors are present, the last two may invite the blasé response - "anything *might* be risky, so why worry about this?"). Critically, all the factors have to be judged from the perspective of those affected. Eating a particular food may be entirely voluntary. But people who believe they have been denied relevant information about its safety may see themselves as having suffered an *involuntary* risk.

Though the fright factors may distort perceptions by highlighting certain types of risk, there is no basis for dismissing them all as unreasonable. They may, in fact, reflect defensible *value judgements*. Risk of death by cancer, for example, usually carries much greater dread than the prospect of a sudden heart attack. Given the eventual inevitability of death itself, it would be perverse to dismiss this view as irrational. Similarly, willingness to tolerate voluntary rather than involuntary risk may reflect a need to maintain some personal autonomy.

These general factors are quite good indicators of overall public responses to risks (our main concern here), but they do not necessarily predict how *individual people* will react. This can depend strongly on attitudes toward specific hazards, in particular on approval or disapproval on other grounds. Most people tend to make all-or-nothing valuations. All else being equal, those who love (or hate) the motor car anyway usually entertain smaller (or greater) estimates of its health risks. There is also some evidence relating attitudes to risk to more general views about society and the world. Some attempts have been made to categorise the latter. One approach ("Cultural Theory") divides people into individualists, egalitarians, hierarchists and fatalists, each with characteristic views about risks. For example, egalitarians tend to see the balance of nature as fragile, to distrust expertise and strongly favour public participation in decisions. However predicting individual responses to specific risks remains difficult, and people seldom conform *consistently* to any of the four ideal types. To summarise:

- *Perceived risk has many dimensions, which cannot be expressed on a single scale such as "probable number of fatalities".*
- *Fright Factors provide guide as to the types of risk likely to cause general alarm, though individual reactions remain difficult to predict.*
- *Disagreements are typically about both facts and values. Effective risk communication will address both, while keeping the distinction clear.*
- *Perceptions of specific risks are often linked to wider beliefs. Providing facts about one risk in isolation may therefore have little impact.*

² The list given here includes the most relevant items from several extant lists. Terminology differs somewhat: for example, some authors group several factors together under the label "dread", which is used in a narrower sense here.

2.2: Using Risk Comparisons

The difficulty of envisaging very small probabilities is well-known. Just how small, in practical terms, is "a risk of 1 in 10^6 ", or "a probability of 0.00015"? This has led to the use of *comparative* information: for example, comparing the risk of death from an air pollutant with that from smoking a single cigarette, driving 100 miles, and so on. Many tables have been published comparing the actual frequencies of death from various causes with public perceptions of riskiness as established by surveys. Typical examples are reproduced in Table 1 and Figure 1. Most notably, studies repeatedly show a general *over-estimation* of unusual or dramatic causes (flood, homicide, unusual diseases) and *under-estimation* of common killers such as heart disease. This demonstrates what psychologists call the "availability bias" - the tendency to judge probability by how easily examples can be brought to mind. This is not always a bad rule of thumb, but produces distortions if certain events are highly-memorable.

Though these and similar effects are well established, their practical implications have been hotly debated. Some writers have used them to "prove" the public's inability to make sensible judgements about risks. However, this interpretation is now largely discredited. Although the perceived estimates are biased in numerical terms, they do generally match the actual ordering of deaths from more to less common. More importantly, experts turn out to be prone to very similar biases, undermining any conclusion about "public stupidity". Mismatches against the statistics may also reflect different interpretations of the concept of risk: for example, those more alarmed by involuntary dangers will tend to describe these as riskier. It is difficult to disentangle such effects from arguments about relative frequencies.

Use of risk comparisons to imply *acceptability* - as distinct from merely giving an indication of magnitude - can be counterproductive. In particular, equating a voluntary with an involuntary risk in this way is likely to backfire. (One employer assured women that occupational exposure to chemicals carried "no more risk to your unborn baby than a large gin and tonic". The ensuing outrage apparently came as a surprise.) Such comparisons seem both to trivialise the risk and patronise the audience. Use of risk comparisons thus requires careful thought. If the aim is to inform others' decisions or to explain one's own, the most helpful comparisons will be those that compare the available options directly. Alternatively, introducing familiar comparators such as "roughly one person in a small town" for "1 in 10,000" may help give a feel for the figures. Comparisons with irrelevant risks - particularly if trust is already lacking - may be seen as sophistry or special pleading. In summary:

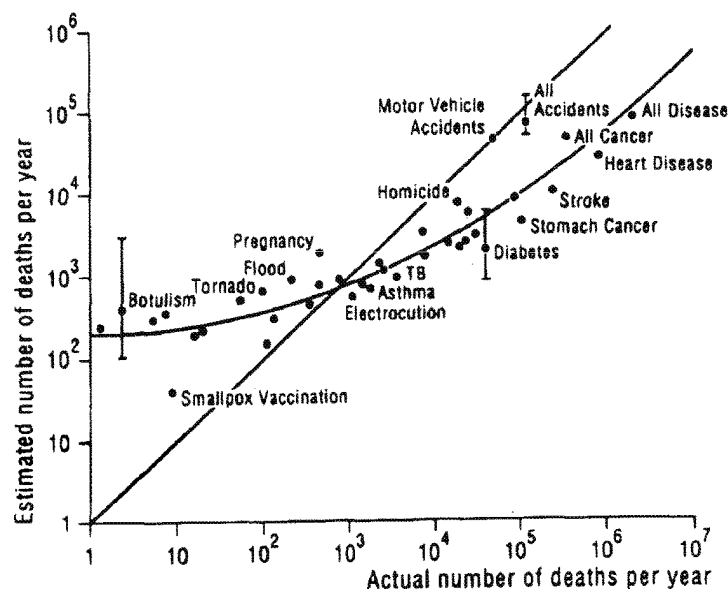
- *There may well be a general tendency to overstate the occurrence of rare events: in principle, risk comparisons can provide a sense of perspective.*
- *Risk comparisons are appropriate if they can illuminate the alternatives actually available, but should otherwise be treated with caution.*
- *If acceptability is implied, risks compared numerically must be otherwise alike. At all costs, flippant comparisons are to be avoided.*

Table 1: Examples of Risks Estimated to Increase the Annual Chance of Death by 1 in one Million (US statistics)

(Source: Wilson, 1979)

<u>Activity</u>	<u>Cause of Death</u>
Smoking 1.4 cigarettes	Cancer, heart disease
Spending 1 hour in a coal mine	Black lung disease
Living 2 days in New York or Boston	Air Pollution
Travelling 10 miles by bicycle	Accident
Flying 1,000 miles by jet	Accident
Living 2 months in Denver (rather than New York)	Cancer (cosmic radiation)
One chest X-ray in a good hospital	Cancer (from radiation)
Eating 40 tbs. of peanut butter	Liver cancer (aflatoxin B)
Drinking 30 12-oz cans of diet soda	Cancer (from saccharin)
Living 150 years within 20 miles of nuclear power plant	Cancer (from radiation)

Figure 1: Estimated and actual frequency* of deaths from various causes
(Source: Fischhoff *et al*, 1981)



* Data points show the averaged responses of a sample of US population. If estimated and actual frequencies agreed, the data would lie on the straight line shown.

2.3: Framing Effects

Considering risk in the context of personal decision-making highlights a further important issue. Faced with choices, people may "frame" the alternatives differently, in the sense of how the available information is mentally arranged. We start with two specific examples.

Firstly, outcomes may be measured against different presumed baselines (as with the bottle half-full or half-empty). The possible impact can be demonstrated experimentally by presenting the same decision problem in different ways. In one typical study, people were presented with a hypothetical choice between two cancer therapies, with different probabilities of success and failure. Half were told about the relative chances of dying while the rest had the *same* information presented in terms of survival rates. This more than doubled the numbers choosing one alternative. Perhaps most strikingly, the effect was just as great for physicians (again undermining any "stupid public" thesis). Similar studies show consistent results. As with gamblers who bet more wildly to recoup losses:

- *People tend to make riskier choices if all alternatives are framed in terms of possible losses, but "play safe" if choosing between alternative gains.*

Secondly, responses to risks can depend critically on whether probabilities are expressed in absolute terms ("the chance is.....") or relative terms ("the chance has gone up by...." or "this group suffers ten times the normal risk of...."). The media often concentrate on relative risks, which can be seriously misleading if the baseline risk is not given. To illustrate, suppose 10 million people are exposed to two fatal risks. News that Risk A has doubled may sound much more alarming than B increasing by 10%. However if the baseline probabilities of death from A and B are 1 in 10^8 and 1 in 10^4 respectively, doubling A produces one extra fatality, while the "smaller" increase in B kills 100. As noted in the last section, baseline probabilities are generally *not* well-understood. A further effect is that people may be inclined to prefer complete elimination of minuscule risks to reduction of substantial ones. Differences between groups may raise further questions of inequity. If so, these should be discussed on their own merits rather than being allowed to distort perceptions of the overall size of the risk.

- *In any statement about relative risks over time or between groups, the baseline risk must be made clear, and its significance explained.*

More generally, people frequently define issues in different terms, and hence apply totally different frames of reference. For example, if an authority sets some acceptable level for an industrial pollutant, is it protecting the public from a risk, or legitimising pollution? People may, indeed, perceive different *sorts* of decision - for example, some may presume that they are engaged in a negotiation, while others see only the search for the best technical solution. In risk communication, there are thus at least two independent variables: the framing of one's own messages, and the existing framing of the issue by the recipients. The former is, at least in principle, under one's own control. The latter will be subject to many influences, and may not even be known. Furthermore, different

audiences will almost certainly frame the issue differently from each other. Thus:

- *Responses to communication will be highly dependent both on recipients' existing framing of the issue and on how the message itself is framed.*
- *Many communication attempts fail because the sender wrongly presumes that the recipient frames the issue similarly.*

One possible response is to manipulate the way messages are expressed so as to gain control of how the issue is framed - as in almost any advertising campaign. In the present context, outright manipulation is arguably unethical. Given the general distrust of "official" sources of information, it may also be impractical. Rather, the need is to avoid accidental mismatches in framing, either because the possibility has not been considered, or because too little is known about public perceptions. *Ways of avoiding such pitfalls can include consultation exercises, small-scale piloting of messages (perhaps as an internal exercise), workshops to promote "assumption-busting", reviews of previous cases, and direct research on public perceptions of specific risks.* There is certainly no need to leave framing to chance.

2.4: Scientific and Lay Perspectives

One particular difference in framing that bedevils risk communication is that between a "natural science" perspective and that typically held by a lay audience. Overcoming this is not merely a matter of explaining the science in lay terms - important though this is. Rather, it is a question of acknowledging that issues may be seen in different ways, and being seen to pay genuine attention to stakeholders' concerns. Arguably the most important difference is that scientists usually define risk in terms of effects on populations, while the lay audience is concerned with effects on individuals.³ Though both perspectives can be couched in terms of probability, this can disguise very different uses of the term. On the one hand lie statements about the incidence of cancers, and whether a pollutant causes any significant variation. On the other is the stark question "what is the chance of this giving *me* cancer?".

Some will deny the difference by arguing that the latter question can only be answered by the statistical evidence. The communication problem then becomes one of educating the populace. However, there are logical - not just psychological - difficulties here. It is *not* necessarily valid to make a direct inference from group statistics to the risks facing individuals. To do so is to assume both that the individual is entirely representative of the population - has *no* relevant distinguishing features - and that the distribution of risk is truly random. Neither will be literally true, though they *may* be fair approximations.

³Another frequently-cited difference is that the public is *scared by the possibility of catastrophe*, while scientists are more *reassured by low probabilities*. This has some plausibility in the context of hostile responses to the siting of allegedly-hazardous power stations and other "LULUs" (Locally Unwanted Land Uses). But in other contexts people may be *unduly* reassured by long odds - for example, in ignoring advice on "safe sex". Such apparent contradictions may again be understood if reactions depend on other reasons for being antagonistic or enthusiastic toward the source of the risk.

The lay perspective is more likely to start from the presumption that "the average person does not exist". If the statistics can be broken down to show how a risk depends on age, sex, place of work, lifestyle and so on, the gap between the perspectives narrows. Even so, individuals may feel they escape such classifications. For example, personal experience may suggest that one is very sensitive to certain pollutants, and hence at greater risk.⁴ Given that sensitivity can indeed vary widely, it would be rash to dismiss such beliefs. The problem here is that science necessarily deals with reproducible effects and controlled conditions. From the opposite perspective, the scientific world may look merely artificial.

Finally, it is also noteworthy that two quite different notions of probability have currency even within science. Traditional methods define probability in terms of *relative frequency* of events. However these have increasingly been challenged by "subjective" (or "Bayesian") methods in which probability means *degree of belief*, an idea perhaps closer to the lay understanding of probability. In most circumstances, the two approaches give the same numerical results, but not always. Even if the numbers are not in dispute, different interpretations can cause confusion. If a scientist refers to a "one in a million" probability of suffering illness X as a result of Y, she may mean that "evidence suggests that Y will cause about one extra case of X per million population". She may or may not attach a high degree of certainty to the estimate. To a lay audience, the message may be heard as "I am extremely confident - virtually certain - that you will not get X as a result of Y". This would be a very different claim.

In summary:

- *Science often defines risk in relation to large populations, but people seldom see such probabilities as applying directly to themselves.*
- *If there is evidence on how risk is spread, this should be given - whether it shows the spread to be even or uneven.*
- *Risk communication requires attention to different interpretations of "probability", to ensure that the intended meaning is made clear.*

2.5: Indirect Effects and the "Social Amplification" of Risks

Events to do with risk can be likened to a stone dropping in a pool. Sometimes there is little more than the initial splash: sometimes the ripples spread far and wide. In many cases the *indirect effects* - caused, as it were, by the distant ripples - can far exceed the direct ones. This is perhaps most obvious with events such as accidents: it has often been remarked that although "no-one died" at Three Mile Island, the nuclear malfunction there had huge indirect effects on the industry worldwide. However risk *communication* can

⁴ Conversely, health promotion efforts (e.g. on smoking) may be undermined by an "optimistic bias", in which individuals deny that the statistics apply to them. However the empirical evidence on this is not clear-cut.

itself have indirect effects. Suppose a health warning is issued on a prominent variety of cheese or wine. Initially, rival producers may rejoice. However their glee is typically cut short as they find that consumers also ("unfairly!") shun *their* products. Companies may then close or be forced to lay off staff, with further indirect effects on other businesses, there are expensive attempts to restore confidence, political recriminations - perhaps international in scope - and so on. Such knock-on effects have at least two mechanisms:

- *Messages about risk will be picked up and interpreted by many audiences, not just those intended.*
- *The behaviour of those influenced by the message will impact on other people and modify their behaviour in turn.*

As to when indirect effects are likely to be prominent, the Fright Factors listed in 2.1 will again be relevant. High-scoring issues will catch widespread attention, feeding both the above mechanisms. In addition, an event may gain significance not so much because of what has happened, but because of what it seems to portend.⁵ Such an event is sometimes said to have a high *signal value*, in the sense of being seen not as a localised problem but as a harbinger of general doom. Thus a message ostensibly about a specific hazard may carry the unintended "meta-message" that assurances about safety always turn out to be wrong, or even that "we are playing with nature in ways nobody understands". Although it is not always clear why some events acquire such interpretations (out of all those that *could* do so) it is plausible that inconsistencies or reversals in policy are one common factor. These can carry powerful indirect messages about institutional competence, especially if previous "errors" are not admitted or not explained. These can easily cast doubt on the handling of other, supposedly-unrelated issues. Hence the importance of *cumulative* effects on perceived trustworthiness.

2.6: The Role of the Media

The media clearly play a major role in all the effects described so far. Reportage affects perceptions of risk in general and the way in which specific issues are framed. As an episode develops, reports of people's reactions to the original risk feed the indirect effects just noted. However the mass media are not *all-important*. Professional (e.g. medical / scientific) networks are often also significant, as are informal networks of friends and acquaintances - the classic "grapevine". People typically trust the goodwill of family and friends more than any institutional source of information. Access to decentralised communication media such as the Internet seems set to increase the influence of self-organised networks. In any case, to blame "sensationalist reporting" for exaggerated fears is largely to miss the point. Media coverage may well amplify the public's interest

⁵ To quote the *New Yorker's* editorial of Feb 18th 1985 on the Bhopal disaster:
"What truly grips us... is not so much the numbers as the spectacle of suddenly vanishing competence, of men utterly routed by technology, of fail-safe systems failing with a logic as inexorable as it was once - indeed, right up to that very moment - unforeseeable. And the spectacle haunts us because it seems to carry allegorical import, like the whispery omen of a hovering future."

in unlikely but dramatic forms of mishap, but it does not usually *create* it. The news media's overriding need is to attract attention, and a "good story" is one in which public and media interest reinforce each other. It is difficult to see how this could be otherwise. Nevertheless, the storyline adopted need not be beyond influence, and seeking *early* advice on media handling may pay dividends.

The question of why some particular stories about health risks "take off" spectacularly is the subject of continuing research. Though the media are well-attuned to the "Fright Factors" already noted, this is not the whole story. The Media Triggers suggested in Box 2 provide some *additional* indicators of likely interest.

Box 2: Media Triggers

A possible risk to public health is more likely to become a major story if the following are prominent *or can readily be made to become so*:

1. Questions of **blame**
2. Alleged secrets and attempted "cover-ups"
3. "**Human interest**" through identifiable heroes, villains, dupes, etc. (as well as victims)
4. Links with existing high-profile issues or personalities
5. **Conflict** (between experts and/or between experts and public)
6. **Signal value**: the story as a portent of further ills ("*What next?*")
7. **Many people exposed** to the risk, even if at low levels ("*It could be you!*").
8. **Strong visual impact**
9. **Sex and/or crime**
10. "**Snowballing**" of reportage: the fact that something is a "major story" is often itself a story, and this becomes self-fulfilling as media compete for coverage.

Of the factors listed, there is some evidence that the single most important is *blame*. However each case may be affected by many factors, including chance (e.g. a shortage or glut of competing stories). It is also worth noting that a story sometimes has an "incubation period": interest can erupt some time after an event, catching out the unwary.

3: RISK COMMUNICATION AS A DECISION PROCESS

Choosing how to communicate is itself a decision - and one that carries risks. Success demands attention not only to the content and presentation of messages - but also to two interlinked *processes*:

- the internal process of identifying issues, planning how to deal with them, taking action, and monitoring results, and
- that of managing external relations - setting up consultation, engaging with other interested parties, handling media interest, etc.

This section sets out some principles for managing both these processes effectively.

3.1: Identifying Key Issues: Scanning and Prioritising

Crisis conditions - combining time pressure, unexpectedness, and high levels of threat - almost always militate against effective decision-making. While crises cannot always be avoided, it may be possible to identify potential difficulties in advance. Such *scanning* will not be possible if communication is treated as an "add-on" to be considered only once other choices have been made. In any case, risk management that overlooks stakeholders' basic concerns cannot usually be saved by good communication techniques late in the day. Effective scanning will usually identify many potential issues, not all of which can be given in-depth attention. The findings outlined in Section 2 can be used to set risk communication priorities, alongside scientific assessment of the risks themselves. To summarise:

- *Communication should be routinely considered alongside risk assessment rather than waiting for an obvious "risk communication issue" to arise.*
- *Particular attention should be paid to risks scoring highly on Fright Factors and/or Media Triggers.*

This helps to identify the cases in which poor communication is likely to have the most dramatic consequences. Depending on the objectives however, the opposite extreme may also call for closer-than-usual attention. *If the aim is to warn*, it may be more difficult to direct attention to low-scoring risks.

Two further points reinforce the need to scan and prioritise:

- *It is essential that "internal" actors have the opportunity to discuss the issues and agree a line to take. Otherwise the risk is of sending confusing and contradictory messages.*
- *If other stakeholders are to be involved, an early approach generally gives the best chance of establishing trust and of getting useful input to policy.*

Relevant internal actors clearly vary from organisation to organisation and case to case. They commonly include policy leads, managers, administrators, technical experts, medical staff, and communications professionals. The loss of credibility caused by poor internal coordination is difficult to overstate, and coordination is hampered by crisis. No scanning approach can hope to spot all the relevant issues in advance: there will always be a continuing need to "firefight". In that context too however, the material given in Section 2 can provide a rough-but-rapid diagnosis of *which* unforeseen events carry the greatest danger of spiralling out of control.

3.2: Objectives Relative to Key Stakeholders

Moving on now to external stakeholders, we have already noted the need to be clear about the aims of each specific risk communication attempt. Ostensibly, many messages seek either to *warn* or to *reassure* - in the latter case, that the risk itself is "tolerable" or that it is being competently dealt with. Others seek primarily to *advise*, *inform* or *explain*, so as to help other actors make better-informed choices. To complicate matters, one may wish to warn some audiences and inform or reassure others. In any case, the significance of communication lies in its influence on decisions. It is thus important to formulate specific objectives and keep them under review. Who exactly is one intending to influence? Which specific decisions does the message relate to? Without some clear connection to decisions, a message about risk may do no more than contribute to general public anxiety or provoke the response "so what?".

For public health risks, relevant stakeholders may include GPs, pharmacists, clinical specialists, campaigning groups, OGDs, charities, businesses, trade associations and so on, as well as particular sections of the public. It is therefore essential to consider, *as early as possible*, what responses from such actors would help or hinder the aims of the communication exercise *and what they might contribute to a wider understanding of the issues*. As noted in Section 1, an open, two-way communication process can have benefits. However, it requires a proactive approach: it will not "just happen". Even where others are *not* brought into the decision process, considering their possible responses in advance will help avoid pitfalls - e.g. the announcement held up due to last-minute legal objections. One useful approach is to have a prepared list of the key actors liable to be involved in a specific type of communication, and actions needed to engage with them. A good example is the CMO's guidelines on Public Health Alerts (reproduced at Annex 2), and similar lists may help in dealing with other generic cases.

To summarise:

- *Risk communication is usually significant to the extent that it relates to decisions.*
- *It is essential to be clear as to aims, to identify relevant stakeholders early on, and to consider their likely agendas.*
- *This should clarify the potential for cooperation. Failing that, prior planning can identify ways to defuse opposition.*

3.3: The Need for Contingency Planning

Research on public perceptions of risk is neatly complemented by studies of its organisational mismanagement. Large-scale failures have been studied in contexts as diverse as warfare, corporate policy, public-sector planning, international relations, and engineering. A common thread is that of *expert overconfidence*. The most able decision-makers (and their advisers) can become fixed on a particular set of assumptions. Uncertainties are assumed away and alternative views ignored despite evidence that should have given pause for thought. These effects can be amplified when work is carried out in highly-cohesive groups. When trouble strikes, no alternative plans are in place: commitments already made may be costly or impossible to undo, and crisis ensues.

- *It is essential to have ways of uncovering uncertainties and considering alternative scenarios so that responses can be considered in outline.*

For example, the scientific evidence on risks may itself be subject to significant uncertainties. By its very nature, scientific knowledge is provisional - but acknowledging this often flies in the face of demands for certainty from public and policy-makers alike. General understanding of the process of scientific enquiry is not great. Policy-makers may be tempted to use science as a totem with which to ward off criticism. For the public, failure to deliver certainty can fuel the cynical belief that anything can be "proven". There is thus massive pressure for premature closure of debate, for example by transforming lack of evidence for some effect into proof of its non-existence. (Similarly, caveats in relating laboratory to field conditions can get forgotten, or people are presumed always to understand and follow safety instructions.)

While acknowledging uncertainty is never easy, greater damage to credibility can be caused both by premature dogmatism and by failure to consider different scenarios - even if only in private. If an initial public position has to be modified, preparedness will limit the damage by allowing change to be both prompt and convincingly explained. The key to preparedness is determined "assumption-busting" early on, so as to identify the most critical suppositions. One form of contingency planning is to ask "*What if* the key scientific evidence were thrown into doubt?". (Clues as to which assumptions to vary can be found by examining dissident scientific views, and by looking critically at the "pedigree" of key evidence - how it was generated and by whom.) Another is to consider different ways in which an issue could be framed by the media, while satisfying the need for a good story. This can help clarify possible responses, and suggest what might influence choices of storyline.

3.4 Monitoring and Review

Finally, each communication episode - successful or otherwise - represents an opportunity for organisational learning. This will only occur if there are mechanisms to ensure that the reasons for decisions are logged, and outcomes noted. Given pressures on time, procedures need to work with as little additional effort as possible - the more automatic the better. (Data recorded *at the time* are of particular value.) Review should then be undertaken as a matter of course - rather than *post mortems* being triggered only by

perceived failures. The main aim should be to identify learning points of possible future relevance, and these need to be shared with staff in other relevant policy areas. The results should then feed into routine analysis of new issues. In this way, collective experience may be put to best use.

3.5 Further Analysis: Sources of Assistance

This document can be used as a "D-I-Y" guide, but may also suggest areas for further analysis in tackling specific cases. This can take various forms. Some concentrate on aiding the *process* of decision-making: for example, through

- scanning exercises using idea-management techniques to generate and prioritise different topics for examination,
- decision support workshops to promote scenario-building and contingency planning in specific cases,
- staff development exercises using past cases or hypothetical scenarios.

In each case, the format can be more or less elaborate. The aim is not to bypass other sources of advice, but rather to include those with expertise in particular fields - for example on scientific topics or in dealing with the media. Indeed, the sharing of perspectives is often a significant by-product. Other forms of assistance concentrate on the use of empirical findings, for example through

- small-scale exercises designed to "test-run" specific messages quickly,
- applying established research findings (such as those summarised above) to the handling of specific cases,
- primary research commissioned on topics of long-term interest.

Several academic departments (and commercial consultancies) have interests in risk and may be worth approaching: relevant general disciplines include Psychology, Management Science, Operational Research and Decision Analysis. Some centres specialise in specific areas such as the perception of environmental or food-related risks. External advisors or analysts can bring fresh perspectives to bear. Conversely, the sensitivity of some issues may make internal assistance more attractive. Staff will also start with greater knowledge of procedures and may be more immediately available. Within DH, EOR Division is a source of relevant expertise, while contact with the Health Intelligence Officer in CMO's office will facilitate the sharing of information across different policy areas. In the NHS, many individual Trusts and Health Authorities can draw on significant pools of expertise, while assistance is available through Regional Offices (NHSE organises a National Forum involving all Regional Heads of Communication). Across Government, experience can be shared through fora such as the Interdepartmental Liaison Group on Risk Assessment (ILGRA) and the Inter-Departmental Group on Public Health (IDGPH). All these mechanisms can contribute to a common understanding, through which risk communication strategies can be tailored to specific circumstances.

4: CHECKLIST OF KEY POINTS

Scanning and reacting

1. This checklist can be used:
 - for **scanning** to help identify difficult cases and prioritise attention
 - to guide reaction to **unforeseen incidents**.

In both cases, communication should be considered as early as possible, as an integral part of risk assessment and management.

Anticipating public impact

2. Public responses to risks will be influenced by:

- **fright factors** (*see Box 1, p.4*)
- **media triggers** (*see Box 2, p.11*)

A high score on either list indicates a need for particular care. A high score on *both* should alert you to a possible high-profile scare. Conversely, it will be difficult to direct public attention to low-scoring risks.

3. "**Indirect**" effects are commonly caused by people's responses to the original risk. Have possible economic, social and political consequences been considered?

Planning a communication strategy

4. Are the **aims** of communicating clear? Note that objectives should be:
 - **agreed internally** between relevant staff with different responsibilities (e.g. policy leads, technical advisors, press staff)
 - **reviewed** as the situation develops
5. Who are the **key stakeholders**? (These will include both *intended* audiences and others who may react.) What other issues may affect their behaviour?
6. What is known (or is being assumed) about **how different stakeholders perceive the issue**? Does this require further investigation? What are the likely levels of **trust**, and what can be done to influence this?
7. Can the proposed message be seen as **inconsistent with previous messages** or with other policies? How can this be avoided or, failing that, explained?
8. Are mechanisms in place for keeping all the above **under review**?

The process of communication

9. Is there a checklist of **who to involve** at each stage of information release? If so, is it in use?
10. In deciding how and when to involve external stakeholders:
 - are decisions being considered as early as possible, and taken **on a consistent and defensible basis**?
 - are any **decisions against openness** both necessary and clearly-explained?
 - have mechanisms for involvement been **made clear to others**?
11. **What other actions are being taken** to deal with the risk in question? Do these support or undermine the intended communication? What overall impression is being conveyed?

Content of communication

12. Do statements attend to likely **values of the audiences** (e.g. perceived fairness, or need to vent anger), as well as providing factual information? Is the emotional tone appropriate to this?
13. Have **uncertainties** in scientific assessments been acknowledged?
14. In any statements about **probabilities**:
 - if **relative risks** are given, is the "baseline" risk made clear?
 - do **risk comparisons** serve to illuminate alternative options? Could any comparisons appear unfair or flippant?
15. Have **framing effects** of wording (e.g. "lives lost" versus "lives saved") been considered?

Monitoring of decisions and outcomes

16. Are procedures in place to **monitor** actions and results?
17. Are there mechanisms for **reviewing** strategy and outcomes, and **disseminating** lessons for future practice?

Further analysis

18. Might **further analysis** be appropriate? If so, has assistance been sought?

Annex 1: INDIVIDUAL COMMUNICATION ON CLINICAL RISKS

A.1 Introduction

Many of the points made about public communication above are relevant to communicating about clinical risks with individual patients or their families - in particular the multi-faceted nature of perceived risk and the need for a two-way process. There are also some critical differences. In principle, communicating with individuals provides the opportunity to gear messages to personal needs, values and perceptions. In addition, doctors start (for most people) from a position of high trust. However, these advantages clearly do not guarantee success. Assuming an ideal in which actual or potential patients make informed decisions based on the best available research, one can consider two stages of communication: between medical researchers and practitioners, and between practitioners and patients.

A.2 The "Research-Practitioner Gap"

A common observation is that medical research on the risks and benefits of treatments - e.g. clinical trials - often has little immediate impact on practice. Alternative explanations for this "research-practitioner gap" have been offered: that research results are often poorly disseminated, or that practitioners are overly-resistant to novel ideas or lack time to consider them. However, it has also plausibly been argued that different mental frameworks create communication barriers between researchers and practitioners *within* medical science, as well as between scientists and lay audiences.

Specifically, Dowie (1996) suggests that there is a gap between "truth-seeking" research carried out in a highly-structured setting and "decision-driven" practice that must work in unstructured settings. Thus, researchers mainly focus on the symptoms associated with a *given disease*, while the practitioner is more concerned with the person presenting with *given symptoms*. This leads to a different focus in the use of probabilities: for example, researchers will be more interested in the *performance rate* of a diagnostic test (likelihood that a given condition will be correctly diagnosed), practitioners on *predictive value* (likelihood that a given diagnosis turns out to be correct). The difference between "frequency" and "Bayesian" interpretation of probabilities noted in section 2.4 carries further complications if those working in different areas tend to favour one or the other: In summary, there is potential for confusion about the use of probability statements within the medical community, as well as with the lay public. Dowie's suggestion to bridge the gap is to use Decision Analysis as a common framework for communication, supported by appropriate professional education.

A.3 Practitioner-Patient Communication

Though communication with patients has traditionally been criticised as a weak point in the medical system, significant progress has been made in recognising the importance of the issue. Whether or not terms such as patient "activism" or "consumerism" are considered helpful, people are becoming less willing to be treated merely as passive recipients of treatment. A change in medical culture toward patient involvement can be

discerned. In some cases, media such as video are being used with success to inform patients about risks and benefits, and have been shown to affect choice significantly. For example, patients are less likely to opt for prostate surgery when shown the possible side effects. In this instance, improved communication avoids over-treatment: in others, patients may express a wish for more treatment. Communication with cancer patients represents a paradigm case, both in the disease's exceptionally high "dread factor" and in the need to weigh up the risks of different treatments - or none. From a situation in which patients were routinely not informed of the basic diagnosis, there has been a notable swing toward honest and careful discussion about the disease and its treatment - the need for which now features strongly in the guidance offered to purchasers of services. There is ample evidence that most patients wish to have information, that many wish to have a greater role in deciding on treatment, and that this can be medically beneficial as well as ethically desirable.

Nevertheless, poor communication remains a frequent cause of complaint. While by no means all communication problems involve medical risks, patients who believe that inadequate information has caused them avoidable harm (or even unavoidable harm inadequately explained) are increasingly prepared to protest or to quit "orthodox" treatment altogether. In seeking to avoid such failures, there are obvious practical challenges. Clinicians may be under extreme time pressure, while patients may have to digest a great deal of unfamiliar information while under great emotional stress. However some of the problems identified in the context of public communication also appear in related guises. The difference between scientific and lay perspectives on risk (Section 2.4) is again of obvious relevance. Medical evidence will often be statistical, whereas patients wish to know how probabilities relate to them as individuals (and may have plausible arguments as to how they differ from the "average patient").

A.4 Relating to Individual Concerns

The well-intentioned notion of professionals making choices by putting themselves in the patients' place is undermined by research showing that patients may have very different preferences both from physicians and from each other. Individuals vary greatly in their attitudes toward medical risks, in at least the following ways.

Types of risk perceived as significant

Some patients may be absorbed by the risks inherent in their disease, others more concerned by side-effects of treatments or the possibility of medical mistakes. They may be more or less concerned by the risks of being in hospital, in the care of strangers. Fears will be conditioned by personality, beliefs, past experience, reaction to friends' experiences, media reports, and so on. Failure to respond to them - however "anecdotal" the evidence - cannot be expected to engender trust.

Evaluation of specific risks and benefits

Different side-effects of treatment may be weighted quite differently both against each other and against potential benefits. "Quality of life" may be weighted quite differently against longevity.

Responsibility for choice.

Despite wide support for a model in which physicians and patients share responsibility, many people will prefer to leave choices in the hands of the professional expert. At the other extreme, a (probably increasing) minority want to make their own choices and see expert advice as helpful but far from decisive.

Successful communication calls for some understanding of each individual's attitudes toward all these issues. A classic model of two-way communication is that of the medical expert supplying factual information while the patient applies his or her own values. While helpful as a first approximation, even this may not be sufficient. Some patients will wish to become "expert" in their own disease, and feel frustrated if not helped to do so. Nor are doctors disembodied calculating machines: their own interpretation of the evidence on risks will be subject - for example - to framing effects. Doctors will also differ substantially in their personal attitudes to risk. Communicating the idea that different "experts" routinely *and legitimately* make different judgements about risk itself poses an interesting challenge - here, as in the public health setting.

Annex 2: CMO's PUBLIC HEALTH ALERT

CHECKLIST FOR ACTION

1 CLARIFYING THE MESSAGE

- A. identification of DH-wide interests and lead official;
- B. involve press office
- C. review information
- D. check the knowledge base
- E. check the source material
- F. legal advice
- G. peer reviewed publication available
- H. check purpose of the message and target audience
- I. professional endorsement of message (medical/nursing etc.)

ACTION POINT 1

- 1. *statement clarified*
- 2. *level of alert (immediate, urgent, important)*
- 3. *level of press involvement (press release, briefing, conference)*
- 4. *timescale (hours, weeks, days)*
- 5. *people involvement (ministers, CMO, officials, professionals, patients, others)*
- 6. *development of action plan*

2 MEETINGS, DISCUSSION AND PREPARATIONS

- A. Intra-departmental interests (including regional offices) identified
- B. Interdepartmental - OGDs identified
- C. NDPB identified
- D. Special interest groups, patient groups, industry etc
- E. Special issues with pharmaceuticals, MCA, ABPI etc
- F. Chairmen of DH Specialist Advisory Committees;
- G. Professional staff (doctors, nurses, dentists, pharmacists etc)
- I. Identify EU/international interests

ACTION POINT 2

- 1. *statement clarified*
- 2. *level of alert (immediate, urgent, important)*
- 3. *level of press involvement (press release, briefing, conference)*
- 4. *timescale (hours, weeks, days)*
- 5. *people involvement (ministers, CMO, officials, professionals, patients, others)*
- 6. *development of action plan*

3 DEPARTMENTAL ISSUES

- A. materials, print and video (including patient material where appropriate)
- B. need for helplines, information sources etc.
- C. list of actions to take eg. research, pharmacy, service charges, funding, drug supply, manufacturers etc.
- D. review legal advice
- E. submission and clearance from Ministers
- F. do OGDs need to be informed? (MOD; MAFF; HSE; DoE; Prison Health Service; LA; SSDs via SSI; DFEE);
- G. which division is in the lead - who is the lead official?
- H. timing of announcement - who does what
- I. check costs

ACTION POINT 3

- 1. *statement clarified*
- 2. *level of alert (immediate, urgent, important)*
- 3. *level of press involvement (press release, briefing, conference)*
- 4. *timescale (hours, weeks, days)*
- 5. *people involvement (ministers, CMO, officials, professionals, patients, others)*
- 6. *development of action plan*

4 PREPARATION FOR LAUNCH

- A. timing and relationship to other events
- B. media links
- C. method and contact with professionals: epinet, CMO letter, CSM letter, fax cascade etc.; professional endorsement of the message
- D. use of special targeting;
- E. plans for handling of media
- F. patient information
- G. use of NHS Helpline

ACTION POINT 4

- 1. *statement clarified*
- 2. *level of alert (immediate, urgent, important)*
- 3. *level of press involvement (press release, briefing, conference)*
- 4. *timescale (hours, weeks, days)*
- 5. *people involvement (ministers, CMO, officials, professionals, patients, others)*
- 6. *development of action plan*

5 FOLLOW THROUGH AND EVALUATION

Plans should be laid to evaluate the process and the outcome

15th October 1996

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