Legislation and the lay audience: Challenges of communicating benefit and risk in the light of new regulations

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Abstract

There is a paradigm shift in the pharmaceutical industry and regulatory agencies towards transparency and an emphasis on the benefit-risk ratio of medicines. The recent changes in legislation surrounding clinical documentation have produced significant challenges for medical writers, who are now tasked with translating and explaining complex concepts for the lay audience. This article explains some of the challenges faced by medical writers in this new era.

Keywords: Lay audience, RMP, CTR summary, Benefit-risk, Medical writing, Lay summary

'Patient-centricity' and 'transparency' are buzzwords right now. They are not new, but they are increasingly important in the context of regulatory documentation. 'Transparent' and 'patient-centric' documents are intended to help the lay audience understand complicated issues so that they can make an informed decision with their healthcare provider about a drug or treatment. Such shared decision making is attractive to over-stretched and under-funded health services because it dovetails nicely with patient groups' demands for more (and better) information about their medicines and treatment options. 'No decision about me without me' has been a mantra in the UK for the last 3 years.[1] At the same time, the thirst for information about health-related topics continues unabated. In a recent survey, 72% of internet users in the US stated that they had looked online for health information of one kind or another within the past year, and worryingly 35% said they did **not** visit a clinician to get a professional opinion.[2] This means that the quality of health information available to patients is a major concern and increasingly important.

Legislation

The importance of patient information has not been ignored by the Regulatory Authorities (RAs), and regulations have been updated to mandate the provision of information aimed directly at the lay audience. This is clearly an opportunity for medical writers, who are now tasked with converting complex information into a form that holds true to the tenets of scientific accuracy and is also unbiased, clear, and understandable by the lay.

However, many medical writers only have experience of writing for RAs or academics, who require a specific writing style and tone, have a very high level of health literacy, and may also have a vast knowledge of the specific disease or therapy area. Writing instead for an audience with an often low level of health literacy, and perhaps little or no disease and therapy-area knowledge, is a challenge. When the information to be conveyed involves complex assessments of the benefits and risks (or harms) that could be expected, this challenge becomes significant. Identifying and then translating this information into a form intelligible by the lay audience requires an empathy and understanding of the motivations of the layperson, and also an understanding of the challenges faced by them in digesting and understanding complex information.

The challenges faced by medical writers in this new era of transparency can be illustrated using two new pieces of EU legislation: the recently introduced Risk Management Plan (RMP) Section VI.2 (the lay summary), and the planned EU No 536/2014 (Clinical Trial Regulation [CTR], which is expected to include a lay summary of the clinical trial results).

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Challenges of legislation

RMP Section VI.2

An RMP, by definition, deals with the benefits and risks of a particular drug in a given indication, and how these benefits and risks are to be addressed. In 2013, the EU introduced an new section to the RMP, Section VI.2–the lay summary, the details of which have been discussed elsewhere.[3,4]

In the one-year pilot phase of the regulation, the target audience for this section was stated as, 'the lay audience'. However, this initial target audience is to be amended in a shortly awaited update from the EMA. The new description of the target audience is:

- *Primary*–'stakeholders with professional interest in medicines';
- *Secondary*–'members of the public - should be understandable to those who are looking for more information on medicines but who may not be familiar with medical terminology'.[5]

This expansion of the target audience creates a significant challenge for medical writers, as the primary and secondary audiences are likely to have very different health literacy and numeracy levels, interest levels, and motivations for seeking the information. This is implicitly acknowledged in the phraseology used: the primary target audience of individuals with a 'professional interest' would be expected to understand medical terminology, whereas it is clearly stated that the secondary target audience is not expected to 'be familiar with medical terminology'. Considering that the average reading age in the UK is below 14 years of age,[6] the challenge of explaining the risks and harms of treatments as laid out in a risk management plan becomes apparent.

Sections in the RMP Section VI.2 such as, 'The epidemiology of the disease being treated', 'The clinical benefits of the drug', and 'A more in-depth discussion of the important identified risks and the important potential risks', are particularly difficult to write in lay language. The epidemiology section naturally incorporates numerical presentations of incidence and prevalence data, both of which are difficult concepts to explain to the lay. Similarly, discussions of the benefits and risks or harms of a drug are often supported by statistical information, and risk information in particular is usually given in numerical terms. Simply providing these numbers is not sufficient for the lay audience–an understanding of what the numbers *mean* must be conveyed, so that the risks, benefits, and incidence/prevalence can be put into context.

CTR EU 536/2014

All clinical trials performed in the EU will be required to be conducted in accordance with the new CTR EU No 536/2014 starting May 2016. One of the main characteristics of this new regulation is increased transparency in terms of clinical trial outcomes. All information in the EU database submitted in the Clinical Trials Application and during the assessment procedure will be publically accessible, allowing the public to access extensive details. Additionally, the regulation obliges the sponsor to produce a summary of results for the lay audience one year after the end of the trial in the EU. Further detail of the regulation regarding this summary is presented elsewhere.[7,8]

To make sense of the results of clinical trials in the CTR summary, the lay audience needs the medical writer's help. Merely presenting the 'facts' (the results of the trial) expects the reader to have a level of clinical knowledge sufficient to extrapolate the facts into medical outcomes. Some context or explanation should be given to allow the reader to translate these findings into what it means for them, that is, what are the risks of harm and what are the benefits of taking the drug? This must be done without bias, and in the context of the trial and the therapy area in general. However, it is important to remember that these results will be presented to the lay audience as a stand-alone piece of work; the context of clinical development will not be given along with them. RAs and the pharmaceutical industry do not assess a drug using the results of a single clinical trial, and it could be dangerous (and certainly inappropriate) for the lay audience to take the results of a single trial and make assumptions based on this alone. This is a particularly difficult challenge, and extensive discussion will be needed when preparing the CTR lay summary to address this aspect. In the meantime, medical writers are tasked with presenting this information clearly and without bias.

A summary of these challenges is given in Table 1 below.

Benefit-risk communication

Underlying all of the challenges relating to the legislation described above is the more general challenge of communicating benefit-risk information in terms that do not rely on statistical values or parameters to convey the plausibility of results. Without a background knowledge of statistics, how can a lay audience weigh the relative merits of the data they are given, or even really understand the relevance of, for example, a *p*-value?

Table 1: Challenges of legislation

Document Section	Legislation	Summary	Main Challenges
RMP Section VI.2	Guidance on format of the risk management plan (RMP) in the EU–in integrated format EMA/465932/2013	This section is a summary of the RMP aimed at stakeholders with professional interest in medicines and members of the public - should be understandable to those who are looking for more information on medicines but who may not be familiar with medical terminology	• The expansion of the target audience to 2 diverse groups; providing one document for both groups will be difficult • Description of facts that are normally supported and described numerically (e.g. epidemiology, prevalence, incidence) • Description of the credibility of benefits and harms without using complex statistical terms
Clinical Trial Results Summary	CTR EU 536/2014	This is a summary of clinical trial results aimed at the lay audience.	• Providing context for the results to allow the lay to interpret the results correctly • Providing complex data in an easily understood format • Deciding the granularity and depth of detail to provide • Avoiding bias

How individuals make decisions, and the effects of data presentation and framing, are scientific specialties in their own right, and the intricacies are beyond the scope of this article. However, some basic principles should be borne in mind, particularly in the context of medical writing and the description of benefit and risk/harm information.

Bias

Human decision processes are limited by heuristics (mental 'short cuts') and biases, and the effects of these biases are greatest in decisions involving risk or a degree of ambiguity. The amount and type of bias also differ between individuals, and have more impact on people with low numeracy levels.[9] Therefore, how a drug or treatment's risks or harms are 'framed' (logically equivalent choice situations described in different ways,[10] and the context in which they are explained, can be crucial in how they are understood, and therefore in the outcomes that result.

For example, the chances of death or survival from a particular treatment option may be judged as relatively more attractive if the outcome is described as a 90% chance of survival than if it was described as having a 10% chance of mortality. Both statistics mean the same thing in terms of outcome, but patients may be more willing to undergo the treatment if they are given the outcome as a 'positive' 90% rather than a 'negative' 10%.[11]

Although the full impact of framing is difficult to assess,[12] the medical writer must nevertheless decide how the framing should be done and how much context to give to ameliorate these potential biases.

Wording and statistics

The wording used can have a large impact on outcomes, and so should be considered carefully. For example, when an effect was described using the word 'percentage' it is perceived to be larger than if terms such as 'reduced by' or 'relatively reduced' are used.[13]

Most people are risk averse–to the point of choosing a less effective treatment if they think it is 'safer',[14] and some will also avoid making a decision at all if ambiguity is involved–'ambiguity aversion'.[15] If a term is poorly understood (if at all), it becomes ambiguous. Therefore, using statistical (or any complicated medical) terms can be counter-productive when writing in lay language. If, for example, confidence intervals are used to try to explain how much 'trust' the reader can place in a result or a statistic, the perception of the risk can increase,[16] and lead to a reluctance to take the drug.

Relative risk, absolute risk, and probability

It is also known that describing an adverse effect in relative risk terms ('taking drug X will lead to a 50% increase in heart attack compared with people who don't take drug X') will communicate a greater size of risk than describing the adverse effect in absolute risk terms ('2 people out of 100 who took drug X had a heart attack, compared with 1 person out of 100 in the group who did not take

drug X').[17,18] This bias caused by the different statistical formats is also true for effect sizes. A large Cochrane review found that interventions are perceived to be more effective if the results are expressed as relative risk reductions rather than absolute risk reductions: the lay audience perceives risk reductions to be larger, and are therefore more likely to adopt an intervention, if the effect is presented in relative terms.[18]

Additionally, it is far more difficult for a lay audience to understand the probability of an effect (e.g. '0.05') than the frequency of an effect (e.g. '5 in 100').[19] Therefore, frequencies and absolute risks should be used wherever possible.

In this way, giving the lay audience complex, numerical, benefit-risk information is often counter-productive and can lead to impaired decision making.[20] It also calls into question the value of disclosing complex clinical trial results without some degree of context and explanation (neither of which is currently mandated by the regulation). For example, publically disclosing that 30% of subjects in a trial reported that their leg turned blue temporarily sounds very dramatic and might stop potential patients taking a drug or participating in a future trial, but what if 29% of the general population had blue legs from time to time anyway? An increase of 1% over the general population level is suddenly much less scary or serious, and may well make the drug worth taking…. but this relies on the individual reading the trial results *knowing* the baseline level of blue legs in the population and being able to put this into context.

When writing for the lay audience, the medical writer must anticipate and understand the audience's level of prior knowledge, and use their skills to explain complicated statistical information in a lay-friendly format.

Therefore, empowering patients to become involved in their healthcare and the decisions made about their treatment means more than just publishing the results of trials or a summary of the RMP. If this information is not given in context and in a form that the lay audience can understand and interpret, 'transparency' can do more harm than good.

What does this mean for medical writers?

Producing the RMP Section VI.2 and the Summary of Clinical Trial Results typify the challenges for medical writers brought by the need and desire for increased transparency in the pharmaceutical industry. As medical writers writing for the lay audience, our job is to determine the appropriate level of granularity needed, to tease the key messages from data and to present them clearly and accurately. Of course, this applies whether our target audience is a regulatory authority or a member of the general public, but the words we choose, and the way we explain and express them, differs dramatically for each audience.

Our latest challenge is to present data and messages in a way that the lay audience can both understand and use in their healthcare decision making. This is a means for the pharmaceutical industry to engage with the general public in a way that has never been permitted before. But it is also a huge responsibility and requires an extensive medical writing skill set that differs in many ways from that carefully honed by medical writers who write regulatory documents. Writing in lay language is far more than just translating clinical words into simpler ones, particularly when discussions of benefit and risk are involved. However, in the quest for transparency and patient-centricity, medical writers are clearly set to play a crucial role.

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Suggested reading

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