

False Hopes, Unwarranted Fears: The Trouble with Medical News Stories

The *PLoS Medicine* Editors

On April 26, 2007, ABC World News, the American Broadcasting Corporation's flagship television news program, aired a "good news" story about a new test for prostate cancer [1]. Against a background of a dramatic graphic showing that 1.6 million American men undergo prostate biopsy each year, the presenter announced: "Researchers at Johns Hopkins say they have developed a more accurate blood screening test." The story was based on a new study examining the performance of early prostate cancer antigen-2 as a serum marker for prostate cancer [2]. Unfortunately, ABC failed to disclose one crucial fact: the principal investigator of this study receives a share of the royalty sales of the test and is a paid consultant to the test's manufacturer [3].

This failure was one of a litany of weaknesses in the story. There was no discussion, for example, of the scientific evidence showing that the test was "more accurate" than existing screening tests or of the uncertain benefits and proven harms of prostate cancer screening. In this month's *PLoS Medicine*, Gary Schwitzer of the University of Minnesota School of Journalism and Mass Communication highlights this ABC broadcast as an example of particularly poor health reporting [4]. Schwitzer publishes an online project called HealthNewsReview.org (<http://HealthNewsReview.org/>) that evaluates and grades media stories about new health interventions, notifying journalists of their grades. The project builds on other initiatives that monitor the quality of health reporting, such as the Australian Media Doctor Web site (<http://www.media doctor.org.au/>) and the United Kingdom's Behind the Headlines project (<http://www.nhs.uk/News/Pages/NewsIndex.aspx>). BBC News, *The Guardian*, and other news organizations covered a recent randomized controlled trial in *PLoS*

Medicine on the effects of stopping or continuing antipsychotic drugs in Alzheimer disease [5], and Behind the Headlines posted a detailed assessment of the science behind the coverage [6].

HealthNewsReview.org uses a 10-point grading scale. The rating criteria include whether a story adequately quantifies the benefits of an intervention, appraises the supporting evidence, and gives information on the sources of a story and the sources' competing interests. On this scale, the ABC story received a grade of just two. Based on the ratings of 500 stories from the highest circulation newspapers and news magazines, the most widely used wire service (Associated Press), and the three most popular US television networks, the report card from HealthNewsReview.org is grim. Most stories (62%–77%) failed to adequately address costs, harms, benefits, the quality of evidence, and the existence of other treatment options. The trouble with distorted journalistic reports, say David Ransohoff and Richard Ransohoff, is that they can generate false hopes and unwarranted fears [7]. Accurate, balanced, and complete health reporting is crucial, argues Schwitzer, so that "health care consumers are properly informed and ready to participate in decision making about their health care" [4].

The Origins of Unbalanced Reporting

When it comes to the quality of health reporting, why is the bar set so low? One problem is that today's health reporters may have been covering crime last week and politics the week before. They have rarely been trained to understand the complexities of health research. For example, in her survey of 165 reporters in the US (response rate 69.6%), Melinda Voss found that 83% (96/115) had received no training in interpreting health statistics, and a third said that understanding key health issues was

"often" or "nearly always" difficult [8]. While there are certainly studies in specialist medical journals that will be difficult for many people to grasp, nevertheless there may be some value in establishing a core set of scientific competencies for all health reporters. Indeed, the Association of Health Care Journalists' Statement of Principles states that health reporters should "understand the process of medical research in order to report accurately" (<http://www.healthjournalism.org/secondarypage-details.php?id=56>).

There is also a broader context in which medical stories get exaggerated—the 24-hour news cycle means that media organizations are battling for audience share, which in turn means that "the press has moved towards sensationalism, entertainment, and opinion" [9]. Headlines are often written by news editors, rather than the article's reporter, and are particularly prone to exaggeration. All of this sensationalism strays far from the reality of biomedical research, a slow process that yields small, incremental results based on long-term studies that always have weaknesses.

The origin of hype in health stories goes even deeper than journalists' lack of training and the hurried pace of broadcasting. Ransohoff and Ransohoff have described medical researchers and reporters as "complicit collaborators," both of whom may benefit from a sensationalized story [7].

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Researchers benefit from the publicity because it may increase citations to their study and help their chances of promotion or tenure, while a highly visible story of a dramatic medical breakthrough can boost a journalist's career. Sensationalism occurs, they say, "when the participants stand to benefit from publicity without a corresponding penalty for misleading reports." HealthNewsReview.org could now provide such a penalty with its public naming and shaming of poor reporting, which in turn may drive journalists toward more balanced reporting.

The Role of Medical Journals

When a health story gets hyped, it is all too easy for medical journal editors to deny any responsibility. The reality, of course, is that journal editors themselves are the third party in the "complicit collaboration"—the journal's press release is the usual mechanism for linking the researcher to the journalist. Medical journals issue press releases about their upcoming studies partly because media publicity drives readers to the journal and builds brand recognition. A bland press release may be less likely to get your journal and the study noticed. Not surprisingly, a content analysis of journal press releases by Steven Woloshin and Lisa Schwartz found that these releases were themselves prone to exaggeration [10]; we suspect that press releases from research institutions and funding agencies may be equally as prone. Woloshin and Schwartz argue that all journal press releases should include: (1) a section putting results into context, (2) a section for the study's limitations, (3) a statement of the study authors' competing interests, and (4) a summary of the quantitative results expressed using absolute rather than just relative measures.

Some commentators also feel that news embargoes—in which journals give reporters previews of an article if they promise not to report on it until an agreed-upon date—are merely a tool for a journal's self-promotion [11]. While there may be some truth to that, Steve Connor, science editor of *The Independent*, has argued that abandoning embargoes could result in journalists trying to scoop each other, with the effect of lowering the quality

of the coverage (<http://www.plos.org/cms/node/339>). One advantage of an embargo is that we make the journal article available to the public at the same time as the news story appears.

Given PLoS' core principle of "engag[ing] the interest and imagination of the public" (<http://www.plos.org/about/principles.html>), we do invest resources into publicizing our papers. At *PLoS Medicine*, we try to predict which studies are likely to be of greatest public interest. An editor (not a press officer) writes the press release, and we ask the study authors to fact-check it ahead of release. We strive to keep our press releases sober in tone to reduce the chances of media hype. We also write an Editors' Summary published as part of the research article, which is aimed at non-specialists and includes a discussion of the study's implications and limitations. We ask all reporters to include a link in their story to the freely available *PLoS Medicine* study, so that readers can assess for themselves its strengths and weaknesses. And although we have no control over press releases issued by an author's institution, we routinely ask to see these releases and will advise the institution's press officer if we feel that a release exaggerates the study's findings.

Our "press release cycle" is, however, an imperfect art. We have no say over how authors present their work when they talk with reporters. We don't always get our predictions right—we didn't predict, for example, how much public interest there would be in a study examining acid-fast bacilli in tuberculosis-positive sputum [12], nor did we expect so little attention to a study on mental health disorders in Lebanon [13]. And we have occasionally seen our studies sensationalized. For example, a media storm (see <http://www.plos.org/cms/node/335>) surrounded our publication of a meta-analysis of all pre-licensing trials submitted to the US Food and Drug Administration, including unpublished trials, on the efficacy of certain antidepressants [14]. Although much of the reporting was balanced and insightful—highlighting the study's finding that efficacy was seen only in severe depression and questioning why trials go unpublished and why drugs get approved based on weak evidence—we also saw over-simplified headlines such

as "Antidepressant drugs don't work." The study's public availability did at least allow clinicians, policy makers, and the public to discuss and debate the paper, and at the time of writing this editorial, we have posted 40 such Reader Responses [15].

A Shared Responsibility to Raise the Bar

Schwitzer's alarming report card of the trouble with medical news stories is thus a wake-up call for all of us involved in disseminating health research—researchers, academic institutions, journal editors, reporters, and media organizations—to work collaboratively to improve the standards of health reporting. The good news is that there are signs of change. Two years ago, Ray Moynihan and David Henry guest-edited a special *PLoS Medicine* theme issue on disease mongering (<http://collections.plos.org/plosmedicine/diseasemongering-2006.php>), the corporate creation of new diseases in order to sell treatments. As they report in this month's issue, over the last two years there has been a growing number of high-profile articles on disease mongering, suggesting that "scepticism is building within the mainstream media" [16]. *The Wall Street Journal*, for example, recently ran a story on a new drug for restless legs syndrome under the headline "How Glaxo Marketed a Malady to Sell a Drug" [17].

There is other good news. Despite the risk that the media might over-promote the findings of genetic research (leading to so-called "genohype"), a study of 627 newspaper articles on gene discoveries found that only 11% contained such hype [18]. And if you want to see further proof that medical reporters can be healthily skeptical and nuanced in their reporting, take a look at the stories that were graded 10 out of 10 by Schwitzer's project [4]. This is the kind of balanced journalism that we should all be working towards and one that helps to promote an informed and medically literate citizenry. ■

References

1. ABC World News With Charles Gibson (2007 April 26) New prostate cancer test shows greater accuracy [transcript]. Available: <http://www.healthnewsreview.org/review/transcript.php?rid=883>. Accessed 24 April 2008.
2. Leman ES, Cannon GW, Trock BJ, Sokoll LJ, Chan DW, et al. (2007) EPCA-2: A highly specific serum marker for prostate cancer. *Urology* 69: 714-720.

3. Johns Hopkins Medicine News and Information Services (2007) Hopkins researchers find a better blood test for prostate cancer. Available: http://www.hopkinsmedicine.org/press_releases/2007/04_26_07.html. Accessed 24 April 2008.
4. Schwitzer G (2008) How do US journalists cover treatments, tests, products, and procedures? An evaluation of 500 stories. *PLoS Med* 5: e95. doi:10.1371/journal.pmed.0050095
5. Ballard C, Lana MM, Theodoulou M, Douglas S, McShane R, et al. (2008) A randomised, blinded, placebo-controlled trial in dementia patients continuing or stopping neuroleptics (The DART-AD Trial) . *PLoS Med* 5: e76. doi:10.1371/journal.pmed.0050076
6. NHS Knowledge Service (2008) Behind the headlines: Antipsychotics and Alzheimer's. Available: <http://www.nhs.uk/news/2008/04April/Pages/AntipsychoticsandAlzheimers.aspx>. Accessed 24 April 2008.
7. Ransohoff DF, Ransohoff RM (2001) Sensationalism in the media: When scientists and journalists may be complicit collaborators. *Eff Clin Pract* 4: 185-188.
8. Voss M (2002) Checking the pulse: Midwestern reporters' opinions on their ability to report health care news. *Am J Public Health* 92: 1158-1160.
9. Kovach B, Rosenstiel (1999) *Warp speed: America in the age of the mixed media culture*. New York: Century Foundation Press. 193 p.
10. Woloshin S, Schwartz L (2002) Press releases: Translating research into news. *JAMA* 287: 2856-2858.
11. Wilkes MS (1997) The public dissemination of medical research: Problems and solutions. *J Health Commun* 2: 3-15.
12. Garton NJ, Waddell SJ, Sherratt AL, Lee SM, Smith RJ, et al. (2008) Cytological and transcript analyses reveal fat and lazy persister-like bacilli in tuberculous sputum. *PLoS Med* 5: e75 doi:10.1371/journal.pmed.0050075
13. Karam EG, Mneimneh ZN, Dimassi H, Fayyad JA, Karam AN, et al. (2008) Lifetime prevalence of mental disorders in Lebanon: First onset, treatment, and exposure to war. *PLoS Med* 5: e61. doi:10.1371/journal.pmed.0050061
14. Kirsch I, Deacon BJ, Huedo-Medina TB, Scoboria A, Moore TJ, et al. (2008) Initial severity and antidepressant benefits: A meta-analysis of data submitted to the Food and Drug Administration. *PLoS Med* 5: e45. doi:10.1371/journal.pmed.0050045
15. *PLoS Medicine* (2008) Initial severity and antidepressant benefits: Reader responses. Available: <http://medicine.plosjournals.org/perlserv/?request=read-response&doi=10.1371/journal.pmed.0050045>. Accessed 24 April 2008.
16. Moynihan R, Doran E, Henry D (2008) Disease mongering is now part of the global health debate. *PLoS Med* 5: e106. doi:10.1371/journal.pmed.0050106
17. Whalen J (2006 October 25) How Glaxo marketed a malady to sell a drug. *The Wall Street Journal*. Available: <http://online.wsj.com/article/SB116174246339602800.html>. Accessed 24 April 2008.
18. Bubela TM, Caulfield TA (2004) Do the print media "hype" genetic research? A comparison of newspaper stories and peer-reviewed research papers. *CMAJ* 170: 1399-1407.

