Journal Watch

Journal Watch is based on the French-language blog *Rédaction Médicale et Scientifique* by Hervé Maisonneuve available at www.redactionmedicale.fr.

SECTION EDITOR

Hervé Maisonneuve
herve@h2mw.eu

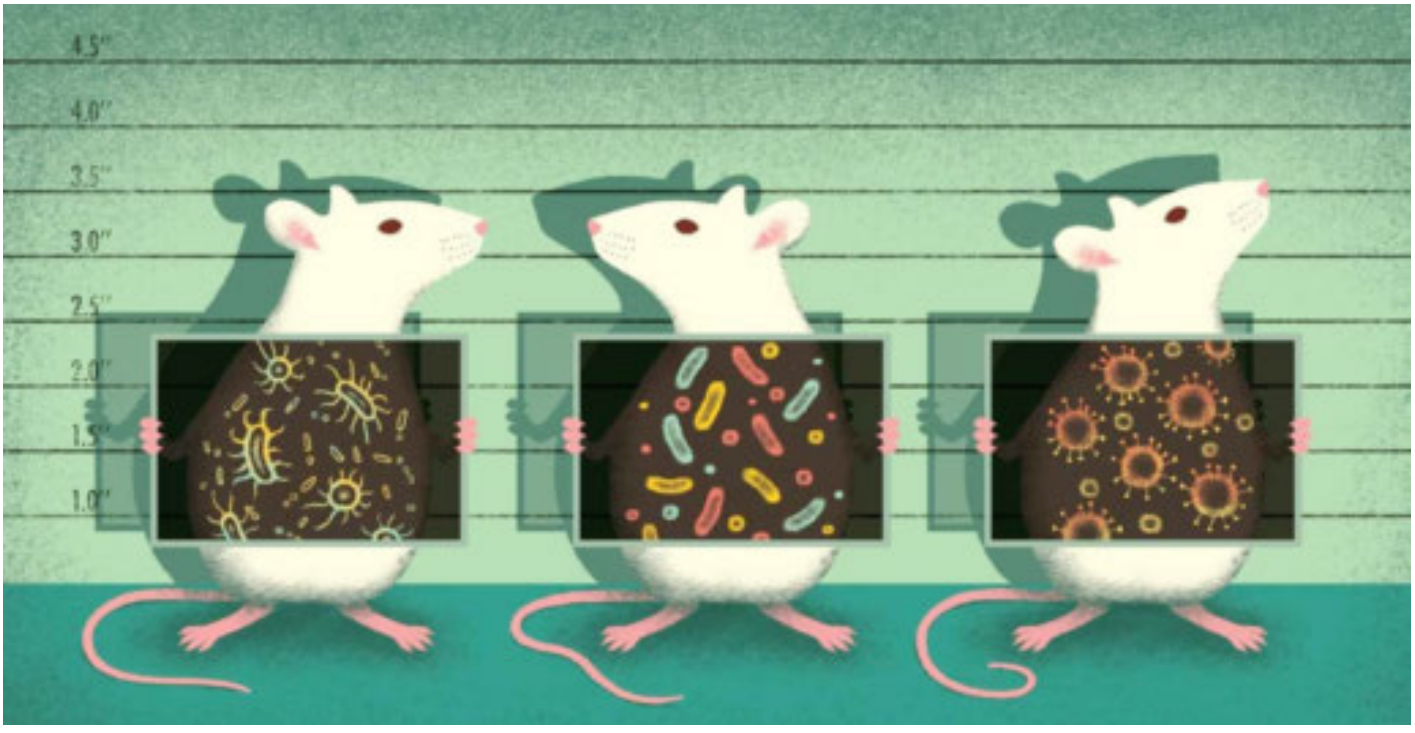
The vast majority of investigator brochures lack sufficient information to systematically appraise the strength of the supporting preclinical findings

The above title is one of the conclusions of an investigation of 109 investigator brochures (IBs) reported in an April 2018 issue of *PLoS Biology*.[1] Out of six German institutional review boards (IRBs), three accepted to provide the IBs of phase I and II trials; one IRB provided 97 IBs reviewed between 2010 and 2016. The IBs covered 8 of 12 therapeutic areas as distinguished by the European Medicine Agency. Seven studies were first in human, whereas all other mentioned at least some clinical evidence for the investigational product. All trials were privately funded, and 48 IBs were from the top 25 pharmaceutical companies. The authors assessed the content and properties of preclinical efficacy studies (PCESs) contained in IBs. They rated 708 unique PCESs (109 IBs) for their reporting on study elements that help to address validity threats, whether they referenced published reports, and the direction of their results. Less than 5% of all PCESs described elements essential for reducing validity threats such as randomisation, sample size calculation, and blinded outcome assessment. For most PCESs (89%), no reference to a published report was provided. Only 6% of all PCESs reported an outcome demonstrating no effect. For the majority of IBs (82%), all PCESs were described as reporting positive findings. Our results show that most IBs for phase I/II studies did not allow evaluators to systematically appraise the strength of the supporting preclinical findings. The very rare reporting of PCESs that demonstrated no effect raises concerns about potential design or reporting biases. Poor PCES design and reporting thwart risk-benefit evaluation during ethical review of phase I/II studies.

In February 2018, a series of papers in the *BMJ* reported the development of a new tuberculosis vaccine that failed: 2,800 infants had been included in trials conducted in South Africa.[2] The researchers were disappointed and later discovered that the animal studies had already raised doubts about the potential efficacy of the vaccine. An analysis of the IBs concluded that a selection of positive studies was done to influence the funding and approval for human trials. It was a public funded project.

References

1. Wieschowski S, Chin WWL, Federico C, Sievers S, Kimmelman J, Strech D. Preclinical efficacy studies in investigator brochures: Do they enable risk-benefit assessment? PLoS Biology. 2018; 16(4):e2004879.
2. Cohen D. Oxford TB vaccine study calls into question selective use of animal data. BMJ. 2018; 360:j5845.



Prestigious journals start asking for disclosure of non-financial interests

Most journals limit disclosure to financial interest. Controversies about non-financial interests were discussed in a "Head to Head" published by the *BMJ*.[1] There are many interests that influence the decision of an expert – political, ideological, individual or religious. Individual interests could be past or current disputes between researchers, differences in schools of thought, etc. People are driven at least as much by non- financial motives as they are by financial gain. Fame may be more seductive than gain. Such declaration of non-financial interests must be handled with discretion. All experts have non-financial interests that cannot be eliminated. On the contrary, financial conflicts of interests can be eliminated or avoided.

Nature research journals recently updated their policies, asking authors of research articles, reviews, commentaries, and research analysis to disclose non-financial interests.[2] The Nature instructions are (https://www.nature.com/authors/policies/competing.html):

> *Non-financial competing interests can take different forms, including personal or professional relations with organisations and individuals. We would encourage authors and referees to declare any unpaid roles or relationships that might have a bearing on the publication process. Examples of non-financial competing interests include (but are not limited to):*
>
> - *Unpaid membership in a government or non-governmental organisation*
> - *Unpaid membership in an advocacy or lobbying organisation*
> - *Unpaid advisory position in a commercial organisation*
> - *Writing or consulting for an educational company*
> - *Acting as an expert witness.*

References

1. Wiersma M, Kerridge I, Lipworth W, Rodwin M. Should we try to manage non-financial interests? BMJ. 2018;361:k1240.
2. Outside interests. Nature research journals will ask authors to declare non-financial conflicts. Nature. 2018;554:6.

A *Nature* special issue: How to grow a healthy lab?

A series of articles appeared in *Nature* (May 16, 2018 https://www.nature.com/collections/pmlcrkkyyq) on research integrity. An article introducing the series notes:

> *If you find a bad apple, check the barrel. Research-integrity specialists say that focusing too much on individual bad actors deflects attention from the environments that promote bad behaviour. The idea applies just as much to researchers who are unproductive, frustrated or unhappy, as this could be indicative of deeper problems.*

A *Nature* survey revealed the tensions bubbling in research groups around the world. A lack of research training exists in laboratories and personnel management is poor; it is one of the strongest contributors to an unhealthy lab culture. Senior and junior researchers live almost in separate worlds. The testimony of Catherine Winchester, research integrity adviser at the Cancer Research UK Beatson Institute, a non-profit organisation in Glasgow, is interesting.[1] She assists researchers and help teams to better do research and collaborate. She has been able to implement good practices: "*Perhaps the most complex undertaking so far has been developing practices for curating and preserving all the data that underpin a paper, including replicates*". In 5 years, no retraction and no serious issues with publications were observed.

The factors that lead to bad decisions can be represented by the mnemonic TRAGEDIES: Temptation, Rationalisation, Ambition, Group and authority pressure, Entitlement, Deception, Incrementalism, Embarrassment, and Stupid systems.[2] Recognising these and responding appropriately can save a career and strengthen science.

References

1. Winchester C. Give every paper a read for reproducibility. Nature. 2018;557:281.
2. Gunsalus CK, Robinson AD. Nine pitfalls of research misconduct. Nature. 2018;557:297-9.

Assessment of researchers should change to align the research system with society needs

A 20-page paper in *PLoS Biology* proposes strategies that are important for the future of research.[1] Currently, the reward system is based on poor metrics, such as the impact factor. The current quality of publications, the poor reproducibility of science must be improved. I extracted sentences from the abstract:

Assessment of researchers is necessary for decisions of hiring, promotion, and tenure. A burgeoning number of scientific leaders believe the current system of faculty incentives and rewards is misaligned with the needs of society and disconnected from the evidence about the causes of the reproducibility crisis and suboptimal quality of the scientific publication record. We completed a selective literature review of 22 key documents critiquing the current incentive system. From each document, we extracted how the authors perceived the problems of assessing science and scientists, the unintended consequences of maintaining the status quo for assessing scientists, and details of their proposed solutions. The resulting table was used as a seed for participant discussion. This resulted in six principles for assessing scientists and associated research and policy implications. We hope the content of this paper will serve as a basis for establishing best practices and redesigning the current approaches to assessing scientists by the many players involved in that process.

The six principles are:

1. Contributing to societal needs is an important goal of scholarship. Focusing on research that addresses the societal need and impact of research requires a broader, outward view of scientific investigation.
2. Assessing scientists should be based on evidence and indicators that can incentivise best publication practices. Several new "responsible indicators for assessing scientists" were proposed and discussed.
3. All research should be published completely and transparently, regardless of the results. Academic institutions could implement policies in the promotion process to review complete reporting of all research, and/or penalise noncompleted or nonpublished research – particularly clinical trials, which must be registered.
4. Openness – facilitating dissemination and use of research data and results by others. Researchers can share their data, procedures, and code in various ways, such as in open access repositories. Some journals are supporting this process by endorsing and implementing the transparency and openness promotion (TOP) guidelines.
5. Investing in research to provide the necessary evidence to guide the development of new assessment criteria and to evaluate the merits of existing ones.
6. Rewarding researchers for intellectual risk-taking that might not be reflected in early successes or publications. The need for a young researcher to obtain their own funding early often results in a conservatism that is inimical to ground-breaking work at a time when they might be the most creative. Changing assessments to evaluate and reward such hypotheses might encourage truly creative research.

Goodreports: A new tool to fill in the reporting guidelines checklists

The EQUATOR Network, in collaboration with Penelope (a website checking academic manuscripts before submission), has launched a simple and useful website available at www.goodreports.org. Authors choose the reporting guideline corresponding to their paper, and they fill in the checklists online. Checklists of 16 reporting guidelines are available. The authors then print and/or download the checklist in order to join it to their submitted paper.

Reference

1. Moher D, Naudet F, Cristea IA, Miedema F, Ioannidis JPA, Goodman SN. Assessing scientists for hiring, promotion, and tenure. PLoS Biol. 2018;16(3):e2004089.