Responsible dissemination of health and medical research: some guidance points

Raffaella Ravinetto 1, Jerome Amir Singh 2,3

Ravinetto and Singh argue that better practices can be implemented when disseminating research findings through abstracts, preprints, peer-reviewed publications, press releases and social media.

Dissemination has been defined as ‘the targeted distribution of information and intervention materials to a specific public health or clinical practice audience’,1 and as being ‘simply about getting the findings of your research to the people who can make use of them, to maximise the benefit of the research without delay’.2 Ethics guidelines concur that research stakeholders have ethical obligations to disseminate positive, inconclusive or negative results,3 in an accurate, comprehensive and transparent way4—even more so during public health emergencies.

Traditionally, research results were first shared within the scientific community, and then ‘translated’ into lay language for policymakers and other audiences via the media, policy briefs, lobbying. Today, preprints5 and press releases6 often come first. Dissemination of research findings to research participants and communities requires contextualised approaches and has been explored elsewhere.4 Similarly, trial registries8 and data sharing are explored elsewhere in this series. Here, we navigate the challenges and opportunities presented by dissemination through peer-review publications, abstracts, preprints, press release, media coverage and social media (box 1 – summary of research dissemination).

Peer-reviewed publications

Publication in peer-reviewed journals remains the benchmark dissemination modality. Independent peer-review aims to assure the quality, accuracy and credibility of reports, but does not always prevent the publication of poorly written, dubious or even fraudulent manuscripts,9 particularly if there is dearth of qualified reviewers, and/or an findings are hastily published to gain competitive advantage and visibility.10 Furthermore, researchers who are inexperienced or subject to an institutional ethos of ‘publish or perish’, may choose to publish in predatory journals with highly questionable ethics and values.11

Communication via abstracts is laudable, but should be rapidly followed by peer-reviewed publications, which allows for the findings to be comprehensively reviewed by experts. When abstracts remain the sole source of information, the findings’ significance might be misunderstood, overestimated or wrongly used to guide behaviours, policies and practices.

Preprints

Preprints, that is, preliminary reports of work not yet peer-reviewed, are uploaded in dedicated free-access servers, such as https://www.medrxiv.org/. Preprints are increasingly being used by health

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Box 1 Summary of research dissemination

**What**—Dissemination of health and medical research entails communicating the findings of research to stakeholders in ways that can facilitate understanding and use.

**Why**—Any positive, inconclusive or negative research findings should be disseminated to maximise the social value of the research and to accurately inform medical policies and practices.

**When**—Dissemination of health and medical research should occur as soon as possible after completion of interim and final analysis, particularly during public health emergencies.

**Who**—Researchers, research institutions, sponsors, developers, publishers and editors must ensure the timely and accurate dissemination of research findings. Similarly, the scientific community should critically appraise research findings; policymakers and clinicians should weigh the implications of research findings for policy and clinical practice; while mainstream media should communicate the implications of research findings to the general public in a manner that facilitates understanding.

**How**—Research findings are primarily disseminated via press releases, preprints, abstracts and peer-reviewed publications. To ensure timely, comprehensive, accurate, unbiased, unambiguous and transparent dissemination, all research stakeholders should integrate ethics and integrity principles in their institutional dissemination policies and personal belief systems.

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Press releases, media coverage and social media

Since 2021, the dissemination of clinical trial findings by corporate press release has almost become synonymous with announcements of COVID-19 scientific breakthroughs. Therefore, it seems important to briefly contextualise the strategy underpinning such dissemination. Corporate press releases are often preceded by stock repurchasing or ‘buybacks’, that is, companies buy back part of their own stock held by executives. This increases demand for the stock and enhances earnings per share. Pharmaceutical or biotechnology companies typically engage in strategically timed buybacks, before press releases announcing significant research findings. Furthermore, corporates in the USA and elsewhere may employ press releases to comply with the legal requirements to disclose information that impact on their market values, and changes in their ‘financial conditions and operations’. Press releases are typically drafted by marketing experts and they are often first aimed at the market, and driven by corporate interests rather than social value.

For researchers, the potential to amplify scientific visibility through mass media may act as a powerful incentive to indulge in flattering but inaccurate language. Nonetheless, they have a moral responsibility to review press releases for accuracy, and to immediately make key-information including the protocol, analysis plan and detailed results, publicly available. For instance, the media briefing that announced on 16 June 2020 the life-saving benefit of dexamethasone in severe COVID-19 was followed on 26 June by a preprint with full trial results. In absence of such good practices, press releases can contain inaccuracies or over-hype findings with major damaging downstream effects.

The media have an equally significant impact on science dissemination: peer-reviewed publications which receive more

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Box 2 Recommendations for journalists

**Recommendations for journalists who cover (early) press release**

**A.** Always be conscious of the power of the media to shape the views, fears and beliefs of the public, in the short term, medium term and long term.

**B.** Weigh the tone and the extent of coverage afforded to press releases, based, among other factors, on:

- A critical appraisal of whether the press release was preceded by stock buyouts and/or aimed at influencing corporates share values.
- A critical appraisal of the science underpinning the press release, such as the sample size, study population representativeness (for instance, age, sex, ethnicity), research questions that are not addressed yet, and any omissions of potential harms.
- A recourse to the views of independent scientists, paying attention to any declared or undeclared conflicts of interest that may bias their opinions.

**C.** Critically appraise the accuracy and possible biases of (independent) scientists’ opinions on press releases, when shared on personal social media feeds, before deciding whether to afford coverage to such views.

**D.** Afford the same coverage given to the initial press release (or more, if necessary) to any significant follow-up information-related thereto.

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attention from lay-press, are more likely to be cited in scientific literature.21 Perceived media credibility also impacts on dissemination: once individuals trust a media source,22 they often let down their guard on evaluating the credibility of that source. This speaks to the importance of discerning media dissemination (box 2). Journalists who cover early press releases should critically appraise them considering their limitations and potential conflicts of interest.

A call for good dissemination practices

The scientific community, health system policy-makers and regulators are the primary audience of peer-reviewed manuscripts, abstracts and preprints. These constituencies should be, or become, sufficiently skilled in critical thinking and scientific methods that they can make sensible decisions, regardless of whether an article is peer reviewed or not.23; understand that the nature of scientific knowledge is incremental and cumulative (one study seldom changes practice on its own); and also critically assess other sources, for example, pharmacovigilance, etc. Conversely, corporate press releases are aimed at influencing the market, and society as a whole—and not suited for scientific appraisal.

Irrespective of dissemination modalities, upstream information is cascaded to mainstream and social media, spreading knowledge but risk catalysing misunderstanding or overemphasis. Risks are only partially mitigated by independent quality control on the upstream information (relatively stringent in peer-review, weaker in preprints and abstracts, and virtually absent for press releases). In table 1, we summarise recommendations for good dissemination practices, aimed at researchers, research institutions, developers, medical journals editors, media, journalists, social media actors, medical opinion leaders, policy-makers, regulators and the scientific community. All these stakeholders should integrate ethics and integrity in their policies and behaviours, to ensure timely, comprehensive, accurate, unbiased, unambiguous and transparent dissemination of research findings.

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### Table 1 Summary of the recommendations for good dissemination practices

<table>
<thead>
<tr>
<th>Dissemination modality</th>
<th>Recommendation</th>
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<tbody>
<tr>
<td><strong>Peer-reviewed publication</strong></td>
<td>Avoid predatory journals (researchers, research institutions)</td>
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<td>Publish all findings, even if ‘negative’ or inconclusive (researchers, research institutions, developers)</td>
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<td>Avoid fostering an institutional ‘publish or perish’ culture (research institutions)</td>
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<td>Publish open access when possible (researchers, research institutions, developers)</td>
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<td>Adopt fair prices for open access publication fees (publishers)</td>
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<td>Rigorously ensure compliance with ICMJE requirements, beyond a checklist approach (editors of medical journals)</td>
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<td></td>
<td>Rigorously ensure compliance with COPE core practices, beyond a checklist approach (editors of medical journals)</td>
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<td><strong>Abstracts</strong></td>
<td>Ensure they are rapidly followed by (preprint and) peer-reviewed publication (researchers, research institutions, developers)</td>
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<tr>
<td><strong>Preprints</strong></td>
<td>Ensure they are rapidly followed by peer-reviewed publication (researchers, research institutions, developers)</td>
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<td>Be transparent about lack of submission to peer-review journals or rejection. On peer-review publication, withdraw preprint or add a link to the final publication (researchers, research institutions, developers).</td>
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<td>Present preprints contents as ‘non-confirmed yet’ (researchers, research institutions, developers, mainstream media)</td>
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<td>Develop formal ‘Good Preprint Practices’ (scientific community, editors of medical journals)</td>
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<td>Agree on a non-ambiguous terminology, such as ‘Not peer-reviewed’ or ‘peer-review pending’ (scientific community, editors of medical journals)</td>
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<tr>
<td><strong>Press releases</strong></td>
<td>Ensure accuracy, clarity and completeness of contents (research, research institutions, developers)</td>
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<td>Immediately make key information, for example, protocol, analysis plan and detailed results, publicly available (research, research institutions, developers)</td>
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<td>Critically appraise press release for ethics, science and biases, and afford coverage to further communications accordingly (mainstream social media, journalists, social media actors, opinion leaders)</td>
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<td>Be mindful about personal comments, particularly but not only in social media feeds (researchers, opinion leaders)</td>
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<td>Be cautious about disseminating scientists’ opinions shared on personal social media feeds (mainstream media, journalists, social media actors)</td>
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<tr>
<td><strong>All modalities</strong></td>
<td>Disseminate in a timely, comprehensive, accurate, unbiased, unambiguous and transparent manner (researchers, research institutions, developers)</td>
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<td>Critically appraise all information before commenting, disseminating to secondary audiences or use (opinion leaders, mainstream media, journalists, social media actors, policy-makers in health systems, regulators, clinicians)</td>
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COPE, Committee on Publication Ethics; ICMJE, International Committee of Medical Journal Editors.
EBM analysis

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