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## EDITORIAL

### Reporting guidelines: tools to increase the completeness and transparency of your anesthesiology research paper



### Roteiro para redação de artigos científicos: ferramentas para aumentar a precisão e clareza de artigos de pesquisa em anestesiologia

In an effort to increase research reporting standards in the Brazilian Journal of Anesthesiology (BJAN), the Instructions to authors have been updated by adopting the reporting guidelines available on the EQUATOR (Enhancing the Quality, Transparency Of health Research) Network platform <[www.equator-network.org](http://www.equator-network.org)>. The mandatory use of these reporting guidelines will be effective from the next issue onwards.

The EQUATOR Network is an international initiative that seeks to improve the reliability and value of published health research literature by promoting transparent and accurate reporting and wider use of robust reporting guidelines. The network comprises researchers, medical journal editors, methodologists, and information specialists, reporting guidelines developers, statisticians and many other collaborators. The EQUATOR Network website is hosted by the University of Oxford and currently includes more than 400 reporting guidelines and extensions.

#### What are reporting guidelines?

Reporting guidelines are simple and structured tools for researchers to use while writing manuscripts. Such guidelines are reminders of the minimal information required in a manuscript to ensure understanding by the reader, replication by a researcher, use in clinical practice, and inclusion in a systematic review, guideline or other research study. Reporting guidelines can be a checklist, flow diagram or structured text developed using explicit methodology.<sup>1</sup> They present a clear list of reporting items that must appear in the paper and ideally provide explanation about the rationale and importance of each item, examples of good reporting and details on how the list was developed.

The best-known reporting guidelines are:

- Randomized trials: CONSORT 2010<sup>2</sup>
- Observational studies: STROBE<sup>3</sup>
- Systematic reviews: PRISMA<sup>4</sup>
- Study protocol: SPIRIT<sup>5</sup> and PRISMA - P<sup>6</sup>
- Diagnostic/prognostic studies: STARD<sup>7</sup> and TRIPOD<sup>8</sup>
- Case reports: CARE<sup>9</sup>
- Clinical practice guidelines: AGREE<sup>10</sup> and RIGHT<sup>11</sup>
- Qualitative research: SRQR<sup>12</sup> and COREQ<sup>13</sup>
- Animal pre-clinical studies: ARRIVE<sup>14</sup>
- Quality improvement studies: SQUIRE<sup>15</sup>
- Economic evaluations: CHEERS<sup>16</sup>

#### Why should I use reporting guidelines?

Writing a paper is a product of a long and challenging research project, and should never be left as a secondary task. In fact, the research process is not finished until it is comprehensively and transparently documented. Therefore, good reporting is not an optional extra, but an essential component of good research.

For several activities, including clinical practice, there are guidelines to help professionals to complete their tasks. Using reporting guidelines in the writing process ensures that descriptions of research objectives, methodology and results are more complete and so it is widely encouraged that authors use reporting guidelines when writing up their medical and biomedical research studies for publication.

A paper with the methodology and results documented carefully and comprehensively is extremely important for editors, peer reviewers and readers. Not only is it recommended that journals take further actions regarding implementation of reporting guidelines, but evidence also shows that, for example, published clinical trial reports written up by following such guidelines are more completely reported.<sup>17</sup>

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## Is there any evidence for the use of reporting guidelines?

In 2015, a retrospective analysis of 11 top ranked anesthesiology journals, which evaluated 319 articles describing the results of randomized clinical trials (RCTs) showed that the median adherence to all CONSORT items was 60% (range 22.9–89%). Regarding primary and secondary outcomes, only 72.1% of analyzed papers were clearly defined.<sup>18</sup> Evidence also shows positive effect of PRISMA endorsement on systematic reviews and meta-analysis papers. A study comparing 27 items in the PRISMA checklist before and after journal endorsement in 63 and 80 papers, respectively, showed a significantly statistical difference for completeness, with a standardized mean difference of 0.53 (0.02–1.03).<sup>19</sup>

However, a systematic review of 124 reviews evaluating adherence to the main reporting guidelines found that 87.9% of the studies reported suboptimal adherence. Most of the included reviews assessed adherence to CONSORT (81 reviews), PRISMA (19 reviews) and STROBE (16 reviews) with inadequate adherence (i.e., reviews concluding improvements in reporting needed) observed in 88%, 84% and 88%, respectively.<sup>20</sup> It was shown that adherence to reporting guidelines was associated with better study designs such as quality of randomization process, allocation concealment, and adequate study powering. The authors concluded “endorsement of reporting guidelines by journals is important and recommended.”<sup>20</sup>

Along with the main reporting guidelines, there are a number of extensions to account for the description of specific variations of study designs, research planning aspects or parts of the research methods. For instance, the CONSORT statement has 24 extensions including one for abstracts: CONSORT-A.<sup>21</sup> A recent study analyzed 622 abstracts of seven anesthesia journals and showed a per-article median of 41% of CONSORT-A checklist adherence.<sup>22</sup>

## Why is BJAN adopting reporting guidelines?

Using reporting guidelines should not be perceived as a barrier to submission. Rather, authors should use the reporting guidelines as a guide during the manuscript writing process and not as an afterthought. The Brazilian Journal of Anesthesiology believes that by requesting adherence to reporting guidelines, editors, peer reviewers and readers will benefit from well-written, accurate, complete and structured manuscripts. The use of reporting guidelines will aid editors in effectively judging the methodological robustness of a study, consequently facilitating the process of acceptance or rejection of an article. Peer reviewers will be able to review the article more efficiently and easily, checking the appropriateness of the methods and accuracy of the findings. Finally, readers will be empowered to critically assess the validity of the study findings provided in order to either use it during clinical practice or replicate it in future studies.

Many journals and organizations have already endorsed the main reporting guidelines and the EQUATOR Network platform. These include the Council of Science Editors and the Committee on Publication Ethics (COPE) along with 23 publishers, including the Brazilian Health Ministry and the

Sao Paulo Medical Association, who all endorse and refer to EQUATOR and encourage the use of the provided resources.<sup>23</sup>

The Brazilian Journal of Anesthesiology will provide reporting guidelines checklists and links within the online *Instructions to Authors*. Authors are also encouraged to consult the checklists in the EQUATOR Network website, where they have access to resources (e.g. online courses and the EQUATOR wizard) that help with identifying the correct reporting guideline and relevant extensions to aid the writing of their manuscript. Also, the EQUATOR network, in collaboration with the PAHO (Pan American Health Organization), provides resources in Portuguese at their platform <[www.equator-network.org/library/resources-in-portuguese-recursos-em-portugues/](http://www.equator-network.org/library/resources-in-portuguese-recursos-em-portugues/)>.

It is expected that papers submitted and published in BJAN will present increased completeness and transparency, and it is desired that all researchers, especially from Brazilian anesthesiology, embrace this commitment to aim for higher quality and rigor in scholarly communication in the anesthesiology field.


## Conflicts of interest

The authors declare no conflicts of interest.

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