

# Plagiarism in Medical Publications: Practical Solutions for Maintaining Integrity in the Industry

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## Abstract

### OBJECTIVE

To create a standardized operating procedure to identify and combat plagiarism based on the existing practices of high impact medical and scientific journals, professional publication societies, and established periodicals.

### RESEARCH DESIGN AND METHODS

A comprehensive analysis of plagiarism policies, protocols, and identification methods used by these organizations reveals the best practices of each. This analysis includes the definitions of plagiarism as defined by target publications, measures taken to identify and prevent the practice, and responses to suspicions of impropriety. Organizations searched include ISMPP, AMWA, EMWA, AMA, scientific journal publishers, various universities, News Corp, and the New York Times Company.

### RESULTS

The search reveals significant variability in anti-plagiarism policies in the medical publication industry. Professional organizations, journals, trade publications, and media companies employ individual guidelines to thwart plagiarism. Journals requiring certification from anti-plagiarism software illustrate a shift in the medical publication industry. Similarly, associations representing publication professionals explicitly define plagiarism and their methods to stem the practice.

### CONCLUSIONS

While plagiarism remains a threat to scientific credibility and a serious challenge for medical publications, this examination of industry practices reveals a framework of policies and preventative procedures to check for the theft of original thought. The best practices employed by the organizations analyzed in the present study inform the adherence policies of medical publication firms. In light of these findings, companies should develop a process to ensure the integrity of the publication.

## Background

- Plagiarism is a serious form of scientific misconduct that results from “the failure to attribute words, ideas, or findings to their true authors”<sup>1</sup>
- Specifically, the World Association of Medical Editors (WAME) defines plagiarism as – “...the use of others’ published and unpublished ideas or words...without attribution or permission, and presenting them as new and original rather than derived from an existing source...”<sup>2</sup>
- Das and Panjabi<sup>3</sup> have outlined several types of plagiarism that may occur in medical and scientific publications, which are listed in **Table 1**
- The source of the original work – be it a scientific abstract, unpublished or published manuscript, research thesis, or electronic media – is irrelevant in the determination of plagiarism
- While plagiarism remains an ongoing moral and ethical concern in the medical communications industry, cases of plagiarism in clinical and scientific publications have led to the redaction of scientific research and charges of copyright infringement<sup>4,5</sup>

**Table 1. Common Types of Plagiarism in Medical and Scientific Publications**

Type of Plagiarism	Definition
Direct plagiarism	• Direct (or word-for-word) plagiarism is the most blatant offense, where exact sentences, phrases, or paragraphs are utilized and presented as original thought without acknowledgement
Mosaic plagiarism	• Mosaic plagiarism is the most common form of plagiarism and occurs when the structure and language of the sentence or paragraph is similar to that of the original source • Few words and phrases from the original source document are utilized; however, the original thought and intent is maintained
Plagiarism of ideas	• Plagiarism of ideas is viewed as the most difficult type of plagiarism to detect, as the author may not directly copy words or phrases from the original source, but utilizes the same ideas, thought processes, or conclusions without acknowledgement
Self-plagiarism	• Self-plagiarism occurs when an author cites their own previously published original scientific research without appropriate acknowledgement and permissions from the publisher (eg, scientific journal, textbook, or online website) • Self-plagiarism is the most controversial of all the forms of plagiarism, especially given the complexity of copyright law regarding “intellectual copyright”
Duplicate publication	• All forms of plagiarism should also be appropriately differentiated from duplicate publication, where an author simultaneously submits the same clinical data to different journals without clear indication to the respective editorial committees • The CONSolidated Standards of Reporting Trials (CONSORT) <sup>6</sup> checklist assists in reducing the incidence of duplicate publication

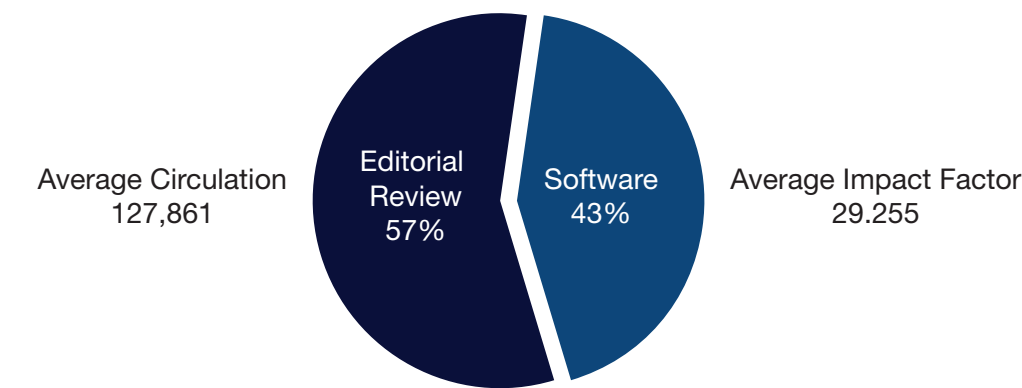
## Purpose

- The medical and editorial teams at The Medicine Group sought to combine current industry standards of issue awareness, editorial review, and cross-referencing software into a company-wide standard operating procedure (SOP) designed to identify and prevent plagiarism in all publication activities
  - The SOP must utilize a multifaceted approach to identify potential cases of plagiarism
  - The SOP must be based on the existing medical and editorial review practices used by academic and clinical research centers, scientific and medical journals, and professional publication societies

## Methodology

- The Medicine Group identified the various policies and procedures related to the identification and prevention of plagiarism in major scientific and clinical journals, publication societies, and commercial news services via interviews, correspondence, and websites
- Although plagiarism is seen as an unacceptable practice by many medical publication societies, including AMWA, EMWA, ISMPP, TIPPA, ICMJE, and WAME, the quantitative standards for defining plagiarism vary significantly among scientific publications<sup>7</sup>
- Although several journals utilize plagiarism identification software to identify suspect passages before publication, the majority rely solely on manual identification through the peer-review process

**Figure 1. Assessment of Review Process from Medical Journals, Publication Societies, and Commercial News Services**



## Results

- In light of these findings, the medical and editorial team at The Medicine Group designed an independent SOP that focuses on raising the awareness of all staff on plagiarism, including its identification and prevention
- In addition, a three-step plagiarism identification process was designed and implemented to be integrated with scientific and editorial review, along with software verification
- This plagiarism identification process is introduced at the initiation of the manuscript development and maintained throughout the project
- This unique approach facilitates the education of all staff members to enhance their ability to recognize and inhibit plagiarism; maintains the integrity of authorship throughout manuscript development; and assures all stakeholders of original content as the manuscript moves from outline through submission

## The Medicine Group’s Procedures

### Employee Education

- All staff members involved in publication planning, manuscript development, and scientific review participate in an online educational test developed by the Indiana University Bloomington School of Education<sup>8</sup>
  - The test examines the employees’ understanding of plagiarism and certifies their ability to identify, and therefore prevent, the potential for plagiarism
  - All new medical and editorial staff members must complete the online assessment as part of their new-hire training

### Step 1: Comprehensive First Draft Review

- During first draft review, the full content of the manuscript (excluding references, acknowledgements, and disclosures) is simultaneously reviewed by The Medicine Group’s editorial staff and submitted to a web-based plagiarism detection software system

- The online software systematically utilizes a wide resource of clinical and scientific documents available through online literature databases, as well as web-based search engines
- Editorial review with a software analysis tool identifies potential plagiarism of sentences, phrases, and complete thoughts outside of cited references, which aids in assessing and confirming the originality of the content
- A combined originality score of greater than 90% must be achieved before a manuscript can undergo further development

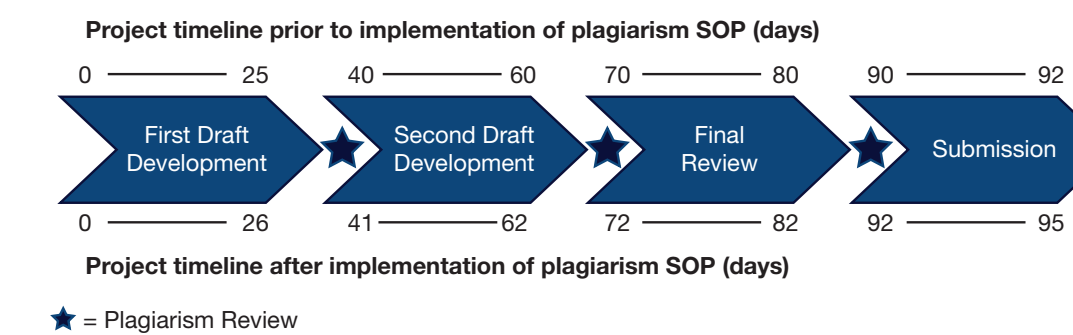
### Step 2: Electronic Second Draft Review

- An electronic review is conducted during second draft development using an e-based document comparison tool, with a subsequent online review for plagiarism conducted if more than 20% of the first draft text has been replaced or added

### Step 3: Comprehensive Final Editorial Review

- Author-approved manuscript copy (excluding references, acknowledgements, and disclosures) is comprehensively examined in a process replicating first draft review: manual review by The Medicine Group’s editorial staff and submission to an online anti-plagiarism software resource
  - A combined originality score of greater than 90% is required before a manuscript is allowed to be submitted

**Figure 2. Timeline of Standard Operating Procedure on Plagiarism**



## Advantages of The Medicine Group’s SOP on Plagiarism

- The Medicine Group’s SOP on plagiarism ensures that industry best practices are met before a document can move to the next stage of development
  - Our three-step approach to authentication of manuscript originality maintains the integrity of the document throughout the development process and assures authors and journals of original content
  - No additional time is added to the overall manuscript development timeline
- Assures clients and authors that any work submitted on their behalf will be original content and properly checked throughout manuscript development
  - Employees are trained to determine what constitutes plagiarism to more easily identify potential instances of impropriety
  - Increases awareness of plagiarism prevention and identification procedures throughout the medical publication industry
  - Utilizes the best practices of journals and publication societies to ensure the integrity of all submitted materials

## Limitations

- Instances of detected plagiarism are subject to further revision by authors and editorial staff
- To implement the procedure successfully, all members of the manuscript development team must adhere strictly, and in good faith, to The Medicine Group’s anti-plagiarism policy

## Conclusions

- Educating staff on how to identify plagiarism allows for a consistent understanding of the practice throughout all aspects of manuscript development
- Simultaneous review by editorial staff and plagiarism detection software is a more effective countermeasure than either procedure independently
- Manuscripts that undergo plagiarism-prevention review after each stage of development will be free of any misrepresentation of authorship and the theft of original ideas

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