

Evaluating Quality in Case Study Writing

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(This article is based on, “Using a Rubric to Evaluate Quality in Case Study Writing,” authored by Edward Chiu and published in *Meridians: The Journal of Acupuncture and Oriental Medicine*, v4, #4)

A case study, also called a case report, is defined as an individual record of the diagnosis and treatment of a single patient by a single physician. Case records have been found in Chinese medical writings dating back to the legendary physician Huatuo in the 3rd century CE.¹ Throughout Chinese history, their structure has varied greatly. In the early 20th century it shifted from a “notebook” format, which was more similar to a published chart note, to a “didactic” type of case study, which was used to explain why a particular treatment course was chosen.

During the past several centuries, large numbers of case studies by Chinese medical doctors have been published. They are regarded as an important aspect of scholarly work in Chinese medicine.² Case studies have been written to not only illustrate successful treatment of difficult diseases but also to guide a reader through the thought process of Chinese medicine by demonstrating practical application of theory to achieve an effective result. A small number of modern case studies in Chinese medicine have also described situations where treatment has not necessarily been successful, but the case is instructive nevertheless (e.g., cautions and contraindications).

Biomedical case studies have generally been used to build hypotheses or to highlight unusual aspects of patient care.³ In 1972, a publication entitled *The American National Standard for the Preparation of Scientific Papers for Oral or Written Presentation* established a specific format known as IMRaD (Introduction, Methods, Results, and Discussion).⁴ This convention was widely accepted by biomedical journals for research articles, and the format has been adopted for case study writing.

In modern journals, an abstract, conclusion, and reference sections are often included. The content within each section of a quality case study must be detailed, concise, and flow logically. With these ideals in mind, the evaluation of a complex narrative report can be somewhat subjective. What constitutes “quality” is not well-defined.⁵ While checklists, such as the [CARE Case Report Guidelines](#), can ascertain all sections are included,⁶ we must ask, “How do we rigorously evaluate the quality of a case study?”

The OCOM Case Study Rubric has 12 separate elements, each of which delineates specific expectations. A number of these elements are associated with specific sections within the format of the case study (e.g., Element 10: evaluating the quality of the Discussion section). Some elements consider more global aspects (e.g., Element 12: evaluating the use of references throughout the paper).

The following is a summary of the rubric elements, describing the aspects an instructor or reviewer would consider in evaluating the quality of a case study.

Element 1 - OVERALL APPEARANCE AND WRITING QUALITY

The document looks professional, as indicated by: well-organized sections with clearly labeled headings, and proper formatting. The text is well written as indicated by: consistent professional tone and absence of significant spelling and grammatical mistakes. The text flows well and concepts are presented in a logical manner.

When preparing a case study to submit to a professional journal, it is advisable to read case study papers previously published in that journal. Before submitting a manuscript to a journal, it is essential to consult and comply with their Instructions for Authors, also called Author Guidelines.

Element 2 - TITLE AND LANGUAGE

The case study has an informative title, which is concise and accurately reflects the contents. Relevant and appropriate medical vocabulary and terminology are used. A complete title should include at least three items: the condition, the treatment modality, and the words “case study” or “case report.” These three items are often sufficient.

Biomedical terminology should be used appropriately. Any acronyms or abbreviations should be spelled out in parentheses the first time they appear in the text. Chinese medical terminology, if used improperly, can cause confusion or misinterpretation. A good reference for accepted definitions is Wiseman’s *A Practical Dictionary of Chinese Medicine*.¹⁰ Chinese medicine terms should be capitalized if the same word exists as a biomedical term. For example, names of meridians and Chinese medicine organs (e.g. Kidney, Liver, and Heart,) are capitalized to alert the reader and to prevent incorrect correlations between biomedicine and Chinese medicine that would lead to imprecise thought and practice. All words in Chinese pinyin should be italicized. More detail about these preferences are in the journal’s Instructions for Authors.

Each professional journal has its own conventions. A copy editor will help in the final revision stages if there is any question concerning capitalization or italicizing of specific terms. The wording of the title is especially important in publication; if the title does not accurately reflect the article’s contents, a search might overlook the article in its results, thus negating the author’s efforts.⁹

Element 3 - ABSTRACT

A concise abstract is included, which adequately summarizes the overall contents of the document and includes appropriate information in the Background, Case Description, Results, and Discussion/Conclusion. *No references* are used in the abstract.

There are two types of abstracts: structured abstracts include subheadings; descriptive abstracts are written as a narrative paragraph. Either style of abstract should summarize information covered in the case background, description, results, and discussion sections. The rationale for writing the case study is the reasoning behind why this case is worthwhile reading. Abstracts should be concise yet complete, generally ranging between 150 and 250 words.¹¹ The abstract should include enough information (including background, case description, results, and discussion points) for the reader to decide

whether or not to read the full article. The preferred word count of the abstract should be indicated in the instructions for authors.

Element 4 – INTRODUCTION – BIOMEDICAL

A biomedical introduction section establishes a context for the case through an appropriate review of biomedical journal articles, texts and other research information. This introduction should include biomedical information on the condition being discussed in the case, including typical signs and symptoms, biomedical diagnosis, demographics, etiology and pathogenesis, and treatment options.

The biomedical introduction section is a review of the condition being discussed in the case study. This is especially useful if the condition is rare but can also be helpful if the condition is fairly common. Establishing a biomedical context will make the reader aware of the range of severity and the variety of symptoms experienced by patients with this condition. When the individual patient is discussed in later sections of the case study, the reader will have an idea as to how the individual patient's experience fits within this range.

Element 5 – INTRODUCTION – ACUPUNCTURE AND ORIENTAL MEDICINE (AOM)

An AOM introduction section establishes a context through an appropriate review of relevant journal articles, texts and other research information. Biomedical efficacy research should be reviewed for the condition, and articles from AOM journals with advanced information on the subject should be included where appropriate.

The AOM introduction section can take a variety of forms, depending on the case. For an academic paper, this section should review the AOM perspective on the condition discussed in the case, including differential diagnosis, etiology and pathogenesis, and treatment options. For a traditional Chinese medicine (TCM) case, the writer needs to identify the relevant AOM disease categories (*bian bing*). A chart may be included that indicates likely patterns (*bian zheng*), typical signs and symptoms, and sample treatment points or traditional Chinese herbal formulas to outline the basic approach. For a non-TCM case, including some basic concepts about any non-TCM approach (e.g., Five Element or Japanese styles) applied in the case can greatly enhance the case for an uninitiated reader.

A review of biomedical research is also appropriate here. Systematic research reviews are good sources which can be used to determine our current understanding of efficacy. If relevant to the case, individual studies can be briefly mentioned by including basic details.

Element 6 - CASE DESCRIPTION - CASE HISTORY

The document includes a thorough narrative presentation of the patient's case history, including full details of the chief complaint, relevant past and present biomedical history, and AOM diagnostic information.

The case description is divided into four sections: case history, diagnostic assessment, treatment, and results. This section should be written in past tense and third person format. Accuracy and good reporting in the case description will offer a baseline to compare outcomes later stated in the paper.

The case history section includes the patient's gender and age and full details about the chief complaint. The patient's chief complaint should be described by including information about the severity, specific symptoms experienced, and circumstances and time

of onset. Relevant lab results and radiologic studies should be summarized along with any biomedical diagnosis made by an allopathic practitioner. This should be followed by a review of systems or a “10 questions” section where additional information relevant to the patient’s AOM diagnosis is provided. Other pertinent observations should be noted, including pulse, tongue, and palpatory findings.

A biomedical journal might reduce or omit the AOM diagnostic information, including pulse, tongue, and palpatory findings, depending on the knowledge base of the readership. Excluding this information may oversimplify the diagnosis and thereby make the case report less useful to an AOM practitioner.

Element 7 - CASE DESCRIPTION - DIAGNOSTIC ASSESSMENT

A full assessment of the patient's AOM diagnostic status is provided, including differential diagnosis, disease categories, pathogenesis and etiology, patterns and differentiations, as appropriate. Justification for the diagnosis and pattern differentiation is required (symptoms, signs, pulse, tongue, other information that supports the diagnosis).

The presentation of the diagnostic assessment depends upon the style of acupuncture being performed. In a TCM acupuncture and/or Chinese herbal medicine case, the diagnosis should include disease diagnosis (*bian bing*) and pattern differentiation (*bian zheng*). Examples of disease diagnosis include headache (*tou tong*), low back pain (*yao tong*), and atrophy syndrome (*wei zheng*); examples of pattern differentiation include Heart Blood deficiency, Liver fire, and Phlegm obstructing the Lung. If the case involves another style of acupuncture with a diagnosis that is not conventional to TCM, this diagnosis is acceptable as long as it is explained. For example, in Kiiko Matsumoto acupuncture, diagnoses depend on palpatory findings, and include concepts like *Oketsu* (similar to Blood stasis), *Shaoyang* pattern, and Immune imbalance. In Japanese meridian therapy, a pulse pattern would determine a specific *sho* confirmation. Each of these is appropriate determination of diagnosis.

Every diagnosis requires a rationale (a set of signs and symptoms) to support it. For example, if the patient is diagnosed with Heart Blood deficiency, a list of signs and symptoms in the patient which support that diagnosis should immediately follow. A diagnosis of *Oketsu* requires the explanation that the patient exhibited sensitivity/and or hardness on palpation at left ST 25-27 area. A *sho* conformation requires a matching description of the patient’s pulse. A case study models the practice of medicine, and understanding the diagnosis is essential to this process.

Element 8 - DESCRIPTION - TREATMENT

State the treatment principles and describe the treatment. Include details on acupuncture point combinations and/or herbal formulas, specific needling techniques, herb dosages and methods of preparation, and justifications for their use based on your diagnosis. Include information on the case management—treatment frequency, length of treatment, adjunctive therapies (diet, exercise, etc.). Include a discussion of long-term case management and treatment strategies when appropriate. For cases with multiple treatments, treatments may be appropriately summarized.

Treatment principles and goals should follow logically from the AOM diagnosis. All treatment details should be provided and follow STRICTA guidelines.¹² This section should be written such that a reader would be able to repeat the exact same procedure if presented

with an identical patient. The treatment choices (acupuncture points and herbal choices) should be justified.

For a case study involving multiple treatments, writing out each treatment individually can be laborious and may result in a section that is wordy and cumbersome. If all treatments are exactly the same, it is only necessary to describe one treatment and how many times that the treatment was repeated. If the treatments in the case are similar, it is acceptable to write a sample treatment and then describe the variations and in what circumstances they were applied.

Another common situation involves a treatment plan that occurs in multiple stages, where one approach proves unsuccessful and then the treatment goals are shifted and results are improved. In some cases, perhaps one approach is used to clear the first level of pathology, and then a second approach can be used to completely resolve the complex pattern. The treatments in these two situations may be described in phases. The goal of this section is to present treatment details thoroughly but in a concise way that is easy to understand.

Element 9 - CASE DESCRIPTION - OUTCOMES AND PROGNOSIS

Describe outcomes of treatment, including signs, symptoms and tests that indicate progress (or lack of it). Include the patient's prognosis and discuss possible circumstances when additional AOM treatment may be recommended to maintain the patient's health.

The results section should provide specific details on the patient's response to treatment. Lab tests, radiology reports, range of motion measurements, and de-identified photographs of dermatological conditions may be included here. If the results can be quantified, the case study may be more compelling. For example, reporting that a knee pain patient "felt improvement" is not as useful as reporting that the patient was able to walk 30 minutes after a series of treatments, compared to only 5 minutes of walking before pain onset when treatment first began. For headaches, the frequency of headaches, duration of episodes, and amount of medication taken are measurable indicators of the severity of the condition and the level of improvement. Limited subjective data may also be included.

Element 10 – DISCUSSION

Discuss your observations and the results in the case, summarizing the practical and theoretical points. Discuss how the case relates to the purpose described in the introduction. Propose recommendations for clinical practice, case management, and/or further research based on this case.

The discussion section includes a brief summary, which elaborates on important observations and recommendations for education, practice, and/or research. These may include considering specific techniques or formulas for similar patients, suggesting alternate interpretations of classical theory which are supported in the case, encouraging readers to pay attention to specific areas of diagnosis, or advising caution with particular acupuncture points or herbs. It may be worthwhile to discuss other treatment variables here because a case study can suggest a connection between treatment and results but cannot establish a clear cause and effect relationship. All recommendations should be supported by the case described in the paper.

Publication often depends on the points of significance discussed in this section. While a novel treatment approach for a common problem might be grounds for consideration, the background behind the approach may be useful discussion to inform

clinical practice and research. For clinical practice, it may be useful to include suggestions as to how a reader might think about approaching a similar patient. For research, examining logical gaps in the current research literature and making judicious suggestions for improving research methodology can help to further the field.

Element 11 -CONCLUSION

A concise conclusion summarizes the practical and theoretical points of the case.

A conclusion section should be very brief. It should contain just one or two paragraphs, summarizing the case and its significance.

Element 12 -RESEARCH/REFERENCES

Multiple sources are cited (not just basic texts), including published journal articles. Citations are in proper format according to the journal's author instructions.

All references should be *only* from scholarly sources. Relevant biomedical database searches should be done; biomedical material should come from current sources intended for a professional audience. Information from websites written for the layperson (e.g., webmd.com, mayoclinic.org) is *not* acceptable. Recent editions of specialist textbooks and biomedical journal article are acceptable resources as well as systematic literature reviews which provide current practice guidelines.

For the academic paper, general AOM textbooks are acceptable but specialist textbooks are preferable. AOM journal articles may not be searchable in standard biomedical databases, but searching archives of AOM journals may turn up useful material. Each statement taken from source material should be cited. Formatting style of references should be followed precisely, according to the journal's instructions for authors.

An author preparing a case study manuscript for publication can use the full version of this rubric to assess his or her own work before submitting it to a journal. A journal editor assessing a case study submission might weigh certain sections of the rubric more heavily in informing a decision to reject a manuscript or to recommend it for the peer review process.

If a case study which seems to follow standard textbook TCM principles but lacks significant reflections or novel ideas in the discussion, it may be more likely to be rejected outright because editors may prefer material that goes beyond standard textbook knowledge. In all of these situations, an editor can provide written feedback on each element to improve a writer's future work and make sure that all points are addressed.

Finally, while this rubric was designed as an objective measurement tool, any rubric cannot fully appraise the value of a particular case study. Each journal reader may take different views on strengths, weaknesses, and importance of a given paper⁵ depending on his or her own knowledge, skills, and practice situation.

The rubric elements were developed by the Oregon College of Oriental Medicine doctoral faculty for over 10 years. Faculty members who have made significant contributions include Elizabeth Burch, Zhaoxue Lu, Bob Quinn, Lee Hullender-Rubin, Henry McCann, and myself. Please contact echiu@ocom.edu with any comments or suggestions for changes.

References

1. Cullen C. *Yi'an* (case statements): The origins of a genre of Chinese medical literature. In: Hsu E, ed. *Innovations in Chinese medicine*. Cambridge: Cambridge University Press, 2001: 297-323.
2. Andrews BA. From case records to case histories: The modernization of a Chinese medical genre, 1912-49. In: Hsu E, ed. *Innovations in Chinese medicine*. Cambridge: Cambridge University Press, 2001: 324-336.
3. Jenicek M. *Clinical case reporting in evidence-based medicine*, 2nd ed. New York: Arnold Publishers, 2001.
4. Day RA. The origins of the scientific paper: The IMRAD format. *American Medical Writers Association Journal*. 1989; 4(2):16-18.
5. Smith R. Peer review: A flawed process at the heart of science and journals. *J R Soc Med*. 2006 Apr; 99(4):178–182.
6. Gagnier JJ, Kienle G, Altman DG, et al. The CARE guidelines: Consensus based clinical reporting guideline development. *Global Advances in Health and Medicine*, 2013; 2(5):1-6.
7. Stevens DD and Levi AJ. *Introduction to rubrics: An assessment tool to save grading time, convey effective feedback, and promote student learning*. Sterling, VA: Stylus publishing, 2005.
8. Arter J, McTighe J. *Scoring rubrics in the classroom: Using performance criteria for assessing and improving student performance*. Thousand Oaks, CA: Corwin Press, Inc. 2001.
9. Lang TA. *How to write, publish and present in the health sciences: A guide for clinicians and laboratory researchers*. Philadelphia: ACP Press, 2010.
10. Wiseman N, Feng Y. *A practical dictionary of Chinese medicine*, 2nd ed. Brookline MA: Paradigm Publications, 1994.
11. Vinjamury, SP. How to write a case report. *The American Acupuncturist*, 2012 (59); 25-30.
12. Macpherson H, White A, Cummings M et al. Standards for reporting interventions in controlled trials of acupuncture: The STRICTA recommendations. *Acupuncture in Medicine*: 2002; 20(1):22-25.