

CASE REPORTS: TERMINOLOGY AND PHRASING

Case reports are brief papers that typically describe the condition, diagnosis, treatment, outcome, and follow-up of one or few patients. Depending on the journal, a report may be deemed publishable based on novelty, rarity, clinical relevance, and/or educational value. Common topics include new diagnostics or therapeutics, rare or newfound diseases or presentations, unexpected adverse effects or outcomes, and fresh perspectives on disease pathogenesis.

Although the format of case reports is carefully outlined by many clinical journals (see final section), the proper use of certain terminology in these papers, including unique clinical phrasing, may not be clear without extensive reading and writing experience. In particular, terms that would be considered grammatically incorrect or awkwardly phrased in other forms of writing, such as

newspaper articles, may be completely acceptable in a case report. Below, we outline four categories of terminology and phrasing that are specific to case reports and potentially relevant to other clinical writing as well: commonly confused terms, frequently misused terms, unique terms, and preferred phrasing.

COMMONLY CONFUSED TERMS

These pairs of terms are often used interchangeably but are not equivalent.

Case/patient: A *case* is an occurrence of a clinical condition (“A case of Parkinson’s disease is presented”), whereas a *patient* is an individual with a specific condition (“A patient with Parkinson’s disease visited our clinic” and not “A case of Parkinson’s disease visited our clinic”). Note that a case is *presented*, and a patient is *described*.

Dose/dosage: *Dose* refers to the amount of medication administered at one time point (“A 325 mg dose of aspirin was administered every 4 hours”), whereas *dosage* describes both the amount and the rate of administration (“The dosage was 325 mg of aspirin every 4 hours”).

Survival period/rate: *Survival period* refers to the duration of patient survival, expressed in units of time (such as weeks or month). In contrast, *survival rate* refers to a percentage value that describes the proportion of patients surviving. Either term can be expressed simply as *survival*, as in “the overall survival of the patient was....”

FREQUENTLY MISUSED TERMS.

In many of these cases, an incorrect preposition is used or a preposition is omitted. Correct phrasing, even if contingent on a single preposition, helps to

increase the readability and clarity of all writing, including case reports.

Correlated/associated: The terms *correlated* and *associated* are typically followed by the preposition *with* instead of *to*.

Diagnosed/classified: A patient cannot be *diagnosed* as a condition but can be *diagnosed as having* or *diagnosed with* a condition. Similarly, a patient cannot be *classified* as a disease; *classified as having* is the correct usage.

Indication/indicated: A specific medical condition is an *indication for* or *indicates* the use of a specific therapy (“Bacterial infection is an indication for an antibiotic

use”), and the therapy itself is *indicated* for the treatment of a condition (“Antibiotics are indicated for the treatment of bacterial infection”). Moreover, a symptom is an *indication of* a condition (“Inflammation is one indication of bacterial infection”). This final usage is based on the more common definition of *indicate*.

Operated: A patient is always *operated on* rather than *operated*.

Predictor/indicator: *Predictor* and *indicator* should be followed by the preposition *of* instead of *for*.

Risk/risk factor: *Risk* should be follow by *of*, and *risk factor* should be followed by *for*.

UNIQUE TERMS

Certain terms and phrases are essentially exclusive to clinical writing and may even be deemed incorrect in other contexts.

Attended by: A patient can be *attended by* a doctor or nurse. This usage may be unfamiliar because the term is regularly used outside of case reports to describe participation, such as in an event (“The anatomy lecture was attended by first-year medical students”).

Clinical picture: This phrase describes the sum of the clinical characteristics associated with a specific patient or condition (“Here, we describe the clinical picture of pollen allergy in adolescents”).

Experience: This term is used to describe medical professionals’ previous encounters with a condition, a method, or patients with a condition. *Experience* may be followed by the preposition *in* or *with*, although *in* is slightly more common when describing patient-related

experience. For example:

- “In this case report, we describe our experience with diabetes.”
- “...with a new glucose assessment technique.”
- “...in 40 patients with diabetes.”

Followed/follow-up: When the clinical course of a patient is monitored, particularly after treatment, the patient is said to be *followed* or *followed up*. If monitoring cannot be continued due to patient noncompliance or disappearance, the patient is *lost to follow-up*. Note that *follow-up* is acceptable on its own as a noun, although the phrase *follow-up period* is also acceptable.

Implanted/transplanted with: These terms may seem awkward but are commonly found in clinical papers. For example, if a device was implanted into a patient, the patient may be described as having been *implanted with* the device. Similarly, a patient who received an organ transplant may be said to have been *transplanted with* the organ.

On+method: Although they may sound grammatically incorrect, terms such as “on physical examination” and “on MRI” (“Evidence of a growth was found on MRI”) are conventional in case reports.

Operated: A patient who was *operated on*, as detailed above, can be described as an *operated* patient. Similarly, a control can be described as a *non-operated* patient.

Past/current history: Although the term *past history* sounds redundant and the term *current history* appears

contradictory, this phrasing is customarily used in case reports to describe a patient’s past and present conditions, respectively.

Phase X study in/of: When detailing a clinical trial focusing on a specific disease or patient group, *study in* is the norm, whereas *study of* typically precedes the name of the treatment being tested or the outcome being explored. For example,

- Phase II study in breast cancer
- Phase II study in breast cancer patients
- Phase II study of a novel anticancer drug
- Phase II study of the anticancer effects of a novel drug

PREFERRED PHRASING

In the instances outlined below, specific phrasing can significantly improve the clarity of case reports.

He/she: When a single patient is being described in a case report, it is common to write “he” or “she” after initially introducing the patient. However, the use of vague pronouns may be confusing to the reader, as in these examples:

- The patient was a 55-year-old female with a history of fainting. The attending physician performed a physical examination and ordered laboratory testing. She had high levels of blood glucose and hypercholesterolemia.
- The patient was a 55-year-old female with a history of fainting. A physical examination and laboratory testing were performed at admission. Blood screening revealed hypercholesterolemia. High levels of blood glucose were also noted. She was admitted to our department for further testing.

In the first case, although it may be inferred that “She” refers to the patient rather than to the doctor, “The patient” would be preferable for clarity. In the second example, the several-sentence separation between the description of the patient and the pronoun “She” may be disorienting. Again, “The patient” may be a better option. Remember that your reader (whether an editor or a fellow researcher) may be distracted or inattentive, so try to reduce ambiguity wherever possible.

Doses/dosages: Doses and dosages may be placed before or after a drug name, but either format should be applied consistently, as in “100 mg/kg/day ampicillin and 50 mg/kg/day penicillin were studied” or “ampicillin 100 mg/kg/day and penicillin 50 mg/kg/day were studied.”

Clinical testing: Authors will sometimes list clinical tests and results using sentence fragments, as might be done in a patient’s medical chart. However, narrative form may be more comprehensible, especially when read by a researcher in a different field:

- Laboratory testing. Cholesterol levels high, 300 mg/dL. Other tests negative. (*Less clear*)
- Laboratory testing was performed. The patient’s cholesterol levels were high (300 mg/dL). All other tests yielded negative results. (*More clear*)

Levels: Professional editors will often add the word *level(s)* or *concentration* to enhance the clarity of biomedical writing:

- The patient’s hemoglobin was normal. (*Less clear*)
- The patient’s hemoglobin levels were normal. (*More clear*)

In the first example, although “levels” is implied and the phrasing is common, the sentence suggests that the protein itself was normal (e.g., no mutations), rather than its concentration. Adding “levels” in the second examples thus improves the accuracy of the statement.

JOURNALS ACCEPTING CASE REPORTS.

Over the past decade or so, many medical journals have stopped accepting case reports. However, several journals with a focus on case reports have been launched. A few such journals are listed here:

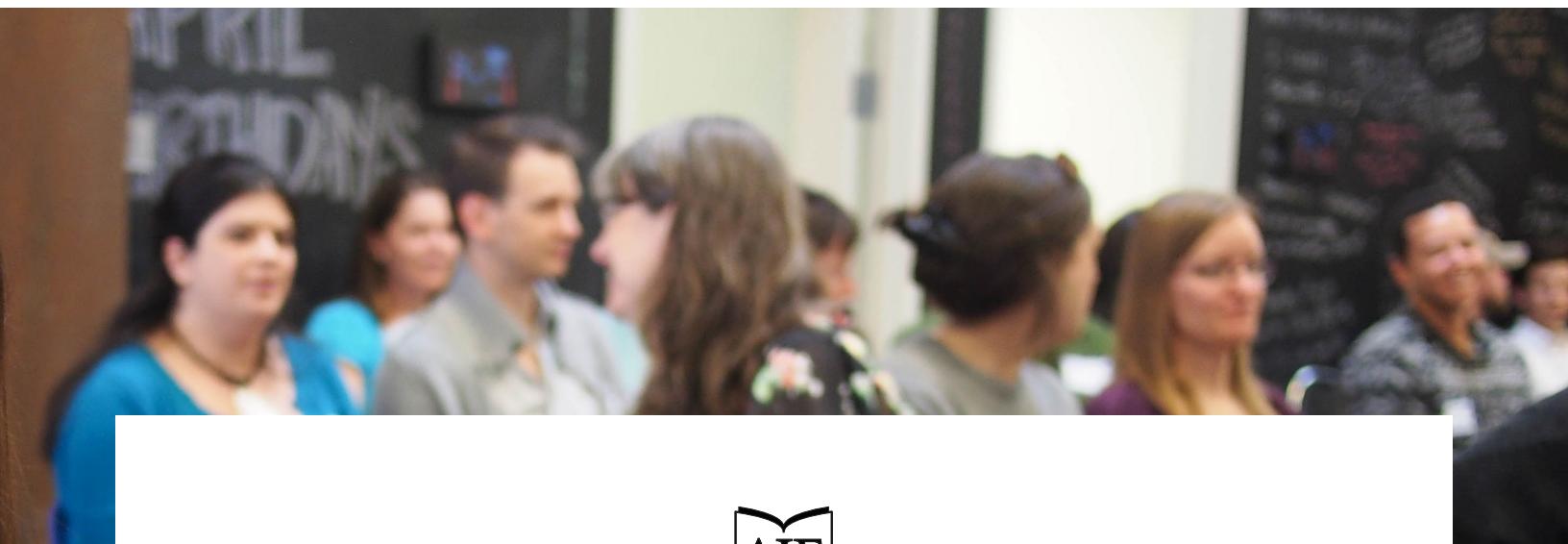
- *BMC Public Health* (<http://www.biomedcentral.com/bmcpublichealth/>)
- *BMJ Case Reports* (<http://casereports.bmj.com>)
- *Case Reports in Medicine* (<http://www.hindawi.com/crim/medicine/>)
- *Clinical Case Reports* ([http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)2050-0904](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2050-0904))
- *International Journal of Surgery Case Reports* (<http://www.journals.elsevier.com/international-journal-of-surgery-case-reports/>)
- *Journal of Medical Case Reports* (<http://www.jmedicalcasereports.com/>)

**WE HOPE THAT THIS LIST OF TERMS AND PHRASING IN CASE REPORTS HAS PROVIDED
HELPFUL GUIDANCE FOR YOUR CLINICAL WRITING. PLEASE CONTACT US AT
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IN CLINICAL PAPERS.**



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Dr. Panter is an In-House Editor at AJE and has been editing for the company since 2008. She graduated from Yale University with a BS and MS in Biomedical Engineering and a PhD in Immunobiology. Her dissertation focused on antigen presentation in human cells. Dr. Panter has also served as Editor-in-Chief of the *Yale Journal of Biology and Medicine* and as a writing advisor for graduate students in the sciences.



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