# Why publish on *Case Report in Emergency Surgery and Trauma* (CREST)?

Luca Ansaloni,[1] Fausto Catena,[2] Paola Fugazzola,[3] Brian Tian[4]

[1]Fondazione IRCCS Policlinico San Matteo, Università degli Studi di Pavia, Italy; [2]Bufalini Hospital, Cesena, Italy; [3]Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; [4]Singapore General Hospital, Singapore

## Why still case reports?

In medicine and surgery, a case report (CR) is a comprehensive or intensive analysis of a single individual or particular group, while a case series is an association of similar CRs. A CR includes an exhaustive narrative report of the symptoms, signs, diagnosis, treatment and follow-up of a patient. CRs usually describe an unusual or novel occurrence or disease and sometimes contain a literature review of other reported cases. CRs can also be professional accounts that provide feedback on clinical practice guidelines and offer a framework for early signals of effectiveness, adverse events, and costs. They can be shared for medical, scientific, or educational purposes. CRs are always peer-reviewed, like other scientific journal article types.

## Types of case reports

Most CRs are among the following seven matters:[1] i) atypical or rare features of a disease; ii) findings which shed new light on the possible pathogenesis of a disease or an adverse effect; iii) an unexpected association between diseases or symptoms; iv) an unexpected event while observing or treating a patient; v) unique therapeutic approaches; vi) a positional or quantitative variation of the anatomical structures; vii) an emerging disease or condition.

## Roles in research and education

A CR is generally considered a type of anecdotal and, for this reason, an unreliable evidence.[2,3] Given their methodological restrictions, including the absence of statistical sampling, CRs are positioned at the lowermost of the pyramid of clinical evidence, together with case series.[4] Nonetheless, CRs have and have had, valuable roles in medical research and evidence-based medicine.[5] The 17% of CRs and the 33% of case series published by Lancet in 1996-1997 were followed by clinical trials.[6] In particular, they have helped the discovery of new illnesses and adverse effects of drugs and treatments (Table 1). A CR promoted the link between the administration of thalidomide to mothers and malformations in their babies.[7] Meanwhile, Burkitt D. first described Burkitt lymphoma in Uganda in 1958: he initially thought it was a rare sarcoma of the jaw, but shortly physicians identified it as a distinct form of non-hodgkin lymphoma.[8] CRs have an essential part in pharmacovigilance. They can also support recognizing the clinical presentation of rare diseases as well as uncommon appearances of common disorders. CRs are commonly used in psychology to give an overview of unusual conditions. They can produce hypotheses for new studies, including possible mechanisms of disease. CRs may, furthermore, play a role in managing the personalization of treatments in clinical practice.[9-12]

Advocates of CRs have defined some particular benefits of this study design. CRs and case series show an extraordinary sensitivity for identifying originality and, therefore, they remain one of the origins of medical progress, providing many new ideas in medicine. While randomized clinical trials only check one variable or very few aspects of a disease/treatment, rarely reproducing the full representation of a complicated medical condition, CRs can detail many different aspects of the patient's medical situation (*e.g.* patient history, physical examination, diagnosis, psychosocial aspects, follow up).[13-15] Furthermore, because typical, unexceptional cases are less expected to be published, the use of CRs as scientific evidence must consider publication bias. Some CRs contain a broad review of the related literature (and often a systematic review of available evidence). Reports implementing this approach can be recognized by terms such as "case report and review of the literature". CRs can moreover play a pertinent role in medical education and knowledge translation, providing a chance for case-based learning. A specific attraction of CRs is the opportunity for fast publication (compared to more widespread studies such as randomized control trials), allowing them to act as a kind of quick short communication among busy clinicians who may not have the time or resources to conduct large scale research.[16]

Correspondence: Paola Fugazzola, Fondazione IRCCS Policlinico San Matteo, Viale Camillo Golgi 19, 27100 Pavia, Italy
E-mail: paola.fugazzola@gmail.com

Key words: editorial, case report, emergency medicine.

Received: 5 June 2023.
Accepted: 5 June 2023.


*Case Reports in Emergency Surgery and Trauma 2023; 1:18*
*doi:10.4081/crest.2023.18*

## CARE: case report reporting guidelines

The quality of the scientific reporting of CRs is inconstant, and suboptimal reporting is frequent. In response to these issues, an international group of experts developed guidelines to enable transparency and extensiveness in the provision of relevant information for individual cases. The CARE (*i.e.,* CAse REport) guidelines contain a reporting checklist (Figure 1) that is listed on the EQUATOR Network,[17] an international initiative aimed at promoting transparent and accurate reporting to enhance the value and reliability of medical research literature. This 13-item

**Table 1.** Famous scientific case reports.

| Famous scientific case reports |
|---|
| Sigmund Freud reported on numerous cases, including Anna O., Dora, Little Hans, Rat Man, and Wolf Man |
| Frederick Treves reported on "The Elephant Man" |
| Paul Broca reported on language impairment following left hemisphere lesions in the 1860s |
| Joseph Jules Dejerine reported on a case of pure alexia |
| William MacIntyre reported on a case of multiple myeloma (described in the 1840s) |
| Christiaan Barnard described the world's first heart transplant as a case report |
| W.G. McBride in a case report first showed the link between thalidomide and malformations in babies (1961) |
| John Martin reported the case study on Phineas Gage, the man who changed personality after having a railway spike through his head |
| The Morbidity and Mortality Weekly Report (MMWR) number of June 5th 1981 published the first case series of Pneumocystis Pneumonia |
| James Parkinson reported a case report, which lead to the discovery of Parkinson's disease |
| Case reports first linked fenfluramine and dexfenfluramine with primary pulmonary hypertension, which finally lead to their withdrawal from the market |
| A case series first reported dramatic resolution of symptoms of *Escherichia coli*-associated hemolytic-uremic syndrome after treatment with the monoclonal antibody Eculizumab |
| Burkitt D. first described Burkitt lymphoma in Uganda in a case report in 1958 |

CARE case report guidelines

**CARE Checklist of information to include when writing a case report**

| Topic | Item | Checklist item description | Reported on Line |
|---|---|---|---|
| Title | 1 | The diagnosis or intervention of primary focus followed by the words "case report" | |
| Key Words | 2 | 2 to 5 key words that identify diagnoses or interventions in this case report, including "case report" | |
| Abstract (no references) | 3a | Introduction: What is unique about this case and what does it add to the scientific literature? | |
| | 3b | Main symptoms and/or important clinical findings | |
| | 3c | The main diagnoses, therapeutic interventions, and outcomes | |
| | 3d | Conclusion—What is the main "take-away" lesson(s) from this case? | |
| Introduction | 4 | One or two paragraphs summarizing why this case is unique (**may include references**) | |
| Patient Information | 5a | De-identified patient specific information. | |
| | 5b | Primary concerns and symptoms of the patient. | |
| | 5c | Medical, family, and psycho-social history including relevant genetic information | |
| | 5d | Relevant past interventions with outcomes | |
| Clinical Findings | 6 | Describe significant physical examination (PE) and important clinical findings. | |
| Timeline | 7 | Historical and current information from this episode of care organized as a timeline | |
| Diagnostic Assessment | 8a | Diagnostic testing (such as PE, laboratory testing, imaging, surveys). | |
| | 8b | Diagnostic challenges (such as access to testing, financial, or cultural) | |
| | 8c | Diagnosis (including other diagnoses considered) | |
| | 8d | Prognosis (such as staging in oncology) where applicable | |
| Therapeutic Intervention | 9a | Types of therapeutic intervention (such as pharmacologic, surgical, preventive, self-care) | |
| | 9b | Administration of therapeutic intervention (such as dosage, strength, duration) | |
| | 9c | Changes in therapeutic intervention (with rationale) | |
| Follow-up and Outcomes | 10a | Clinician and patient-assessed outcomes (if available) | |
| | 10b | Important follow-up diagnostic and other test results | |
| | 10c | Intervention adherence and tolerability (How was this assessed?) | |
| | 10d | Adverse and unanticipated events | |
| Discussion | 11a | A scientific discussion of the strengths AND limitations associated with this case report | |
| | 11b | Discussion of the relevant medical literature **with references**. | |
| | 11c | The scientific rationale for any conclusions (including assessment of possible causes) | |
| | 11d | The primary "take-away" lessons of this case report (without references) in a one paragraph conclusion | |
| Patient Perspective | 12 | The patient should share their perspective in one to two paragraphs on the treatment(s) they received | |
| Informed Consent | 13 | Did the patient give informed consent? Please provide if requested | Yes ☐ No ☐ |

**Figure 1.** The CARE checklist. Available from: https://www.care-statement.org/checklist

checklist includes indications regarding title, keywords, abstract, introduction, patient information, clinical findings, timeline, diagnostic assessment, therapeutic interventions, follow-up and outcomes, discussion, patient perspective and informed consent. Furthermore, the CARE steering group developed a flow diagram[18] summarizing how a clinician should collect data on the patient or fill in a chart review adhering to the CARE guidelines. The Journal of Clinical Epidemiology in 2017 published a manual for writing CRs following the CARE guidelines.[19-25]

Moreover, the Scientific Writing in Health and Medicine (SWIHM) created an online application (CARE-writer) [26] to help authors to organize and format the information necessary to write systematic and transparent CRs following the CARE guidelines.

## Publishing

Numerous international journals publish CRs, but they limit their number because they negatively affect the journal's impact factor. Nevertheless, CRs have already been often published online and a growing number of journals, most of them open-access, publish only CRs. The first was, in 2001, Grand Rounds.[27-29]

## Why CREST (Case Reports in Emergency Surgery and Trauma)?

Acute Care Surgery & Trauma (ACS&T) is a quite recently developed field of surgery that has taken the principles of trauma care (organized teams, evidence-based processes and procedures, and continuous quality improvement) and applied them to patients with other urgent, time-sensitive surgical conditions.[30] Many of the above considerations are valid for the area concerning ACS&T. This field makes it very difficult to produce evidence of the highest levels,[31] so CRs can be very useful, but they are often difficult to publish.

## References

1. Volkland D, Iles RL. Guidebook to better medical writing. Washington, DC: Island Press. 1997.
2. Elston DM, Sloan B. Case reports and anecdotal evidence. J Am Acad Dermatol 2020;83:1007.
3. Aronson JK. Anecdotes as evidence. BMJ 2003;326:1346.
4. Greenhalgh T. How to read a paper. Getting your bearings (deciding what the paper is about). BMJ. 1997;315:243-6.
5. Wáng YX. Advance modern medicine with clinical case reports. Quant Imaging Med Surg 2014;4:439-43.
6. Albrecht J, Meves A, Bigby M. Case reports and case series from Lancet had significant impact on medical literature. J Clin Epidemiol 2005;58:1227-32.
7. Lenz W. Thalidomide and congenital anomalies. Br Med Surg 1962;2:646-7.
8. Burkitt D. A sarcoma involving the jaws in African children. Br J Surg 1958;46:218-23.
9. Gagnier JJ, Kienle G, Altman DG, et al. The CARE guidelines: consensus-based clinical case reporting guideline development. Headache 2013;53:1541-7.
10. Aronson JK, Hauben M. Anecdotes that provide definitive evidence. BMJ 2006;333:1267-9.
11. Mcbride WG. Thalidomide and congenital abnormalities. Lancet 1961;2:1358.
12. Burkitt D. A sarcoma involving the jaws in African children. Br J Surg 1958;46:218-23.
13. Yitschaky O, Yitschaky M, Zadik Y. Case report on trial: Do you, Doctor, swear to tell the truth, the whole truth and nothing but the truth? J Med Case Rep 2011;5:179.
14. Kidd M, Hubbard C: Introducing journal of medical case reports. J Med Case Reports 2007;1:1-10.
15. Ansaloni L, Catena F, Moore EE. WJES and case reports/case series. World J Emerg Surg 2007;2:11.
16. Ortega-Loubon C, Culquichicón C, Correa R. The Importance of Writing and Publishing Case Reports During Medical Training. Cureus 2017;9:e1964.
17. Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D; the CARE Group. The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development. Accessed: 21.1.23. Available from: https://www.equator-network.org/reporting-guidelines/care/
18. CARE Guidelines. Flow Diagram — Case Reports following the CARE guidelines. Accessed: 21.1.23. Available from: https://www.equator-network.org/wp-content/uploads/2013/09/CARE FlowDiagram-updated-2019.pdf
19. Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D. The CARE guidelines: consensus-based clinical case reporting guideline development. Headache 2013;53:1541-7.
20. Riley DS, Barber MS, Kienle GS, et al. CARE guidelines for case reports: explanation and elaboration document. J Clinical Epidemiol 2017;89:218-35.
21. Calvache JA, Vera-Montoya M, Ordoñez D, et al. Completeness of reporting of case reports in high-impact medical journals. Eur J Clin Invest 2020;50:e13215.
22. Koch CA, Fülöp T. Case reports: old-timers and evergreens. J Med Case Rep 2018;12:355.
23. Rees M. Publication of medical case reports and the CARE guidelines. Case Rep Women Health 2018;17:1-2.
24. Editorial Office. Application of the CARE guideline as reporting standard in the AME Case Reports AME Case Rep 2019;3:47.
25. The EQUATOR Network. The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development. Accessed: 4.10.200. Available from: https://www.equator-network.org/reporting-guidelines/care/
26. CARE – writer. Case report writing simplified. Accessed: 21.1.2023. Available from: https://care-writer.com/
27. Rison RA, Shepphird JK, Kidd MR. How to choose the best journal for your case report. J Med Case Rep 2017;11:198.
28. Akers KG. New journals for publishing medical case reports. J Med Library Ass 2016;104:146-9.
29. Bognolo G. Grand Rounds. BMJ 2004;328:353.
30. Galante JM, Phan HH, Wisner DH. Trauma surgery to acute care surgery: defining the paradigm shift. J Trauma 2010;68:1024-31.
31. Biffl WL. Evidence-based medicine in trauma/acute care surgery-what does that look like? Am J Surg 2019;217:1000-5.