# Writing a wound care case study

Writing case reports can be a daunting task for the uninitiated, however, once the structure is understood, it can be a straightforward and rewarding process. The aim of writing a wound care case study is to clearly present the treatment and healing process of a specific case. It can, therefore, help serve as a guideline for the treatment of similar wounds in the future. By producing a case report to a high standard, clinicians' skills can be boosted as a result of shared best practice.

A case report or case study is a means of communicating something new that has been learnt from clinical practice (Kirthi, 2011). To date, there has been little written on how to present and write a good case study generally. There is even less in the specific field of wound care, despite case studies often being presented in relation to tissue viability problems (Dealey, 2000). Bale (2004) agreed there appears to be a lack of consensus regarding what constitutes a case study or case report. This article aims to help healthcare professionals working within the field of tissue viability or wound care to present information in a way that enables the sharing of practice at an individual level. The case report may be used in a journal publication, but writing for publication will be the topic of a further article. The taking of good wound images that will enhance a case study will also be discussed in a further article.

A case study is usually a retrospective report of a single clinical case and is most often expressed as a narrative highlighting the diagnosis, treatment, rehabilitation and possible complications of a single observed case. Case reports are one of the oldest, most basic and most valued methods used in teaching today (Iles and Piepho, 1996) and so their main aim needs to be educational. Most case studies fall into one of five categories described by Nelson (2000):

- An unexpected event in the course of observing or treating a patient
- Findings that suggest new evidence on the possible pathogenesis or treatment of a disease
- Unique or rare features of a disease
- Unique therapeutic approach
- Unexpected associations between diseases or symptoms.

Case studies can be useful in order to illustrate a wound management problem or to share a particular clinical experience. The case study has also been criticised as having a weak design because researchers who utilise it often fail to address validity and reliability threats effectively and the results of one case study provide a poor basis for generalisation (Bale, 2004). This can be addressed by ensuring the case study is well researched and evidenced. Bale (2004) explained that clinical wound healing research has particular challenges relating to the nature of the patients and the interventions being studied and that wounds are a symptom, rather than a disease, and patients often present with multiple or complex pathology.

## WHY WRITE A CASE STUDY?

There may be a number of reasons to write a case study. For example:

- It may be required as part of an academic course
- For publication in a journal
- As an abstract for submission to a conference
- For your organisation (e.g. to raise awareness at an event such as Stop Pressure Ulcer day)
- For a company following a product evaluation.

Whatever the reason it is important that the case study is written in a way that answers all the questions a potential reader may have. They are a great way to develop your writing skills and published material will look impressive on any CV (Kirthi, 2011). If there is a particular word limit, it is always best to include all the required information first and then reduce the word count afterward,

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**Table 1. The designation used by the Australian National Health and Medical Research Council (National Health and Medical Research Council, 1999).**

| Level | Description |
|---|---|
| **Level I** | Evidence obtained from a systematic review of all relevant randomised controlled trials (RCTs) |
| **Level II** | Evidence obtained from at least one properly designed RCT |
| **Level III–1** | Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method) |
| **Level III–2** | Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case control studies, or interrupted time series with a control group |
| **Level III–3** | Evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group |
| **Level IV** | Evidence obtained from case series, either post-test or pre-test and post-test |

rather than the other way round, which could lead to the risk of leaving important information out.

## WHERE IS A CASE STUDY IN THE RESEARCH HIERARCHY?

Evidence-based practice promotes the concept that research should underpin decisions made by healthcare providers (Dealey, 2000). This involves evaluating the quality of the best available clinical research by critical assessment and uses a hierarchy of evidence at the heart of the assessment process, an example of which is outlined in *Table 1*.

Within the hierarchies of evidence, case studies are sometimes seen to be on a par with expert opinion (Dealey, 2000). Case studies can only provide descriptive, non-experimental clinical evidence and this is why they are often considered to be the lowest level in the hierarchy of evidence. Bale (2004) stated that a case study series in wound healing has advantages over a single case study as it allows researchers the opportunity to compare results across a range of patients.

## WHAT MAKES A GOOD CASE STUDY?

Nelson (2000) stated that greater credibility is given to those case studies that include a definition of the clinical problem and the objectives of treatment.

Dealey (2000) provided an in depth review of case study methodology in tissue viability and concluded that if undertaken prospectively, with clearly defined multiple sources of data collection and a documented chain of evidence, case studies can add breadth to our knowledge and experience of caring for patients. She also demonstrated this by providing an example of how a case study can be used to provide useful research evidence in relation to leg ulcer management (Dealey, 2001). Meanwhile, Yin suggested preparing a case report for each case study and then identifying pattern matches that allow cross-case conclusions to be developed (Yin, 1989).

The following points may help to make your case study a good case study:

- Ensure it contains interesting or new information; something that was worthwhile and stands out from just another patient
- There should be inclusion of strategic and/or service delivery changes that resulted from the management of the case study patient, this helps readers see the bigger picture
- The subject of a case study is usually an infrequent or unusual case
- It is interesting to the reader if you refer to the particular problems or challenges that were overcome, these can be organisational and/or patient related
- It must be detailed and leave the reader with no questions unanswered.

## WHERE DO YOU START?

The case study should start with the title which should be an accurate, succinct description of the patient under study (Green and Johnson, 2006). Janicek (1999) suggested that four items should be included in the 'informative' title to enable rapid identification of the topic presented. An example of this is outlined in *Table 2*.

The case study should have a clear objective and focus, which should be clearly explained in the introduction. Readers will appreciate it if the case study is well structured and organised and follows a chronological order including the assessment, treatment plan, re-assessment and final evaluation.

Budgell (2008) provided readers with an excellent set of guidelines and template that can be used to prepare a case study by a relatively novice writer. Despite not using examples that are related to wound care or tissue viability, the principles, nonetheless, remain the same.

It is good practice to seek permission before the

author starts writing and to outline what permission has been gained to enable the writing of the case study. This will include patient and/or relatives consent, permission from the consultant or GP in charge of the patient's care, permission from your line manager and possibly organisational consent.

All identifying features should also be removed from the case study; the patients' real name should not be used but a made up name can be used instead (e.g. Stella or Mrs X) and it should be stated that the name has been changed to protect patient confidentiality.

A strategic or 'big picture' introduction is a good starting point. For example, for a case report focusing on people with diabetic foot ulcers (DFU), it would be useful to mention how many patients there are with a DFU, what the current amputation rate, if it is an increasing problem, are there any national or International documents to mention, and if it is a particular problem for the NHS at the moment.

A thorough literature search should be undertaken – this is the single most important step. It is also good practise to explain to the readers which search facilities were used (e.g. PubMed, Medline, Ovid; Kirthi, 2011).

Once the general subject has been introduced in this way, the article can then begin to focus on the local level within a specific organisation. It should be explained how the author first became involved in the care of the patient and identified if it was at the beginning of, or mid-treatment. If it was mid-treatment, the assessment and management before the author was involved will need to be described.

Overall, the aim of the introduction is to provide the reader a clear sense of the purpose of the case study (Frawley and Finney-Brown, 2013).

## THE MAIN BODY OF THE CASE STUDY

The case study can be presented using a recognised format, such as; title, introduction, method, results and discussion and/or conclusion. Specific journal instructions will also need to be heeded when preparing the case report, in order to increase the chance of acceptance.

This 'main body' section is where the patient is introduced to the reader in a thorough and comprehensive way. What should be included is outlined in Table 3 and extreme care must be taken to protect the identity of the patient. If an organisational assessment form has been completed, this can provide the necessary framework to describe the case study. An example of a framework is History, Examination, Investigations, Diagnosis and Indicators (HEIDI; Harding et al, 2007).

Perhaps some quotes from the patient should be incorporated as they help bring the story alive and try to describe the impact of the condition and the treatment on their quality of life and their family and/or carers.

**Table 2. Four elements of the informative case study title.**

| Element | Example |
|---|---|
| Intervention is named | Superabsorbent wound dressings |
| Outcome of the intervention is identified | Reduction in wound dressing changes |
| Population under study is identified | Secondary care |
| The condition of interest is stated | Venous leg ulcers |

## DISCUSSION AND CONCLUSION OF THE CASE STUDY

This can comprise some concluding points by means of a summary, but could also include some discussion points resulting from the author's experience following the management of this particular patient. The discussion is the most important section as this is the time any thought-provoking findings can be shared and the significance of the case can be outlined. It is also the only time you can express your own thoughts and opinions. Care should be taken not to generalise findings for this case study to other patients with a similar set of circumstances. Critical thought and reflection should be applied to the case study and current literature used from the initial review where applicable. The case may have raised clinical questions and possible direction for future research, and these can be described in this section (Frawley and Finney-Brown, 2013). In summary:

- What has been learnt from this and what will be done differently next time?
- This can be the most important thing when sharing a case study and what can be learnt by others from it
- How have learning points been shared or how will they be shared in the future from this case study within the author's organisation
- Compare the case to what is already known in the literature.

## WHEN YOU HAVE FINISHED WRITING YOUR CASE STUDY

There are a number of things that should be checked before the case study is finished. They include:

| Table 3. Elements to be included in the main body of a case study. |
|---|
| Background/demographics e.g. age, gender, occupation |
| Health/medical history |
| Medication and product history — generic names should be used where possible (e.g. diuretics or cohesive short stretch bandage) |
| Patients dietary and fluid intake where relevant |
| History of complaint including signs and symptoms |
| Relevant physical examination |
| Laboratory results and relevant physical examination results (e.g. positive Stemmer's sign, Doppler assessment) |
| Working and differential diagnosis |
| Treatment decisions including and multidisciplinary referrals (e.g. vascular surgeon, dermatologist, podiatrist, dietician, lymphoedema nurse specialist) |
| Methods used to monitor outcomes, e.g. limb volume measurements, Teller assessment, photography — e.g. digital or Eykona camera, reduction in wound dressing changes and exudate assessment |
| Primary outcomes of treatment — both positive and negative |

- Check the spelling and the grammar
- Get a colleague (if possible who doesn't know the patient) to proof-read it. Do they have any questions that have not been answered?
- Perhaps discuss the case report with a line manager
- Only list the names of those who have contributed to the report in the authorship (Kirthi, 2011)
- If appropriate, help and support of, for example, a ward, a colleague or an organisation who have assisted you in your case study preparation should be acknowledged
- Are there any photographs to demonstrate initial presentation, the progress through the treatment and a final status? (Sperring and Baker, 2014)
- References must be accurate and in the referencing style that is required (if stated)
- A summary or abstract of the key points of the case study may be required — always do this at the end and it should generally be around 150–200 words
- Also, three or four key words may be required (e.g. pressure ulcers, debridement, topical antimicrobials) and/or three or four key points (e.g. wound debridement was an essential first step in the management of this wound, this case study demonstrates the importance of multidisciplinary working). The key words are used to search for evidence and so it is useful if words are selected from a standard list
- Any financial assistance will need to be declared under a 'disclaimer' or 'declaration of interest' section. This may include, for example, the supply of free wound dressings to manage the patient or the use of an industry based person for support. Anything that may affect the independence of the case study should be declared.

## CONCLUSION

The retrospective designed case study in the simplest form to write and is an excellent design for the beginner author (Green and Johnson, 2006). With prospective case studies, the author plans out patient care and data collection ahead of time and may be a design to work towards in time as it has a higher research rigor. Writing a case study for publication can seem a daunting experience, but it is also a very rewarding one, most useful for sharing knowledge and experiences. Case studies are an essential part of the practitioner's tool kit but, as with all research methodologies, their application is limited (Nelson, 2000). The main thing to remember is to be structured and organised while telling the patient's story. There is nothing quite like seeing that first publication in print and a case study is a great way to start. Wuk

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