



**National Wound Care  
Strategy Programme**

# Engaging with Evidence for Wound Care

November 2022

# Contents

Introduction.....	1
Part 1 – A brief overview of different types of information.....	2
Clinical Guidelines .....	2
Reviews of Research Studies.....	2
Research Studies .....	3
Other types of information.....	3
Part 2 – Using research evidence to answer wound care questions .....	5
What type of question are you asking? .....	5
What type of research evidence can best answer this type of question? .....	5
Which type of research evidence or information can best answer which types of question? .....	6
What relevant research evidence is out there? (Searching) .....	8
Can the available research evidence be trusted? (Critical Appraisal) .....	9
Part 3 - Different Research Study Designs.....	11
Clinical Guidelines .....	12
Reviews of Research Studies.....	13
Experimental Studies.....	15
Observational Studies.....	17
Qualitative Studies .....	22
Next Steps and Key Questions .....	23
The Final Steps.....	24
Useful Resources.....	25

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Engaging with Evidence

[www.nationalwoundcarestrategy.net](http://www.nationalwoundcarestrategy.net)

# Introduction

Welcome to our guide to engaging with evidence for wound care. The purpose of the guide is to provide an introduction to evidence-based wound care to help you:

- Make sense of the most common different types of information.
- Understand which types of evidence can most reliably answer different types of questions.
- Begin to critique the relevance and usefulness of evidence sources by asking some key questions.

It is intended for health and care professionals in clinical practice who are responsible for judgements and decisions about wound care and who want to improve their evidence-based practice skills.

Deciding how to diagnose and treat someone with a wound is difficult. There are many uncertainties around diagnosis and treatment options, in terms of what is the most clinically effective treatment and what gives best value for money. This information needs to be incorporated with patient preferences through shared decision making to arrive at a decision as to what is the best possible wound care for each person with a wound.

We cannot remove uncertainty from clinical decision making, but we can reduce it if we use evidence to inform our practice. Informing our decisions with the best quality available information will make it more likely that we make better decisions and achieve better outcomes.

But how do we identify the best evidence when there is so much information from clinical guidelines, systematic reviews, randomised controlled trials, local practice guidelines, opinions pieces, blogs, and the views of colleagues? What is the best way to find evidence that is useful and reliable?

In this guide we will help you find your way round the different types of evidence for wound care. We will help you think about the types of questions you may ask and then how to look for evidence that will answer those questions. We will also help you consider how much you should trust different types of evidence.

The information in this document has been drawn from a wide range of reliable resources which are listed at the end.

We hope that this guide will make you want to go and explore these further to develop your skills in evidence-based practice to improve your decision-making for wound care.

# Part 1 - A brief overview of different types of information

'Evidence' can mean a broad range of things from a conversation with a colleague to a published clinical guideline but in clinical care, the term 'evidence-based practice' refers to the integration of the best available research evidence with clinical expertise and patient values.

All types of information have some value, but good-quality research evidence provides a more solid foundation on which to base clinical practice, so is much more valuable as a starting point for making health and care judgements and decisions. It is not possible to say that one type of research study is always more valuable than another type: the value depends on whether that type of study design can answer the type of question being asked and how well it was designed and conducted.

This guide is going to mostly focus on research evidence but will also consider other types of published sources of information such as blogs, tweets, newspaper articles, and opinion pieces in academic journals.

So, what are the different kinds of research evidence and information?

## Clinical Guidelines

Clinical guidelines give detailed research-informed guidance on how health and care professionals should care for people with specific conditions. Good quality clinical guidelines are based on the best available evidence which includes critiqued clinical research and the consensus views of clinical experts in that field. Clinical Guidelines are produced at international, national, and local level.

## Reviews of Research Studies

Reviews of research studies combine individual studies to give an overall picture of the current evidence. Such reviews can give a very useful summary to guide clinical practice. There are many different types of review but to keep it simple we will be considering them in two groups:

### Systematic reviews

A systematic review is a summary of research evidence on a topic that has been systematically identified, appraised, and summarised according to predetermined criteria which is clearly reported.

### Other reviews of research (including best practice statements and consensus documents)

There are other types of reviews which consider other forms of evidence, as well as research evidence (e.g., literature reviews, scoping reviews). These can be helpful in starting to understand the evidence around an issue but as the methodologies are not as thorough or robust as for a systematic review, such reviews are more vulnerable to bias. (See [page 9](#) for further information about bias).

Best practice statements and consensus documents seek to promote evidence-based practice by providing practice statements to improve the quality of care. High quality best practice statements and consensus documents use systematic, rigorous methods to search for research evidence or, when robust research evidence is lacking, to develop consensus on what constitutes good practice.

When there are limited resources and time, best practice statements and consensus documents can be useful, but their quality will depend on the level of reporting and transparency about the methods of development and the expertise of those involved.

## Research Studies

Research is the systematic investigation of an issue using scientific methods to discover new knowledge. There are many different types of research. Some is undertaken in highly controlled environment (such as experiments undertaken in laboratories) some uses partially controlled environments to collect data which can then be analysed (such as randomised controlled trials in patient groups) while some will use existing, naturally occurring clinical data and observations (such as 'real world evidence' studies). Different types of research methods are needed to answer different types of clinical questions.

Research can be published in many places including academic journals and the websites of health and social care organisations such as the [National Institute for Health and Care Excellence \(NICE\)](#), the [Cochrane Collaboration](#), the [National Institute for Health Research \(NIHR\)](#) and publications from charities, such as the Society of Tissue Viability, and commercial organisations, such as Wounds UK. It is important to remember that publication in an academic journal or on a reputable website does not automatically guarantee quality.

## Other types of information

### Opinion pieces and reports in specialist academic clinical journals, blogs and social media and newspapers and magazines

*Opinion pieces or editorials in specialist academic clinical journals* can be particularly useful sources of information about broad topics, if based on good quality evidence written by well-informed experts.

Opinion pieces or editorials in specialist academic clinical journals are useful for understanding the background to an issue and current thinking on a topic. Such articles are subject to editorial control which increases their level of credibility, but they will still reflect the opinion of just one or a small group of authors. Editorials and opinion pieces that clearly cite their sources of information are more credible.

Often specialist academic journals also publish research evidence. However, publication in an academic journal, even a prestigious journal, is no guarantee of quality. It is worth remembering that the infamous and now discredited MMR/autism anti-vaccination research article was originally published in the highly reputable journal, *The Lancet*. So, any research article should be critiqued rather than just taken on face-value.

*Blogs and social media on the internet* have completely changed how we communicate with each other. Anyone can compose a 'tweet' or set up a Facebook page or YouTube channel to share their thoughts and these views can be read by anyone with access to the internet.

Social media offers the opportunity to share views, experiences, and other information with other members of the health and care community and the public. However, there is little regulation of content, so the quality of information varies widely between reputable communities discussing research and other clinical issues to poorly informed individuals voicing highly questionable beliefs. Social media can be helpful in sharing ideas and signposting to other publications, but it is important to find and critique the actual policy or research evidence behind the opinion.

*The mainstream news outlets and magazines* are valuable sources of information about recent health and care research and policy, often providing opinion pieces that seek to give context. Such articles are usually written by journalists, researchers, practitioners, and experts from the health and care sector, so are likely to offer an informed opinion.

However, the truth can lie in the detail so, as with blogs and social media, the challenge is in finding the actual policy or research evidence behind the opinion or the headline. The role of newspapers is to highlight what's new, so newspapers and magazines are unlikely to report research that confirms the status quo and may sensationalise new research findings. Even though good journalism aims to be accurate, it is important to remember that there may be other information about the same topic that does not reach the same conclusions. Good journalism will cite the original source of a story and present new research findings in the context of existing information.

# Part 2 - Using research evidence to answer wound care questions

There are four key stages to using research evidence to inform clinical practice:

- What type of question are you asking?
- What type of evidence can best answer this type of question?
- What relevant evidence is available?
- Can the available evidence be trusted?

## What type of question are you asking?

There are lots of different types of questions in health and care, such as:

- What is the background to this issue?
- What causes this condition?
- What are the signs and symptoms of this condition?
- Does this treatment/service work (and do more good than harm?)
- Is this issue important to other people?
- Will the treatment/service be acceptable to people with wounds?
- Is it worth spending money on this?
- What do people think or feel about an issue?

It is important to think carefully about the type of question you are asking to decide what sort of evidence you are seeking.

## What type of research evidence can best answer this type of question?

When deciding on the best treatment for people with wounds, some types of evidence are more useful than others. As stated before, all types of information have some value, but information from a well-designed and well-conducted research study using an appropriate design provides a more solid foundation on which to base clinical practice.

Different types of question require different research designs to give results that can be trusted. So, it is important to seek out the type of research design that can answer your particular clinical question.

You may have heard of the 'pyramid of evidence' which offers a hierarchy of different types of studies from 'low quality' case studies at the bottom, through cohort studies then randomised controlled trials (RCT) to the pinnacle of systematic reviews at the top. The 'pyramid of evidence' offers a conveniently simple way of categorising the usefulness of different types of research studies, but only applies to questions of effectiveness (i.e., Does this treatment work?). Even then, the results from a high-quality cohort study may be more useful than those from a poor-quality randomised controlled trial (RCT).

## Which type of research evidence or information can best answer which types of question?

So, what types of research study can best answer what types of question?

This table suggests the most common types of research evidence that you might seek for different types of questions. For each type of question, the types of studies are listed from the most robust design down to the weaker types of design. However, it is important to remember that the results from a research study should never be taken on face-value.

- Critical appraisal is essential (More information about this will follow in [Part 3](#)).
- It is also important to be aware that the ranking in this table is only indicative and based on the assumption that the evidence is high quality and for clinical guidelines, systematic reviews and other reviews, sufficiently up to date.

Types of Question	Technical terms	Types of evidence	Rank
What is the background to this issue?		Clinical Guidelines	★★★★★
		Systematic Reviews	★★★★
		Other reviews of research	★★★
		Opinion pieces and reports	★★
What causes this condition?	Aetiology	Systematic Reviews of analytical observational studies	★★★★★
		Cross-sectional studies/ case-control studies/cohort studies	★★★
What are the signs and symptoms of this condition?	Diagnosis	Systematic Reviews (Diagnostic Test Accuracy (DTA) review)	★★★★★
		Diagnostic Test Accuracy Studies	★★★
Does this treatment/ service work (and do more good than harm?)	Effectiveness (and safety)	Clinical Guidelines	★★★★★
		Systematic Review of Randomised Controlled Trials (RCTs)	★★★★
		Other reviews of research	★★★
		Randomised Controlled Trials (RCTs)	★★★
		Case Control Studies/Cohort Studies	★★

Continued overleaf →



Types of Question	Technical terms	Types of evidence	Rank
Is this issue important to other people?	Saliency	Clinical Guidelines	★★★★★
		Other reviews of research	★★★
		Opinion pieces and reports	★★
Will the treatment / service be acceptable to people with wounds?	Acceptability	Systematic Reviews of qualitative and quantitative evidence	★★★★★
		Other reviews of research	★★★
		Qualitative Research	★★★
		Descriptive Surveys	★★★
		Case Studies	★★
		Opinion pieces	★★
Is it worth spending money on this?	Cost effectiveness	Clinical Guidelines	★★★★★
		Systematic Reviews that include health economic evaluation	★★★★★
		Randomised Controlled Trials (RCTs) that include a health economic evaluation	★★
		Opinion pieces and reports	★★
What do people think or feel about an issue?		Systematic Reviews of qualitative and quantitative evidence	★★★★★
		Other reviews of research	★★★
		Qualitative Research	★★★
		Descriptive Surveys	★★★
		Opinion pieces and reports	★★

## What relevant research evidence is out there? (Searching)

Finding useful research evidence can be daunting. This section offers a highly simplified introduction for those new to searching. More detailed information and help can be found in the many online resources (some of which are listed in the Useful Resources section at the end) or through your local health care library.

The first thing to do is break your search down into several steps.

1. Before you start looking, think about the question you are asking and write a list of the separate topics within it. For example, there are three key issues in the question:

Does larvae therapy help in healing pressure ulcers?

- a. Larvae therapy
- b. Healing
- c. Pressure ulcers.

These form the basis of the 'keywords' for your search.

2. The next task is to combine these keywords to find relevant publications. This principle applies whether you are doing a detailed search in a clinical database such as Medline or CINAHL or just a search in the standard search engine on your computer (e.g. Google). The simplest way to combine the keywords is through using the common 'Boolean operators' AND and OR.

For example:

**AND** Search e.g. larvae therapy **AND** pressure ulcer only retrieves information which includes both terms.

**OR** Search e.g. larvae therapy **OR** pressure ulcer retrieves all information which includes either terms.

Begin with what you think are the most important topics but if you find too few results, use OR to broaden your search.

e.g. larvae therapy **OR** maggots **AND** pressure ulcers

If you have too many results, use **AND** to bring in other relevant terms to narrow your search.

e.g. larvae therapy **OR** maggots **AND** pressure ulcers **AND** healing

3. When you get your results, it is worth organising the results into two groups, 'research' and 'other'. Then organise the research results into different types of research, putting the types of research most likely to be able to answer your question at the top of the pile.
4. Once you have retrieved and sorted your research and information, then it's time to start critical appraisal of the quality of what you have found to see how useful it will be in answering your question.

## Can the available research evidence be trusted? (Critical Appraisal)

Critical appraisal is the process of carefully considering research to judge whether the results can be trusted and how relevant and important those results are to the patients and service to which you wish to apply them. Unfortunately, research varies in quality. Some studies may be biased, and their results unreliable and untrustworthy. Critical appraisal helps you sort out which studies you can trust and those you should be suspicious of.

Before we look at the different types of research evidence in more detail, we need to think about bias. In its broadest sense, bias is any tendency which stops us considering information in an impartial way.

We need to be aware that we bring our own biases when we consider any piece of information. Are we giving a piece of information a fair hearing, or is it falling victim to our own beliefs and prejudices?

Here are some of the most common biases that may affect how we view any piece of information:

**Confirmation bias.** We are more likely to believe information that confirms what we already believe than information that contradicts our beliefs.

**Anchoring bias.** We are more likely to put most trust in the first piece of information we come across, than any further information we later discover.

**Bandwagon effect.** We may like to think of ourselves as independent thinkers, but we tend to have the beliefs and behaviours of those around us (who may not be right).

**Status quo bias.** Most of us prefer to avoid change so we tend to dismiss new information that contradicts our current ways of delivering care.

**Pro-innovation bias.** By contrast, we like the new and 'shiny' so can put too much faith in anything new, even if there is no proof that it is better than the care we currently give.

**Hero bias.** We tend to put a lot of trust in the views of senior, successful health and care professionals but their success may be due to factors other than their own knowledge base (such as luck and opportunity).

In research, bias can also arise when the study design allows systemic errors that may have an impact on the results. However, it is almost impossible to design a study with no bias. Therefore, it is important to consider the degree of bias in a research publication, either by critiquing it ourselves, or by seeking out a good quality critique of the evidence or a pre-critiqued piece of evidence.

Research study designs that include and combine individual studies to give an overall picture of the current evidence (such as clinical guidelines and reviews) should pre-appraise the included studies as part of the development of the guideline or review.

There are different methods for critical appraisal but the [GRADE \(Grading of Recommendations, Assessment, Development and Evaluations\) framework](#) is the most widely adopted and endorsed tool for grading the quality of evidence. GRADE is a transparent framework for developing and presenting summaries of evidence and provides a systematic approach for making clinical practice recommendations.

It is also important to consider whether the research has been undertaken in the laboratory ('in vitro') or in animals or humans ('in vivo'). For example, if you are a community nurse considering a topical treatment for people with diabetic foot ulcers receiving care at home, you will need more robust evidence than that from a study that has only tested the treatment in the lab ('in vitro') or on animals. Treatments should be tested in the same group of people as those to whom the results will be applied and in a setting that resembles where you plan to apply the treatment. Even if the treatment has been tested on humans, if it has only been tested on patients with diabetes receiving care from a multi-disciplinary team in a specialist foot care clinic, it may not deliver the same results on a different type of wound, in a different clinical setting.

## Part 3 - Different Research Study Designs

The section presents the most common types of research along with some guidance about how to start critically appraising each type of research design.

Research is the systematic investigation of an issue using scientific methods to discover new knowledge. Research design can be qualitative or quantitative or use a combination of both ('mixed methods').

Qualitative research is used to develop in-depth understanding of an issue through collecting and analysing non-numerical data such as recordings, texts, or observations. For example, qualitative methods would be used to understand the experience of living with a leg ulcer.

Quantitative research uses statistical methods to analyse numerical data to identify patterns which can be used to predict outcomes and test relationships between different issues. For example, quantitative methods would be used to test whether people being treated with a new type of dressing are more likely to heal faster than those receiving the usual treatment.

Mixed methods research uses both qualitative and quantitative methods together.

Real-world evidence studies most commonly use observational data generated during routine clinical practice. However, some 'pragmatic' clinical trials, conducted in real-world clinical practice settings with broad inclusion criteria are also considered to generate 'real-world' evidence. (More information about real-world evidence can be found in the [Useful Resources](#) section at the end of this document).

## Clinical Guidelines

Good quality clinical guidelines will help you to understand the research in the area and make an evidence-informed decision.

Clinical guidelines may be developed by local healthcare organisations (such as local healthcare providers) national bodies (such as the [NICE pressure ulcer clinical guidelines](#)) and international organisations (such as the [EPUAP pressure ulcer guideline](#)). Clinical guidelines are systematically developed evidence-informed statements of best clinical practice and are intended to guide decision making for both people with wounds and clinicians. As such, they are a useful source of pre-appraised evidence for clinical practice.

The quality of a clinical guideline will depend on the rigour of the methods used to develop the guideline and the availability of relevant good quality research evidence. Ideally, a clinical guideline will be based on good quality systematic reviews of good quality quantitative and qualitative research evidence. It will clearly report its methods and provide a rating of the quality of the evidence used to underpin the recommendation to give sufficient transparency for critical appraisal.

However, if there is a shortage of robust research evidence upon which to base the clinical guideline or the guidelines development methods are not clearly reported, it can be difficult to work out whether a guideline can be trusted or whether it should be applied to the people with wounds receiving care from you.

### Useful for:

- A potentially high-quality pre-appraised review of the current evidence on a particular topic.

### Questions to ask:

- Who was involved in developing the guideline? (Was there sufficient relevant expertise, including patient and carer expertise?)
- How were conflicts of interest managed? (Was undue influence adequately avoided?)
- Do you think all the important, relevant studies were included?
- Did the guideline group do enough to assess the quality of the included studies?
- Were all relevant outcomes considered?
- Did the guideline group consider all the important outcomes?
- Was the guideline subjected to peer review?
- How strong are the recommendations?
- Is it reasonable to implement the recommendations with those receiving care from you?

## Reviews of Research Studies

### Systematic Reviews

A systematic review is research on research which seeks to identify, appraise, and synthesise all the available relevant evidence about a particular question. Good quality systematic reviews will help you to understand the research in the area and make an evidence-informed decision. Systematic Reviews can review qualitative, quantitative, and mixed methods research.

A systematic review has clear criteria for how the review will be developed (which types of studies to include, how to search for such studies, how to analyse the results of the included studies and how to report the overall findings) so that only high-quality studies are included, and nothing is missed. Because of this, the results are more reliable.

A systematic review that is seeking to establish the effectiveness of an intervention will include the numeric results from the included studies. If the studies are sufficiently similar, it may be possible to do a meta-analysis. A meta-analysis takes the numeric results from sufficiently similar research studies within a systematic review and combines them to give an overall result. The quality of a meta-analysis will depend on the quality of the systematic review.

In wound care, there are many systematic reviews, but the shortage of good quality wound care research studies means that there are relatively few systematic reviews that can give clear guidance for clinical practice. It is also important to remember that systematic reviews can vary in quality so should be critiqued and not just taken on face value.

#### Useful for:

- A potentially high-quality pre-appraised review of the current evidence on a particular topic.

#### Questions to ask:

- Was a sufficiently rigorous approach taken, when searching for published (and unpublished) research to include? Are you aware of any evidence that is missing from the review?
- How was the research filtered and appraised?

### Initial Screening Questions to ask:

Critical Appraisal Skills Programme (2022). CASP (Systematic Review) Checklist.

[online] Available at: <https://casp-uk.net/casp-tools-checklists/>. Accessed: 06.11.22.

Paper for appraisal and reference:

Section A: Are the results of the review valid?

1. Did the review address a clearly focused question?

	Yes	<input type="checkbox"/>	<p><b>HINT:</b> An issue can be 'focused' in terms of:</p> <ul style="list-style-type: none"> <li>• the population studied</li> <li>• The intervention given</li> <li>• The outcome considered</li> </ul>
	Can't tell	<input type="checkbox"/>	
	No	<input type="checkbox"/>	

Comments:

2. Did the authors look for the right kind of papers?

	Yes	<input type="checkbox"/>	<p><b>HINT:</b> The 'best sort of studies' would:</p> <ul style="list-style-type: none"> <li>• address the review's question</li> <li>• have an appropriate study design (usually RCTs for papers evaluating interventions)</li> </ul>
	Can't tell	<input type="checkbox"/>	
	No	<input type="checkbox"/>	

### Other Reviews of Research

Other types of reviews, such as scoping reviews, mixed methods reviews and rapid reviews, can provide a good introduction, depending on the quality of the review. Such reviews seek to combine the results from numerous research studies. Although such reviews lack the rigour of a systematic review, they can very useful providing they are well-designed and well-conducted.

#### Useful for:

- An overview of the evidence on a particular topic.

#### Questions to ask:

- Was a sufficiently rigorous approach taken, when searching for published (and unpublished) research to include? Are you aware of any evidence that is missing from the review?
- How was the research filtered and appraised?



## Experimental Studies

Put simply, an experiment involves changing something (e.g., using a particular wound cleansing fluid rather than a standard fluid such as saline or tap water) and then observing to see if that change makes a difference (e.g., reducing the incidence of wound infection).

So, an experiment involves making a deliberate change and then observing to see the impact of that change. This can be done in just one participant, or one group of participants but experiments with two groups or more are more reliable. Experiments with a group that receives the deliberate change (the intervention group) and another group that receives 'standard care' without the deliberate change (the comparison group) increase the reliability of the experiment. 'Standard care' should be an appropriate comparator and not obviously inferior to the intervention that is being tested. The outcomes in both groups should be measured using independent, recognised, and valid statistical tests both at the beginning and the end of the experiment.

e.g., One group of people with a venous leg ulcer have their wound cleansed with an antimicrobial wound cleansing fluid while another group of people also with a venous leg ulcer, have their wound cleansed with potable tap water. The researchers would measure relevant variables (such as demographic data such as average age of the participants, wound size, ankle brachial pressure index etc) at the beginning of the study and relevant variables (such as incidence of infection, time to wound healing) at the end of the study,

### Randomised Controlled Trials (RCTs)

Experimental studies where the participants are randomly allocated to a particular treatment, are more capable of showing whether any difference in outcome is due to the treatment, rather than just chance. Randomised controlled trials (RCTs) compare the effect of an intervention in a group of relevant people who are randomly allocated to either the intervention or a comparison intervention (control). Randomisation means that any difference observed between the two groups can be more reliably attributed to the intervention so RCTs are usually better-quality experiments. In non-randomised trials, the allocation of people is by a method other than randomisation so it will be less certain that any difference observed between the two groups is due to the intervention.

The strength of experiments is their potential to provide information that can be applied to other similar groups of people. The larger and better designed the experiment and the more closely it reflects real-world conditions, the more likely this is to be the case. RCTs are particularly useful if they are designed to mirror usual clinical practice in a relevant population, thus generating 'real world' evidence. There is a myth that wound care RCTs are too expensive and difficult to do. It is true that wound care RCTs can be expensive and can be challenging due to issues such as recruitment and duration. However, the existence of a number of published high-quality wound care pragmatic RCTs proves that such studies are possible.

## Initial Screening Questions to ask:

Critical Appraisal Skills Programme (2022). CASP (Randomised Controlled Trial) Checklist. [online] Available at: <https://casp-uk.net/casp-tools-checklists/>. Accessed: 06.11.22.

Section A: Is the basic study design valid for a randomised controlled trial?			
<p><b>1. Did the study address a clearly focused research question?</b></p> <p>CONSIDER:</p> <p>Was the study designed to assess the outcomes of an intervention?</p> <p>Is the research question 'focused' in terms of:</p> <ul style="list-style-type: none"> <li>• Population studied</li> <li>• Intervention given</li> <li>• Comparator chosen</li> <li>• Outcomes measured?</li> </ul>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Can't tell</p> <input type="checkbox"/>
<p><b>2. Was the assignment of participants to interventions randomised?</b></p> <p>CONSIDER:</p> <ul style="list-style-type: none"> <li>• How was randomisation carried out? Was the method appropriate?</li> <li>• Was randomisation sufficient to eliminate systematic bias?</li> <li>• Was the allocation sequence concealed from investigators and participants?</li> </ul>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Can't tell</p> <input type="checkbox"/>
<p><b>3. Were all participants who entered the study accounted for at its conclusion?</b></p> <p>CONSIDER:</p> <ul style="list-style-type: none"> <li>• Were losses to follow-up and exclusions after randomisation accounted for?</li> <li>• Were participants analysed in the study groups to which they were randomised (intention-to-treat analysis)?</li> <li>• Was the study stopped early? If so, what was the reason?</li> </ul>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>	<p>Can't tell</p> <input type="checkbox"/>

## Observational Studies

### Correlational Surveys (or cross-sectional surveys)

Correlational (or cross-sectional) surveys gather information about two issues (known as variables) to try to understand if there is any relationship ('correlation') between them. For example, is there a relationship/ correlation between social deprivation (variable a) and the risk of developing a leg ulcer (variable b)?

Correlational surveys are useful for identifying patterns but can't tell us whether one circumstance (e.g., social deprivation) is a direct cause of a particular outcome (e.g., leg ulceration). To use the language of research, surveys can show a correlation between the two, but not causation. For example, a correlational survey may show that leg ulcer is more common in populations with high levels of deprivation, but this doesn't mean that social deprivation is a direct cause of leg ulceration. The exact nature of that relationship needs further investigation.

Correlational surveys are unlikely to provide enough detail or certainty to justify implementing as standard treatment. However, they may provide an argument for further research using a design that is more capable of answering the questions arising from the results of correlational surveys.

#### Useful for:

- Suggesting links and connections between different variables.
- Suggesting approaches or interventions that could be tested to see if they make an important difference.

#### Questions to ask:

- How was the survey population chosen? Is it a relevant population?
- How were the survey participants chosen? At random or using some other method? Is the sample a fair representation of the population?
- When profiling links between the data, are other explanations considered (e.g., socio-economic, genetic)?
- Do the authors draw causal links where these are not justified?
- Has the author outlined the limitations of the study?

## Cohort Studies

Cohort studies can be used to answer questions about risk of developing disease by looking for associations between exposures and outcomes. A cohort is a group of people that meet certain criteria at the start of the study. e.g., pregnant women with a high body mass index undergoing planned caesarean section. Cohort studies start with this event and follow a group of people who have experienced that event forwards in time, collecting data along the way through questionnaires, interviews, and other data sources such as clinical records. These data sources enable researchers to identify patterns and relationships between different variables. e.g., Is there a relationship between body mass index (BMI) and surgical wound breakdown?

However, it is important to remember that even if there does appear to be a relationship between BMI and wound breakdown, this be due to something other than BMI, such as a particular surgical technique or the nutritional status of the person with the wound ('correlation does not equal causation').

### Useful for:

- Profiles of populations over time.
- Suggesting links and connections between different variables.
- Suggesting approaches or interventions that could be tested to see if they make an important difference.

### Initial Screening Questions to ask:

Critical Appraisal Skills Programme (2022). CASP (Cohort Study) Checklist.

[online] Available at: <https://casp-uk.net/casp-tools-checklists/>. Accessed: 06.11.22.

Section A: Are the results of the study valid?		
1. Did the study address a clearly focused question?	Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No <input type="checkbox"/>	<b>HINT:</b> An issue can be 'focused' in terms of: <ul style="list-style-type: none"> <li>• the population studied</li> <li>• the risk factors studied</li> <li>• is it clear whether the study tried to detect a beneficial or harmful effect</li> <li>• the outcomes considered</li> </ul>
Comments:		
2. Was the cohort recruited in an acceptable way?	Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No <input type="checkbox"/>	<b>HINT:</b> Look for selection bias which might compromise the generalisability of the findings: <ul style="list-style-type: none"> <li>• was the cohort representative of a defined population</li> <li>• was there something special about the cohort</li> <li>• was everybody included who should have been</li> </ul>

## Case-Control Studies

A case-control study is a study that is used to identify risk factors for a clinical condition, such as a pressure ulcer. Case control studies start with people with a condition (cases) e.g., people with a spinal injury and a pressure ulcer (cases) and compare them to people without that condition (controls) e.g., people with a spinal injury and no pressure damage and look back for past treatments or issues which may explain why the person receiving care did or did not develop a pressure ulcer.

A high-quality case control study may provide enough detail or certainty to justify use of an intervention, particularly if an RCT would be very difficult or expensive to implement.

### Useful for:

- Profiles of populations over time.
- Suggesting links and connections between different variables.
- Suggesting approaches or interventions that could be tested to see if they make an important difference.

### Initial Screening Questions to ask:

Critical Appraisal Skills Programme (2022). CASP (Case Control Study) Checklist.

[online] Available at: <https://casp-uk.net/casp-tools-checklists/>. Accessed: 06.11.22.

Section A: Are the results of the trial valid?		
1. Did the study address a clearly focused issue?	Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No <input type="checkbox"/>	<b>HINT:</b> An issue can be 'focused' in terms of: <ul style="list-style-type: none"> <li>• the population studied</li> <li>• Whether the study tried to detect a beneficial or harmful effect</li> <li>• the risk factors studied</li> </ul>
Comments:		
2. Did the authors use an appropriate method to answer their question?	Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No <input type="checkbox"/>	<b>HINT:</b> Consider: <ul style="list-style-type: none"> <li>• Is a case control study an appropriate way of answering the question under the circumstances</li> <li>• Did it address the study question</li> </ul>

## Descriptive Surveys

Descriptive surveys use interviews or questionnaires to gather information in a systematic way from a relatively large number of people. They seek to measure whether a particular intervention is likely to be acceptable. However, as a descriptive survey lacks the robust structure of an experimental design, it cannot reliably establish whether an intervention is likely to be effective.

So, a well-designed descriptive survey about larvae therapy might tell us what proportion of people receiving care (or clinicians) are open to the idea of receiving (or delivering) larvae therapy but not whether larvae therapy prevents wound infection or increases healing rates.

A survey question such as “Did the wound heal faster with larvae therapy” is really “Do you think the wound healed faster with larvae therapy” as the lack of a comparator group (those who did not receive larvae therapy) means there is nothing to compare against. Another potential problem with questionnaires and interviews is the use of leading or loaded questions (e.g., “How disgusted are you by larvae therapy?”) which can skew the answers of participants.

Descriptive studies are unlikely to provide enough detail or certainty to justify implementing an intervention as standard treatment but if there is stronger evidence of effectiveness from more robust studies, may provide useful information to support successful implementation. For example, what do those involved think about this topic? What will help implement the intervention successfully, and what might be the barriers?

### Useful for:

- Information about the attitudes and opinions of large populations.
- Identifying whether particular challenges are widespread.
- Suggesting approaches that might prove to be acceptable.

### Appraisal questions to ask:

- How was the survey population chosen? Is it a relevant population?
- How were the survey participants chosen? At random or using some other method? Is the sample a fair representation of the population?
- Has the survey questionnaire been checked (for example, in a previous academic study) to prove that it is valid and reliable? Were any of the questions leading or loaded?
- Do the conclusions of the report accurately reflect the data or do the authors speculate beyond it?
- Has the author outlined the limitations of the study?

## Case Studies/Case Series

Case studies or case series look at individual people or a series of individual people to describe what happened when something was changed in their care. More robust case series, such as action research, follow a pre-defined methodology to give structure to the research. Case studies/series can indicate whether possible interventions or treatments are acceptable and feasible, so can be useful in developing theory and offering ideas for future research studies.

However, case study design is not sufficiently robust to indicate whether any observed improvement is most likely due to the treatment under consideration. Where there is stronger evidence of effectiveness from more robust studies, case study evidence may provide useful information to support successful implementation, but case study evidence alone rarely justifies widespread adoption of treatments.

### Useful for:

- Generating ideas for possible interventions to be tested by further, more robust research
- Considering the likely acceptability of the proposed interventions/treatment.
- Considering how these interventions/treatments might be tested in a research study using a more robust design.

### Questions to ask:

- Is the context similar to the health or care situation in which I am interested?
- Is the approach clearly described?
- To what extent is existing evidence considered? Has all the known relevant evidence been presented or has information been cherry-picked to support their arguments?
- Are the limitations of the study made clear?
- Does the author or sponsor have a vested interest and if so, is there a conflict of interest?

## Qualitative Studies

Qualitative research aims to understand the underlying reasons, opinions, and motivations behind an issue to achieve as full an understanding as possible to inform wound care practice. Qualitative studies can help answer questions such as why someone with a wound prefers one type of care over another and what might work better or be more acceptable.

e.g., What are the views of patients, carers and health and care professionals towards larvae therapy?

Common methods for data collection include focus groups, in-depth interviews, and observation. The information collected through these methods can provide stories that help explain patient, carers and health and care professionals' perspectives about different issues.

### Useful for:

- Understanding the attitudes and opinions of those with in-depth knowledge and/ experience of an issue.

### Initial Screening Questions to ask:

Critical Appraisal Skills Programme (2022). CASP (Qualitative Studies) Checklist. [online] Available at: <https://casp-uk.net/casp-tools-checklists/>. Accessed: 06.11.22.

Section A: Are the results valid?		
1. Was there a clearstatement of the aims ofthe research?	Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No <input type="checkbox"/>	<b>HINT: Consider:</b> <ul style="list-style-type: none"> <li>• what was the goal of the research</li> <li>• why it was thought important</li> <li>• its relevance</li> </ul>
Comments:		
2. Is a qualitative methodology appropriate?	Yes <input type="checkbox"/> Can't tell <input type="checkbox"/> No <input type="checkbox"/>	<b>HINT: Consider:</b> <ul style="list-style-type: none"> <li>• If the research seeks to interpret orilluminate the actions and/or subjective experiences of research participants</li> <li>• Is qualitative research the rightmethodology for addressing theresearch goal</li> </ul>



# Next Steps and Key Questions

Making evidence-informed clinical decisions helps us offer care that is more likely to be acceptable and clinically and cost-effective.

Keep these 'red flags' in mind when thinking about the trustworthiness of evidence.

## Authors and publication

### 🚩 What would make you sceptical or cautious in relation to the author or where the article was published?

- The author has biases or vested interests.
- The author is not qualified to comment or has no experience in this field.
- The evidence is shared, funded, or published by an organisation that benefits commercially from the evidence.

## Literature or evidence reviews

### 🚩 What would make you sceptical or cautious in relation to reviews of previous research?

- Reporting only studies which support the author's views, or are written by the author, and ignoring any other evidence.
- Uncritical inclusion of poor-quality studies.
- Applying findings to situations or people beyond the original research.
- Conclusions which most experts in the field would disagree with.

## Experimental Research Methods

### 🚩 What would make you sceptical or cautious in relation to research methods?

- Small or biased samples.
- The intervention being compared to an inappropriate control
- The intervention and comparison group not being similar before the research began.
- In addition to receiving a deliberately different intervention, participants receiving different care.
- Unrecognisable statistical methods
- High rates of participants dropping out, which is not considered in the conclusions.
- Using a research method which is not appropriate to answer the research question

## Data Analysis and Conclusions

### 🚩 What would make you sceptical or cautious in relation to research methods?

- Small or biased samples.
- The intervention being compared to an inappropriate control
- The intervention and comparison group not being similar before the research began.
- In addition to receiving a deliberately different intervention, participants receiving different care.
- Unrecognisable statistical methods
- High rates of participants dropping out, which is not considered in the conclusions.
- Using a research method which is not appropriate to answer the research question

# The Final Steps

So, you have:

- Identified the clinical issue that you want to address,
- Identified the type of question you are asking,
- Sought out the type of evidence that is most likely to answer your type of question, and
- Critiqued that evidence.

The final step is to think about how what you have learned can be applied to your health care setting. How can the evidence help in your context, so you can implement positive change?

Am I convinced by the evidence?	Is the evidence relevant to our service?	Should I apply this evidence to our service?
What evidence is there that the new approach can improve care?	Has the approach worked in services similar to our own?	Is the approach relevant to the priorities of the people with wounds we are treating and our service?
Are conclusions based on solid evidence?	Has the research been carried out with people with wounds who are similar to those we are caring for?	Is the advice specific enough to be implemented? Could the strategies be used in our service?
Is the author credible? Are they qualified and experienced in this area? Do they have biases or vested interests?	When was the research carried out? Have ideas changed since then? Is there new, up to date research?	Do we have enough information about the challenges of implementation and how to meet them?
Is the type of research suitable for the type of question we are asking?  How robust is the evidence?	Can we reasonably assess the costs and prospective benefits for our service?	Do we have enough information about what supported implementation in the studies? Are we able to replicate those supporting factors in our service?
From what is written, can we understand the practice that was evaluated, what was measured, and who the participants were?		Is the advice practical for our service given our capabilities and resources?

And finally, don't forget to think ahead about how you can monitor the impact of implementation in your service...

# Useful Resources

## **CASP** <https://casp-uk.net/casp-tools-checklists/>

The Critical Appraisal Skills Programme (CASP) which is based at the University of Oxford, grew out of the Getting Research into Practice Project in the 1980s which sought to promote research informed clinical practice. The key message from CASP is that systematic reviews are decision-makers' best resource for research evidence, and other forms of evidence should only be used in the absence of a high-quality systematic review.

CASP offers a range of resources, including the CASP checklists which are a set of critical appraisal tools designed to be used when reading research. The CASP checklists present a few initial screening questions (some of which are cited in this guidance). These can be answered quickly to help you decide whether the study is of sufficient quality to justify reading any further. If the answer to these is "yes", it is worth proceeding with the remaining questions which can be found on the CASP website.

## **Cochrane Wounds** <https://wounds.cochrane.org/>

Cochrane Wounds is an international network of healthcare professionals, researchers, patients, and members of the public. Cochrane Wounds publishes systematic reviews of randomised controlled trials in wound care, treatment, and prevention of infection.

## **RCN Library** <https://www.rcn.org.uk/library/subject-guides/critical-appraisal>

The Royal College of Nursing (RCN) Library has a useful section dedicated to critical appraisal with hyperlinks to many high-quality resources.

## **NICE** <https://www.nice.org.uk/>

The National Institute of Clinical Excellence (NICE) uses the best available evidence to develop recommendations that guide decisions in health, public health, and social care. As well as considering the scientific value of evidence, NICE also follows a set of principles for making social value judgements. NICE guidance applies to England and Wales.

*NICE Clinical Guidelines* are evidence-based recommendations for health and care in England and Wales that set out the care and services suitable for most people with a specific condition or need, and people in particular circumstances or settings.

*NICE Health Technology Evaluations* are developed by NICE's Centre for Health Technology Evaluation and cover the:

- Diagnostics Assessment Programme
- Medical Technologies Evaluation Programme
- Highly Specialised Technologies Evaluation Programme
- Technology Appraisal Programme.

The health technology evaluation methods and processes are designed to provide recommendations, in the form of NICE guidance, on the use of new and existing medicines, products and treatments in the NHS.

The 2019 Department of Health and Social Care voluntary scheme for branded medicines pricing and access requires NICE to issue technology appraisal or highly specialised technologies guidance on all medicines that are new to the UK market or have a significant new therapeutic indication.

For other topics, NICE identifies the priorities of the health and care system and gathers information on potential topics by proactively engaging with national policy teams, clinical leaders, patient groups, system partners, national innovation competitions and commissioner groups.

<https://www.nice.org.uk/process/pmg36/chapter/introduction-to-health-technology-evaluation>

Health and care commissioning and provider organisations are required to fund and resource medicines and treatments recommended through Health Technology Evaluations which are accompanied by an NHS funding mandate, in accordance with the NHS Constitution.

<https://www.nice.org.uk/about/who-we-are/our-charter#the-status-of-our-guidance>

Health and social care professionals are actively encouraged to follow the recommendations in other NICE guidance to help them deliver the highest quality care. NICE recommendations are not intended to replace the professional expertise and clinical judgement of health professionals, as they discuss treatment options with their patients.

<https://www.nice.org.uk/about/who-we-are/our-charter#the-status-of-our-guidance>

*NICE Clinical Knowledge Summaries (CKS)* are concise, accessible summaries of current evidence for primary care professionals. There are over 370 topics to choose from. The topics focus on the most common and significant presentations in primary care. They give trusted information to support safe decision-making and improve standards of patient care, but CKS are not equivalent to NICE guidance as they have not been produced using a NICE process, nor are they signed off by NICE guidance executive. <https://cks.nice.org.uk/about/>

*NICE Real-World Evidence Framework* This framework describes best practices for the planning, conduct, and reporting of real-world evidence studies.

<https://www.nice.org.uk/about/what-we-do/real-world-evidence-framework-feedback>

**NIHR** <https://www.nihr.ac.uk/health-and-care-professionals/search-our-evidence.htm>

The National Institute for Health Research (NIHR) funds, enables and delivers world-leading health and social care research that improves people's health and wellbeing, and promotes economic growth.

**SIGN** <https://www.sign.ac.uk/our-guidelines/>

The Scottish Intercollegiate Guidelines Network (SIGN) seeks to improve the quality of health care for patients in Scotland by reducing variation in practice and outcome, through the development and dissemination of national clinical guidelines containing recommendations for effective practice based on current evidence. Although SIGN publications are intended for use in Scotland, they are useful in informing care in other countries.



## **National Wound Care Strategy Programme**

Citylabs 1.0, Nelson Street,  
Manchester M13 9NQ

[www.nationalwoundcarestrategy.net](http://www.nationalwoundcarestrategy.net)



A programme commissioned by  
NHS England and NHS Improvement.