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## How to read an ethics paper

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Received 7 June 2018  
 Revised 30 July 2018  
 Accepted 4 August 2018  
 Published Online First  
 22 August 2018

## ABSTRACT

In recent decades, evidence-based medicine has become one of the foundations of clinical practice, making it necessary that healthcare practitioners develop keen critical appraisal skills for scientific papers. Worksheets to guide clinicians through this critical appraisal are often used in journal clubs, a key part of continuing medical education. A similar need is arising for health professionals to develop skills in the critical appraisal of medical ethics papers. Medicine is increasingly ethically complex, and there is a growing medical ethics literature that modern practitioners need to be able to use in their practice. In addition, clinical ethics services are commonplace in healthcare institutions, and the lion's share of the work done by these services is done by clinicians in addition to their usual roles. Education to support this work is important. In this paper, we present a worksheet designed to help busy healthcare practitioners critically appraise ethics papers relevant to clinical practice. In the first section, we explain what is different about ethics papers. We then describe how to work through the steps in our critical appraisal worksheet: identifying the point at issue; scrutinising definitions; dissecting the arguments presented; considering counterarguments; and finally deciding on relevance. Working through this reflective worksheet will help healthcare practitioners to use the ethics literature effectively in clinical practice. We also intend it to be a shared evaluative tool that can form the basis of professional discussion such as at ethics journal clubs. Practising these critical reasoning skills will also increase practitioners' capacity to think through difficult ethical decisions in daily clinical practice.

Evidence-based medicine is a foundation of clinical practice, necessitating that healthcare practitioners develop keen critical appraisal skills for scientific papers. Many excellent resources exist, including the paper by Sackett *et al*<sup>1</sup> and a reference book by Greenhalgh.<sup>2</sup> In 1992, the *Medical Journal of Australia* published a paper titled 'How to read a journal article'.<sup>3</sup> The authors' goal was to give a step-by-step guide to critically appraising scientific papers. Journal clubs using this worksheet, or similar, are now commonplace in teaching hospitals and are a key part of medical education. A similar need is arising for health professionals to develop skills in the critical appraisal of ethics papers. The reasons for this are twofold. First, healthcare grows increasingly ethically complex. Just as clinicians must keep abreast of the scientific literature, they should also keep up to date with the ethics literature relevant to their practice. Second, clinical ethics services (CES) have become commonplace in hospitals in developed nations. The lion's share of the work of these services is done by healthcare professionals in addition to their clinical roles<sup>4-6</sup>

and who have highly variable levels of training.<sup>4-8</sup> There is an urgent need to equip these and other clinical staff with skills to appraise papers relevant to these aspects of practice.

In this paper, we present the critical appraisal worksheet developed at the Centre for Children's Health Ethics and Law (CCHEL), Children's Health Queensland, Brisbane, Australia (table 1). The worksheet was developed for our ethics journal club and has proved useful both for the critical appraisal of ethics papers and for the development of critical thinking skills that can be applied in clinical practice and in clinical ethics consultation work. The goal of this paper is to provide a tool for clinicians without extensive philosophical training to critically appraise ethics papers relevant to clinical practice. We also intend it to be a shared evaluative tool that can form the basis of professional discussion such as at ethics journal clubs. In the first section, we explain what is different about ethics papers. We then describe the steps in our critical appraisal worksheet.

## WHAT IS DIFFERENT ABOUT ETHICS PAPERS? A DISCUSSION OF ARGUMENTS, FACTS AND VALUES

It is important to recognise that ethics is a philosophical, not a scientific, discipline. Healthcare professionals are accustomed to critically appraising scientific data, and to constructing an argument based on that data for why a particular clinical decision is justified. Note that we use the word argument in the philosophical sense, meaning a set of reasons that justify a position. For example, if a patient presents with clinical signs consistent with bacterial pneumonia, the doctor will prescribe an antibiotic regimen based on their knowledge of the likely pathogens and the efficacy of particular antibiotics against these. That oral amoxicillin is an effective treatment for mild community-acquired pneumonia is a factual claim supported by scientific evidence. In contrast, ethical claims are claims of value and must be justified with an ethical argument. For example, the claim that life-sustaining therapy (LST) should be withdrawn from a patient with end-stage cancer is a value claim. Prescriptive words such as 'should' and 'ought' are useful signposts for value claims. An argument that may justify the claim that LST should be withdrawn is that the patient had previously stated that they did not want to be maintained on LST, and therefore to respect their autonomy the treatment should be withdrawn.

Note that matters of fact and matters of value coexist in clinical medicine (as they do in life) and that rationales for ethical and medical decisions are usually made up of both fact and value claims. Take the example just given of the argument that therapy should be stopped to respect the patient's autonomy.



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**To cite:** Jansen M, Ellerton P. *J Med Ethics* 2018;**44**:810–813.

**Table 1** Ethics critical appraisal worksheet**How to read an ethics paper: a resource for healthcare practitioners**

This worksheet is to be used in conjunction with the paper 'How to read an ethics paper' (reference)

Can you find this information in the paper?	Is the way this was approached a problem?	Does this threaten the strength or credibility of the paper?
1. What is the point at issue?	Does the author conflate different points at issue? Does the author fail to adequately address the points raised?	Is the purpose of the paper so unclear that it is not useful? Is a conclusion clearly linked to a defined problem or point?
2. Has the author defined all of the terms they use?	Are the key terms well-defined? Are the definitions correct/reasonable?	If there are no clear definitions, what ambiguity does this give rise to? If the definitions are wrong or unreasonable, what impact does this have in this case?
3. Dissect the argument: (a) What are the premises of the author's argument? (b) What are the author's conclusions?	Are the premises true? What evidence/reasons does the author give to support their premises? Does the conclusion follow on logically from the premises? If not, where are the errors of reasoning? Are there any hidden assumptions?	If the premises are untrue or unreasonable, how does this impact the overall argument? If the argument is invalid, what implications does this have for the author's overall position?
4. Does the author address all relevant counterarguments?	Do the authors address relevant counterarguments? Do they do so convincingly? (based on standards from all the previous steps?) Can you think of any other significant counterarguments?	If not, does this affect the overall credibility of the author's position? What key arguments or ideas has the author missed and what implications does this have for their position?
5. Is the argument or exploration of the issue relevant to your practice?	Is the problem framed in a way that is useful to practitioners? Is the paper directed towards practical outcomes? Does the paper help to clarify or organise your thinking?	Overall, is the paper useful? Does the author provide valuable insights into a difficult topic? Are the conclusions relevant to the population you are interested in?

That the patient had previously expressed wishes not to be maintained on life support is a factual claim. The claim that we should respect autonomy is a value claim. Likewise, when deciding on antibiotics for the patient with pneumonia, the claim that amoxicillin is effective is a factual claim. That we should treat the patient with amoxicillin is a value claim—the implicit argument for which is that the right thing to do is to treat patients with the most effective therapy for their disease. This seems so plainly reasonable that it does not need to be stated; however, it is important to recognise implicit value judgements in clinical decisions, as these are often at issue when there is conflict. The important skill is to be able to differentiate fact and value claims and to understand how the two can interact to form a set of reasons that support a particular conclusion. To do this, it is important to understand how arguments are constructed.

Understanding arguments is important for clinical practice, because ethical decision making threads through everything healthcare practitioners do. High-level skills in this area are especially important for those providing clinical ethics consultation. The UK Clinical Ethics Network and the American Society for Bioethics and Humanities have each published core competencies for clinical ethics consultation.<sup>9 10</sup> Both specify the need for consultants to understand ethical theory and reasoning, to analyse ethical conflicts, and to be able to elicit values and assumptions. Understanding argumentation is fundamental to these skills. The ethics critical appraisal worksheet provides a framework through which to appraise arguments and, by guiding practitioners to read ethics papers actively, aims to deepen understanding of ethical argumentation. We acknowledge that there is a growing literature in empirical ethics—this critical appraisal worksheet is not intended for these papers, as they are scientific papers and can be appraised as such. This worksheet is intended for papers that discuss ethical issues, not those that present scientific data relevant to an ethical issue.

## THE ETHICS CRITICAL APPRAISAL WORKSHEET

We have structured the worksheet in a similar way to the one by Darzins *et al*,<sup>3</sup> as a matrix of questions arranged in three columns (table 1). In the first column are questions that prompt the reader to look for important types of information in the article. The second column contains questions that help the reader to decide whether there are problems with these. The third column poses questions to help the reader decide if any problems identified threaten the quality of the paper. Using this worksheet should assist clinicians to more rapidly identify problems with the paper, making the reading of ethics papers more time-efficient.

### Critical appraisal questions

#### What is the point at issue?

The point at issue is the ethical question that the paper is addressing. Well-written ethics papers will explicitly state the point, or points, at issue in the introduction and will go on to address them. Poorly written ethics papers will shift between points at issue, which clouds reasoning and precludes systematic appraisal of all the relevant arguments. Shifting the point at issue happens often in ethical discussions. For example, we may be discussing the issue of whether we should continue providing LST to a child with a very poor prognosis. One person believes that the LST is causing suffering to the child, another person questions the truth of this. A third person points out that we cannot over-ride the parents' autonomy. This third person is shifting the point at issue. The ethicality of over-riding parental autonomy is important, but concerns a different point at issue. Whether the LST is causing suffering or not is a point that needs to be explored and clarified before moving onto the question of whether it is of a magnitude that makes it reasonable to interfere with parental autonomy.

**Has the author defined all of the terms they use?**

Defining key terms is critical to avoid confusion. For example, in a paper discussing the rights of adolescents to autonomy in medical decision making, the author needs to define what persons they are referring to with the word 'adolescent'; exactly what range of decisions they are referring to within the phrase 'medical decision making'; and exactly how autonomy is conceived in this context. Failing to define key terms used in an argument sacrifices clarity, and defining key terms in an unusual or unreasonable way may have implications for the generalisability of the argument.

**Dissect the argument: What are the premises of the author's argument? What is/are the author's conclusion/s?**

This section of the worksheet requires explanation of the anatomy of an argument and clarification of the difference between truth and validity.

Arguments consist of premises and a conclusion, for example:

Premise 1: Human suffering is undesirable.

Premise 2: Medically extending life in case X prolongs human suffering.

Conclusion: Medically extending life in case X is undesirable.

This is a valid argument because the conclusion follows logically from the premises; that is, it is impossible for the premises to be true and the conclusion false. Whether the conclusion (or a premise) is true or not is a separate issue. Refuting this argument requires proving one or both of the premises to be false—finding evidence that suffering is not always undesirable, or making a case that this particular medical intervention does not prolong suffering. There are no errors of reasoning in this argument, but there may be factual errors which will prove the argument to be a bad one. Consider another argument:

Premise 1: Lucy has a chronic cough.

Premise 2: Lung cancer can present with a chronic cough.

Conclusion: Lucy has lung cancer.

In this case, the argument is invalid. The premises are true but the reasoning is flawed. It is true that Lucy has a chronic cough, and that lung cancer can present with a chronic cough, but it does not follow that Lucy necessarily has lung cancer. Her chronic cough may be from asthma or chronic bronchitis. Lucy *may* even have lung cancer, although it could be of a type that would not usually cause coughing. So, even if all the information given is true, the conclusion that she *must* have lung cancer does not necessarily follow.

Another important phenomenon to be aware of is the 'hidden assumption'. A hidden assumption is a premise that is not explicitly stated. For example, a person may claim that homosexuality is morally wrong because it is unnatural. The hidden premise here is that things that are unnatural are morally wrong, as follows:

Premise 1: (Hidden) Things that are unnatural are morally wrong.

Premise 2: Homosexuality is unnatural.

Conclusion: Homosexuality is morally wrong.

To refute this argument one needs to either show the premises are false or that the reasoning is invalid. The reasoning is valid because it is impossible for the premises to be true and the conclusion false. However, even if one were to accept premise 2—in ignorance of the natural occurrence of homosexuality in many animals—the hidden premise 1 ignores that many things that are unnatural are considered morally good (or at least morally neutral), such as medicines, clothing or the telephone. Identifying the hidden premise is necessary to fully represent the argument, and hence to properly evaluate it.

In ethics papers, deciding whether premises are true will often require recourse to the scientific literature. Good ethics papers have well-researched references for factual premises. Appraising the validity of reasoning can be more difficult and requires practice. A full and rich account of logical fallacies is outside the scope of this paper; however, there are excellent, accessible resources available to hone these skills.<sup>11</sup> It is also worth noting that the overall position of an ethics paper is likely to be made up of a complex argument, with the conclusions of initial arguments making up the premises of further arguments. For example, some may claim that premise 1 (above) is a claim about the existence of ethical laws of nature. To support this claim, the person must develop an argument for the existence of ethical laws of nature and the definition of 'unnatural', ending with premise 1—things that are unnatural are morally wrong—as the conclusion. The analytical framework we present here is applicable to each constituent argument of a complex argument.

**Does the author address all relevant counterarguments?**

When making a case for an ethical position, it is imperative that authors address counterarguments to their position. If an author has not addressed relevant counterarguments, or has done so unconvincingly, this significantly decreases the strength of their case, or at least suggests a shallow investigation of the issue.

**Is the argument or exploration of the issue relevant to your practice?**

Some ethics papers will address a specific ethical question arising in the reader's own practice and assist them in navigating this scenario. Other papers will change the way practitioners think, affecting practice in myriad but subtle ways. There will be papers that, while of good internal quality, are not relevant to the reader's practice. Explicitly deciding on the relevance of a paper prompts practitioners to contextualise new ethical information within their own practice.

**CONCLUSION**

Working through this reflective worksheet will aid healthcare practitioners in actively reading and critically appraising ethics papers, enabling them to use the ethics literature more effectively. Developing these critical reasoning skills will also increase capacity to think through difficult ethical decisions in day-to-day practice. It is of particular importance that clinicians working within CES develop these skills to a high level. In the future, we hope to empirically evaluate the ethics critical appraisal worksheet.

**Key messages**

- ▶ Healthcare is increasingly ethically complex, and so there is a growing need for clinicians to keep up to date with the ethics literature relevant to clinical practice.
- ▶ Clinical ethics services have become commonplace, and the majority of the work of these services is done by clinicians in addition to their clinical roles.
- ▶ Ethics papers differ in important ways from scientific papers, requiring a different set of critical appraisal skills.
- ▶ We have developed a worksheet to assist clinicians in the critical appraisal of ethics papers, which can also be used as a shared evaluative tool, such as at ethics journal clubs.

**Correction notice** This article has been made Open Access since it was published Online First.

**Acknowledgements** The authors would like to acknowledge all CCHEL Clinical Ethics Response Pool members who have participated in the ethics journal club, and in so doing have helped to refine this critical appraisal worksheet.

**Contributors** MJ conceived the idea of the critical appraisal worksheet for clinicians. PE assisted in developing the idea and refining the worksheet. MJ wrote the initial draft of the manuscript. PE and MJ were both involved in draft review and development of the final version of the manuscript. MJ is the guarantor of this article.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Disclaimer** The views expressed in this paper are the authors' own and do not necessarily reflect the views of their institutions.

**Competing interests** None declared.

**Patient consent** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data sharing statement** No additional data are available.

**Author note** MJ is a medical doctor in intensive care medicine and has additional qualifications and experience in clinical ethics. She co-led the working group to establish the Centre for Children's Health Ethics and Law at Children's Health Queensland, and was the centre's inaugural Clinical Ethics Fellow. MJ recently completed a Churchill Fellowship in clinical ethics. She has published both empirical research and analysis pieces on healthcare ethics issues. PE is a science educator and philosopher, and is the Curriculum Director of the University of Queensland Critical Thinking Project. He is an expert in critical thinking and argumentation and has published on these topics in a number of contexts.

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