

Do ethics hold back or promote advances in medical knowledge and practice?

To address this question, it is essential to first address exactly what is meant by the term ethics. It can be defined more generally as a set of moral principles that control or influence a person's behaviour¹. If applied to its use in the medical field, it is defined as the branch of applied ethics relating to moral behaviour and judgements in clinical practice and clinical research². Simple definitions, yet they define a field that is anything but – a field that attempts to answer the unanswerable, to hold accountable those in positions of power and question the very essence of who we are as doctors, patients and simply humans.

What must also be addressed is what exactly the current position of medical knowledge and practice is, where we stand as a profession in terms of successes in research and clinical practice, and where we hope to advance to. The GMC states that medical practice is becoming inherently more complex, adding that the greater the knowledge we gain, the more factors doctors have to weigh in the balance when deciding the best course of action for their patients³, suggesting that with increased knowledge potentially comes increasingly complex ethical dilemmas.

Looking to the current position of medical research, it is clear that the advancement of medical care through research over the past century has been monumental, with much of our increased life expectancy attributed to healthcare⁴. Yet with every success comes another question, with every development comes a need to push even further, meaning the quest for advancement of medical knowledge is truly never-ending. What is also clear is that there are still cases where medical care is based on poor evidence, where potential life-changing treatments are not being used effectively or widely, and that whilst a theory may predict a treatment will be successful, in reality, evidence may prove the opposite. All this again highlights the ever-expanding need for accurate, effective and rapid research⁴. The role of ethics in this research – whether one of help or hindrance, is undoubtedly a key factor that must be discussed.

The first point to discuss is the idea that ethics is indeed holding back advances in medical knowledge and practice – in particular with relation to clinical research. The view that ethics forms a barrier to research can be applied to certain potentially controversial aspects of research – for example human embryonic stem cell research, cloning, genetic engineering, and research involving animal or human subjects⁵. These methods of research inevitably come with much ethical discussion and debate – not just within the world of scientific research, but from the wider communities.

Looking first at religious communities and their views on, for example, stem cell research, there is a varied response between faiths. Judaism and Islam seem to take a similar view that an embryo does not become a human until at least forty days post-conception. This contrasts the view taken by more conservative Christians that human life is created at conception⁶. These views then have an effect on their subsequent acceptance of embryonic stem cell research, with it being opposed by the Roman Catholic Church along with some Protestant groups, but accepted and supported by the Jewish community, along with many Muslim countries⁶. The barrier this creates to research is displayed in Italy – a predominantly Roman Catholic country, where the embryo is recognised as a subject of rights from the moment of fertilisation under Law 40, thus preventing the use of embryos for research, and limiting scientists to adult tissue stem cells⁷.

In addition there is still debate within the medical and religious communities as to the status and use of human tissue samples for educational and research purposes. Proving controversial is the legal status of human tissue retrieved from patients, and whether or not they could be used under a generalised consent for research or if a more specific consent protocol is required⁸. The simple act of debating and discussing these issues will clearly have an effect on access to samples for research whilst discussion is carried out, thus potentially slowing any research process relying on tissue samples and therefore slowing the advancement of research.

A final point to discuss regarding the role of ethics at slowing medical knowledge and advancement is to look at experiments and discoveries where the principles of ethics that now govern much modern research failed to be applied in quite the same way. Take the case of the Watson and Crick discovery of the structure of DNA in 1953. Clearly a game changing discovery for the field of medicine, however a discovery that was made with key x-ray differentiation data obtained without permission from Rosalind Franklin, and without acknowledgement⁹. Such actions now would surely be deemed unethical, and at the very least be deemed plagiarism¹⁰ – however without these actions the discovery may well have been made much later, again slowing the advancement of knowledge.

Secondly the argument that ethics in fact promotes the advancement of medical knowledge and practice must be discussed. Arguably the most important application for ethics is for protection of the public. Ethics provide guidelines within which research must be carried out, it oversees the work of practitioners and it seeks to avoid unnecessary harm or exploitation towards patients, and indeed health professionals themselves. An example of unethical research causing harm, and thus essentially the opposite of advancing medical practice, is shown in The Tuskegee Syphilis Study, carried out from 1932-1972 in the USA. The effects of untreated syphilis on 400 men were being studied, and even when penicillin treatment came available it was withheld, leading to progression of the infection. Most of the men not even aware they were part of an experiment⁹. Such unethical treatment is also shown in the immoral research conducted by German scientists in concentration camps, by Japanese scientists on Chinese prisoners of war – the list goes on. Surely when the actions of the practitioner or scientist so drastically go against the most basic of medical principles of non-maleficence¹¹, those actions and whatever is learned from them cannot be called advancement of medicine, and in fact must be deemed the opposite, as they so wholly oppose the basic principles of medical practice.

Another case worthy of discussion is the paper released by Andrew Wakefield in 1998, falsely connecting the MMR vaccine with the development of autism and Crohn's disease¹². Not only was

the claim simply incorrect, but it became clear that Wakefield had directly altered facts regarding his patients in order to fabricate evidence supporting his claim, and thus exploit the following scandal for financial gain¹³ – a clear disregard of the principles of integrity, honesty and transparency expected from medical research, as highlighted by the Medical Research Council ¹⁴ . This research then had the profound impact of significantly reducing vaccine uptake in two year olds – dropping to 80% in 2003 and 2004, compared with 92% in 1995 (pre-article release) ¹⁵, with the follow-on effect of allowing epidemics to be possible, such as the measles outbreak in Wales and England in 2012 to 2013 ^{15, 16}. Not only was this false advancement of medical knowledge, it actually created an environment of increased harm to a population – therefore a clear example of how ignoring the principles of ethics when carrying out research not only slows the acquisition of new knowledge, but prevented good medical practice from being carried out.

Ethics also has a role in governing individual healthcare. The correct application of ethics aims to create an environment in which patients have autonomy over their own care and where consent and confidentiality is ensured wherever it is legally possible¹⁷. This can be considered a true advancement of medical practice when comparing to the more historical practice of “doctor knows best”¹⁸. Success in clinical practice relates not just to achieving a time management goal, to getting the job done as quickly as possible – but it relates to patient experience, something that will always be improved by the correct application of the ethical principles of autonomy, beneficence, non-maleficence, and justice¹⁹.

The role of ethics in clinical practice can also be expanded to the wider population, in regards to the allocation and division of a limited supply of resources. It provides a baseline on which to discuss and allocate medical provisions in a way that will aim to provide the greatest benefit for the greatest population²⁰. This essentially aims to prevent select individuals receiving a disproportionate amount of a finite resources at the whim of an individual practitioner, by applying a cost-benefit principle to healthcare interventions that ensures a fair distribution of care amongst an entire population ²⁰.

These principles are applied in the UK by the NHS Commissioning Board, which sets out in its guidelines that “access to services should be governed, as far as practicable, by the principle of equal access for equal clinical need”²¹, and that a patient's care must never be advantaged or disadvantaged on any form of personal grounds, such as age, gender, sexuality, race or religion. This reflects the utilitarianism belief that society should aim to develop a healthcare system that is equally beneficial across entire populations²⁰. Without solid ethical principles these in place there is the potential for only select populations to feel the benefit of advancing medical knowledge, and for other populations to be left behind. If medical practice cannot advance for the entire population, then surely it is not advancing at all.

In conclusion, it is clear that the role of ethics within medicine is one of vital importance, not least because of its place in ensuring patient safety. What is also clear however, is that the application of ethical principles does take time, and can slow the progression of certain research projects – for example those involving the use of embryonic stem cells as outlined earlier in this essay. Finding a balance between creating an environment of clinical practice or research that is both entirely ethical and efficient is an undeniable challenge, one still faced on a daily basis with health services and communities across the globe. Populations are expanding more rapidly than resources, and demand on health services grows ever more extreme. Potential additional time-burdens from the discussion and application of ethical principles in regards to clinical practice and research may be unwelcome, and yes – could slow the advancement of knowledge. However what remains undeniable when looking at cases such as The Tuskegee Syphilis Study or the MMR scandal, is that when ethical principles are not followed, there is potential for unjust, illegal and inhumane activities to be carried out, and possibly to continue to lengths we could not yet imagine. Therefore an overall answer to the question “Do ethics hold back or promote advances in medical knowledge and practice?” must be that yes, ethics can slow the progression of knowledge and practice, but without them, the field of medicine could never truly advance – at least not to a place one would hope.

References:

1. Oxford Learners Dictionaries.
<http://www.oxfordlearnersdictionaries.com/definition/english/ethic> (Accessed November 2016).
2. Oxford Concise Medical Dictionary. (8th ed.). Oxford: Oxford University Press; 2010.
3. General Medical Council. The state of medical education and practice in the UK. 2011.
http://www.gmc-uk.org/State_of_medicine_Final_web.pdf_44213427.pdf. (Accessed November 2016).
4. European Science Foundation. *Forward Look – Implementation of medical Research in Clinical Practice*. May 2011.
http://www.esf.org/fileadmin/Public_documents/Publications/Implem_MedReseach_ClinPractice.pdf. (Accessed November 2016).
5. D. B. Resnik. . National Institute of Environmental Health Sciences. *What is ethics in research and why is it so important?* December 2015.
<http://www.niehs.nih.gov/research/resources/bioethics/whatis/>. (Accessed November 2016).
6. A Powell. Harvard Gazette. *Stem cells, through a religious lens*. March 2007.
<http://news.harvard.edu/gazette/story/2007/03/stem-cells-through-a-religious-lens/> (Accessed November 2016)
7. K Doherty. EuroStemCell. *Regulation of stem cell research in Italy*. August 2008 – updated March 2012. <http://www.eurostemcell.org/regulations/regulation-stem-cell-research-italy>. (Accessed November 2016)
8. C. S. Campbell. Kennedy Institute of Ethics Journal. Volume 8, Number 3, September 1998. pp. 275-305 | 10.1353/ken.1998.0019.
9. D. B. Resnik. National Institute of Environmental Health Sciences. *Research Ethics Timeline. (1932-Present)*. Last reviewed July 2016.
<http://www.niehs.nih.gov/research/resources/bioethics/timeline/index.cfm> (Accessed November 2016)
10. University of Oxford. *Plagiarism*. 2016.
<https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1>. (Accessed November 2016)
11. Stanford.Edu. *What are the Basic Principles of Medical Ethics?*
<https://web.stanford.edu/class/siw198q/websites/reprotech/New%20Ways%20of%20Making%20Babies/EthicVoc.htm>. (Accessed November 2016)
12. Wakefield AJ, Murch SH, Anthony A, Linnell, Casson DM, Malik M, et al. *Ileal lymphoid nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children* [retracted]. *Lancet*1998; 351: 637-41
13. *BMJ* 2011; 342 doi: <http://dx.doi.org/10.1136/bmj.c7452> (Published 06 January 2011) - (<http://www.bmj.com/content/342/bmj.c7452>). (Accessed November 2016)

14. Medical Research Council. *MRC ethics series – Good research practice: principles and guidelines*. July 2012. <http://www.mrc.ac.uk/publications/browse/good-research-practice-principles-and-guidelines/> (Accessed November 2016)
15. Public Health England. *Measles, mumps, rubella (MMR): use of combined vaccine instead of single vaccines: Background*. January 2014. <https://www.gov.uk/government/publications/mmr-vaccine-dispelling-myths/measles-mumps-rubella-mmr-maintaining-uptake-of-vaccine> (Accessed November 2016)
16. BBC News. *Swansea measles epidemic: Worries over MMR uptake after outbreak*. July 2013. <http://www.bbc.co.uk/news/uk-wales-politics-23244628>. (Accessed November 2016)
17. The General Medical Council. *Good Medical Practice*. March 2013 (Updated April 2014). http://www.gmc-uk.org/static/documents/content/GMP_.pdf. (Accessed November 2016).
18. John Carvel. The Guardian. *NHS constitution ends era of 'doctor knows best'*. January 2009. <https://www.theguardian.com/society/2009/jan/21/nhs-constitution-rights-treatment>. (Accessed November 2016)
19. BMJ 1994; 309 doi: <http://dx.doi.org/10.1136/bmj.309.6948.184> (Published 16 July 1994) <http://www.bmj.com/content/309/6948/184>. (Accessed November 2016)
20. UK Clinical Ethics Network. *Resource Allocation: Ethical considerations*. April 2011. (http://www.ukcen.net/ethical_issues/resource_allocation/ethical_considerations3). (Accessed November 2016).
21. Medical Directorate, NHS Commissioning Board working with Public Health. *Commissioning Policy: In-Year Service Developments and the NHS Commissioning Board's approach to treatments not yet assessed and prioritised*. April 2013. NHSCB/CP/02. <https://www.england.nhs.uk/wp-content/uploads/2013/04/cp-02.pdf>. (Accessed November 2016)