TRIPLE HELIX

NEW TECHNOLOGIES

MEDICAL ARTIFICIAL INTELLIGENCE
BIOLOGICAL NEURONAL NETWORKS
WHOLE GENOME SEQUENCING

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‘It would have been enough…’

Steve Fouch is CMF Head of Communications

My mother had a saying whenever the news proudly proclaimed that scientists had made a major new discovery of what some might call the ‘blooming obvious’, such as that babies need touch and smiles to thrive. She would roll her eyes, pronounce a loud ‘Ha!’, and retort, ‘Mothers have known that for years!’ We have known much since time immemorial that science is ‘discovering’ to be true.

One of the latest such ‘truths’ is the growing body of research suggesting that thankfulness is integral to maintaining and promoting mental health.[1] Over the last decade, research has shown that expressing gratitude to another person helps build wellbeing and social bonds. Expressing gratitude, in general, is associated with lower levels of anxiety, stress, and depression.[2]

I can hear my mother saying ‘Ha!’ and rolling her eyes once again.

But we should **not** be surprised or roll our eyes. All truth is God’s truth, as both Augustine and Calvin wisely observed.[3] Today in our culture the scientific method is seen as the most effective way of uncovering how the universe works. But the same is true in reverse – just because knowledge is ancient and not drawn from modern science does not necessarily make it invalid.

So, while I do have to ask who an agnostic or atheist is thankful to when practising ‘daily gratitudes’,[4] Scripture urges Christians to give thanks constantly and for all things to God,[5] the one in whom all things have their origin. Thankfulness for all God’s gifts has been one of the central features of Christian prayer since before the time of Jesus himself.

The Jewish hymn ‘Dayenu’, sung at Passover for centuries (if not millennia!), sums up this thankfulness. *Dayenu* roughly translates as ‘it would have been enough’. In recounting the story of the Exodus, in each of the hymn’s fifteen stanzas, the refrain says, ‘Lord, it would have been enough’.

If he had split the sea for us,
and had not brought us through to dry land,
Lord, it would have been enough[6]

I wonder how often we pray that way?

Lord, it would have been enough that I woke and started my day with breakfast, but you showed me that sunrise on my walk to work through the car park.

Lord, it would have been enough that we saved that patient, but you let me see his family’s relief and joy.

Lord, it would have been enough to have made it through my shift in one piece, but you gave me a friend with whom to talk and pray it over.

God is a generous giver. Twelve-basketfuls-of-leftovers generous.[7] The current narrative in the media and our professions is about crisis and stress, overload and despair. While this challenging time can neither be denied nor ignored, neither can we forget thankfulness for the blessings with which God still daily showers us.

In editing this edition of *Triple Helix*, I have much to be thankful for. Firstly the topic of new technology. The authors in this edition have reminded me that we have so much to thank God for in modern medicine, from the pioneering surgery of John Hunter and Christian Barnard in previous centuries to the potential of AI and genome sequencing in diagnostics, robotics in surgery, and computers powered by neurones, in this. The authors have done a wonderful job of balancing the potential for good and evil as they explore these emerging technologies. We hope you are similarly stimulated to thanksgiving and prayerful watchfulness.

> All truth is God’s truth, as both Augustine and Calvin wisely observed

I am also thankful to God for the fantastic creative team who pulled this edition together. The authors, in particular, deserve considerable credit for grappling with such complex, dense, and fast-moving ideas. I am also thankful for our Editor, David Smithard, for his creativity in networking, commissioning, and exploration of new ideas; Kevina Kiganda, our Digital Communications Coordinator, for advising on the digital and social media aspects of the new design; Jennie Pollock, our Head of Public Policy, with her keen proofreader’s eyes, and Darren Southworth of S2 Design, our designer who has redesigned this, CMF’s flagship magazine. Also, many thanks to the *Triple Helix* Editorial Committee who have all inputted into this edition in too many ways to list.

It would have been enough if the Lord had given us good writers, but he also gave us all these other creative individuals. We hope you like what their combined efforts have produced.

Finally, our prayer is that we all find encouragement and thankfulness in our day-to-day lives, as we remember all God’s abundant goodness to us amidst our trials and hardships. o

SCAN FOR MORE

references (accessed 10/3/23)

1. Giving thanks can make you happier. *Harvard Health Publishing*. 14 August 2021. *bit.ly/3YFjCLh*
2. Sansone R and Sansone L. Gratitude and Well Being: The Benefits of Appreciation. *Psychiatry (Edgmont)*. 2010 Nov;7(11):18-22. *bit.ly/3YxzY8E*
3. Mathison A. All Truth is God’s Truth — A Reformed Approach to Science and Scripture. *Ligonier*. 11 May 2012. *bit.ly/3LgcW34*
4. Marlys M. 11 Gratitude Journal Prompts to Practice Daily. *Oprah Daily*. 29 June 2022. *bit.ly/3l0fU14*
5. For example: 1 Thessalonians 5:16-18 and Colossians 2:6-7
6. Dayenu. *Wikipedia*. *bit.ly/3ZF9y64*
7. Luke 9:17 [see Luke 9:10-17 for context]

when is a baby not a baby?

changing the language of abortion

Full story at *cmf.li/3yfMHIO*

Jennie Pollock
CMF Head of Public Policy

On 27 February 2023, BBC's *Panorama* ran an 'investigation' into pregnancy advice centres, claiming that they give misleading information to pregnant women. They found 57 centres listed online, could find no fault with 34 of them and sent an undercover journalist in to investigate three. The journalist presenting it spoke only to women who were unhappy with the centres, and not the many who were satisfied with the support they had received. And while there were causes for concern in the practice and advice giving of the three centres visited, overall the piece was biased and very one-sided.

In 1968, when the abortion law came into effect, there were nearly 3,000 abortions each month. Just three years later, in 1971, that number had risen to 10,500 per month. It has never dropped below that rate since, reaching nearly 18,000 (17,906/month) in 2021 (the last year for which data is available).

That is a lot of women choosing to terminate their pregnancies – a lot of babies being killed. For context, there were just over 52,000 live births per month in 2021. In pregnancies where the mother had a choice, one in four chose to end it by abortion. Of course, many women and their partners suffer the tragedy of the miscarriage or stillbirth of their much-wanted babies. And there are, equally tragically, too many examples of women being forced or coerced into having an abortion against their will.

One quote from the commentators in the documentary (who all seemed to work for abortion providers or agencies referring to them) stood out. Jo Holmes, of the British Association for Counselling and Psychotherapy (BACP), proclaimed, 'It's not a baby when you've got a choice – it's a pregnancy, it's an unplanned pregnancy, an unexpected pregnancy, or an unwanted pregnancy'. Blatantly saying that unless you want it, what is growing inside you is not a baby. To show evidence to the contrary (eg from a fetal ultrasound) is 'misinformation'.

What was abundantly clear in the Panorama programme was that while Holmes and other commentators wanted women to be able to have a choice, they strongly objected to that being an informed choice. They didn't want women to be told that having a medical abortion at home meant that the pills would kill their baby and then cause them to pass it, usually into the toilet. They didn't want them to be offered ultrasounds in order to see the baby they were making choices about. They didn't want them to be told that many women experience deep feelings of regret, guilt, and sadness, often for many years after an abortion.

Yes, these things are likely to be distressing for a woman with an unwanted pregnancy. Yes, they should be communicated sensitively and gently. No, they should not be exaggerated or shared in a pushy way, trying to scare women into keeping their babies. But as for any other medical procedure, the woman should be given sufficient evidence about the procedure, its outcome, and its possible side effects in order to enable her to make an informed choice.

Coercion and manipulation work both ways, and both should be stopped. o

'podbabies'

who are they kidding?

Full story at *cmf.li/3BylRY1*

Trevor Stammers
CMF Public Policy Associate

Ectogenesis – the gestation of children in artificial wombs – has long been considered by many feminist writers as the ultimate liberation for women from the tyranny of reproduction. If a concept video, misleadingly entitled *EctoLife: The World's First Artificial Womb Facility* is anything to go by then ectogenesis is so superior to conventional pregnancy no one would ever think of carrying a child themselves ever again.

Ectogenesis of lambs for up to four weeks in a Biobag was first reported in 2017, and more recently, mouse embryos have been grown in an artificial womb for up to 12 days – half their gestational age. However, the headline writers cannot resist adding, '*humans could be next*'. They certainly won't be! A recent article, quoting Matt Kemp, who runs the perinatal lab at Western Australia's Women and Infants Research Foundation, clarifies, '*...clinical trials involving human babies are a long way off*'.

Some comment on the Ectolife vision has been highly critical, not primarily about the timescale of the project, but the wisdom of it. A recent, insightful blog entitled '*Podbabies: coming to a womb facility near you*' concludes, '*A mother's devotion to her baby is the template for our (wavering) belief that all human life has value. When we stop making mothers, we hack at the foundations of that value. Pity the factory-made infants, newborn and helpless in such a world.*'

The God of the Bible alludes to the devotion of a mother as an analogy of his own dedication and commitment to his people. '*Can a mother forget the baby at her breast and have no compassion on the child she has borne? Though she may forget, I will not forget you!*' (Isaiah 49:15). In our secular age, a mother's love for her baby is rightly appealed to as an indicator of the intrinsic value and dignity of all human life. But the Scriptures reveal that even that love, for all its burning intensity, is but a reflection of divine love.

In future decades, we may eventually physiologically replicate gestation in a pod, but the maternal bonds wrought in a mother's womb never can be. They can, of course, be despised or dismissed, but it will be at the next generations' peril. o

assisted suicide
learning from Canada's mistakes

Jennie Pollock
CMF Head of Public Policy

Recent months have seen a steady stream of alarming reports from Canada about the progress and implementation of their Medical Assistance in Dying (MAiD) programme.

In the wake of media stories, such as those of the disabled man who applied for MAiD out of fear of being made homeless,[1] the army veteran suffering from PTSD who was offered MAiD by an employee of Veterans Affairs Canada,[2] and the woman suffering from multiple chemical sensitivities who died by MAiD after her pleas for suitable accommodation went unheeded,[3] Professor Leonie Herx came to the UK in January to urge legislators, medics and campaigners to heed Canada's warning.

Speaking at public and private events in Jersey, Scotland and the Isle of Man, Herx highlighted these and many other stories of MAiD being sought or offered for conditions far outside the strict boundaries of the original legislation. At an event hosted by CMF, Herx noted that MAiD must be funded from within existing healthcare budgets, which most often means drawing from the already-stretched palliative care sector.

Herx is also one of dozens of signatories to a response to February's Report of the Special Joint Committee on Medical Assistance in Dying.[4] The letter states that the committee '*ignored much of the input of the … experts and individuals with lived experience who expressed concern and caution. …[T]hese invited witnesses were routinely talked over, ignored, argued with, and at times, openly disparaged by committee members*', and the resulting report reflects this bias in favour of MAiD's expansion.[5]

Canada is the 'canary in the coalmine', alerting the world to the sobering reality of the inevitable expansion of assisted suicide laws once introduced. We hope and pray that Scotland, the Isle of Man and Jersey will heed the warning. o

references (accessed 15/03/2023)

1. Mulligan C, Bond M. Ontario man applying for medically-assisted death as alternative to being homeless. *Toronto City News*. 13 October 2022. *bit.ly/428SPtP*
2. Lee M. Canadian soldier suffering with PTSD offered euthanasia by Veterans Affairs. *Fox News*. 22 August 2022. *fxn.ws/3Lkgh18*
3. Favaro A. Woman with chemical sensitivities chose medically-assisted death after failed bid to get better housing. *CTV News*. 24 August 2022. *bit.ly/3TipiQM*
4. Garneau M, Martin Y. Medical Assistance in Dying in Canada: Choices for Canadians. *Parliament of Canada*. February 2023. *bit.ly/42recqr*
5. Chochinov H *et al*. Expert Witnesses Speak Out Against Bias in Medical Assistance in Dying Report. March 2023. *bit.ly/3JGMZZr*

desperate for organs
how Christians can challenge the global crime of organ trafficking

Full story at *cmf.li/3llX3NM*

Trevor Stammers
CMF Public Policy Associate

'*What can a man give in return for his life?*' asks Jesus rhetorically of his disciples and the crowds following him (Mark 8:37, RSV). In doing so, he implicitly acknowledges that people will go to almost any lengths to save their own skins. They will also do the same for those they love. If the threat of death to your own children comes from incipient organ failure, parents will understandably be prepared to do everything they can to obtain a suitable donor organ for transplantation for their child.

A Nigerian couple have recently been convicted of organ trafficking under the Modern Slavery Act, having allegedly brought over to the UK a young Lagos street trader to donate his kidney to their daughter, Sonia, in a transplant operation privately arranged at the Royal Free Hospital for £80,000. Organ trafficking was a worldwide organised crime well before the Covid pandemic, but post-pandemic, the situation is far worse. There was a global reduction of 17.6 per cent in the number of organs transplanted in 2020 compared with the previous year, and the numbers have still not returned to pre-pandemic levels.

In such a climate, for those desperate enough and able to pay, the market for human organs is a tempting alternative. And there are plenty willing to source human body parts for a price to meet that need.

At the other end of the 'supply chain', a worsening global economic situation means the poorest in the world will be increasingly vulnerable to the lure of promises of work and a few thousand pounds in exchange for a kidney.

Whilst the Scriptures obviously do not refer to organ donation per se, they do specifically refer to the giving of one's life for another (John 15:13). Live kidney donation, though not without some risks, rarely results in the loss of the donor's life. Deceased donation should surely not be problematic for those who know that the eternal destiny of their souls is not dependent on the state of the 'earthly tent' (2 Corinthians 5:1) that we leave behind at our death.

The more general principles of kindness (Ephesians 4:32), love towards our neighbour (Matthew 22:35–40, Mark 12:28–34, and Luke 10:27), bearing one another's burdens (Galatians 6:2), and preferring one another in honour (Romans 12:10), all surely point towards an attitude of being open to deceased donation as a minimum moral requirement. Living donation should also be something that Christians ought to be at least raising from time to time in their fellowships and churches.

Tackling organ trafficking is a massively complex task, but reducing the demand for organs by all ethical means has to be a part of that solution. I have been a regularly worshipping Christian for over a half a century, and not once have I ever heard reference made to organ donation at any church event. While some Christians advocate for altruistic organ donation (ie not for gain and to a stranger – as in John 15:3 – giving one's life (or kidney) for another), deceased donation is far more common.

Faith in Operation is a network for Christians in the UK interested in donating organs altruistically. Their founder, Joe Walsh, shared his story on the *CMF blogs* back in 2020. We need to share more stories and see more responses like this across the global church. o

reference (accessed 15/03/2023)

1. Walsh J. How Christians can end the waiting list for a kidney. *CMF Blogs*. 7 September 2020. *cmf.li/2ZclGhZ*

CHRISTIANS AND THE NEW TECHNOLOGIES

Laurence J Naismith considers what the Bible tells us about humanity and how it should affect how we interact with new medical technologies.

Laurence J Naismith *is a retired specialist in forensic psychiatry. He also has degrees in theology and is the author of several books on mental health and Christianity*

'Would you trust a robot surgeon powered by algorithms?'[1] **This was the title of an article in the *Daily Telegraph*.** Although it initially sounds exciting, one is brought back down to earth again by the quote in the subsequent article from a surgeon who comments, '*Current machine learning and AI systems have a long way to go before they can be trained to make that human judgement of where to cut and where not to cut*'. Nevertheless, he did add, '*Can they be taught to do that? Yes, but that's not ready for prime time yet*'.[1]

It is not uncommon to come across news items about introducing and applying new technologies to advance medicine. Some will still recall the worldwide astonishment when Christian Barnard performed the first heart transplant in 1967. More recently, one might think of the robotic surgery previously mentioned, wherein an intelligent machine performs the surgeon's task. Another relevant clinical area is that of whole genome sequencing (WGS), where genomic information is used to identify inherited disorders and mutations which can influence the progress of many diseases. As in all branches of science, medicine is rapidly advancing in its knowledge and capabilities. Many innovations are made possible by advances outside medicine itself. They have been imported and applied to medical practice, often from genetic and computer science.

Many, if not most, of the innovative procedures trumpeted in the media will fall outside of our particular fields of clinical practice. Nevertheless, we should still have some appreciation of our own attitudes towards the ethical issues involved. This is important because news items are frequently the

key points

- New technology is ubiquitous in all areas of life, not least in healthcare.
- The pace and depth of change in new technologies is increasing at a dizzying rate that can be scary and bewildering at times.
- Our understanding of our humanity in relationship to God should influence how we interact with new technology.

SCAN FOR MORE

subject of conversation amongst work colleagues and in the wider world. We don't need to be aware of all the intricate details of whatever procedures are involved to understand the basic moral considerations. We all recognise that every area of medicine, including research such as clinical trials etc., are subject to strict ethical scrutiny.

Although we recognise that careful ethical considerations govern all forms of clinical work (and one would in no way wish to disparage this), it must be remembered that these ethical standards generally stem from a mindset that does not necessarily conform with a Christian viewpoint. Science (including medicine) and society today are very strongly influenced by Darwinian evolutionary thinking. They are resistant, often very vocally, to the biblical account of the origin of humankind and its account of the origin of the earth and the solar system. The divine is thus excluded from human thought processes. This leads to humanity assigning the honour for our achievements to ourselves and ourselves alone. Like the residents of Babel,[2] we want to construct a tower to reach the heavens and make a name for ourselves. There is nothing wrong with ambition or a wish to improve one's lot, but an attitude of selfish pride is contrary to biblical teaching.[3]

All this is unsurprising as humankind opposes God and the things of God.[4] Fallen individuals do not want to acknowledge God as the Creator. To do so places us in a position of self-perceived inferiority. This impinges on our self-esteem. We do not want to have what we perceive as a secondary status. We don't want to be told what to do. We don't want our self-directed pride and achievements to be dented in any way or the credit for them to be attributed elsewhere. The concept of the sovereignty of God offends us because it means we are not in control. Indeed, it is a death blow to human autonomy.

As Christians, we recognise and attest to the attributes of God, which include his foreknowledge, sovereignty, and power. We know that God has created everything and that he has made humankind in his image.[5] We did not simply appear as the result of a purely random, gradual process, some billions of years long, in which primaeval slime (wherever that came from!) gradually metamorphosed via ape-like creatures into the human form as we now know it.

Humans were created as intelligent beings, and medicine gives us a plethora of examples of our ingenuity. Indeed, it is astonishing what advances are now being made. Just over half a century ago, Christian Barnard could not have contemplated robotic machines performing surgery any more than the pioneering surgeon John Hunter of the eighteenth century could have envisaged heart transplant operations.

Artificial intelligence (AI) is demonstrated by machines rather than humans. It is part of everyday life in search engines, speech recognition such as in the Alexa devices used by many, and computer games. In medicine, AI can pick up details in scans that the human eye can miss, and it is already being used for this purpose. Nevertheless, the potential dangers are well recognised, including the mooted possibility of super-intelligent AI improving beyond the ability of humans to control it. This led Stephen Hawking to suggest in a BBC interview that such a development could '*spell the end of the human race*'.[6] William Cheshire's piece in this edition explores the theological and ethical implications of AI in medicine in more detail.

> Would you trust a robot surgeon powered by algorithms?

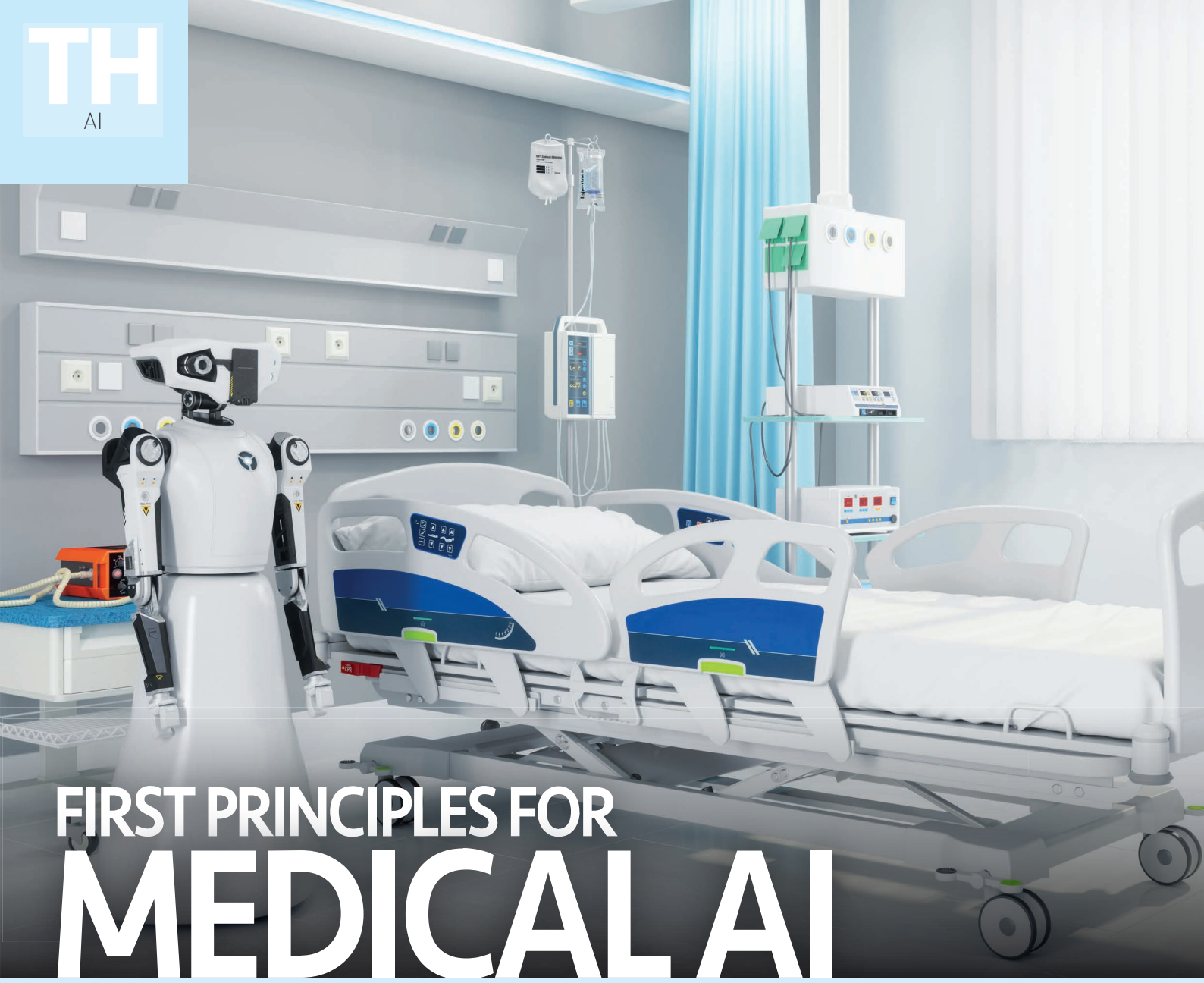
As already noted, whole genome sequencing (WGS) can provide genomic information that can influence the evaluation and treatment of inherited disorders. Superficially this seems helpful and indeed desirable; in practice, the pre-natal identification of an inherited disorder could also lead to an abortion. This raises ethical questions for Christians involved in this area of investigation. Melody Redman and Francis Sansbury's article in this edition addresses these and related issues in more depth.

In day-to-day clinical practice, most Christian healthcare workers are not faced with pressing ethical problems that trouble their consciences. We are dealing with sick people and do our best in often difficult circumstances to alleviate their suffering and effect improvement. Jesus healed the sick, and such is our aim as well. Nevertheless, as in all aspects of life, although we are under authority, it is primarily the authority of Christ to which we owe obedience, and that authority must take precedence.[7]

The modern world generally regards the human race as the product of a continuous sequence of random events with no direction. *Homo sapiens* are thus perceived as merely another animal, albeit one with superior skills and intelligence. Christians have a very different way of looking at these matters. We acknowledge God as Creator and the One to whom we are responsible and must answer. Humanity is made in the image of God and must answer to him. While acknowledging man's ingenuity (itself a gift from God), we must not permit wonder at this to detract from a proper sense of awe and reverence toward God himself, the Creator of all things. This truth must be at the forefront of our minds and dictate our ethics and clinical practice. To do so is to bear witness to God and the gospel in our interactions with our colleagues. o

references (accessed 20/02/23)

1. Chowdhury H. Would you trust a robot surgeon powered by algorithms? *Daily Telegraph*, 25 August 2020. *bit.ly/417DRDI*
2. Genesis 11:1-9
3. Proverbs 16:18; 1 John 2:16
4. Psalm 10:4; Romans 1:18-32
5. Genesis 1:26-27
6. Cellan-Jones R. Stephen Hawking warns artificial intelligence could end mankind. *BBC News Online*. 2 December 2014. *bbc.in/3EopUaF*
7. Acts 5:29



FIRST PRINCIPLES FOR MEDICAL AI

William P Cheshire looks at the emerging use of artificial intelligence (AI) and machine learning in medicine, the great opportunities it presents to improve treatment and care, and the pitfalls and dangers we should be aware of as Christian health professionals.

William P Cheshire
is a neurologist at Mayo Clinic in Jacksonville, Florida

The history of medicine is punctuated by novel innovations. Consider the impact of anaesthesia, antibiotics, the hypodermic syringe, the stethoscope, X-ray imaging, MRI, artificial ventilators, pagers, pacemakers, organ transplants, gene sequencing – the list goes on. The first use of each of these inventions revolutionised the diagnosis and treatment of the sick. Technology turns the pages of the book of medical progress.

Prophets of the technosphere predict that the next wave of extraordinary progress lies with artificial intelligence, or 'AI'. This refers to the simulation of human intelligence by machines programmed to mimic human thought patterns such as learning, adapting to new data, problem-solving, executing complex tasks, and even social interaction – without being assisted by humans. Enthusiasm for its transformative potential has led to predictions that AI will usher in a fourth technological revolution comparable to the neolithic transition to agriculture, the industrial revolution utilising mechanised production, and the digital revolution based on computer processing of digital information.

medical AI

What AI might mean for medicine is a subject of exciting speculation. Inspired by accelerating change, the CEO of Google has predicted that, within the next five years, '*we will shift to a world that is AI-first*'.[1] The challenge for physicians will be to calibrate medical AI in such a way as to place the interests of patients first. With that in mind, a responsible approach to making decisions about medical AI must not be limited to technique but should thoughtfully explore the ethics of human interaction with technology.

ways to think about technology

The bioethicist Michael Sleasman offers a helpful, ethical framework for thinking through decisions about the use of technology.[2] He proposes four categories, which he labels as sentimentalism, messianism, pragmatism, and responsibilism. How one navigates these categories and balances their concerns draws from prior assumptions about what it means to be human and a thinking, morally responsible being.

technological sentimentalism

In one corner are those who instinctively question or resist technological innovation. They may feel threatened by technological trends that erode kindness in communication or seem to treat people as things to be manipulated. Finding it increasingly difficult to unplug from electronic connectivity, they feel that technology deprives them of a more natural way of inhabiting the world. They see technology as the source of a host of social problems, and thus novel technologies such as AI as a Pandora's box of potential new problems. Recognising that AI has the potential to magnify biases in data, they worry that AI could worsen unjust disparities and social inequalities, placing the poor and vulnerable at a greater disadvantage. Sentimentalists value being satisfied with what one has and lament the loss of what is nostalgically imagined as a simpler, less technological age. Sentimental rejection of medical AI, however, would deny us its benefits.

technological messianism

At another corner are those who regard technology as intrinsically good and desirable. The potential useful benefits of AI stagger the imagination, especially as medical progress relies increasingly on digital technologies. The enormous amount of data in every person's genome and the accumulating scientific content in medical journals exceed the capacity of the human brain to recall, interpret, or synthesise all there is to know about health and disease. AI promises to augment our ability to assess this 'megadata' and bridge the information gap. An already familiar application of AI is natural language processing to generate clinical notes efficiently from speech. In medical research, machine-learning algorithms are mining vast clinical data sets to detect previously unrecognised disease patterns. Artificial neural networks utilising deep learning are beginning to analyse radiographic, histologic, and morphologic images with stunning diagnostic accuracy. Such advances may lead to earlier detection of disease when it is more easily treatable.

We can trace optimism in technological progress to the European Enlightenment, which sought to improve the human condition by applying rational knowledge and invention to fulfil material needs. Optimism in technology can overlook unintended bad consequences, and it flies off the rails if taken to the extreme by those who would place ultimate hope in machinery as the saviour of society.

The uncritical adoption of technology sometimes appeals to the technological imperative, which is the philosophical claim that technology in all its achievable forms is inevitable. The technological imperative bows to this supposed inevitability and reduces to the belief that if it can be done, it should be done. Such fatalism is seriously mistaken because it abandons ethics by denying the role of human decision and responsibility.

technological pragmatism

The prevailing attitude toward technology today is pragmatism, which regards usefulness as the ultimate measure of truth and meaning. From a pragmatic perspective, AI is a transactional tool for solving human problems by plugging predicted benefits and risks into a mathematical equation, digesting more and more data to calculate potential consequences far into the future. Would such hyper-pragmatism ultimately deliver human flourishing?

Thinking about thinking technology brings this question to the forefront. Projects to construct a machine intelligence superior to human intelligence presuppose that thought is reducible to matter and its physical causes and random collisions. If intelligence were nothing more than neurones firing and neurochemicals churning in a particular pattern, then, in principle, intelligence equivalent to or surpassing the human mind could be replicated in electronic circuits. Some philosophers go so far as to suggest that if machines can mimic human intelligence, then more powerful machines will eventually exceed it and potentially replace it. The Oxford bioethicist Julian Savulescu speculates that, '*Humans may become extinct…We might have reason to save or create such vastly superior lives, rather than continue the human line*'.[3] One rightly shudders to consider the implications of such a view for medicine.

Whereas pragmatism seems objective, its blind spot is the assumption that empirically verifiable facts are the only valid knowledge. If that were true, then ethical problems could be resolved by acquiring a sufficient amount of measurable factual data and subjecting that data to intense machine analysis. In reality, facts are necessary but insufficient for ethical analysis. As the volume of clinical data increases, the variables that can interact increase, and the number of potential outcomes enlarges exponentially. Having more facts is not enough. Ethical decisions depend on considering what is meant by 'useful,' which requires assigning to facts not just numerical value but moral value. Lacking or ignoring knowledge of moral right and wrong, pragmatism and computer programs that emulate it descend into moral relativism.[4]

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key points

- AI will transform healthcare in many ways, some as yet unforeseen, and differently from other technologies in that it imitates human intelligence.
- While customary ethical approaches to technology can guide us, the author argues that responsible use of AI must affirm and preserve the human aspect of medicine.
- The author challenges us to use this new technology to serve Christ and glorify God in improving the care of patients.

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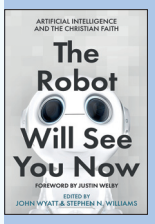

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references (accessed 17/02/23)

1. Schultz S. Artificial Intelligence: The Next Industrial Revolution. *Inside HPC*, 5 February, 2018. *bit.ly/3S9jP7z*
2. Sleasman M. Thinking Through Technology Part III. The Bioethics Podcast, *Center for Bioethics & Human Dignity*, 25 July, 2008. 8:1. *bit.ly/3xuPpTX*
3. Savulescu J. The human prejudice and the moral status of enhanced beings: what do we owe the gods? In: Savulescu J & Bostrom N, editors. *Human Enhancement*. Oxford: Oxford University Press 2009, p. 244.
4. Hughes A. The folly of scientism. *The New Atlantis*, 2012; 37: 32-50. *bit.ly/3l8AeET*
5. West J, editor. *The Magician's Twin: C. S. Lewis on Science, Scientism, and Society*. Seattle, WA: Discovery Institute Press, 2012.
6. DeCamp M & Tilburt JC. Why we cannot trust artificial intelligence in medicine. *The Lancet*, 2019; 1(8): E390. *doi.org/10.1016/S2589-7500(19)30197-9*
7. John 3:16-17
8. Genesis 1:27
9. Philippians 2:5-7
10. John 15:9, Romans 5:8
11. John 10:10
12. Richards J. *The Human Advantage: The Future of American Work in an Age of Smart Machines*. New York: Crown Forum, 2018, 195.
13. Mark 12:31, Luke 10:24-37, Galatians 5:13
14. Hippocrates. *Epidemics*. Circa 400 BC, Book I, Section XI.
15. Isaiah 55:8
16. John 14:6

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CS Lewis understood this when he warned that recognising facts while denying the realm of value undermines the authority of the ethical principles needed to justify limits on human manipulation.[5] Unconstrained pragmatism makes it possible to justify committing any evil, provided a greater benefit is predicted for society at large.

Powerful computational technology, even if supplied with unimaginable quantities of data and outfitted with the superfast computer processing speed of AI, operates within the realm of fact. Technology, while useful, is not, on its own, the final answer to human problems. Virtue is also needed, an aspect of human intelligence that surpasses the realm of factual knowledge where AI operates, not by degree but in kind.

technological responsibilism

Technological responsibilism realistically accepts both the promise and peril of technology while engaging with it critically and with an awareness of what it means to be human. This perspective recognises both fact and value and distinguishes between the real and the artificial.

Technology itself is morally ambiguous and laden with the values of its designers and implementers. AI is a tool, not an agent; a machine made of matter and not a living being. Although AI might be programmed to imitate human emotion and, in some ways, to deliver care, it cannot truly care about the patient. An AI might be programmed to render responsible decisions that conform with humanly decided values, but it cannot be programmed to be responsible. Applying the attribute of trust to AI, according to physicians Matthew DeCamp and Jon Tilburt, *'is a category error, mistakenly assuming that AI belongs to a category of things that can be trusted'*.[6] AI cannot be said to have the human attributes of voluntary responsibility, moral agency, motives, or character.

Some uses of AI blur the line of moral responsibility. A signature feature of deep learning AI is what is known as its 'black box' problem, in which hidden layers within artificial neural networks are inaccessible to human users, who see only input and output and cannot know how the AI is analysing data. One might accept an AI diagnosis of cancer based on a proven track record for accurate analysis of images. But if an unsupervised AI supplied with clinical data were to advise an elderly patient to forego life-prolonging treatment without giving reasons, one would be justified in querying whether the machine's decision was ethically valid.

Technological responsibilism entails a more comprehensive perspective on human nature than is available within the paradigm of pragmatism. Christian healthcare professionals affirm that humans are much more than the sum of their cells. Every patient is a precious unity of body and spirit who is loved by God.[7] All people are endowed with unique dignity as image-bearers of the Creator.[8] Responsible use of technology respects this innate dignity in others, a dignity affirmed by Jesus Christ, who, though being in the form of God, took on humanity.[9] Unlike AI, which is incapable of compassion, Jesus loves us[10] and came that we might have life abundantly.[11]

Moral responsibility for medical AI lies with those who design and implement its programming. This is why it matters what moral vision is embedded in the technology. For medicine to retain its moral integrity, AI must remain our tool and not become our master. We must ensure we retain the prerogative to override an AI-generated healthcare decision we believe to be morally wrong and harmful to patients. In harnessing the power of AI, we must be careful not to become so enchanted by its technical charm that we lose sight of the special dignity of our patients, who are bearers of God's image.

Responsible use of AI extends to an awareness of how its use may influence implicit attitudes toward others. Once we habitually converse with AI, a mere machine imitating human emotion, we must guard against thinking of other persons as objects. The philosopher Jay Richards observes, '*The greatest delusion of our age is the paradoxical penchant to deny our own agency while attributing agency to the machines we create*'.[12]

conclusion

The potential medical benefits of AI are promising. If used wisely, AI promises to be a powerful tool to assist Christian healthcare professionals in their calling to heal the sick and to love and serve those in need.[13] However, caution also is needed to fulfil the Hippocratic imperative to '*first do no harm*'.[14]

The eventual entry of superintelligent AI into medicine will challenge healthcare professionals in new ways to choose whom we will serve. When we reach the limit of what we as finite humans can accomplish, will we place our ultimate trust in supercomputers or in Christ? Will we look to and empower technology, potentially allowing it to master us, or will we strive to align our use of technology with God's good purposes? Christians understand that God's thoughts are infinitely higher than anything possible by machine intelligence.[15] Christians believe that Christ, not technology, is the true saviour, and his teachings are our first principles for providing medical care. Christians know that Christ, not machine intelligence, is the way, the truth, and the life,[16] our only reliable source of wisdom, our rescue from disease and death, and our everlasting hope. o

ETHICAL CHALLENGES POSED BY BIOLOGICAL NEURONAL NETWORKS

Matthew Hosier explores a cutting-edge technology that raises many questions about humanity.

Matthew Hosier *leads Gateway Church, Poole, and regularly contributes to Think Theology and the CMF Medical Study Group.*

That computer technology grows ever more powerful, refined, and efficient is self-evident. Moore's law observes that the number of transistors in an integrated circuit doubles every two years,[1] and we are familiar with factoids such as the phones we carry in our pockets containing more computing power than the Apollo spacecraft that carried men to the moon.[2]

There are now suggestions that the rate of improvement in chips is slowing as development starts to run up against the physical limits of silicon technology. Impressive as today's computers are, there is no doubt that they are in many ways puny compared with the power and efficiency of animal brains. While a smartphone has hundreds of thousands of times the memory and processing power of the Apollo computers, they still lag way behind the brains of mammals.

While silicon computers transformed society, they are still outmatched by the brains of most animals. For example, a cat's brain contains 1,000 times more data storage than an average iPad and can use this information a million times faster. The human brain, with its trillion neural connections, is capable of making 15 quintillion operations per second.

key points

- Animal brains are faster, more energy efficient, and more self-organising than silicon processors, driving a move to incorporate brain neurones into computers.
- Will such entities using human neurones become conscious or have rights as humans and animals do, or is this a category error?
- The author asks if the more important ethical questions are around the ownership and commercialisation of human tissues and the reduction of humanity to mere neuronal connections.

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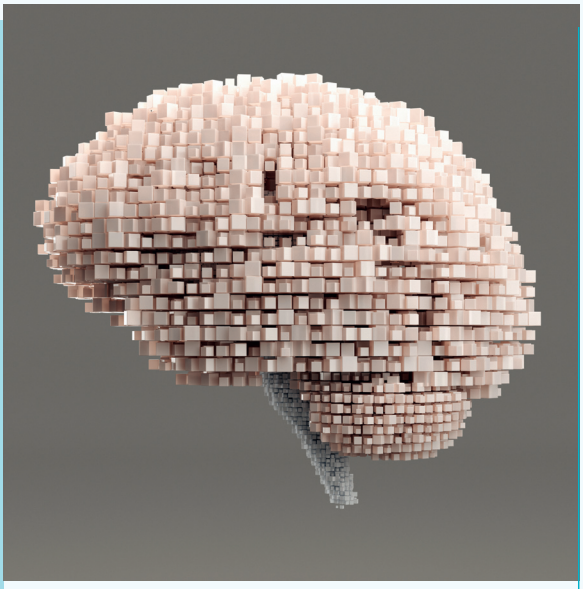
Human beings are not smartphones whose hardware can be upgraded while the SIM card of the soul is maintained



This can only be matched today by massive supercomputers using vast amounts of energy. The human brain only uses about 20 watts of energy, or about the same as it takes to power a lightbulb. It would take 34 coal-powered plants generating 500 megawatts per hour to store the same amount of data contained in one human brain in modern data storage centres. [3]

This vast disparity in storage, processing speed, and energy efficiency between animal brains and silicon-based computing means that researchers are beginning to explore the possibility of creating biological computing.

This possibility was brought into focus when Melbourne-based Cortical Labs incorporated brain cells in a computer chip. In a paper describing their research, [4] the team show how they made these first steps in creating a 'synthetic biological intelligence' (SBI). Their '*DishBrain*' computer used neurones from both rodent and human sources to create a computing network that learnt to play a version of the classic arcade game Pong.

A biological neuronal network (BNN) like *DishBrain* offers great potential for more powerful computing as the 'wetware' of neurones integrates with computing hardware using the common language of electricity. *DishBrain* demonstrated that a BNN is capable of self-organising – that neural development can occur as the computer responds to stimuli and learns to better complete the task it has been set.

This fascinating piece of research represents more than mere scientific curiosity: BNNs really could offer the potential for much faster and more powerful computers, breaking free of the constraints imposed by silicon circuits. As well as massively improved processing power, these neural computers could use far less energy than existing machines. They would be smaller, more flexible, and cheaper to run than silicon-based computers.

But alongside these fascinating possibilities lie substantial ethical questions.

The very name chosen by the Melbourne team is troubling: *DishBrain* highlights the disembodied nature of what has been created – human neurones, yes, but human neurones operating in a Petri dish culture rather than within a human body.

The researchers report significant differences in performance between different cell sources, with human neurones possessing superior information-processing capacity to rodent neurones. If this is the case, we would expect human neurones to be preferred in future and used in more sophisticated BNNs. How might we feel about super-powerful computers running on wetware comprising self-organising human neurones? And what ethical considerations should researchers and legislators be mindful of as such computers are developed?

The human neurones in *DishBrain* were developed from a stem line from '*an XY donor isolated from neonatal foreskin*'. [5] As stem lines go, this is ethically a relatively untroubling one. But if BNN's are developed from stem lines such as this, we should still ask ethical and practical questions.

For example, what of donor consent? If tissue samples are used in the creation of neural computers, do the donors need to know this and give consent? What rights might donors then have? Presumably, BNNs could be of significant economic value, so might donors expect some financial compensation? What about intellectual rights as synthetic biological intelligence develops? Or copyright if such computers are able to self-replicate?

DishBrain is described by its creators as a first step in synthetic biological intelligence. This raises the question of whether BNNs could develop a form of consciousness. Might they be able to feel pain? If so, would they have some kind of rights analogous to existing human or animal rights? What would be the legal status of such entities?

These ethical questions might feel less sharp if human stem lines were being used to develop, say, cardiac or skin cells that were then somehow incorporated in a computer. That it is neurones being used certainly 'feels' more problematic, even if at a fundamental, ethical level, the questions are similar. The reason neurones will be used is because of their ability to self-organise. It is this neural plasticity that will enable more powerful BNNs to be developed. But does this mean we really could end up with a brain in a dish?

An issue here is the common dualistic tendency to separate consciousness from bodies rather than to speak of humans having embodied consciousness – the 'embodied soul' we see in the biblical account of the creation of human beings. In the popular

imagination, human consciousness resides in human brains, and machines that incorporate human neurones might therefore be assumed to have the capacity to develop human-like consciousness. Certainly, AIs are increasingly able to pass the 'Turing test'[6] and give the appearance of consciousness, even if this is only appearance and not reality.[7] It is likely that BNNs would push ever further in this direction.

If computers increasingly incorporate human neuronal networks, and the information they hold is passed from one computer to its replacement, the idea that humans are essentially brains contained in disposable 'meat shells' will be reinforced. This notion, in turn, will have a bearing on other applications of technology in health and on some gender-related issues that society is grappling with. This is one reason why the use of neurones, as compared with other types of cells, feels significant.

So we need to be clear: a biblically framed understanding of humanity would reject the notion that *DishBrain* represents the first step in creating human intelligence abstracted from the human body. Biblically speaking, human beings can only be understood as embodied souls created in the image of God.

> *So God created mankind in his own image, in the image of God he created them; male and female he created them.* (Genesis 1:27)

This creation was bodily (material flesh and blood), binary (male and female), and self-sustaining (oriented towards reproduction). Human beings are not smartphones whose hardware can be upgraded while the SIM card of the soul is maintained. There is a body-and-soul integrity to men and women which cannot be abstracted one from the other. That we might use the analogy of computing hardware and software to understand human intelligence (just as previous generations used the analogies of the technologies of their day, such as steam power, or clockwork) is understandable. But we are made in the image of God, not the image of a computer.

The fantasies of sci-fi seem to be increasingly being realised, and it is not impossible to imagine that, in time, we will be able to create androids with 'brains' built around a BNN and bodies that are able to interact with the world in a way analogous to how humans do – like Bishop in the movie *Aliens*.[8] Such creations would be impressive and ethically troubling, but they would not be human. They would still be hardware and wetware, not embodied souls created in the image of God.

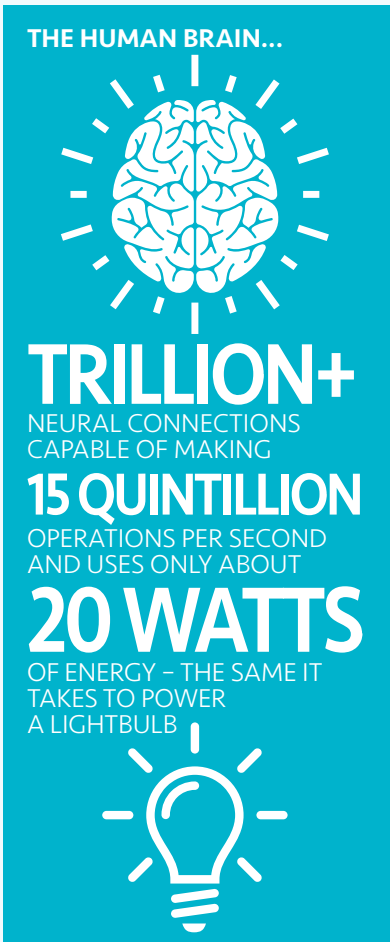
Far more likely than such a scenario, however, is that BNNs start to be incorporated into more prosaic computing technology to improve battery life, processing power and memory. Even if we are clear that such computers are not human, we will still need to decide whether their use is appropriate – where on the 'lawful but not beneficial'[9] spectrum would such machines sit?

So long as the stem-cell lines from which neurones are produced are ethically sourced and issues around consent and ownership properly addressed, we might find no particular problem in the use of BNNs. In this case, we might view neurones as simply a type of circuitry. However, it is likely that many would feel disturbed by such computers or troubled in conscience by their use. An analogy might be found in vaccines developed using fetal t issue lines. That there is a direct connection, albeit distant and attenuated, with a real *person* could cause understandable disquiet.

> As well as massively improved processing power, these neural computers could use far less energy than existing machines

Another theological line of thought to consider is the general biblical prejudice against one human possessing ownership of another human or even parts of their body. This is seen in a variety of biblical sources, from the rigid prohibition against murder in Genesis 9:6 and Exodus 20:13,[10] to a rejection of prostitution,[11] to the condemnation of slave traders.[12] Within our cultural framework, this Christian legacy has led not only to the abolition of slavery but to the fact that in English common law, no one actually legally owns a dead body.[13] (There was a subtle but significant change in this in May 2020 with the introduction of the 'opt out' register for organ donation.)[14] If BNNs were to develop to the extent that the phones in our pockets contained human tissue; tissue which we own, that would represent a significant moral and legal shift.

For these reasons, and others space does not allow us to consider, we should be extremely cautious about the development of BNNs. As with developments in embryo research, we should wish for governments to be a step ahead of researchers in setting ethical guardrails around the development of such technologies. Sadly, that might be wishful thinking. o



references (accessed 17/02/23)

1. Britannica, The Editors of Encyclopaedia. Moore's law. *Encyclopedia Britannica*, 18 Nov. 2022, *bit.ly/3lEEZOV*
2. Kendall G. Would your mobile phone be powerful enough to get you to the moon? *The Conversation*. 1 July 2019. *bit.ly/40WBGmi*
3. Savalsecu J. Tech firms are making computer chips with human cells – is it ethical? *The Conversation*. 24 May 2022. *bit.ly/3lbT4eo*
4. Kagan B *et al*. In vitro neurones learn and exhibit sentience when embodied in a simulated game-world. *Neuron*, 110, 23, 2022, 3952-3969.e8, *doi.org/10.1016/j.neuron.2022.09.001*
5. *Ibid*.
6. Britannica, The Editors of Encyclopaedia. Turing test. *Encyclopedia Britannica*, 7 February. 2023, *bit.ly/3Sf9FTe*
7. Vallance C. Google engineer says Lamda AI system may have its own feelings. *BBC News Online*. 13 June 2022. *bbc.in/3KcRhs4*
8. Cameron J. Director. *Aliens*. 20th Century Fox. 18 July 1986. *imdb.to/3lIteqS*
9. 1 Corinthians 10:23
10. See also Revelation 22:15
11. 1 Corinthians 6:16
12. 1 Timothy 1:10
13. Campbell-Tiech A. A corpse in law. *British Journal of Haematology*. 2002.117: 809-811. *doi.org/10.1046/j.1365-2141.2002.03578.x*
14. Saunders P. Organ donation opt out plans in England – not nearly as clear cut as it might seem. *CMF Blogs*. 8 August 2018. *cmf.li/3S6lpGi*

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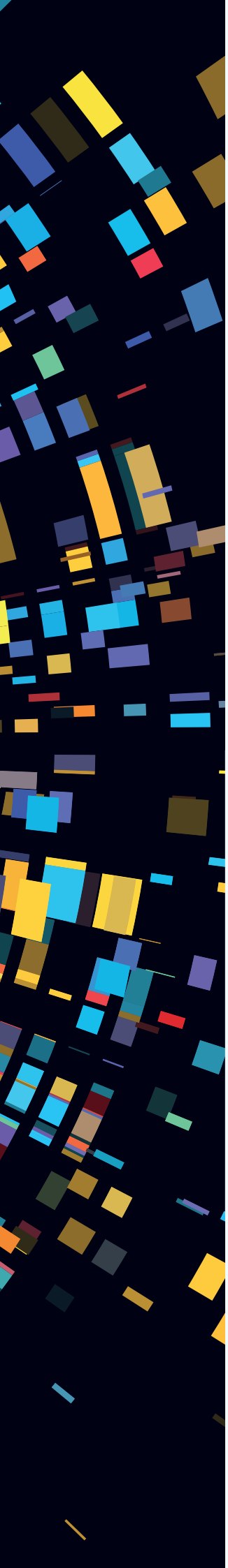
WHOLE GENOME SEQUENCING: EXPLORING THE CHALLENGES

Melody Redman and **Francis Sansbury** unpack a complex and rapidly expanding area of medicine.

key points

- Introduced in the UK in 2021, Whole Genome Sequencing is a new area of genetic testing with many applications, but which also raises many ethical and practical challenges.
- Because WGS can reveal much more information, it is both more clinically useful and likely to reveal unexpected issues and problems.
- Unpacking the human genome does not reveal who we truly are, and the authors remind us that our identity and the value of human beings transcends genetics; it is only to be found in our relationship with Christ.



The NHS introduced Whole Genome Sequencing (WGS) in early 2021 for a range of indications.[1] Further background reading on WGS and its several positive impacts is available in our blog on this topic.[2] Here, we focus on the potential challenges arising from WGS (though they may also apply to other forms of genetic testing) and then explore how we can apply a Christian worldview in this field.

what is Whole Genome Sequencing?

Our genome is our body's set of genetic information, including over 20,000 genes. Whole Genome Sequencing (WGS) aims to *sequence* all of someone's DNA, although an NHS laboratory would only *analyse* a small part of this. Often, a trio is used for WGS. This means testing the patient and both biological parents, which is helpful for interpreting the results.

the National Genomic Research Library and Big Data

Patients who undergo WGS in England are asked for permission for their genomic data to be added to the National Genomic Research Library (NGRL).[3] The NGRL stores WGS data and can also link this to the patient's wider primary and secondary care NHS records.

If a patient chooses to fully withdraw from the NGRL, their data will be removed from future research, but cannot be removed from research that is underway or has already taken place.

challenges:

incidental findings

WGS may reveal incidental or unexpected findings, such as adult-onset neurological disorders or cancer predisposition genes in children. Although NHS laboratories will not look for these, sometimes they cannot avoid seeing them.

variant classification and uncertainty

Genetic changes may be classified as a 'variant of uncertain significance' (VOUS/VUS), if there is insufficient evidence to know if the variant is a benign human variation or pathogenic. Further information (such as family segregation studies or research) may enable re-classification, but patients may be left with uncertainty. Families can find this uncertainty difficult. VUSs may be more common in different ethnic groups who have been under-represented in genetic testing.

revealing biological parentage

Because a trio would often be used (comparing the patient's sample to mum and dad), non-paternity or non-maternity can be identified. This unexpected information can cause complex ethical dilemmas and may not be disclosed if it is not relevant to the patient's care.

reproductive options

Couples may face challenging decisions about reproduction if they know their genetic status. There is some evidence that having genetic testing may help those who know their status, whether or not they opt for prenatal diagnosis.[4] Pre-implantation genetic testing involves the discarding of affected embryos.[5] Testing in pregnancy is often offered, particularly when a person plans to have an abortion if the baby is affected.[6]

> like Jesus, we must express compassion and walk with people who face these experiences

sharing information with close relatives

Obtaining a genetic result or an incidental finding may have implications for other family members. Should one's genetic information remain private to them, or should that information be shared where there are potential health impacts for others? This is a hugely complex area for individuals and for society. As clinical geneticists, whilst we seek to maintain the patient's confidentiality, we must also consider the potential risk and consequences to other family members if an individual refuses to share that information. A 2020 High Court Case (ABC v St George's University Hospital NHS FT) highlighted complexities around this balancing act.[7]

consent

For WGS, 'fully-informed' consent may not be possible.[8] Rather than using a 'consent form', NHS doctors in England use a 'Record of Discussion'[9] where we communicate types of situations such as complex, uncertain or unexpected results.

When the patient undergoing WGS is a child, usually someone with parental responsibility would complete the Record of Discussion to approve the test going ahead. Typically, parents can only consent to testing when the genetic variant would be of relevance during childhood. However, the test may reveal carrier status for recessive conditions or other incidental findings that are not relevant in childhood. How and when should these findings be communicated?

data security and access

It is crucial that genomic data is kept securely. There are also questions around access to this data – for ▶

example, should Genomics England be permitted to receive fees for using patients' data when for-profit companies conduct research?

inequities and inequalities

The dystopian near-future in the film *Gattaca*[10] shows a society where individuals are categorised and discriminated against based on their genetic composition. Polygenic screening of embryos is already available in the USA,[11] although the European Society of Human Genetics has called this an 'unproven, unethical practice '.[12]

There are already issues around equity within the devolved nations of the UK; the NHS Long Term Plan WGS aims relate to England only. There are also issues of equity worldwide.

applying the Christian worldview

God created human beings in his image,[13] and God knows us even before we are formed in the womb.[14] However, Scripture also tells of the fall[15] and that humanity is marred by sin.[16] The genomes of humans and other organisms have become corrupted, leading to death, disease, and decay. However, through Jesus, we have an eternal hope because he will return and, on that day, '*There will be no more death or mourning or crying or pain, for the old order of things has passed away*'. (Revelation 21:4) Whilst we are responsible for caring for our bodies, we must balance this with not becoming preoccupied with searching for future risks of disease or genetic perfection or believing that our identity lies in our genome.

Genetic conditions vary widely in the nature and severity of their effects. Many genetic conditions can cause great pain and suffering – both to the patient and to their loved ones. Families can experience feelings of guilt, fear for the future, and concern about other children or family members. Like Jesus, we must express compassion[17] and walk with people who face these experiences.

As with many technologies, genetic testing, including WGS, can be used for great good. For example, WGS can help reach a relevant diagnosis for the patient. However, it can also be used for purposes which many of us would regard as potentially harmful, such as testing a fetus for the presence of a condition to decide whether to end a pregnancy. We are all one in Christ Jesus, regardless of status or disability.[18] If we believe that life matters from the moment of conception,[19,20] then life should still matter, even if affected by a genetic condition. However, these decisions are highly emotive and complicated for families. God calls us to defend the rights of the vulnerable.[21] Jesus perfectly exemplified both how to be sensitive and compassionate and how not to compromise on sin.[22] The challenge for Christians is to do the same whilst protecting these most vulnerable of people.

We are also called to seek justice.[23] If an individual's ability to access insurance or healthcare were affected by their genetic blueprint, or if only the most genetically 'superior' embryos were chosen, this would introduce further inequalities into society. We must take care to safeguard against inequity and inequality.

> when we seek to build something monumental, we must carefully consider if this actually aligns with God's will

Understanding more about the genome may give us helpful insights into aspects of human health and disease, both on an individual and a societal level. 'Big data' can benefit the nation's health – such as by identifying modifiable risk factors for illness. But big data can also be used for commercial gain or other harmful purposes. There is so much that we do not yet understand about the genome. The Tower of Babel reminds us that when we seek to make a name for ourselves and build something monumental, we must carefully consider if this actually aligns with God's will.[24]

conclusion

The wider rollout of WGS in the NHS poses many potential opportunities and challenges.[25] Our genome is unique, but it is not where our identity lies. Humans are bearers of God's image. For believers in Jesus, our primary identity is as a child of God. We should seek to prevent any inequalities arising from new technologies. Where possible, we should contribute to policy-making and consultations. We should also walk alongside and show compassion to those experiencing the effects of a genetic condition or facing challenging decisions in this area. o

further reading

- Stammers T. The ethics of gene editing. *Nucleus*. February 2019. *cmf.li/2IJgM5i*
- Redman M & Sansbury F. whole genome sequencing. *Nucleus*. Spring 2023. *cmf.li/3JIhAEK*
- Redman M & Sansbury F. Whole Genome Sequencing: challenges and opportunities. *CMF Blogs*. 22 June 2022. *cmf.li/3OBcHy5*
- Alexander D. Genes, Determinism and God. *Triple Helix*. Autumn 2017. *cmf.li/2kGyrjw*

SCAN FOR MORE

references (accessed 04/01/23)

1. National Genomic Test Directory. NHS England. 3 Aug 2018 [updated 2 Feb 2022]. *england.nhs.uk/publication/national-genomic-test-directories*
2. Redman M, Sansbury F. Whole Genome Sequencing: challenges and opportunities. *CMF Blogs*. 22 June 2022. *cmf.li/3OBcHy5*
3. Caufield M et al. The National Genomic Research Library v5.1, *Genomics England*. 1 April 2020. *doi.org/10.6084/m9.figshare.4530893.v6*
4. Turner G et al. Restoring reproductive confidence in families with X-linked mental retardation by finding the causal mutation. *Clin Genet*. 2008 Feb;73(2):188-90. *doi: 10.1111/j.1399-0004.2007.00929.x.*
5. Barker P. Thinking through... pre-implantation genetic diagnosis. *Nucleus*. Summer 2007. *cmf.li/PGD*
6. Ward R. Abortion. *CMF File* 23. 2003. *cmf.li/File23Abortion*
7. Case of note: ABC v St George's University Hospital NHS FT, SW London & St George's Mental Health NHST and Another (High Court, 28 February 2020 – Yip J.) *NHS Resolution* 22 April 2020. *bit.ly/3X1nohB*
8. Horton R, Lucassen A. Consent and Autonomy in the Genomics Era. *Curr Genet Med Rep*. 7, 85–91:2019. *doi: 10.1007/s40142-019-00164-9.*
9. Record of Discussion Regarding Genomic Testing version 4.03. *NHS Genomic Medicine Service*. 2019. *bit.ly/3QfeBqf*
10. Nicols A (writer & director). Gattaca. *Columbia Pictures*. 1997 *imdb.com/title/tt0119177/*
11. Ball P. Polygenic screening of embryos is here, but is it ethical? *The Observer*. 17 October 2021. *bit.ly/3ifyeBW*
12. Forzano F *et al*. The use of polygenic risk scores in pre-implantation genetic testing: an unproven, unethical practice. *Eur J Hum Genet* 30, 493–495: 2022. *doi.org/10.1038/s41431-021-01000-x*
13. Genesis 1:26-27
14. Jeremiah 1:5
15. Genesis 3
16. Romans 3:23
17. Isaiah 40:11
18. Galatians 3:28; Luke 14:13-14
19. Psalm 139:13-16
20. Crutchlow L. when does life begin? *Nucleus*. February 2019. *cmf.li/lifebegins*
21. Proverbs 31:8-9
22. John 4 & 8
23. Micah 6:8
24. Genesis 11:1-9

GENETIC COUNSELLING

Verity Leach looks at the genetic counsellor's role, offering support to families dealing with the impact of genetic diagnoses in the fast-changing, emerging field of genetic medicine.

Dr Verity Leach *has a Ph.D in healthcare genetics and healthcare and currently works as a Genetic Counsellor for the All Wales Medical Genomics Service. She is married to a Church of England minister and has two young boys*

Few people have heard of the role of a genetic counsellor (GC), but those who have, know us well. A GC works closely with patients and families, offering genomic information, analysing family histories, ordering and interpreting genomic test results, and offering support in light of those results. The title, therefore, is a little misleading (since it does not involve therapeutic counselling). But we do use counselling techniques to help patients adjust to having a genetic condition and to help them make difficult decisions associated with this. We work closely with multidisciplinary teams, including consultant geneticists and clinical scientists, as well as staff from other disciplines, such as obstetrics, cardiology, and paediatrics.

My faith provides me with a grounding in my job by giving me some ethical parameters within which I feel comfortable operating. It also helps me – to some extent – make sense of the suffering our patients often face. Sometimes I find, however, that my faith is at odds with the information and options I present to my patients – particularly in prenatal work. Those with a previously known condition sometimes choose IVF, where only unaffected ▸

key points

- Genetic counselling is a relatively new field that uses counselling skills to help patients and their families adjust to the diagnosis of a genetic disorder.
- Much in the field is changing rapidly, and what can now be tested for was unknowable just a few years ago. But this creates new problems for families.
- The author explores how her faith helps her support and guide families through the confusion of data, options, tests, and the implications of a diagnosis.

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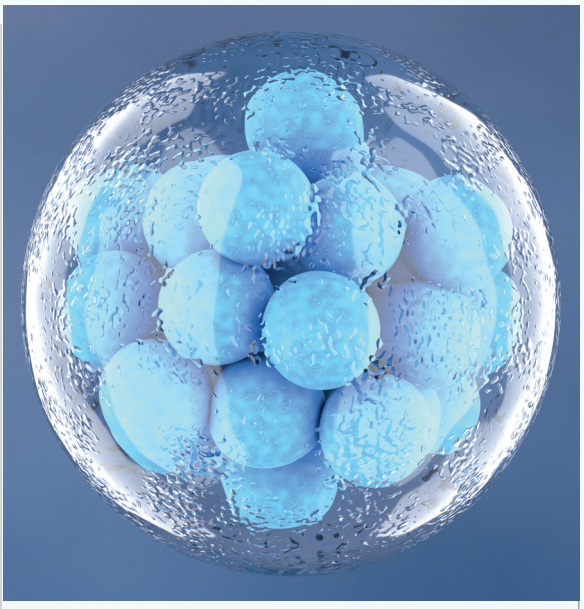


embryos are returned. Many genetic conditions are tested for during pregnancy, varying from early to late gestation. Following testing, parents often face difficult decisions.

Initially, I found providing information about ending pregnancies – some of them very late term – difficult. I have come to realise, however, that my job is to provide information and support. Ultimately, it is the parents who are responsible for their decisions. At the same time, I always provide the important option that it is okay to carry on with the pregnancy.

As medicine progresses and we are able to offer so much more in genetics – even compared to five years ago – it can feel as though the testing odyssey never ends. We can and do provide our patients with a lot more understanding and answers. But with that comes expectations that are hard to meet. Patients want answers; they want to know why a certain situation has happened to them. Even when genetics can provide answers, the effects can ripple down families for generations – especially with the more complex genomic conditions – which can make offering support difficult. The role of a GC is to manage expectations and provide realism, including making it clear that any genomic finding will impact not only that one nuclear family but also their much wider family network.

As a Christian, I sometimes wonder whether it is better not to open the Pandora's box that is genetic testing, particularly as our rate of incidental findings is becoming more significant as technology improves. In the end, our faulty genes are only an expression of the sin that has dislocated everything good in God's creation. And even when we can find the cause of a genetic condition, it does not necessarily solve the problem. We need a better saviour than genetic testing for that! The Bible makes it clear that we don't always have the answers. We need to know a contentment that only comes from Jesus.[1] The constant striving for answers indicates that some patients are trying to take some control in an often uncontrollable situation. Sometimes, I find it more helpful to ask, 'how can I help you live with uncertainty and a lack of knowledge?' rather than, 'let me see what further testing we can offer'.

The area of practice I find most challenging to my faith is the question all of us who work in healthcare know: why do some people have so much pain and sadness in their lives whilst others never experience such grief? This could be the family who have been affected by early onset Huntington's disease in every generation (where the uncertainty of inheriting the condition only compounds the grief and guilt for many families). It might be those who experience the loss of multiple children or who have several children with severe disabilities. Then there is the family marred by a young cancer diagnosis. It can feel desperate at times, and I often find myself burdened by sadness. As a Christian, I have faith in the Lord Jesus. I know my final destination, and this provides me with a sure and certain hope. But many of my patients endure these difficult situations without this faith and yet cope with such grace and strength. I often wonder if I would respond similarly even though I have a relationship with the living God who loves me.

> Even when genetics can provide answers, the effects can ripple down families for generations

The areas of my practice most at odds with my Christian faith have probably not fully arrived yet. As medicine progresses – particularly genetics – and the values of our society become less rooted in the Judaeo-Christian worldview, I wonder at what point I will have to reassess my practice. Advanced genetic testing for children (pre or post-birth), the implications of which could lead to parents being able to 'design' their baby, transgender issues, and private testing options are all ethical concerns that could provide challenges in the future. I am unsure what these challenges will mean for the role of a GC, but as Christians, we are called to obey the Word of the Lord, which is never changing, and apply it to a medical and ethical landscape that is ever-changing. o

reference

1. Philippians 4:11

‘I’M FINE...’: HONESTY ABOUT MENTAL ILLNESS

Rachael Pickering looks back on a mental health journey.

Rachael Pickering
is a prison GP and Chief Medical Officer of Integritas Healthcare

t’s a formative memory: I returned from school to find a relative sitting in the dark, still in their dressing gown, crying their heart out. Toddling through to the kitchen, I asked another family member, ‘What’s wrong?’ Her reply was puzzling: ‘Oh, nothing, darling. They’re absolutely fine!’ Hmm. Someone wasn’t telling the truth. Why was that?

fine

Growing up, I was shy, but I did like to observe my peers. A numerically-challenged girl would binge eat in the school toilets after every maths class and an awkward kid at church pulled out their eyelashes during youth meetings. Yet curiously, whenever I asked if they were okay, I’d hear ‘I’m fine’ and the like. Clearly I found, we humans tend to hide our ▸

key points

- The author reflects on how various life experiences, professional encounters, and traumas have shaped her resilience through God's grace.
- The NHS can often be a very unsupportive environment, and faith and medical training on their own are no guarantee that we can survive working there.
- Finding supportive networks and communities (professional and spiritual) and developing emotional intelligence and self-awareness are vital for our wellbeing.

SCAN FOR MORE

true selves from each other. But there's neither need nor point in hiding from God. Rather, there is every reason to be open and honest with him.

You have searched me, Lord, and you know me. You know when I sit and when I rise; you perceive my thoughts from afar. You discern my going out and my lying down; you are familiar with all my ways. (Psalm 139:1-3)

personal

It was during my undergraduate years that mental illness became personal. After marrying Mark, who now leads our CMF family, I fell pregnant – finding out only when I started to miscarry. Reactive depression kicked in. As a result, I had to rearrange my elective, staying home for a placement in liaison psychiatry. Unexpectedly, I loved it! It is a medical acknowledgement of what Christians know to be true. We are more than our physical bodies. We are mind, body, and soul.

I've generally been well since then, save for a few crises. I was slow to recover from occupationally-acquired pneumonia. An accidentally diagnosed cancer necessitated major surgery. An overseas coup-countercoup head injury pummelled my Broca's area; I regressed to high school French and please forgive me if I call you by the wrong name. And yes, I've joined the ranks of those living with long Covid; the brain fog and depression have been grim, but I'm turning the corner.

The human spirit can endure in sickness, but a crushed spirit who can bear? (Proverbs 18:14)

professional

After medical school and a brief spell of surgical training, I migrated to GP Land. A registrar year in an affluent practice helped me learn that financial security does not necessarily go hand-in-glove with wellness. And a spell as a London locum opened my eyes to the sheer scale of mental distress within our inner cities.

But pretty soon, I was recruited by the Metropolitan Police Service to work as a forensic physician, caring for detainees in London's custody suites. It was a baptism of fire! Day in, day out, I was dealing with extreme deliberate self-harm (DSH), highly distressed people detained for their own protection, and aggressive folk under the influence of multiple substances. To cap it all off, I also had to attend scenes of unexpected death, some more gruesome than others. Many of these people had (obviously or less obviously) died by suicide.

These days, I'm a prison GP. More than half of my consultations are overtly psychiatric, and most of the rest touch on mental distress. Psychosomatic and functional disorders abound. And using consultation model lingo, I take many physical entry tickets for consultations about emotional problems.[1]

The frequent attempt to conceal mental pain increases the burden: it is easier to say 'My tooth is aching' than to say 'My heart is broken'.[2]

> mental illness is...the proverbial 'elephant in the cell'. Everyone ignores it even though it's taking up so much room!

And in my humanitarian work with detainees in poorer countries where mental illness is *completely* taboo, I find it the proverbial 'elephant in the cell'. Everyone ignores it even though it's taking up so much room!

It's 25 years and counting since I got my licence to wield a stethoscope. Mental distress has cropped up almost every day. It is to be expected in doctor-patient consultations. But worryingly, it's increasingly common within peer interactions. Many colleagues have burned out and left the NHS. Some are on slow burn and *need* a break. And tragically, a few – including people I knew from CMF – have taken their own lives.

Neither Christianity nor medical knowledge exempts us from the risk of mental illness. Even our Great Physician experienced extreme sadness, and he self-prescribed human companionship. And I'm so grateful to the colleagues who have walked alongside me and prayed with me during my struggles.

...[Jesus] plunged into an agonising sorrow. Then he said [to his disciples], 'This sorrow is crushing my life out. Stay here and keep vigil with me.' (Matthew 26:36-38, The Message)

domestic

In my private life, too, psychiatry came home to roost. Several friends and family members suffered. And most painfully for Mark and me, our only child was diagnosed as neurodiverse and then developed a mood disorder; I mourned for the idyllic future I'd envisaged for them.

There is a time for everything...a time to weep and a time to laugh, a time to mourn and a time to dance... (Ecclesiastes 3:1-4)

adventure

Too anxious to cope with high school, they needed me at home. With sadness, I gave up my job as a high-secure prison GP and tried to settle down to a life of caring and home-schooling. But surprisingly, this career sacrifice enabled me to embark on an amazing professional adventure! Suddenly uncoupled from school term timetables, I was able to take my child around the world. Together we explored my dormant calling to medical mission, which I'd first heard at a CMF student conference. And long story short, I co-founded and started to grow Integritas Healthcare, a Christian faith-inspired organisation with a heart for detainees.[3]

Carry each other's burdens, and in this way you will fulfil the law of Christ. (Galatians 6:2)

support

I was pretty clueless at the start of my police career. I wasn't even clear about the difference between highly risky DSH and actual suicidality! Yes, the police had given me forensic training. But there was minimal emotional support and absolutely no additional *psychiatric* training.

A far better experience was the three years I spent with an all-female team of sexual offence examiners. Although we dealt 24/7 with child and adult victims of sexual assault, the police service did not provide emotional support for us. So, we formed our own support group, and our wonderful clinical lead was a true servant leader.

Now that I, your Lord and Teacher, have washed your feet, you also should wash one another's feet. I have set you an example that you should do as I have done for you. (John 13:14-15)

resilience

Some black clouds do indeed have silver linings. Looking back on the various trials of my life to date, I can now thank my Creator for using them to grow me, slowly but surely, into a more resilient creature. A couple of coats of emotional Teflon have armoured me up for work I would have been far too vulnerable to undertake as a younger GP. God prepares and equips each of us in a unique way.

Now may the God of peace...equip you with everything good for doing his will, and may he work in us what is pleasing to him... (Hebrews 13:20-21)

change

It's been my experience that many providers of NHS offender healthcare have decidedly inadequate psychological and educational support for their staff members. And whilst constructive criticism should inform positive change, seasoned staff with valid concerns have been shoved out into the cold. That said, after several spells of yelling myself hoarse in the 'Great NHS Wilderness', I've finally stumbled into a role within a dynamic, listening NHS Trust.

neither Christianity nor medical knowledge exempts us from the risk of mental illness

Wounds from a friend can be trusted, but an enemy multiplies kisses. (Proverbs 27:6)

Other changes are afoot too. I'm giving myself more breathing room. I'm more open about my own mental health. And at work, I'm trying to speak less and listen more. Less cleverness, more emotional intelligence is the order of the day.

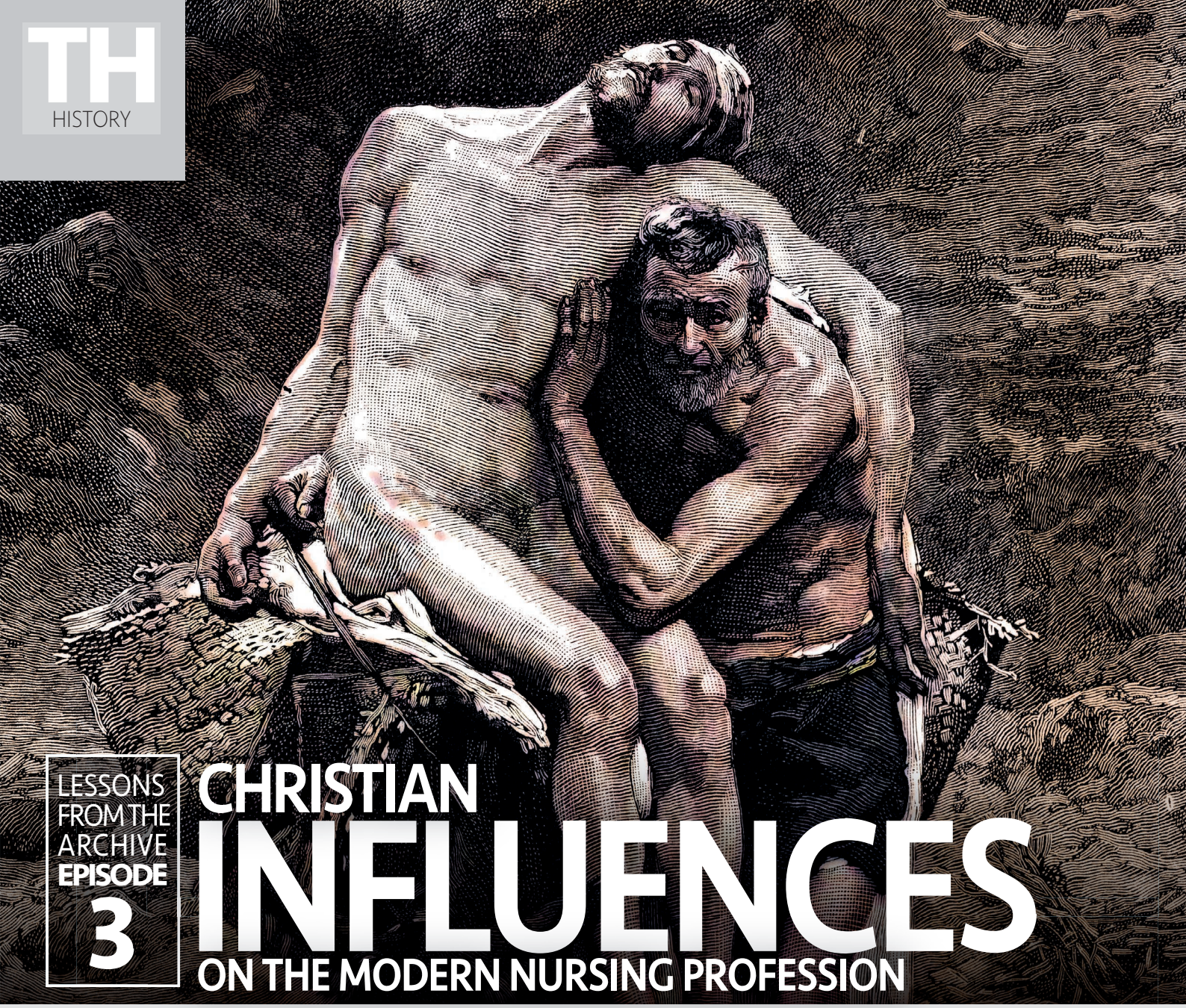
The words of the reckless pierce like swords, but the tongue of the wise brings healing. (Proverbs 12:18)

And the NHS is in a dire need of emotional intelligence. Psychological First Aid courses may be all the rage,[4] but we don't need certificates to utilise emotional intelligence about the wellbeing of others and ourselves. And down on the shop floor, we CMF members are in a prime position to lead by example. o

the NHS is in dire need of emotional intelligence

references (accessed 23/02/23)

1. Balint M. *The Doctor, His Patient and The Illness*. London: Churchill Livingstone 1957 & 1962
2. Lewis CS. *The Problem of Pain*. London: Collins. 1940 & 2012
3. Find out more at: *integritashealthcare.org*
4. Psychological first aid in emergencies training for frontline staff and volunteers. *GOV.UK*. 15 June 2020. *bit.ly/41oaKMs*



LESSONS FROM THE ARCHIVE **EPISODE 3**

CHRISTIAN INFLUENCES ON THE MODERN NURSING PROFESSION

Mark Pickering explores the development of the modern nursing profession in the nineteenth century and how its founders and the early medical mission movements in England worked together with the precursors of CMF.

Mark Pickering
is CMF Chief Executive

Caring for the sick has been a feature of Christianity ever since its inception.[1] Jesus told the parable of the Good Samaritan to show that his disciples should care selflessly for those in need, whoever they were.[2] Communities have always looked after their own, but Jesus' unique contribution was to spur his followers on to care for those who suffered outside their own family and community.

Countless examples can be given of how Christian women and men through the centuries have cared for the sick and vulnerable – abandoned babies, destitute orphans, and plague victims. Many monasteries and convents had a particular ministry of caring for the sick; some of these evolved into

key points

- Modern nursing developed in an atmosphere where several Christian movements were seeking to reestablish the early church ministry of the deaconesses.
- Many early modern nursing professional pioneers were Christians and greatly influenced the medical mission movements in the UK.
- Among the many lessons to be learnt from the development of nursing is the importance of rediscovering older movements of God and learning from them for our day and age.

SCAN FOR MORE

dedicated hospitals, such as St Thomas's in London during the twelfth century.[3] Indeed, the very word 'hospital' derives from the 'hospitality' that was offered to the poor and sick in these Christian institutions.[4]

Much of this caring activity could be described as 'nursing'. And yet the modern profession of nursing emerged much more recently, in the nineteenth century. Prior to this, nursing was simply personal care for the sick, sometimes done with skill and compassion, sometimes not. Often it was done by family and friends or by paid carers of varying skill. In early Victorian England, stereotypes of poorly trained nurses were well known, such as the infamous Sarah Gamp in Charles Dickens' novel *Martin Chuzzlewit*, who was '*dissolute, sloppy and generally drunk*'.[5]

early nursing reforms

Medical knowledge was advancing rapidly in the nineteenth century, and hospitals were becoming more important. In London, in addition to the great mediaeval hospitals of St Bartholomew's and St Thomas's, a number of newer hospitals had been founded in the early eighteenth century – the Westminster, the London, Guy's, and St George's were all founded within a couple of decades.

As hospitals grew and doctors had more therapeutic options, they needed more highly skilled assistants to carry out treatments and observations methodically. The role of the nurse became more developed, and the need for a professional class of nurses became obvious.

Initially, little training was given or thought necessary. Nurses were usually lower-class women, eg domestic servants. Sisters and Matrons were often recruited separately, from higher-class women, with little idea of the lower-class nurses being promoted to these more senior roles.

What training there was often came directly from the doctors, who were obviously interested in ensuring that the nurses working with them could follow their directions between ward rounds.

Many of the poor and sick were cared for in workhouses, where the situation was particularly bad. There, nursing was often done simply by those inmates who were relatively able-bodied but who usually had little or no training. Very few workhouses had paid nurses.[6]

As the nursing profession developed, one of the most famous names is, of course, Florence Nightingale. She was motivated by Christian compassion in her work, but she was by no means the only one, and there are a number of examples of Christians who greatly influenced the movement's early direction. In the rest of this article, we shall see several such examples.

Elizabeth Fry

Elizabeth Fry was born into a wealthy Quaker family in Norfolk in 1780. She was motivated by her Christian faith to make a difference in society, and in 1813 she first visited Newgate prison in London. She was horrified by the conditions she found, especially for female prisoners, and she spent many years effecting prison and penal reforms.[7] She also campaigned tirelessly for reform in other areas, such as welfare, homelessness and the abolition of slavery.

However, later in life, at age 60, she finally found time to do something she had been meaning to do for years. Whilst chiefly engaged in prison and penal reform for most of her life, she had long wished to do something for the standard of nursing care. In 1827 she had written:

> *During the last ten years much attention has been successfully bestowed by women on the female inmates of our prisons...But a similar care is evidently required for our hospitals, our lunatic asylums, and our workhouses.'*[8]

Three years earlier, in 1824, she had hosted a young German pastor, Theodor Fliedner, who came to see her prison reform work. He went home inspired to set up a similar prison ministry and, later on, nursing work (see below).

In 1840, Elizabeth Fry could finally do something herself about nursing training in England. Along with her sister-in-law, Elizabeth Gurney, they set up the Institution for Nursing Sisters, linked with Guy's and the London Hospitals.[9] An Annual Report stated its purpose as:

> *to provide experienced, conscientious and Christian Nurses for the sick, and also to raise the standard of this useful and important occupation, so as to engage the attention and enlist the services of many who may be desirous of devoting their time to the glory of God, and to the mitigation of human suffering.*[10]

The same report interestingly notes the kind attentions of Dr Hodgkin (the fellow Quaker and friend of medical mission that we met in our previous article),[11] who cared for the nursing sisters when they themselves were ill; it also lists one 'Miss F Nightingale' as one of the Institute's donors!

1836 Theodor & Friederike Fliedner set up the Kaiserswerth Deaconesses' Institute

1840 Elizabeth Fry & Elizabeth Gurney set up the Institution for Nursing Sisters

1848 Dr Robert Todd founds St John's House

1851 Florence Nightingale enrols to train at the Kaiserswerth Deaconesses' Institute

1854 Florence Nightingale goes to Scutari Hospital to establish nursing care for the British Army

1857 Rev William Pennefather and Catherine Pennefather found the Association of Female Workers

1860 The Nightingale Training School for Nurses opens in London

1866 Mildmay Deaconesses respond to the Bethnal Green cholera epidemic

1877 The Mildmay Mission Hospital opens it's doors

CMF was founded in 1949, and 2024 will be its 75th Anniversary. However, its roots go back much further, and there is plenty to learn from the people and organisations that came before it. This is the third of a series of articles, available on the CMF website, featuring some of the main highlights. If any readers have an interest in this area or relevant material to contribute, please contact Mark on *admin@cmf.org.uk*

Modern nursing faces many challenges – what might the Lord enable his disciples to do in the midst of them?

Kaiserswerth

Pastor Theodor Fliedner, mentioned above, was a young pastor in Kaiserswerth, near Düsseldorf in Germany. Needing funds for his community, he travelled in Holland and England, meeting Moravians in Holland and learning how they had revived the ancient Christian ministry of deaconess.[12] Going on to London, he met Elizabeth Fry in 1824 and was inspired by her work amongst prisoners. He returned and set about reforming prisons and supporting both current and former prisoners in his local area.

He went on to develop other projects, such as education. Then in 1836, he and his wife Friederike set up the Kaiserswerth Deaconesses' Institute, training young Christian women to care for the sick poor of the area. Deaconesses had been a vital part of the Church's social outreach in the early centuries of Christianity, but this role had gradually died out until revived by the Moravians and then further by Pastor Fliedner. His Institute gained fame far and wide, setting up daughter institutions in many cities, including the German Hospital in London,[13] which opened in 1845 to care for poor German immigrants in London.

Florence Nightingale visited the German Hospital twice and the Kaiserswerth centre twice before finally enrolling for training at the Deaconesses' Institute in 1851.

Florence Nightingale

Florence was born into a wealthy family in 1820. Aged 16, she experienced a call from God that prompted her to devote her life to the service of others, which in her case also involved rejecting marriage. Although her own faith was not exactly orthodox evangelical, it was clearly a huge motivator for her work.[14]

As mentioned above, Florence was greatly influenced by her contact with the Kaiserswerth Deaconesses' Institute, and financially supported Elizabeth Fry's Institute for Nursing Sisters. But of course, she is best known for work amongst wounded soldiers at Scutari Hospital in Istanbul during the Crimean War. In 1854, Florence took a team of 38 volunteer nurses (including some from Fry's Institute) and 15 Catholic nuns to Scutari. Through their hard work and diligent attention to basic issues such as hygiene, sanitation and nutrition, Florence and her team were able to reduce the death rate significantly.

During her time there, her influence was also felt by Dr George Saunders, a Christian military surgeon who would be one of the founders of both the Medical Prayer Union (1874) and the Medical Missionary Association (1878). In his autobiography, *Reminiscences*, he tells of being invalided back from Crimea to Scutari with a fever in 1855:

> *When I came to Scutari, I found that the hospital there had now every appearance of comfort, and was unsurpassed by any other, civil or military. For this improved state of things all the praise was due to the noble and indefatigable efforts of Miss Nightingale, who fortunately had carte blanche to do whatever she thought necessary for the comfort and well-being of the sick and wounded.*[15]

On returning to London after the war, she used her new-found fame and influence, and the funds this had attracted, to open the Nightingale Training School for Nurses at St Thomas's Hospital in 1860 (then based at London Bridge next to Guy's Hospital, before its move to Lambeth). She was also responsible for hospital redesign to improve infection control – the 'Nightingale Ward' layouts common in many hospitals from the period, including St Thomas's.[16]

Call the Midwife

The kindly exploits of the fictional nuns of St Raymond Nonnatus in Poplar, East London, are well known to many of us through the TV series *Call the Midwife*. However, the true story behind this is no less inspiring.

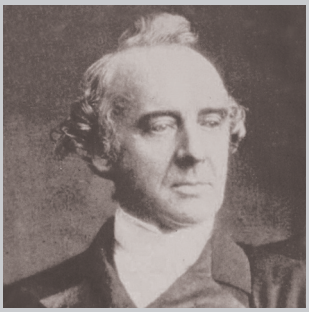
Dr Robert Todd was an energetic and talented London physician who was influential in the launching of King's College Hospital in 1840.[17] He gave his name to Todd's Paralysis (paralysis following a seizure). Furthermore, as a keen Christian, he introduced reforms for the medical students at King's to provide better academic, social and pastoral support, becoming the first Dean of the medical school at King's.

Seeing the need to improve standards of nursing in the London hospitals, Dr Todd worked with his friend, Charles Blomfield, the Bishop of London, to establish St John's House in 1848. This was an Anglican nursing order based on similar principles to

those of the Kaiserswerth Deaconesses.[18] It became highly successful in producing quality nurses and was influential on Florence Nightingale as she prepared to set up her own nursing school. The Superintendent of St John's House, Mary Jones, was a close friend of Nightingale's, and Florence formulated her new school in many ways as a secular version of St John's House.[19]

The Sisters of St John's have gone through turbulent times over the years, including their time in Poplar, immortalised in Jennifer Worth's memoir *Call the Midwife*.[20] The small community lives on today in the West Midlands, though without its original nursing function.[21]

Mildmay Mission Hospital



The Rev William Pennefather was appointed Vicar of Christ Church, Barnet, in 1852. Filled with passion and energy, he engaged in evangelism, overseas mission, and social action, such as working with orphans and developing interdenominational Bible conferences that were the forerunners of the Keswick Conventions.[22] His wife Catherine was no less a force to be reckoned with, and at their second conference in 1857, the Association of Female Workers was formed, with Catherine as President. They began to build up Deaconess ministry in and beyond their parish. A few years later, they moved to St Jude's, Mildmay Park, in North London, where the growing network of ministries continued.

The Deaconess ministry was yet again inspired by what had begun in Kaiserswerth and it developed over several years, gaining the approval of Florence Nightingale, who wrote to Rev Pennefather:

> *I hail with the greatest satisfaction every attempt to train in practical activity all female missionaries, whether for home or foreign service, whether rich or poor. I am sure that whatever you do will be blessed in this thing.*[23]

Then in 1866, things took a historic turn when a cholera epidemic ripped through the slums of East London. Mildmay Deaconesses were sent to Bethnal Green, where they set to work caring for the poor and sick.[24] Growing rapidly, the Deaconesses added a nursing home and a cottage hospital to their ministry.

At this point, the Mildmay work connects with the Edinburgh Medical Missionary Society (EMMS), which played such a vital role in the birth of medical mission and which featured strongly in our previous article.[25] In 1869, Dr Burns Thomson of the EMMS gave a stirring speech on medical missions at the annual Mildmay Park Conference.[26] This greatly impressed the Pennefathers, who subsequently visited Edinburgh and were inspired to launch the Bethnal Green Medical Mission in 1874 to further develop the work of Mildmay. Its first superintendent, Dr Dixon, was a graduate of the EMMS training school.[27]

The medical work grew rapidly, and in 1877, the Mildmay Mission Hospital opened its doors. Within a few years, in 1883, it was recognised as a nurse training institution.[28] Down the years, many Christian nurses - including my own mother - have been trained at Mildmay and sent out around the UK and the world. Dr Burns Thomson also retired to Mildmay on leaving Edinburgh and spent his final years providing pastoral support to the Deaconesses and the aged Mrs Pennefather.[29]

Through many changes and adaptations, the Mildmay Mission Hospital is still going strong today – it survived the dawning of the NHS in 1948 when many smaller hospitals were forced to close. Later, it focussed on specialist HIV care and is now reinventing itself yet again for the challenges of the twenty-first century with a new step-down service for homeless patients.[30]

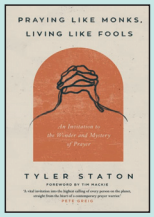
what can we learn from the early nursing profession?

Looking back at the amazing Christian role models who played an important part in the development of nursing in the UK, several lessons stand out:

- As in previous articles, there were numerous links and connections between some of the early pioneers. We should never underestimate the power of putting people with similar good ideas together – creative inspiration and the Holy Spirit often take over!
- Sometimes 'old' ideas can be revived and adapted to new situations in amazing ways. The renewal of the Deaconess movement is an excellent example.
- These early pioneers often saw their Christian faith as foundational to raising standards and maintaining the unity of those they inspired – excellent evidence that life-changing faith can (and should) make us better professionals.
- Difficult and challenging times can inspire us to do incredible things and show creativity and leadership we never knew we had. Both Florence Nightingale's experience in Crimea and Elizabeth Fry's in Newgate prison inspired them. Modern nursing faces many challenges – what might the Lord enable his disciples to do in the midst of them?
- Mission, evangelism, and wider social reform went hand in hand with most of these early movements. Christian nurses and other healthcarers can have incredible effects beyond their purely professional achievements. o

references (accessed 21/02/23)

1. Matthew 10:8
2. Luke 10:25-37
3. Pickering M. Lessons from the Archive 1 – Golding Bird and the Christian Medical Association. *Triple Helix*. Spring 2022; 81: 12-14. *cmf.li/3AK9834*
4. Hospital. *Wikipedia. en.wikipedia.org/wiki/Hospital*
5. Sarah Gamp. *Wikipedia. en.wikipedia.org/wiki/Sarah_Gamp*
6. Information in the above section taken from Abel-Smith B. *A History of the Nursing Profession*. London: Heinemann, 1960. Chs 1-3
7. Elizabeth Fry. *Wikipedia. en.wikipedia.org/wiki/Elizabeth_Fry*
8. Huntsman R, Bruin M, Holttum D. Twixt Candle and Lamp: The Contribution of Elizabeth Fry and the Institution of Nursing Sisters to Nursing Reform. *Medical History* 2002,46:351-380. *bit.ly/3SkIbM4*
9. *Ibid*
10. Report of the Institution for Nursing Sisters. *Wellcome Collection*. London, 1848. *bit.ly/3Ih1e5i*
11. Pickering M. Lessons from the archive 2 – the birth of modern medical mission. *Triple Helix* 2022; Autumn: 82: 16-18. *cmf.li/3Iixbdo*
12. Theodor Fliedner. *Wikipedia. en.wikipedia.org/wiki/Theodor_Fliedner*
13. German Hospital. *Lost hospitals of London. ezitis.myzen.co.uk/german.html*
14. Fouch S. Florence Nightingale: nurse, statistician, activist & mystic. *Spotlight*. Winter 2021: 13-17. *cmf.li/2MUUFfR*
15. Saunders G. *Reminiscences*. London: James Nisbet, 1907:44
16. Nightingale Ward. *Wikipedia. en.wikipedia.org/wiki/Nightingale_ward*
17. Robert Bently Todd. *Wikipedia. en.wikipedia.org/wiki/Robert_Bentley_Todd*
18. Helmstadter C. Robert Bentley Todd, Saint John's House, and the Origins of the Modern Trained Nurse. *Bulletin of the History of Medicine*, 1993, Vol 67, No 2 (Summer): 282-319 *bit.ly/3EoepzW*
19. *Ibid*
20. Call the Midwife. *Wikipedia. en.wikipedia.org/wiki/Call_the_Midwife*
21. The Community of St John the Divine (CSJD). *Anglican Religious Life Yearbook. bit.ly/3SxcoaR*
22. Information in this section taken mainly from Cooke H. *Mildmay: the Story of the First Deaconess Institution*. 1893, Palala Press. 2015
23. Cooke H. *Op Cit*: 48
24. *Ibid*: 94-95
25. Pickering M. *Op Cit*.
26. Burns Thomson W. *Medical Missions: an Address*. London: Mildmay, 1869
27. Cooke H. *Op cit*: 157-158
28. History of Mildmay Hospital. *mildmay.org/history-of-mildmay-hospital*
29. Burns Thomson W. *Reminiscences of Medical Missionary Work*. London: Hodder & Stoughton, 1895: 229-236
30. *mildmay.nhs.uk/homeless-pathway*



Praying Like Monks, Living Like Fools:
An Invitation to the Wonder and Mystery of Prayer
Tyler Staton

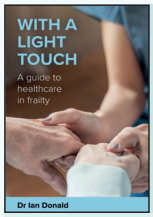
- Hodder & Stoughton, £14, 2022, 272pp, ISBN: 9781399808040
- Reviewed by **Steve Fouch**, CMF Head of Communications

Not another book on prayer! We've had so many in recent years from such luminaries as Pete Greig and Tim Keller. Surely, we don't need yet another one?

It turns out we did. Staton is a young US pastor and leader in the 24/7 prayer movement, and he has a lot of real-world experience as an intercessor. Staton leads us step-by-step through prayer in all its dimensions by drawing deeply – and sometimes with shocking frankness – from his personal prayer life and taking the Lord's Prayer as his template. He invites us to dig deeper into the wonder and mystery of time spent in the presence of our heavenly Father. Along the way, he delves into areas of prayer with which many evangelicals are often less familiar or comfortable – including silent prayer, confessional prayer, and prayer in the 'middle voice' (look it up).

If all that sounds shockingly old-fashioned and traditional or a bit too progressive, then you are probably right. He draws on ancient traditions from the early church, the middle ages, and the Reformation (and even the Counter-Reformation) to flesh out a contemporary prayer discipline steeped in the experiences of the saints down the ages. That may sound a bit too hide-bound by human tradition. But Staton is also never less than thoroughly biblical as he explores these dimensions of prayer.

Do you yearn for a deeper relationship with God? Are you seeking to ground your prayer life more deeply in Scripture or to learn how to persist in prayer and faith when life is tough and insanely busy? This book won't be the solution! But it will point you in the right direction and gives you some helpful tools for the journey. The rest will be for you and the Lord. Well worth reading and rereading.



With a Light Touch:
A guide to healthcare in frailty
Dr Ian Donald

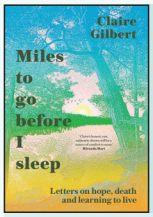
- Onwards & Upwards, 2021, £12, 134pp, ISBN: 9781788159296
- Reviewed by **David Smithard**, *Triple Helix* Editor

A longstanding CMF member, Ian Donald is a Physician in Old Age Medicine at the Gloucestershire Royal Hospital. An old-fashioned geriatrician. As you read his words, you can feel the empathy that he has for his patients. They are more than people to be examined and diagnosed; they are his friends.

His book takes you gently through aspects of caring for older people. He covers the 'Geriatric Giants' (falls, incontinence, immobility, confusion, and polypharmacy) and dispels common myths, such as 'if nothing can be found to explain confusion, it must be a Urinary Tract Infection'. How often, as a geriatrician, have I been presented with this as a diagnosis with no clinical evidence to support it. I have also repeatedly heard the dreaded fictitious diagnosis of 'acopia', despite the presence of a high temperature or recurrent falls. I could go on!

If you have little time to read this small book, read the last two chapters. Here Dr Donald focuses on planning for the end of life and coming to terms with the reality that death comes to us all. He approaches this with subtlety and kindness, bringing together medicine and a Christian perspective, even when tackling the difficult issues such as providing fluids as death draws near or assisted suicide.

I would recommend this book to all health professionals irrespective of their speciality (paediatricians, midwives, and neonatologists excepted).



Miles to go before I sleep
Letters on hope, death and learning to live
Claire Gilbert

- Hodder and Stoughton 2021 £10.99 288pp, ISBN: 9781529359732
- Reviewed by **Patricia Wilkinson**, a GP in East Lancashire

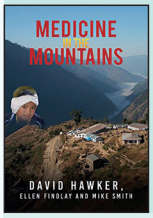
Describing the year after the author's diagnosis of myeloma, this book takes us through diagnosis and treatment, all the while sharing the author's thoughts. Gilbert decided to write to friends as 'Dear readers' in a series of diary entries and letters detailing her journey, feelings, experiences, and normal life.

She is honest about her ambiguity towards treatment and being entered into a clinical trial, especially when assigned to the bone marrow transplant arm.

I found this a frustrating book in many ways. There is a lot of repetition, for example about horse riding and which horse it was on a particular day. Her faith remains strong, and there never seems to be any doubts or questioning, not that these are obligatory, although she is generally open and honest.

The book ends with her preparing for her transplant in March 2020. I would have liked a short paragraph saying how things were, but perhaps that is for a sequel. Did I gain

any insights into living with death? I don't think there was anything new or unique contained in this book, and I am not sure who would benefit from it.



Medicine in the Mountains

David Hawker, Ellen Findlay, and Mike Smith

- Austin Macauley, 2022, £8.99, 204pp, ISBN: 9781398420755
- Reviewed by **Richard Scott**, a GP in Ramsgate

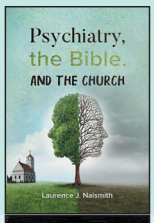
Medicine in the Mountains comes hot on the heels of the author's second book, *A Week in August*, which celebrates 70 years of Kingston Grammar School's Christian Union summer camps. I was converted, aged 14, at one of these camps, and recall being inspired by old-boy David Hawker, a Christian anaesthetist in Nepal. My student elective was sorted!

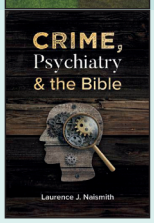
Hawker *et al's* new book places my elective memories in a wider context. Unlike his previous biography of the first missionary surgeon in Nepal (*Kanchi doctor*), *Medicine in the Mountains* is a collegiate effort. Nurse Ellen Findlay began work in Pokhara in 1970, whilst Mike Smith, an ENT surgeon, arrived in 1980. In 1992, their survey confirmed that few patients beyond major bus routes attended their hospital. Who cared for the rest? Fifteen million Nepalis lived in remote, inaccessible towns and villages hidden away in the mountains, neglected and often with serious pathology. Mobile medical camps were required.

The book takes us to the first 'ear camp' in 1993, with porters carrying equipment on their backs and suspended from their foreheads, including an operating microscope. Excellent, unsparingly detailed notes capture the dilemmas involved with evocative pictures adding to the flavour. Geography lessons are thrown in, and the tales are hair-raising. God's provision shines through as dental, gynaecological, surgical, plastic surgical, and medical camps were spawned, even during the extreme violence of the Maoist insurgency. A lovely quote from a patient summed up the team's ethos: '*No others are doing what you people are doing. You operate on us, give us food and clothing. What kind of people are you?*' I loved the answer from a visiting surgeon: '*I have never spent any time with anyone who had such faith. You have made a very hardcore atheist surgeon much more reflective*'.

The book ends with the political upheavals of 2008: the disbanding of the monarchy, and governmental restrictions on foreigners. With locals being trained and hospitals improved, the long-term objective was for Nepal to care for its own. Accordingly, and following the massive earthquake which devastated central Nepal, the camps concluded in 2015. Ellen comments that the camps are not her work but God's, and he will bring it to an end in his time.

This book is quite an undertaking. It reminds us that missionary medics still have a part to play. Read it, be inspired, and whether a student or retired consultant, ask yourself, is God speaking to me?





Psychiatry, the Bible, and the Church

Crime, Psychiatry & the Bible

Laurence J Naismith

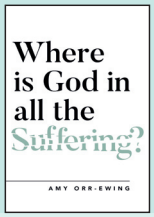
- Faithbuilders Publishing, 2021, 214pp, £12.95, ISBN: 9781913181697
- Faithbuilders Publishing, 2020, 244pp, £10.99, ISBN: 9781913181550
- Reviewed by **David Smithard**, Consultant in Geriatric Medicine at Lewisham and Greenwich NHS Trust, a Visiting Professor at the University of Greenwich, and is the *Triple Helix* Editor

Laurence Naismith is a retired forensic psychiatrist with degrees in theology and a teaching ministry in Cyprus. His book, *Psychiatry, the Bible and the Church* is very readable and aimed at the lay reader, particularly church leaders. The author identifies examples of possible mental disorders within the Old and New Testaments and explores the issues from a medical (psychiatric) and theological point of view. Sometimes, the links are a little tenuous, but he provides an opportunity to explore the broader issues around the topic. In one example, 'Rachel and White Lies', Dr Naismith acknowledges that lying is not a psychiatric disorder but goes on to explore the issues around factitious medical conditions.

I enjoyed the book, and it is certainly one I will share with my pastor.

Crime, Psychiatry & the Bible explores crimes documented within the Scriptures (including murder, manslaughter, rape, treason, perjury, and theft). The book's first part summarises Hebrew, Roman, and modern UK law, drawing some interesting parallels. Naismith provides a different and interesting approach to examining the biblical text. While the book is well written and the arguments clear, there were times when I thought there were better examples of the said crimes than the ones chosen.

Personally, I found the text a little repetitive, but others may find his approach useful. Professionals from many spheres, not just medical, will find the book interesting and valuable. The text is clear, and those with no specific training will be able to get enjoyment from it.



Where is God in all the Suffering?

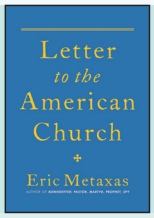
Amy Orr-Ewing

- The Good Book Company, 2020, 144pp, £8.99, ISBN: 9781784982768
- Reviewed by **David Smithard**, Consultant in Geriatric Medicine at Lewisham and Greenwich NHS Trust, a Visiting Professor at the University of Greenwich, and editor of *Triple Helix*

Professor John C Lennox writes in the foreword, '*This book arises out of the conviction of the author that if Christian faith is worth considering, it needs to be deep enough to cope with our most rigorous human scrutiny and our most heart-rending questions*'. This little volume covers many subjects in its 130 pages. It starts with the question 'Why?'. Why does suffering occur? Is it a punishment for our past wrongs, the wrongs of our parents, or just the way of life?

At the beginning Orr-Ewing states, '*Books on suffering written by academic types rarely connect with people who are actually suffering*', yet when I was reading this book, I felt it was missing something. I kept thinking this book did not cover the subject as well as CS Lewis did 80 years earlier. So, I dug out my copy of *The Problem of Pain* and found the arguments deeper and the questions better argued. However, Lewis' English is more difficult to read, and many today might struggle with it.

Nevertheless, Orr-Ewing's is a good book and worth a read. However, I would also recommend going back and reading Lewis to complement it if you want a deeper exposition of the topic.



Letter to the American Church

Eric Metaxas

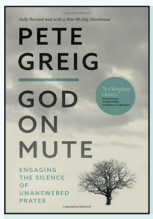
- Salem Books, £15, 139p, ISBN: 9781684513895
- Reviewed by **Greg Gardner**, a GP in Birmingham

Dietrich Bonhoeffer's biographer, Eric Metaxas, has authored an essay applying lessons from the life and writings of Bonhoeffer to the American church. He unpacks the famous quote, erroneously linked to Bonhoeffer, '*Silence in the face of evil is itself evil. Not to speak is to speak. Not to act is to act.*' The book's theme is that large parts of the American church (and, by implication, Western churches in general) have been and continue to be silent in the face of evil and advancing statism.

In a chapter called 'The spiral of silence', Metaxas explains the idea, derived from Bonhoeffer, that if you do not speak, you are not being neutral but are contributing to the success of the thing you refuse to name and condemn. Conversely, those who speak out make it easier for others to speak out.

Drawing lessons from the silence of 12,000 German pastors in the face of rising Nazi evil in the 1930s, Metaxas asks whether history is repeating itself in America. There is an incisive commentary on the parable of the talents and chapters on faith, evangelism, and politics.

The book is short, readable, and uncomfortably relevant.



God on Mute: Engaging the Silence of Unanswered Prayer

Pete Greig

- David C Cook, £11.99, Revised edition 2020, 400pp, ISBN: 9780830780716
- Reviewed by **Steve Fouch**, CMF Head of Communications

A stone-cold classic of modern Christian writing. Greig is devastatingly honest and realistic, but full of faith and hope as he grapples with some of the hardest questions any Christian can face. Why does God not answer some prayers? Why was God silent when I needed him the most? Why do some people have incredible stories of answered prayer, but I have nothing but silence and disappointment?

If you have ever asked those questions (and few of us haven't at some point), this book is for you. Compassionate, wise, deeply scriptural, and highly practical – it will help anyone struggling with the burden of unanswered prayer. o

SCAN FOR MORE

SAVE THE DATE

Seniors' Conference 9-11 October at King's Park Conference Centre, Northampton

What's so good about getting old? - Are you really in the most productive decades of your life?

This is a three-day residential conference for encouragement, reflection, and fellowship around God's word for CMF Members and other Christian health workers aged 55 and over. This will be an opportunity to renew your vision and find God's grace to run the race and finish well.

Jonathan Lamb (Keswick Ministries) will give the Bible addresses. There will be multiple seminar options and plenty of time to relax and meet fellow believers.

More details will be coming out over the summer.

Junior Doctors' Conference 10-12 November at the Hayes Conference Centre, Swanwick.

More details will be coming out over the summer.

GLOBAL

CMF team in the United Arab Emirates

Three of us had the privilege of visiting Kanad hospital in Al Ain, Abu Dhabi, in the United Arab Emirates (UAE) from 3-10 March this year. Kanad (formerly Oasis Hospital) has a long history of providing healthcare to this highly diverse community. Only 20-30 per cent of the population are Emiratis, with the remainder coming from many other countries to work in the UAE. The hospital enjoys the favour of the Sheikh, as many royal babies have been born there! Thank God for the position they hold to be able to operate as a Christian hospital in a Muslim country.

The purpose was to explore opportunities for working there, as the hospital provides a range of inpatient and outpatient care and intentionally seeks to make Christ known. They are currently running Alpha courses for any staff who wish to attend, undertake many 'new mum' visits to homes, seek to minister to inpatients from the chaplaincy team and volunteers, etc. It was all inspiring to see.

One of our members is going to work here from the autumn onwards. One junior doctor is considering going as part of an F3 year. We got to visit one of our members leading the development of a paediatric plastic surgery department in a government hospital in Dubai.

Kanad needs short-term paediatricians this September-December. If you are at all interested, don't hesitate to get in touch with us (see below).

We undertake similar visits to other parts of the world to encourage the local teams working long-term in these nations and to introduce CMF members to 'gospel poor' places that need healthcare professionals.

If you are interested in participating in such a visit to explore how you might serve, please get in touch with the CMF Global Department at: *globalcoordinator@cmf.org.uk*.

Fi McLachlan – Head of CMF Global

PASTORAL

'Toolbox of Hope' Pastoral Care Day Conference, Saturday 11 March 2023

In December 2019, we gathered gifted and concerned people for our first-ever conference on pastoral care in the health sector. We learnt a lot that day. Three years and one pandemic later, we met for our second.

technology

Over 40 of us sat in Johnson House and were joined by others from across the UK and worldwide on Zoom, from Palau in the Pacific Ocean to Bristol, Tennessee, in the USA. We interacted *viva voce* and through Slido as if we were all in the same room. Even the unwelcome snowfall in northern England was no obstacle. Those who couldn't travel joined online. Big thanks to God that hybrid conferencing is now a reality for CMF!

content and reach

Ideas and concepts that were marginal three years ago have become mainstream, and we had a feast of new learning. Robert Lightowler spoke on the biblical basis for post-traumatic growth, drawing on his experience of prison chaplaincy and Christian prisoner rehabilitation. From Biblical Counselling UK, Helen Thorne taught us how to use the Bible in conversations. Simon Edwards, a retired senior army officer, spoke about moral injury and how the military experience impacts healthcare. And what happens when Christians obediently seek the welfare of the wider workforce in healthcare? Susannah Hunt told us of the impact we can have based on her work in Cambridge.

In a culture of suspicion, how do we retain authentic relationships in pastoral care and is it safe to do so? Professor John Wyatt explored the theme of spiritual friendship against this background, challenging us to re-examine how we relate in pastoral care. Bex Lawton, from the CMF Nurses and Midwives team, explained what nurses are ▸

BRIEFS

PRAYER

Training for our student leaders occurs in various ways, including an online Learning Platform. But the most valuable training for new student links takes place as part of the CMF National Conference (21-23 April this year), and we are busy inviting new links to join us for the weekend.

Please remember in your prayers all the final-year medical students who will have just received exam results and details of their placements for FY1 from the start of August.

STAFF MOVEMENTS

LEAVING


Vicky McIlroy

Vicky McIlroy left as CMF Global Coordinator in March. She will be much missed by the team, and our prayers go with her and her family for their next steps.

JOINING

Lois Fielder joins the staff team as CMF Global Coordinator. Contact her on *globalcoordinator@cmf.org.uk*

Jane Colling joins the team for ten months from April as the CMF Peer Support Coordinator.

Bethany Fuller joined the team for ten months in March as the Peer Support Coordinator for Newly Qualified Nurses and Midwives.

◂ experiencing right now and what their wellbeing needs are. Finally, Bert Jones, Vice President of Missions and Member Care at CMDA USA, described a strategy for managing burnout before it strikes. All new stuff to most of us, opening our eyes to new 'tools in the box'.

What hadn't changed? Christ Jesus, still the same, reaching out in mercy and compassion and asking us to follow him.

We finished the day with on-screen prayers, and someone asked the Lord that we might 'approach the medical culture of lack, from a position of the abundance that is mine in Christ'. It sounds like we got to the right place.

Steve Sturman – Associate Head of Doctors' Ministries

GLOBAL

Developing Health Course

This year's Developing Health Course (DHC) is being held in person at the London School of Theology in Northwood, Middlesex, from 8-15 July.

The DHC is unique. A week of residential training focused on global health and mission, giving both a professional and a spiritual refresher for Christian health professionals. But it is more than just a refresher – it is a chance to explore a calling to global healthcare mission, an opportunity for a clinical crash course before going, and a moment to stop, reflect, and review where God is leading you.

STUDENTS

CMF Student Conference 2023

Thank God for another successful student conference, held this year on 3-5 February at the Yarnfield Park Conference Centre in Stone, Staffordshire. Over 300 medical, nursing, and midwifery students joined us for only our second in-person conference in four years. Feedback comments were overwhelmingly positive and included: 'Absolutely amazing. God sent. Everything from seminars to Bible address to food was absolutely incredible', 'I really enjoyed it, left feeling spiritually nurtured and really encouraged'.

The main Bible talks by Giles Cattermole (a former CMF Head of Student Ministries and an A&E Consultant) explored what the books of Luke and Acts (both written by a Christian physician) teach us about living and walking in Jesus' footsteps as Christian health professionals.

A variety of seminars on topics as diverse as artificial intelligence, medical mission, and relationships and singleness, as well as discussions around transgender identification, health and justice, and FOMO (fear of missing out), helped equip students to live out their faith in healthcare.

Throughout the weekend, the bookstall had regular visits from students, with queues snaking around the displays. Books such as Giles' recent CMF book, *Whatever* and another recent CMF title *Serving Two Masters?* by Paul Coulter, were amongst the most popular.

There was plenty of laughter between the focus on God's word and this activity. As is to be expected from students, plenty of creativity was on display through the many Carpool Karaoke videos they sent us!

It is a privilege to be able to pour into and learn from the next generation of Christian healthcarers.

The next Student Conference will be on 2-4 February 2024, where our next main speaker will be Amy Orr-Ewing. Save the date, and watch this space for more information.

CMF EVENTS

Upcoming events

SCAN FOR MORE

It also fosters a learning community, with additional virtual study days that you can join from anywhere in the world throughout the year.

The weeklong course starts with the Mission Fair on 8 July. This is open to anyone with an interest in global missions. It will include an exhibition from a wide range of Christian mission and development agencies and talks by Andy Dipper of All Nations Christian College, Steve Smith of Serving in Mission, and Howard Lyons of the International Christian Medical and Dental Association. The main course will run from 9 July. Course attendees can join us for the whole week or individual study days.

If you want to know more, email *fi.mchlachlan@cmf.org.uk* or visit our booking page at *cmf.li/DHC2023*

VOLUNTEERS

Deep:ER

In June, the current Deep:ER Fellowship programme comes to an end after ten months of growing and learning together. We thank God for our six Deep:ER Fellows and pray for God's blessing on each of them as they return to work and study – Onahi Idikwu, Rachel Mitchell, Olivia Abrams, Susanna Enongene, Lizzy Alexander, and Liz Birdie Ong.


Onahi Idikwu


Rachel Mitchell


Olivia Abrams


Susanna Enongene


Lizzy Alexander


Liz Birdie Ong

Onahi and Rachel both work as Associates in the Nurses and Midwives team. Onahi is developing the CMF nurses' and midwives' network across London, while Rachel has been developing Saline Solution training for nurses and midwives.

Lizzy Alexander has been developing a podcast series called '*Juniors Foundations*'. These are conversations with junior and senior doctors, exploring the challenges of faith and spiritual resilience during the testing times of a doctor's career. You can hear the episodes at *cmf.li/1st-Incision*.

Liz Ong has been the *Nucleus* student editor over the last year. Susanna and Olivia have been working with CMF Global on various projects. Olivia is currently helping finalise details for the CMF Mission Fair at DHC. All of them were also involved in supporting the Student Conference. Please pray for them as they move on to the next steps in their careers and calling. Pray that everything they have learnt in their ten months of Deep:ER would strengthen and equip them to live and speak for Jesus Christ.

HOSTED BY CMF

NAMfest Pre-conference

20-21 April 2023
5pm Thursday 20 April - 5pm Friday 21 April
Yarnfield Park Conference Centre, Staffordshire

Come to our first in-person NAMfest (Nurses & Midwives' Festival) gathering of nurses and midwives! Together, let us 'cast our cares on the Lord and he will sustain us' (Psalm 55:22) as we worship in song, pray, and reflect on his word.

HOSTED BY CMF

Catalyst Teams Pre-conference

20-21 April 2023
5pm Thursday 20 April - 5pm Friday 21 April
Yarnfield Park Conference Centre, Staffordshire

A chance to be together, to eat, chat, pray, and reflect on what God has taught us since we last met over three years ago. We will develop our skills as Catalysts, equipping one another for life and ministry. A great way to kickstart the 2023 CMF National Conference weekend!

HOSTED BY CMF

National Conference 2023

21-23 April 2023
Yarnfield Park Conference Centre, Staffordshire

Join us for a fantastic residential weekend conference for all Christian healthcare workers and their families for excellent teaching from God's Word, wonderful fellowship, and great food! If you can't attend the in-person conference, the main sessions (not the seminars) will be available online - registration required.

HOSTED BY CMF

Developing Health Course

8-15 July 2023
London School of Theology

The DHC is for anyone committed to global health, whether you are preparing to go from the UK, returning on a break and needing a clinical update, or considering whether global health work is for you.
The 2023 course will run from 8-15 July at the London School of Theology (LST).

HOSTED BY CMF

General Committee

10 June 2023
Johnson House, 6 Marshalsea Road, London SE1 1HL, and online

The CMF General Committee will meet to hold CMF's annual members' meeting to review the past year's reports and finances, look at plans for the coming year, and appoint new Board members and officers. If you are a member of the General Committee, you will receive notice shortly.

SCAN FOR MORE

Professor Duncan Vere

(*b* 1929, *q* The London Hospital Medical College 1952, *d* London 2022)

Duncan trained at The London Hospital Medical College (LHMC) and graduated, after getting a string of prizes, with Honours in 1952. He spent his whole working life at The London, apart from a brief period from 1954 to 1956, doing research at The Royal Air Force Institute of Aviation Medicine. Duncan then had various academic posts at LHMC, becoming a consultant physician in 1965. He was Professor of Therapeutics at LHMC from 1972 until he became Emeritus in 1994.

Duncan was a well-known Christian committed to his local church and children's Christian education. He wrote many articles on ethics from a Christian perspective in addition to his many scientific papers. He was involved in committees on regulating medicines from the 1960s until his retirement, making significant contributions related to adverse reactions. Despite his towering intellect, he was also very practical, designing systems for drug dispensing in the hospital, notably reducing drug errors.

He was a caring clinician, treating everyone equally, from the alcoholics living on the streets of Whitechapel to members of the House of Lords.

He looked after his wife, Vera, for many years after her stroke. He is survived by his two daughters and grandchildren. o

Professor Stephen Evans *is Professor of Pharmacoepidemiology at the London School of Hygiene and Tropical Medicine*

Other members who have died in the last few months:

Matt Davis
(*b* 1986, *q* Oxford 2010, *d* December 2022)
David Hutchinson
(*q* Trinity College Dublin 1974, *d* June 2022)
Jonathan Lavy
(attended St Georges, *d* January 2023)
Patricia Price
(*q* University of Edinburgh, 1951, *d* March 2023)

Sir Eldryd Parry

(*b* 1930, *q* Cambridge, *d* 2022)

Sir Eldryd Hugh Owen Parry, KCMG OBE, a CMF member, died aged 91 on 13 November 2022. I wanted to write a brief appreciation of his extraordinary life of service in universities in Nigeria, Ethiopia, and Ghana and the establishment of the Tropical Health and Education Trust (THET).

Many might ask what moulded this remarkable man. Eldryd himself acknowledged several key influences. Firstly, his parents, who were GPs in Cardiff, often worked with very deprived families before the start of the NHS. His mother set up an early palliative care service, occasionally accompanied by Eldryd, and she raised funds for the Christian Medical College at Vellore, South India. Eldryd recalls the impact of cold baths and food rationing at school during World War Two on developing his appreciation of 'austerity'! At university – Cambridge and Cardiff – Eldryd especially appreciated the vibrant academic atmosphere in the Welsh National School of Medicine, where he saw many patients with infections. Perhaps that was where Eldryd caught TB? He was very ill and needed a thoracotomy as well as TB drugs.

Secondly, his friends. Many of his contemporaries at Cambridge became medical missionaries, and his best man went to work in Nepal.

Eldryd worked at several prestigious hospitals with eminent consultants who recognised his very bright intellect; they spent time nurturing Eldryd's clinical and investigative skills. These enabled Eldryd to make massive contributions to the management of cardiac disease in Africa.

Thirdly, existing academic links with universities overseas enabled extremely talented consultants in the UK to be seconded to centres of excellence in Africa. Eldryd was therefore not surprised to be asked at interview in London, 'Would you be prepared to be seconded to Nigeria?'.

Fourthly, his family. Eldryd married Helen, an extremely bright and gifted linguist and teacher who made massive contributions to many African schools and colleges and subsequently at the London Institute of Contemporary Christianity (LICC) in the UK. She agreed they could go to Ibadan, Nigeria – leaving just six days after their wedding! She made a welcoming home for their four children and countless visitors.

Fifthly, his colleagues – in Africa and the UK. Eldryd had the unique ability to recognise talent and readiness to contribute to clinical care, teaching and research at the many African university departments he headed up. He particularly valued developing deep relationships with senior and junior African colleagues, encouraging robust but respectful dialogue and mutual learning. The affection of his colleagues, particularly his African colleagues, is expressed in the online condolences that have poured in since his death.

Finally, but far from least, his faith. Eldryd was always explicit about his personal Christian faith and how it motivated his attitudes, relationships, and practice. He loved the expressive worship of several African churches that he and Helen attended. Eldryd gave inspiring talks to groups of students – organised by CMF and other organisations. He emphasised the value of Scripture, citing the writings of Luke (in his eponymous Gospel and the Book of Acts) as being crucial in challenging social norms when providing care for the ill, especially for the disadvantaged. The genuine presence of Jesus in Eldryd's life was striking, and many who worked for or with Eldryd knew that they had become different people. o

Andrew Tomkins *is Professor Emeritus at the Institute for Global Health, UCL, London*

WANT TO CONTRIBUTE?

If you would like to write an obituary or notify us of the passing of a member, please email *communications@cmf.org.uk*

J Michael Winter

(*b* Cirencester 1939, *q* Barts 1962, *d* Cirencester Nov 2022)

It could be said that Michael was born into medicine, just as he was born into the Christian faith he held fast to from an early age. He followed his father into medicine and later into general practice in the town where he grew up.

The second world war broke out when he was less than three months old, and one of his earliest childhood memories was of tanks rumbling through the streets of Cirencester, which was on the route for driving armaments from the Midlands to the south coast. However, this Brethren family were more likely to be pacifists and missionaries than soldiers.

After medical training at Barts Hospital in London, he worked at Addenbrookes in Cambridge, where he met Adrienne Nye, also a second-generation doctor. In 1965 they married and travelled together to Uganda to do medical work with the support of the Church Mission Society.

After starting a family and returning to the UK, Michael attended All Nations Christian College. But despite the continued pull of Africa, a growing family and involvement in general practice took priority.

In 1974, the family moved to Cirencester. In those days, Cirencester acted as an associate district general hospital with acute medical, surgical, children's and maternity wards. Michael trained hospital Senior House Officers (for which he was awarded FRCP in 2002). He was on-call almost every night, alongside his work as a GP. This was a golden era for patients but not for doctors and their families.

Michael's gentle, sociable nature suited general practice. He disliked conflict and had a desire for unity. For a while later in life, he was chairman of Cirencester Churches Together and was an elder in Cirencester Baptist Church. He also joined Street Pastors, patrolling the town at night to show kindness to strangers who were often the worse for wear.

After retirement, he walked, sang, sailed and travelled, putting his encyclopaedic knowledge of people and places to good use. Michael had an extensive collection of maps and delighted friends with his local and global knowledge. He continued his involvement in CMF, maintaining his concern for those at the coal face of the ethical dilemmas facing Christians in healthcare.

But it is as a local GP and trainer of GPs that he will be most widely remembered. 'He (was) unfailingly professional', said a colleague.

'A highly respected doctor and an amazing person who quietly carried his faith into all areas of life.' 'He would come out to care for us in the middle of the night, always in a suit and tie', said one former patient. 'We owe him a debt of gratitude we could never repay.'

Hundreds gathered for his memorial service in Cirencester in December 2022 after he was 'gathered to his people' aged 83, just 400m from where he was born.

Michael will be missed by many, including his wife Adrienne, children Jonathan, Peter, and Kirsten, and his five grandchildren.

Donations in memory of Dr Winter will go towards a water borehole and community health work in Uganda and can be made by searching for JMWinter on *justgiving.com* o

***Jonathan Winter** is a Social entrepreneur, founder of The Career Innovation Company and co-founder of Primary Care International*

Professor Andrew Sims

(*b* 1938, *q* Westminster Medical School, London 1963, *d* Shropshire, December 2022)

Andrew Charles Petter Sims was born on 5 November 1938 in Exeter to GP parents Charles and Norah Sims (née Petter), who were vibrant Christians and founder members of Belmont Chapel Brethren Assembly in Exeter. He was sent to board at Monkton Coombe School at the tender age of 12, which was not initially a happy experience, but then went to Emmanuel College, Cambridge, where he thrived and met his future wife, Ruth Marie Harvey. His Christian faith blossomed whilst working at a cheese factory in the months before starting at Cambridge and grew and strengthened across his life.

He went on to Westminster Medical School in London to continue clinical medical studies. He met some opposition when he decided to train in psychiatry, from those who felt Christianity and psychiatry were incompatible. However, Andrew felt strongly called to psychiatry and had great compassion for his patients. For much of his life, he studied and wrote about faith and psychiatric symptomatology, fascinated by the evidence for the protective influence of religious faith on health, and keen to clarify and correct misconceptions. These concepts are expounded in his most recent books, *Is Faith Delusion?* and *Mad or God? Jesus: the healthiest mind of all*, written with his friend and colleague Pablo Martinez.

He became Professor of Psychiatry at Leeds in 1979. He was based clinically at St James's University Hospital, where he continued working until he retired in 2000. He wrote a number of textbooks, including *Lecture Notes on Behavioural Sciences*, and *Symptoms in the Mind: An Introduction to Descriptive Psychopathology*, which was first published in 1995 and reached its sixth edition in 2018. Overall he has authored or co-authored 29 books.

He completed his MD on the long-term outcomes of patients with neurosis, notable for the thoroughness of his follow-up. He was also awarded the Lambeth degree of Doctor of Medicine in 1995 by the then Archbishop of Canterbury, George Carey, '*in recognition of his services to psychiatry, in particular in promoting the need to evaluate the religious and spiritual experience of patients*.' He was very involved in the Royal College of Psychiatrists for much of his career, becoming President of the College from 1990 to 1993, having previously served as Dean.

He had four children and twelve grandchildren, six of whom followed him into medicine and one into psychiatry. He was a very hands-on father and a proud and delighted grandfather, passionate about rugby union, international cricket, gardening and walking the hills, particularly in Yorkshire and Dartmoor. He also loved classical music, enjoying being part of the Alveley singers and the church choir and filling the house with Bach organ music on CD. He travelled widely to teach and examine psychiatry at undergraduate and postgraduate levels in Pakistan, Singapore, Zambia and South Africa. In his retirement, he was involved with PRIME in Nepal, the Czech Republic and Bosnia-Herzegovina. He was an active member of CMF for over 40 years and, together with Ruth, was keen to show hospitality to CMF members new to Leeds. Their generous hospitality continued at the home they retired to in Alveley, Shropshire, where Ruth became a non-stipendiary priest and Andrew was Chair of the Deanery Synod, hosting regular men's breakfasts in the barn, with interesting Christian speakers for local friends and acquaintances. They also taught and led seminars at CMF conferences.

At 60, he needed a replacement aortic valve due to severe stenosis but returned to being fit and active, particularly in medicolegal work, which had always interested him. Shortly after his eightieth birthday, he developed bacterial endocarditis, which was not diagnosed until a large abscess had formed, requiring significant surgery from which he never fully recovered. He remained kind, charming, loving and godly till he was 'called to Glory' on 14 December 2022.

He is survived by Ruth, two sons, two daughters, six grandsons and six granddaughters, who will always be grateful for his love, encouragement and Christian example. o

Mary Bunn *is a GP and palliative care specialist currently based in Sierra Leone with a small team working to establish a palliative care service.*

CAN I BE SURE - I'VE LEFT IT SO LATE?

Bernard Palmer, a retired surgeon in Hertfordshire, tells the story of a patient who reminds us that it is never too late to find Christ.

SCAN FOR MORE

Very truly I tell you, whoever hears my word and believes him who sent me has eternal life and will not be judged but has crossed over from death to life. (John 5:24)

Brian had just been told he had secondary cancer in his liver, causing him to become jaundiced. He and his wife realised that the outlook was not good. I was his surgeon, and after talking about possible treatment options, I asked Brian, 'Do you have a faith that helps you at a time like this, or aren't you sure about such things?'.

He turned to his wife and asked, 'Do we, dear?'.

As there didn't appear to be much interest in spiritual things, I simply said, 'For me, knowing that there is a God who loves us and cares for us is the only thing that makes sense of problems like this', and changed the subject.

The following week, however, I met Brian as he sat in the waiting room for a blood test. He said, 'You know what you said last week – it is strange, but my next-door neighbour, who is a Christian, asked us if we would like to go to church. What do you think?'

'I think that is lovely, but honestly, Brian, I wonder if sitting through some hymns, prayers, and a sermon is what you most need at the moment. I would guess what you most need to know is "How can I get right with God?"'

There was a two-second pause before Brian looked up and asked, 'How do I get right with God?' We arranged to meet up the following morning at his home, and there we went over the basics of the Christian faith. One thing really bothered him – how could God accept him when he had spent most of his life without any interest in God whatsoever?

We looked at several key verses again, noting how their emphasis is 'to all' or to 'whoever'. There is no age limit or discussion about past mistakes! We looked at:

Yet to all who received him, to those who believed in his name, he gave the right to become children of God. (John 1:12)

The offer to be adopted as children of God is open to everyone who turns to Christ for forgiveness.

For God so loved the world that he gave his one and only Son, that whoever believes in him shall not perish but have eternal life. (John 3:16)

This willingness of God to accept anybody who genuinely turns to God keeps being repeated:

Whoever believes in him is not condemned, but whoever does not believe stands condemned already because he has not believed in God's one and only Son. (John 3:18)

As the verse at the start of this page reminds us, our natural status is that we stand outside of God's kingdom. But that whoever turns to Christ is accepted by God. Jesus keeps repeating this vital message.

We then turned to the parable Jesus told that most answers the question, can a person really be accepted by God if they turn to him so late in life? In Matthew 20:1-16, Jesus tells the parable of the workers in the vineyard. Jesus is specifically telling us that his kingdom will contain some who have spent all their lives working for him, whereas some will be accepted at the last hour. Yet all receive the same full day's pay. We also looked at the story of the repentant thief on the cross. A man couldn't leave it much later than he did to acknowledge his personal faith that Jesus is the Saviour of the world,

Jesus, remember me when you come into your kingdom. (Luke 23:42)

Jesus gave him the most reassuring answer anyone could want to hear in such a desperate situation,

I tell you the truth, today you will be with me in paradise. (Luke 23:43)

Brian said that he wanted to spend some time thinking all this through but that he would like to come to our church the following Sunday. The sermon that Sunday just happened to be on the same parable from Matthew 20! After the service, I went to talk with Brian and his wife, Barbara, as they sat in the pew. His opening words were thrilling, 'I've some good news to share with you – my wife has become a Christian too!' Brian survived, remarkably, for another six months, and both he and Barbara came to really love their Saviour and became fully involved in the life of God's people for the rest of their lives. o

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