Update on Life Issues

Abortion

Abortion - 50 Years of Shame
Fifty years ago on Friday 27 October, the 1967 Abortion Act received its royal assent and became law. The killing started six months later on Saturday 27 April 1968. This year, 2017, is therefore the 50th anniversary, the golden anniversary, the semi-centennial of the most cruel and perverse piece of legislation still on our Statute Book. Under its precepts at least 8.6 million unborn lives have been snuffed out in England, Scotland and Wales. How will you be marking this woeful event? 'Righteousness exalts a nation, but sin condemns any people' (Proverbs 14:34).

Can 70% of women be wrong?
Where Do They Stand? is a grass-roots, volunteer-led initiative which exists to help the UK public to learn the views of the general public and their elected representatives. Recently it commissioned a ComRes poll to survey the public's views prior to the General Election on a variety of issues. In the poll of more than 2,000 people, it found that 70% of women (and 60% of the general population) wanted the abortion upper limit reduced from 24 to 20 weeks and 60% wanted the limit set at 16 weeks. In addition, 90% of those questioned wanted sex-selective abortions banned. The survey also found that 90% thought a woman considering an abortion should have a legal right to independent counselling from a source that has no financial interest in her decision.

Abortions by midwives?
Here is good news and bad news. The good news is that more and more young doctors are unwilling to perform abortions. The bad news is that midwives might be given the task. At least, this is the view expressed in an online paper by Sally Sheldon and Joanne Fletcher (*Journal of Family Planning & Reproductive Health Care*, 18 January 2017) and entitled 'Vacuum aspiration for induced abortion could be safely and legally performed by nurses and midwives.'

The authors' thesis is this: 'Some 40% of abortions carried out in England and Wales are done by vacuum aspiration. It is widely assumed that, in order to be lawful, these procedures must be performed by doctors. However, a close reading of relevant law reveals that this assumption is unfounded. On the contrary, it would be lawful for appropriately trained nurses or midwives, acting as part of a multidisciplinary team, to carry out vacuum aspiration procedures. This interpretation of the law offers the potential for developing more streamlined, cost-effective abortion services, which would be both safe and highly acceptable to patients.'

First, some background. Sally Sheldon, the lead author, is a Professor of law at the University of Kent. For more than 20 years she has campaigned for abortion-on-demand and is currently a trustee of the British Pregnancy Advisory Service (Bpas), the largest provider of abortions in the UK. Last year, she received a government grant of £512,000 for a research project called 'The Abortion Act (1967): a Biography.' This project was begun in May 2016 and its findings will be launched at the Houses of Parliament on 27 April 2018, the fiftieth anniversary of the Abortion Act coming into force. In other words, Ms Sheldon is hardly an impartial observer. This Sheldon and Fletcher paper's conclusions are therefore no surprise, but they are still alarming.

They are alarming because they recommend shifting the responsibility for surgical abortions on to midwives and obstetric nurses. The vast majority of these healthcare workers did not enter the profession to be involved in terminating the lives of unborn babies – anything but. Furthermore, if implemented, this shift would probably prompt a further erosion of freedom of conscience in the workplace and it would create another no-go area for Christians and the 'morally sensitive'.

Decriminalising abortion – in England and Wales
On 12 March, Diana Johnson (Labour MP for Hull North) tabled a Ten-Minute Rule Bill, entitled 'Reproductive Health (Access to Terminations) Bill 2016-2017', which called for the full decriminalisation of abortion across England and Wales. This would mean all legal restrictions on abortion would be removed. It was part of a campaign sponsored by Bpas, the Royal College of Midwives and others to rip up sections 58 and 59 of the 1861 Offences Against the Person Act, the 1967 Abortion Act and probably also the 1929 Infant Life (Preservation) Act. Ten-minute rule bills signal an issue in Parliament, but they very rarely are given government time to allow them to be fully debated and become law. The 1967 Abortion Act is a glaring exception to this pattern.

Opposition to this Bill was led by Maria Caulfield (Conservative MP for Lewes). During her speech she stated, 'I and many colleagues who share my views will not be silenced as we seek to be a voice for the voiceless … and as we argue for a more modern and humane abortion law that not only upholds the dignity and rights of women but the dignity and rights of the unborn child. A 21st-century approach to this area must be based on a fuller and richer understanding of human dignity and equality which doesn't treat women as a victim of her own body, which doesn't treat children as commodities, and which doesn't treat marginalised people such as young girls or children with Down's Syndrome as burdens or inconveniences. On this count this Bill fails.'

MPs were deeply divided on the issue and the Bill was narrowly passed by 172 to 142. It was then read the First time. The Second Reading was set for 24 March, but then delayed until 12 May. In the meantime, a General Election was called, Parliament was dissolved and the Bill fell and no further action will be taken. Hooray!

This vote was won by the pro-abortionists. OK, the Bill fell, but only because of unusual circumstances. OK, it was a Friday sitting and many MPs travel to their constituencies on that day so attendance was poor. OK, ten-minute rule bills seldom make progress. But this episode should serve as a wake-up call to MPs – there is real pressure at Westminster for a radical reform of abortion law, the sort that would remove all legal protection for the unborn.

Assisted Reproductive Technologies

In vitro gametogenesis (IVG)
If IVF is bioethically problematic, IVG is gruelling. Within the next 10 to 20 years, this new and controversial fertility technology, called in vitro gametogenesis, could make it possible to manipulate skin cells into creating a human baby. Though the technology is difficult, the basic formula is simple, IVG = iPSC + IVF. In other words, take a skin, or any other adult, cell, reprogramme it into an induced pluripotent stem cell (iPSC), convert that into a gamete, that is, a sperm and/or an ovum, use them in IVF to create a human embryo, transfer that into a woman, and deliver a baby.

IVG is not without its critics. As Professor Eli Adashi of Brown University has declared, 'There's something troubling about an inexhaustible supply of gametes that can be fertilized into an inexhaustible supply of embryos.' And, for example, it also raises the spectre of 'embryo farming' and 'designer babies'. It would turn procreation into a transaction. It would introduce further fractures into parenthood, allowing more human combinations into the generation of a child. It would allow singles, gays and lesbians to become parents. It would genetically distance parents from child. Contrariwise, it might allow one adult to be both father and mother – the ultimate in inbreeding. And if gametes could be generated from easily-collectable skin cells, for example from a glass, people could be made parents without their knowledge or consent. IVG has the potential to rewrite the biology of human reproduction.

So far, the first phase of IVG, that is production of ova, or oogenesis, has been successfully accomplished and tested by Japanese researchers on mice, which produced healthy babies derived from skin cells. That work by Hikabe *et al*. was published in *Nature* (2016, **539**: 299-303) as 'Reconstitution *in vitro* of the entire cycle of the mouse female germ line.' The second phase of IVG, in vitro spermatogenesis from iPSC, has been variously reported, but with methods that have proven difficult to replicate. And besides biologically mice are not men. Currently, it is not feasible – technically or legally – to create a human baby via IVG, but at least it is now plausible.

Another reason to shun IVF

A document recently published (28 February 2017) by the ethics committee of the *American Society for Reproductive Medicine* (ASRM), entitled, 'Unconventional combinations of prospective parents: ethical challenges faced by IVF providers', draws attention to the potential dangers of 'intrafamilial reproductive arrangements.' While so-called 'collaborative reproduction' typically involves anonymous or unrelated individuals, such as family friends, it is becoming increasingly common, at least in the USA, for first-degree relatives to share ova, sperm or wombs.

The document states that there are some combinations that should be rejected outright because they are consanguineous, such as the pairing of a sister's ova with a brother's sperm. There are also 'incestuous unions', such as a father providing sperm for a daughter, who is using donated ova. On the other hand, the committee is less opposed to arrangements such as a father giving sperm to his son's wife. Such 'intrafamilial arrangements' raise concerns not just about adverse genetic links but also about consent and family dynamics.

The ova donation racket

In early May, *The Daily Mail* published a front-page story about the ethical and exploitative nature of 'egg donation'. The paper's major allegation against the fertility industry, as visited by its undercover journalists, was that women are being persuaded to donate their healthy ova in return for free or discounted IVF treatments, specifcally at several clinics in London, Hertfordshire and County Durham. The exposé has cajoled the HFEA into investigating the paper's claims. And Health Secretary, Jeremy Hunt, has said the allegations are 'serious and worrying'.

Human ova are rare, but also at a financial premium. They are needed for IVF and embryo research. The voluntary donation of ova is regarded as an important safeguard which reduces the extent to which a woman's body can be commodified. Thus buying and selling of human ova is generally regarded as unethical. The fertility pioneer, Lord Robert Winston, responded to the *The Daily Mail's* evidence of this practice as, 'I fear that some in my profession have no moral or ethical compass. These women cannot appreciate the consequences of what they're agreeing to. These patients are vulnerable and anxious and likely to be worried about money. The women who are egg sharing are under duress and that's really worrying.'

There are considerable health risks to multiple ova production and donation. It is invasive and often painful. The inevitable process of superovulation can lead to ovarian hyperstimulation syndrome (OHSS), which is hazardous. Follow-up of these women is random. Psychological harm is not uncommon. It is frequently disadvantaged and economically-needy women who are targeted. For example, Newcastle University has advertised that 'Donors will receive £500 compensation for a completed donation cycle.' Is the health of women unimportant? Does research and IVF trump their well-being? Have fertility practitioners lost or fogotten their principles, morals and guidelines? Who will protect these women? Where are the regulators?

On 2 May, the HFEA issued the following statement, 'We have clear rules in our code of practice, enforced by inspectors, that clinics must explain the risks and chance of success of treatment to each patient and donor, and avoid encouraging people to donate eggs and sperm with the promise of financial gain. This investigation highlights potential breaches of our code and our inspectors will be investigating each

allegation presented to us. If we find that a clinic is in breach of our code, we will take regulatory action.' Oh yes? Come on paper tiger, show us some teeth.

'Three-parent' IVF – the details

In April, John Zhang and his team, who created the world's first 'three-parent' IVF baby, published more details about the techniques used in the child's conception (Zhang, J. *et al*. (2017) *Reproductive BioMedicine Online* **34**: 361–368). The essential procedure was already known. It involved removing the nucleus from a healthy donor ovum and replacing it with a nucleus taken from the ovum of the woman who carried the neurological disease, Leigh syndrome. This leaves the donor's healthy mitochondria intact. The scientists then performed IVF by fertilising the modified ovum with the father's sperm before transferring it into the mother's uterus. The resulting baby boy was born in April 2016.

Zhang's new paper reports the more detailed methods used to transfer the mitochondria and how they froze and heated the embryo before using an electrical pulse to fuse the mother's nucleus into the donor ovum. It also reveals that some diseased DNA from the mother was carried over inadvertently into the donor ovum.

But the big questions remain – will the child's health be affected by the procedures and/or by the traces of the mother's diseased mitochondrial DNA that he carries, and will his mitochondria function properly? The percentage of affected mitochondria varies among his tissues. Just 2% of the mitochondrial DNA of cells in the boy's urine came from the mother, but it was as high as 9% in cells from his circumcised foreskin.

But none of these key questions are likely to be answered because his parents have refused any further mitochondrial testing on the baby unless there is a medical need. It is not clear whether the family was ever asked to consent to long-term medical monitoring. There is now no way to assess the long-term health of this uniquely-conceived child and determine if 'three-parent' IVF is indeed safe. What are the risks of this experimental technique of mitochondrial replacement therapy? What is in the best interests of the boy? This is medical science at its worst. This is all most unsatisfactory.

Gene editing

Editing human embryos – the latest

In April 2015, it was reported that researchers in China, led by Junjiu Huang at the Sun Yat-sen University in Guangzhou, used the gene-editing tool CRISPR-Cas9 to edit the rogue gene responsible for the disease β-thalassaemia out of human embryos. The embryos were non-viable because they carried extra chromosomes. These world-first results were published in the online journal *Protein & Cell* under the title, 'CRISPR/Cas9-mediated gene editing in human tripronuclear zygotes.' The world-second report of editing human embryos appeared in the April 2016 edition of the *Journal of Assisted Reproduction and Genetics* by Yong Fan and colleagues from the Guangzhou Medical University. Their paper was entitled, 'Introducing precise genetic modifications into human 3PN embryos by CRISPR/Cas-mediated genome editing.' They introduced a mutated gene, known as CCR5Δ32, into some of the embryos, which can confer resistance to HIV. Again, the embryos they used, 'spares' from IVF, were reported to be abnormal and unsuitable for implantation because they also contained an extra set of chromosomes – they were destroyed three days after the experiment began.

So the next tantalising challenge was to try gene editing using viable human embryos. In June 2017, a report in *Molecular Genetics and Genomics*, entitled 'CRISPR/Cas9-mediated gene editing in human zygotes using Cas9 protein' by Tang *et al*. showed, for the first time that mutations in normal human embryos could indeed be corrected. The team, led by Jianqiao Liu at the Third Affiliated Hospital of Guangzhou Medical University, used ova leftover from IVF procedures and fertilised them with donor sperm from two men who suffered from diseases that are common in China. Six embryos were created.

One of the sperm donors had a mutation called β41-42, which causes β-thalassemia, while the other donor had a mutation in the *G6PD*gene, which is a cause of favism, a disorder which results in the spontaneous destruction of red blood cells after eating, for example, broad beans.

Four of the resulting embryos had the β41-42 mutation, while two had mutations in the *G6PD* gene. They were subjected to the CRISPR-Cas technique and allowed to develop for two days. Then their DNA was analysed to establish if the mutations had been successfully corrected. The β41-42 mutation was only partially corrected in one embryo, forming a mosaic embryo. CRISPR-Cas induced an additional mutation in another embryo, and the technique did not work at all in the two remaining embryos. The mutation in the *G6PD* gene was successfully repaired in one embryo. In the other embryo, it was corrected only in some cells, thus also forming a mosaic embryo, that is, with a mixture of edited and unedited cells, a combination of both repaired and unrepaired cells.

This work has been described as 'promising' and 'encouraging' yet it pointed out serious limitations and complications. The trial was small, the methodology not entirely efficient and it included the continuing worry of 'off-target' mutations. The occurrence of mosaicism also needs solving – perhaps by editing ova and sperm, rather than embryos. And, of course, there are all those underlying grave bioethical concerns about genetically editing humans. In fact, this type of germline editing probably will not be the first way CRISPR-Cas9 is used to tackle human genetic diseases. Researchers are already planning experiments to edit genes in the somatic cells of patients. Such experiments come with fewer bioethical questions, but also many remaining technical hurdles. And anyway, almost all inherited diseases can already be prevented for most couples by existing forms of screening, such as preimplantation genetic diagnosis (PGD) of IVF embryos, without any need for CRISPR.

CRISPR, drugs and tumours

Tumours can often become resistant to individual drugs, but it is well known that certain drug combinations can be surprisingly effective in destroying such drug-resistant tumours. Michael Bassik and his colleagues at Stanford University have developed a method based on CRISPR–Cas9 that can offer a way to discover such useful mixtures. The work was reported in *Nature* (23 March 2017, **543**: 467) under the title, 'CRISPR finds drug synergy.'

Their method systematically disables two genes at a time in cells. They used their system to knock out 21,321 pairs of potential drug targets in leukaemia cells, looking for combinations that work synergistically to kill cancer cells. They found that disabling two genes, called BCL2L1 and MCL1, destroyed drug-resistant cells. Drugs that inhibited these genes killed more leukaemia cells than each of the two medicines did when used individually. It looks like a step forward in cancer treatment.

Stem-Cell Technologies

The Human Induced Pluripotent Stem Cell Initiative (HipSci)

In May 2017, the Wellcome Trust and the Medical Research Council (MRC) announced a £12.75 million initiative to create a catalogue of high-quality adult stem cells, the so-called induced pluripotent stem (iPS) cells. This initiative known as HipSci is the UK's largest resource of human stem cells and has been heralded as a powerful research tool for studying human development and diseases including cancer, Alzheimer's and heart disease.

The strategy is to lay the foundations to create a new iPS cell bank, providing a world-class resource for UK researchers. So far, 711 cell lines have been created and detailed information about their genomes, the proteins they express and their cell biology has been generated. This knowledge base is openly available to the research community.

It is significant that this Initiative deals exclusively with iPS cells, produced by that Nobel Prize-winning technology, which is bioethically uncontroversial, and not the once-celebrated embryonic stem cells, which are bioethically objectionable.

'Artificial embryos' from stem cells

Scientists at the University of Cambridge have used two types of stem cells from mice and a 3-D scaffold to create 'artificial embryos', structures that closely resemble natural mouse embryos. Previous work had limited success, but this is believed to be a world first, with the hope of improving fertility treatments (of course) as well as insights into early embryo development (of course).

This work, published in the journal *Science* (2 March 2017) as 'Assembly of embryonic and extra-embryonic stem cells to mimic embryogenesis in vitro', used embryonic-stem cells plus a second type of stem cell, known as extra-embryonic trophoblast stem cells, which form the placenta. Lead researcher, Magdalena Zernicka Goetz said, 'We knew that interactions between the different types of stem cells are important for development, but the striking thing that our new work illustrates is that this is a real partnership – these cells truly guide each other.' Christians will recall Psalm 139: 14, 'I praise you because I am fearfully and wonderfully made.' However, an artificial embryo is unlikely to develop into a healthy foetus as it would probably need the third form of stem cell, which develops into the yolk sac that provides nutrition. And, of course, if such experimental human embryos were created, they would not be allowed to develop beyond 14 days. So, it is obvious that bioethical predicaments are stacking up against this technique.

Blood from stem cells

Could this be the end of the road for all those altruistic blood donors? Over the last twenty or so years scientists have longed to produce 'artificial blood'. Now that goal is apparently within grasp. The breakthrough has centred on a special sort of stem cell known as the haematopoietic stem cell (HSC). From this type of cell all the basic components of blood are generated. And a group, led by George Daley at Harvard University, has seemingly overcome the final technical hurdles. They first took ordinary human adult cells, added a mixture of seven transcription factors which reprogrammed them into induced pluripotent stem cells (iPSC) and then coaxed these into HSCs. The end-product, when injected into mice, produced the complete set of human blood cells – well, almost, though not exactly identical to those found in nature, they were tantalisingly close.

The outlook could be staggeringly good. For instance, take cells from patients with genetic blood disorders including leukaemia, use CRISPR to correct the genetic defect and then make functional blood cells so that patients could receive laboratory-grown versions of their own healthy cells. Also, use cells from universal donors and make limitless supplies of donative blood for everyone. We are not there yet – human clinical trials are needed and safety concerns must be allayed, but it certainly does look promising. This work was reported in *Nature* (online 17 May 2017) under the title, 'Haematopoietic stem and progenitor cells from human pluripotent stem cells.'

Euthanasia and Assisted Suicide

Noel Conway – the latest

Noel Conway is the 67-year-old retired college lecturer, who has motor neurone disease (MND), and is not expected to live for more than 12 months. Mr Conway wants the right to die. He wants a declaration that the 1961 Suicide Act is incompatible with Article 8 of the 1998 Human Rights Act, which relates to respect for private and family life, and Article 14, which protects from discrimination.

On Thursday 30 March 2017, a decision was handed down on the Noel Conway *v.* Ministry of Justice case denying permission for it to proceed. Noel Conway's legal team appealed this decision and a hearing took

place on Tuesday 11 April 2017. This appeal was successful and the earlier decision was overturned. Noel's case will now proceed to a full hearing in the High Court.

Back in 2014, the case of Tony Nicklinson, who suffered from paralysis after a stroke, was ultimately dismissed by the Supreme Court. Noel Conway's case is considered by Dignity in Dying, his backers, to be different from the Nicklinson challenge in that Noel has a terminal illness and his legal team are setting out strict criteria and clear potential safeguards to protect vulnerable people from any abuse of the system.

These include:

- that the adult is suffering a terminal illness diagnosed with six months or less to live;
- medical evidence confirming the individual has mental capacity to make the decision;
- evidence of the person's wishes and that they were informed, clear, settled and voluntary;
- medical professionals involved would report the assistance given to an appropriate person or organisation;

A High Court judge could be asked to confirm these criteria have been met.

The Not Dead Yet UK organisation is a network of disabled people in the UK who oppose the legalised killing of disabled people. It has issued a statement on the Conway case. It reads, 'While we empathise with Mr Conway in his legal attempt to avoid what he wrongly believes is inevitable suffering at the time of his death we strongly maintain that changing the law to allow physician Assisted Suicide will endanger the lives of the UK's many ill and disabled people who, with the right amount of appropriate care and support can and do achieve a peaceful passing. More importantly, this type of support allows disabled and ill people to live full and enjoyable lives, with no fear of unnecessary death from coercion, error or human prejudice holding them back.'

There is also the associated case of Omid (whose surname cannot be released). He was diagnosed in 2014 with the non-terminal neurological condition, multiple system atrophy. Omid does not have a terminal diagnosis and is calling for assisted suicide to be made available to anyone who is suffering unbearably, not just those who are dying. Omid asked for permission to intervene in Noel's case in March but permission to bring a case was not granted to Noel at the time of that hearing. In order for Omid's case to progress it will need a separate permissions hearing.

Assisted suicide in Washington DC

In mid-February, Washington, DC became the seventh jurisdiction in the US to legalise assisted suicide, as the Republican-controlled Congress failed to block the law. The other members of the infamous US septet are California, Colorado, Oregon, Vermont, Washington state and Montana.

The Home Rule Act of 1973 gives Congress power, under the aegis of the Oversight Committee, to overturn DC laws within a certain time frame after their passage. On 13 February, the Oversight Committee voted 22 to 14 to cancel the District of Columbia's new assisted suicide law, the Death with Dignity Act. The next step in cancelling it would have been to bring the resolution to a full House vote. Because of political bungling, the full House never had the opportunity to vote and so assisted suicide became legal. A wonderful opportunity to block assisted-suicide legislation was missed. Congress messed up, big time!

The traffic is not all one way

The world, including the USA, has not gone assisted-suicide mad. Despite that impression from the media, several anti-life bills have been recently defeated in Indiana, Mississippi, Tennessee and New Mexico. For example, in New Mexico, the state Senate voted 22 to 20 against a bill to legalise assisted suicide for people expected to die within six months. Similar bills have stalled in Hawaii, Maryland, Utah and Wyoming.

USA and Elsewhere

What has Donald Trump done?

This is not the place to provide a comprehensive assessment of President Trump's first few months in the White House. Suffice to say he has made some sweeping, and positive, policy changes in terms of bioethical issues. For example, as recently as 15 May, he expanded the Mexico City Policy, which bans federal funding for abortions outside US borders. And his so-called Protecting Life in Global Health Assistance policy also blocks US funding of foreign aid to non-governmental organisations that provide or promote abortion or mention abortion in connection with family planning. The policy applies to approximately $8.8 billion of aid.

Furthermore, he has raised the profile of this year's annual National March for Life. He has signed an executive order entitled 'Promoting Free Speech and Religious Liberty'. He has chosen the evidently pro-life Neil Gorsuch for the key role of a US Supreme Court Justice and has also made other strong pro-life appointments including the choice of his vice-president, Mike Pence; Attorney General, Jeff Sessions; Health and Human Services Secretary, Tom Price, and Counselor to the President, Kellyanne Conway. Most recently the pro-life activist Charmaine Yoest has been given the job of Assistant Secretary of Public Affairs at the Department of Health and Human Services (HHS). Yoest is the former CEO of Americans United for Life and regarded as the 'legal architect of the pro-life movement'. The man Yoest is replacing is now a vice-president of Planned Parenthood. And Trump has recently hired another top social conservative, Shannon Royce, former chief of staff at the pro-life lobbying organisation, the Family Research Council, to work in the HHS as the Director of the Center for Faith-based and Neighborhood Partnerships. And so the impressive recruiting list goes on.

And to top it all, Planned Parenthood, the largest abortion provider in the US, is about to be defunded to the tune of an annual $450 million. At least, President Trump's 2018 budget proposal would withhold all federal funds from Planned Parenthood, if, and it may be a big 'if', the new Republican healthcare legislation, the so-called American Health Care Act (AHCA), which was narrowly approved by the House of Representatives (217 to 213) in early May, also passes the Senate and is signed into law. It would mean that Trump has kept his pro-life promises, including stopping US taxpayers from being forced to fund abortion and abortion businesses. Of course, there have been disappointments, but there is no denying that the President is packing his administration with pro-life, pro-family advocates.

Bad news for France

On Sunday 14 May, the 39-year-old Emmanuel Macron took over as France's new president. His predecessor, François Hollande, was a pro-life, pro-family disaster. He extended abortion rights, legalised gay 'marriage', permitted terminal sedation, and so on. Will Macron be any better? Probably not. His electoral platform certainly did not propose a single pro-life or pro-family measure.

It seems as though the traditional French secular state with its entrenched Enlightenment philosophy is set to continue. Perhaps the most that its minority of pro-life citizens can hope for is a preservation of the status quo and an avoidance of any further sliding into the culture of death.

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(This article was originally published in the Affinity Social Issues Bulletin for July 2017. The whole edition can be found at www.affinity.org.uk)