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Essay

Capital punishment, my sixth great grandfather, and me—an essay by Robert Sneyd

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*After finding out about a distant forebear's execution, **Robert Sneyd** acted as an expert witness for a US court that wanted to use a new drug for lethal injection, appalled that untrained government workers were using lifesaving drugs to kill*

In the summer of 2017 I was visiting family in Scotland when two notable things happened within a few days. Firstly, my great aunt let on that my sixth great grandfather Archibald Cameron (**F**fig 1) had been convicted of high treason. With a bit of research I learnt he'd been sentenced to death, hanged for 20 minutes, and then beheaded. He was not quartered but his heart was cut out and burnt.

Fig 1: **Six-Eight** degrees of separation: line of descent from **Dr** Archibald Cameron to **Professor** Robert Sneyd

Cameron was a physician in the service of Bonnie Prince Charlie who, after the defeat of the prince's army at the Battle of Culloden in 1746, fled with him to France. Returning to collect some of the prince's debts, he was betrayed, imprisoned in Edinburgh Castle, and then transferred to the Tower of London before being sentenced to death for high treason. In 1753 he was finally transferred to Tyburn for execution (fig 2).

Fig 2: Robert Sneyd's ancestor, Archibald Cameron, heads towards his end in Tyburn, place of execution for London, on 7 June 1753. The attendant riding with him holds a raised surgeon's knife to remind Cameron of his fate.

A few days after I learnt of my ancestor's fate, and entirely by coincidence, I was approached to provide assistance as an expert witness on behalf of Mark James Asay, a prisoner scheduled to be executed by lethal injection in Florida. Although I have always been opposed to the death penalty, I had not until then tried to do anything about it.

Public killings go private

While the policy framework within which a state kills its citizens is a matter of public opinion and political whim, the mechanics of the process have evolved. In the centuries since my ancestor was killed and eviscerated as an entertaining spectacle, members of the public have progressively lost appetite for the actual delivery of policies that they and their politicians purport to desire.

Public execution was replaced by private processes within prisons, where partial asphyxiation and disembowelling gave way to hanging and occasionally shooting. Performed by specialists and in volume, the process could certainly be efficient and swift: the British hangman Albert Pierrepoint supposedly hanged a man within 12 seconds of his entry to the execution chamber.[1] However, such expertise was not universal, and after a series of bungled hangings in the 1880s the electric chair was introduced. A century later, in response to unrest over the inhumanity and gruesome practicalities of the electric chair, Americans turned to lethal injection.

In the US the decision of whether or not to employ the death penalty, the subsequent legal processes, and the mechanics of execution lie largely within the remit of the individual states. Only at the later stages of the appeals process do federal courts (including the US Supreme Court) become involved.

Although other methods, including shooting and hanging, remain on the statute books, lethal injection is the primary method of execution used by US states today. The drugs used in executions were never designed for this purpose; and incompetence, inexperience, and the inappropriate use of lifesaving medicines to kill have repeatedly delivered well documented fiascos, with condemned inmates experiencing agonising and protracted executions that have sometimes even failed completely.

More difficult than it sounds

The executors of Archibald Cameron had no difficulty finding a way to kill him, but today US states are struggling to assemble the necessary pharmaceuticals, expertise, people, and facilities to carry out judicial killing by drugs.

Doctors are potentially useful contributors to the operations of the death penalty. But clear and sustained guidance from professional bodies such as the American Medical Association, the American Society of Anesthesiologists, and others directs doctors away from participation in any part of the process. Specifically, doctors should not certify patients fit for execution, should not participate in the process, nor should they pronounce them dead in the event that it succeeds.

When lethal injection was developed in 1977 the original protocol consisted of three drugs: the injectable general anaesthetic thiopental (previously thiopentone); pancuronium bromide (a paralytic agent); and potassium chloride (which was intended to cause cardiac arrest). But by 2011 the manufacture of thiopental was largely discontinued, as the drug had

been almost entirely replaced with propofol, which is now the most widely used injectable anaesthetic in the world.

In response, states began adding new drugs to their execution protocol, experimenting with different drug combinations and dosages. This spawned multiple procedures and pharmacological choices for executions across the US, subjecting death row inmates to multiple modalities for death, as my ancestor was. The misuse of these drugs has caused a range of painful sensations from “waterboarding”[2] to “the chemical equivalent of being burned at the stake.”[3] Faced with the misuse of their drugs in executions and the serious legal, fiscal, and reputational risks associated with the practice, pharmaceutical companies strengthened their efforts to prevent states accessing these drugs for the purpose of capital punishment. In recent years every single company approved by the US Food and Drug Administration to manufacture the drugs currently used in executions in the US has made statements opposing the practice, and companies have entered into contracts with their distributors to prevent prisons buying their drugs for this purpose. These companies have adapted their distribution processes to frustrate the diversion of their products for use in executions, and some have taken legal action with the same objective. Legal efforts have challenged attempts by prison authorities to fraudulently subvert the therapeutic supply line for drugs, delivering drugs for execution using “false pretense, trickery, and bad faith.”[4] Companies have also sued for the return of drugs originally supplied for therapeutic purposes and subsequently resold or diverted.[5]

Prisons getting desperate

Companies’ actions have effectively “end[ed] the open market for execution drugs,”[6] and US prisons are now experiencing great difficulty legally obtaining reliable supplies of suitable pharmaceuticals for executions.

Frustrated by companies’ efforts to disrupt the supply chain of drugs for execution, prisons have resorted to procurement by unorthodox and in some cases illegal routes, with batches of drugs traded in a grey market involving non-standard outlets, including a London pharmacy operating out of the backroom of a driving school,[7] and various illicit and unlicensed suppliers.

Prison officials have also continued to expand the list of drugs used in executions, adding new and experimental drugs to their protocols in an effort to purchase manufactured drugs before companies have the opportunity to restrict their sale for execution purposes. In 2017 the state of Florida announced that it would use the anaesthetic etomidate in an execution,

marking the first time in the US and global history that this drug would be used for such a purpose. I became an expert witness to the Florida Supreme Court in an attempt to stop this. On 7 August 2017 I filed a declaration in court in the case of Mark James Asay v State of Florida.

Cruel and unusual

Up to this point my objection to the death penalty had been based on my liberal principles, and these now faced a reality test. I decided to do some homework about Asay, whose execution I was to attempt to prevent. Asay was a racist double murderer who, at the age of 23 years, shot and killed a passer-by and a transgender sex worker. Arrested two weeks later, he had spent 30 years in custody, mostly on death row. Although I was appalled by Asay's crimes, my principles prevailed: regardless of his crime, the overwhelming evidence has shown that his execution would have no public safety benefit or deterrent value. And as a doctor I could not abide the idea that untrained officials were using lifesaving medicines to kill.

I urgently set about reviewing court documents, scientific literature, and other resources to support Asay's legal team in their attempts to show that his execution by lethal injection would violate the US Constitution's prohibition on cruel and unusual punishment.

As I outlined for the Florida Supreme Court, etomidate is a short acting anaesthetic that commonly causes myoclonic movements or other forms of excitation during the onset of its effects. In normal medical usage recipients sometimes experience local pain during injection of the drug. I presume my ancestor's hanging, beheading, and heart removal were done by people with experience. Non-medical executioners using etomidate could lead to a host of adverse effects, including decannulation owing to myoclonus and the recovery of consciousness during subsequent paralysis and potassium chloride injection.

In short, I found that Asay was at grave risk of suffocating from paralysis to his diaphragm while feeling the excruciating pain of the potassium chloride travelling up his veins, stopping his heart. The risk of suffocation and cardiac arrest seemed eerily similar to my forefather's execution: he was hanged before the executioners cut out and burnt his heart.

In the end, the state of Florida ignored these risks and executed Asay.

In a different case, an amicus brief submitted to the US Supreme Court with evidence from myself and other academics has contributed to the postponement of another execution that planned to use a similar cocktail.[8] This amicus brief highlighted an important but often unseen risk that states' unrelenting pursuit of execution drugs pose not just to prisoners but to

the wider public. The appellant remains alive despite an unfavourable ruling by the Supreme Court.[9] But it is likely that execution will be attempted in the near future.

Some states have recently turned to using dangerous drugs of misuse in executions, such as fentanyl, pentobarbital, and hydromorphone, all schedule II controlled substances. And an increasing number have recently passed special legislation imposing a blanket of secrecy around this information to shield from public view how they acquire, prepare, and use these drugs.

Because companies have contractually prohibited the use of these drugs in executions, the efforts of state officials to procure them outside legitimate supply channels risks creating a state sponsored black market for drugs of misuse. The decision to use fentanyl in executions despite its unavailability through legitimate supply channels is especially striking in light of the opioid epidemic currently ravaging the United States. By purchasing these drugs secretly—outside legitimate supply channels—states are effectively fuelling a black market for these products.

Lifesaving drugs needed elsewhere

The use of these drugs in executions also poses risks to patients because many are in short supply, with fentanyl, the neuromuscular blocker rocuronium bromide, and potassium chloride injections all currently listed by the FDA as being in short supply. Other sought-after execution drugs such as the hypnotic propofol and the muscle relaxant vecuronium bromide are listed on the World Health Organization's model list of essential medicines. An investigation in the *Guardian* newspaper reported that just four states' execution drug stockpiles could otherwise be used to treat more than 11 thousand US patients undergoing surgical procedures.[10] As two drug companies wrote in a legal filing, "Use of the medicines for lethal injections creates a public-health risk by undermining the safety and supply of lifesaving medicines. Improperly procured medicines from unauthorized sellers are at risk of adulteration or chemical change [and could] place patients across the country at risk." [11]

Where does this end? The risks to prisoners and to patients created by states' single minded pursuit of an expanding list of drugs should give any medical practitioner pause. And it is not clear whether there is an end in sight to this experimentation, with its consequences for prisoners and for patients.

Choosing death

Following the 2015 US Supreme Court decision of *Glossip v Gross*, prisoners seeking to challenge a lethal injection drug protocol under the eighth amendment of the US Constitution are now required to proffer their own alternative drug choice or execution method. In some cases prisoners have requested that their execution be delivered by firing squad rather than face lethal injection. Under the Supreme Court's legal standard, prisoners and their lawyers must devise and plan their own executions—yet prisoners, lawyers, and state officials have no business determining which drugs or methods are appropriate to use.

New horrors also lie ahead since the recent decision by several states to approve in principle execution by asphyxiation with nitrogen gas. We may be heading back to my ancestor's time when burly men would drag prisoners out of their cells and string them up on scaffolds. Execution by asphyxiation would take only a sufficient supply of muscular executioners, an airtight bag, and a cylinder of nitrogen gas. For the practitioners of judicial killing this could bypass objections from most of the elements that have been frustrated by doctors and pharmaceutical companies since no IV cannulae, no anaesthetic drugs and no clinical skills would be required. [sense unclear: what are the "elements" here?].

But the reality is that states that have announced this move (Oklahoma and Alabama) are struggling to arrive at an execution protocol. Gas suppliers are refusing to cooperate, the states haven't been able to figure out how to carry out the execution without putting executioners at risk of exposure to gas leaks, and the very nature of the execution would require the prisoner to actively participate in his or her own execution, inhaling the deadly hypoxic gas. This is to say nothing of the years of legal challenges (up to the US Supreme Court) that this method will face.

Contemporary accounts suggest my ancestor was a decent man and a good doctor, but that didn't prevent him being killed by the state. But, horrifying as his execution must have been, at least it took place in public, with the brutality clear for all to see. Today some US officials are trying to hide the brutality of judicial killing behind a medical mask, only it's not working so well.

box start

Biography

Rob Sneyd is emeritus professor at the University of Plymouth, where he previously led the medical and dental schools. He trained in anaesthesiology in the US~~K~~ and UK~~S~~, has worked in the pharmaceutical industry and the NHS, and led the 2013 national sedation review for the Academy of Medical Royal Colleges. His research interests include clinical pharmacology relevant to anaesthesia and intensive care.

box end

Competing interests: I have read and understood the BMJ Group policy on declaration of interests and declare the following interests: I am a supporter of Reprieve, a UK charity that campaigns against the death penalty.

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<lgl>8 Russell Bucklew v Annel Precythe, director, Department of Corrections, et al. <https://lethalinjectioninfo.org/wp-content/uploads/2018/07/Bucklew-Amicus-Brief-of-Pharmacy-Medicine-and-Health-Policy-Experts.pdf>.</lgl>

<eref>9 **new reference to come to our own news story on the Bucklew case (expected Thursday 4th)**</eref>

<eref>10 Pilkington E. States are stockpiling lethal injection drugs that could be used to save lives. *Guardian*. Apr 2017. <https://www.theguardian.com/world/2017/apr/20/states-stockpiling-lethal-injection-drugs-arkansas-execution></eref>

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