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Water, water everywhere

The pandemic has caused a shortage of cadavers

Surgical training is suffering as a result





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PRESS A KNIFE into human flesh and, as the blade slides in, the sensation subtly changes. Human skin, says Claire Smith, professor of anatomy at Brighton and Sussex Medical School, “feels like chicken skin”; it is “slightly rougher” and “not always slippery”. Slice into a human artery, meanwhile, and you will feel “a little bit of springback”; while veins just feel “flat” and nerves, says Dr Smith, “feel like a noodle”.

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This complex stew of sensations that travels from blade to brain is known in the trade as “haptic feedback” and, in surgery, it matters. It has also, this year, been hard for trainee medics to come by. Because the covid-19 pandemic has caused—and the irony of this hardly needs to be laboured—a shortage in cadavers.

Britain has experience of such shortages, and of attempts to fix them. An enterprising early attempt to increase supply in Edinburgh by Burke and Hare ended with the execution of Burke, the introduction of the 1832 Anatomy Act and a general sense that dissection was a bit ghoulish. (Burke died as he lived: his body was publicly dissected and his skeleton still stands in Edinburgh’s anatomical museum.)

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Supplying the market remains tricky. Squeamishness is undoubtedly one problem: people rarely like to think of their own death, still less of what happens to their own all too solid flesh after it. Anatomy departments, unlike organ donation programmes, do not advertise for custom. Strict quality-control standards also act as a brake on the numbers accepted. All men may be born equal but they do not, in the eyes of anatomists, die so. Bodies are rejected for a large number of reasons, including being too thin (not enough to dissect); too fat (anatomy tables have weight limits); too tall (cadavers come inconveniently off the ends of those tables) and for having a large unhealed wound (the embalming fluid pours out).

And the regulations are getting ever tighter. Before 2004, so-called “second-person consent” was allowed, meaning that bodies could be donated on the word of the next of kin—and that families who wished to donate an irksome aunt, thus saving on funeral costs, could do so. Now, only first-person consent, in the form of a form, signed by the individual, will suffice.

To fill the gap in its market, Britain imports parts from America, where rules are looser—second-person consent is permitted, as is the use of unclaimed corpses from prisons and elsewhere—but is attempting to become more self-sufficient. In 2015 a National Repository Centre was established in Nottingham to source and store cadavers. It couriers parts around the country, using undertakers. International transport is done by specialists—not, says Dr Smith, “DPD or anything”.

Though supply is constrained, demand for corpses has been growing as the numbers training to be doctors have increased. In 2005, medical schools bought 600 cadavers; in 2017, 1,300. Given both rising demand and supply constraints, it is perhaps surprising that arms and legs do not cost an arm and a leg. Nor do heads: the going rate for one in America is around \$500; a foot is \$350 (prices are similar in Britain).

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Covid-19 has made things trickier still. Body donation in Britain paused, since no one was certain whether bodies would be infectious. Besides, medical schools had other priorities. Dr Smith gained a temporary mortuary in a car park and around 400 deceased victims of the pandemic. She and her lecturers tended them between teaching sessions.

Despite deaths of more than 100,000 in excess of what the country would normally have experienced since the pandemic began, the nation's anatomy departments have therefore struggled to fill their fridges. Dr Smith's department usually requires around 70 donors a year: so far it is around 30 short. The London Anatomy Office, which provides cadavers for seven medical schools in and near the capital, normally receives and processes 150 or so bodies every three months. Between March and June last year it took none.

During the pandemic this lack of cadavers didn't matter, as many training courses were being paused and operations cancelled anyway. Now that the pandemic is easing, surgical training is starting to pick up again, as is donation, but anatomy departments are still struggling to meet demand. Shortages are contributing to what the *British Medical Journal* has called a "crisis" in surgical training.

There are ways around the shortage of cadavers: surgeons can and do train in other ways, such as 3D computer simulations. But though these are good they are not, says Neil Mortensen of the Royal College of Surgeons of England, "yet good enough for advanced surgical training."

Other nations use different solutions. In some countries, surgeons still train on live animals, a practice that has many advantages—including realistic haptic feedback: if you cut a dog, it will bleed. Unfortunately for medics, so too do the hearts of animal-loving Britons at the thought of such things, and the practice is not done here. Although even if it were, it might not help. Pet ownership has increased so rapidly in the pandemic that dogs, like cadavers, are now in short supply. ■

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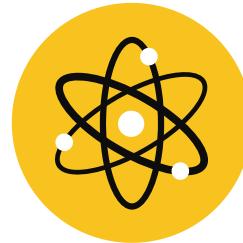
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