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A COSTLY SEPARATION BETWEEN WITHDRAWING AND WITHHOLDING TREATMENT IN INTENSIVE CARE

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ABSTRACT

Ethical analyses, professional guidelines and legal decisions support the equivalence thesis for life-sustaining treatment: if it is ethical to withhold treatment, it would be ethical to withdraw the same treatment.

In this paper we explore reasons why the majority of medical professionals disagree with the conclusions of ethical analysis. Resource allocation is considered by clinicians to be a legitimate reason to withhold but not to withdraw intensive care treatment. We analyse five arguments in favour of non-equivalence, and find only relatively weak reasons to restrict rationing to withholding treatment. On the contrary, resource allocation provides a strong argument in favour of equivalence: non-equivalence causes preventable death in critically ill patients. We outline two proposals for increasing equivalence in practice: (1) reduction of the mortality threshold for treatment withdrawal, (2) time-limited trials of intensive care. These strategies would help to move practice towards more rational treatment limitation decisions.

INTRODUCTION

An intensive care consultant is summoned to the emergency department with his registrar to assess a seriously ill patient. Mr W is a fifty-year old man who presented with breathlessness, and has clinical and radiological features of right-sided pneumonia. He is moderately hypoxic despite high-flow oxygen. There is limited information available, but the patient is believed to have an underlying neurological problem. Mr W is too breathless and drowsy to communicate his wishes.

The intensive care consultant asks his registrar to stay with the patient while he calls Mr W's family. It takes some minutes to contact them, but when he speaks to the patient's wife it becomes apparent that Mr W has a rapidly progressive neurodegenerative condition, with recent severe functional decline. His wife does not believe that he would want to receive intensive care for a chest infection. A quick phone call to Mr W's GP confirms that this information is correct. The ICU consultant decides on this basis not to admit Mr W to intensive care.

But when the consultant returns to the resuscitation area he discovers that his registrar had misunderstood his instructions. He has already intubated Mr W and transferred him to intensive care. Mr W is stable on the ventilator with good oxygen levels. At this point the ICU consultant is reluctant to withdraw treatment, and elects to institute a 'one-way wean'. As Mr W improves, the level of respiratory support will be reduced until he can be taken off the ventilator. However, levels of support will not be increased, and additional support (including inotropes and cardiopulmonary resuscitation) will not be provided. Mr W is discharged to the ward two days later.[1]

The case of Mr W is not an unusual one for those who work in intensive care units (ICU). Medical and nursing staff in ICU face questions every day about whether or not potentially life-saving treatment should be provided or continued. Approximately 25% of patients admitted to

[1] This case is fictional, though based on real cases that we have encountered.

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medical intensive care units die.[2] The majority of deaths in intensive care follow explicit decisions to withhold or withdraw treatment.[3]

Yet the decisions made by medical staff in Mr W's case appear to conflict with a principle that is widely promulgated in medical ethics, the so-called Equivalence Thesis (ET), i.e. that withholding and withdrawing life saving treatment are ethically and legally equivalent. The intensive care consultant did not wish to withdraw treatment from W although he would have had no qualms about withholding it. Is this justifiable?

In this paper, we will look at the reasons why medical practice may not be in concordance with the Equivalence Thesis. We will outline briefly the ethical and legal basis for ET, and the empirical evidence of medical professionals' views. We will explore potential explanations for a medical perception that withholding and withdrawing decisions are ethically different. In particular, we will look at the potential for resource allocation to provide an explanation for the difference between withholding and withdrawing intensive care treatment. We analyse five arguments for resource allocation playing a role only, or to a much greater degree, in withholding decisions. These arguments provide only a limited justification for the non-equivalence of treatment withholding and withdrawal, and this distinction comes at a significant cost. We finally provide two potential strategies for addressing this problem and for moving practice towards equivalence.

EQUIVALENCE

The Equivalence Thesis has been expressed as a statement about the comparative moral permissibility of two types of action.[4]

> Equivalence Thesis (ET): Other things being equal, it is permissible to withdraw a medical treatment that a patient is receiving if it would have been permissible to withhold the same treatment (not already provided), and vice versa.

We might contrast this with Non-Equivalence.

> Non-equivalence (NE): Even where other things are equal, it is sometimes permissible to withhold treatment from a patient though it would not be permissible to withdraw the same treatment if already started.[5]

The equivalence or otherwise of withholding and withdrawing treatment is related to other debates about the potential equivalence of action and omission, or of killing and letting die.[6] We will return briefly to the acts/omissions distinction later, but we will largely set those questions aside, and focus on decisions about withholding/withdrawing treatment in intensive care.

ET has received considerable support from philosophers, and on inspection appears hard to doubt. Why should the intensive care consultant feel reluctant to withdraw treatment from Mr W? If it is not in his best interests to provide treatment, the doctor appears just as justified in a decision to withhold treatment as in one to withdraw treatment. Conversely, if it were actually in Mr W's interests to receive treatment, then it would be just as wrong to withdraw treatment as to withhold it. Importantly, there are no necessary differences in the intentions of the doctor who withholds treatment compared to the one who withdraws it, no differences in consequences for the patient, no differences in the ultimate cause of their death, nor any difference in the moral responsibility of the doctor for his or her decision.

What is more, Non-equivalence appears to lead to absurd consequences. In the case of Mr W, the delay caused by a phone call leads to W receiving intensive care for his pneumonia and surviving (at least in the short term). However, if it is ethical not to treat Mr W's pneumonia with mechanical ventilation and respiratory support, why should it make a difference whether the ICU consultant arrives back in time to stop him from

[2] M.A. Metcalfe et al. Mortality among Appropriately Referred Patients Refused Admission to Intensive-care Units. *Lancet* 1997; 350: 7–11; S. Ridley & S. Morris. Cost Effectiveness of Adult Intensive Care in the UK. *Anaesthesia* 2007; 62: 547–554; H. Wunsch et al. End-of-life Decisions: a Cohort Study of the Withdrawal of all Active Treatment in Intensive Care Units in the United Kingdom. *Intensive Care Med* 2005; 31: 823–831.

[3] J.L. Brieva et al. Withholding and Withdrawal of Life-sustaining Therapies in Intensive Care: an Australian Experience. *Crit Care Resusc* 2009; 11: 266–268; P.E. Spronk et al. The Practice of and Documentation on Withholding and Withdrawing Life Support: a Retrospective Study in two Dutch Intensive Care Units. *Anesth Analg* 2009; 109: 841–846; C.L. Sprung et al. End-of-life Practices in European Intensive Care Units: the Ethicus Study. *JAMA* 2003; 290: 790–797; Wunsch et al., *op. cit.* note 2.

[4] D.P. Sulmasy & J. Sugarman. Are Withholding and Withdrawing Therapy Always Morally Equivalent? *J Med Ethics* 1994; 20: 218–222; discussion 223–224. Some might distinguish between strong forms of ET ('Other things being equal, it is *always* permissible to withdraw etc.) and weaker forms ('Other things being equal, it is *usually* permissible etc.). In this paper we refer to and defend the former, strong form of ET. The other way of expressing the ET is that the 'bare difference' between withdrawal and withholding makes no moral difference to the question of whether or not treatment should be provided.

[5] This statement of Non-equivalence is based on the idea that it is less morally troublesome to withhold treatment than it is to withdraw treatment. An alternative Non-equivalence thesis might endorse the opposite view (that treatment withdrawal is preferable to treatment withholding). See below.

[6] Sulmasy & Sugarman, *op. cit.* note 4; J. Rachels. 2001. Killing and Letting Die. In *Encyclopedia of ethics.* L.C. Becker & C.B. Becker, eds. 2nd edn. New York & London: Routledge: 947–950.

being intubated? Similarly, Non-equivalence seems to imply that in some circumstances it would be permissible to fail to reinstitute respiratory support if there were a power cut, or a patient became accidentally disconnected from respiratory support, though it would be impermissible to deliberately withdraw mechanical ventilation from the same patient. But why should the chance event of a power cut or an accidental disconnection determine whether or not a patient dies from lack of respiratory support?

Finally, non-equivalence has significant negative implications. If there is a higher (harder to achieve) threshold for withdrawing treatment than withholding it, there is a danger that doctors will decide not to provide treatment out of fear that, once started, they will not be able to discontinue it. As a consequence patients who could have benefited may be denied potentially life-prolonging treatment.

Some have argued for an alternative form of non-equivalence, i.e. that it is preferable to *withdraw* treatment than to withhold the same treatment because of reduced uncertainty.[7] Providing a patient with a trial of therapy, and making a decision to stop treatment after 24 or 48 hours, may allow a far better assessment of the patient's prognosis and chance of surviving intensive care than an assessment made before treatment is started. This argument provides one reason for making a practical distinction between withholding and withdrawing treatment; it is actually compatible with ET, however, since it points to a relevant factual difference between withholding and withdrawal. If the prognostic facts were identical, there would be no reason to prefer withdrawal over withholding.

ET has also been supported by a large number of professional guidelines.[8] A recent systematic survey of guidelines and decision-support tools available on the internet, or published in the medical literature, found that 28 of 29 documents that referred to withholding/withdrawal of treatment stated that the two were ethically or legally equivalent.[9] In the United Kingdom ET has received support in case law, probably most clearly in the case of Tony Bland, a patient in a persistent vegetative state whose doctors sought the permission of the courts to withdraw artificial feeding. Lord Lowry stated that 'I do not believe that there is a valid distinction between the omission to treat a patient and the abandonment of treatment which has been commenced . . .'.[10]

NON-EQUIVALENCE

ET is not universally supported, however. In a paper in 1994, Daniel Sulmasy and Jeremy Sugarman argued that there is an intrinsic moral difference between withdrawing and withholding.[11] The patient who has been started on treatment has a *prima facie* claim to that treatment on the basis of prior acquisition. The patient may waive this claim (for example if the patient or their surrogates judge treatment to be of no benefit), in which case withholding and withdrawal of treatment become equivalent. But if they do not waive their claim, it is worse to take treatment away from the patient than to fail to provide it.[12] The distinctiveness of this argument is that non-equivalence is only apparent in cases where treatment *should* be provided.

Nevertheless, Sulmasy and Sugarman's argument has been challenged.[13] In particular, their claim that a patient who has had treatment started has a *prima facie* claim to that treatment appears simply to restate their belief that withdrawing is different from withholding.[14]

Although they do not suggest it, perhaps a more plausible way of defending Sulmasy and Sugarman's claim would be on the basis of a duty of care. Doctors take on a duty of care to patients once they start to treat them. This duty may be greater than their wider duties to patients in general. For example, a doctor usually has a greater duty of care to patients who have attended her practice or clinic than to patients whom she has never met. On this basis, if it were actually in Mr W's interests to receive treatment it would be worse for the intensive care doctor to withdraw treatment than to withhold it in the emergency department. Yet in many circumstances doctors *have* actively taken on a duty of care to patients even if they have not yet started treatment.[15]

[7] J.L. Vincent. Withdrawing may be Preferable to Withholding. *Critical care (London, England)* 2005; 9: 226–229. We will return to this practical distinction in our proposals at the end of this paper.

[8] General Medical Council. 2006. Withholding and Withdrawing Life-prolonging Treatments: Good Practice in Decision-making. London: GMC (BMA edn. 2007). *Withholding and withdrawing life-prolonging medical treatment : guidance for decision making*. 3rd edn. Malden, MA & Oxford: Blackwell; L. Snyder & C. Leffler. Ethics Manual: Fifth Edition. *Ann Intern Med* 2005; 142: 560–582.

[9] M. Giacomini et al. Decision Tools for Life Support: a Review and Policy Analysis. *Crit Care Med* 2006; 34: 864–870.

[10] Airedale NHS Trust v Bland [1993] AC 789.

[11] Sulmasy & Sugarman, *op. cit.* note 4.

[12] Ibid.

[13] J. Harris. Are Withholding and Withdrawing Therapy Always Morally Equivalent? A Reply to Sulmasy and Sugarman. *J Med Ethics* 1994; 20: 223–224; R. Gillon. Withholding and Withdrawing Life-prolonging Treatment – Moral Implications of a Thought Experiment. *J Med Ethics* 1994; 20: 203–204, 222.

[14] Harris, *op. cit.* note 13.

[15] Imagine, for example, that the intensive care consultant admits Mr W to the intensive care unit (but has not yet intubated him and put him on the ventilator). He leaves the ward in order to contact the family and GP. He decides after speaking to them that he will not institute invasive respiratory support. However, in his absence the registrar has already put Mr W on the ventilator.

Furthermore, certain types of doctors have strong duties of care to patients that they have neither met nor started to treat. Imagine that an emergency physician is in the middle of interviewing a moderately but not acutely unwell patient about their past medical history. A nurse interrupts to tell the doctor that a patient has just arrived by ambulance who has had a cardiac arrest. It would not be acceptable for the emergency physician to continue his interview on the basis that he has an established duty of care for this patient that is greater than for the patient just arrived. Likewise, intensive care clinicians do not have obligations solely or preferentially to patients in one geographic area of the hospital. Rather, they have an obligation to any critically ill patients that they have the means to support, including patients in the wards, in the emergency department, or even outside the hospital.

One other source of disagreement with ET has come from orthodox Judaism. Halakhic law is often interpreted to prohibit physical intervention in a dying patient that might hasten their death.[16] This has led to the development of mechanical ventilators with timers that must be regularly reset.[17] Such timers potentially allow doctors caring for orthodox Jewish patients to decide not to restart mechanical ventilation (after the timer turns it off), though it would have been impermissible to withdraw the same treatment. But while religious beliefs might lead patients to have a preference for withholding over withdrawing, and to choose to have timers on their ventilators, it is hard to see why this makes a moral difference. The design or purchase of timing devices for ventilators and the decision to put a patient on a ventilator with a timer are in themselves acts that lead to the hastening of death (where the patient would not otherwise have treatment withdrawn). Imagine, for example, that an ingenious physician developed a syringe pump for intensive care patients that, as well as providing normal intravenous fluids, would set an alarm and deliver an injection of potassium chloride once every 24 hours unless it were deactivated. If nurses and doctors failed to deactivate the potassium syringe and a patient died there would be no physical intervention close to that point in time that had hastened death. But it would rightly be regarded as highly implausible to pretend that either the invention of the pump, or the decision to use the pump for a patient were not morally significant (and troubling) actions. Furthermore, we should not exonerate the bedside staff who failed to deactivate the syringe merely because they omitted to act rather than took a positive step to kill the patient.

As noted above, the overwhelming majority of guidelines for doctors about end-of-life decisions support the equivalence thesis. Yet surveys of medical professionals have repeatedly shown that medical staff remain unconvinced. A survey of 148 Swedish intensive care staff in 1992 in Sweden revealed that only 37% believed that there was no ethical difference between withholding and withdrawing treatment.[18] In the mid 1990s only 20% of surveyed UK nurses[19] and 30–40% of US medical and nursing staff believed in the Equivalence Thesis.[20] In a very large international study of neonatal physicians in 10 European countries published in 2000, 21–54% of physicians believed that there was no difference between withdrawing and withholding.[21]

WHY DO DOCTORS REJECT THE EQUIVALENCE THESIS?

Why do medical staff continue to endorse Non-Equivalence? One plausible psychological explanation is that medical attitudes are a reflection of the status quo bias, a serious and widespread cognitive bias in decision-making.[22] This bias, and the related omission bias[23] may

[16] M. Washofsky. 2005. A Jewish Guide to the Moral Maze of Hi-tech Medicine. Available at: http://reformjudaismmag.org/Articles/index.cfm?id=1048 (Accessed 25 Sept 2010); J. Kunin. 2010. Caring for the Terminally Ill: Halachic Approaches to Withholding and Withdrawing of Therapy. Available at: http://www.medethics.org.il/articles/JME/JMEM9/JMEM.9.2.asp [Accessed 05 Nov 2010]; V. Ravitsky. Timers on Ventilators. *BMJ* 2005; 330: 415–417.

[17] Ravitsky, *op. cit.* note. 16.

[18] G. Melltorp & T. Nilstun. The Difference between Withholding and Withdrawing Life-sustaining Treatment. *Intensive Care Med* 1997; 23: 1264–1267.

[19] D.L. Dickenson. Are Medical Ethicists Out of Touch? Practitioner Attitudes in the US and UK towards Decisions at the End of Life. *J Med Ethics* 2000; 26: 254–260.

[20] M.Z. Solomon et al. Decisions near the End of Life: Professional Views on Life-sustaining Treatments. *Am J Pub Health* 1993; 83: 14–23.

[21] M. Rebagliato et al. Neonatal End-of-life Decision Making: Physicians' Attitudes and Relationship with Self-reported Practices in 10 European Countries. *JAMA* 2000; 284: 2451–2459. This proportion does not appear to have increased over time. At a professional development meeting in 2010 we performed a survey of 49 junior and senior doctors working in intensive care in the Oxfordshire region of the UK. 39% of physicians agreed that withholding and withdrawal were ethically equivalent, 35% indicated that they were legally equivalent.

[22] Status quo bias refers to an irrational or inappropriate preference for the status quo. W. Samuelson & R. Zeckhauser. Status quo bias in decision making. *Journal of Risk and Uncertainty* 1988; 1: 7–59; N. Bostrom & T. Ord. The Reversal Test: Eliminating Status Quo Bias in Applied Ethics. *Ethics* 2006; 116: 656–679; D. Kahneman et al. Anomalies: the Endowment Effect, Loss Aversion and Status Quo Bias. *The Journal of economic perspectives* 1991; 5: 193–206.

[23] The omission bias is a tendency to judge harm resulting from an omission as being less morally serious than an equal harm resulting from an action. J.H. Kordes-de Vaal. Intention and the Omission Bias: Omissions Perceived as Nondecisions. *Acta Psychol (Amst)* 1996; 93: 161–172; J. Baron & I. Ritov. Omission Bias, Individual Differences and Normality. *Org Behav Hum Dec Proc* 2004; 94: 74–85.

lead doctors and nurses to intuitively believe that it is worse to actively stop a treatment than to decide not to start it. There is some evidence that status quo and omission biases impact on doctors' decision-making.[24] In one example, 125 US chest physicians were randomly provided with one of a pair of clinical vignettes.[25] Physicians were twice as likely to continue a treatment that had already been started (of dubious benefit or possible harm) than they were to start the treatment themselves.[26] There are no data on physicians' belief in the acts/omissions distinction, although this belief is widespread across cultures, class and gender.[27] Nevertheless, an intrinsic distinction between acts and omissions has been persuasively refuted,[28] and is denied by both consequentialists and deontologists.[29] If these biases were the explanation, or a partial explanation, it would motivate further education of intensive care staff, and attempts to overcome the effect of cognitive bias on decisions.

A second possible explanation and justification of medical attitudes is that in practice there are often factual differences between the cases of treatment withdrawal and treatment withholding that physicians encounter. For example, there may be differences in prognosis between a patient who has not yet received a treatment, and a patient who has. Mr W appeared to stabilize after receiving a short period of intensive care, at which point he may have a reasonable chance of recovering from his acute chest infection. However, prior to his intubation there was a significant possibility that he would have a cardiac arrest if intensive care were provided, or develop refractory respiratory failure and die despite intensive measures. If this is the explanation for medical staff attitudes, then it does not problematically conflict with ET. Doctors could agree with a hypothetical version of Equivalence, but deny that the *ceteris paribus* clause applies in many cases that they encounter.

But there is a third possible explanation of a medical perception of NE. Consider the following:

> Dr A is an intensive care physician managing a critical care unit in a country with limited ICU resources. The ICU has a single vacant bed, and all patients in the unit are receiving respiratory support. It is the middle of the winter flu season, and all other regional intensive care units are full.
>
> Dr A is called to the emergency department to review Mr North. North is critically ill, and will die without intensive care. With intensive care he has approximately a 50% chance of survival. Dr A is prepared to intubate North and admit him to intensive care, but before A can do so he is called to a second patient in the emergency department. Mr South is critically ill, and will die without intensive care. With intensive care South has approximately a 90% chance of survival. Dr A can admit only one patient to intensive care (there is no possibility of additional beds). It is likely that whichever patient is not admitted to ICU will die.
>
> Dr A elects to withhold intensive care from North in order to admit South to the ICU. An attempt is made to manage North without intensive care, but he dies in the emergency department.
>
> Dr B is an intensive care physician managing a critical care unit in a country with limited ICU resources. The ICU has a single vacant bed, and all other patients in the unit are receiving respiratory support. It is the middle of the winter flu season, and all other regional intensive care units are full.
>
> Dr B is called to the emergency department to review Mr West. West is critically ill, and will die without intensive care. With intensive care he has approximately a 50% chance of survival. Dr B intubates West and admits him to intensive care, but just as West is wheeled out of the emergency department Dr B is called to a second patient in the emergency department. Mr East is critically ill, and will die without intensive care. With intensive care East has approximately a 90% chance of survival. Dr B can admit only one patient to intensive care (there is no possibility of additional beds). It is likely that whichever patient is not admitted to ICU will die.
>
> Dr B elects to withdraw intensive care from West in order to admit East to the ICU. An attempt is made to manage West without intensive care, but he dies in the emergency department.[30]

These cases differ from those above in that they are explicitly motivated by distributive justice and limited resources. One reason why Dr A's actions may appear permissible but not Dr B's, is that resource allocation is sometimes thought to be a legitimate consideration in treatment withholding but *not* (or only rarely) in treatment withdrawal decisions. If this were justified, the Equivalence Thesis would be false.

RESOURCE ALLOCATION AND NON-EQUIVALENCE

Adult intensive care units are often in a position where they have no capacity, or very limited capacity, to admit

[24] N.A. Christakis & D.A. Asch. Biases in How Physicians Choose to Withdraw Life Support. *Lancet* 1993; 342: 642–646.

[25] S.K. Aberegg et al. Omission Bias and Decision Making in Pulmonary and Critical Care Medicine. *Chest* 2005; 128: 1497–1505.

[26] Ibid.

[27] M.D. Hauser. 2008. *Moral minds : how nature designed our universal sense of right and wrong*. London: Abacus; Baron & Ritov, *op. cit.* note 23.

[28] J. Rachels. Active and Passive Euthanasia. *N Engl J Med* 1975; 292: 78–80.

[29] R. Gillon. Acts and Omissions, Killing and Letting Die. *Br Med J (Clin Res Ed)* 1986; 292: 126–127.

[30] These cases are derived from ones discussed by Sulmasy and Sugarman. Sulmasy & Sugarman, *op. cit.* note 4. Those authors claimed that doctors would accept the actions of Dr A, but not Dr B because of West's prima facie claim on treatment (having had it started). Here, we analyse an alternative explanation, that resource allocation per se may make a difference between withdrawing and withholding decisions.

further patients.[31] Rationing of intensive care admission is common.[32] In one study from Hong Kong, 38% of patients who were referred to the intensive care unit were refused admission.[33] Of those patients, almost half were assessed as likely to benefit from intensive care admission, but were judged as having an insufficient priority to justify admitting them. Consideration of available resources appears to often influence doctors' decisions about withholding potentially life-prolonging medical treatment.

On the other hand, resource allocation appears to play a much smaller role in decisions about treatment withdrawal in intensive care. A study published in 1983 revealed that a major resource shortage (a drop in intensive care beds due to a lack of nursing staff) led to a reduction in admissions, but did not appear to affect treatment withdrawal decisions.[34] In a survey published in 1994, only 3% of chest physicians reported that treatment withdrawal decisions were influenced by bed availability.[35] There may be variation between countries. One fifth of surveyed Italian intensivists were willing to withdraw treatment from a patient with a lower probability of survival than other patients needing admission.[36] In contrast, a very large study of end-of-life decisions in intensive care patients in 17 European countries published in 2008 found that cost effectiveness and need for an ICU bed were the stated primary reason for decisions in less than 1% of all cases.[37]

In a small survey, we presented intensive care doctors in Oxfordshire with a version of the cases of North/South and West/East.[38] 83% of the intensive care doctors surveyed agreed that in the North/South case the patient with a greater chance of survival should be admitted in preference. By contrast only 9% of doctors agreed that in the West/East cases the patient with higher risk of mortality should be discharged in order to create a bed for the other patient; 91% of the surveyed doctors appeared to believe that treatment should not be withdrawn for resource allocation reasons.

Resource allocation may at least partly explain doctors' belief in Non-equivalence. But what reasons could there be to justify taking account of resource allocation in treatment withholding decisions but not in treatment withdrawal decisions in intensive care?

1. Fairness

One reason why doctors might choose not to withdraw treatment from West, though East has a higher chance of survival, is because they are acting on the basis of the 'first-come-first-served' rule.[39] The American Thoracic Society has recommended this approach as a fair means of allocating intensive care unit resources.[40] The advantage of first-come-first-served as a heuristic for resource allocation is that it is simple to implement, unambiguous, and avoids the need for difficult or controversial judgements about the relative merits of treating different patients. It is arguably a fair decision-procedure because it treats patients equally. However, first-come-first-served is not consistent with other types of fairness. For example, using a Rawlsian approach,[41] decision-makers behind the veil of ignorance would potentially choose a rationing policy that endorsed ET. Given that they could be either West or East, it would be rational to choose a policy that gave them the greatest chance of life.[42]

First-come-first-served is vulnerable to other criticisms. It would give preference to patients who are wealthy, powerful or well connected (and able to reach health care sooner).[43] It also yields highly counterintuitive conclusions. If West had only a 1% chance of survival with intensive care, and East a 99% chance of survival, first-come-first-served would give priority to West.

[31] Consensus Statement on the Triage of Critically Ill Patients. Society of Critical Care Medicine Ethics Committee. *JAMA* 1994; 271: 1200–1203.

[32] M.J. Strauss et al. Rationing of Intensive Care Unit Services. An Everyday Occurrence. Ibid. 1986; 255: 1143–1146; T. Sinuff et al. Rationing Critical Care Beds: a Systematic Review. *Crit Care Med* 2004; 32: 1588–1597.

[33] G.M. Joynt et al. Prospective Evaluation of Patients Refused Admission to an Intensive Care Unit: Triage, Futility and Outcome. *Intensive Care Med* 2001; 27: 1459–1465.

[34] D.E. Singer et al. Rationing Intensive Care – Physician Responses to a Resource Shortage. *N Engl J Med* 1983; 309: 1155–1160.

[35] K. Faber-Langendoen. The Clinical Management of Dying Patients Receiving Mechanical Ventilation. A Survey of Physician Practice. *Chest* 1994; 106: 880–888.

[36] A. Giannini & D. Consonni. Physicians' Perceptions and Attitudes Regarding Inappropriate Admissions and Resource Allocation in the Intensive Care Setting. *Br J Anaesth* 2006; 96: 57–62.

[37] C.L. Sprung et al. Reasons, Considerations, Difficulties and Documentation of End-of-life Decisions in European Intensive Care Units: the ETHICUS Study. *Intensive Care Med* 2008; 34: 271–277. NB Half of the decisions made by doctors in this study were decisions to withhold further treatment (without withdrawing treatment). Consequently it appeared that once admitted to intensive care, resource allocation was not explicitly taken into account for either treatment withdrawal or withholding decisions. It is possible, however, that resource considerations were a secondary factor in a larger proportion of cases.

[38] See note 21. In the cases presented in the survey, doctors were not told of the outcome for North or West. In the second case, East had been admitted one hour before West's presentation to intensive care.

[39] G. Persad et al. Principles for Allocation of Scarce Medical Interventions. *Lancet* 2009; 373: 423–431.

[40] Fair Allocation of Intensive Care Unit Resources. American Thoracic Society. *Am J Respir Crit Care Med* 1997; 156: 1282–1301.

[41] J. McMillan & T. Hope. Justice-based Obligations in Intensive Care. *Lancet* 2010; 375: 1156–1157.

[42] What is more first-come-first served appears *unfair* in the emphasis that it places on the order of presentation to hospital. Why should a patient who happens to have arrived earlier receive preferential treatment?

[43] Persad et al., *op. cit.* note 39.

Although the rule avoids having to choose between patients on the basis of prognosis, exactly the same distinctions are drawn for treatment withholding. Why should not these considerations be applied to treatment withdrawal?

2. Conflict of interest

A second possible concern about allowing resource allocation to affect treatment withdrawal decisions is that this would lead to a conflict of interest. Clinicians treating patients in intensive care would be forced to make 'tragic choices' between the best interests of their current patients, and the welfare of other patients.[44] Clinicians' relationship with existing patients may make it psychologically difficult for them to choose between patients, and make their assessment of prognosis vulnerable to bias.

In contrast, one reason why triage is relatively uncontroversial is that it separates rationing decisions from treatment decisions. A triage officer on a battlefield or in an emergency department is responsible for prioritizing treatment; they (usually) do not know or have a relationship with the patients they are assessing. This leaves other clinicians able to concentrate on the best interests of patients. It might be thought that Dr A is acting as a sort of triage officer when he chooses between North and South, but that Dr B is placed in an invidious position of having to juggle conflicting responsibilities at the bedside.

But intensive care doctors who make decisions about withholding treatment are not mere triage officers. They already have to balance what would be best for individual patients with what would be best for the wider group of critically ill patients.[45] These are not easy decisions, yet it is not clear that Dr B's choice is harder or more prone to bias than Dr A's. Furthermore, if we wanted to we could overcome the conflict of interest in withdrawal decisions by creating an additional level of triage above treating doctors in intensive care. When there is a need to decline intensive care for a patient who could potentially benefit, the head of the unit or an intensive care clinician not currently on clinical service might act as an impartial arbiter between the competing claims of patients within and outside the ICU.[46]

[44] D. Orentlicher. Rationing Health Care: It's a Matter of the Health Care System's Structure. *Annals of health law* 2010; 19: 449–464.

[45] W. Sage. Physicians as Advocates. *Houston Law Review* 1999; 35: 1529–1630.

[46] This sort of mechanism might also resolve residual concerns about intensive care doctors' greater duty of care to existing patients in the ICU. This higher-level triage officer would not have a duty of care to specific patients.

3. Slippery slope

A separate concern about withdrawing treatment because of resource constraints is that even if this were justified, it would potentially lead to withdrawal of treatment from patients for morally unjustified reasons. For example, if doctors were allowed to stop life-prolonging treatment because another patient would have a greater chance of benefit, this might allow doctors to discriminate, consciously or subconsciously, on the basis of race, gender, age or disability. Alternatively, it might lead doctors to seek to actively end the lives of patients with a lower chance of survival, or a lower predicted quality of life than other existing or potential patients.

Either of these outcomes would be highly troubling. However, it is not clear why treatment withdrawal would make these outcomes more likely than treatment withholding. Doctors currently withhold intensive care admission on the grounds of limited resources, and it would be possible for such decisions to be made unjustly. Yet we do not take such concerns to mean that doctors should not ration intensive care admission. Rather, we attempt to ensure that intensive care beds are rationed only on the basis of morally relevant criteria.

There is also no evidence that allowing doctors to *withhold* treatment on the basis of limited intensive care beds has led doctors to practice involuntary euthanasia for patients with poor prognosis. There is no good reason to think that if resources were included in treatment withdrawal decisions that this would be any more likely to occur.

4. Consent

One potentially significant factor that may explain why doctors prefer to manage limited resources by withholding treatment rather than by withdrawing treatment, is that in the former situation there is often no need to consult with patients or families, nor to obtain consent for the decision. For example, in our experience at least, requests for intensive care admission come from other doctors, perhaps those in the emergency department or ward. The intensive care clinician may decline admission over the phone, or he or she may review the patient in person. However, the decision not to admit to intensive care is usually communicated back to referring physicians, and not discussed directly with family members (or with the patient). There is no practical nor legal need to seek consent, since what is contemplated is non-provision of a treatment.

In contrast, where a decision is made to cease potentially life-prolonging treatment that has already been started, there is usually a discussion in advance with

family members to let them know that this is taking place. For children at least, there is almost always a need to obtain parents' or surrogates' agreement with the decision to stop treatment. Such decisions are difficult enough when the primary reason for withdrawing treatment is that it is no longer in the best interests of the patient. However, it is easy to understand why doctors would be reluctant to explain to family members that treatment is not being provided because it cannot be afforded or because another patient needs it instead. It is highly likely that some families would refuse to consent to treatment withdrawal on such a basis.[47]

On the other hand, the fact that doctors don't have to embark on difficult discussions about limited resources when they withhold treatment is a poor justification for distinguishing between treatment withdrawal and withholding. If a patient is not going to be provided with treatment because there are not enough intensive care beds, that is something that family members and the patient deserve to have explained to them *whether or not* that treatment has already been started. Intensive care staff should be prepared to justify their resource allocation decisions explicitly to patients and families. Furthermore, if it is justified to decide not to provide treatment on resource grounds, then it seems unfair and inappropriate to seek consent from patient or surrogate for that decision. If families or patients are allowed to overrule a decision to ration treatment by declining consent, there is a real risk that a subgroup of the community will disproportionately bear the burden of rationing decisions. This may selectively disadvantage those patients whose surrogates are not well spoken, literate, or aware of their rights. Perhaps families and patients should simply be informed that treatment is not available because of limited resources.

5. Legal vulnerability

Finally, there is the possibility that withdrawing treatment for reasons of limited resources would make doctors vulnerable to legal sanction in a way that treatment withholding decisions would not.[48] A full discussion of the legal status of treatment withdrawal and withholding decisions is beyond the scope of this paper. However, it is worth noting a couple of points about UK law (with which we are most familiar). Firstly, as mentioned above, there is explicit judicial support for the equivalence thesis. There is also explicit acknowledgement in a number of cases that health care resources are limited and that it is reasonable for doctors and healthcare authorities to make decisions about the distribution of such resources.[49]

> . . . health authorities may on occasion find that they have too few resources, either human or material or both, to treat all the patients whom they would like to treat in the way in which they would like to treat them. It is then their duty to make choices.[50]

The combination of these two facts may imply that the courts would support withdrawal of treatment on the grounds of limited resources. However, we are not aware of any case law precedent in the UK for withdrawing life-sustaining treatment other than on the basis of the best interests of the patient, and it is conceivable that a court might not be so accepting of treatment withdrawal decisions for reasons of limited resources.[51] Secondly, if a doctor were to withdraw treatment on the basis of limited resources, and were subsequently brought before the court, they might try to defend themselves against a charge of negligence by drawing on the Bolam principle.[52] This principle asserts that a doctor is not negligent if he or she acts in accordance with practice that is accepted by a reasonable body of medical opinion. However, the evidence cited above suggests that the vast majority of intensive care doctors would not withdraw treatment on the grounds of resources, potentially making the doctor in question negligent at law.[53]

Thirdly, and perhaps most importantly, even if it is the case that doctors would be more legally vulnerable for withdrawing treatment on the grounds of resources than for withholding it, there is a further question about what the law should be. We have outlined four potential arguments in favour of restricting resource allocation to treatment withholding decisions, but none of these provide a conclusive justification of Non-equivalence.

[47] There is a separate concern about counselling and consent. Although currently treatment withdrawal decisions are rarely, if ever, primarily motivated by a shortage of intensive care beds, patients' families often cite this concern as one reason for refusing to believe the prognosis offered by doctors, or for refusing to agree to treatment withdrawal. Currently it is possible for doctors to claim sincerely that their treatment withdrawal decisions are only ever motivated by the interests of the patient. However, if resource allocation were allowed to play a significant role in withdrawal decisions in intensive care, this would no longer be the case. Families might be more likely to insist on treatment continuing, even in those cases where doctors are genuinely motivated solely by the patient's interests.

[48] N. Eastman et al. Triaging for Adult Critical Care in the Event of Overwhelming Need. *Intensive Care Med* 2010; 36: 1076–1082.

[49] Airedale NHS Trust v Bland [1993] AC 789; Re J (A Minor) (Child in Care: Medical Treatment) [1993] Fam 15; R. v Cambridge Health Authority [1995] EWCA Civ 49.

[50] Re J (A Minor) (Child in Care: Medical Treatment), *op. cit.* note 49.

[51] Eastman et al., *op. cit.* note 48.

[52] Bolam v Friern Hospital Management committee [1957] 1 WLR 583.

[53] Indeed, this paper might be cited in support of a claim that the standard of care is not to include resource considerations in treatment withdrawal decisions. However, our aim (below) will be to argue that the standard of care should change.

THE COSTS OF NON-EQUIVALENCE

There are relatively weak reasons for medical professionals to apply resource constraints to treatment withholding, but not treatment withdrawal decisions. But why does it matter if doctors use this to support Non-equivalence in practice?

The problem is that non-equivalence comes at a significant cost. Where intensive care treatment is continued for patients whose prognosis is poor, it is likely to mean that other patients (with a greater chance of benefiting from intensive care) are turned away.

This is not just a theoretical concern. Studies that have looked at patients who were referred to intensive care units have found increased risks of death in patients who are refused admission.[54] After adjusting for markers of severity of illness, patients who were refused admission had a 2.5 fold increased risk of death.[55] One study, of patients who were referred to six intensive care units in the UK, found that a quarter of patients who were referred were declined admission, including 116 judged (on the basis of severity of illness at presentation) to have been referred appropriately.[56] On the basis of the excess mortality in this group of patients it was estimated at the time (mid 1990s) that lack of access to intensive care beds was potentially responsible for 2100–2500 preventable deaths per year in England – a figure equal to the number of deaths on the roads.[57]

What is more, these studies may underestimate the total number of deaths attributable to lack of intensive care beds, since patients (who might benefit from intensive care but are likely to be a lower priority) may not be referred to intensive care.[58] In a study in 5 hospitals over a 16 day period in Israel, (where intensive care beds are in short supply), only 13% of patients who acutely deteriorated and who met admission criteria for intensive care were admitted to intensive care. The majority were managed in monitored beds elsewhere in the hospital.[59] Patients who deteriorated acutely but who were not managed in ICU were twice as likely to die.[60]

[54] Sinuff et al., *op. cit.* note 32; C.L. Sprung et al., Evaluation of Triage Decisions for Intensive Care Admission. *Crit Care Med* 1999; 27: 1073–1079; Ridley & Morris, *op. cit.* note 2.

[55] Sprung et al., *op. cit.* note 54.

[56] Metcalfe et al., *op. cit.* note 2.

[57] Ibid.

[58] E. Simchen et al., Survival of Critically Ill Patients Hospitalized in and out of Intensive Care Units under Paucity of Intensive Care Unit Beds. *Crit Care Med* 2004; 32: 1654–1661.

[59] E. Simchen et al. Survival of Critically Ill Patients Hospitalized In and Out of Intensive Care. *Crit Care Med* 2007; 35: 449–457.

[60] Ibid.

TOWARDS EQUIVALENCE: TWO PROPOSALS

There is no good ethical reason to confine resource allocation to treatment withholding decisions. Furthermore, non-equivalence leads to the preventable death of critically ill patients who are declined intensive care. Perhaps intensive care doctors should reconsider their approach to rationing and treatment decisions? If they were prepared to withdraw life-sustaining treatment from patients with a worse prognosis than other patients in need of admission, what would this mean for practice?[61]

Here are two potential proposals for implementing equivalence in intensive care.

1. Reduce the mortality threshold for treatment withdrawal

In the UK the mortality in patients who had intensive care withheld because of poor prognosis was approximately 80% in one study.[62] In contrast, in a large survey of UK intensive care units, 99% of patients who had active treatment withdrawn died.[63] The ET suggests that these mortality rates should be closer. One potential compromise would be to consider either withdrawal or withholding of life-sustaining treatment on the basis of limited resources if the predicted mortality with intensive care were greater than 90%. This would also fit with

[61] Embracing ET in intensive care does not mean that treatment should be withdrawn whenever there is a patient with a slightly better prognosis in need of a bed. There is often considerable uncertainty about prognosis for critically ill patients; it is rarely possible to quantify survival chances in the way that we have outlined in the cases above, and it may be extremely difficult to compare prognosis between patients with very different illnesses. Furthermore, it may compromise the care of critically ill patients in intensive care if their physicians were constantly attempting to establish their prognosis and to compare them with other patients every time that they were faced with a new admission.

[62] Metcalfe et al., *op. cit.* note 2.

[63] Wunsch et al., *op. cit.* note 2. In a number of studies the mortality risk for patients who are appropriately declined intensive care admission is approximately 50%. Sinuff et al., *op. cit.* note 32; Sprung et al., *op. cit.* note 54; Ridley & Morris, *op. cit.* note 2. However, this includes both patients who are judged too well to benefit from ICU admission (ie too low a mortality risk), and those who are judged too sick to benefit. The risk of death in the latter group is 65–90% in published studies in Israel, the UK and Hong Kong. Sprung et al., *op. cit.* note 54; Metcalfe et al., *op. cit.* note 2; Joynt et al., *op. cit.* note 33. In comparison, the mortality rate (prior to hospital discharge) in patients who have intensive care withdrawn is 93–99%. T. Nolin & R. Andersson. Withdrawal of Medical Treatment in the ICU. A Cohort Study of 318 cases during 1994–2000. *Acta Anaesthiol Scand* 2003; 47: 501–507; J.P. Lewis et al., Outcome of Patients who have Therapy Withheld or Withdrawn in ICU. *Anaesth Intensive Care* 2007; 35: 387–392; A. Esteban et al., Withdrawing and Withholding Life Support in the Intensive Care Unit: a Spanish Prospective Multi-centre Observational Study. *Intensive Care Med* 2001; 27: 1744–1749.

cost-effectiveness analysis of adult intensive care, since provision of adult intensive care in the UK has been estimated to cost more than £20,000 per quality-adjusted life year saved once the absolute risk-reduction of death is less than 10%.[64]

The level of this threshold will differ between countries depending on the availability of intensive care beds.

2. Time-limited trials of intensive care

A second option would be to offer patients with a high risk of death despite intensive care a trial of treatment for a defined period of time. For example, such patients (and their families) could be offered a 48 or 72-hour period of intensive care with an expectation that at the end of that time treatment would be withdrawn unless the patient had shown a definite response to treatment. This policy would enable more prognostic information to be collected prior to treatment limitation. It would allow more rational and considered treatment decisions to be made.

We do not have space here to explore in detail how these proposals might work: that will be the subject of another paper. But it is worth briefly noting their potential impact. While doctors' belief in non-equivalence is not the sole cause of a lack of intensive care beds, it is likely that the proposals would improve access to intensive care. They would enable some patients to access intensive care who would otherwise be denied admission. In a very large study of UK intensive care units, one quarter of patients who had all active treatment withdrawn were in intensive care for more than six days before this decision, and some patients had stays that were considerably longer than this (103 days in one case).[65] If a greater acceptance of the equivalence thesis reduced by only one day on average the period of time before deciding to withdraw treatment in this group of patients, it could save the lives of up to 100 patients in England and Wales per year.[66]

CONCLUSION

Despite the powerful and straightforward arguments in favour of the equivalence of withholding and withdrawing treatment, and despite numerous supportive professional guidelines and legal decisions over several decades, the majority of doctors appear unconvinced. In this paper we have investigated an issue that has been neglected in the debate, and have sought to move past the ethical impasse that has developed.

Medical endorsement of non-equivalence is manifest in resource allocation decisions. Intensive care physicians are forced to consider limited resources in their decisions about life-sustaining treatment, yet they appear to apply this largely in their decisions about treatment withholding and little, if at all, in treatment withdrawal decisions. We explored five possible reasons for restricting rationing of intensive care to treatment withholding. The need to obtain consent, and the possibility of legal vulnerability may explain why doctors prefer to ration by withholding intensive care rather than by withdrawing the same treatment, though the most likely underlying reason for doctors' belief in Non-equivalence is *status quo* bias, combined with intuitive support for the acts/omissions distinction. This provides an explanation but not a justification for a practical distinction between withdrawing and withholding. On the contrary, rather than justifying non-equivalence, resource allocation provides a separate strong argument in favour of equivalence.

There are two alternatives. If we continue to allow doctors to withhold treatment that they would not withdraw, some patients will die whose lives could have been significantly prolonged. Alternatively, if we are serious about the equivalence of withdrawing and withholding treatment, then we need to develop a legal and procedural

[64] Ridley & Morris, *op. cit.* note 2. In the UK the National Institute for Clinical Excellence approves treatments with an incremental cost-effectiveness of less than £20–30,000 per quality-adjusted-life-year saved.

[65] Wunsch et al., *op. cit.* note 2. Long-stay patients in intensive care constitute only a small proportion of admissions, but have a high mortality rate, and are responsible for up to 50% of ICU costs. D.T. Wong et al. Utilization of Intensive Care Unit Days in a Canadian Medical-Surgical Intensive Care Unit. *Crit Care Med* 1999; 27: 1319–1324; C.A. Bashour et al. Long-term Survival and Functional Capacity in Cardiac Surgery Patients after Prolonged Intensive Care. *Crit Care Med* 2000; 28: 3847–3853; M. Hughes et al. Outcome of Long-stay Intensive Care Patients. *Intensive Care Med* 2001; 27: 779–782. The other significance of long-stay patients in intensive care is that they have a disproportionate impact on bed availability. Queuing models of intensive care admission highlight an exquisite sensitivity of the system to bed crises when there are staff shortages or long-staying patients. M.L. McManus et al. Queuing Theory Accurately Models the Need for Critical Care Resources. *Anesthesiology* 2004; 100: 1271–1276.

[66] In the UK 99/1000 admissions to intensive care have all active treatment withdrawn. Wunsch et al., *op. cit.* note 2. There are 80798 admissions to intensive care units in England and Wales per year. Ridley & Morris, *op. cit.* note 2. If a quarter of those who have all treatment withdrawn had their ICU length of stay reduced by 1 day, it would yield 99/1000*80798*0.25 = 2000 ICU bed days per year. Given an average length of stay of 5 days, this would mean that 400 patients could be admitted to intensive care who would otherwise be refused. On the basis of a 25% absolute risk reduction in the risk of death in appropriately referred patients admitted to intensive care, (Sinuff et al., *op. cit.* note 32; Sprung et al., *op. cit.* note 54; Metcalfe et al., *op. cit.* note 2.) 100 lives could potentially be saved.

basis for withdrawing intensive care treatment on the basis of limited resources. We have briefly outlined two potential ways to move practice towards equivalence. The thresholds for withholding and for withdrawal could be brought closer, for example aiming to withdraw or withhold treatment for patients who have a greater than 90% chance of dying despite treatment. Alternatively, or additionally, it would be worth considering time-limited trials of intensive care treatment as a means of fairly managing this scarce resource. It is not enough for ethicists to repeat *ad nauseam* that withholding and withdrawing treatment are equivalent. We must find ways of translating ethical analysis into practice.

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