

EXPERTS' OPINION

Forgoing life-sustaining treatments in the ICU

To withhold or to withdraw: is that the question?

Giuseppe R. GRISTINA¹, Francesca BARONCELLI², Marco VERGANO^{1,3*}

¹Società Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI), Rome, Italy; ²Department of Surgical Sciences, University of Turin, Turin, Italy; ³Department of Anesthesia and Intensive Care, San Giovanni Bosco Hospital, Turin, Italy

*Corresponding author: Marco Vergano, 2nd Unit of Anesthesia and Resuscitation, San Giovanni Bosco Hospital, Piazza del Donatore di Sangue 3, 10154 Turin, Italy. E-mail: m.vergano@gmail.com

ABSTRACT

In the last decades, mortality from severe acute illnesses has considerably declined thanks to the advances in intensive care medicine. Meanwhile, critical care physicians realized that life-sustaining treatments (LST) may not be appropriate for every patient, and end-of-life care in the Intensive Care Unit (ICU) started to receive growing attention. Most deaths occurring in the ICU now follow a decision to forgo life-sustaining treatments (DFLST), which can be implemented either by withdrawing (WDLST) or withholding (WHLST) life-sustaining treatments. Despite the broad consensus about the equivalence of the two practices from an ethical point of view, the issue of the best option between WDLST and WHLST constantly gives rise to controversies in clinical practice. This review is not intended to take a stand for or against WDLST or WHLST. Based on available evidence, the definitions of the two practices are first presented. Secondly, the preferences of ICU physicians towards WDLST and WHLST are examined. Finally, some arguments are offered outlining pros and cons of WDLST and WHLST, stressing that the clinician's attention should focus on an early and thorough recognition of patients in need of a DFLST, rather than on the theoretical strength and weakness of the two practices. This approach will enable physicians to make informed decisions on how to implement the limitation of LSTs, considering the patients' clinical conditions and preferences, the circumstances and needs of their families.

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In the last decades, the advances in intensive care medicine reduced the all-cause mortality to the current 16%.¹ Meanwhile, both the availability of beds in Intensive Care Units (ICUs) and the number of admitted patients steadily increased. In Italy, from 2005 to 2015, the number of ICUs taking part in the GiViTI network increased by 29%, while the number of patients admitted to the ICU increased by 59%.^{2,3} In Europe, in 2012, Rhodes identified an average of 11.5 ICU beds/100.000 inhabitants, the proportion of ICU beds in each country being related to the Gross Domestic Product (GDP).⁴ In the

USA, one sick person in five is currently admitted to the ICU before death.⁵

As the burden of chronic illnesses progressively increased in the ageing population,^{6,7} end-of-life care has become an integral part of critical care medicine.^{8,9} At present, the majority of deaths in the ICU follow a decision to forgo life-sustaining treatments (DFLST), either by withholding (WHLST) or withdrawing (WDLST) them,¹⁰ but even though 28 of 29 current practice guidelines consider WHLST and WDLST ethically and legally equivalent,^{11,12} in clinical practice the topic is still controversial.¹³⁻¹⁶

This paper is not intended to take a stand for or against WHLST or WDLST. The definitions of the two practices, shared by an international consensus conference, are first reported. Then, the clinicians' attitudes towards WHLST and WDLST are reviewed. Finally, the pros and cons of WHLST and WDLST are described, considering that clinicians should pay attention to the two options only as a means of pursuing the best interest of the dying patients rather than a matter of theoretical discussion.

Withdrawing or withholding life sustaining treatments: definitions

In 2015, the WELPICUS study¹⁵ set out the conclusions reached by a consensus conference on the principles of end-of-life care for critically ill patients. 1366 respondents from ICUs all over the world established the closeness of agreement regarding the definitions of end-of-life practices. Table I summarizes the current definitions relevant to end-of-life care and WDLST/WHLST practice.

Findings from the clinical practice

A survey conducted in the USA¹⁷ reported that only 34% of 1446 doctors and nurses considered WHLST and WDLST ethically equivalent. In Europe,¹⁸ 93% of 504 critical care physicians claimed that they sometime had decided to withhold LSTs, while 77% of them had opted for WDLST at least once. Wide variability in the choice between WHLST and WDLST was reported among different geographical areas, ICUs, and individual intensivists.¹⁹ Several studies concluded that cultural factors, religious affiliations, and legal frameworks may significantly influence the clinicians' preference towards WHLST or WDLST.^{20, 21}

A higher prevalence of WHLST was highlighted in the ICUs of the Arab and Asian countries and in Israel.²²⁻²⁵ In Western countries, the practice of WDLST has grown over time,²⁶ being influenced by factors such as the availability of a trustee,²⁷ the age of the patient²⁸ and the severity of disease.²⁹

These factors, however, only explain part of

TABLE I.—*Definitions of practices relevant to end-of-life care in the Intensive Care Unit.*¹⁵

Practice	Definition
Life-sustaining treatments (LSTs)	All treatments aimed to save patients life. These may include, among others: cardiopulmonary resuscitation, tracheal intubation and mechanical ventilation, dialysis, administration of vasopressors, artificial nutrition, blood products, antibiotics and fluids. The LSTs should be used consistently with the patients' values and preferences. When the LSTs fail to offer any proven benefit, and only prolong the death process, clinicians should refrain from their use and discuss this option with the patients (if possible), and/or their relatives.
Withholding life-sustaining treatments (WHLST)	Decision not to start or increase a life-sustaining intervention. WHLST may be referred to: <ul style="list-style-type: none"> • a decision of not to start LST (for example, a do not resuscitate [DNR] order), or • a decision not to escalate a treatment already in place (DNE order) when the disease gets worse or when specific complications arise. Treatments that are included in a DNE order should be clearly defined because doctors, patients, and their relatives might not necessarily look at some treatments as a therapeutic escalation.
Withdrawing life-sustaining treatments (WDLST)	Decision to actively stop a life-sustaining intervention presently being given.
Informed Consent (IC)	The voluntary decision of an individual with decisional capacity to undergo a procedure or treatment after receiving information about the procedure or treatment, including possible alternative procedures or treatments. Life-sustaining treatment should generally be withheld or withdrawn only after obtaining agreement of the patient and/or the surrogate decision maker or family. There are circumstances when withholding life-sustaining treatment is permissible (provided it is legal in a given location) even though agreement cannot be obtained (such as when the patient is not capable of decision making and there are no family members).
Active shortening of the dying process (ASDP)	A circumstance in which someone performs an act with the specific intent of hastening death or shortening the dying process. These acts do not include withdrawing or withholding life-sustaining treatment and should not be confused with WHLST or WDLST.

the variability. A study conducted in 127 British ICUs showed a broad range of WDLST prevalence (0-96%).³⁰ A similar result was reported in two studies carried out in 131 ICUs in USA (0-79%)³¹ and in 37 European ICUs (5-69%).⁹ A significant variability towards the choice of WDLST was detected among 153 American ICUs in relation to demographic and social characteristics of the patients, the type and severity of the disease and the organizational models of the ICUs.³²

A distribution of deaths preceded by WHLST/WDLST in 20 studies carried out between 1997 and 2013 in Europe and USA is shown in Figure 1.³³

In 2003, the point of view of 225 clinicians working in 20 ICUs in a single city in Northern Italy was explored.³⁴ Fifty three percent of respondents said that DFLST occurred rarely in their ICUs while very rarely in the opinion of 26.8% of them; 77% of physicians stated that

the proportion of deaths preceded by DFLST was included in a range between 1% and 10% of cases; 52.7% of intensivists affirmed that there is no ethical difference between WHLST and WDLST, while 25.7% of them considered WHLST morally more acceptable than WDLST. Lastly, 50.9% of physicians considered WDLST psychologically more complex and difficult to deal with than WHLST. The main reasons for a DFLST were the lack of response to full treatment (WDLST 78.1% vs. WHLST 42.2%), the futility of treatment (WDLST 49.8% vs. WHLST 45.2%), the severity of the underlying disease (WDLST 47.9% vs. WHLST 47.3%), and the severity of a pre-existing neurological disease (WDLST 43.4% vs. WHLST 38.5%).

In 2010, a study conducted in 84 Italian ICUs showed that 61% of 3793 ICU deaths was preceded by a DFLST.³⁵ In 28.2% of patients the WHLST was implemented through a Do Not Resuscitate (DNR) order; WHLST in terms of a Do Not Escalate (DNE) order was carried out in 15.6% of patients, while WDLST was performed in the remaining 17.1%. Interestingly, this study also revealed that in the ICUs where the proportion of DFLSTs observed was lower than expected, the all-cause mortality was higher than that highlighted in the ICUs more prone to DFLST. The study concluded that the inclination to limit treatments at the end of life could be taken as an indicator of quality of the Unit.

Why doctors prefer withholding rather than withdrawing life sustaining treatments

In accordance with the ethical theory of equivalence, if LSTs may be withheld, then they may be also withdrawn.³⁶ Nevertheless, doctors seem to favor the theory of non-equivalence: if sometimes LSTs may be withheld, they cannot be withdrawn once started.^{36, 37}

This approach may be explained taking into account some issues.

During the clinical decision-making, doctors commonly show a propensity for maintaining the state of things (*status quo bias*).³⁸ This bias is related to the bias of omission: the propensity to judge harmful actions worse than equally

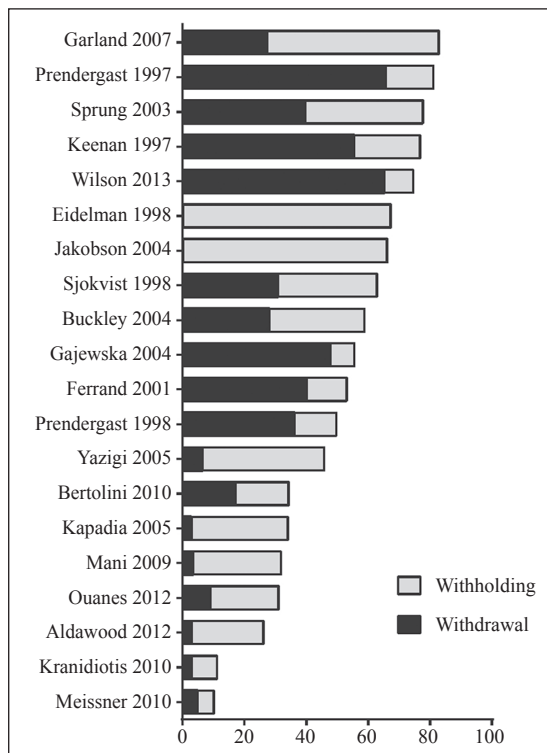


Figure 1.—Proportion of deaths preceded by WHLST or WDLST in 20 studies conducted between 1997 and 2013 in Europe and the USA.³³

harmful omissions.³⁹ These cognitive biases can lead doctors to believe, intuitively, that WDLST is worse than WHLST. There is evidence that these different biases exert a profound influence on clinical decisions.⁴⁰ At the same time, other reasons that may influence the clinician's preferences such as the deficit of knowledge, inexperience, lack of communication in the team cannot be forgotten.⁴¹

Clinicians incline towards the theory of non-equivalence also when the principle of distributive justice is involved. One reason could be that doctors operate on the "first-come-first-served" rule.^{42, 43} This rule is simple to apply, unambiguous, and it avoids difficult decisions or litigations, but it leads to a counterintuitive conclusion: if patient A has a very low chance of survival after receiving an intensive treatment and patient B has a very high chance of survival after receiving the same treatment, the "first-come-first-served" rule would prioritize patient A if he or she gets to the ICU first.

The need to implement the WDLST in cases of limited resources is not an unusual condition in the ICU. The findings from Giannini and coll. demonstrate that 67% out of 259 physicians at all 20 ICUs in Milan, Italy, said they frequently received requests for appropriate admissions when no beds were available. This was considered sufficient reason to WDLST from patients with lower survival probability (sometimes 21%) or for whom nothing more could be done (sometimes 51%, frequently 11%).⁴⁴ In this regard a concern might arise if the decision to withdraw LSTs is made for reasons that are not morally justifiable. For example, if the choice of WDLST is implemented in a patient to benefit another, there is a risk that this decision is based on a discrimination against the first one, related to race, sex, age, disability, minor chances of survival or lower quality of future life. This approach would certainly be reprehensible, but it is not clear if a decision to withdraw LSTs would make this scenario more likely than one in which WHLST is chosen.

Another reason to explain the clinicians' preference towards WHLST rather than WDLST may be an easier communication with patients and families when WHSLT is chosen.

Critical care physicians are often asked by

their colleagues to admit terminally ill patients from wards and emergency departments to the ICU. In the setting of limited resources, intensivists may communicate right back to the physicians the decision not to admit the patient to the ICU. Since no therapy is implemented, and intensivists are only asked to decide about the clinical appropriateness of intensive care, no consent is required, and there is no need to discuss the decision of withholding LSTs with the patient or her relatives.

As for the legal aspects of WDLST/WHLST, two important issues arise.

The first one relates to the perception of the clinicians' professional responsibility towards WDLST.

In the USA, Canada, Australia, New Zealand and some European countries, both the principle of proportionate care and the DFLSTs at the end of life are covered by appropriate laws varying from system to system in relation to recipients, clinical conditions, procedures, methods of intervention and clinicians' involvement.⁴⁵ In Italy, the topic of DFLST is now currently covered by the law and is addressed in the Code of Medical Ethics (article 16),⁴⁶ in recommendations from scientific societies⁴⁷ and in several institutional documents.^{48, 49}

Despite a wide convergence of views, given the close causal and temporal relationship between WDLST and death, doctors fear of being prosecuted when withdrawing rather than withholding LSTs. In a study on 115 patients who died in two American ICUs,⁵⁰ death occurred within 48 h after WDLST.

In a subset of 38 of the 84 Italian ICUs participating in the study by Bertolini *et al.*,³⁵ 92% of deaths occurred within 24-72 hours after the decision to withdraw; only 85% of patients undergoing WHLST died within 72 after the decision to withhold. In the UK, a median time of 2.4 hours between the withdrawal of LSTs and death was reported.³⁰ The ETHICUS study ultimately found that WDLST was practiced in 33% of patients undergoing a DFLST; death intervened in 99% of patients with a median time of four hours.⁹

A second legal issue is connected to the relationship between WDLST and distributive justice.

Under legal terms, the inappropriateness of continuing LSTs in an incompetent patient affected by a life-threatening disease with a poor prognosis despite intensive care rules out the possibility of considering WDLST as a criminal act, because interruption of LSTs is applied in the best interest of patient.⁵¹ Relevant aspects of this choice are the physician's moral duty to avoid unnecessary suffering, the scientifically proven irreversibility of the dying process, the experienced limits of care and its ascertained futility.

Thus, the cause of the patient's death would be the underlying disease and not the WDLST itself, as WDLST is not aimed at hastening death, but at letting the patient die of a proven and intractable disease.

However, this same approach would not be justifiable if the WDLST decision is made on a patient for the benefit of another, as in the case of limited resources or organ donation, in line with the utilitarian theory (maximizing the common good advocates an ethical model aiming at the wellbeing of society as a whole). In this case, the decision to withdraw LSTs may be likened to the implementation of Non-Voluntary Euthanasia (where the person is unable to consent-NVE),⁵² an unlawful practice even in the countries where euthanasia and physician-assisted suicide are legal. According to this theory, there is a "gray zone" where the border between killing and letting die becomes blurred. Arguments in favor of this view are that the clinician is actively involved in WDLST, resulting in hastening of the death process (*e.g.* through terminal extubation, discontinuation of mechanical circulatory support, etc.); that the patient is incompetent because of disease and cannot consent or object; and that in the lack of advance directives the decision of withdrawing LSTs is based on a substitute judgment expressed by doctors, even if the decision is made in the best interest of the patient.⁵³

The risk of falling into this "gray zone" leads most doctors to opt for a moral deontic approach: moral rules are established once and for all and nobody will ever change them for any reason. In this case, the option of "conscientious objection" to a DFLST is called into question.⁵³

In this perspective, the Catechism of the Catholic Church points out that the difference

between WDLST and NVE resides in the clinicians' intention (double-effect theory): in the case of NVE, the intention is leading to death, whereas in the case of WDLST the intention is to end the suffering of the dying patient.^{54, 55}

Thus, clinicians that consider WDLST similar to NVE have two options to choose from: those who may accept the implementation of WDLST based on the double-effect theory, and those who will never implement WDLST on the basis of the equivalence between WDLST and NVE.

Arguments in favor of withdrawing life sustaining treatments

In the clinical practice, the option of WDLST may solve the prognostic uncertainty when compared to WHLST. Offering an "ICU test" (a trial of intensive care treatment that ends when failing to reach the therapeutic goal) would give the clinician a chance to evaluate the patient's response to LSTs, and formulate a prognosis based on evidence rather than on a probabilistic estimate. This argument allows to make a practical distinction between WHLST and WDLST, indicating a significant difference between the two DFLST options. Other arguments in favor of WDLST attain to the four principles of clinical ethics:

- autonomy: patients admitted to the ICU are rarely involved in their care plan and end-of-life decisions, but there is evidence that many of them (especially the elderly and those suffering from chronic, degenerative diseases) would not accept intensive treatments that they consider inappropriate and/or disproportionate;
- beneficence: not every patient may benefit from intensive care medicine, while experiencing severe disability and permanent dependency on life support;
- non-maleficence: aggressive and invasive treatments may cause suffering, even when sedation and analgesia are administered;
- distributive justice: when the intensive treatments are indefinitely prolonged on patients with a poor prognosis, they are denied to other patients more likely to benefit.

Distributive justice is not just a theoretical problem. Studies examining admission policies to the ICU have shown that patients who are

denied access to an ICU have a significantly increased risk of death.⁵⁶ Based on the excess of total estimated mortality in the population of patients not admitted to the ICU a study showed that, in the UK, the non-admission to an ICU was potentially responsible for 2100-2500 preventable deaths per year, a figure equal to the number of deaths from road accidents.⁵⁷ In another study conducted in five hospitals in Israel,⁵⁸ only 13% of critically ill patients meeting the inclusion criteria for admission to an ICU were eventually admitted. Furthermore, critically ill patients treated out of the ICU experience a risk of death which is twofold the risk of those admitted with the same disease and severity of illness. If WDLST was not permitted, this could cause a delay in the management of a patient in a critical status, when the promptness of treatment is a well-established element.

Arguments in favor of withholding life sustaining treatments

The ETHICUS study⁹ showed that the median time to death for patients undergoing WHLST was 14 hours, *versus* 4 hours in those undergoing WDLST. It is thus unlikely that the difference in median times to death (10 hours) has a significant impact on the occupancy of ICU beds.

In the last decades the number of hospital admissions for chronically ill patients has steadily increased. As a result, many of these patients were admitted to the ICU improperly, during the end stage of their illness.⁵⁹ In this context, the usefulness of an "ICU test", frequently used as an argument in favor of WDLST, has been questioned.

Many studies show that chronically ill patients, once admitted to the ICU, experience dependency on long-term care, with significantly higher mortality in the ICU and up to one year following discharge.⁶⁰

Variables such as age and comorbidities,⁶¹ functional and cognitive status,⁶² frailty,⁶³ quality of life before and after admission,^{64, 65} should be considered⁶⁶ when triaging these patients for admission to an ICU⁶⁷ and during discussions about the goals of care with patients and their relatives.⁶⁸

In addition, many survivors are readmitted to the ICU because of subsequent exacerbations of the underlying disease, with the goal to achieve additional survival. However, the survival benefit is often increasingly shorter, and is paralleled by an increase in suffering for the patients, their families, and higher costs for the society.

Then, a "WHLST test" could be suggested.⁶⁹ The ETHICUS study showed that 99% of patients undergoing WDLST had died, while 11% of those undergone WHLST survived and were discharged from the hospital. Thus, when the life-support measures no longer provide a good prognosis, WHLST may be preferable to WDLST because it allows a limitation of ineffective treatments without necessarily affecting the outcome.⁹

These findings today call the relevant stakeholders and healthcare system decision-makers for a serious and thorough consideration regarding the limits of life-sustaining treatments in terms of reasonableness (intensive care medicine cannot meet any request), clinical efficacy (a limit changing with the evolution of scientific knowledge) and meaning (the moral value of clinical choices).⁷⁰

Withholding or withdrawing?

According to a bioethical perspective, there are no substantial theoretical differences between WDLST and WHLST: either way, the decision refers to a situation where the clinicians recognize that the LSTs add no survival benefit, while potentially increasing the duration of the dying process and resulting in additional suffering for the patients and their relatives.

Under a pragmatic perspective, the differences are best understood when three clinical scenarios are considered. The simplest form of WHLST is a DNR order that a healthy person may include in his or her advance directives, when he or she may not need LSTs. A second scenario involves a patient suffering from end-stage chronic respiratory failure, potentially requiring mechanical ventilation because of pneumonia and acute-on-chronic respiratory failure. In this context, the critical care physician may consider mechanical ventilation to be inappropriate and implement

WHLST. The patient will not be admitted to the ICU, while receiving palliative care in the ward to treat distressing symptoms and ensure a dignified death.

A third scenario involves the same patient, assuming that the critical care physician has decided to attempt an “ICU test.” The patient is now admitted to the ICU and mechanically ventilated. After three days, the clinical picture is nonetheless worsening, and pneumonia has now evolved into acute respiratory distress syndrome and multiple organ failure: the “ICU test” has failed. After a shared decision between intensive care doctors, nurses and relatives, WDLST is implemented with the goal of minimizing the impact of mechanical ventilation, while interrupting inotropic support and renal replacement therapy, and instituting palliative sedation.

Some differences among the three scenarios certainly exist for patients and relatives, doctors and nurses in relation to the different types of stress, suffering and emotional strain which accompanies each one.⁷¹⁻⁷³ Thus, these differences represent an important set of information that, considering the ethical principle of autonomy, should be transferred to the patients and families to formulate a shared and planned course of actions in line with their preferences and values.

Given these differences, it is worth to note that in clinical practice no abstract algorithms may be useful to identify the best method of implementing a decision to forgo LSTs.

The only way to effectively and practically deal with the difficult task of caring for the dying patient and his family is to choose whichever option-WDLST or WHLST-is more consistent with an effective allocation of available resources. This choice should be guided by the principle of distributive justice, considering the best setting of care for the patient, while assessing the severity of illness not only from a clinical point of view, but in the context of a holistic approach to meet the overall patient’s needs in a realistic perspective.

For this reason, any decision on end-of-life care should be made as early as possible.

The risks and benefits of each choice should

be first thoroughly debated within the health-care team and then discussed with the family members. The final decisions should be explicit, properly communicated⁷⁴ and shared, with clear records in the clinical notes.

This approach is effective when a decision to forgo LSTs is made both inside or outside an ICU, to allow all the relevant parties to ensure a proper care to the dying patient.

However, in order to overcome many of the difficulties that hamper proper implementation of the two practices, we would like to stress the importance of acting on multiple fronts: 1) on a professional level, with adequate training in palliative care both for graduate and for undergraduate students; 2) on the legal level, making every effort to create a legislative framework that favors autonomous and responsible choices of both patients and their families and health professionals; 3) on the organizational level by generating health policies focused on end-of-life management and palliative care.

Conclusions

Caring for the critically ill patient at the end of life represents an area of intensive care medicine that requires the same level of knowledge, expertise and experience as any other ICU activity.⁷⁵ The decision to limit life support treatments in terms of WHLST or WDLST is an integral part of this care, and the best option for each patient must be identified after exploring every possibility and considering available resources.

The physicians who refuse to take part to WHLST or WDLST, for their part, should not use their choice as a passive solution to disregard the clinical problem of a patient who is suffering from an indefinite prolongation of the dying process. In general, as doctors working in an era of great technological advances, we must include the appropriate care of the dying patient among our clinical duties.

As intensivists, we have to take the responsibility that death in the hospital or the ICU is not transformed into an impersonal event, allowing patients to die with dignity and appropriately shifting from active treatment to palliative care: from cure to care.

Key messages

- From an ethical point of view there are no differences between WHLST and WDLST.
- The inclination of intensivists towards WHLST or WDLST depends on their culture and religion, as well as country-specific laws and regulations.
- WHLST and WDLST should be carefully considered in the context of an efficient allocation of resources.
- The only way to effectively and practically cope with the task of caring for a dying patient is to choose whichever option—WDLST or WHLST—is in the best interest of the patient, taking into account the setting and the severity of illness, not only from a clinical point of view but in the context of an holistic approach to meet the overall patient's needs in a realistic perspective.
- All ICU health care professionals should remember that end-of-life care continues beyond the decision to forgo life-sustaining treatments.

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