Ethics is an integral part of standard of care. In tort law, the standard of care is the degree of prudence and caution required of an individual providing the care who thereby has a legal obligation to adhere to certain standards while performing care that could cause foreseeable harm-- i.e. maleficence. Simply put: try your best to “do no harm”. The requirements of this standard are closely dependent on circumstances and are typically framed with the substitution principle, which is to say are the actions those of a “reasonable person” with respect to each ethical principle.

There are four commonly accepted pillars of medical ethics: autonomy, beneficence, nonmaleficence, and justice. We will discuss each, with particular application to Neurocritical Care scenarios.

AUTONOMY

The right of patients to be able to make informed decisions, with the necessary facts, risks, and benefits clearly delineated, and the likelihood of success reasonably estimated. In the case of severe, acute neurological injury the information regarding treatment and prognosis is highly technical yet there is often a short-time window to gain understanding and make a decision. There are two common scenarios in which autonomy may come into play: conflict with the medical team and proxy consent.

CASE 1: *A patient with myasthenic gravis (a neuromuscular disorder) with a treatable infection has impending respiratory failure/myasthenic crisis. Intubation is highly recommended but the patient refuses, stating he is ready to die after years fighting his chronic illnesses and isn’t willing to spend any amount of time on a ventilator.*

In the cases where a patient has retained capacity, it may occasionally occur that their decision conflicts with the recommendations of the treatment team. When this is not based on poor understanding or antagonizing relationships, this may be a source of tension anchored in different belief systems and prioritization. Consider the case above; while the treating physician may feel significant discomfort with this patient’s choice, it is within the principle of autonomy to respect that choice so long as risks/benefits are fully understood by both parties.

CASE 2a: *An older but mostly functionally independent male with several medical comorbidities has an acute onset left MCA syndrome affecting his language abilities.*

More often than not, it is impossible for patients admitted to a NeuroICU to be able to fully consent to decisions due to the nature of their illness/injuries affecting cognition. When unable to participate, proxy expressions of consent are sought from next of kin under the pretext that they will have insight into goals-of-care wishes and express them accordingly. It is important to note that the proxy decision making, as a substitute for autonomy, is held to the same technical standards regarding a reasonable understanding of risks/benefits and prognosis. Consider the cases of large-territory infarcts which incapacitate patients, in which treatment decisions need to be made by proxy. Many families will not have heard of thrombolytics, endovascular therapy, penumbra, or hemorrhagic transformation previously, yet will need to quickly gain a peripheral understanding to make a time-sensitive decision. In a patient with, for example, baseline disabilities and possibly only marginal improvement to be obtained from intervention,

ascertaining what the patient would have wanted for themselves will be key for surrogates to make reasonable decisions both in the acute phase and beyond.

CASE 2b: T*he patient receives tPA and endovascular therapy with good reperfusion within 4 hours of onset. In the ICU, he remains obtunded, hemiplegic, and globally aphasic; MRI demonstrates full territory involvement.*

Proxies will often face a series of decisions to be made. In this case, the proxy is now faced with a decision to continue care with a possible hemicraniectomy if mass effect develops followed by a likely tracheostomy (if intubated) and percutaneous epigastric (PEG) tube or to withdrawal. Without prior goals-of-care discussions, this can be overwhelming and proxies may feel they are "killing" their loved one if they withdraw care. Careful framing of the situation in regards to how the patient would want to live and what decision he/she would make for themselves, rather the what the proxy wants, is key and well-worth the discussion.

BENEFICENCE & NONMALEFICENCE

Perhaps the best known pillars of ethics due to the prominence in the Hippocratic Oath, "Do no harm" is often brought into question in medical legal cases. Many interventions are deployed in the ICU for the benefit of a tenuous patient and, although they carry a risk of adverse effects, the net effect is presumed to be beneficial. Despite the intent, however, there may be rare but devastating complications, which blur the lines between beneficence and nonmaleficence.

CASE 3: *A patient with a basilar occlusion and associated acute brainstem strokes has progressive deficits. The team debates starting anticoagulation to stop propagation of the clot but is concerned that hemorrhagic conversion of the stroke bed could be catastrophic.*

Despite literature reviews and case studies, it may be difficult to determine the true risks and benefits of an intervention in a particular, complicated patient. In the case above, limiting clot propagation of a basilar occlusion could spare the patient more severe deficits but a hemorrhagic conversion of a brainstem infarct could be neurologically devastating or even fatal. Either starting or not starting the therapy has risks and benefits but the key is that the net effect is presumed to be benefit while minimizing the risks in whatever way possible.

CASE 4: *A young female presents as a trauma after an automobile accident, GCS 3, with intra-cranial hemorrhage and diffuse-axonal injury. Family is distraught and desires early prognostication as they do not want her to suffer if there is unlikely to be recovery.*

This may, at first, to have little to do with beneficence but consider that early prognostication to ease the family's and potentially the patient suffering and decisions about care, such as early tracheostomy could occur. However, prognositication may be difficult due to confounding factors, such as intoxication or iatrogenic drug administration, leading to a self-fulfilling prophecy if care is withdrawn (maleficence). The Neurocritical Care Society published recommendations that specifically caution against early prognostication in devastating brain injury, recommending a 72-hour window immediately after injury during which maximal resuscitative efforts should be pursued. Continuing appropriate resuscitation (beneficence) while minimizing pain and discomfort (non-maleficence) is in the best interest of the patient until prognostication can be

more clearly ascertained.

JUSTICE:
This principle seeks to ensure fair and equitable distribution of care and resources. Here fairness, as applied to need, defines equitable care but not necessarily equal care.

CASE 5: *Two patients of similar ages, both with left MCA infarcts, are admitted to the ICU. One received tPA, underwent endovascular therapy, and later a decompressive hemicraniectomy for mass effect. The other did not receive tPA and was maximally medically managed with blood pressure control, antiplatelet, and statins.*

Consider in this case how disparate the care may seem to an outside observer, yet if the details were provided, the care may be equitable given their individual circumstances (i.e. time window of last-known-well, location of lesion, penumbra, prognosis, etc.). Justice must therefore have an over-arching view for equitable care but be employed on a case-by-case basis.

This can be complicated by resource limitations. Consider the recent pandemic when hospital beds and supplies were limited. One patient may be able to transfer to a higher-level of care while another similar patient is managed on a lower-level due to bed availability. While this is unequal care, if both patients have their needs met, it can still be equitable care.

In Summary

Ethics is an integral part of standard of care. Autonomy, beneficence, non-maleficence, and justice are deeply embedded many of the medical decisions we make on a daily basis.

“Ethics is not just an abstract intellectual discipline. It is about the conflicts that arise in trying to meet real human needs and values” -John Ziman