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MANUSCRIPT #2

Title: Rationing Limited Health Care Resources in the COVID-19 Era and Beyond: Ethical Considerations Regarding Older Adults

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ABSTRACT

COVID-19 continues to impact older adults disproportionately with respect to serious consequences ranging from severe illness and hospitalization to increased risk for death. Concurrently, concerns about potential shortages of healthcare professionals and health supplies to address these issues have focused attention on how these resources are ultimately allocated and used. Some strategies, for example, misguidedly use age as an arbitrary criterion, which disfavors older adults regardless of their health relative to COVID-19. This is a companion manuscript to the American Geriatrics Society (AGS) position statement, "Resource Allocation Strategies and Age-Related Considerations in the COVID-19 Era and Beyond." It is intended to inform clinicians, health system administrators, hospitals, and policymakers about ethical considerations that should be considered when developing strategies for allocation of scarce resources during an emergency involving older adults. This review presents the legal and ethical background for the position statement and discusses the following issues that informed the development of the AGS positions: (1) age as a determining factor; (2) age as a tiebreaker; (3) criteria with a differential impact on older adults; (4) individual choices and advance directives; (5) racial/ethnic disparities and resource allocation; and (6) scoring systems and their impact on older adults. It also considers the role of advance directives as expressions of individual preferences in pandemics.

Introduction

While the data regarding COVID-19 are rapidly evolving, early reports indicate that older adults and those with chronic medical conditions are disproportionately affected with respect to both morbidity and mortality. Among those over 80 years old, case fatality rates are well over 10%.[1,2] According to the CDC, 80% of COVID-19 deaths have been among older adults.[3] Long-term care facilities, which are comprised largely of frail older adults with multiple chronic conditions living in close quarters, have been especially and disproportionately impacted by COVID-19.[4] In addition to the urgent threat of viral infection and critical illness, older adults are also more likely to experience detrimental effects of physical distancing, such as social isolation, that further hamper their recovery.

In some geographic areas, COVID-19 is overwhelming intensive care unit (ICU) beds, mechanical ventilator capacity, and the ability of hospital personnel to care for patients. Strategies have been developed to guide the allocation of limited resources during this public health emergency.[5-7] Some of these strategies explicitly mention advanced age as a criterion to be used when prioritization decisions are imperative. Other strategies use factors such as predicted life-years saved that may disproportionately impact older adults. Coupled with evidence that stereotypes and discrimination may disproportionately affect prioritization decisions,[8,9] these strategies raise concerns that older adults may be treated unjustly in such pandemic emergencies.

This paper is a companion to the AGS position statement, "Resource Allocation Strategies and Age-Related Considerations in the COVID-19 Era and Beyond".[10] In this companion piece, we provide a review of resource allocation strategies that use age as a factor and explain the legal and ethical problems raised by these approaches. The American Geriatrics Society is a nationwide, not-for-profit society of geriatrics healthcare professionals dedicated to improving the health, independence, and quality of life of older people. Our 6,000+ members include geriatricians, geriatric nurses, nurse practitioners, social workers, family practitioners, physician assistants, pharmacists, internists, and specialty physicians who are pioneers in advanced-illness care for older individuals.

Overall Framing

Members of the AGS Ethics Committee collaborated with an interprofessional team of experts in ethics, law, nursing, and medicine (including geriatrics, palliative care, emergency medicine, and pulmonology/critical care) to conduct a structured literature review and examine relevant reports. The authors developed the AGS position statement, "Resource Allocation Strategies and Age-Related Considerations in the COVID-19 Era and Beyond"[10] and this companion manuscript within the context of a society where too few adults have engaged in meaningful advance care planning discussions with their families and loved ones and, as a result, have not completed an advance directive.[11] We also considered the overall framework of a just society with a specific focus on health care systems as well as reviewing legal considerations.

We determined that is important to include these considerations in both the AGS position statement and this companion manuscript.

Urgent Need for Advance Care Planning

It is our strong assertion that the COVID-19 pandemic further highlights the widespread and urgent need for all adults to engage in advance care planning discussions and create an advance directive. Advance care planning must be prioritized both now and after COVID-19. The rate of advance directive completion is unacceptably low at about 50% of adults over age 60.[11] The Age-Friendly Health Systems movement, as well as Medicare reimbursement for advance care planning discussions, present opportunities to increase goals of care discussions, advance directive completion, and POLST/MOLST completion. Completion of advance directives is necessary but insufficient without meaningful goals of care discussions focusing on what matters most to the patient and also ensuring patient understanding by accounting for cultural factors, limited health literacy, and sensory deficits that may impede communication.

Advance care planning discussions are of paramount importance in reducing the need to ration limited health care resources during an emergency because they will inevitably identify people who do not wish to receive intensive care, including mechanical ventilation. A critical point in the discussion of advance care planning is that these discussions are not rationing and should not be confused with triage allocation decisions. Advance care planning discussions should occur before patients are in crisis and should be part of every patient's individualized care plan.[12,13] A conversation with older patients about what matters most to them[14] and their goals of

care should not lead health care providers to incorrectly infer that simply having had a goals of care discussion signals a clear preference for limited interventions. Also, providers should be aware that care plans developed for anticipated longer term declines in health may not be applicable to sudden emergencies such as COVID-19, and it is inappropriate to infer from a do not resuscitate order that a particular patient would necessarily refuse mechanical ventilation.[15]

Achieving Justice in Resource Allocation[16-18]

A just health care system should treat similarly situated people equally, as much as possible. There is something particularly unjust about membership in a class, such as an age group, determining whether one receives health care. Not only is membership in a class defined by characteristics such as race, sex, or age, beyond the individual's control, but the use of these criteria might conceal implicit bias and other social inequities. Health care may be distinct in terms of requiring equal access, as it is critically important to many other goods in life across the life span. These factors suggest that basing resource allocation decisions on advanced age may violate the ethical principle of justice.

Resource allocation strategies, such as those proposed in response to COVID-19, rely on different notions of distributive justice. There are many contested theories, and each theory claims to represent justice in the priority given certain factors or values when goods are distributed to society. In this position statement, we seek to defend a particular view of distributive justice that maximizes relevant clinical factors and either de-emphasizes or eliminates factors that place an arbitrary and disproportionate weight on advanced age.

Legal Considerations

The non-discrimination section of the Affordable Care Act, Section 1557, prohibits discrimination in federally funded health care programs on the grounds prohibited by the Age Discrimination Act of 1975, 42 U.S.C. §§ 6101-6107. The Age Discrimination Act applies to discrimination on the basis of age, which includes exclusion from participation in, or denial of the benefits of, any program or activity receiving federal financial assistance. Resource allocation strategies that exclude based on age as a category violate this provision of federal anti-discrimination law. Whether provisions of the Age Discrimination Act beyond identifying age as a category are also included by reference in Section 1557 is an unsettled legal question, but if they are, they would permit age to be used as a proxy for some other characteristic, such as survivability, that is necessary to the statutory objective or to the business and that cannot practically be measured in an individualized way. The statute and implementing regulations would also permit use of reasonable factors other than age that have a disproportionate effect on persons of different ages, if the factor bears a direct and substantial relationship to the program's normal operation or statutory objective.[19] The legal question then would be whether factors such as long-term survival or life-years lived are reasonable factors other than age that meet this standard.

Recently Published Scoring Systems and Frameworks

In the COVID-19 pandemic, as in the H1N1 pandemic, the SOFA score has been shown to be associated with in-hospital mortality,[20] supporting its use as measure of severity of illness and in-hospital mortality. Importantly, SOFA does not incorporate age, unlike other commonly used measures of severity of illness such as APACHE; thus, SOFA represents the best measure of in-hospital survival given the current evidence.

Several frameworks have been published to guide the allocation of scarce resources during a public health emergency.[21-24] The recent multi-principle allocation framework from Pennsylvania[5] builds on the Maryland framework while distinguishing between medical conditions likely to cause death (independent of the acute illness) within 1 year versus 5 years. The Pennsylvania framework was revised after initial publication to distinguish between risk of 1 year and 5 year mortality. A few points about this protocol deserve special mention. First, the authors emphasize, as they have in prior work,[25] that categorically excluding groups of patients violates the ethical principle of justice. As such, no patient group is categorically excluded from entering the triage protocol. Other protocols, such as the New York State protocol, only categorically exclude patients for whom mortality in the immediate future is nearly certain, such as a patient presenting with recurrent cardiac arrest. Although the Pennsylvania protocol does not categorically exclude these patients, it acknowledges that in routine clinical circumstances, many of these patients do not survive long enough to receive critical care services. Second, the triage score is primarily determined by equal weighting of the likelihood of in-hospital survival (via the SOFA score) and longer-term survival probabilities based on consideration of chronic illness in

addition to the acute illness or event. Lifecycle considerations are not incorporated into the initial scoring algorithm but are considered in the event that a tiebreaker is needed. Age is suggested as the first tiebreaker and front-line worker status as a second tiebreaker, with subsequent tiebreakers including raw score comparison (if not previously used) and finally, a lottery.

Issues Considered in Developing AGS Recommendations for Resource Allocation Strategies if Emergency Rationing Is Required

Age as a Determining Factor

Some proposed rationing frameworks would use age cutoffs to categorically deny admission to an ICU or ventilator support. For example, Italy reportedly made decisions using age cutoffs.[26] In the United States, Section 1557 of the Affordable Care Act prohibits age discrimination in all health care programs or activities receiving federal funds or administered by the executive branch of the U.S. government. The statute defines discrimination to include exclusion from participation in or the denial of benefits of any health program or activity.[27] Rationing frameworks relying on age cutoffs would deny the benefits of a health program based on age and thus would be illegal discrimination under Section 1557 unless they can be justified by other factors.

Age cutoffs are also ethically worrisome. Categorically excluding groups of patients from access to scare resources ignores the enormous heterogeneity of functional status, cognitive status, and burden of comorbidities within the older adult population. A robust body of literature demonstrates that although age can contribute to models that are predictive of mortality and poor

functional outcomes, other factors, such as functional trajectory,[28] multimorbidity,[29,30] and frailty[31,32] are more predictive. Thus, age alone is a poor proxy for projected outcomes. In particular, rationing strategies that are based in part on age cutoffs could lead to persistent beliefs that older adults' lives are less valuable than others' lives or are even expendable.[25]

Age as a Tiebreaker

Other proposed rationing frameworks rely on age as a factor, perhaps in a "tiebreaking" role after a primary allocation strategy using in-hospital survival and short-term survival has been employed.[33] These frameworks bring age into account after the patient has been individually assessed for likelihood of benefit from ICU or ventilator care. Importantly, the inclusion of age as a tiebreaker in the Maryland framework, and subsequent protocols based on that framework,[5] was based on a community engagement project.[33] The community recommended that age not be used as the primary nor the sole criterion for triage scoring, but that it may be appropriate to consider age in the event of a tiebreaker. The group gave highest priority to children and to adults age 49 or less, whose death would be most likely to impose hardship on family dependent on them for support (such as older adults and children).

Whether frameworks that use age only as a tiebreaker violate non-discrimination criteria raises difficult legal and ethical questions that have not yet been resolved. On the one hand, use of age as a tiebreaker does mean that in some cases age will be the very last factor used in determining which patient receives care. Such categorical use could be considered discriminatory. On the other hand, Section 1557 incorporates the criteria for non-discrimination

in the Age Discrimination Act by reference.[27,34] These questions are also raised by criteria that will predictably have a differential impact on older adults.

Criteria with a Differential Impact on Older Adults

Nearly all prioritization recommendations reject taking "quality of life" measures into account. These are frequently biased and value-laden with judgments about what makes a life "worthwhile" or "worth living." They may also be based on implicit assumptions about the moral status of individuals based on classifications such as age or disabilities.

Criteria such as "life =-years saved," "long-term predicted life expectancy" or "life-years lived," while not referencing age directly, nonetheless will predictably disadvantage older people relative to younger people. The use of such factors correlated with age, but not explicitly relying on age as a class, does not violate federal law so long as the factors are reasonable when disconnected from their relationship to age. Based on a Westlaw search of all reported federal court decisions by one of the authors, it appears that no reported decisions have considered whether factors such as that an older person's life expectancy might be shorter than a younger person's are "reasonable factors other than age" that would be permitted under Section 1557 of the ACA and the Age Discrimination Act. The permissibility of using these factors may depend on whether they are based on validated data or represent the best available measures under the circumstances.

The "life-years saved" measure has been proposed as a justification for some prioritization frameworks that employ age as a factor.[6] It is based on a utilitarian idea of resource

stewardship that resources should be used to do the most good. This approach is based on the expected outcome overall and not on assessments of individual patients. Some versions of this approach would consider only near-term prospects of death from co-morbid conditions, for example whether a patient has widely metastatic cancer or a massive intracranial hemorrhage that is likely to result in death within a short period of time. This approach can be justified on the basis that even if the patient survives the episode of care for COVID-19, the benefit will be very limited given these comorbidities. One concern about this approach is that it may amplify implicit bias and ignore the social determinants of health that have systematically disadvantaged underrepresented groups. In addition to a growing awareness that social factors play a key role in the onset and progression of chronic diseases, underlying income and racial disparities have also been linked with pandemics.[35]

"Long-term predicted life expectancy" is more likely than near-term survival to incorporate ageist considerations. Age has traditionally been used as *the* proxy for life expectancy. And while it does play some role, older adults of the same age can have very heterogeneous health status and trajectories.[36] One ethical concern about this approach is that long-term predictions of life expectancy are notoriously unreliable.[37] Unfortunately, even when clinicians aim for accurate life expectancy predictions for cancer screenings, diabetes treatment, or joint replacement surgery, age continues to play a more powerful role than expected.[38] Like many statistical models, models that aim to predict long-term life expectancy in older adults are designed based on population norms and available samples and are subject to bias from

unmeasured or partially measured variables. Although invaluable for population health planning and informing choice in medicine, these models for older adults often have wide confidence intervals surrounding most point estimates and are often imprecise at the individual patient level. While other measures, such as gait speed, might predict mortality and life expectancy in those over 75, this is not routinely measured in primary care[39] and could not be realistically applied in the setting of acute illness. Given that few validated measures can precisely predict long-term life expectancy at the individual level for each older adult, the concern here too is that older adults will have their life expectancy predicted based on their age alone, rather than factoring in their individual characteristics.

"Life-years lived" is based on the so-called "fair innings" argument that people who have had the opportunity to live through more life stages should receive lower priority than those who have not.[40] On this argument, people who are older have had more of a chance to experience the goods of life: they have gone through early adulthood, perhaps had families and enjoyed careers, and maybe even reached retirement and the joy of becoming grandparents or great-grandparents. Younger people have not had these chances and so, the argument goes, should receive higher priority. This argument assumes that innings are fair based on the number of years that people have lived. However, this argument can be criticized on the basis that some older people, especially women or people in poverty, may not have had the advantages that others experienced at earlier stages in life. Another criticism of this fair innings argument is that the goods of life matter at any stage of life and that comparative judgments about what counts as having had more

of the goods of life simply cannot be made. It also ignores that we are all continually changing, and this dynamic process includes positive aspects at every stage. Further, older adults may have just begun to appreciate the social, emotional, and cognitive growth that comes with age, and neither they nor the community at large should be denied the ultimate benefit of these insights and perspectives.[41]

Individual choices and advance directives

Some commentators have suggested that older individuals may choose to forego opportunities for ventilator support or intensive care based on an absolute age cutoff.[40] While some patients choose to use this criterion for their care planning, this should not be universally imposed on all older adults to determine rationing decisions or be expected to alleviate shortages.

Respect for autonomy is an important moral consideration and patient choice should be honored. Patients should be strongly encouraged to make their wishes known through a carefully considered advance directive. In emergency situations, such as COVID-19 infection, identification of the patient's chosen surrogate decision-maker may be especially important. However, AGS urges two critical cautions about advance directives in the COVID-19 pandemic.

First, patients who are severely ill with COVID-19 may not have advance directives and may not be in an appropriate position to make their wishes known in a thoughtful manner. They may be afraid, short of breath, hypoxemic, or have a rapidly deteriorating clinical status. In such circumstances, they should not be even subtly pressured to make care decisions on the basis of conserving resources. Second, physicians should also not engage in preemptive rationing, where

pressure is placed only on older adults or their families to reconsider their advance care planning and to elect DNI/DNR status. The lack of reliable information about fatality rates among patients with COVID-19 might encourage decision-making that is based too much on fear, or on unreliable media portrayals.

Advance identification of patients' chosen decision makers may be especially important in the COVID-19 pandemic. These decision makers will be able to respond flexibly to changes in the patient's condition and survival prospects. Patients with existing advance directives should still be asked about their wishes if they are able to respond in addition to reaching out to surrogate decision makers when appropriate. Finally, physicians should not interpret patients' do not resuscitate orders to assume that they would also reject a completely different intervention such as mechanical ventilation. A do not resuscitate order should also not be interpreted as a reason to avoid providing other types of care, whether curative or palliative in nature.

Racial/Ethnic Disparities and Resource Allocation

Emerging data indicates that members of underrepresented minority groups are being disproportionately affected by COVID-19. In Michigan, 40% of persons who have died from COVID-19 are Black or African American.[42] In Louisiana, African Americans account for 70% of COVID-19 related deaths.[43] In New York City alone, Hispanics make up 27.4% and African Americans 29% of COVID-19 related deaths, while making up 29% and 24% of the city's population, respectively.[44,45] It stands to reason that older adults in these underrepresented minority racial and ethnic groups are also experiencing increased morbidity and mortality related

to COVID-19, and the striking disparities that are being amplified with this pandemic are related to racial and ethnic differences in social determinants of health, including socioeconomic status, education, neighborhood, physical environment, and access to health care. Disparities in health are often multifactorial, with explicit and implicit biases serving as contributors. Injustices related to resource allocation based on age may be compounded by biases related to race, ethnicity, or sociodemographic status, thereby further potentiating disparities in health for underrepresented minority older adults. For example, assessment of comorbidities in resource allocation strategies may be inherently biased against underrepresented minority groups, as inadequate access to primary care – and the development of chronic illness that is more severe than a patient with adequate access to primary care - may result in worse overall scores in these strategies.

Summary

Front-line providers should not be expected to make rationing decisions in isolation, and therefore must have guidance from clear, consistent, transparent, and uniformly applied ethical resource allocation strategies, triage officers and committees, and updated information about the availability of health care resources so that resource allocation strategies are not activated inappropriately. In this paper, we reviewed a number of ethical frameworks that include age as a criteria for emergency resource allocation strategies during the era of COVID-19. Ethical multi-factor resource allocation strategies exist that rely on in-hospital survival and severe comorbidities contributing to short-term (<6 month) mortality. Extreme care must be taken to

consider the disparate impact on older adults of assessing comorbidities as part of resource allocation strategies, as older adults are heterogeneous with respect to burden of comorbidities and functional status. Racial and ethnic minorities are at even greater risk of the disparate impacts of assessing comorbidities in resource allocation strategies. We concluded that when developing and implementing such strategies, key stakeholders including ethics committees, health care systems, and policymakers must not apply categorical age exclusions since such exclusions are unethical and violate anti-discrimination law. Ideally, they will be developed and integrated into institutional policies when an institution is not in crisis. We believe that now and in the future, intensive efforts to provide meaningful advance care planning must occur to ensure that patients' wishes are respected. Older adults would be well served by an intensive post-pandemic review of resource allocation strategies.

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Conflicts of Interest and Disclosures

TWF, LF, TB, LEF, EW, RR, TR, UH, LJW, NT, SWL, CAV, UKB, CS, and DS have no conflicts of interest to disclose.

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