

The Moral Cost of an Earlier Place in the Queue: An Ethical Allocation Framework for Waiting Time, Cumulative Disadvantage, and Deterioration Risk in Elective Healthcare

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Abstract

Elective waiting lists convert scarcity into temporal order, but the moral meaning of that order is often left implicit. This article asks when an earlier place in a queue should continue to control priority once patients differ in deterioration risk, cumulative disadvantage, and the burdens generated by delay. Using allocation ethics and a non-compensatory threshold approach, it treats elapsed waiting as a morally relevant but rebuttable procedural claim rather than as an intrinsically decisive entitlement. The analysis distinguishes administrative waiting time from morally relevant waiting, separates urgency from deterioration trajectory, and examines how social disadvantage can matter without becoming a mechanical priority bonus. The central contribution is a conditional allocation rule: fair queue position retains presumptive force while competing claims remain materially comparable, but additional waiting cannot always compensate for sufficiently serious, clinically and ethically relevant deterioration or cumulative disadvantage. Reordering is justified only when the reasons for departure are relevant, consistently applicable, evidence-responsive, and open to review. This approach protects the fairness value of orderly queues while preventing procedural sequence from obscuring unequal harm accumulated during delay. It also avoids converting complex claims into a single additive score or invented numerical threshold.

Keywords: Elective waiting lists, Healthcare priority setting, Allocation ethics, Deterioration risk, Cumulative disadvantage, Procedural fairness

Introduction

Elective waiting lists appear administratively simple because they express scarcity as order: patients enter, time accumulates, and treatment is offered when capacity becomes available. Yet this apparent simplicity conceals a normative question. A queue does not merely record delay; it distributes the consequences of scarcity among people whose clinical states, vulnerabilities, and opportunities may change while they wait. Recent ethical

analysis of elective mental-health queues shows that first-come-first-served (FCFS) can require more justification than its familiarity suggests and may even be inferior under specified conditions [1]. More generally, waiting time has no self-evident intrinsic claim to moral priority. Its force is derivative: it can protect legitimate expectations, prevent arbitrary line-cutting, and treat relevantly similar claimants consistently, but those reasons depend on the queue itself being sufficiently just [2].

The contemporary policy context makes this distinction consequential. Elective backlogs and waiting times have changed substantially across OECD systems, with marked heterogeneity in how queues expanded and recovered after the pandemic [3, 4]. In England, modelling likewise showed that COVID-19 disruptions altered elective waiting trajectories at scale. These

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system effects matter ethically because a patient's time in a queue is partly produced by institutional capacity, referral rules, and backlog management rather than by any morally relevant feature of that patient.

A defensible allocation principle therefore requires more than administrative consistency. Priority rules should cohere with the moral commitments they invoke, because an internally inconsistent rule may be procedurally orderly yet normatively unstable [5]. Empirical evidence about public values can inform that justificatory process, but it cannot by itself determine what is fair; public preference must be interpreted within a broader account of reasons and justification [6]. Scarcity ethics has accordingly drawn on several values—benefit, equality, concern for the worse off, instrumental value, and procedural fairness—without showing that one of them can resolve every allocation problem [7]. The challenge becomes sharper when formally neutral rules reproduce background racial or socioeconomic disadvantage, because equal application of a queue rule can coexist with unequal exposure to its harms [8].

This article addresses that narrower problem in elective healthcare: when should elapsed waiting continue to control priority, and when may deterioration or cumulative disadvantage justify a departure from queue order? The analysis does not assume that FCFS is ethically neutral, nor that deterioration automatically overrides it. Instead, it develops a non-compensatory account in which waiting time can accumulate legitimate procedural force while still being unable to offset every sufficiently serious change in a patient's comparative claim.

Waiting time as an allocation principle

The first difficulty is definitional. “Waiting time” is not a single natural quantity. Jurisdictions vary in when they start and stop the clock, whether they report ongoing or completed waits, and which pathway segments are counted [9]. The moral status of waiting therefore cannot be read directly from an administrative metric. A patient who has waited longer under one reporting convention has not necessarily acquired a stronger ethical claim than someone whose clinically relevant delay is represented differently. This measurement problem is one reason elective prioritisation systems often incorporate several attributes rather than pure chronological order. A systematic review of elective-surgery prioritisation methods found substantial heterogeneity in the factors

and tools used to rank patients, reflecting the practical inadequacy of a single time variable [10].

Operational reforms can shorten waits without resolving this ethical question. Referral-system redesign may improve access and reduce delay [11], but speed alone does not establish that the resulting order is fair. Conversely, explicit waiting-time targets can generate their own distortions. Threshold analysis of English cancer standards found patterns consistent with target-driven prioritisation around particular cut-offs, illustrating how a metric designed to improve timeliness can displace clinical relevance when compliance itself becomes the operational objective.[12] The lesson is not that targets are inherently unjust, but that administrative time becomes ethically suspect when it substitutes for the reasons that should determine priority.

Actual scheduling also reveals a gap between formal priority and practical order. Ethnographic work in a Dutch academic hospital found that elective-surgery prioritisation is mediated by professional judgment, logistics, routines, and the difficulty of translating formal priority categories into specific scheduling decisions.[13] Similarly, a Canadian study of 1,792 patients waiting for general or colorectal surgery found that longer expected waits were associated with worse self-rated health and pain even though diagnosis-based priority categories did not cleanly separate actual waiting experiences.[14] These findings do not establish that longer waiting caused deterioration, but they show why queue position cannot be treated as a complete proxy for need.

Elapsed waiting nevertheless retains moral importance. If entry to a queue was fair, relevant information was considered, and patients remain sufficiently similar in need and expected benefit, preserving order protects legitimate expectations and constrains opportunistic preference. The question is how strong that constraint should be. Public-values research warns against treating apparent consensus as decisive: experimental evidence shows that expressed support for healthcare priority principles can shift with framing and abstraction [15]. Lottery-based tie-breaking offers another comparator when competing claims are closely matched, but public acceptance of a lottery does not make randomisation universally superior [16]. The defensible conclusion is therefore narrower. Waiting time can strengthen a claim to treatment because orderly queues serve fairness, predictability, and non-arbitrariness, but its moral weight depends on what the queue represents and on whether the conditions that made patients comparable remain stable.

The ethical force of elapsed waiting therefore depends on the relationship between the queue's procedural integrity and the patient's changing claim. **Table 1** maps those

conditions by separating accumulated waiting from the factors that can preserve, qualify, or displace its priority-conferring role.

Table 1. When elapsed waiting strengthens—or fails to settle—a claim to earlier elective treatment

Queue circumstance	What elapsed waiting morally represents	Condition preserving priority	Condition qualifying the claim	Allocation implication
Fair entry among materially comparable patients	Accumulated procedural expectation	Relevant clinical claims remain similar	New clinically relevant differences emerge	Earlier position retains presumptive priority
Administratively measured delay	Recorded time within a defined pathway	Metric tracks the ethically relevant delay	Start/end points omit meaningful parts of waiting	Recorded duration requires interpretation before comparison
Stable need and benefit	Non-arbitrary temporal ordering	Urgency, expected benefit and burden remain broadly unchanged	Material deterioration or benefit loss develops	Chronology remains useful only while substantive comparability persists
Target-governed queue	Institutional commitment to timely access	Target supports clinically relevant ordering	Compliance pressure displaces clinical relevance	Meeting the clock cannot by itself justify priority
Formal priority category	Standardised recognition of need	Category continues to reflect current patient state	Diagnosis-based category misses pain, function, vulnerability or changing risk	Reassessment may be necessary before chronology controls
Near-equivalent competing claims	Fairness-enhancing tie-breaker	No sufficiently strong distinguishing reason exists	A materially stronger competing claim develops	Waiting time may break ties but should not erase ethically decisive differences

Cumulative disadvantage and deterioration risk

Once waiting is treated as a conditional rather than absolute priority claim, the central comparison changes. The ethical question is no longer simply who entered the queue first, but whether patients remain sufficiently alike for chronology to continue doing legitimate work. Health-economic modelling demonstrates why this matters: an equal period of delay can generate different health losses across procedures and clinical trajectories [17]. Time is therefore ethically mediated by what happens during it. A month in which a patient's condition is stable is not necessarily equivalent to a month in which function, pain, prognosis, or treatment benefit deteriorates.

Evidence from joint replacement illustrates both the importance and the limits of this claim. A large systematic review and meta-analysis found that prolonged waiting for hip and knee arthroplasty was associated with deterioration in preoperative function and health-related quality of life, while evidence for worse postoperative outcomes was not established. A single-centre study of patients awaiting total hip arthroplasty also reported worse function and quality of life among those experiencing longer waits. Yet an instrumental-variable analysis of English hip and knee replacement

data found an outcome-specific pattern: longer waits increased length of stay after hip replacement but did not worsen postoperative Oxford Hip or Knee Scores [18-20]. The normative implication is not that deterioration is doubtful, but that it must be specified. “Longer waiting is harmful” is too coarse a premise for reallocating treatment; the relevant issue is which harm, for whom, over what interval, with what evidentiary confidence.

Delay can also create burdens outside the final treatment outcome. A retrospective treatment-control study found additional healthcare utilisation among UK patients awaiting elective treatment, indicating that waiting can generate continuing demands on patients and the health system [21]. Such burdens may strengthen the case for timely care, but they should not automatically override queue order. Additional service use can reflect disease severity, poor access to alternatives, anxiety, or care fragmentation. It is ethically relevant only after its relation to the patient's comparative claim is established. Cumulative disadvantage adds a further layer because patients do not enter or experience queues from equivalent starting positions. Socioeconomic inequalities in waiting have been reported across breast-cancer surgery in England, planned and cancer surgery in Spain, and primary or specialist care, but the size and direction

of these gradients vary across pathways and periods [22-24]. This heterogeneity matters. It would be as mistaken to assume that socioeconomic disadvantage always lengthens waiting as it would be to ignore evidence that non-clinical resources can influence access. Austrian evidence, for example, found associations between waiting time and non-need factors such as insurance and private-care pathways alongside need-related variables [25]. Large linked-data analysis in northern England further showed that patients from more deprived areas on elective waiting lists also carried greater burdens of several health risks [26].

These findings require a distinction among three phenomena that are easily collapsed. Background disadvantage refers to unequal social and health conditions present before queue entry. Queue-produced disadvantage arises when the organisation of access or waiting itself systematically burdens some patients more than others. Deterioration risk concerns clinically relevant changes that occur during delay. The three can overlap, but they are not interchangeable. Socioeconomic position should therefore not become a mechanical “priority bonus,” and deprivation should not be treated as synonymous with clinical severity. Its ethical relevance depends on whether it changes the patient's exposure to avoidable harm, capacity to endure delay, effective access to treatment, or comparative worse-off position in a way that bears directly on the allocation question.

The result is a dynamic account of comparative priority. Elapsed waiting can continue to strengthen an earlier patient's procedural claim, but that accumulation does not freeze the morally relevant comparison at the moment of list entry. Where competing patients experience materially different deterioration trajectories or cumulative burdens, the justice of maintaining queue order depends on whether those differences are sufficiently relevant to alter what each patient is owed. The next stage of the argument must therefore determine how such changing claims can justify priority revision without collapsing elective allocation into unrestricted discretion or an additive score.

An ethical allocation framework for elective healthcare

An ethically defensible approach to elective queues must begin by rejecting a simple additive assumption: waiting time, urgency, deterioration, expected benefit, and disadvantage are not necessarily commensurable quantities that can be converted into points and summed. Priority to the worse off already raises questions about

whether severity should be understood narrowly through the index condition or more holistically through the patient's relevant health needs [27]. Recent work on heterogeneous severity strengthens this concern by showing that averaging or aggregating severity can conceal morally important variation and that threshold-like approaches may sometimes better preserve the underlying rationale for giving additional weight to severe need [28]. Applied to elective queues, the implication is not that one criterion always trumps the others. It is that some changes in a patient's claim may become sufficiently important that additional elapsed waiting by another patient cannot simply compensate for them.

This non-compensatory logic still requires institutional discipline. Qualitative research on scarce radiotherapy allocation illustrates the danger of priority systems in which explicit criteria are weak or absent: FCFS, informal judgments, and socially contingent factors can enter decisions without a clear account of why they are relevant [29]. Procedural fairness therefore matters alongside substantive reasons. Work on priority setting in resource-constrained environments emphasizes relevance, transparency, opportunities for review, and mechanisms that make allocation reasons accountable [30]. In an elective queue, these requirements constrain any departure from established order. A patient should not move ahead merely because their case becomes more visible, their clinician advocates more forcefully, or the institution finds their treatment easier to schedule. A change in queue position requires a reason connected to the ethically relevant allocation problem.

The temporal character of elective care also makes one-time prioritisation insufficient. A priority judgment that was defensible at referral can become outdated as prognosis, function, pain, treatment benefit, or competing risks change. Ethical analysis of time-sensitive scoring in elective care has therefore argued for prioritisation that can respond to clinically meaningful change rather than freeze patients at their initial state [31]. Yet dynamic reassessment introduces another risk. Highly salient individual cases may attract disproportionate attention, and identified-victim effects can alter support for allocation decisions even when morally relevant circumstances are unchanged [32]. Reassessment must consequently distinguish evidence of material change from visibility, emotional salience, institutional pressure, or differential capacity to advocate.

Efficiency remains relevant within this structure. Delayed treatment may change the benefits, costs, and cost-effectiveness of elective procedures, meaning that timing can affect how much health a system can produce from limited resources [33]. That consideration should not be excluded merely because the article is concerned with fairness. It should, however, operate within rather than above the allocation constraints already identified. A small efficiency advantage cannot automatically offset every severe deterioration, and a claim of cumulative

disadvantage cannot automatically extinguish a substantial procedural claim built through fair waiting. The normative task is to identify circumstances in which one reason cannot permissibly be treated as merely another compensable increment.

The priority-changing conditions derived from this analysis are summarized below. They remain qualitative because the cited evidence does not support a universal numerical threshold.

Table 2 summarizes the distinctions discussed above.

Table 2. Priority-changing conditions in an elective queue under non-compensatory allocation logic

Allocation condition	Status of the earlier patient's queue-position claim	Change in the competing patient's condition	Does additional elapsed waiting remain compensatory?	Proposed allocation consequence
Materially comparable clinical states and burdens	Strong presumptive claim	No material change	Yes	Preserve established order
Moderate deterioration without clear change in comparative severity	Presumptive claim remains substantial	Worsening is relevant but not overriding	Usually	Reassess, but do not automatically reorder
Serious deterioration that materially changes comparative need	Presumption becomes defeasible	Clinically important worsening changes the patient comparison	Potentially no	Priority revision can be justified if evidence and procedure are adequate
Cumulative disadvantage that directly increases exposure to avoidable health loss	Presumption remains but carries less controlling force	Background and queue-produced disadvantage combine with clinically relevant burden	Potentially no	Give additional priority only where disadvantage is relevant to the allocation claim
Difference based mainly on visibility, advocacy strength, convenience, or social influence	Presumption remains controlling	No morally relevant change demonstrated	Yes	Do not reorder
Expected benefit or treatment value falls substantially during delay	Presumption must be reconsidered	Timing changes achievable benefit or opportunity cost	Context dependent	Compare deterioration, benefit loss, and competing claims without reducing them to one score
Evidence about deterioration is weak, unstable, or contested	Presumption remains important	Claimed change is insufficiently established	Yes unless stronger evidence emerges	Maintain order while reassessing evidence
Severe competing claim meets a non-compensatory ethical condition	Earlier place retains moral significance but no longer settles priority	Continued delay would impose a sufficiently serious and relevant comparative burden	No, by proposed rule	Permit justified queue revision subject to consistent reasons and review

The proposed rule can therefore be stated as a **rebuttable queue-position presumption**. Fairly accumulated waiting creates a genuine claim to earlier treatment [2]. That claim should normally govern where patients remain materially comparable. It becomes defeasible when clinically and ethically relevant changes make the comparison materially different and when the competing claim reaches a level that cannot fairly be answered merely by pointing to the other patient's additional elapsed waiting. Evidence that different procedures incur different delay-related losses supports the need for such

dynamic comparison [17]. Evidence of outcome-specific null effects simultaneously prevents the rule from presuming deterioration whenever time passes [20]. Holistic severity determines which patient differences are morally relevant [27]. while procedural fairness determines whether the resulting departure from established order can be publicly justified [30].

This allocation relation is not a sequence in which every patient moves mechanically from waiting to deterioration to reprioritisation. It is a field of competing claims in which procedural accumulation and changing clinical or

social burdens develop simultaneously and may alter one another's normative force.

Figure 1 illustrates the relationships discussed above.

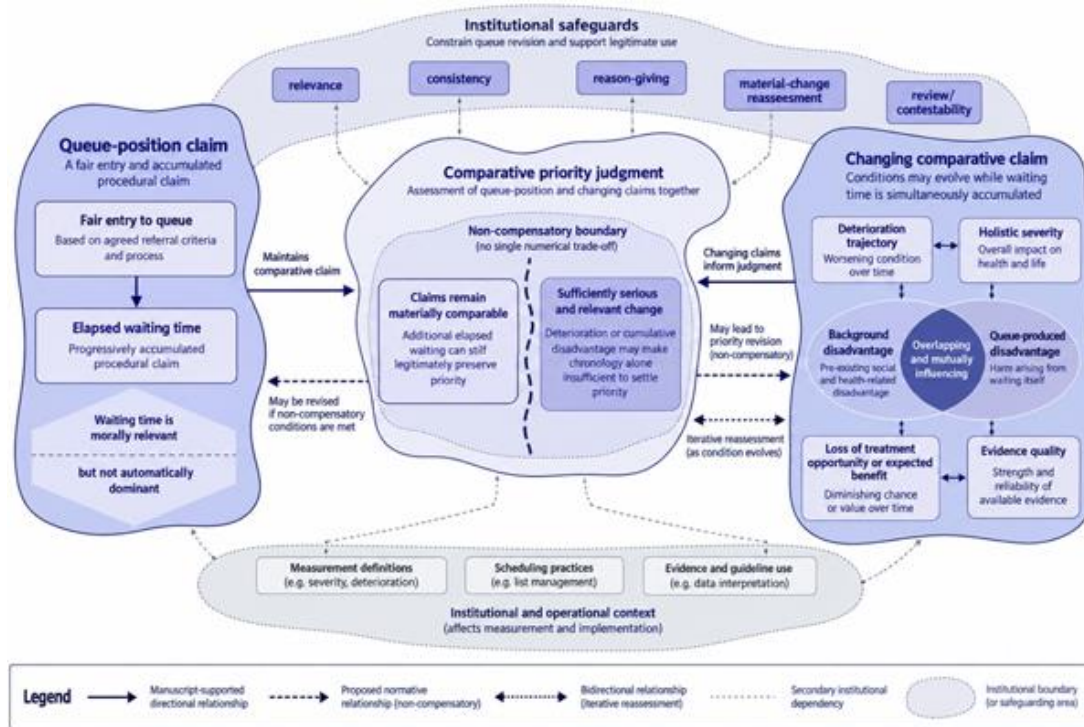


Figure 1. When accumulated waiting no longer settles priority: the non-compensatory logic of elective queue revision

Policy implications

The framework changes what institutions should monitor and when they should reconsider priority. Queue entry should create a stable presumption rather than an immutable entitlement. Reassessment should therefore occur when material clinical or contextual change is detected, not merely because a fixed administrative interval has elapsed. Comparative analysis of elective hip and knee replacement policy in England and Scotland shows that system design can alter waiting patterns and inequalities over time [34]. This reinforces a broader point: queues are institutional arrangements whose distributive effects are partly produced by policy. Reassessment should also be insulated from the very inequities it is intended to address. Waiting-time definitions need to be explicit so that priority decisions are not based on incomparable administrative clocks [9]. Target regimes should be monitored for threshold behaviour that displaces relevant clinical ordering [12]. Practical scheduling should be audited because formal priority scores do not necessarily determine actual theatre access [13]. Where non-need factors influence waiting,

institutions should ask whether those effects reflect legitimate clinical differentiation or avoidable advantage [25].

Priority changes also require a documented reason. Evidence from scarce-resource settings shows why explicit criteria matter when FCFS, social factors, and professional discretion coexist [29]. Procedural fairness requires reasons that affected patients could recognize as relevant, together with consistency and meaningful possibilities for review [30]. Efficiency should remain part of this explanation where prolonged delay changes achievable value [33], but institutions should not translate every consideration into a common score merely to make reordering appear objective.

Performance monitoring should therefore move beyond mean or median waiting time. A system can shorten average waits while leaving severe deterioration, unequal burden, or systematically disadvantaged groups hidden within the distribution. Monitoring should examine whether longer waits are concentrated among patients who already carry greater health risk, whether clinically important deterioration accumulates disproportionately,

and whether changes in priority can be traced to relevant reasons. These are proposed monitoring principles rather than validated performance indicators.

The resulting institutional requirements are summarized below.

Table 3 summarizes the distinctions discussed above.

Table 3. Institutional safeguards for justified changes in elective queue position

Institutional decision point	Required question	Acceptable basis for action	Basis that should not independently justify reordering	Safeguard
Entry to waiting list	Was initial placement based on relevant and consistently applied criteria?	Clinical need, expected benefit, transparent eligibility rules	Social influence, convenience, ability to advocate	Document initial priority rationale
Definition of waiting	Does the recorded clock represent the clinically relevant delay?	Explicit start/end points and pathway definitions	Unexamined administrative timestamp	Standardised measurement rule
Reassessment	Has a material change occurred?	Documented deterioration, altered benefit, new relevant burden	Passage of an arbitrary interval alone	Material-change trigger with clinical review
Priority revision	Does the competing claim now differ in a morally relevant way?	Serious relevant deterioration, holistic severity, health-related cumulative disadvantage	Visibility, pressure, socioeconomic status by itself	Consistent relevance test
Non-compensatory judgment	Can additional waiting still fairly offset the competing reason?	Reasoned comparison showing why chronology is no longer sufficient	Unexplained intuition or undisclosed weighting	Written justification and second-level review
Scheduling	Is operational practice reproducing the approved priority relation?	Clinically necessary logistical adjustment	Theatre convenience or preferential advocacy alone	Audit discrepancy between formal and actual order
Monitoring	Are aggregate improvements hiding unequal harm?	Distribution of wait, deterioration and access consequences	Mean waiting time alone	Equity- and harm-sensitive monitoring
Contestation	Can affected patients challenge the basis of a change?	Review of relevance, consistency, evidence and procedure	Automatic restoration of queue position regardless of reasons	Proportionate review mechanism

Results and Discussion

The strongest challenge to this account comes from the fairness of orderly queues themselves. A sufficiently just FCFS system can protect equality, legitimate expectation, predictability, and freedom from discretionary line-cutting [2]. Those values should not be weakened casually. Indeed, the present framework depends on them: if queue position carried no moral force, there would be no need to justify departure from it. The argument is therefore narrower than an attack on FCFS. Where patients entered fairly and remain materially comparable, accumulated waiting should continue to govern priority. The ethical problem arises when continued reliance on chronology preserves procedural equality only by ignoring a significant change in the substantive comparison.

The evidence does not support automatic reversal whenever deterioration or disadvantage is observed. Some effects of waiting are strongly pathway-specific, and important postoperative outcomes can remain unchanged even where delay affects other measures [20]. Socioeconomic gradients in waiting can also be small, inconsistent, or temporally variable [22]. Associations with non-need factors require interpretation rather than immediate moral reweighting [25]. Deprivation-related risk burden similarly cannot be collapsed into a single severity measure [26]. These limitations protect the framework from becoming an unrestricted prioritarian rule in which any disadvantage defeats an earlier queue claim.

A second limitation concerns evidence and institutional capacity. Dynamic reassessment is ethically attractive only if institutions can identify material changes with enough reliability to avoid replacing chronological

arbitrariness with discretionary arbitrariness. A priority rule that responds to deterioration but systematically rewards patients with better documentation, more assertive clinicians, or greater advocacy resources could intensify inequity. The justificatory coherence demanded in healthcare priority setting therefore remains important [5]. Public values may contribute to that justification without determining it [6]. Holistic severity clarifies which health needs should count [27], while non-additive severity reasoning explains why some considerations cannot simply be traded against one another [28]. Procedural fairness then constrains how those substantive judgments are made and revised [30].

The framework would accordingly weaken or fail under several conditions. It would fail if the purported deterioration were too uncertain to establish a materially different claim; if the relevant queue were already structured around a continuously updated measure that captured the same change; if the proposed disadvantage criterion merely reproduced social privilege under a new label; or if repeated reordering created instability severe enough to undermine fair access for everyone. It would also require modification in settings where delays are so short that meaningful divergence in patient trajectories is unlikely, or where emergency urgency properly displaces the elective-allocation problem entirely.

The contribution is therefore a rule about the limits of compensation between reasons, not a new universal hierarchy of patients. Elapsed waiting matters because fair queues matter. Deterioration matters because patients' claims can change. Cumulative disadvantage matters when it changes their exposure to health-related harm or their comparative worse-off position. None of these considerations is sufficient in isolation. The distinctive allocation question is whether one patient's additional procedural accumulation can still fairly answer another patient's materially strengthened claim. Where it cannot, preserving order ceases to be neutrality and becomes a substantive choice to let chronology dominate the comparison.

Conclusion

An earlier place in an elective queue carries genuine moral weight when queue entry is fair and competing patients remain materially comparable. That weight is presumptive, not absolute. Patients can accumulate unequal deterioration, health-related disadvantage, and loss of treatment opportunity while the clock continues

to run for everyone. Under those conditions, additional elapsed waiting cannot always compensate for a sufficiently serious competing claim. Queue revision is therefore ethically defensible when the difference is materially relevant, supported by adequate evidence, applied consistently, and subject to reason-giving and review. The practical challenge is not to replace orderly waiting with unrestricted discretion, but to preserve the fairness of queues without allowing chronology to conceal morally significant changes in what patients are owed.

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