Preserving Acquired Rights in the Re-Placement of Medical Residents in Turkey

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Abstract

We analyze the re-placement mechanism implemented in Turkey for reassigning doctors to residency programs in Turkey after scoring errors were realized, an issue that occurred thrice in the past decade. Legally, initial placements based on faulty scores are considered acquired rights, preventing any re-placement to less favorable programs. This setup necessitates a balance between restoring fairness for those with improved ranking and preserving the acquired rights while also adhering to predetermined program capacities as much as possible. Our analysis focuses on the two-step serial dictatorship mechanism utilized by the Center for Assessment, Selection, and Placement to address this challenge. We demonstrate that the mechanism violates fairness, such that doctors with higher scores may justifiably envy the assignments of others with lower scores. Yet, it does comply with a modified, more lenient notion of q-fairness, aligning better with scenarios involving acquired rights. Additionally, we show the manipulation incentives by the doctors. Finally, we propose an alternative mechanism to reduce deviations from the target program capacities and describe alterations to the existing mechanism, which would make the two mechanisms equivalent.

Keywords: many-to-one matching, acquired rights, capacity constraints, fairness

JEL Classification: C78 , D47 , D78 , D82

1 Introduction

After completing the six-year primary medical education in Turkey, doctors aiming for specialization must take the "Examination for Specialty in Medicine" (ESM). The ESM is conducted twice a year, and each term, almost thirty thousand young doctors compete for less than ten thousand residency slots.[1] After the exam, candidates receive their scores and submit a ranking of residency programs. The Center for Assessment, Selection, and Placement (CASP), the governing body responsible for all examination-related placements in Turkey, then employs the simple serial dictatorship mechanism (which is equivalent to the doctor proposing deferred acceptance algorithm) to assign candidates to programs according to their exam scores and pre-determined program capacities. As the problem essentially constitutes a student placement problem as in Balinski and Sönmez (1999), this algorithm ensures a stable matching by making it unattractive or unfeasible for any participant, individually or collaboratively, to deviate from their allocated placement. Furthermore, it effectively eliminates opportunities for doctors to manipulate the system by misrepresenting their true program preferences.

A crucial component of the serial dictatorship mechanism in student placement problems is the centralized exam score, which dictates the preferences of residency programs as a common ranking of the doctors. Over the past decade, there have been three instances where questions were canceled or redeemed valid after cancellation, resulting in the need for score recalculations after the placement process had already been completed and doctors had begun their residencies. This untimely change in score calculation raised concerns about fairness, particularly among doctors whose revised scores resulted in higher rankings than those determined by the initial calculations.

When these scoring changes altered the established common ranking of doctors, the CASP employed re-placement mechanisms to adjust for the updated rankings and restore perceived fairness for doctors whose rankings improved following the score recalculation. Various mechanisms have been implemented in 2010, 2013, 2014, and 2016, which share the primary aim of restoring fairness but differ in terms of participation conditions and how preferences are elicited, etc. In this paper, we analyze the characteristics and limitations of the latest re-placement mechanism implemented by the CASP in 2016 for re-placements.

The CASP Re-placement Mechanism operates through a two-step procedure. In the first step, doctors are assigned to programs based on a simple serial dictatorship

[1] For general information: https://www.osym.gov.tr/TR,4520/tus-ile-ilgili-sorular.html
The number of doctors taking the exam increases each year, over 27000 doctors took the last exam of March 2024: https://www.aa.com.tr/tr/egitim/2024-tus-ve-sts-tip-doktorlugu-1-donem-sinavlari-17-mart-pazar-gunu-yapilacak/3165177
For the table regarding vacancies and placements in 2022: https://dokuman.osym.gov.tr/pdfdokuman/2022/TUSDONEM2/TERCIH/sayisalbilgiler04112022.pdf

mechanism that operates according to the updated preference list they submitted to the CASP prior to the re-placement (doctors who did not update their list are excluded from the re-placement along with their seats). In the subsequent step, doctors are given the option to either accept the outcome of their re-placement or maintain their original assignments under their acquired rights.

The fundamental objective of the re-placement mechanism is to restore fairness for the doctors whose scores increased following the correction. In the meantime, the mechanism is legally obligated to respect the initial placements of doctors. These initial assignments are considered *acquired rights*, which subsequent placements cannot violate. Therefore, doctors can only be reassigned to programs they prefer more than their current assignments during the re-placement process (otherwise, they do not accept their re-placement outcome). Comparable situations involving a threshold are present in matching models with endowments, such as Shapley and Scarf (1974), Abdulkadiroglu and Sönmez (1999), Roth, Sönmez, and Ünver (2004), Guillen and Kesten (2012), Pereyra (2013), Combe et al. (2022). In all these examples, agents possess an *outside option*, which sets a lower bound on their utility level. This outside option establishes a participation constraint, and any mechanism that is individually rational must ensure that agents receive at least that level of utility for the participants.

When lower-score candidates possess acquired rights, restoring fairness to higher-score candidates necessitates expanding the programs' capacities. Therefore, when implementing a re-placement mechanism, the CASP often admits more doctors than the initial target capacities of programs. In the literature, fairness is typically defined by the *no justified envy* condition, where no doctor should envy another one's assignment if their own score is higher. Nevertheless, substantial changes in rankings due to score recalculations can lead to scenarios where even the lowest-ranked candidates hold acquired rights. In such cases, eliminating justified envy becomes challenging without completely ignoring the target capacities. Therefore, the standard fairness axiom is not feasible in environments involving acquired rights.

Instead, we adopt two alternative axioms proposed by Aygün and Bilgin (2023) for a broader interpretation of situations with acquired rights. These axioms are introduced for environments where programs possess general preferences - thus, the exam score determining a universal ranking exhibits a special case within their overarching model. The first axiom, termed *capacity respecting fairness*, or shortly *q-fairness*, mandates that for a doctor's envy towards a lower-score candidate to be justified, the doctor must also be ranked within the target capacity of their preferred program. In other words, the number of higher-scoring doctors accepted into a more desired program must not exceed the program's target capacity, thereby justifying the envy based on merit. Unlike the fairness notion commonly used in the literature, q-fairness also considers the target capacities and permits fairness violations for doctors who fall outside these capacities.

As q-fairness defines who cannot claim seats in programs, the other axiom determines the eligible doctors. If a re-placement mechanism *avoids unnecessary slots*, or shortly satisfies *AUS*, seats in residency programs are filled solely with either doctors holding a sufficient ranking within the target capacities or those possessing acquired rights.

Analyzing the CASP Re-placement Mechanism in the light of these axioms, we show that it naturally fails fairness due to capacity constraints, although it does permit some flexibility in these capacities. Despite these limitations, the CASP Re-placement Mechanism satisfies the less stringent axiom of q-fairness. However, it violates avoiding unnecessary slots and creates additional seats for doctors who neither have a high enough score nor an acquired right.

After analyzing the properties of the CASP Re-placement Mechanism, we propose an alternative mechanism, which we call Acquired Rights Adjusted Serial Dictatorship (AR-SD). This is an adjustment of the simple serial dictatorship mechanism, where candidates are first ranked according to their recalculated, accurate scores. Then, as in the simple serial dictatorship, they select the best alternative among the remaining ones. If the candidate whose turn is to choose wants to be assigned to their own program but the capacity of this program is already full, the program's capacity is extended to accommodate the candidate with the acquired right. AR-SD naturally satisfies q-fairness, avoids unnecessary slots, and preserves acquired rights. Remarkably, in the context of resident re-placement, AR-SD stands out as the unique mechanism that fulfills these properties. Furthermore, because it adheres to the AUS property, AR-SD emerges as the mechanism that minimizes deviations from target capacities, among mechanisms that uphold q-fairness and preserve acquired rights.

Additionally, we analyze the strategic incentives of doctors when reporting their preferences during the re-placement process. Generally, doctors prefer to have more colleagues in residency programs. Thus, a weakly dominant strategy emerges: doctors participate in the re-placement process by submitting a new preference list and deliberately omitting their current assignment. This strategy effectively vacates their current seat, potentially making room for other doctors. Should they not receive a better assignment in the initial step of the re-placement, they still retain the option to exercise their acquired rights during the second step, allowing them to keep their original residency placement while potentially gaining an additional colleague.

The distinction between the CASP Mechanism and AR-SD stems from the strategic behavior of doctors, particularly their preference to increase their number of colleagues. This behavior is primarily driven by the two-step nature of the CASP Mechanism. In the paper's final part, we explore potential modifications to the two-step DA that would mitigate doctors' incentives for manipulation. For instance, if doctors are required to commit to the re-placement outcome when they are assigned to a program they prefer more than their originally acquired position, as indicated in their revised preference list, then reporting their true preferences becomes the weakly dominant strategy. In addition to this complience rule, when the initial program is automatically appended to the updated preference list in the case of omission, and the list is truncated at this point for existing residents, the two-step CASP Mechanism is equivalent to AR-SD under truthful reporting.

The placement problem with acquired rights also constitutes an application for affirmative action, particularly in the form of reserves, as analyzed in Aygün and Turhan (2017), Aygün and Turhan (2020), Sönmez and Yenmez (2022) and hard quotas, as in Abdulkadiroglu and Sönmez (2003), Kojima (2012), Ehlers, Hafalir,

Yenmez, and Yildirim (2014), Dur, Kominers, Pathak, and Sönmez (2018). If a re-placement mechanism preserves acquired rights, and is non-wasteful in the sense that it does not leave vacancies empty as long as there are doctors wanting them, then q-fairness is equivalent to no envy across new doctors, i.e. fairness across the same types as in Ehlers et al. (2014). Nevertheless, different than the papers mentioned above, the focus of this paper is on strategic behavior as well as the deviation from the target capacities. As the CASP Mechanism allows target capacities to double, only half of the admitted candidates can be new residents. The other half, corresponding to the target capacity, must consist of existing residents with acquired rights, ensuring these seats are not allocated to new residents. However, the mechanism does not specify the exact capacity that will be realized at the end but rather provides an upper bound: programs can admit up to a twofold of their target capacity.

When doubling the capacity constraints, the CASP Mechanism allows for the possibility that the top half of the admitted residents are existing residents and the bottom half new residents. On the contrary, this is not possible under AR-SD, due to the AUS property. With AUS, when programs double their target capacity, the new residents must be among the top half of the admitted candidates. Thus, the additional seats beyond the target capacity are created only for doctors with acquired rights.

The paper is organized as follows: After discussing the related literature in the subsequent subsection, we introduce the model and the re-placement of medical residents problem in Section 2. In Section 3, we introduce and describe the mechanism used by CASP in Turkey and discuss its properties. In Section 4, we describe an alternative mechanism that can address the shortcomings of the CASP algorithm. We analyze both mechanisms from an incentives perspective and discuss strategy proofness properties, as well as propose adjustments under which they become equivalent in Section 5. We conclude in Section 6.

2 Model

In our analysis, we model the re-placement procedure as a many-to-one matching problem involving a finite set of doctors, denoted by $\mathcal{D} = d_1, d_2, \ldots, d_n$. Within this set, $D \subset \mathcal{D}$ represents the subset of doctors participating in the re-placement process. We also consider a finite set of residency programs, represented by $H = h_1, h_2, \ldots, h_m$. Each doctor d from the subset D has strict preferences, denoted by $\succ_d$, over the programs in H. Additionally, each doctor has the option of remaining unemployed, represented by the outside option $\emptyset$. The collection of all preferences for doctors in the subset D is given by $\succ_D$, and $\mathcal{P}_d$ denotes the complete set of possible preferences for any doctor d.

In this student placement problem, the role of the exam score is crucial in determining the preferences of residency programs for doctors. Each doctor d has an original score s_d^0, and a recalculated score s_d after corrections. For the initial placement of residents, the score used is s_d^0, while for the re-placement process, s_d becomes relevant. To simplify the analysis, we assume that no two doctors share the same score, $s_d^0 \neq s_{d'}^0$ and $s_d \neq s_{d'}$ for any $d \neq d'$.

For any subset of doctors D', $s^0_{D'}$ and $s_{D'}$ represent the collections of original and recalculated scores, respectively. Furthermore, the ranking of a doctor d within any subset of applicants D' is defined by a function $z : D' \to \mathbb{N}^+$, where $z(d|s^0_{D'}, D') = |\{d' \in D' : s^0_{d'} > s^0_d\}| + 1$ and $z(d|s_{D'}, D') = |\{d' \in D' : s_{d'} > s_d\}| + 1$. Verbally, the ranking function establishes the position of doctor d relative to others based on their scores.

For a program h, q^0_h is the exogenously determined capacity, the number of residents the program can accommodate. The vector of these capacities for all programs is represented as q^0_H. With the initially calculated scores, the placement of residents matching problem is represented by the tuple $(\mathcal{D}, \succ_{\mathcal{D}}, H, q^0_H, s^0_{\mathcal{D}})$.

After the original placements, m_h denotes the number of doctors currently placed at program h and have *not updated their preferences* following the score recalculation. Choosing not to update the preference list signifies a doctor's decision to remain in their originally assigned placement, a choice protected by law. Consequently, the capacities during the replacement phase are adjusted to $q_h = q^0_h - m_h$ (this adjustment will be discussed when introducing the re-placement mechanism in more detail). Throughout the paper, q_h will also be referred to as "the target capacity" to acknowledge that deviations from this figure might occur during the re-placement process.

Independent of whether doctors update their preference lists, E_h denotes the set of existing doctors at program h, who were initially placed there, and E_H represents the collection of such doctors across all programs. The re-placement of residents matching problem is thus represented by the tuple $(D, \succ_D, H, q_H, E_H, s_D)$.

A many-to-one matching μ is a function from the set of doctors and programs to the set of programs and subsets of doctors, $\mu : D \cup H \to 2^D \cup H$, such that for each doctor d, $\mu(d) \in H \cup \{\emptyset\}$, for each hospital h, $\mu(h) \in 2^D$ and $\mu(d) = h \iff d \in \mu(h)$. Here, $\mu(d)$ is the match of a doctor d, and doctors are matched to programs or remain unemployed. Similarly, $\mu(h)$ denotes the match of the h under matching μ, and programs are matched to subsets of doctors. Moreover, $\mu(d) = h$ if and only if $d \in \mu(h)$, meaning that a matching denotes a bilateral relation. The set of all many-to-one matching functions is $\mathcal{M}$.

A direct mechanism is then a function $\phi : \prod_{d \in D} \mathcal{P}_d \to \mathcal{M}$ that determines a matching based on each possible submitted preference profile of the doctors. Throughout this paper, we refer to the matching resulting from the direct mechanism ϕ as μ^ϕ.

2.1 Placement of Residents Matching Problem and the Need for Re-placement

Following the Examination for Specialty in Medicine in 2016 (other examples include 2010, 2013, and 2014), some questions were found flawed by authorities and were canceled[2]. Scores were then calculated according to the remaining accurate questions. As usually done in CASP's placement procedures, candidates were assigned to the residential programs according to the simple serial dictatorship mechanism. In this serial dictatorship, candidates are sequenced by their ESM scores and these scores determine the program preferences along with the capacity constraints. When in turn,

[2] https://www.osym.gov.tr/TR,12703/2016-dus-2016-sts-dis-hekimligi-2016--tus-sonbahar-donemi-2016-sts-tip-doktorlugu-sonbahar-donemi--degerlendirme-sonuclarinin-aciklanmasi-hk--13102016.html

a doctor picks its favorite program among the programs that still have vacancies at that point.

Nevertheless, in the meantime, CASP filed an appeal regarding the canceled questions. Five months after the exam, and after the doctors had already been assigned to programs and begun their residencies, the State Council annulled the cancellation of the questions.[3]

Consequently, the scores and rankings of candidates were altered after they had commenced their residency programs. Given the significant role of scores and rankings in the placement procedure, any change suggests that the initial placements may not have been *fair*, particularly for doctors whose rankings have improved after the recalculation. In general, fairness requires that doctors with higher rankings do not envy others' placements with lower scores. Formally, in a re-placement problem:

Definition 1. *Mechanism ϕ satisfies **fairness** (or is fair) if for any fixed problem $(D, \succ_D, H, q_H, E_H, s_D)$, $\nexists\{d, d', h\}$ such that $s_d > s_{d'}$ and $h \succ_d \mu^\phi(d)$ whereas $d' \in \mu^\phi(h)$.*

Naturally, there may be situations where a candidate with a higher accurate score is ranked lower in the initial score calculations. If this candidate feels envious of doctors who, according to the accurate scores, are ranked below them but received better placements, the initial placements would be deemed unfair. To address this discrepancy and restore fairness, CASP introduced a re-placement mechanism.[4] This mechanism aims to correct such imbalances and will be described and analyzed in detail in the following section.

3 The CASP Re-placement Mechanism

The general principles regarding the re-placement procedure announced by CASP specified that any candidate from the initial placements could apply for the re-placement and update their preference list. The re-placement mechanism would operate as a two-step procedure. In the first step, the simple serial dictatorship mechanism would be implemented, where doctors' rankings are determined based on the newly calculated, accurate scores. Importantly, the seats of initially placed doctors

[3] https://www.osym.gov.tr/TR,13094/2016-tus-sonbahar-donemi-ve-2016-sts-tip-doktorlugu-sonbahar-donemi-yeni-degerlendirme-sonuclari-26042017.html

[4] The examinations conducted in the years 2010, 2013, 2014, and 2016 exhibit variations in the rationale behind score recalculations. These recalculations occur due to either the cancellation of specific questions or the nullification of previously canceled questions. Additionally, there are differences in the methods employed to collect the preferences of doctors and how these preferences are handled. In 2010, only candidates who did not submit their preferences were permitted to submit a new preference list for re-placement. Those doctors who had already been placed were not affected by this process. Contrarily, in 2013, all doctors were given the opportunity to update their preference list. While those who did not update were considered based on their initial submission, they were not reassigned elsewhere. In both 2014 and 2016, doctors who did not update their preference list were excluded during the re-placement process, and their seats did not become available for reassignment. Nevertheless, these minor changes do not affect the core of the analysis of this paper.
For 2010: https://www.osym.gov.tr/TR,4398/2010-tus-sonbahar-donemi-ilgili-adaylardan-tercih-alinmasi-19122012.html
For 2013: https://www.osym.gov.tr/TR,4242/2013-tus-sonbahar-donemi-idare-mahkemesi-karariyla-iptal-edilen-6-soru-sonrasi-yapilacak-islemler-hakkinda-aciklama-26012015.html
For 2014: https://dokuman.osym.gov.tr/pdfdokuman/2014/TUSsonbahar/YAciklama04072017.pdf

who did not apply for re-placement would be disregarded during this process.[5] In the second step, doctors would decide whether to accept the re-placement outcome or retain their original placement. Regardless of the re-placement results, candidates would have the option to continue with their initial placement[6].

This announcement is grounded in legal principles. The doctrine of the acquired rights asserts that once a right has been granted, subsequent legislation cannot revoke or diminish it. In essence, if an individual possesses a legal right, it remains unaffected by later laws or regulations that would reduce or eliminate it. In this context, the acquired right is the initial placement of the candidates. Despite potential discrepancies in the exam scores that originally led to their placements, the candidates were assigned to their programs based on valid regulations at the time, and any mistakes in the process are not attributable to the candidates themselves. Formally:

Definition 2. *A mechanism ϕ* ***preserves the acquired rights of the existing residents*** *if for any fixed problem $(D, \succ_D, H, q_H, E_H, s_D)$, $\nexists d \in D$ such that $d \in E_h$ for some h and $h \succ_d \mu^\phi(d)$.*

Verbally, preserving acquired rights ensures that initially assigned doctors are not re-placed into programs less favorable than their initial assignments. If feasible, they may be moved to programs they prefer over their initial choices. In essence, this ensures that initially assigned doctors will be at least as well off, if not better, with the re-placement outcome.

The main purpose of the re-placement mechanism is to restore fairness, particularly for those doctors whose rankings have improved following the recalculation of scores. Since the initial score calculation has been identified as flawed, not conducting a re-placement would perpetuate clear *fairness* violations. However, the traditional definition of fairness proves overly strict when acquired rights are taken into consideration. Indeed, in some extreme instances, reconciling fairness with acquired rights requires completely disregarding target capacities, underscoring the complex interplay between maintaining equitable treatment and respecting previously established placements. We demonstrate such a case as the proof of the proposition below.

Proposition 1. *Ensuring fairness in a re-placement mechanism while preserving acquired rights is not feasible unless the capacity q_h equals the size of the total set of doctors D for all programs.*

Example 1. *Suppose there is a single program $H = \{h\}$ and doctors $D = \{d_1, ...d_m\}$ are ranked according to their indices with respect to their recalculated scores. Furthermore, suppose $E_h = \{d_m\}$, indicating that the doctor with the lowest recalculated score is the existing resident at the only program. If all doctors prefer the program h over remaining unemployed, any doctor who remains unemployed will have justified envy towards d_m, who will be placed at h due to acquired rights. To eliminate this,*

[5] In the re-placement of 2014, doctors who did not update their preference list would be included based on their initially submitted preference list. This minor difference does not affect the analysis in this paper.
[6] https://dokuman.osym.gov.tr/pdfdokuman/2016/TUSSONBAHAR/YerlestirmeAciklamalar.pdf

the capacity of program h would need to be increased to accommodate all doctors.

Nevertheless, extending the capacities of all programs to the number of candidates is often impractical in a re-placement mechanism. In fact, due to the peculiar setup with acquired rights, imposing fairness has different implications. To illustrate this, consider a simplified version of the example used in the proof above, with three doctors and one program.

Example 2. *Doctors $\{d_1, d_2, d_3\}$ are ranked according to their recalculated scores, and d_3 is the only existing doctor at program h, which has a target capacity of 1. In line with the proposition, to satisfy fairness, all three doctors would need to be admitted to the program when d_3 receives a seat due to her acquired right.*

Consider the scenario in which the score calculation had been correct in the very beginning. In that case, d_1 would receive the only seat at h based on her superior exam performance. In the re-placement problem, d_3 also receives a seat due to acquired rights, which triggers envy by d_2. Since d_2 has a higher score than d_3, this envy would be justified unless d_2 receives a seat as well. In other words, fairness results in d_2 claiming a seat that has foundations neither in her own merit nor in exogenously defined acquired rights. Therefore, the standard fairness notion is arguably too strict in environments with acquired rights.

In response, Aygün and Bilgin (2023) proposes a more relaxed fairness notion that does not justify doctors' envy solely based on another candidate's acquired right. This approach aims to balance better individual merit and the legal complexities introduced by previous errors.

Definition 3. *Mechanism ϕ satisfies **capacity respecting fairness (q-fairness)**: $\nexists (d,h) \in (D \times H)$ such that $h \succ_d \mu^\phi(d)$ & $z(d|s_{\mu^\phi(h)\cup\{d\}}, \mu^\phi(h) \cup \{d\}) \leq q_h$.*

The standard fairness definition is contingent solely upon comparisons between doctors, thereby justifying envy when a lower-scoring doctor secures a placement. Nevertheless, q-fairness introduces a nuanced consideration of target capacities. Under q-fairness, for a doctor's envy towards a lower score candidate to be justified, the envious doctor must also rank within the top-q_h candidates of the program. In other words, q-fairness allows for fairness violations if a doctor does not rank sufficiently high among the program's placements, thereby incorporating capacity constraints into considerations of fairness. Particularly, q-fairness has a similar flavor to the fairness across same types in Ehlers et al. (2014), in the sense envy of a new candidate towards an existing resident is not justified unless she is ranked within the target capacity.

Proposition 2. *The CASP Re-placement Mechanism violates fairness. Nevertheless, it satisfies q-fairness.*

Proof. Consider the setup in Example 2. In the first part of the CASP Mechanism d_1 is admitted, in the second part d_3 returns to her position in h. Therefore, μ^{CASP}

emerges as $\mu^{CASP}(h) = \{d_1, d_3\}$. Since d_2 has higher score than d_3, we say CASP violates fairness. Under the re-placement mechanism of CASP, if doctor d cannot enter program h, there are at least q_h many doctors with higher scores in the application pool. Lower-score doctors may only be admitted due to their acquired right and create additional seats if the capacity is full, but crucially, they do not displace the higher-score doctors. Therefore, we can conclude that doctor d, who is by assumption rejected by h is not ranked within the top q_h of the program, concluding q-fairness of the CASP Mechanism.

□

Another key property when analyzing mechanisms is non-wastefulness. As the term verbally suggests, this property implies that no program seat is left vacant as long as there are doctors who prefer them. Formally:

Definition 4. *Mechanism ϕ is **non-wasteful** if $\forall(d,h) \in (D \times H)$, $h \succ_d \mu^\phi(d) \implies |\mu^\phi(h)| \geq q'_h$.(Balinski and Sönmez (1999))*

The standard fairness notion of the literature, also known as no justified envy, does not imply non-wastefulness. Typically, non-wastefulness is viewed as a separate, additional property that ensures all available resources are fully utilized. Nevertheless, it turns out that while q-fairness adjusts for capacity constraints, it also implies non-wastefulness as shown by Aygün and Bilgin (2023). In fact, without the interference of acquired rights, q-fairness is equivalent to fairness and non-wastefulness combined.

The CASP Mechanism doubles the target capacity of programs for some preference reporting. If the program capacity is doubled, half of the admitted doctors are ones with acquired rights and the other half are new doctors. This is naturally capacity respectingly fair and has a fairness restoring flavor to the new candidates.

Nevertheless, in some situations, the CASP Mechanism increasing capacities might be redundant. To illustrate this, we present another simplistic example below:

Example 3. *Consider a re-placement problem with 3 doctors and 3 programs given below:*

$$\begin{aligned} &D = \{d_1, d_2, d_3\}, && s_{d_1} > s_{d_2} > s_{d_3} \\ &H = \{h_1, h_2, h_3\}, && q_{h_i} = 1 \quad \forall i \\ &E_{h_i} = \{d_i\} && \forall i = 1, 2, 3 \end{aligned}$$

In addition, suppose doctors submit new preference lists as follows:

$$\begin{aligned} &d_1 : h_1 \\ &d_2 : h_1 \\ &d_3 : h_1 \succ h_2 \succ h_3 \end{aligned}$$

With these preference lists, the first step of the CASP Mechanism places d_1 to h_1 and d_3 to h_2, leaving d_2 unassigned. Suppose in the second step, d_2 uses her acquired

right to return to h_2. In that case, the CASP Mechanism places both d_2 and d_3 to h_2, exceeding its capacity and leaving h_3 vacant. Furthermore, d_3 is receiving a seat at h_2 neither due to her merit (d_2 has a higher score) nor her acquired right.

The example above shows how existing residential candidates may create additional seats and shift inbetween programs. In addition, consider now introducing another doctor, d_4, who had no initial assignment and thus no acquired rights. In the following example, we demonstrate how this can exacerbate capacity issues.

Example 4.

$$\begin{aligned} &D = \{d_1, d_2, d_3, d_4\}, && s_{d_1} > s_{d_2} > s_{d_3} > s_{d_4} \\ &H = \{h_1, h_2, h_3\}, && q_{h_i} = 1 \quad \forall i \\ &E_{h_i} = \{d_i\} && \forall i = 1, 2, 3 \end{aligned}$$

The preference list submitted for the re-placement is the same as before:

$$\begin{aligned} &d_1 : h_1 \\ &d_2 : h_1 \\ &d_3 : h_1 \succ h_2 \succ h_3 \end{aligned}$$

In this case, if d_4 submits a ranking of the programs as $h_1 \succ h_2 \succ h_3$, she gets placed at h_3. This effectively fills all programs but results in h_2 having one extra resident beyond its target capacity. This scenario not only restrains h_2 by creating an extra seat for a lower-score candidate than its existing doctor (who is still placed there in the end) but also places d_4 at h_3, who has a lower score than h_3's original resident d_3.

The unintended creation of excess capacity and the resulting shifts in placements have multiple detrimental effects. Firstly, it imposes a financial burden on the government, as the excess placements such as d_4 in Example 4 stretch the budget beyond its planned limits. Secondly, from the standpoint of individual residency programs, the influx of additional residents than the program is designed to accommodate can compromise the quality of educational experiences. Overcrowding at h_2 may hinder effective training and decrease the educational value for each resident, for both d_2 and d_3 in the example. Thirdly, the movement of existing doctors into new programs represents a loss of investment for their original programs (h_3 loses d_3), which have already spent resources training them since the beginning of their residencies. This not only weakens the workforce in these initial placements but can also lead to skill shortages and operational challenges.

Moreover, this influx of additional residents can exacerbate existing complications within the program's application pool, creating a domino effect that disproportionately affects less preferred programs. Additionally, there is a known preference among residency applicants in Turkey for urban over rural programs. The disruption caused by re-placement and over-employment in urban centers exacerbates the imbalance between rural and urban healthcare facilities, potentially leading to understaffing and

decreased healthcare quality in rural areas. Furthermore, the over-employment during re-placement periods might result in fewer vacancies in subsequent years for these more preferred programs. This reduction in openings can diminish the overall quality of these programs and create a disadvantage for future applicants hoping to enter them. Such a cycle could have long-term implications on the attractiveness and effectiveness of the nation's medical training hubs, ultimately impacting the healthcare system at large.

Despite its intention to address unfairness stemming from errors in score calculation, the CASP Mechanism can inadvertently extend beyond its remedial purpose, as illustrated in both Example 3 and 4, where d_2 returns to its initial assignment h_2 in the second step using her assignment guarantee. This return leads h_2 to exceed its capacity by accommodating both d_2 and d_3, despite d_2 being the candidate with both a higher score (merit) and an assignment guarantee at that program. Without any injustice towards d_3 or legal constraints justifying this excess, the rationale for creating an additional seat at h_2 for d_3 remains unclear.

To address and prevent such unwarranted capacity expansions, Aygün and Bilgin (2023) proposed an additional axiom, avoiding unnecessary slots (AUS). This axiom mandates that doctors are placed in programs based solely on their merit or their own acquired rights. Essentially, if a doctor is placed in a program without an acquired right, she must be sufficiently highly ranked to justify her placement based purely on merit. Formally:

Definition 5. *Mechanism ϕ* ***avoids unnecessary slots*** *(or satisfies AUS) if for any pair $(d,h) \in (D \times H)$, $\mu^\phi(d) = h$ and $d \notin E_h \Rightarrow z(d|s_{\mu^\phi(h)}, \mu^\phi(h)) \leq q_h$.*

As discussed in Aygün and Bilgin (2023), the axioms of q-fairness and AUS are proposed to harmonize doctors' preferences, program preferences, target capacities, and acquired rights. While the axioms might appear similar, their implications diverge significantly. For instance, assigning each doctor to their most preferred program would straightforwardly preserve acquired rights and align with q-fairness and fairness (as there would be no envy). Yet, it could potentially lead to unnecessary slots, thus violating the AUS axiom. Conversely, limiting seat allocations solely to doctors with acquired rights would mitigate the creation of unnecessary slots but could raise fairness apprehensions.

In the absence of assignment guarantees, the usual simple serial dictatorship (and the doctor proposing deferred acceptance algorithm) naturally adheres to q-fairness (also fairness) while also avoiding unnecessary slots. However, in the current problem with acquired rights, the CASP Mechanism satisfies q-fairness but violates AUS by possibly creating seats for doctors without merit or acquired rights. In the following section, we propose an alternative mechanism and compare it to the CASP Mechanism from the perspective of these axioms.

4 An Alternative: Acquired Rights Adjusted Serial Dictatorship (AR-SD)

With the aim of preventing redundant capacity deviations, we propose another mechanism. The mechanism will be an adjustment of the simple serial dictatorship, which will also take the acquired rights into consideration. Because of this adjustment, we call the mechanism the Acquired Rights Adjusted Serial Dictatorship (AR-SD). For any given re-placement of residents matching problem, the mechanism proceeds as follows:

- Step 0: Rank the doctors who applied for the re-placements ($d \in D$) according to their recalculated scores. Let $D = \{d_1, d_2, ..., d_n\}$ be ranked accordingly and for any program h, set $q'_h(0) = q_h = q^0_h - m_h > 0$.
- Step k: Place d_k to her most preferred program among the programs which have $q'_h(k-1) > 0$ and her initial placement. Denote the program that d_k is placed to by h_k (if there is no such program, leave d_k unemployed and proceed with Step $k+1$). Decrease h_k's capacity by 1, $q'_{h_k}(k) = q'_{h_k}(k-1) - 1$. If she is an existing doctor and the program has already depleted its capacity, keep the remaining capacity as before, $q'_{h_k}(k) = 0$. For all other programs $h_j \neq h_k$, keep the capacity the same, i.e. set $q'_{h_j}(k) = q'_{h_j}(k-1)$.

Similar to the CASP Mechanism, AR-SD violates fairness as it does not abolish the target capacities altogether. However, it satisfies q-fairness[7] and thus restores fairness for candidates who would rank within the target capacities of programs. Furthermore, it preserves acquired rights[8], which is an essential consideration from a legal standpoint. In contrast to the CASP Mechanism, AR-SD does not create unnecessary slots for applicants who neither possess a sufficiently high merit ranking nor have acquired rights stemming from the initial placements[9]. Moreover, the following proposition shows that AR-SD stands out as the unique mechanism that satisfies these axioms when doctors' ranking is uniformly determined for all programs, making it a strong candidate for implementation over the two-step CASP Mechanism in the re-placement of medical residents.

Proposition 3. *In the re-placement problem with acquired rights, AR-SD is the unique mechanism that preserves acquired rights, is q-fair, and avoids unnecessary slots.*

As the formal proof can be found in Appendix B, it relies on the fact that q-fairness, AUS, and preserving acquired rights correspond to some form of stability within this context. Furthermore, the recalculated scores establish a common ranking of doctors from the programs' perspective. Therefore, the adjusted serial dictatorship is the unique mechanism that produces the stable matching.

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[7] Any candidate whose turn is to pick is admitted as long as there are vacant capacities, thus $h \succ_d \mu^\phi(d) \Rightarrow z(d|s_{\mu^\phi(h)\cup\{d\}}, \mu^\phi(h) \cup \{d\}) > q_h$.

[8] If a candidate whose turn is to pick has their existing program as their best alternative among the remaining programs, they are assigned there independent of the program's remaining capacity.

[9] By definition of the mechanism, candidates are placed to programs only if they are ranked sufficiently high (such that the program has remaining vacancies) or they are existing residents.

To address the unfairness caused by score miscalculations while also preserving the acquired rights from initial placements, creating some level of excess capacity in certain programs becomes unavoidable. However, the aim is to do this to a minimal extent and create as least additional capacities as possible. Recall that the CASP Mechanism doubles the target capacity of programs for some preference reporting. The doubling of target capacity is still possible with AR-SD for some preference reporting and some recalculation of scores.

Nonetheless, there is a significant difference between the two mechanisms regarding how they double these capacities. When the target capacity is doubled under the CASP mechanism, it might be that the top q_h candidates are doctors with acquired rights at h, and the bottom q_h with lower scores are new residents. For instance, this happens when the existing residents of h omit the program in their updated preference list as in Example 3). On the contrary, when the target capacity is doubled under AR-SD, the top q_h candidates are new to the program, and the bottom q_h are existing residents. This happens because the number of available seats decreases over time during AR-SD, independent of whether the assigned candidates are existing residents.

In other words, imposing AUS is one way to minimize deviations from the target capacities for q-fair mechanisms that preserve acquired rights as in Aygün and Bilgin (2023). As q-fairness ensures that no merit-deserving candidate will be left out, acquired rights are preserved so legally deserving candidates are not left out. Avoiding unnecessary slots, on the other hand, ensures that the merit and the acquired right candidates are the only ones who will receive the seats, ensuring minimal deviation.

5 Strategy-Proofness

In any placement mechanism, it is important to analyze the strategic incentives of the agents. The use of a centralized exam score for both initial placements and the re-placement procedure (albeit resulting in different rankings) establishes a transparent ranking of individual doctors for all residency programs. Additionally, the target capacities of these programs are determined centrally and are common knowledge to all involved parties. Consequently, our analysis concentrates on the strategic behavior of residency candidates, particularly the incentives they encounter when reporting their preference lists.

Given the regulatory framework for the re-placement process, we can analyze the weakly dominant strategy for doctors under the CASP Mechanism. The first stage of the CASP Mechanism involves a doctor-proposing simple serial dictatorship mechanism, which is strategy-proof for doctors according to Roth (1985). However, the option for doctors to return to their initial placements using their acquired rights adds complexity to this analysis.

Firstly, a weakly dominant strategy for doctors in this re-placement process is to participate in the re-placement. A doctor can choose to accept the outcome of the re-placement if it is more favorable than their initial placement, or they can choose to retain their initial placement if it is not.

Secondly, doctors generally prefer to have more colleagues with similar degrees within each program. This preference stems from the desire for a reduced workload per person and fewer on-call nights each month.[10]

Consequently, the weakly dominant strategy for doctors entails excluding the current placement from the updated preference list. This action makes the slot available to another candidate while allowing the initial resident the option to return using their acquired rights, possibly gaining an additional colleague in the process.

An easy way to implement the components of the weakly dominant strategy is the following: Doctors update their preference lists, adding only a few highly demanded programs while excluding their current placements. This approach increases the likelihood that they will either remain unassigned during the re-placement process or be placed into a more preferable program. Subsequently, they can exercise their acquired rights to reclaim their initial placements. Should another doctor be assigned to that program in the meantime, they effectively gain a colleague.[11]

The problem regarding the strategic manipulation techniques under the CASP Re-placement Mechanism stems mainly from the two-step nature of the algorithm. In these conseqent steps, agents may exhibit inconsistencies in their preferences. As indicated by the forum entry, doctors may return to their initial assignment in the second step despite deeming it unacceptable in the first step of the algorithm. In contrast, AR-SD operates through a one-step procedure where candidates accept the outcome without negotiation. Moreover, acquired rights are automatically accomodated with respect to the reported preferences, eliminating the need for a second step. The following proposition shows that the mechanism is strategy-proof.

Proposition 4. *Unlike the CASP Re-placement Mechanism, AR-SD is strategy-proof.*

Unlike the CASP Mechanism, AR-SD operates through a streamlined one-step procedure. This one-step procedure is essentially a deferred acceptance algorithm in which the induced choice function satisfies substitutes and the Law of Aggregate Demand (LAD) conditions, with further technical details available in the Appendix B. Consequently, AR-SD is inherently strategy-proof, eliminating the complexities and potential strategic manipulations associated with multi-step procedures like the CASP Mechanism.

5.1 Restoring equivalence between the CASP Mechanism and AR-SD

The discrepancy between the CASP Mechanism and AR-SD primarily stems from doctors omitting their initial placements in their updated lists, but returning to their initial placements in the second step of the CASP mechanism. This manipulation

[10] The preference on the number of colleagues hints at an underlying many-to-one matching with contracts structure as in Hatfield and Milgrom (2005) and Hatfield and Kojima (2008) Nevertheless, this preference does not change our analysis beyond the incentives discussed in this section.

[11] Anecdotal evidence indicates that doctors have recognized and could implement this weakly dominant strategy. For instance, discussions on this topic have been observed on professional forums: https://www.drtus.com/forum/viewtopic.php?f=163&t=127472&start=135#p3432230 (For the unofficial translation of the forum entry, see AppendixC)

not only undermines the strategy-proofness of the re-placement mechanism but also leads to significant deviations from the target capacities. From a matching theoretical perspective, excluding a program from one's preference list typically signals its unacceptability, suggesting that a candidate would prefer remaining unassigned rather than being placed in that program, thus making the program individually irrational. However, in this context, candidates are not actually resigning from their programs; instead, they opt to continue in their initial placements if they find themselves unassigned during the re-placement process. Given this, it would be reasonable to assume the acceptability of the programs at the time of re-placement.[12]

Furthermore, the allowance for candidates to revise their preference lists before re-placement implies that any program ranked higher than a doctor's initial program clearly indicates a stronger preference for that new program. [13]

In light of these observations regarding the strategic manipulation of preferences and its impact on the re-placement outcome, we propose a new policy for re-placements. In addition to the current regulation that allows candidates to apply for re-placements and update their preference lists, the following alterations to the regulation should be considered:

1. **Automatic Inclusion of Current Placement:** If a candidate does not include their initial placement in their updated preference list, it will be automatically appended to the bottom of the list.
2. **Mandatory Transition to More Favorable Placements:** If a candidate gets placed in a program declared more favorable than their initial placement in the updated preference list, they must adhere to the re-placement result and transition to the new residency.
3. **Truncation of the Preference List after the Current Placement:** If a candidate includes more programs following their initial placement in their updated preference list, those programs will be erased from the list.

Proposition 5. *Under the three adjustments of "Automatic Inclusion of the Current Placement", "Mandatory Transition to More Favorable Placements", and "Truncation of the Preference List after the Current Placement", the CASP Re-placement Mechanism becomes equivalent to the AR-SD when doctors submit their preferences according to the weakly dominant strategy.*

Proof. These additional adjustments would not interfere with the acquired rights since the adjustment would only force the candidates to comply with the re-placement as long as the outcome is declared more favorable than the acquired right. On the other hand, they would prevent strategic manipulation by omitting the initial placement. Furthermore, only appending the initial placement would not prevent strategic manipulation. The omission could then be mimicked by putting much less favorable

[12] In fact, the effective outside option during the re-placement is the initial placement.

[13] This system design is intended to provide flexibility and adapt to the evolving preferences of candidates, thereby ensuring a better alignment between doctors' preferences and their actual placements.

programs in between. The compliance rule for more favorable programs than the initial program disables manipulation techniques. Hence, agents are first assigned to programs according to the doctor-proposing DA with respect to their truthful preferences. Observe that if they are not placed at least to their current assignment via their merit ranking, they are left unassigned. In the second step, existing doctors who did not achieve a better outcome return to their initial assignments, creating additional capacities. Therefore, under these adjustments, the CASP Re-placement mechanism only creates additional capacities for existing doctors who cannot claim the seats via their recalculated scores, re-aligning with the AUS property.

Therefore, the weak dominance-adjusted CASP Re-placement Mechanism is equivalent to AR-SD.

□

We introduce AR-SD as a potential alternative mechanism that stands out as a viable option for implementation, given its q-fairness and avoidance of unnecessary slots properties. Recall that AR-SD is the unique mechanism satisfying these properties along with preserving acquired rights, therefore emerging as the mechanism that minimizes the deviation from the target mechanism while satisfying q-fairness and preserving acquired rights.

However, oftentimes, it is not feasible for the designer to completely change the mechanism. In that case, we propose three modifications to the current system: "Automatic Inclusion of the Current Placement", "Mandatory Transition to More Favorable Placements", and "Truncation of the Preference List after the Current Placement". By incorporating these adjustments, the CASP Re-placement Mechanism will mirror AR-SD, provided that doctors adhere to the weakly dominant strategy of submitting truthful preferences. This alignment maintains the desirable characteristics without necessitating a total overhaul of the current system.

Furthermore, the modifications are user-friendly, intuitive, comprehensible, and straightforward to execute, thereby avoiding potential legal complexities. As a result, they provide a feasible and minimal approach to enhancing the existing system without compromising its basic framework.

6 Conclusion

This paper studies a re-placement mechanism employed by Turkey's Center for Assessment, Selection, and Placement to assign doctors to residency programs, necessitated by a miscalculation of scores that was concluded after the initial placement of doctors. Legally, the initial placement of candidates constitutes an acquired right, meaning that any re-placement mechanism must adhere to the principle that candidates can only be reassigned to programs they prefer over their initial assignment.

The re-placement mechanism introduced by CASP involved a two-step serial dictatorship. In this mechanism, candidates who wish to participate can update their preference lists for the re-placement process. In the first step, the simple serial dictatorship mechanism would process proposals based on accurate scores. Subsequently, in the second step, doctors would decide whether to accept their re-placement outcome or adhere to their initial assignment by exercising their acquired rights.

For some residents re-placement problems, the CASP Mechanism may violate fairness by resulting in justified envy for some doctors towards lower-scored candidates. This happens particularly in cases where the rankings change drastically due to recalculation, i.e., when the worst candidates according to the accurate scores, have acquired rights. Nevertheless, the CASP Mechanism ensures q-fairness, a more relaxed fairness concept that eliminates justified envy among candidates ranked within the target capacity of programs. Moreover, it is non-wasteful and upholds acquired rights in accordance with legal mandates.

Furthermore, under the CASP Mechanism, doctors' preference for more colleagues at residency programs exposes their weakly dominant strategy: doctors update their preference list and exclude their initial assignment in the updated list. By doing so, they might be able to attract new colleagues to their initial assignment, which is what they prefer due to a reduced per capita workload.

In problems involving acquired rights, ensuring even q-fairness without generating additional seats is unfeasible. Nevertheless, the CASP Mechanism unintendedly generates extra seats for candidates lacking both acquired rights and sufficiently high merit. Put differently, the CASP Mechanism violates the principle of avoiding unnecessary slots (AUS). To address this inadvertent surplus capacity, we propose another mechanism, the Acquired Rights Adjusted Serial Dictatorship (AR-SD) and compare it with the CASP Mechanism.

In the re-placement problem with acquired rights, AR-SD stands out as the sole mechanism that upholds acquired rights while simultaneously meeting the criteria of q-fairness and AUS. Additionally, it minimizes deviations from target capacities compared to other mechanisms that are both q-fair and preserve acquired rights. Finally, we propose a modification to the existing mechanism, aiming to align the CASP Mechanism with AR-SD, thereby mitigating potential manipulation by doctors. This adjustment would require doctors to accept the re-placement outcome if they deemed it more preferable than their acquired right in their updated list, ensuring compliance with the mechanism.

Appendix A One-step serial dictatorship equivalent of the CASP Mechanism

Under the weakly dominant strategy of updating the preference list and omitting the initial placement by doing so, the mechanism used by CASP for the re-placement works as follows:

- Step 0: Rank the doctors who applied for the re-placements ($d \in D$) according to their recalculated scores. Let $D = \{d_1, d_2, ..., d_n\}$ be ranked accordingly and for any program h, set $q_h(0) = q_h^0 - m_h > 0$.
- Step k: Place d_k to her most preferred program among the programs which have $q'_h(k-1) > 0$ and her initial placement. If she is new to the program, then decrease that program's remaining capacity by 1, $q'_h(k) = q'_h(k-1) - 1$. If she is an existing doctor, keep the remaining capacity as before, $q'_h(k) = q'_h(k-1)$.

In the following, we analyze the properties of this one-step equivalent of the CASP Mechanism. For convenience, we use the deferred acceptance equivalent of the serial dictatorship mechanism described above to do so. In line with the peculiarities of the re-placement problem due to the acquired rights, the modified deferred acceptance algorithm differs from its usual counterpart in the sense that the choice procedure at each step is special. We call the choice function used at each step by programs following doctor proposals the Modified Choice Function, C_h^M.

Similar to the choice functions in the Cadet-Branch Matching problem in Sönmez and Switzer (2013), the modified choice function of CASP, C_h^M, which is a selection rule of a program from an application pool and works as follows:

1. Rank the doctors in Y according to their recalculated scores.
2. Add all doctors $d \in (E_h \cap Y)$ to $C_h^M(Y)$.
3. Based on their recalculated rankings, add from remaining doctors $d \in (Y \setminus E_h)$ one-by-one to $C_h^M(Y)$ until either (q'_h) doctors from $(Y \setminus E_h)$ are added to $C_h^M(Y)$ or all doctors are considered.
4. Terminate the procedure, reject all other doctors.

Knowing C_h^M, the one-step DA equivalent of the CASP Mechanism proceeds as follows: *Step 1*: Each doctor proposes to her first choice. Each program tentatively assigns its seats to the doctors in its application pool according to C_h^M.
Step k: Each doctor who was rejected by any program in the previous step proposes to her next choice. Each program considers the doctors it has been holding with the new applicants and tentatively assigns its seats to these doctors according to C_h^M.

No different than the usual deferred acceptance algorithm, the process concludes when no further proposals are made, and the programs are matched to doctors whose proposals they are holding.

Before proceeding with the properties of this one-step mechanism, we show the equivalence between the one-step SSD equivalent of the CASP Mechanism and the deferred acceptance algorithm described above in the next proposition.

Proposition 6. *The one-step SSD equivalent of the CASP mechanism is equivalent to the deferred acceptance algorithm induced by the modified choice function* C_h^M.

Proof. To show that the two mechanisms are equivalent, we need to show that for all doctors, their assignment under one mechanism is the same as their assignment under the other. Suppose the mechanisms are not equivalent. Let d be the highest-ranked doctor according to the recalculated scores, whose assignment is different under the two mechanisms. Let her assignment be h under the DA and h' under the SSD.
First, let her be better off under the DA than under the SSD. Since she couldn't get a seat in h under the SSD, we know she is not an existing doctor for h. Furthermore, there must be q_h new candidates in h under the SSD who are ranked higher than d. Furthermore, since d is the highest-ranked doctor, whose assignment is different under the two mechanisms, those doctors are also placed at h under the DA. Then there is no capacity left for d in h under the DA either. Otherwise, it would violate the individual rationality condition of the outcome of the DA for h under C_h^M.
Second, let her be better off under the SSD than under the DA. There must be $q_{h'}$ new candidates in h' under the DA, who are ranked higher than d, otherwise (d, h') would be a blocking pair, which contradicts the stability of the outcome of the DA under C_h^M. Furthermore, since d is the highest ranked doctor, whose assignment is different under the two mechanisms, those $q_{h'}$ new doctors are also placed at h' under the SSD. Then there is no capacity left for d in h' under the SSD either.
Since she is neither better nor worse off and doctors have strict preferences, $h = h'$ □

Properties of C_h^M

Another important mechanism feature is whether there is room for manipulation by the agents participating in the placement procedure. For deferred acceptance algorithms, stability and strategy-proofness can be proven using the choice function properties as shown by Hatfield and Milgrom (2005), Hatfield and Kojima (2010), Aygün and Sönmez (2013). The three important properties are the substitutes condition, the law of aggregate demand, and the irrelevance of rejected contracts. Below are the definitions of the properties. We also show that C_h^M satisfies them.

Definition 6. *Elements of* Y *are* ***substitutes*** *for program* h *if for all subsets* $Y' \subset Y'' \subset D$ *we have* $Y' \setminus C_h(Y') \subset Y'' \setminus C_h(Y'')$. *(Hatfield and Milgrom (2005))*

The substitutes condition requires that the rejection set expands (weakly) as the set expands. Intuitively, it implies that there are no complementarities between doctors. Suppose C_h^M rejects d in an application pool Y' for h. It would mean that at least q_h doctors in this pool have higher scores than d, and d is not an existing candidate. In all other pools Y'' that contain Y', d cannot possibly have a higher ranking with her score, which would imply rejection in bigger sets, concluding subsitutes.

Definition 7. *The preferences of program* h *satisfy the* ***law of aggregate demand (LAD)*** *if for all* $Y' \subset Y'' \subset D$, $|C_h(Y')| \leq |C_h(Y'')|$. *(Hatfield and Kojima (2010))*

Law of aggregate demand implies that the chosen set from an application pool is responsive to the demand for that program. Observe that C_h^M accepts at most twice the capacity q_h, half of which are new doctors with high scores and the other existing doctors. As the application pool expands, existing doctors keep being admitted, and new doctors only get replaced by other new doctors with higher scores. Therefore, the chosen set weakly expands as the application pool expands.

Definition 8. *Given a set of doctors D, a choice function satisfies the* ***irrelevance of rejected contracts (IRC)*** *if and only if:*
$\forall Y \subset D, \quad \forall z \in D \setminus Y \qquad z \notin C(Y \cup \{z\}) \implies C(Y) = C(Y \cup \{z\})$.*(Aygün and Sönmez (2013))*

The IRC condition requires that the removal of not chosen (rejected) contracts from the application pool does not affect the chosen set. Suppose d is being rejected in an application pool Y for h. This implies that there are at least q_h candidates with higher scores and d is not an existing doctor for h. When d is removed from the application pool, the same top q_h doctors, as well as the existing doctors with acquired rights will still be chosen, concluding IRC for C_h^M.

As shown by Aygün and Sönmez (2013), substitutes and IRC together imply the existence of a stable matching. Furthermore, Substitutes and LAD together imply IRC, thus resulting in the existence of a stable matching as well. As shown by Hatfield and Milgrom (2005) and Hatfield and Kojima (2010), the doctor proposing deferred acceptance algorithm then produces the stable matching and strategy-proof for the doctors.

Even though the choice function C_h^M used in the DA satisfies substitutes and LAD, it is only stable with respect to the reported preferences, and satisfying strategy-proofness is not straightforward. The reason for that is the DA is the mechanism equivalent to what CASP implements under the weakly dominant strategy of doctors. In fact, the underlying mechanism is a two-step procedure, which involves a usual DA in the first step and a return step for the existing candidates in the second step due to acquired rights. As discussed in earlier chapters, this leads doctors to omit their current programs in the re-placements, which violates strategy-proofness.

Appendix B Equivalence Between AR-SD and AGAM

In the generalized placement problem with assignment guarantees[14], where a centralized exam score does not necessarily determine programs' preferences, Aygün and Bilgin (2023) introduces the Assignment-Guarantees-Adjusted Mechanism (AGAM) to prevent excess capacity creation. The mechanism essentially is a deferred acceptance algorithm that induces the Assignment-Guarantees-Adjusted Choice Function at each step.

[14] Assignment guarantees determine a lower bound on candidates' assignments. Yet, the source for this lower bound is not necessarily acquired rights.

The re-placement problem involving acquired rights is a specific case within the broader model proposed by Aygün and Bilgin (2023), where programs exhibit uniform preferences across individual doctors due to the (recalculated) centralized exam score. Consequently, we can contextualize the AGAM within this model. In fact, the AR-SD is equivalent to AGAM where program preferences are defined by the centralized exam score. In this section, we describe AGAM in the context of the re-placement of residents matching problem, and prove the equivalence to AR-SD.

For any application pool $D' \subset D$, the Assignment-Guarantees-Adjusted Choice Function (shortly AGA Choice Function, denoted by C_h^A) defines a selection rule of program h and proceeds as follows:

1. Rank all the doctors in D' according to preferences of h.
2. Based on their rankings, add doctors one-by-one to $C_h^A(D')$ until q_h is full or all doctors are considered.
3. Add all the remaining doctors such that $d \in (E_h \cap D')$ to $C_h^A(D')$.
4. Terminate the procedure, reject all other doctors.

Having defined the Assignment-Guarantees-Adjusted Choice Function, AGAM is the deferred acceptance algorithm, in which programs choose according to C_h^A at each step. Formally, the Assignment-Guarantees-Adjusted Mechanism proceeds as follows:

Step 1: Each doctor proposes to her first choice. Each program tentatively assigns its seats to the doctors in its application pool according to the AGA Choice Function.

$\vdots$

Step k: Each doctor who was rejected by any program in the previous step proposes to her next choice. Each program considers the doctors it has been holding so far, together with the new applicants, and tentatively assigns its seats to the doctors in its new application pool according to the AGA Choice Function.

Due to the simplicity provided by a centralized exam score determining a common ranking of residential candidates, a deferred acceptance algorithm can easily be represented by a serial dictatorship mechanism. In fact, AR-SD is equivalent to AGAM in the residents re-placement problem.

Proposition 7. *In the re-placement of residents matching problem, AR-SD is equivalent to AGAM. That is, for all $d \in D$ and $h \in H$, $\mu^{AR\text{-}SD}(d) = \mu^{AGAM}(d)$ and $\mu^{AR\text{-}SD}(h) = \mu^{AGAM}(h)$.*

Proof. Similar to the Proof of Proposition 6, we show that all doctors are placed to the same program under AR-SD and AGAM. Suppose otherwise, and assume that d is the highest-ranked doctor who is assigned to different programs under AR-SD and AGAM. Let her placement under AR-SD and AGAM be h and h', respectively. If $h \succ_d h'$, we know she is not an existing doctor for h, since AGAM preserves acquired rights. Furthermore, since AGAM is q-fair, there are at least q_h doctors at h with higher scores than d. Since d is the highest-ranked doctor whose placement is different under the two mechanisms, those doctors are placed to h under AR-SD as well. Therefore, when it is d's turn to pick, there is neither capacity left at h, nor she

has an acquired right to be placed there. If $h' \succ_d h$, we know she is not an existing doctor for h' since AR-SD places candidates in their programs independent of the capacity should the candidates demand so. Moreover, since $h' \succ_d h$ but d not being placed in h' also implies there is no remaining capacity left at h' when it is d's turn to pick. This implies at least $q_{h'}$ doctors with higher scores are placed at h'. This implies d not being admitted to h' under AGAM either. Therefore, $h = h'$. □

In the general case with assignment guarantees, AGAM is the unique strategy-proof mechanism that respects assignment guarantees, is q-fair, and avoids unnecessary slots. In the special case of re-placement under acquired rights with centralized exam scores, the theorem of Aygün and Bilgin (2023) can be further strengthened by the following statement in the main text:

Proposition 3: In the re-placement problem with acquired rights, AGAM is the unique mechanism that preserves acquired rights, is q-fair, and avoids unnecessary slots.

Proof. The proof resembles the general case proof in Aygün and Bilgin (2023). They show that assignment guarantees, q-fairness, and AUS correspond to stability with respect to the AGA choice function. When there is a centralized exam score (recalculated scores in this case), there is a unique stable matching that can be reached via the deferred acceptance algorithm. Since AGAM is the doctor proposing DA, it generates the unique stable matching for every re-placement problem. With AR-SD being equivalent to AGAM, this proof concludes the proof of Proposition 3 as well.

□

Appendix C Online Appendix - Announcements and Translations

CASP Announcements

Below are the announcements for 2010, 2013, 2014, and 2016. We include the unofficial translation for 2016.

TUS: Tıpta Uzmanlık Eğitimi Giriş Sınavı

DUYURU
(19 Aralık 2012)

2010-TUS Sonbahar Dönemi: İlgili Adaylardan Tercih Alınması

Ankara 15. İdare Mahkemesince verilen ve Danıştay 8. Dairesince onanan 2010 TUS Sonbahar Dönemi sınavına ait karar sonrası Sağlık Bakanlığı ve Yükseköğretim Kurulunun ortak talebi doğrultusunda , 2010-TUS Sonbahar Dönemi Sınavına yönelik tercih hakkı olup tercih yapmayan adaylar ile yeniden yapılan değerlendirme sonucu tercih hakkı kazanan adaylardan tercih alınacaktır.

Bu adaylardan tercih alınma işlemleri **19 Aralık 2012** tarihinde saat **18.00'de** başlayacak ve **22 Aralık 2012** tarihinde saat **23.59'da** sona erecektir.

Bu adaylardan alınan tercihler ve 2010-TUS Sonbahar Dönemi genel yerleştirme için alınan tercihler birlikte değerlendirilerek 2010-TUS Sonbahar Dönemi kontenjanlarına göre yerleştirme işlemi yapılacaktır. Yapılacak yerleştirme, 2010-TUS Sonbahar Dönemine ilişkin daha önce yapılmış yerleştirme sonuçlarına göre bir uzmanlık dalına yerleşen adayları etkilemeyecektir. Bu uygulama Sağlık Bakanlığı ve Yükseköğretim Kurulunun ortak kararı ve talebi gereğince yapılmaktadır.

2010-TUS Sonbahar Dönemi sınavına giren bütün adaylar, soru iptali sonrası yeniden yapılan değerlendirme işlemi sonuçları ve yeniden tercih bildiriminde bulunup

bulunamayacakları bilgilerini **https://sonuc.osym.gov.tr/Sorgu.aspx?SonucID=1281** (https://sonuc.osym.gov.tr/Sorgu.aspx?SonucID=1281) İnternet adresinden öğrenebilirler.

İlgili adaylara duyurulur.

ÖSYM BAŞKANLIĞI

MENÜ

Hakkında (/TR,8854/Hakkinda.Html)

+ TUS 1. Dönem (/TR,145/Tus-1-Donem.Html)

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TUS: Tıpta Uzmanlık Eğitimi Giriş Sınavı

DUYURU
(26 Ocak 2015)

2013-TUS Sonbahar Dönemi İdare Mahkemesi Kararıyla İptal Edilen 6 Soru Sonrası Yapılacak İşlemler Hakkında Açıklama

2013-TUS Sonbahar Dönemi Sınavına İlişkin Ankara 10. İdare Mahkemesinin 23.09.2014 tarihli ve 2014/2 E. Sayılı dosyasında bahsi geçen 6 soru hakkında verilen Yürütmeyi Durdurma Kararının uygulanması için yapılan değerlendirme işlemi, yeni oluşan sınav sonuçlarına göre, yeni yasal sorunlar oluşturmamak üzere adaylardan tercihlerinin alınması ve yapılacak yerleştirme yönteminin belirlenmesi konusu ilgili kurumlarla görüşülmüş ve yeniden yapılacak yerleştirme işleminin aşağıdaki doğrultuda yapılması hususunda mutabakata varılmıştır:

Tercihlerin yapılması:

1) 2013-TUS Sonbahar Dönemi Sınavının yeni değerlendirme (6 sorunun iptalinden sonra oluşan) sonuçlarına göre tercih yapma hakkı bulunan tüm adayların tercih işlemi yapabilmeleri için tercih sistemi **26-28 Ocak 2015** tarihleri arasında adayların erişimine açılacaktır.

2) 2013-TUS Sonbahar Dönemi Sınavının yeni değerlendirme (6 sorunun iptalinden sonra oluşan) sonuçlarına göre yapılacak tercih işlemlerinde tercih

sisteminde kullanılacak kontenjan ve koşul tabloları ile yerleştirme kuralları, 2013-TUS Sonbahar Dönemi Yerleştirme işlemleri ile aynı olacaktır.

3) Yeniden değerlendirme sonuçlarına göre (6 sorunun iptalinden sonra oluşan) tercih yapma hakkı kazanan adaylardan isteyenler, bu yerleştirme için tercih yapabileceklerdir.

4) 2013-TUS Sonbahar Dönemi yerleştirme işlemleri için tercih yapan adaylar (bir kuruma yerleşmiş olsalar da) istedikleri takdirde ilk yerleştirmede yapmış oldukları tercihlerini **26-28 Ocak 2015** tarihleri arasında güncelleyebileceklerdir.

5) 2013-TUS Sonbahar Dönemi 3. Yerleştirme için **26-31 Aralık 2014** tarihleri arasında tercih yapan adaylar da 26-28 Ocak 2015 tarihleri arasında tercihlerini güncelleyebileceklerdir.

6) 2013-TUS Sonbahar Dönemi yerleştirme işlemlerinde tercih hakkı olup ilgili dönemde tercih yapmamış adaylar da bu yerleştirme için **26-28 Ocak 2015** tarihleri arasında tercih yapabileceklerdir.

Yerleştirme işlemi:

1) 3. Yerleştirme işlemi için;

a) 2013-TUS Sonbahar Dönemi 3. Yerleştirme için **26-28 Ocak 2015** tarihleri arasında yapılan tercihler,

b) 2013-TUS Sonbahar Dönemi ilk yerleştirme işlemleri için tercih yapan adaylardan, **26-31 Aralık 2014** tarihleri arasında tercih yapmayan ve bu yerleştirme için de tercihlerini güncellemeyenlerin, 2013-TUS Sonbahar Dönemi yerleştirmelerine ilişkin yapmış oldukları ilk tercihleri,

c) 2013-TUS Sonbahar Dönemi 3. Yerleştirme için **26-31 Aralık 2014** tarihleri arasında tercih yapan adaylardan tercihlerini güncellemeyenlerin, **26-31 Aralık 2014** tarihleri arasında yaptıkları tercihleri,

d) Hem ilk yerleştirme için tercih yapan hem de 2013-TUS Sonbahar Dönemi 3. Yerleştirme için **26-31 Aralık 2014** tarihlerinde tercih yapan adaylardan son tercih işleminde (**26-28 Ocak 2015** tarihleri arasında yapılan) tercih yapmayanların **26-31 Aralık 2014** tarihleri arasında yaptıkları tercihleri,

e) 2013-TUS Sonbahar Dönemi 3. yerleştirme işlemi için verilen tercih sürelerinde birden fazla dönemde tercih işlemi yapan adaylardan en son yaptıkları tercihleri (Bu durumdaki adayların önceki tercih sürelerinde/dönemlerinde yapmış oldukları diğer tercihleri işleme alınmayacaktır.)

2) Yerleştirme işlemi, kılavuzda yer alan temel ilke ve kurallar doğrultusunda adayların tercihleri, kontenjan ve koşullar dikkate alınarak yapılacaktır.

Yerleştirme sonuçlarının açıklanması;

1) Yerleştirme sonuçları;

a) 2013-TUS Sonbahar Dönemi 3. Yerleştirme için **26-28 Ocak 2015** tarihleri arasında tercih yapan adaylara,

b) 2013-TUS Sonbahar Dönemi 3. Yerleştirme için **26-28 Ocak 2015** tarihleri arasında tercih yapmayan; ancak, **26-31 Aralık 2014** tarihleri arasında tercihlerini güncelleyen adaylara

açılacaktır.

2) Bu yerleştirmede yerleşen adaylar, yerleştirme sonucunu kabul ettiklerine dair yazılı beyanlarını yerleştirme sonuç belgesinde belirtilecek olan tarihe kadar ÖSYM'ye ulaştırması gerekmektedir. Belirtilen tarihe kadar yazılı beyanlarını göndermeyen adaylar yerleştirme sonucundan yararlanamayacaktır.

3) Yeni tercih bildiriminde bulunmayan ve tercihlerini güncellemeyen adaylara sonuç açıklanmayacak ve bu adaylarla ilgili herhangi bir işlem yapılmayacaktır.

Sonuç Olarak:

1) Bu yerleştirme sonucu oluşacak kadrolara mükerrer yerleştirmeler için ihtiyaç duyulan kadro adedi ilgili kurumlar tarafından açılacaktır.

2) Mahkeme kararının bir yürütmeyi durdurma kararı olması dolayısıyla ileri bir tarihte verilecek aksi/farklı yöndeki bir karara göre işlem yapılması halinde bu yerleştirme sonuçları (sınav sonuçları da dâhil), adaylar açısından bir kazanılmış hak kabul edilmeyecektir.

3) İlk yerleştirmede yerleştirilmiş adaylardan, bu yerleştirmede yerleşsin veya yerleşmesin yerleştirildikleri ilk kurumda kalmak isteyenler, uzmanlık eğitimlerine bu kurumda devam edebileceklerdir.

4) 2015 TUS İlkbahar Dönemi Sınavından başlamak üzere, yapılan sınavlarda kılavuzda belirtilen itiraz süresi dolmadan veya olası mahkeme süreci sonuçlanmadan yerleştirme işlemi yapılmayacaktır.

5) Benzer sorunların oluşmaması için açık uçlu sorularla sınav (yazılı sınav) sistemi TUS'ta da uygulanacaktır.

Adaylara ve kamuoyuna duyurulur.

ÖSYM BAŞKANLIĞI

MENÜ

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+ TUS 2. Dönem (/TR,167/Tus-2-Donem.Html)

Yerleştirme İşlemleri İle İlgili Açıklama

2014-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemleri aşağıda belirtildiği şekilde yürütülecektir:

Tercihlerin yapılması:

1) 2014-TUS Sonbahar Dönemi'nin yeniden değerlendirmesi sonucu oluşan sınav sonuçlarına göre tercih yapma hakkı bulunan tüm adayların tercih işlemi yapabilmeleri için tercih sistemi, 4-10 Temmuz 2017 tarihleri arasında https://ais.osym.gov.tr/ internet adresinden adayların erişimine açılacaktır.

2) Tercih işlemlerinde tercih sisteminde kullanılacak kontenjan ve koşul tabloları ile yerleştirme kuralları, 2014-TUS Sonbahar Dönemi yerleştirme işlemleri ile aynı olacaktır.

3) Yeniden değerlendirme sonuçlarına göre tercih yapma hakkı kazanan adaylardan isteyenler, bu yerleştirme için tercih yapabileceklerdir.

4) 2014-TUS Sonbahar Dönemi yerleştirme işlemleri için tercih yapan adaylar (bir kuruma yerleşmiş olsalar da) istedikleri takdirde ilk yerleştirmede yapmış oldukları tercihlerini 4-10 Temmuz 2017 tarihleri arasında güncelleyebileceklerdir.

5) 2014-TUS Sonbahar Dönemi 3. Yerleştirme için 5-11 Ocak 2016 tarihleri arasında tercih yapan adaylar (bir kuruma yerleşmiş olsalar da) istedikleri takdirde 4-10 Temmuz 2017 tarihleri arasında tercihlerini güncelleyebileceklerdir.

6) 2014-TUS Sonbahar Dönemi yerleştirme işlemlerinde tercih hakkı olup ilgili dönemlerde tercih yapmamış adaylar da bu yerleştirme için 4-10 Temmuz 2017 tarihleri arasında tercih yapabileceklerdir.

7) 2014-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemleri için adayların 4-10 Temmuz 2017 tarihleri arasında yapacağı veya bu tarihlerde güncelleyeceği tercihleri geçerli olacaktır.

Daha önce yapmış olduğu tercihleri aynen kullanmak isteyen adayların Aday İşlemleri Sisteminden tercih güncelleme işlemi yapmaları gerekmektedir. Güncelleme yapmamaları halinde adayların yerleşme hakkı olmayacak ve sonuçları açıklanmayacaktır.

Yerleştirme işlemi:

1) 2014-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemleri için;

a) 2014-TUS Sonbahar Dönemi ilk yerleştirme işlemleri için tercih yapan adaylardan, 5-11 Ocak 2016 tarihleri ile 4-10 Temmuz 2017 tarihleri arasında

tercihlerini güncellemeyenlerin 2014-TUS Sonbahar Dönemi yerleştirmelerine ilişkin yapmış oldukları ilk tercihleri,

b) İlk yerleştirme için tercih yapmayan, 2014-TUS Sonbahar Dönemi 3. Yerleştirme için 5-11 Ocak 2016 tarihleri arasında tercih yapan adaylardan 4-10 Temmuz 2017 tarihleri arasında tercihlerini güncellemeyenlerin, 5-11 Ocak 2016 tarihleri arasında yaptıkları tercihleri,

c) Hem ilk yerleştirme için tercih yapan hem de 2014-TUS Sonbahar Dönemi 3. Yerleştirme için 5-11 Ocak 2016 tarihlerinde tercih yapan adaylardan son tercih süresinde (4-10 Temmuz 2017 tarihleri arasında yapılan) tercih yapmayanların 5-11 Ocak 2016 tarihleri arasında yaptıkları tercihleri,

d) 2014-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemi için; birden fazla tercih süresinde tercih işlemi yapan adaylardan en son yaptıkları tercihleri,

işleme alınacaktır.

ÖNEMLİ 4-10 Temmuz 2017 tarihleri arasında, daha önceki tercihlerini güncellemeyen adayların tercihleri yalnızca yerleştirmede yapılacak sıralamalar için kullanılacak olup aday, tercihleri ile ilgili güncelleme yapmadığı müddetçe herhangi bir yerleşme hakkı kazanmayacak ve bu adaylara sonuç açıklanmayacaktır.

2) Yerleştirme işlemi, 2014-TUS Sonbahar Dönemi kılavuzunda yer alan temel ilke ve kurallar doğrultusunda adayların tercihleri, kontenjan ve koşullar dikkate alınarak yapılacaktır.

Yerleştirme sonuçlarının açıklanması:

1) Yerleştirme sonuçları yerleştirme işlemi tamamlandıktan sonra ÖSYM'nin internet adresinden adaylara duyurulacaktır.

2) Yerleştirme sonuçları, 4-10 Temmuz 2017 tarihleri arasında tercih yapan adaylar veya 4-10 Temmuz 2017 tarihleri arasında mevcut tercihlerini güncelleyen adaylar için açıklanacaktır. Bu yerleştirme için verilen sürelerde yeni tercih bildiriminde bulunmayan veya mevcut tercihlerini güncellemeyen adaylara yerleştirme sonuçları açıklanmayacak ve bu adaylarla ilgili herhangi yerleştirme işlemi yapılmayacaktır.

3) Yerleştirme sonuçları yerleştirme işlemi tamamlandıktan sonra ilgili kurumlara Merkezimiz tarafından elektronik ortamda iletilecektir. Yerleşen adaylardan isteyenler, sonuçlar açıklandıktan bir gün sonra başlamak üzere 10 iş günü içerisinde yerleştirildikleri kuruma kayıt yaptırmak zorundadır. Belirtilen tarihe kadar yerleştirildikleri kuruma kayıt yaptırmayan adaylar, bu yerleştirme sonucundan yararlanamayacaklardır.

4) Bu yerleştirmede yerleşsin veya yerleşmesin daha önceki yerleştirmelerde yerleştirilmiş adaylardan yerleştirildikleri kurumda kalmak isteyenler, uzmanlık eğitimlerine bu kurumda devam edebileceklerdir.

5) 2014-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemleri ile yerleştirildiği kontenjanda eğitime başlayan adaylar, önceki yerleştirilmelerine ait haklarından vazgeçmiş sayılırlar. Bu durumdaki adaylar, daha önce yerleştirilmiş olduğu kontenjandaki eğitimine geri dönemez.

6) Kılavuzdaki mevcut kontenjanlara yeni değerlendirme sonuçlarına göre yerleştirme işlemleri sonucu ortaya çıkabilecek ilave kadro ihtiyaçları, ilgili kurumlar tarafından karşılanacaktır.

2016-TUS Sonbahar Dönemi Yeni Değerlendirme Sonuçlarına Göre Yerleştirme İşlemleri

2016-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemleri aşağıda belirtildiği şekilde yürütülecektir:

Tercihlerin yapılması:

1) 2016-TUS Sonbahar Dönemi Sınavının yeniden değerlendirmesi sonucu oluşan sınav sonuçlarına göre tercih yapma hakkı bulunan tüm adayların tercih işlemi yapabilmeleri için tercih sistemi, 28 Nisan 2017- 3 Mayıs 2017 tarihleri arasında https://ais.osym.gov.tr/ internet adresinden adayların erişimine açılacaktır. Tercih işlemi 28 Nisan 2017 tarihinde saat 16:45'te başlayacak olup, 3 Mayıs 2017 tarihinde saat 23:59'da sonlanacaktır.

2) Tercih işlemlerinde tercih sisteminde kullanılacak kontenjan ve koşul tabloları ile yerleştirme kuralları, 2016-TUS Sonbahar Dönemi Yerleştirme işlemleri ile aynı olacaktır.

3) Yeniden değerlendirme sonuçlarına göre tercih yapma hakkı kazanan adaylardan isteyenler, bu yerleştirme için tercih yapabileceklerdir.

4) 2016-TUS Sonbahar Dönemi yerleştirme işlemleri için tercih yapan adaylar (bir kuruma yerleşmiş olsalar da) istedikleri takdirde ilk yerleştirmede yapmış oldukları tercihlerini 28 Nisan 2017- 3 Mayıs 2017 tarihleri arasında güncelleyebileceklerdir.

5) 2016-TUS Sonbahar Dönemi yerleştirme işlemlerinde tercih hakkı olup ilgili dönemde tercih yapmamış adaylar da bu yerleştirme için 28 Nisan 2017- 3 Mayıs 2017 tarihleri arasında tercih yapabileceklerdir.

Yerleştirme işlemi:

1) 2016-TUS Sonbahar Dönemi yeni değerlendirme sonuçlarına göre yerleştirme işlemleri için;

a) 28 Nisan 2017- 3 Mayıs 2017 tarihleri arasında yapılan tercihler,

b) 28 Nisan 2017- 3 Mayıs 2017 tarihleri arasında tercih yapmayanların 2016-TUS Sonbahar Dönemi yerleştirmelerine ilişkin yapmış oldukları ilk tercihleri,

işleme alınacaktır.

2) Yerleştirme işlemi, 2016-TUS Sonbahar Dönemi kılavuzlarında yer alan temel ilke ve kurallar doğrultusunda adayların tercihleri, kontenjan ve koşullar dikkate alınarak yapılacaktır.

Yerleştirme sonuçlarının açıklanması:

1) Yerleştirme sonuçları yerleştirme işlemi tamamlandıktan sonra ÖSYM'nin internet adresinden adaylara duyurulacaktır.

2) Yerleştirme sonuçları, 28 Nisan 2017-3 Mayıs 2017 tarihleri arasında bu yerleştirme için tercih yapan adaylar için açılacaktır. Bu yerleştirme için verilen sürelerde yeni tercih bildiriminde bulunmayan adaylara yerleştirme sonuçları açıklanmayacak ve bu adaylarla ilgili herhangi bir işlem yapılmayacaktır.

3) Yerleştirme sonuçları yerleştirme işlemi tamamlandıktan sonra ilgili kurumlara Merkezimiz tarafından elektronik ortamda iletilecektir. Yerleşen adaylardan isteyenler, sonuçlar

açıklandıktan bir gün sonra başlamak üzere 10 iş günü içerisinde yerleştirildikleri kuruma kayıt yaptırmak zorundadır. Belirtilen tarihe kadar yerleştirildikleri kuruma kayıt yaptırmayan adaylar, bu yerleştirme sonucundan yararlanamayacaklardır.

4) Bu yerleştirmede yerleşsin veya yerleşmesin ilk yerleştirmede yerleştirilmiş adaylardan yerleştirildikleri ilk kurumda kalmak isteyenler, uzmanlık eğitimlerine bu kurumda devam edebileceklerdir.

5) 2016-TUS Sonbahar Dönemi, yeni değerlendirme sonuçlarına göre yerleştirme işlemleri ile yerleştirildiği kontenjanda eğitime başlayan adaylar, önceki yerleştirilmelerine ait haklarından vazgeçmiş sayılırlar. Bu durumdaki adaylar, daha önce yerleştirilmiş olduğu kontenjandaki eğitimine geri dönemez.

6) Kılavuzdaki mevcut kontenjanlara yeni değerlendirme sonuçlarına göre yerleştirme işlemleri sonucu ortaya çıkabilecek ilave kadro ihtiyaçları, ilgili kurumlar tarafından karşılanacaktır.

Unofficial Translation by authors with additional explanation added by italic script in parentheses:

2016-TUS Autumn Term Re-Placement According to New Evaluation Results The Re-placement procedure according to the new evaluation results of 2016-TUS Fall Semester will proceed as follows:

Submitting preferences:

1. For all candidates who have the right to submit a preference list according to the exam results resulting from the re-evaluation of the 2016-TUS Fall Semester Examination to submit their lists, the preference system will be available to candidates at https://ais.osym.gov.tr/ between April 28, 2017 and May 3, 2017. The preference process will start on April 28, 2017 at 16:45 and will end on May 3, 2017 at 23:59.
2. The quota and condition tables and placement rules (*such as target capacities*) to be used in the preference system during the preference process will be the same as the 2016-TUS Fall Semester Placement process.
3. Candidates who are entitled to submit a preference list according to the re-evaluation results will be able to submit preferences for this placement.
4. Candidates who submitted preferences for the 2016-TUS Fall Semester placement (even if they are placed in an institution) will be able to update their preferences submitted in the first placement between April 28, 2017 and May 3, 2017 if they wish.
5. Candidates who had the right to submit preferences in the 2016-TUS Fall Semester placement process but did not do so in the relevant period will also be able to submit a preference list for this re-placement between April 28, 2017 and May 3, 2017.

The re-placement process:

1. For the re-placement according to the new evaluation results of 2016-TUS Fall Semester;
   (a) Preferences submitted between April 28, 2017 and May 3, 2017,
   (b) Of those who did not make a preference between April 28, 2017 and May 3, 2017, their initial preferences regarding the 2016-TUS Fall Semester placements will be processed.
2. The re-placement will be carried out in accordance with the basic principles and rules in the 2016-TUS Autumn Semester guidelines (*serial dictatorship / deferred acceptance algorithm*), taking into account the preferences, quotas, and conditions of the candidates.

Announcement of re-placement results:

1. Placement results will be announced on CASP's website after the placement process is completed.
2. The results of the placement will be available for candidates who made a choice for this placement between 28 April 2017 and 3 May 2017. New preferences may be submitted during the periods given for this placement. For the candidates who do not submit new preferences, re-placement results will not be announced, and no action will be taken regarding these candidates.

3. The placement results will be sent to the relevant institutions electronically by our Center after the placement process is completed. The candidates who are placed must register at the institution where they are placed within 10 working days, starting one day after the results are announced. Candidates who do not register at the institution where they are placed until the specified date will not be able to benefit from this placement result.
4. Whether placed in this re-placement or not, candidates placed in the first placement who wish to stay in the first institution will be able to continue their specialty education at this institution.
5. Candidates who start their education at the new placement they qre placed during the re-placement according to the new evaluation results of 2016-TUS Fall Semester are deemed to have given up their rights regarding their previous placement. Candidates in this situation cannot return to their education in the residency program in which they were previously placed.

Doctors' Forum Entry

Rajoah yazdı:

drriza yazdı:
'''haydi durma; TERCİH YAP'''

Bu sizin için fırsat...

Bu yazıyı 2014 eylül tusuyla yerleşmiş tüm asistan hekim arkadaşların dikkatle okumasını rica ediyoruz.Bilindiği üzere 2014 eylül tusunda 2 soru iptal edildi ve yeniden tercih hakkı verildi.
ösym ;

1)Bu yerleştirmede yerleşsin veya yerleşmesin ilk yerleştirmede yerleştirilmiş adaylardan yerleştirildikleri ilk kurumda kalmak isteyenler, uzmanlık eğitimlerine bu kurumda devam edebileceklerdir.

2)2014-TUS Sonbahar Dönemi ilk yerleştirme işlemleri için tercih yapan adaylardan, 5 - 11 Ocak 2016 tarihleri arasında tercih yapmayanların 2014-TUS Sonbahar Dönemi yerleştirmelerine ilişkin yapmış oldukları ilk tercihleri, işleme alınacaktır.

Değerli asistan hekim arkadaşlar diğer yeniden yerleştirmelerde olduğu gibi bu şu anlama geliyor;ya sen tercih yaparsın ya da ben senin yerine yaparım...yani her halükarda tercih yapmış sayılacaksın madem durum bu o zaman bunu kendi adınıza fırsata açevirebilirsiniz...nasıl mı?

Eğer tercih yaparsan ve mevcut bulunduğun yerden farklı bir yere yerleştirilirsen istersen şimdiki bulunduğun yerde devam edebilirsin yada yeni kazandığın yeri kabul ediyorum diye dilekçeni gönderir yeni yerine gidersin.

Eğer tercih yaptığınız yerlerden birine yerleştirilemesseniz,yani boşta kalırsanız yine mevcut yerinizde devam edersiniz.Hakkınız zayi olmaz buraya kadar herşey net...fırsat bunun neresinde?

işte burda;

Eğer altınıza çömez asistan gelsin istiyorsanız; yapmanız gereken tek şey mevcut kadronuzu boşaltmak olmalıdır.Diyelim ki;2014 eylül tusuyla siz 54 puanla uludağ pediatriye yerleşmiştiniz şimdi yeniden tercih yaptınız ve tercihleriniz arasında yine uludağ pediatri varsa ve siz tekrar bu bölüme yerleşirseniz sizden puanı yüksek olmadığı sürece(ki yeniden yerleştirmelerde daha önce yerleşmiş hiç bir asistan daha düşük puanlı yeri kolay kolay yazmamaktadır) yeni asistan gelemeyecektir.

Ama siz yerinizden memnunsanız ve altınıza çömez asistan gelsin istiyorsanız tercih listenizi güncelleyipTEK TERCİH HACETTEPE NÖROLOJİ olarak verdiğinizde yeniden yerleşenler potasından çıkacak ve kadro işgal etmemiş olacaksınız. bu da hem size hemde diğer bölümlere artı 1 çömez asistan olarak dönecektir.Sizde mevcut yerinizde asistanlığınıza devam edeceksiniz.her tercih bir çömez asistan demek...HAYDİ DURMA TERCİH YAP:)

Dr.Murat ÜNLÜ

Unofficial Translation by authors with additional explanation added by italic script in parentheses:

Go ahead; SUBMIT NEW PREFERENCES

This is an opportunity for you...

We kindly ask all resident physician friends who were placed in September 2014 to read this entry carefully. As it is known, 2 questions were canceled in September

2014, and candidates were granted the right to submit new preferences (*for the re-placement*).

CASP ;

1. Whether or not they are placed in the re-placement, those who want to stay in their first institution where they were placed during the first placement can continue their specialty education at this institution.
2. For the candidates who submitted a preference list for the first placement of the 2014-ESM Fall Semester and did not submit a new preference list between January 5 - 11, 2016, their first submission will be processed for the re-placements.

Dear assistant physician friends, as in other re-placements, this means: Either you submit a preference, or I will do it for you... So, you will be considered to have submitted a preference list in any case. If this is the case, then you can turn it into an opportunity on your behalf. How?

If you submit a new preference list and you are placed in a different place from your current assignment, you can continue where you are now, or you can send your petition saying that you accept the new residency program you have just been assigned to and switch to your new program.

If you cannot be placed in one of the places you prefer, that is, if you remain unassigned, you will continue in your current place.

Here is the catch:

If you want an additional junior assistant to come to your program (*with less seniority due to experience*), you only need to empty your existing staff. Let's say; With the September 2014 ESM, you were assigned to Uludag University Pediatrics with 54 points, and you submit a new preference list. If there is Uludag University Pediatrics among your preferences again and you get reassigned to this department, a new assistant will not be able to come unless his score is higher than you (assistants with higher scores who have previously been placed do not easily submit preferences for less preferred placed during the re-placements).

But if you are satisfied with your place and you want a junior assistant to join you, when you update your preference list and give it as ONE PREFERENCE HACETTEPE UNIVERSITY NEUROLOGY, you probably not be placed during the re-placement(*Residency programs at Hacettepe University are typically on very high demand*). This will return to both you and other departments as plus 1 junior assistant. You will continue your residency in your current place. Each new preference submission means a junior assistant...GO FOR IT:)

Dr.Murat Ünlü

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