

APDS Task Force General Surgery Application and Interview Consensus

RATIONALE FOR CONSENSUS

This consensus aims to improve the challenges for applicants and programs in the General Surgery application and interview residency process. The recommendations include:

- **The number of submitted application numbers by applicants should be guided by available data and consider a candidate’s unique characteristics. The number of accepted interviews by applicants should be guided by available data based upon applicant characteristics.**
- **Holistic Review is strongly recommended as part of the General Surgery residency selection process.**
- **Transparency regarding firm eligibility criteria for each program is strongly recommended.**
- **USMLE Step 1 and COMLEX Level 1 numerical scores should again be de-emphasized in the 2022-2023 Application Cycle. Applicants and their standardized scores should be considered within the context of a holistic review, and programs should disclose how Step 2 and COMLEX Level 2 will be considered.**
- **General Surgery residency programs should strongly consider taking part in the AAMC ERAS Application Pilot Study (Supplemental Application).**
- **Programs should offer the first round of interviews between Wednesday, October 26 and Tuesday, November 1, 2022 and allow a minimum of 48 hours for the candidates to respond before extending an offer to a different candidate.**
- **We strongly recommend programs 1) offer only the number of interviews available and 2) disclose expectations about interview response and cancellation.**
- **We recommend virtual interviews with the option of a voluntary, post-evaluative (e.g., after program rank list finalization) live site visit.**
- **We recommend that interview methods adhere to the following best practices:**
 - **equitable opportunities to all invited applicants**
 - **uniformity of the evaluation process within the program**
 - **transparency about the process**
 - **mitigation strategies to prevent bias.**

BEST AVAILABLE DATA AND EXPLANATION OF RECOMMENDATIONS

Increased application numbers, competition for interview slots, financial burden, and potential for inequity in evaluation throughout the match process in an evolving COVID-impacted world have caused significant stress on residency applicants. The increased numbers of applications can deleteriously impact holistic review for programs. Program directors are also struggling to adapt evaluative rubrics with changes in the available data. In the 2021-2022 Match cycle, many General Surgery programs opted to implement a number of innovations with a goal of improving the Match process. Among them were a single interview release period as well as participation in the AAMC ERAS Supplemental Pilot (using preference signaling and meaningful experiences submitted by the students). Categorical Match rates were unchanged. In ERAS 2022, the

number of applicants to surgery decreased by 6%; however, programs experienced an average of a 1% increase in total number of applications (<https://www.aamc.org/data-reports/interactive-data/eras-statistics-data>).

The APDS Application Cycle Task Force conducted a post-Match, End of Cycle survey evaluating program compliance with the APDS recommendations and perceptions about future strategies (36% of Categorical General Surgery programs participating in the Match completed the survey). Survey results are summarized in relevant sections below.

The Task Force evaluated the available data from application cycle through 2021-2022 including but not limited to the APDS End of Cycle Survey to guide recommendation for the 2022-2023 consensus. This consensus aims to develop and implement innovative strategies to achieve the following immediate and long-term goals:

- a) Equity for General Surgery applicants in the interview and application process
- b) Improved application and interview systems that support the needs of the applicants
- c) Increased efficiency of process for programs so that focus can be on conducting holistic review

APPLICANT CONSIDERATIONS

Issue: Recommended Application Numbers

- **Recommendation:** Submitted application numbers should be guided by available data and consider a candidate's unique characteristics.
- **Justification:** The number of applications submitted by the applicant should consider available data and unique circumstances and considerations of the individual applicant, including but not limited to geographic considerations, scope of achievements, and unique applicant qualities that may alter likelihood of matching. The 2021 NRMP Applicant Survey showed the median number of applications for US MD candidates was 56 in matched candidates, which corresponds to the ERAS 2022 data showing an average number of applications of 52. These numbers exceed the AAMC Diminishing Returns data for US MD Candidates through 2018: with a USMLE Step 1 score ≥ 240 , there is an 82% likelihood of entering a categorical General Surgery residency program with 38 applications (confidence band 35-40). This increases to 39 (confidence band 37-42) with USMLE Step 1 scores 223-239. There are no available data to guide the optimal or minimum application number based on Step 2 scores. Diminishing return data are not available for osteopathic or non-US MD applicants to General Surgery. Further, the 2021 NRMP Applicant Survey demonstrates that the median number of applications submitted was significantly greater for US DO and other applicants and for IMGs (n=84), a finding substantiated by the ERAS 2022 data (61 applications for US DO and 58 for IMG). While application caps have been suggested as an opportunity to resolve some of the aforementioned challenges, the Task Force does not recommend an application cap given limitations of available data, differences in the median number of applications required for different applicant types, and concerns about restrictions on applicants.
 - Data sources include:

- 2021 NRMP Applicant Survey: <https://www.nrmp.org/wp-content/uploads/2021/11/NRMP-2021-Applicant-Survey-Report.pdf>
- Preliminary 2022 ERAS Residency Data: <https://www.aamc.org/data-reports/interactive-data/eras-statistics-data>
- NRMP Interactive Charting Outcomes in the Match: <https://www.nrmp.org/match-data-analytics/interactive-tools/charting-outcomes/>
- 2020 NRMP Charting Outcomes in the Match: <https://www.nrmp.org/match-data-analytics/residency-data-reports/>
- AAMC Point of Diminishing Returns for Entering a General Surgery Residency Program for US MD Applicants (2013-2018): <https://students-residents.aamc.org/apply-smart-residency/apply-smart-data-consider-when-applying-residency>
- Residency Explorer: <https://www.residencyexplorer.org/Account/Login>

Issue: Recommended Number of Applicant Interviews

- **Recommendation:** The number of accepted interviews by an applicant should be guided by available data based upon applicant characteristics.
- **Justification:** The 2021 NRMP Applicant Survey shows that the median number of interviews attended in matched candidates in Categorical General Surgery was 16 for US MD candidates and lower for US DO and other applicant types. 2021 NRMP Charting Outcomes is not available at the time of this recommendation. In 2020, the mean number of contiguous ranks for matched candidates is 13.2, with approximately 11 contiguous ranks needed for a 90% probability of matching. There has been little variability in this metric over the years, and applicants should consider using this data to guide the number of accepted interviews. A firm interview cap is not recommended given paucity of data and unique characteristics that may impact this number for an individual applicant. Mentors and applicants should be mindful, however, of the data above and should discourage interview hoarding particularly by the interview-rich candidates.
 - Data
 - 2021 NRMP Applicant Survey: <https://www.nrmp.org/wp-content/uploads/2021/11/NRMP-2021-Applicant-Survey-Report.pdf>
 - 2020 NRMP Charting Outcomes in the Match: <https://www.nrmp.org/match-data-analytics/residency-data-reports/>

PROGRAM CONSIDERATIONS

Issue: Holistic Review

- **Recommendation:** Holistic Review is strongly recommended as part of the General Surgery residency selection process.
- **Justification:** Recruitment of a diverse work force in residency programs benefits patients, programs, and departments. These benefits include but are not limited to

- improved organizational performance and increased patient safety and satisfaction. Holistic recruitment is also an important mechanism for mitigating racial and ethnic disparities in healthcare. Recruitment reliant solely on objective metrics, such as USMLE or COMLEX scores, narrows the focus of an applicant's potential contribution to healthcare and has been shown to disadvantage those groups underrepresented in medicine. 90% of APDS survey respondents will strongly consider/consider holistic review in this cycle.
- Excellent resources to guide on how to introduce and expand this type of review and the impact of this integration can be found at:
 - AAMC Holistic Review: <https://www.aamc.org/services/member-capacity-building/holistic-review>
 - APDS Diversity and Inclusion Toolkit: <https://apdsweb.s3.amazonaws.com/webfiles/docs/APDS Diversity Inclusion Toolkit June 2020.pdf>
 - Conducting a Holistic Review: APDS Webinar, Dr. Cary Aarons

Issue: Transparency

- **Recommendation: Transparency regarding firm eligibility criteria for each program is strongly recommended.**
Justification: Students often direct applications to programs to which they will have the greatest chance of a successful match. In the absence of such available data, applicants may choose to apply even when historically there would be a low chance of matching. This contributes to the rising application numbers and can lead to post-match challenges if these criteria are later found to not be fulfilled. To help inform applicants about application choices, the Task Force strongly recommends that programs provide transparency about firm program criteria, which may include standardized testing minimums and requirements, medical training type (e.g., US MD, US DO, other applicant types), visa sponsorship, and other program requirements. The majority (88%) of APDS survey respondents will strongly consider/consider transparency in this cycle.

Issue: Standardized Examinations

- **Recommendation: USMLE Step 1 and COMLEX Level 1 numerical scores should again be de-emphasized in the 2022-2023 Application Cycle. Applicants and their standardized scores should be considered within the context of a holistic review, and programs should disclose how Step 2 and COMLEX Level 2 will be considered.**
- **Justification:** USMLE Step 1 and COMLEX Level 1 examinations have transitioned to pass/fail grading. For this reason, available USMLE Step 1 and COMLEX Level 1 numerical scores should be de-emphasized in favor of holistic review. While the APDS survey indicates that the majority of programs (70%) will increase emphasis of Step 2/COMLEX 2 with the transition of Step 1/COMLEX 1 to pass/fail, we recommend consideration of these examination scores within the context of holistic

review. To ensure a fair and equitable evaluation process, we recommend transparency to applicants on how these data will be considered and/or required over the application season.

Issue: AAMC ERAS Application Pilot Study

- **Recommendation: General Surgery residency programs should strongly consider taking part in the AAMC ERAS Application Pilot Study (Supplemental Application).**
- **Justification:** In the 2022-2023 interview cycle, programs will have the opportunity to voluntarily take part in the ERAS Supplemental Pilot Study for both categorical and preliminary programs. Participation is voluntary for both applicants and programs, and programs must not mandate candidates to partake. This year, programs will have the option of viewing information on signaling, meaningful experiences, and geographic preferences. This information will be viewable on the ERAS PDWS platform with the standard MyERAS application for ease of review of the additional information. Applicants will be able to signal up to 5 programs and can signal home programs and sites of visiting acting internships. Geographic preferences allow applicants the opportunity to list up to 3 preferred regions (based on a provided map), declare no geographic preference, or elect an option to not participate in this component. To reduce bias, information on applicants who do not signal a region will appear the same as applicants opting for nonparticipation. Based on the preliminary data and applicant use patterns, the lack of geographic signaling to a program's region should not induce bias in decisions about interview selection and rank. Further, the Supplemental Application is still evolving and experimental; data included should be used as part of a holistic review. It should not be used, and is not designed to be used, as a single determinant for interview selection or for rank list decisions.

Issue: First Round Interview Offer Release Week

- **Recommendation: Programs should offer the first round of interviews between **Wednesday, October 26 and Tuesday, November 1, 2022** and allow a minimum of 48 hours for a candidate to respond before extending an offer to a different candidate.**
- **Justification:** To allow applicants the ability to plan their schedules accordingly, to reduce the anxiety and the impact on clinical rotations, and to potentially reduce overinterviewing (Santos-Parker et al. *J Surg Educ* 2020; doi: 10.1016/j.jsurg2020.10.009), we strongly recommend all General Surgery residency programs to release their first round of interview offers between Wednesday, October 26 and Tuesday, November 1, 2022. This period is based upon AAMC data demonstrating trends of interview offers and is aligned to the historical peak of interview offers (the start of the 4th week of PDWS opening Wednesday, September 28, 2022). We strongly recommend that each program determines in advance the date of release and makes this information public to applicants. The APDS End of Cycle Survey found that 62% of programs released first round interviews in this

window, and 69% will strongly consider/consider this recommendation for 2022-2023. Of note, cancellation rates were stable to lower compared to prior cycles for programs for all groups in the survey. In the prior cycle, 97% allowed a 48 hr response, and 98% will at least consider this response time in 2022-2023.

Issue: Interview Code of Conduct

- **Recommendation: We strongly recommend programs 1) offer only the number of interview invitations for the number of interview slots available and 2) disclose expectations about interview response and cancellation.**
- **Justification:** Similar to the justification for a single initial interview release week, the current interview offer and response system amplifies applicant anxiety and compromises the educational curriculum. To improve this process and to ensure an equitable process for all applicants, adoption of a publicly available code of conduct around the interview process is strongly recommended. The APDS End of Cycle Survey data demonstrate significant compliance and near-universal plans to strongly consider/consider in 2022-2023. In 2021-22, 86% of programs offered invitations only to the number of slots available, and 93% will consider limiting invitations to available slots again this year.

Issue: Interview Method

- **Recommendation: We recommend that interview methods adhere to the following best practices:**
 - **equitable opportunities to all invited applicants**
 - **uniformity of the evaluation process within the program**
 - **transparency about the process**
 - **mitigation strategies to prevent bias.**

To achieve these goals, the Task Force recommends virtual interviews with the option of a voluntary, post-evaluative (e.g., after program rank list finalization) live site visit for the benefit of the applicants.

- **Justification:** In 2021-2022, this APDS Task Force, COPA, and the NRMP recommended virtual interviews. The APDS End of Cycle Survey noted that 95% of programs conducted virtual interviews; 4% used a hybrid model (with variable definitions of hybrid). The APDS Survey shows that 80% of programs will strongly consider/consider virtual interviews in 2022-2023. Data from the NRMP 2021 Program Director Survey suggest that the characteristics that are most important to the programs in determining rank may be gleaned from application review and virtual interviews. For applicants, the 2021 NRMP Applicant Survey demonstrates that the most important variables in applicant rank decisions were desired geographic location and perceived goodness of fit. These characteristics may be difficult to discern in an entirely virtual process. A voluntary, live visit following the initial virtual interview process may be particularly valuable for rank decisions by an applicant.

In Complex General Surgical Oncology Fellowship interviews, a direct comparison showed that applicants had a significantly reduced opinion that the virtual experience was sufficient to allow a ranking decision or to provide an adequate picture of the program's culture (Grova et al. *Ann Surg Oncol* 2021;28:1908-1915). Data from cardiothoracic fellowship cycles suggest that most applicants and program directors agree with virtual interviews, though a minority felt interviews should be virtual alone and 25% agreed/strongly agreed that the virtual option negatively impacted their chance of matching at a top choice program (Robinson et al. *J Surg Edu* 2021;78:1175-1181). A recent abstract presented at Surgical Education Week 2022 outlined data from a multi-institutional survey: the authors noted that most applicants consider virtual interviews inferior to live interviews, and surgical applicants had significant concerns about their ability to assess fit (Metchik et al. Perceptions of Virtual Residency Interviews: The Unique Concerns for Surgical Candidates, oral presentation).

As noted above, and purposely re-emphasized, the Task Force recommends the following mandatory components for any interview method:

1. Equitable opportunities to all invited applicants
2. Uniformity of the evaluation process within the program
3. Transparency about the process and expectations of all participants (program and applicant)
4. Mitigation strategies to prevent bias.

In light of the available data, stated needs of applicants and programs, and other national recommendations for the cycle ([AAMC Interview Guidance for the 2022-2023 Residency Cycle | AAMC](#)), the Task Force recommends that the ideal practice is to conduct virtual interviews *with the option of a voluntary, post-evaluative* (e.g., after program rank list finalization) live site visit.

Within this model,

- All initial interviews are uniformly conducted virtually.
- These interviews can then be followed by an optional, *voluntary*, low-stakes, on-site visit.
- This should be following the program's rank list finalization/certification and prior to the applicants' rank list finalization/certification (aka, decoupling of rank lists).
- This on-site visit should not be used for evaluative purposes.

This strategy achieves the aforementioned mandatory components and also provides the applicants freedom of choice about the live visit on their rank decisions without fear of impact on the program's rank list.

While this structure is considered the most optimal interview structure, the Task Force recognizes that individual programs may have specific needs driving them to consider alternative strategies. The following examples are alternatives that achieve the optimal standards noted

above. Notably all models also have potential implications to the students and might provide additional challenges to parties, beyond those of the main recommendation.

- Virtual interviews: This structure involves *all* applicants undergoing a virtual interview with no option for a live site visit or live in-person interviews.
- Live in-person interviews: Although the task force supports virtual interviews to ensure equity particularly for candidates of differing socioeconomic status, for programs opting for live interviews we recommend *all* applicants undergo live interviews with no option for a virtual interviews to ensure consistency of evaluation across candidates.
- Tiered interviews (e.g., hybrid interviews): This option could include an initial virtual interview of all candidates with a predetermined and transparently communicated number of applicants subsequently offered a live in-person interview that involves a second evaluation. If this option is elected, transparency around these predetermined on-site interview numbers and mitigation strategies if an applicant cannot attend live are critical.

Variability in the interview process between candidates (for instance, allowing applicants options for live or virtual at the same stage of interviewing) is **not** recommended. Prior work including a meta-analysis evaluating the impact of interview medium on interview ratings suggest that interviewees received higher rating in live interviews than candidates who interviewed in a technology mediated platform (Blacksmith et al. *PAD* 2016;2:1; <https://doi.org/10.25035/pad.2016.002>).

- Data
 - 2021 NRMP Applicant Survey: <https://www.nrmp.org/wp-content/uploads/2021/11/NRMP-2021-Applicant-Survey-Report.pdf>
 - AAMC Unconscious Bias in Virtual Interviews: <https://www.aamc.org/media/46876/download>
 - Geary AD and P Yoo. New Dog, Old Tricks: Mitigating Implicit Bias in the Virtual Interview Space; <https://www.aamc.org/media/46876/download>
 - APDS Diversity and Inclusion Toolkit: <https://apdsweb.s3.amazonaws.com/webfiles/docs/APDSDiversityInclusionToolkitJune2020.pdf>

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Methods

After defining the scope of the project, members of the Task Force were identified and recruited based on specific areas of expertise in the residency application and interview process. The goal was to have representation across program and applicant type and to incorporate the perspective of recent applicants. The diversity of the participant experience was critical to allow for a broad perspective across programs represented in the APDS. Review of literature and data on current application and interview processes in Surgery and in other specialties were reviewed. These points were distilled and explored over monthly meetings from February to June 2022. The Task Force created an End of Cycle Survey to assess compliance and perspective from APDS membership. This was approved by the APDS Research Committee and initially distributed in February 2022 for voluntary completion. Recommendations in this consensus represent the majority approval of all Task Force members.