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Use of computerized interview scheduling program for pediatric surgery match applicants☆,☆☆,★

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ABSTRACT

Background: Pediatric surgery fellowship applicants and programs coordinate over 20 interviews per cycle. We hypothesized that replacing e-mail and phone communication with a computerized-scheduling program (CSP) could benefit both parties.
Methods: We used a CSP to schedule 2016 interviews. Time to schedule and e-mail communication per applicant was compared to 2015, when traditional scheduling was used. Additionally, 2016 interviewees were surveyed about their experience with the CSP vs. traditional means. Analysis was performed using descriptive statistics and a Student's T-test.
Results: We found a significant decrease in mean scheduling time from 14.4 to 1.7 h ($p < 0.001$) and in e-mails exchanged from 3.4 to 1.0 ($p < 0.0001$). Survey respondents reported 92% satisfaction with the CSP, and 87% found it easier to schedule interviews. Applicants also reported quicker finalization of interview dates (96%), improved access to interview slots (71%), and easier coordination of additional services and time off (63%). Notably, the mean longest time reported to schedule interviews using traditional methods was 7 days (range 1–30). Overall, 84% supported widespread adoption of CSPs.
Conclusions: Using CSPs improved the scheduling process for the significant majority of interviewees, and our program. If widely adopted, this could greatly improve the efficiency of pediatric surgery interview scheduling.
Level of evidence: N/A.

With a total 39 available spots for 77 applicants in 2016, and an average acceptance rate of 51%, it is well known that the Pediatric Surgery Match is one of the most competitive among the surgical subspecialties [1]. While the number of programs has increased since the early 2000s, so too has the number of applications submitted per applicant with successful candidates typically submitting 30 applications and attending 21 interviews [2]. As a result, most applicants spend over $8800 on the match process [2], over half of which goes to airfare and hotel costs associated with interviewing at various programs [3]. The increase in applications is also time- and work-intensive for fellowship programs, which may offer and attempt to accommodate upwards of 30 interviews [4]. In addition, this process places undue burden on the general surgery programs and residents who must coordinate shift coverage [5].

Proposed solutions to these burdens include a centralized date for interviews, regionally coordinated interview dates, or using videoconferencing for preliminary interviews [5]. However, despite the desire to change the interview process, many agree that the onsite interview remains vital to the match process, with programs reporting that one of the primary factors in rank lists is the fit between the applicant and the program [2,6–8]. While the deliberation over these issues continues, efforts should instead focus on time and cost-saving modifications that could improve the *existing* interview process for all parties. We hypothesized that replacing traditional e-mail and phone communication with a computerized scheduling program (CSP) for interviews could benefit both fellowship programs and applicants.

1. Materials and methods

For the 2016 Pediatric Surgery Match, our program used a CSP (*Interview Broker*™) to schedule all fellowship interviews, replacing the traditional scheduling (direct phone and e-mail communication) used in years prior. In the traditional scheduling system, the program coordinators would send multiple interview invitations, to which applicants

Abbreviation: CSP, Computerized Scheduling Program.

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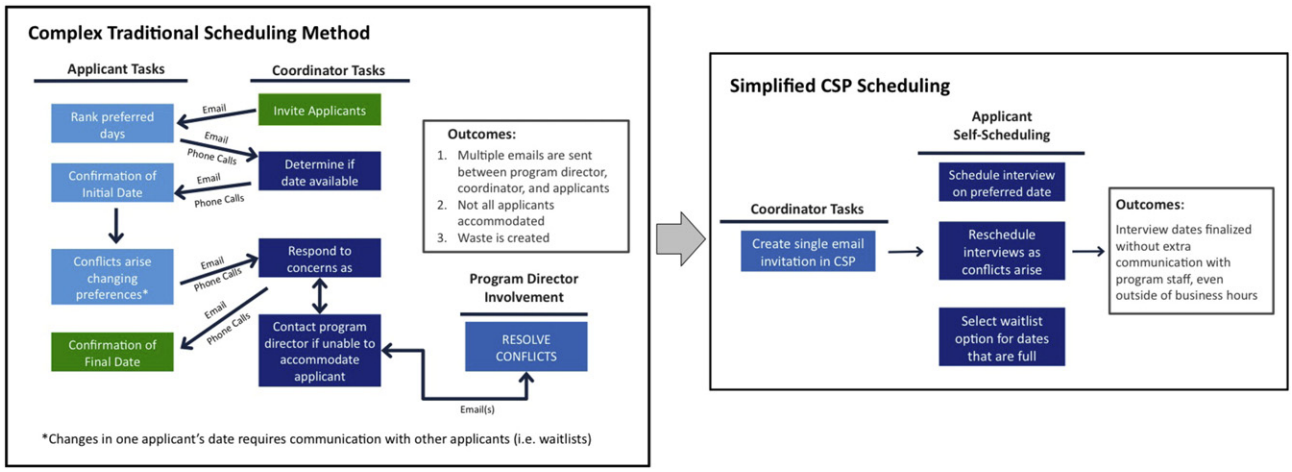

Fig. 1. Scheduling methods before and after the implementation of a Computerized Scheduling Program (CSP): Traditional scheduling method (left), and simplified CSP scheduling system (right).

would respond by phone, e-mail, or both (Fig. 1). To ensure the process was fair, the coordinators then would create a matrix of preferred dates, confirming the dates with each individual applicant. Conflicts, such as date changes or cancellations, often arose requiring further communication with multiple applicants. At times these conflicts could not be easily resolved and required involvement of the program director, causing greater delays for applicants. Conversely, with the introduction of the CSP, the process was automated and significantly streamlined (Fig. 1). Interview invitations to applicants contained a hyperlink connecting them to a calendar offering a range of interview dates. Applicants could then select and finalize their interview date during the workday or after hours and without any communication with program staff. Applicants could also easily re-schedule at their convenience, and if the preferred date was full, a waitlist feature could be used to reserve a spot for an interview day, should one become available.

Data from the CSP itself was compared to our program's scheduling data from the 2015 match, when traditional scheduling means (direct e-mail and phone communication) were used, in order to determine the overall impact of using CSPs. Specific variables examined included the length of time between interview offer and date confirmation, and e-mails sent per applicant for the 2015 and the 2016 match. Those participants that utilized phone communication for the 2015 match were excluded from analysis, as we did not keep records of our phone communication. We did not include rescheduling time in the analysis, as the number of rescheduling events differed between the two groups.

Additionally, after the completion of the interview process, all interviewees were sent an anonymous post-scheduling survey via an online survey tool (SurveyMonkey®) to evaluate this change to their scheduling process. The survey consisted of 5 multiple-choice questions focused on the applicants' experience scheduling interviews with a CSP (questions and results are shown in Tables 2 and 3). A modified Likert Scale was used to assess how the CSP experience compared to their experience in programs utilizing traditional scheduling. There was also one free response question that asked the applicants to estimate, in days, the longest time it took them to schedule an interview during the 2016 match.

Study approval was obtained from the Oregon Health and Science University Institutional Review Board (STUDY00015904) and all procedures were consistent with the National Resident Match Program requirements. Given the small size of the pediatric surgery applicant population, the decision was made to forego the collection of demographic data in order to protect the anonymity of the applicants. Descriptive statistics were used to analyze the survey responses. As respondents were not required to answer every question, an individual question was only analyzed if >90% of respondents provided an answer. A Student's T-test was used to analyze the 2015 and 2016 cohorts, with statistical significance set at $p = 0.05$.

2. Results

2.1. Program experience

The total cost of the CSP to our program was $76.00 for 26 interviewees. All 26 invited applicants in the 2016 cohort used the CSP to schedule interviews, although one applicant, who used the waitlist feature, was excluded from analysis. For the 2015 match, 22 of 25 interviewees used e-mail to schedule their interview. The 3 applicants that used phone communication to schedule interviews were excluded from analysis, as we did not keep sufficient records to quantify the time spent on those interviewees. A significant decrease in the time to schedule ($p < 0.001$) and e-mails sent per applicant ($p < 0.0001$) was found between the 2016 Match and the 2015 Match (Table 1). With the use of a CSP, the average time to schedule an interview per applicant was 1.7 h (range, 0.05–16.45 h) with over half the applicants scheduling their interviews in under 30 min, compared to an average 14.4 h (range, 0.25–46.8 h) with traditional scheduling in 2015. Additionally, an average of 1.0 e-mail (range, 1–2 e-mails) per applicant was sent when scheduling interviews with a CSP, while in 2015 our program sent an average of 3.4 e-mails (range, 3–6 e-mails) per application order to finalize interview scheduling. Lastly, as a result of the rescheduling and waitlist features of the CSP, in 2016 there were no unresolved scheduling conflicts and all those invited to interview were able to schedule an interview. However, in 2015 our program was unable to resolve three scheduling conflicts.

Table 1
Comparison of program data for 2015 ($n = 22$) and 2016 ($n = 25$) match.

	2015 Match (Traditional Scheduling)	2016 Match (CSP)	P-value
Average Time to Schedule/Applicant (Hours)	14.4 (Range, 0.25 to 46.8 h)	1.7 (Range, 0.05 to 16.45 h)	$p < 0.001$
Average e-mails/Applicant (e-mails)	3.4 (Range, 3 to 6 e-mails)	1.0 (Range, 1 to 2 e-mails)	$p < 0.0001$
Unresolved conflicts	3	0	