Incidence and predictors of delays in starting fellowship training in urology

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Cite as: Lavoie CA, Dean N, Do C, et al. Incidence and predictors of delays in starting fellowship training in urology. *Can Urol Assoc J* 2024;18(5):E157-61. http://dx.doi.org/10.5489/cuaj.8608

Published online January 30, 2024

ABSTRACT

INTRODUCTION: The completion of residency and start of fellowship training marks a critical transition for urologists in the pursuit of subspeciality training. Most graduating urology residents are under contract until June 30, and most fellowships are scheduled to begin on July 1. There has been no investigation into the practical implications of fellowship delays in urology from a trainee perspective. Our research study aimed to investigate the incidence and predictors of delays in fellowship starts.

METHODS: Pediatric urology fellows that began their fellowship training between 2019 and 2023 and endourologic fellows that began their fellowship training between 2017 and 2022 were surveyed using SurveyMonkey®. A total of 250 endourology (EU) fellows and 90 pediatric urology (PU) fellows were contacted.

RESULTS: A total of 26.0% and 14.3% of EU and PU fellows, respectively, experienced a delay in their training, despite many leaving their residency positions early (33.8% vs. 44.9%, p=0.2097); 11.7% and 8.2% of EU and PU fellows, respectively, experienced delays they reported to be "very stressful" and 9.1% and 4.1%, respectively, found them "somewhat stressful." Delays of 2–4 weeks were experienced by 5.2% and 6.1%, 4–6-week delays by 7.8% and 4.1%, and delays >6 weeks by 2.6% and 0% of EU and PU fellows, respectively (p=0.0007).

CONCLUSIONS: Delays in fellowship training do occur at a notable rate, despite nearly half of urology fellows leaving their residency training positions early, with unclear impacts on patient care and resident colleague well-being. This research highlights the importance of fellowship programs considering delaying fellowship starts to mid-July or August, with support of the prior fellow cohorts.

INTRODUCTION

The completion of residency and start of fellowship training marks a critical transition for urologists in the pursuit of subspeciality training. Fellowship enables trainees to further their knowledge, refine clinical skills, and conduct research within a specific subspecialty prior to practicing independently. Most graduating urology residents are under contract until June 30 and many fellowships begin on July 1.

Fellowship training may require relocation, hospital credentialling, new medical licenses, and government clearances, leading to possible delays in clinical starts. Thus, to attempt to meet the expectations of their fellowship programs, many graduating urology residents have traditionally left their residency programs early to move and attempt to begin their fellowship training on time; however, it is not infrequent that despite great efforts, delays can still occur for a variety of reasons.

The consequences of urologic fellowship delays are poorly understood and the burden on each party involved (trainee, residency training program, and fellowship training program) remains unmeasured.[1-3]

The transition from residency to fellowship training has been recently highlighted in other medical specialties, with recommendations being made for a transition to a later start date.[4,5] Traditionally, July 1 has been the conventional initiation date for medical training programs; however, some specialties and programs have transitioned to an August 1 fellow-

Table 1. Fellowship delay endourology and pediatric urology cohort analysis

	Endourology (n=77)	Pediatric urology (n=49)	Total (n=126)	p
Fellowship duration				
1 year	57.1% (44)	4.1% (2)	36.5% (46)	<0.0001
2 years	42.9% (33)	89.8% (44)	61.1% (77)	
3 years	0.0% (0)	6.1% (3)	2.4% (3)	
Moved for fellowship				
No	14.3% (11)	8.2% (4)	11.9% (15)	<0.0001
Moved cities	11.7% (9)	4.1% (2)	8.7% (11)	
Moved states/provinces	41.6% (32)	81.6% (40)	57.1% (72)	
Moved internationally	32.5% (25)	6.1% (3)	22.2% (28)	
Year of fellowship start				
2017	20.8% (16)	0.0% (0)	12.7% (16)	<0.0001
2018	14.3% (11)	0.0% (0)	8.7% (11)	
2019	23.4% (18)	20.4% (10)	22.2% (28)	
2020	27.3% (21)	10.2% (5)	20.6% (26)	
2021	11.7% (9)	18.4% (9)	14.3% (18)	
2022	2.6% (2)	18.4% (9)	8.7% (11)	
2023	0.0% (0)	32.7% (16)	12.7% (16)	
Began fellowship immediately after residency completion				
Yes	57.1% (44)	93.9% (46)	71.4% (90)	<0.0001
No	42.9% (33)	6.1% (3)	28.6% (36)	
Left residency before official completion date (June 30)				
Yes	33.8% (26)	44.9% (22)	38.1% (48)	0.2097
No	66.2% (51)	55.1% (27)	61.9% (78)	
Structure of 1st-year fellowship				
Only research	–	30.6% (15)		
Primarily research with some clinical	–	18.4% (9)		
Primarily clinical with some research	–	22.5% (11)		
Only clinical	–	28.6% (14)		
Structure of 2nd-year fellowship				
Only research	–	4.1% (2)		
Primarily research with some clinical	–	44.9% (22)		
Primarily clinical with some research	–	18.4% (9)		
Only clinical	–	32.7% (16)		
Official fellowship start date				
July 1	100.0% (77)	61.2% (30)	84.9% (107)	<0.0001
July 1–7	0.0% (0)	14.3% (7)	5.6% (7)	
July 8–20	0.0% (0)	14.3% (7)	5.6% (7)	
July 21–31	0.0% (0)	0.0% (0)	0.0% (0)	
August 1	0.0% (0)	8.2% (4)	3.2% (4)	
After August 1	0.0% (0)	2.0% (1)	0.8% (1)	
Requested to present prior to official fellowship start date				
Yes	–	42.9% (21)		
No	–	57.1% (28)		
Delay in clinical training or credentialing after official start date				
Yes	26% (20)	14.3% (7)	21.4% (27)	0.1807
No	74% (57)	85.7% (42)	78.6% (99)	

ship start date. In 2014, both the American Board of Surgery and Council of Pediatric Subspecialties made recommendations based on feedback from residents and program directors to transition from a July 1 to an August 1 start date.[6,7] In 2015, the Alliance for Academic Internal Medicine made a similar recommendation.[8]

There has been no investigation into the practical implications of fellowship delays in urology from a trainee perspective. Our research study aimed to investigate the incidence and predictors of delays in fellowship starts.

METHODS

Pediatric urology (PU) fellows that began their fellowship training between 2019 and 2023 and endourologic (EU) fellows that began their fellowship training between 2017 and 2022 were surveyed using SurveyMonkey®. All correspondence was performed via email, with a total of 250 EU fellows and 90 PU fellows being contacted. Surveys were sent between September 2022 and August 2023. Both cohorts received initial email correspondence with the survey link and one reminder email three weeks later. Statistical analysis was performed using SAS statistical software for descriptive statistics, Chi-squared tests, and Fisher's exact tests where appropriate.

RESULTS

A total of 77/250 (30.8%) EU fellows, and 49/90 (54.4%) PU fellows responded to the survey, with 42.9% of EU fellows completing a two-year fellowship compared to 89.8% of PU fellows ($p<0.0001$). Relocation for fellowship was common in both cohorts, with 41.6% of EU and 81.6% of PU fellows moving to a new state or province. More EU fellows required international relocation for fellowship compared to PU fellows (32.5% vs. 6.1%, $p<0.0001$). Only 14.3% and 8.2% of EU and PU fellows, respectively, did not move for fellowship ($p<0.0001$). The greatest proportion of surveyed EU fellows began training in 2020 (27.3%), while the largest proportion of PU fellows began training in 2023 (32.7%). Almost half of PU fellows (42.9%) self-reported a request by their fellowship program to present prior to their official start date (Table 1).

Significantly fewer EU fellows began fellowship immediately after residency completion compared to PU fellows (57.1% vs. 93.9%, $p<0.0001$). Interestingly, a large number of fellows in both cohorts exited their residency positions prior to their contracted completion date (33.8% EU vs. 44.9% PU, $p=0.2097$). There was a difference in the official start dates between cohorts, with 100% of EU fellows and 61.2% of PU fellows starting fellowship on July 1 ($p<0.0001$). Despite fewer PU fellows beginning fellowship on July 1, there

was no difference in the incidence rates of delays in clinical training or credentialling between the fellowship cohorts (26.0% vs. 14.3%, p=0.1807).

With a total of 26.0% and 14.3% of EU and PU fellows, respectively, experiencing a delay in their training, 11.7% and 8.2% experienced delays they reported to be "very stressful," 9.1% and 4.1% "somewhat stressful," and 7.8% and 2.0% "not stressful." These delays were of variable length and differed between the two cohorts, with more EU fellows experiencing delays overall and of greater mean duration. Delays of 2–4 weeks were experienced by 5.2% and 6.1%, 4–6 week delays by 7.8% and 4.1% , and delays >6 weeks by 2.6% and 0% of EU and PU fellows, respectively (p=0.0007).

The cause of delays was multifactorial and differed between groups. Most fellows reported hospital credentialling as the contributing factor to their delay (15.6% for EU and 6.1% for PU). The second most reported factor was state/provincial medical licensing in 9.1% and 6.1% of EU and PU fellows, respectively (p<0.0001). Immigration delays in obtaining a working visa were experienced by 2.6% and 2.0%, and government delays in providing a social security number were experienced by 3.9% and 2.0% of EU and PU fellows, respectively. The COVID-19 pandemic was an attributed cause for delay in 6.5% of EU and 0% of PU fellows (Table 1).

Table 1 (cont'd). Fellowship delay endourology and pediatric urology cohort analysis

	Endourology (n=77)	Pediatric urology (n=49)	Total (n=126)	p
Causes of delay				
Hospital credentialing	15.6% (12)	6.1% (3)	10.3% (15)	<0.0001
Orientation	3.9% (3)	4.1% (2)	3.5% (5)	
Medical license	9.1% (7)	6.1% (3)	6.9% (10)	
Government delays (i.e., SSN)	3.9% (3)	2.0% (1)	2.8% (4)	
Immigration delays (i.e., VISA)	2.6% (2)	2.0% (1)	2.1% (3)	
COVID	6.5% (5)	0.0% (0)	3.5% (5)	
Urology board exam	0.0% (0)	4.1% (2)	1.4% (2)	
Medical leave	2.6% (2)	0.0% (0)	1.4% (2)	
None	74% (57)	85.7% (42)	68.3% (99)	
Duration of delay in clinical activities or credentialing				
<1 week	9.1% (7)	2.0% (1)	6.3% (8)	0.0007
1–2 weeks	3.9% (3)	2.0% (1)	3.1% (4)	
2–4 weeks	5.2% (4)	6.1% (3)	5.5% (7)	
4–6 weeks	7.8% (6)	4.1% (2)	6.3% (8)	
>6 weeks	2.6% (2)	0.0% (0)	1.6% (2)	
None	74% (57)	85.7% (42)	77.3% (99)	
If a delay was experienced, how stressful was it?				
Not at all stressful	7.8% (6)	2.0% (1)	5.5% (7)	0.0042
Somewhat stressful	9.1% (7)	2.0% (2)	7.0% (9)	
Very stressful	11.7% (9)	8.2% (4)	10.2% (13)	
No delay	74% (57)	85.7% (42)	77.3% (99)	
Ideal fellowship start date				
July 1	19.1% (13)	6.4% (3)	13.9% (16)	0.3162
July 8	7.4% (5)	12.8% (6)	9.6% (11)	
July 15	30.9% (21)	31.9% (15)	31.3% (36)	
July 21	5.9% (4)	4.3% (2)	5.2% (6)	
August 1	36.8% (25)	44.7% (21)	40.0% (46)	

DISCUSSION

Our research provides valuable insights into the experience of fellows across multiple urologic subspecialties at an important transition period in training. Although later fellowship start dates have been introduced in disciplines, such as orthopedics and other individual programs across various subspecialties already, this has not been the case in urology.[6,7] Our data demonstrates that 100% (n=77) of EU fellows and 61.2% (n=30) of PU fellows self-report starting fellowship on July 1, with 75.5% (n=37) of PU fellows starting in the first week of July.

Prior research by Banks et al in obstetrics and gynecology, and Mink et al in pediatrics has illustrated that the majority of trainees would prefer delaying the traditional July 1 fellowship start date. In a survey of 911 residents, Banks et al identified that 65.1% of obstetrics and gynecology residents preferred August 1 as the optimal fellowship start date, and 20.2% preferred July 15, with only 14.7% of residents selecting an earlier date.[4] Mink et al surveyed 495 residents, with preferred fellowship start dates of 38.5% for July 15, and 16.9% for August 1.[1,2] These findings are consistent with our data, which illustrates that 73.5% (n=50) of EU fellows and 80.1% (n=38) of PU fellows prefer a start date of July 15 or later.

Our study is the first to illustrate that the preference for a delayed start not only exists in residents prior to their transition to fellowship, but that this sentiment is maintained in a cohort of current fellows and graduated fellows that have been shaped by their experience. Our findings emphasize the need to address fellowship delays, given the universality of a shared preference to increase the amount of allotted time from when urology residency is completed to when fellowships start.

The opinions of fellows in our research and residents in prior publications are supported by statements of multiple medical organizations. The American Board of Surgery, the Council of Pediatric Subspecialties, and the Alliance for Academic Internal Medicine have independently advocated for delaying fellowship start dates.[6-8] Additionally, in 2019, Milburn et al surveyed 240 members of the Association of Program Directors in Radiology (APDR), with 64% of respondents communicating that this difficult transition period between

residency and fellowship caused staffing issues, and 78% supporting a delay in the start of radiology fellowships.[5] This broad support from numerous medical organizations and programs highlights the fact that the effects of these delays are not isolated to the individual trainee, but may impact residency programs, fellowship programs, consultants, and possibly patient care. The effect of urologic fellowship delays on surgical volumes, surgical and clinical competency, and academic productivity is unknown.

Without individual respondent data and only summary data, we are unable to perform detailed analyses to specifically investigate predictors of fellowship initiation delays but can infer that international fellows moving to a new country were at greater risk of suffering a delay, particularly visa and social security number issues. Notably, several fellowship programs have recently transitioned to only accepting American applicants. There are likely multiple reasons for this change. It may be logistically more convenient, with a reduced chance of delays, less costly without the need to sponsor work visas, and may be an attempt to avoid negative impacts on program efficiency, resident training, and patient care. If this were to become common across more programs, it would certainly negatively impact the diversity of fellows and the "exchange of ideas" that may occur. It would also impede the dissemination of specific subspecialty skills and knowledge that occurs when a fellow likely returns to their country of residency training.

The COVID-19 pandemic occurred during part of the time in this study and was cited as a contributing reason for delayed starts in 6.5% of EU fellows but 0% of PU fellows. This finding may be partly due to a greater proportion of EU fellows commencing their fellowship training at the height of the pandemic in 2020 compared to PU fellows (27.3% vs. 10.2%), which could contribute to delays for a variety of reasons, including immigration or moving restrictions, institutional protocols, and more. Additionally, the effect of administrative positions in universities and government transitioning to remote work during the pandemic has had an unmeasured effect on medical education and transitions from medical school to residency and residency to fellowship.

A commonly cited reason for delaying fellowship start dates has been to maintain trainee well-being and mental health at a stressful time in their professional development.[1-5,8] This is certainly a valid reason, given that many trainees completing residency continue to fulfill professional responsibilities, including overnight call coverage and meeting competency-based medical education curriculum criteria.[9] Data from our survey echoes these findings, with 11.7% of EU fellows and 8.1% of PU fellows experiencing a delay that they qualified as "very stressful." Of all fellows who experienced a delay, 41.0% and 57.1% of delays that occurred were reported to be "very stressful."

Stress experienced during a fellowship transition is likely multifactorial, with one component possibly relating to resident age. The mean resident age has increased over time, with the average resident initiating residency at 28.7 years old.[10] As medical trainees start residency at a later age, many will have well-established complexity of social and financial situations. Relocations have an unmeasured effect on spouses possibly requiring occupation changes or hiatus, and dependents requiring transitions of care during this time.

The financial impact of fellowship delays must also not be overlooked, as it can become a significant and unexpected contributor to stress. Fellows routinely commit to leases ahead of time, often without personally viewing residences, to minimize the risk of being unable to find suitable accommodations prior to July 1. Spouses or partners also must arrange for an employment end date if they plan to also relocate, and unexpected delays can have further negative financial effects due to lost earnings. Conversely, a temporal gap between residency and fellowship contracts also introduces several issues that must be considered, including an anticipated gap in financial compensation and/or health benefits.

Despite these issues, it is likely that a mutually beneficial arrangement between fellows and programs exists. Allowing for incoming fellows to begin aspects of their orientation and credentialing leading up to their official start dates, removing redundancies, hospital credentialling processes, and staggering the start dates of incoming residents and fellows would minimize the strain on patient care and academic productivity of residency and fellowship programs alike. Additionally, incoming fellows would be able to better plan for a gap period in financial compensation and consider obtaining individual health insurance for the interim period between contracts. In an ideal world, fellowship programs would be able to offer scholarships/moving stipends, which is a routine practice by employers in non-medical industries.

Limitations

This study has some limitations. With a response rate of 31.0% for EU fellows and 54.4% for PU fellows, nonresponse bias is a consideration, with unaffected fellows less likely to complete the survey. Similarly, we were not able to reliably obtain confirmed up-to-date email

addresses of all fellows in each cohort, thus further limiting the generalizability of our results.

While short-form anonymous surveys like ours that take only a few minutes can maximize response rates, it does also limit what inferences can be made based on limited data. The results were presented in aggregate form from SurveyMonkey, and we were thus unable to conduct any subgroup analyses. Further, it is not known how much time may have passed for those who left their residency programs prior to June 30 before their official fellowship start date. This information, as well as reasons for this gap, may also be insightful.

Additionally, inclusion of other urologic subspecialty programs, such as oncology, reconstruction, and andrology, would have been beneficial and strengthened the conclusions across all urology subspecialties. This research does, however, successfully highlight a rarely discussed, but nevertheless important issue in urologic training that can have far-reaching implications and is worthy of further investigation.

CONCLUSIONS

This survey analysis of multiple urologic subspecialty fellowship programs over a five-year time frame provides valuable information pertaining to a common logistical issue that is experienced by many urology trainees and training programs but rarely discussed. Delays in fellowship training do occur at a notable rate despite nearly half of urology fellows leaving their residency training positions early, with unclear impacts on patient care and resident colleague well-being. Furthermore, the transition from residency to fellowship can be highly stressful for new fellows and their families, and this research highlights the importance of fellowship programs considering delaying fellowship starts to mid-July or August, with support of the prior fellow cohorts.

COMPETING INTERESTS: The authors do not report any competing personal or financial interests related to this work.

This paper has been peer-reviewed.

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