A Transitional Year Residency Program Provides Innovative Solutions for Unmatched Medical Students

Molly M. Gathright, MD Jennifer Hankins, MPH Mohammad Zia Siddiqui, MD Carol R. Thrush, EdD Tim Atkinson, EdD

ABSTRACT

Background The transition to residency is competitive with more medical students applying for residency positions than slots available, and some will face challenges securing a position in their desired specialty. Our institution created a transitional year (TY) residency program in 2016 to help meet the needs of our medical students who did not initially secure a position in the main residency Match.

Objective This report provides a brief overview of the TY program and analysis of the program's value from the inaugural 3 years (2017–2020).

Methods The TY program is based at a midsized, urban, academic health center and features a tailorable curriculum emphasizing preparation for residents' specialty career plans. We used participatory action research and appreciative inquiry strategies as part of the annual program evaluation to examine TY residents' perceptions of the program's value. Stakeholder perceptions were also elicited from a purposive selection of 4 program directors and 2 key medical school education leaders.

Results Internal evaluations revealed a high rate of resident satisfaction with the TY program and self-reported benefits such as increased confidence, clinical proficiency, and professional enculturation. Stakeholders valued the program as a potential pipeline for increasing physicians in the state and providing valuable direction to students' career trajectories.

Conclusions Creating a TY residency program to meet the needs of unmatched medical students was feasible to implement, acceptable to residents in meeting their academic and career needs, and provided a sustainable institutional solution with benefits to multiple stakeholders.

Introduction

The transition to residency is an increasingly competitive and expensive endeavor, ^{1–3} with more medical school graduates seeking residency positions than the total number of positions offered in the National Resident Matching Program (NRMP). ^{4–6} On average, over the past 5 years, about 20% of active applicants have not secured a position in the NRMP Main Residency Match. ⁷ In 2021, the absolute number of unmatched applicants in the main Match, reflecting more than 9000 medical school graduates, is the highest on record in recent years. ⁷ This number exceeds the number of positions placed in the Supplemental Offer and Acceptance Program (SOAP), which has remained at just under 1900 positions in the past couple years. ^{6,8}

Although many systemic factors may contribute to a medical student failing to secure a position in the Match, more commonly reported reasons include student factors such as academic deficiencies or lack of a fit between applicants and their first-choice specialty.^{3,9,10} Less commonly, some research has focused on improving institutional strategies in the advising process to better prepare students for the Match,¹¹ but overall, there is not abundant literature on the topic of unmatched or partially unmatched students,^{10,12} or how they progress through the SOAP and into their careers.

One of our institutional solutions to the unmatched applicant challenge was to develop and implement a transitional year (TY) residency program. Our program was designed in large part to meet the needs of our initially unmatched medical students who had no preliminary or postgraduate year (PGY) 1 position on the Monday of Match week. Our development of the program coincided with the expansion of undergraduate medical student enrollment in the United States at a time of heightened concern with increasing numbers of unmatched students. ^{13,14} Interestingly, from 2015 to 2020, TY programs have shown remarkable growth in the United States, increasing by 74% from 101 to 176 programs, with a concomitant 71% increase in the number of positions from 842 to 1436. ^{6,15}

However, only a handful of articles address various TY program topics, ^{16–24} and none have addressed the needs of unmatched medical students as a program mission. There is also little research on the career trajectories of TY graduates or how many residents complete a TY program as a precursor to an advanced position intentionally versus other reasons. This article aims to address this gap and describes our TY program and initial results in evaluating the success of meeting its mission to date from the vantage point of residents' reflections and stakeholders' perceptions about the program's value.

Methods

Program Implementation and Overview

The impetus for our TY residency program originated from the University of Arkansas for Medical Sciences (UAMS) College of Medicine leaders who were concerned with the increasing rate of medical students who did not initially secure a position in the main residency Match. In 2014–2016, before implementing the TY program, 10%-11% of our senior medical students did not match into a PGY-1 position in the NRMP Main Residency Match, and thus participated in the SOAP. The Dean's office prioritized the development of this TY program as a type of safety net option for such medical students to continue their careers. With this charge, the graduate medical education (GME) team at our institution designed a program to meet the diverse needs of these potential applicants. The designated institutional official at the time selected the assistant dean for GME to implement and administer the program, and she collaborated with our emergency medicine and internal medicine residency programs to gain faculty buy-in and to secure their roles as sponsoring programs.

The TY program follows Accreditation Council for Graduate Medical Education (ACGME) guiding principles and requirements to provide a well-balanced curriculum of competency-based educational and clinical experiences in multiple disciplines. This approach facilitates meeting PGY-1 residents' needs as they prepare to enter a specific medical or surgical specialty. Because the institution is over the cap, the positions are funded by the College of Medicine's Dean's office. This support has survived several transitions in leadership, and the Dean's office continues to offer strong financial and philosophical support for the program.

The TY program is funded for 5 positions. All 5 positions are listed in the main Match in accordance with the NRMP All In Policy. The program does not submit a rank order list or interview anyone but remains in active status with SOAP participation

Objectives

This report provides a brief overview of the innovative transitional year (TY) program and analysis of the program's value from the inaugural 3 years (2017–2020).

Findings

The TY program demonstrated benefits to multiple stake-holders including decreased numbers of unmatched students for the medical school, and the provision of a feasible pathway to meet the academic and career needs of residents who had a consistent specialty goal, for those who were still somewhat undecided, as well as for those who altered their original specialty goal.

Limitations

Findings are limited by the single site nature of the study design and a relatively small sample size comprised of heterogeneous learners and heterogeneous reasons for not matching.

Bottom Line

Creating a TY residency program to meet the needs of unmatched medical students can provide an institutionally valued, feasible, and sustainable solution to a concerning national trend.

selected. This allows us to begin interviewing candidates who apply to the program in Round 1 of SOAP and have all 5 positions available to fill with any local candidates who were not matched. We make this process and information about our interview process available to any interested candidates via our profile in FREIDA (American Medical Association residency database), on our residency website, and any time we speak with an interested applicant.

A summary of the program and curricular highlights are provided in the TABLE. Key elements related to institutional support, capacity, curriculum, and costs are described. To assist residents in professional development and career choices, the TY program director (PD) mentors and meets directly with each TY resident. The schedule is designed to meet requirements for the TY program and to expose residents to increased opportunities for securing career goals and progressing to advanced programs (eg, anesthesiology, radiology, dermatology, ophthalmology, physical medicine and rehabilitation, neurology).

For institutions considering implementing a TY program, costs other than resident salary and benefits that may be helpful include recurring budget items such as education/book funds, supplies, didactic support, coaching, mentoring, and professional development resources. In addition, there are expenses such as the ACGME new program application fee as well as salary costs for PD time (0.25 FTE) and program coordinator time (0.5 FTE). There are also soft costs that aren't easily captured. For example, there is no additional salary support for faculty members of other programs and departments that teach and mentor rotating TY residents.

TABLE Transitional Year Residency Program Description and Highlights

Key Elements of TY Program	
Institution/sponsor	Housed in the COM at an urban, midsized, academic health center Funded by the COM Dean's Office Jointly sponsored by internal medicine and emergency medicine
Capacity	5 preliminary year training slots annually from 2017–2019 Beginning in 2020, 6 preliminary training slots annually
Curriculum	Competency-based tailored curriculum with flexibility in schedule design to meet individual career planning needs 5 months of training chosen from fundamental clinical skill rotations, including ambulatory care in a community-based setting 2 months of selective rotations in fundamental clinical skill areas 5 remaining months of elective rotations Ongoing annual program evaluation and curriculum development
	Mentoring and coaching Program director role is a teacher, mentor, and coach Residents are encouraged to establish and meet with a mentor in their desired specialty to provide additional support and advice on career goals, interviewing, etc Resilience building resources designed for TY resident's needs, including academic coaching and mindfulness
	Team skills Team-building curriculum to establish TY group cohesion/identity
Recurring costs	 Salary and benefits for PD (0.25 FTE) and PC (0.5 FTE): Institution-specific Salary and benefits for 5 PGY-1 residents: \$300,000 Events and food (orientation, retreat, meetings, graduation): \$7,525 Travel to national meeting for PD and PC: \$5,200 Educational funds for books, examination review course, and sitting fees: \$2,500 Supplies, white coats, educational assessments: \$1,400 Clinical expenses (pagers and fees, clinical skills assessments): \$1,000

Abbreviations: TY, transitional year; COM, College of Medicine; PD, program director; FTE, full-time equivalent; PC, program coordinator; PGY, postgraduate year.

Study Design

The design of this study is an evaluation of the first 3 years of the TY residency program in terms of how well the core mission of the program was met. We used participatory action research methods that fit well for the task of formative evaluation of a new residency program, lending opportunities for rapid program improvement cycles. Participatory action research as applied in higher education settings, and in this study specifically, typically involves active engagement of researchers, stakeholders, and participants in the community of practice as co-creators systematically working together in continuously iterative cycles to evaluate and improve real world programs or processes. 25,26

Data Sources and Analysis

To obtain residents' perceptions of the value of the TY program, the evaluator who is a certified appreciative inquiry (AI) facilitator, used an AI approach²⁷ to evaluation and improvement process. Each year from 2017 to 2020, TY residents received AI question prompts prior to participating in a 2- to 3-hour AI "mini-summit." During the mini-summit, residents discussed their responses and were led through a discussion of the discovery, dream, and a combined design/destiny phases of AI.27 The AI questions analyzed for this report were as follows: (1) Describe an experience in the TY program when you felt you were at your best; and (2) As you've gone through this year, you've likely had thoughts about what the ideal TY program could be like. What do you think about the structure of the program and what are your proposed innovations?

Each year, the program evaluator aggregated resident feedback and compiled responses and discussion points to reflect commonalities and information for program planning and improvements. For this study, a TY resident who served on the TY program evaluation committee and as a co-author of this article confirmed the accuracy and integrity of the engage TY residents annually in the program themes. Additional resident perceptions of program value were elicited at year end by the TY program director via an email request and are presented here as direct quotes.

Perceptions of the effectiveness and value of the TY program were also elicited from our institutional stakeholders including 4 residency PDs and 2 medical school leaders. The PDs were purposively selected based on having accepted at least 1 or more TY graduate in the past 3 years, and the medical school leaders were selected based on their key roles in leading undergraduate medical education programs at our school. All stakeholders were asked to respond to an open-ended question: How would you rate the value of the UAMS TY program? (eg, How prepared are the UAMS TY residents you have accepted? What is the quality of residents you have accepted?).

The Institutional Review Board for the University of Arkansas for Medical Sciences deemed this project as not human subjects research.

Results

In 2017–2018, the inaugural year for the TY program, we matched the full cohort of residents (n = 5) from the SOAP. In subsequent years to date, 88% (n = 14) of residents have matched to the TY program through the SOAP, and 12% (n = 2) were offered a position after the SOAP. All positions were filled by medical students from our own institution, although students from other medical schools would have been considered for acceptance to the program if positions had remained unfilled.

Over the first 3 years, 6 of the 21 incoming residents were partially matched (ie, had a PGY-2 spot) and continued into their initially desired specialties upon graduation from the TY program (2) hospital-based, 2 medical-other, 2 surgical). Another 6 residents successfully matched into a program consistent with their initially desired specialty choices (5 medical-primary care, 1 surgical), while 8 residents successfully matched into a different specialty than they had first pursued in the primary Match (1 hospital-based, 7 medical-primary care). One resident, who initially wanted to go into a surgical specialty, chose not to pursue further residency training following completion of the TY program. For the 8 residents who changed career paths, one TY resident initially was interested in a hospital-based specialty but chose TY clinical elective experiences in a community-based ambulatory care setting, which provided exposure to a broad number of patient cases and relevant mentoring. This ultimately led them to pursue a medical-primary care specialty. In another example, one resident who was competitive for a

surgical specialty took advantage of the TY flexible curriculum. This allowed them to meet the PGY-1 requirements for a successful NRMP Match into a PGY-2 in that surgical specialty.

Resident Perceptions of Value

The AI mini-summit discussions regarding when residents felt they were at their best in the program revealed 3 themes across all 3 years of data: confidence, clinical proficiency, and professional enculturation.

Confidence: TY participants expressed an overall increase in confidence and clinical abilities as first-year physicians in training. For example, one resident said, "Anytime I was able to perform procedures I felt like I was at my best." Another resident shared, "The ICU allowed me to combine experiences up to that point and made me shine especially on procedures." In a third example, the resident said, "Helping run the internal medicine ward team as an off-service intern, I felt efficient and equipped to handle a majority of the situations."

Clinical Proficiency: The clinical proficiency theme was evident from resident comments such as "I enjoyed working with multiple cases," "I got to perform many procedures that physicians were required to know," and "I was exposed to more procedures than traditional PGY-1s." The confidence and clinical proficiency themes appear related. We understand that clinical proficiency can lead to confidence and vice versa. We chose to separate the themes to add texture to the interpretation.

Professional Enculturation: A third theme, professional enculturation, emerged indicating that residents in the TY program experienced the same first-year experience as categorical first-year residents. Residents' comments indicated that they felt they were fulfilling a defined role in medicine, felt "connected to the continuity of training," and "learned the culture of medicine." These phrases indicate that TY residents felt integrated into the clinical learning environment quite well.

In response to the AI prompt asking about program innovations, residents reported that the TY program was already innovative. Overall, their comments highlighted how the program promoted hard work, flexibility, resilience, and self-respect. However, one area for improvement that has emerged each year for TY residents is eliminating the stigma of "real resident" vs "not a real resident." In one instance they reported being referred to as "fifth-year medical"

students" by residents in another program. Other suggestions for improvements included ideas to better integrate residents on some rotations where they felt peripheral. The TY program is aware of these issues and continues to make improvements to address them by working with the program evaluation committee on ways to promote and improve the educational and professional content and curriculum and by continued relationship building and positive promotion of the TY program internally with other program directors and faculty.

Additional insights into what residents valued about the TY program are displayed in BOX 1, which shows examples of their end-of-year evaluation comments. Their comments mirror the findings from the AI mini-summits and illustrate an appreciation for flexibility in rotations and experiences, and for the freedom to explore a range of clinical specialties that were not available during their traditional clerkship rotations as students. Overall, TY residents revealed that gaining exposure to various clinical skills provided them with confidence and an advantage over their traditional first-year colleagues, and that the program improved their understanding of other specialties and their relationships with residents in other programs.

Stakeholder Perceptions of Value

Box 2 presents direct quotes elicited from stakeholders, with only slight modifications in some cases to delete words that could serve as identifiers. The PD stakeholders indicated that the TY residents they received were exceptionally well-prepared clinically and had the right skillset and attitude to succeed in their programs. PDs also expressed appreciation for the TY program to help fill the physician shortage needs in our state and to provide a safe, supportive option for some students who benefited from additional time needed to reevaluate their goals and fully commit to new career decisions. Moreover, the PD comments indicate they believe the TY program will continue to serve as a conduit for candidates into their programs in the future and as a pipeline for retaining graduates to practice in the state.

Notably, 67% (14 of 21) of the TY program graduates to date have remained at our institution or affiliated regional programs to complete their residency training. The medical education leadership stakeholders both noted the increasingly challenging Match environment and the importance of having a modern TY program specifically designed to fill the range of various students' needs. They also expressed deep appreciation for how the TY program helps fill an institutional commitment that prioritizes meeting

BOX 1 Transitional Year Resident End-of-Year Evaluation Feedback

Examples of Residents' End-of-Year Program Evaluation Comments

- "Perhaps the most unique aspect of the transitional year residency program, in my view, is that the program offers residents the freedom to explore a wide range of rotations, pertaining to both medical and surgical specialties."
- "As a transitional resident, I am grateful for the flexibility and the support that the transitional year program offers: whereas most PGY-1s follow a fixed rotation schedule specific to their chosen specialty, the transitional year program grants residents greater freedom in selecting rotation schedules, empowering them to explore a wider range of clinical settings. This increased flexibility benefits transitional residents not only by exposing them to an array of cases and practices they might not otherwise experience but also by fostering a stronger sense of understanding and empathy between specialties."
- "The transitional program has provided me with valuable experience working in both anesthesiology and emergency medicine, 2 fields that aren't included among the rotations for UAMS surgical residents but that are undeniably entwined with a surgeon's day-to-day activities..."
- "I think that the TY program is innovative at UAMS. I believe that it is different from other TY programs in that it puts you into rotations where you are treated like the categorical residents on that service and it allows you to take electives that will benefit you in the future. I think it is also helpful if you end up staying at UAMS, as you develop relationships with other residents in nearly every residency program."
- "The TY program has greatly benefited me in that everyone involved was gracious enough to allow me to start a month early to fulfill the prerequisites for an orthopedic intern year. This has allowed me to be eligible and to secure a PGY-2 position in orthopedics for the next year. I personally have never heard of any other program that could make this possible."

Abbreviations: PGY, postgraduate year; UAMS, University of Arkansas for Medical Sciences; TY, transitional year.

the educational and training needs for students to successfully transition to becoming physicians in their desired career paths.

Discussion

The overall findings from this study indicate that the TY program provided a feasible and normative pathway into many desired categorical and advanced residency positions. The program worked well for those who had a consistent specialty goal, for those who were still somewhat undecided, as well as for those who altered their original specialty goal during the TY year. The flexible curriculum, variety of clinical experiences and individualized feedback, and mentoring and coaching helped some residents

BOX 2 Stakeholder Perceptions of Transitional Year Program Value

Program Director Comments

- "The value of the program first must be considered from the standpoint of its production of residents to serve the state of Arkansas. What is needed to solve the shortage of physicians is more GME programs like this, not more medical schools. Secondly, I view its value through the lens of the outstanding residents who have entered our program. They have come to us exceptionally well-prepared to be supervising senior residents. Their specific experiences in the TY program have enabled us to obtain a full year's training credit from our specialty board in all instances. Inspired by their experience during the TY year, one of these residents is now practicing in rural Arkansas, and one was accepted to a prestigious fellowship out of
- "The one resident I have accepted was very well prepared for residency; came in with the right skill set and mindset to succeed as an intern. They had previously tried to match in a different type of residency, and I think just needed some time to find the best fit."
- "Both residents we have accepted had to rethink their career decisions. They are outstanding interns and I anticipate this being a routine track into our categorical program. One of the main advantages of the transitional year is it gave them time to reevaluate their goals and fully commit to their new career decision. In addition to a higher level of commitment, both are excellent clinicians with advanced skills who are very nearly ready to be team leaders in a relatively short period of time."
- "The TY program has been a great benefit and has worked well for us. It is helpful to those graduates who may not have matched into their desired residency on the first go around. It gives the candidate another chance for selection and does not take away a year of GME funding eligibility if the curriculum is designed properly."

Medical School Education Leader Comments

- "I am deeply grateful that we have a TY program at UAMS and grateful for how it was structured to prioritize our students. Over the last 5 years, the Match has become more challenging—and the TY program provides a crucial landing space for our students who either don't match or who need a prelim year spot. In addition, I appreciate the customized curriculum, coaching model, and nurturing approach that the founding TY PD implemented. It allows for some of our struggling students to develop their clinical skills in a nurturing environment and provides a safe space for them to grow/mature in order to get them to [the] residency program they need."
- "As the timeline for selecting a residency program has moved closer to the beginning of the senior year, and the difficulty of obtaining a position has increased, the TY program focus fills an increasingly important role in the overall education of physicians. Students seeking a transitional position fall into 3 categories: (1) students who have not had enough time in their training to be sure of the specialty they wish to pursue; (2) students who need to complete a 1-year training program to fulfill a training requirement for a future residency, or (3) students who have attempted to match into a residency program, but have failed to do so. The current modernized version of the TY program has been specifically designed to fill these needs, and has, therefore, become an integral and very necessary part of the overall postgraduate training landscape. The lack of such a program would place a severe hardship on numerous medical students in a very trying period of their training, that is, the transition from student to physician."

Abbreviations: GME, graduate medical education; TY, transitional year; UAMS, University of Arkansas for Medical Sciences; PD, program director.

informed career choices not previously considered. Residents self-reported the TY program increased their exposure to primary care, surgical procedures, and boosted their confidence overall in their clinical and surgical skills. Also valued by TY residents were the opportunities for developing relationships that facilitated their integration in the culture of medicine. Stakeholders perceived the TY program as a valuable pipeline for our institution to retain good residents. PDs reported that their TY graduates were very wellprepared. Finally, the creation of the program also decreased the number of unmatched students for the medical school. As these graduates advance into their careers, many in primary care and specialty shortage areas, we hope the state of Arkansas will also benefit by retaining them as practicing physicians in our

We believe another benefit of our program is the requirement for residents to take the USMLE Step 3 program providing a valuable transition to residency,

evaluate alternate career options and make more examination, adding strength to their application for those who reentered the Match. The program also allows for the 1 year of postgraduate medical training required to obtain a medical license. This allows TY graduates to continue to practice medicine and generate income even if they do not complete a categorical program or become board eligible in an area.

> The study findings are limited due to the single site nature of the design. Findings are based on a relatively small sample size, comprised of heterogenous learners and heterogeneous reasons they didn't match. Similarly, the varied mix of outcomes following completion of the TY program limit our ability to estimate the extent to which the findings are applicable to other programs and settings. Also, explanations for the eventual success of TY residents are too multifactorial to attribute solely to the TY experience.

> Our findings advance the literature in terms of a TY

but also underscore the need for future research. Future studies are needed to assess the differences in program mission and structure as well as corresponding and longitudinal outcomes for TY graduates. It would be interesting to know whether program directors might view TY graduates more favorably for certain specialties than other preliminary training program or research year graduates. Studies using multicenter designs would allow for more transferability and generalizability of findings and could provide direction for a comprehensive TY program research agenda. More generally, research on the topic of unmatched student characteristics and relevant factors is also needed. To our knowledge, very little research has looked at the effectiveness of various career advising resources^{28,29} and strategies¹¹ to prepare medical students for entering the Match or what students do during the SOAP at baseline. Although a couple of recent articles describe institutional solutions to provide fully unmatched applicants with structured research and skill-building experiences for those seeking a pathway into psychiatry, 30,31 overall additional research is warranted to better understand the options pursued by fully unmatched residency applicants.

Conclusions

Creating a TY residency program to meet the needs of unmatched medical students provided an institutionally valued solution to a concerning trend and was acceptable to learners for meeting their individual career direction needs and plans.

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All authors are with the University of Arkansas for Medical Sciences, College of Medicine. **Molly M. Gathright, MD,** is Designated Institutional Official, Associate Dean for Graduate Medical Education, and Associate Professor of Psychiatry; **Jennifer Hankins, MPH,** is Program Administrator, Graduate Medical Education, and Program Coordinator, Transitional Year; **Mohammad Zia Siddiqui, MD,** is an Ophthalmology Resident and Graduate of the Transitional Year Program; **Carol R. Thrush, EdD,** is Professor of Surgery; and **Tim Atkinson, EdD,** is Director of Education and Associate Professor of Internal Medicine.

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Corresponding author: Molly M. Gathright, MD, University of Arkansas for Medical Sciences, gathrightmollym@uams.edu

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