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Understanding difficulty in transitioning from residency to independent practice in pathology

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ABSTRACT

A web-based survey of 118 pathologists was used to determine the incidence of difficulty transitioning from residency to independent practice. The underlying themes associated with difficulty were further explored through semi-structured interviews with 11 pathologists. Sixty percent of pathologists reported difficulty transitioning to practice. The most commonly reported reason for difficulty was fear of making mistakes. Patterns to understand difficulty, as well as pathways for mitigation, were explored through the semi-structured interviews.

INTRODUCTION

The purpose of this paper is to communicate the results of a study conducted with pathologists across Canada to understand their issues transitioning from residency to independent practice. Two research questions are answered in this article: (a) What is the incidence of difficulty transitioning from residency to independent practice amongst pathologists? And (b) What are the sources of difficulty in transitioning from residency to independent practice in pathology?

Physicians tend to struggle in their transition, especially in their first year of independent practice. However, few details are known about the nature of the difficulty in pathology and laboratory medicine. Most of the literature related to struggles for physicians in transition to independent practice focuses on the tension between clinical and non-clinical competencies. Transition to independent practice "involves a significant difference in the level of work and responsibility of the physician."[1] In a recent study 6est *et al*., focusing on transition to practice in oncology, explain that transition to independent practice has a twofold effect. *A priori*, it creates a sense of accomplishment for having completed the training. This sense of accomplishment is followed by apprehension as the new independent physician will have to manage the non-clinical aspects of the practice. These aspects can be supervision of medical students and residents, financial management, and teaching.

However, the authors argued that a transition to practice component has not been incorporated into the Canadian curriculum for medical training. In their qualitative study, the authors used the CanMEDS framework and identified several gaps in the transition to independent work reported by participants. These gaps are Leadership; Medical Expertise (especially in having ultimate responsibility in patient care long term); and Scholarship (specifically in the area of teaching medical trainees). In their discussion, they suggest that the residency program must replicate the environment and tasks related to independent practice to develop a sense of competence in future independent physicians.

A recent study conducted by Chan and van Manen[2] from the University of Alberta found similar results as 6est *et al*. They conducted focus groups with pediatricians also using the CanMEDS framework. In the area of medical expertise, the participants reported that they felt more prepared to deal with acute care issues than to deal with longitudinal patient management. This was particularly manifested in collaboration related to connecting patients with community services. Another gap area was leadership when related to day-to-day business-type activities. Finally, the researchers identified a gap in scholarship. This included difficulty with maintaining a robust focus on publishing work vs. maintaining clinical responsibilities.

The literature review also identified a paper that does not deal with the tension between clinical and non-clinical competencies but with the sense of identity and the transition to independent practice. In his autoethnographic article, Schrewe[3] describes that being "thrown" into professional independence creates anxiety related to the feeling of competence and also creates an identity crisis as a physician. Schrewe expressed that there is significant value in developing relationships along the way during residency training. This is predicated on the notion that relationships will provide support in the struggles of newly independent physicians.

Other examples in the literature emphasize the focus on the supervision of residents as an enabler to transition to practice;[4] and most of the recent literature calls for curricular and structural focus on the transition to practice.[5-7] These and other examples of prior research focus on curricular, competency, teaching, and supervision aspects of transition to practice. There seems to be little literature associated with general and anatomic pathologist struggles. This creates the need to understand the difficulty of transitioning from a laboratory medicine and pathology perspective.

Table 1. Extract from online questionnaire as it related to difficulty in transition to independent practice.

Question	Potential Response
My transition from residency to independent practice was:	Likert-type scale 1 to 5 (very difficult, difficult, neither difficult nor easy, easy, very easy)
Select the sources of difficulty that apply to you:	• Work seemed different to what I experienced in residency • Lack of supervision • Workload • Hesitation to sign out my own cases • Lack of a sense of competence • Fear of making mistakes

METHODOLOGY

The overall methodological frame of the study is mixed-methods research through the lens of phenomenology. The purpose of a phenomenological study is to describe how people perceive or live experiences.[8] Removing the perception or preconceived ideas of the researcher, a phenomenologist collects relevant data on how different people make sense of a particular phenomenon or experience. In the case of this study, we employed the psychological phenomenology approach,[9,10] which focuses less on the interpretation of the researcher and more on the description of the participants.

Data was analyzed using a mixed methods approach. Mixed methods research focuses on "collecting, analyzing and mixing both quantitative and qualitative data in a single study…"[11] As Creswell and Plano Clark explain, mixed methods researchers concern themselves not with the debate of qualitative vs. quantitative research but look for ways to conduct a single study using the methods of both approaches. This study was conducted using a *sequential exploratory method*. In this method, the researcher collects quantitative data from a sample of participants. After preliminary analysis of the data is performed, the researcher conducts interviews with a subset of the sample to obtain explanations for the results obtained in the quantitative data.[11] These explanations are based on the qualitative data obtained in interviews.

The sample for this study was a *non-probability sample.*[8] According to McMillan and Schumacher, this is the most commonly used sampling method in educational research. It focuses on subjects that are available and accessible to the researcher. The sample represents certain characteristics. In this study, the participants were pathologists across Canada (either general or anatomic pathologists) with between 1 and 16+ years of service after residency. The recruitment of the sample was done with the support of the Canadian Association of Pathologists, who agreed to support this study by sending a questionnaire to its membership across Canada. A total of 118 pathologists responded to the questionnaire.

In terms of the tools used, an online questionnaire was submitted to the participants using Qualtrics. This questionnaire covered three main themes: (a) personality traits, (b) difficulty, and (c) effects of feedback. For the purposes of this article, we are focusing on the results related to difficulty. One question in the questionnaire was to identify their level of difficulty transitioning to independent practice using a scale from 1 to 5. For analysis purposes, we collapsed this into a dichotomous variable with responses 1-3 coded as difficult and responses 4-5 coded as not difficult. Also, respondents were able to identify several reasons for their difficulty. At the end of the questionnaire, participants were asked to volunteer for a semi-structured interview to analyze the phenomenon of difficulty in transition to independent practice. The questionnaire was open from January to April 2022. A total of 11 pathologists participated in the interviews. The interviews were conducted and recorded using Microsoft Teams. The interviews were analyzed using an inductive approach (see Tables 1 and 2).

RESULTS

118 practicing pathologists answered the online survey. This sample had

Table 2. Extract from semi-structured interviews as they relate to difficulty in transition to independent practice

Extracts regarding difficulty in transitioning
Let's go back to when you transitioned from residency to independent practice. Can you remember what kind of feelings you had prior to dealing with your first cases on your own? (i.e. anxiety, excitement, fear, etc.)
If you experienced difficulty transitioning, can you describe for me what was the nature of the difficulty?
How did you manage the difficulties? What did you do to navigate through the transition?
What kind of support did you need for a successful transition from residency to independent practice?

Table 3. Characteristics of study population (n=118).

CHARACTERISTIC	NUMBER OF PATHOLOGISTS	PERCENTAGE
Time in practice		
0-5 years in practice	42	35.6
6-10 years in practice	23	19.5
11-15 years in practice	10	8.5
16+ years in practice	43	36.4
Area of specialization		
General Pathology certification	24	20.3
Anatomic Pathology certification	94	79.7
Practice location		
Community	28	23.7
Acute care	25	21.1
Academic practice	65	55.1

interesting characteristics (see Table 3). For example, the majority of the sample concentrates on the extremes of years of service (i.e. Novice and Expert pathologists). In addition, most of the participants were anatomic pathologists, and a slight majority identified themselves as working in academia. It is important to highlight that many pathologists across Canada work in a dual role. Usually, their practice is linked to academia while at the same time, providing services to patients.

The first research question of this study was related to the incidence of difficulty for pathologists transitioning from residency to independent practice. The 5-point scale was dichotomized from the questionnaire. Most pathologists experienced difficulty transitioning as presented in Table 4.

As it pertains to the sources of difficulty, the participants responded to this in two ways. The first one is represented in Table 5, which was the selection made in the questionnaire. The participants were asked to select all reasons that applied to them.

The second source of information to understand the difficulty of transitioning to independent practice came from the semi-structured interviews. As stated before, an inductive analysis was conducted using the transcripts of the interviews. Two types of patterns emerged. The first one was related to reasons for difficulty. The second pattern emerged from understanding what helped them to overcome the difficulty or to make it easier for them. Saturation was achieved by triangulating the results with the quantitative questionnaire. In addition, additional probing was done during the interviews and no additional themes emerged. Table 6 describes the patterns.

It is important to define each of the themes that emerged in the interviews. *Feelings of uncertainty* refer to negative sentiments about transitioning to independent practice. These were characterized by anxiety and trepidation. *The abrupt transition* was expressed in terms of a lack of graduated responsibility during residency. Participants described it as being supervised and suddenly not being supervised. For *hesitation to sign out their cases,* participants expressed an uneasiness in taking full responsibility for the cases. Having no backup was a source of anxiety in this case. *Lack of preparation for non-clinical duties* refers to becoming a professional. This relates to the literature related to the struggles of physicians and the expectations of the CANMEDS. Finally, the *disconnect*

Table 4. Incidence of difficulty in transitioning to independent practice among 118 pathologists.

Difficulty Response (n=118)	Frequency	Percent
Difficulty Transitioning: No	40	33.9%
Difficulty Transitioning: Yes	71	60.2%
Did not answer	7	5.9%
Total	118	100%

Table 5. Reasons for difficulty in transitioning to independent practice among 118 pathologists. Total does not add up to 100% as individuals could select more than one reason.

Reason	Percent
Fear of making mistakes	66%
Workload	39%
Hesitation to sign out own cases	35%
Lack of sense of competence	23%
Work seemed different to what I experienced in residency	20%
Lack of Supervision	12%

Table 6. Patterns to understand difficulty transitioning to practice.

Sources of Difficulty	Participants
Feelings of uncertainty	6
Abrupt transition	5
Hesitation to sign out own cases	5
Lack of preparation for non-clinical duties	3
Disconnect between residency and independent work	2
Mitigation of Difficulty	**Participants**
Positive Sentiments of confidence	7
Collaborative Environment	6

between residency and independent work was expressed by participants as a significant difference between the two environments. While in residency, trainees are focused on passing the Royal College exams and they discovered that such preparation was not sufficient for work as independent pathologists. Additionally, not being ultimately responsible for cases during residency does not create confidence in them to practice independently.

Two themes emerged for mitigation of the difficulty in transitioning from residency to independent practice. The first one was *positive sentiments of confidence*. This theme is related to the sense of preparation in clinical duties during the time in residency. The technical knowledge was acquired during residency and in preparation for the Royal College exams. It is important to emphasize that this confidence was only related to clinical duties and no other professional duties of a pathologist. In addition, having a *collaborative environment* during the transition was important. 6eing able to ask questions to more senior professionals without being judged or penalized, was crucial for a successful transition.

DISCUSSION AND RECOMMENDATIONS

The results of this study corroborate a few reasons for the difficulty found in the literature. We can identify the lack of preparation during residency to the different roles required in the CanMEDS framework. According to both the literature and the results of this study, residents generally feel better prepared for clinical duties. A second point of coincidence between the literature and the result of this study is the abruptness of the transition. This is also dependent on the environment to which the pathologist might be "thrown into." This absence of supervision and abruptness showed up in the interviews in a significant way for pathologists whose first independent practice was in small clinical settings.

The hesitation to sign out cases for newly graduated pathologists has at its roots the lack of graduated responsibility in training. A pathologist goes from having no responsibility for cases to having full and sole responsibility for cases. For a new graduate, this can certainly create anxiety and trepidation about the consequences of making mistakes on their patients and their careers. This certainly calls for restructuring residency programs to assign more

responsibility to trainees while still being under supervision.

A third aspect is the disconnect between residency training and the realities of independent work. This is part of the focus of Competency-by-Design in Canada which aims to transform residency programs and make them more closely resemble the work environment that trainees are going to face upon graduation. Finally, we want to emphasize the need for collaborative environments when transitioning trainees. A sense of isolation and the lack of openness to ask questions and exhibit vulnerability can be detrimental to the successful transition of pathologists.

As a result of this study, the following recommendations are proposed:

1. Include or augment graduated responsibility early in the residency program. This is particularly necessary now as under the Competence-by-Design Program, the residency is not time-bound as it used to be;

2. Train faculty and supervisors to emphasize all the professional requirements for pathologists. While keeping a focus on clinical and technical duties, it is necessary to provide opportunities for pathologists to learn and practice other professional skills; and

3. Create professional development opportunities for practicing pathologies who receive in their setting new graduates to develop mentoring skills. This will support a smoother and more successful transition for novice pathologists.

Future studies on this topic could include asking if individuals had insight into why they did or did not struggle with transition and whether they took individual initiatives to make this transition easier. It would also be interesting to investigate whether post residency fellowships aided in helping candidates to become more practice ready.

A further important question not addressed in the study is whether there are institutional barriers within hospital settings that might prevent pathology residents being given increased graded responsibility. To address this question would require an examination of medical staff bylaws and interviews with hospital medical leaders and administrators. This topic must await further study.

We will be further analyzing demographic and psychological characteristics associated with difficulty transitioning to practice in a follow up study.

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