

Submitted: 3 February 2026
Accepted: 13 July 2026
Published online: 6 October, TAPS 2026, 11(4), 7-13
<https://doi.org/10.29060/TAPS.2026-11-4/GP4013>

Early experiential exposure to pathology through an open house programme in Thailand

Komson Wannasai, Suree Lekawanvijit & Wiyada Dankai

Department of Pathology, Faculty of Medicine, Chiang Mai University, Thailand

Abstract

Introduction: Pathology is fundamental to patient care but is often perceived by medical students as a background, laboratory-based specialty. Limited early exposure may contribute to misconceptions about the role of pathologists and reduced interest in pathology as a career, particularly in Asia-Pacific medical education contexts.

Methods: This paper reports an institutional educational development initiative at Chiang Mai University, Thailand. A voluntary four-day Pathology Open House was offered to first-year medical students, providing early experiential exposure to authentic pathology practice through observation, limited hands-on activities, and informal interaction with faculty, residents, and laboratory staff. A post-programme questionnaire incorporating retrospective pre-programme ratings was used to assess students' self-reported perceptions.

Results: Participants reported higher self-assessed scores following the programme in their understanding of the professional role of pathologists and awareness of pathology's contribution to patient care. Patient-facing activities, particularly observation of fine needle aspiration procedures, were perceived as the most impactful. Highly technical laboratory activities were viewed as less engaging unless explicitly linked to clinical outcomes.

Conclusion: An open-house-style programme represents a feasible, low-resource approach to addressing professional invisibility and supporting early specialty exploration in pathology. This institutional report may inform similar initiatives in other medical schools across the Asia-Pacific region and beyond.

Practice Highlights

- Early experiential exposure can address misconceptions about pathology as a non-clinical specialty.
- Patient-facing activities strongly influence students' perceptions of clinical relevance.
- Open-house initiatives are feasible without additional infrastructure or funding.
- Informal interaction with faculty and residents enhances professional visibility.
- The model is adaptable to diverse medical education contexts.

I. INTRODUCTION

Pathology underpins clinical diagnosis and patient management across all areas of medicine, yet it remains one of the least visible medical specialties to students and the public. Pathologists often work behind the scenes, with limited direct patient contact, and their contributions are typically communicated through laboratory reports. As a result, medical students may develop an incomplete understanding of the professional

role of pathologists, a phenomenon that has been linked to declining interest in pathology as a career and concerns regarding workforce sustainability (Fischer et al., 2021; McCloskey et al., 2020).

In many Asia-Pacific medical education systems, pathology is positioned primarily within the preclinical curriculum and taught as a foundational biomedical science. Instruction commonly emphasises disease

mechanisms and histopathological concepts, with limited exposure to real-world pathology practice. Consequently, students may progress through early training with little appreciation of how pathologists contribute to multidisciplinary clinical decision-making, reinforcing perceptions of pathology as detached from patient care (Holloman et al., 2023).

In Thailand, pathology is formally taught during the second and third years of medical training. Prior to this initiative, first-year medical students at Chiang Mai University had minimal exposure to pathology as a clinical discipline. Faculty members observed persistent misconceptions, with pathology often perceived as laboratory-bound or disconnected from patient care. Educational strategies that provide early, authentic exposure to pathology practice—such as electives, open-house activities, and observational experiences—have been suggested as potential approaches to addressing these perception gaps (Salah & Mirza, 2021; Tanaka & Ramachandran, 2021).

In response to this context, the Department of Pathology developed a Pathology Open House programme grounded in experiential learning principles. This paper describes the development and implementation of this institutional initiative and reflects on students' perceptions following participation.

II. EDUCATIONAL SETTING AND RATIONALE

Chiang Mai University is a large public medical school in northern Thailand, enrolling approximately 250 medical students annually. The Doctor of Medicine programme follows a traditional structure, with preclinical training preceding clinical clerkships. Pathology is primarily taught during the preclinical years (years 2–3), and opportunities for early exposure to authentic pathology practice remain limited.

Faculty discussions identified a need for early experiential exposure to address the relative professional invisibility of pathology and to support informed specialty exploration among medical students. Guided by experiential learning principles, the Pathology Open House was therefore designed as a short, immersive, voluntary programme for first-year medical students. The initiative was intended to complement, rather than replace, formal curricular teaching by providing authentic exposure to routine pathology practice within the existing institutional context.

III. DESCRIPTION OF THE INITIATIVE

The Pathology Open House was conducted as a four-day voluntary programme during April and May 2024.

Participating students attended in small groups to facilitate close observation and interaction with faculty, residents, and laboratory staff. The programme (Table 1) was embedded within routine departmental activities and required no additional infrastructure or external funding, with the exception of the research component, which was supported by internal funding from the Faculty of Medicine, Chiang Mai University.

The initiative combined brief orientation sessions with experiential exposure to multiple domains of pathology practice. Students observed routine surgical pathology workflows, cytopathology and molecular pathology laboratory activities, and slide review sessions conducted with residents and faculty members. A key component of the programme was observation of fine needle aspiration procedures in a clinical setting, allowing students to witness direct patient interaction and real-time diagnostic assessment, and communication between pathologists and clinicians. Informal discussions with faculty members, residents, and laboratory staff were encouraged throughout the programme to enhance understanding of professional roles and daily practice.

Programme evaluation was conducted using an anonymous post-programme questionnaire designed to obtain formative feedback on students' perceptions of pathology and their learning experience following participation in the Pathology Open House. The primary purpose of the evaluation was to support local educational development rather than to test predefined hypotheses or to measure educational effectiveness.

The questionnaire was developed for this study based on key constructs from prior pathology education literature, including understanding of professional roles, clinical relevance, and career interest. Face and content validity were established through review by faculty members in pathology and medical education.

The instrument comprised four core items assessed using a 5-point Likert scale, evaluating students' self-reported understanding of the role of pathologists, awareness of pathology's contribution to patient care, understanding of daily activities, and interest in pathology as a potential career. Participants completed the questionnaire once immediately after the programme, providing both current and retrospective pre-programme ratings to enable within-subject comparison. Open-ended questions were also included to explore perceived strengths, most impactful activities, and suggestions for improvement. The full questionnaire is provided in Appendix 1. Paired comparisons between retrospective pre- and post-programme scores were analysed using the Wilcoxon

signed-rank test (STATA version 16). Given the small sample size and ordinal nature of Likert-scale data, analyses were conducted as exploratory comparisons to describe within-subject changes in self-reported perceptions rather than to provide definitive evidence of programme effectiveness. Open-ended responses were reviewed to identify activities that participants perceived as most and least valuable, as well as the reasons

underlying these perceptions. Responses were subsequently grouped into recurring themes related to clinical relevance, professional visibility, and learner engagement. Ethical approval was obtained from the institutional review board of the Faculty of Medicine, Chiang Mai University (Approval Number: PAT-2567-0240).

Day	Core activities	Educational focus
Day 1	Introductory session on pathology practice; observation of tissue sampling	Understanding the role of pathology in patient care
Day 2	Observation of tissue processing; cytopathology laboratory exposure	Diagnostic workflow and specimen handling
Day 3	Slide review sessions with residents and faculty; observation of fine needle aspiration (FNA) clinic	Clinical integration and patient-facing pathology
Day 4	Introduction to molecular pathology techniques and laboratory workflow	Emerging diagnostic practices in pathology

Table 1. Overview of the Pathology Open House Programme.

PART 1: Students' understanding about pathologists			
Topic	Student perception (N = 10)		
	Mean retrospective pre-programme score (SD)	Mean post-programme score (SD)	p-value*
Understanding of the pathologist's professional role	2.1 (0.74)	4.8 (0.42)	0.0046
Awareness of pathology's contribution to patient care	1.5 (0.71)	4.4 (0.52)	0.0041
Understanding of daily activities of pathologists and residents	1.6 (0.70)	4.4 (0.70)	0.0040
Interest in pathology as a potential career	2.4 (0.97)	3.6 (0.52)	0.0097
PART 2: Overall satisfaction of the open-house programme			
Topic	Mean score (SD)		
Surgical pathology session (lecture)	4.6 (0.52)		
Tissue sampling activity	4.2 (0.63)		
Tissue processing activity	3.7 (0.95)		
Cytopathology activity	4.1 (0.99)		
Fine needle aspiration (FNA) clinic observation	4.4 (0.52)		
Molecular pathology session	4.3 (0.67)		
Overall satisfaction with the open house programme	4.4 (0.52)		

Table 2. Students' self-reported understanding of pathology and satisfaction with programme activities, based on retrospective pre- and post-programme Likert scale ratings (N = 10; *Wilcoxon signed-rank test).

Student	Most fascinating activity and Reason		Least fascinating activity and Reason	
	Activity	Reason	Activity	Reason
1	FNA clinic	Meeting the patient gave me a new perspective on the pathologist and viewing the process of working with patients. Personally, I enjoy meeting patients and being in large crowds, making it my favorite aspect.	Tissue processing	I felt like I had just gone to see it, and I still don't know much about it.
2	Tissue sampling	I saw various pieces of specimen that were sent and observed various processes. I listened to the teacher explain what each part is. This allowed me to put my knowledge to use.	Tissue processing	We rarely saw the process because the machine was already automatic.

3	Molecular pathology	I had a lecture first to explain the principles. The teacher was very understanding. Since it was content I had studied before, I felt I understood it. I got to see the actual machine and learned about its principles. This made me feel very excited about new technology.	Tissue processing	I went to see it for a short time.
4	FNA clinic	In my opinion, the FNA clinic gave me a chance to talk to the patients, and I found it fun to work with everyone there – nurses, physicians, and medical students.	Tissue processing	I think it took a bit of time, and we didn't see the processes of what personnel in this section did. Therefore, my opinion on this session—tissue processing—is that the job or tasks were a bit less interesting and exciting for me. We were just waiting for the blocks to be done and cut before sending them to the pathologist.
5	FNA clinic	I got to experience a changed learning atmosphere and witness the real work of pathologists in hospitals. It made me more involved in considering the future as a pathologist.	Tissue processing	I thought the time in the room was too long, and it was a repetitive job. So, I felt a little bored.
6	Tissue processing	The work looked fun and worth doing. There were many activities to walk around and see. Everyone talked friendly. While sitting and listening, I gained a lot of information about pathology and other things.	Lecture	I would like to have a few more lectures than this.
7	Tissue sampling	I tried sampling tissue from a real organ.	Tissue processing	It used complicated techniques and took a long time.
8	FNA clinic	I saw the activity of fine needle aspiration from the patient in a real clinic. I felt very excited when I saw it.	Tissue sampling	The activities are quite repetitive.
9	FNA clinic	Because I got to meet real patients and hear new knowledge.	Cytopathology	Because I just listened, there wasn't much to see.
10	Molecular pathology	I liked the atmosphere of having a lecture like a private class. There were questions and answers that invited me to think, making it not boring. Even though I was just learning the content, there were always interesting things to think about.	Cytopathology	There wasn't much that was interesting.

Table 3. Summary of students' reflections on the most and least impactful activities (N = 10).

IV. OUTCOMES AND REFLECTIONS

Ten students completed the post-programme questionnaire, which included both current and retrospective pre-programme ratings. Self-reported post-programme scores were consistently higher than retrospective pre-programme scores across all measured domains (Table 2). Understanding of the pathologist's professional role increased from a mean score of 2.1 (SD 0.74) to 4.8 (SD 0.42), while awareness of pathology's contribution to patient care increased from 1.5 (SD 0.71) to 4.4 (SD 0.52). Understanding of the daily activities of pathologists and residents increased from 1.6 (SD 0.70) to 4.4 (SD 0.70), and interest in pathology as a potential

career increased from 2.4 (SD 0.97) to 3.6 (SD 0.52). Exploratory paired comparisons using the Wilcoxon signed-rank test supported these consistent positive shifts across domains. Given the small sample size and the ordinal nature of the Likert-scale data, these findings should be interpreted as descriptive and exploratory evidence of self-reported perceived change rather than definitive evidence of programme effectiveness.

In addition to these quantitative findings, many students described a shift in perspective, noting that the programme challenged their prior assumptions about pathology as a non-clinical specialty. Similar perception

shifts following early experiential exposure have been described in previous pathology education initiatives (Fischer et al., 2021; Holloman et al., 2023).

Patient-facing activities were consistently identified as the most impactful component of the programme. In particular, observation of fine needle aspiration procedures was frequently described as influential, as it highlighted direct patient interaction, real-time diagnostic reasoning, and multidisciplinary collaboration. This observation is consistent with prior reports emphasising the importance of authentic clinical exposure in shaping students' understanding of pathology's clinical relevance (Holloman et al., 2023; Salah & Mirza, 2021).

Participants also described a perceived increase in the professional visibility of pathologists within the healthcare team, with greater awareness of their role in diagnostic decision-making beyond laboratory analysis. This finding echoes concerns raised in earlier studies regarding the limited visibility of the specialty to both students and the public (Fischer et al., 2021).

In contrast, laboratory-based activities perceived as highly technical or repetitive were viewed as less engaging unless clearly linked to patient outcomes. This aligns with previous educational reports suggesting that technical pathology processes require explicit clinical contextualisation to maintain learner engagement (Tanaka & Ramachandran, 2021).

Several students reported that participation in the programme prompted consideration of pathology as a potential future career, consistent with literature indicating that early exposure and informal interaction with faculty and residents may support informed specialty exploration (McCloskey et al., 2020). Selected student reflections are presented in Table 3.

Rather than representing a novel curricular component, the innovation of this initiative lies in its design features within a resource-limited setting. These include: (1) embedding students in small groups within routine departmental workflow, (2) structured exposure across multiple domains of pathology practice, (3) deliberate inclusion of patient-facing activities such as FNA clinic observation, and (4) facilitation of informal interaction with faculty, residents, and laboratory staff as an intentional component of the learning experience, all implemented without additional funding or infrastructure.

These features may be understood as transferable design principles rather than context-specific elements. Patient-facing exposure appears to play an important role in shaping perceptions of clinical relevance, while technical laboratory activities may require explicit clinical contextualisation to enhance engagement. Informal interaction within the pathology team may also contribute to improved professional visibility. These principles may be adaptable to a range of medical education contexts. In particular, such approaches may help address challenges related to professional invisibility, limited early specialty exposure, and concerns regarding future pathology workforce sustainability that have been described across several Asia-Pacific medical education contexts.

V. CONCLUSION

This institutional report provides preliminary evidence that early experiential exposure may influence students' perceptions of less visible medical specialties. The Pathology Open House appeared to be a feasible, low-resource approach for enhancing perceived professional visibility and supporting early specialty exploration. However, the findings should be interpreted cautiously given the small number of voluntary participants, short-term evaluation, and reliance on retrospective self-reported ratings. Although retrospective pre-programme ratings may be subject to recall bias, this approach was used to reduce response-shift bias and facilitate reflection on perceived changes. Further studies with larger cohorts, prospective baseline assessment, and longer-term follow-up are needed to evaluate the educational impact of similar initiatives.

Notes on Contributors

Komson Wannasai supervised the project and contributed to study conception, data collection, data analysis, manuscript drafting, manuscript revision, and manuscript finalisation. Suree Lekawanvijit contributed to study design and manuscript drafting. Wiyada Dankai contributed to study design, educational implementation, and critical review of the manuscript.

Acknowledgement

The authors thank the medical students who participated in this educational activity.

Funding

This research was supported by Faculty of Medicine, Chiang Mai University endowment fund (grant number 006-2568).

Declaration of Interest

The authors declare no conflicts of interest.

References

- Fischer, G., Anderson, L., Ranson, M., Sellen, D., & McArthur, E. (2021). Public perceptions on pathology: A fundamental change is required. *Journal of Clinical Pathology*, 74(12), 812–815. <https://doi.org/10.1136/jclinpath-2020-206873>
- Holloman, A. M., Berg, M. P., Bryant, B., Dixon, L. R., George, M. R., Karp, J. K., Knollmann-Ritschel, B. E., Prieto, V. G., Timmons, C. F., Childs, J. M., Lofgreen, A., Johnson, K., & McCloskey, C. B. (2023). Experiential exposure as the key to recruiting medical students into pathology. *Academic Pathology*, 10(2), Article 100074. <https://doi.org/10.1016/j.acpath.2023.100074>
- McCloskey, C. B., Johnson, K., Brissette, M., Conran, R., Childs, J., George, M., Gratzinger, D., Prieto, V. G., Rojiani, A. M., Shyu, I., Timmons, C., Jr., & Hoffman, R. (2020). Factors influencing US allopathic medical students to choose pathology as a specialty. *Academic Pathology*, 7, Article 2374289520951924. <https://doi.org/10.1177/2374289520951924>
- Salah, H. T., & Mirza, K. M. (2021). Pathology residency open-house events: A novel marketing paradigm. *American Journal of Clinical Pathology*, 156(6), 950–953. <https://doi.org/10.1093/ajcp/aqab065>
- Tanaka, K. S., & Ramachandran, R. (2021). Perceptions of a remote learning pathology elective for advanced clinical medical students. *Academic Pathology*, 8, Article 23742895211006846. <https://doi.org/10.1177/23742895211006846>

*Komson Wannasai
Faculty of Medicine,
Chiang Mai University,
Chiang Mai, Thailand
Email: komson.w@cmu.ac.th

Appendix 1. Post-Programme Questionnaire

Participants completed a post-programme questionnaire that included both current (post-programme) and retrospective pre-programme self-assessment.

Responses were recorded using a 5-point Likert scale:

1 = Strongly disagree / Very low

2 = Low

3 = Moderate

4 = High

5 = Strongly agree / Very high

Part 1. Self-reported understanding of pathology

Topic	1	2	3	4	5
I have a clear understanding of the professional role of pathologists. - Retrospective pre-program rating - Post-programme rating					
I understand the daily tasks and responsibilities of pathologists. - Retrospective pre-programme rating - Post-programme rating					
I understand the daily activities of pathology residents and laboratory staff. - Retrospective pre-programme rating - Post-programme rating					
I am interested in pursuing pathology as a potential future career. - Retrospective pre-programme rating - Post-programme rating					

Part 2. Satisfaction with programme activities

Please rate your level of satisfaction with each activity:

Topic	1	2	3	4	5
Surgical pathology session (lecture)					
Tissue sampling activity					
Tissue processing activity					
Cytopathology activity					
Fine needle aspiration (FNA) clinic observation					
Molecular pathology session					
Overall satisfaction with the open house programme					

Which activity did you find most impactful, and why?

Which activity did you find least engaging, and why?