

# Fostering pathology as a medical discipline among medical students and graduates

Dwindling interest in pathology as a career is a notable concern among medical students and graduates. Proposed reasons include the lack of exposure during their medical education and the unfavourable view of the discipline. This article discusses the barriers for adoption of pathology as a career and strategies to overcome this.

Pathology is a challenging discipline that has a progressive role in all medical specialties including psychiatry, surgery, obstetrics, acute and critical care medicine, and internal medicine. It is a diverse specialty that plays an increasing role in the day-to-day and longitudinal care of patients, especially with the introduction of complex diagnostic and monitoring parameters. Furthermore, the paradigm shift towards personalised medicine affords dynamicity and relevancy in medical curricula and practice (D'Abbronzio and Franco, 2021). This makes pathology an attractive area of medicine for students and medical graduates to consider as a career.

There is a growing trend for postgraduate medical education to adopt well-defined curricula, adequate supervision and a balance between clinical duties and education (Harden, 2006). For pathology, there is no exception. In countries such as the UK and Australia/New Zealand, pathology encompasses a range of thoroughly-designed curriculums traversing, among others, haematology, microbiology, immunology, chemical pathology, and cellular pathology (which includes diagnostic surgical and cytological pathology, autopsy and forensic pathology). Training and accreditation oversight is provided by a medical college such as the Royal College of Pathologists (UK).

Despite this, pathology is one of the least popular medical disciplines (Holland and Bosch, 2006) and, worryingly, some countries are experiencing declining numbers of pathologists (Metter et al, 2019). There are a number of reasons why this may be the case among junior physicians, including poor exposure during education, poor understanding as a specialty, the lack of direct patient care and the perceived difficulty/complexity of the subject (Lee and Malau-Aduli, 2013; McCloskey et al, 2020). From surveys, medical students are generally favourable towards the discipline of pathology with appreciation of the importance of the discipline for diagnosis and clinical care. However, they consider the discipline to be less prestigious than other medical specialties (Holland and Bosch, 2006).

## How can we increase awareness of and interest in pathology?

There is an emerging demand to foster interest in pathology in the medical curriculum and to vertically and horizontally integrate this specialty into the day-to-day practice of junior doctors. An invisible discipline – or one taken for granted – has little hope of attracting prospective trainees and, therefore, senior clinicians and role models are required to proactively engage interested students and potential trainees. To that end, special discipline-dedicated interest groups for medical students can be highly effective in promoting early interest and awareness of a particular discipline among the cohort (Kerr et al, 2008). As a medical student, the author was instrumental in establishing a pathology interest group at his medical school which provided educational opportunities and information to students interested in pathology. Anecdotally, this was well received and amassed over 70 interested members in its first year. This interest group also worked with the local pathology college (Royal College of Pathologists of Australasia) to promote education and awareness of the discipline as a medical specialty.

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How to cite this article:

Lee AYS. Fostering pathology as a medical discipline among medical students and graduates. *Br J Hosp Med*. 2021. <https://doi.org/10.12968/hmed.2021.0504>

## Key points

- Pathology is a highly diverse and dynamic field of medicine that is playing a significant role in the provision of personalised healthcare to patients.
- There are challenges with promoting interest in pathology among medical students and graduates.
- Educators and mentors should maximise exposure and address attitudinal barriers to the consideration of pathology as a future career.

Another avenue to curb the challenges of exposure to pathology is via the adoption of a variety of teaching modalities that pathology has to offer; these include virtual microscopy, live autopsies and other e-learning or blended learning strategies. These are favoured among medical students and may be a way to positively integrate a varied programme in a busy medical student curriculum (Herrmann et al, 2015). Opportunities should be provided for keener students and junior doctors for research avenues, both in laboratory- and non-laboratory-based domains. This will allow immersion in the discipline and higher-order learning opportunities in an area of interest.

As pathology is known to be a highly knowledge-based discipline with a significant integration of basic sciences (Holland and Bosch, 2006), the early and tactful integration of basic sciences in medical student and junior physician years may help promote retention and clinical relevance (Malau-Aduli et al, 2013). Assessments on basic and clinical sciences should promote ‘real-world’ outcomes, and in the case of students and trainees placed on pathology rotations, student-directed assessments with timely feedback is highly recommended (Jafri et al, 2020). Above all, enthusiastic mentors in pathology are needed – not only to impart knowledge and skills on the next generation of pathologists, but to also promote their physical and emotional wellbeing.

## Conclusions

With concerns about the livelihood of pathology as a career, senior clinicians and educators have a duty to imbue knowledge and enthusiasm to all students and junior doctors about this discipline. Effort needs to be made to dispel negativities and myths, and to promote adequate exposure and integration during medical school and postgraduate years. In doing so, pathology may be better appreciated and considered as a potential career among interested students and junior doctors.

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## References

- D’Abbronzio G, Franco R. The changing role of the pathologist in the era of targeted therapy in personalized medicine. *Expert Rev Precis Med Drug Dev.* 2021;6(5):295–297. <https://doi.org/10.1080/23808993.2021.1923400>
- Harden RM. Trends and the future of postgraduate medical education. *Emerg Med J.* 2006;23(10):798–802. <https://doi.org/10.1136/emj.2005.033738>
- Herrmann FEM, Lenski M, Steffen J et al. A survey study on student preferences regarding pathology teaching in Germany: a call for curricular modernization. *BMC Med Educ.* 2015;15(1):94. <https://doi.org/10.1186/s12909-015-0381-7>
- Holland L, Bosch B. Medical students’ perceptions of pathology and the effect of the second-year pathology course. *Hum Pathol.* 2006;37(1):1–8. <https://doi.org/10.1016/j.humpath.2005.10.004>
- Jafri L, Siddiqui I, Khan AH et al. Fostering teaching-learning through workplace based assessment in postgraduate chemical pathology residency program using virtual learning environment. *BMC Med Educ.* 2020;20(1):383. <https://doi.org/10.1186/s12909-020-02299-8>

- Kerr JR, Seaton MB, Zimcik H, McCabe J, Feldman K. The impact of interest: how do family medicine interest groups influence medical students? *Can Fam Phys*. 2008;54(1):78–79
- Lee AYS, Malau-Aduli BS. Medical students' learning experiences and perceptions of immunology. *Inter J Med Educ*. 2013;3(1):1–7
- Malau-Aduli BS, Lee AYS, Cooling N et al. Retention of knowledge and perceived relevance of basic sciences in an integrated case-based learning (CBL) curriculum. *BMC Med Educ*. 2013;13(1):1–8. <https://doi.org/10.1186/1472-6920-13-139>
- McCloskey CB, Johnson K, Brissette M et al. Factors influencing US allopathic medical students to choose pathology as a specialty. *Acad Pathol*. 2020;7:2374289520951924. <https://doi.org/10.1177/2374289520951924>
- Metter DM, Colgan TJ, Leung ST, Timmons CF, Park JY. Trends in the US and Canadian pathologist workforces from 2007 to 2017. *JAMA Netw Open*. 2019;2(5):e194337. <https://doi.org/10.1001/jamanetworkopen.2019.4337>