

Shortage of Pathologists: a candid narrative

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Dear Editor,

after a long, distinguished and lucky career as a Pathologist I think back to my first experiences and to the reasons of this professional choice. After graduation in the 1970s, I was looking for a graduate school. I was attracted by the classic fields like Internal Medicine, Pneumology or Infectious Diseases. While I was looking around, I had the opportunity to be introduced to the Director of the Department of Pathology of the largest General Hospital, in Milan. After some weeks the unique cultural atmosphere inside the laboratories and the wonderful travels at the microscope won me over. No anxiety, no fears, no concerns about earnings. I loved Herasmus of Rotterdam. In its "Praise of Folly" he wrote "The only certain fact is that without the seasoning of madness, pleasure cannot exist" ¹. The choice was made. And Pathology proved itself a fiery and ever-changing lover. Probably no other specialties have the two-fold characteristics of being the most ancient and the most modern discipline in the same time. In the Pandora's jar of Pathology, you can find a world of sub-fields, a world of techniques such as electron microscopy, histochemistry, immunohistochemistry, molecular pathology and new cutting-edge sciences based on artificial intelligence (AI). Now I put aside the superfluous memories of an old man and I get to the point. Why is this evergreen discipline underappreciated by recent graduates? A number of vacant positions in medical residency programs are the sad constant in many schools in spite of the efforts of some enlightened spirits who try in vain to highlight the positive aspects of this profession during the degree course.

Unfortunately, the narrative on the shortage of Pathologists is a long and boring story. In 1954 Weed tried to answer to the question: "Why are too few young physicians interested to become Pathologists?" ².

Today the global shortage of pathologists still exists and it is rising. For example, China has only one pathologist per 130,000 inhabitants, and in many African countries the ratio is of one per million ^{3,4}. Western countries are dealing with the same problems, with an expected decline in the number of practicing pathologists due to retirement ⁵.

In the United States between 2007 and 2017, the number of active pathologists decreased from 15,568 to 12,8399 (a 17.5% decrease), whereas the diagnostic workload rose by 41.7% ⁶.

In Italy an interesting study tried to identify the causes of this shortage proposing surveys to Medical Course Students and Post Graduate Medical Schools ⁷. The authors showed that the lack of interest in the pathology career depends on poor knowledge about the real clinical significance of Pathology and that the programs of the Schools of Special-

Received and accepted: August 21, 2025

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How to cite this article: Barberis M. Shortage of Pathologists: a candid narrative. *Pathologica* 2025;117:452-454 <https://doi.org/10.32074/1591-951X-N1613>

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ization do not meet their interests ⁷.

The data reported by Anvur (National Agency for the Evaluation of the University System and Research ⁸, a public body supervised by the University and Research Ministry, showed that disciplines such as Emergency Medicine, Radiotherapy, Internal Medicine, Anesthesia and General Surgery, branches that once embodied the appealing of medical science and were coveted by thousands of new doctors, were impoverished or even deserted. On the other hand, specialties such as Plastic Surgery, Ophthalmology, Dermatology and Gynecology were preferred. These are specializations that enjoy a right combination of the profession and the private well-being, which translates into greater earnings and work satisfaction. The well-known “shortage of doctors” and consequently of Pathologists does not concern the health world in general, but only some disciplines and Pathology is one of them. What should we draw from these data? The excess of responsibility, the potential medical-legal implications not only for inadequate diagnoses, but even for delays in reports caused by overwork are where the thoughts of young doctors linger. Moreover, these worries are aggravated by salaries that are too low compared to the hyperbolic hours of work, in sometimes unpleasant contexts. At the end the young white coats tend to turn their gaze towards disciplines that allow them to benefit from a private activity that could elevate their lifestyle beyond the hospital walls. But offering only higher salaries does not seem sufficient to recover vocations. According to the VII Censis-Eudaimon Report ⁹, which concerned disaffection with work and corporate welfare, 67.7% of workers want to work less and 87.3% claim that putting work at the center of their lives is a mistake. In other words, there is a growing demand for work-life balance. 30.5% of those employed, a percentage that increases in young people to 34.7%, said that they engage in work as much as necessary. A new hierarchy of values emerges from the set of data where the time dedicated to one's well-being has a greater weight than that spent at work. Generation Z or “native digitals,” are entering the workforce with different expectations and priorities than previous generations. To attract and retain talents in Pathology we must understand their needs and adapt their recruiting with innovative management strategies such as achieving a greater work-life balance, fostering professional growth and the possibility of acquiring new skills, creating inclusive and stimulating work environments and ensuring access to tools that foster creativity and innovation. The fast changes in health care coupled with technological breakthroughs and the emergence of AI, have given us new opportunities and posed unprecedented chal-

lenges. The implementation of AI offers many benefits, such as improved diagnoses and consultations with digital pathology, personalized health guidance, precision medicine, custom treatment plans, and innovative drug discovery ¹⁰. The traditional role of Pathologists in delivering accurate diagnoses or assessing biomarkers for companion diagnostics will be enhanced in precision, reproducibility, and scale by AI-powered analysis tools. Our positive response to the increasing use of AI will play a pivotal role in shaping its development and its contribution to our profession. However, the wide use of AI has raised many concerns including fear of job displacement, replacement, erosion of professional identity and loss of expertise ¹¹⁻¹⁴.

The integration of an advanced technology like AI into professional workflows could induce distress signals and psychological discomfort defined as “technostress” according to the definition proposed by the psychologist Craig Brod in his work describing our inability to adapt to new computer technology ¹⁵.

A true cultural revolution has been brought about by the new generations. Academia and Hospitals must review their recruiting strategies for young talents. There is a need of investing in technologies, true formation and flexible style of work with particular emphasis on the balance between work and private life. And this to avoid not the shortage of Pathologists, but their extinction.

CONFLICT OF INTEREST STATEMENT

The author declares no conflict of interest

FUNDING

None.

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