



The Challenges of Anatomic Pathology Medical Education In Indonesia

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ABSTRACT

The Covid-19 pandemic has changed many aspects of life in the world, including medical education. To create a public need for health service becomes one of basic philosophical specialist services in Indonesia. The existence of a specialist and the availability of infrastructure uneven in the Indonesia hospital have also been a burden to handle it together. The spread of 681 anatomic pathology doctors in 2019 have not spread evenly across Indonesia. That is because of infrastructure Anatomic Pathology at the hospital certain inadequate. The number is not as required minimum labour standards anatomical pathology doctors determined by the government. The right steps need to be taken to face these challenges so that we can create the good doctors, including a pathologist who is not only competent but also has good ethics and virtue.

1. Introduction

2020 was a valuable year, the time we were taught that prevention is more important than treatment. This old advice is still believed for decades, but is never well applied in our society today. That argue can be implied for Covid-19 pandemic. It is a very good lesson for us to be aware of spreading this virus which has become a pandemic around the world. Doctors as a health worker face these new challenges since their necessary roles in handling this pandemic case.¹¹ Medical doctors as part of the handling of the current pandemic case, cannot be separated from the process of education to become a doctor. Medical education is part of higher education based on Pancasila and the 1945 Constitution of the Republic of Indonesia

(Republic of Indonesia Law No. 20 of 2013 on Medical Education, 2013). The law states that the principles of implementing medical education are to prioritize scientific truth, responsibility, benefit, humanity, balance, equality, relevance, affirmation, and professional ethics with the aim of producing doctors, dentists, primary care physicians, and specialist-subspecialists doctors and dentists who are virtuous, dignified, qualified, competent, cultured to help, ethical, highly dedicated, professional, oriented to patient safety, responsible, having good moral, humanistic, in accordance with the needs of society, able to adapt to the social environment, and having high social spirit.

The ASEAN Free Trade Area (AFTA) demands that all Indonesian people, especially doctors, to be competitive, with the opening of AFTA, foreign medical personnel can enter Indonesia and vice versa. With these challenges, a new specialist must focus only on patients. Service demand is number one (patient centered care). Being a good doctor isn't just about being a science and math, it is about being invested in caring for other people. The doctors must be able to communicate well, have good skills and provide precise assessments to patients and having clear targets for future treatment of patients.

Currently, Indonesian medicine is facing challenges, especially the problem of the mal distribution of health workers, especially specialist doctors. Not many graduated doctors are willing to be specialist doctors. The lowest ratio of specialist doctors is in Papua Province with a ratio of 3.0 per 100,000 population, while the highest ratio of specialist doctors is in DKI Jakarta with a ratio of 52.2 per 100,000 population. Likewise, the number of anatomical pathologists in Indonesia is 681 people, but they have similar problems, namely ratio disproportion between provinces in Indonesia¹

Current medical education

Medical education in Indonesia aims to generate professional and competent medical graduates to meet the needs of the Indonesian people in an equitable manner. Apart from that, medical education also has the objective of being a means of enhancing the development of science and technology in the medical field. Changes in the medical curriculum have shifted the focus paradigm from the success of medical education. The aim is to implement a more practical education in teaching and to generate better doctors¹³

Indonesian medical education in 2020 having currently 91 medical faculties, consisting of 40 State Universities (PTN) and 51 Private Universities (PTS). Based on accreditation status data from the Lembaga Akreditasi Mandiri Pendidikan Tinggi Kesehatan Indonesia (LAMPTKes) in May 2020, there are 30 study programs (33%) have 'A' accreditation, 43 study programs (47%) have 'B' accreditation, and 18 study programs (20%) have 'C' accreditation. Ministry of Research, Technology and Higher Education has collaborated with the Ministry of Health and medical education stakeholders in an effort to standardize the quality of inputs, processes and outputs of medical education through various regulations.



Figure 1. The Tree of Medicine. Pathology is like a tree. Pathology is the trunk of the tree that supports the branches of basic science and connects them with specialized medical science.⁵

Pathology is part of medical education that is equally important, as seen in Figure 1. Pathology originates from several branches of basic medical science that support specialist medical sciences. Pathology is the study of disease as described in the "Medical Tree Trunk". Basic science, which is described as the root consists of various sciences, will support and provide "food" for the knowledge that is in namely clinical pathology and anatomical pathology.¹¹

The challenges of anatomic pathology education

Anatomic pathology is one of the fields of medical science which plays a very important role in medical services in providing the diagnosis of the material being examined, both from living and dead patients. Examination of the specimens used can come from fluids, cells, tissues, and organs obtained either from biopsy, fine needle biopsy, or surgery.

The education of anatomic pathology at this time has at least been adjusted as a result of the Covid 19 pandemic. A lot of learning is being carried out online, following online courses held by major universities inside and outside the country. At least this answer the challenge of technological breakthroughs that we also need to master, apart from the skills and knowledge that must be qualified.⁹

In the era of the industrial revolution 4.0, medical education, including anatomic pathology education has real challenges, so it is necessary to apply three new literacies, namely data, technology, and humanity generate Indonesian doctors who are able to adapt to meet national needs and be able to compete globally. Currently, foreign medical personnel can enter Indonesia, and vice versa, specialist doctors from Indonesia can compete abroad. So that a revolution or reform is needed to answer these global challenges. These changes include the education process to be a specialist doctor and community dedication.⁸

To answer the challenges of medical education, there are several things that also need to be supported in efforts to strengthen health services through strengthening the regionalization of the referral system, access improvement programs in the form of

its branches (specialist sciences), such as anesthesia, psychiatry, dermatovenereology, radiology, ophthalmology, obstetric gynecology, internal medicine, pediatric medicine, surgery, and neurology. Pathology strengthens this branch of knowledge. This is the urgency of pathology as a support between basic medical science and specialist medical science. Pathology is then divided into two major areas, fulfilling facilities, increasing the competence of health human resources and fulfilment of medical devices, and quality improvement programs consisting of accreditation of health service providers such as hospitals and health centers.³

The current number of anatomic pathologists based on BPPSDMK data in 2019 is 681 people, but uneven distribution throughout Indonesia. Whereas pathologists play an important role in identifying and diagnosing the disease. In Indonesia, the field of anatomic pathology is less attractive. The same thing apparently happened in Western countries. The United States (US) pathologist workforce has decreased by approximately 17% from 2007 to 2017, from 2.3% to 1.43% of all US physicians, while the number of physicians and the population as a whole continues to increase.⁴

The lack of interest of doctors who will continue their studies in the field of anatomic pathology has various reasons. Starting from classical reasons such as less income compared to other specialist doctors, to so much knowledge that must be learned. The pathologist s must study all diseases, not focus on certain organs or certain parts like the other medical specialists.¹² In fact, clinicians are very encouraged with the role of assistance from pathologists as consultants to discuss the patient related diseases.⁶

A pathologist at the hospital has to work with the adequate infrastructure. This is also the problem, not every hospital has the ability to purchase a pathologist's working tackles / the technology, except in large hospitals such as the education centre hospital. So that, many hospitals do not have anatomic pathology specialists and have chosen to a partner with other hospitals for these anatomical

pathology services. The hospital must send a tissue sample to be examined in a referral hospital that has a pathologist in cases of tumours. To get a proper diagnosis, doctors must perform the correct fixation procedure, for example by using a certain fixation medium such as 10% NBF. (Neutral Buffer Formalin).

Indonesia consists of various cultural backgrounds and customs, living standards, and socio-economic conditions which are certainly different from other countries. In Thailand, for the example, the opposite is true. The number of anatomic pathologists in Thailand is bigger than the Indonesian pathologists, whereas a population in Thailand is less than Indonesia. Between 2007 and 2017, the number of active pathologists in the United States decreased from 15 568 to 12 839 (-17.53%). In contrast, Canadian data presented an increase from 1467 to 1767 pathologists during the same period (+20.45%).⁷

Many factors, like compensation and insights of stress contribute to a sense of fulfillment in pathologist's career. In Western countries, the welfare of anatomical pathologists is better than other specialists.¹⁶ A 2016 survey of nearly 20 000 physicians including nearly 400 pathologists provides reassuring data about compensation and career choice. This survey showed that 52% of pathologists are satisfied with their career choice and 63% are satisfied with their compensation. Among the 26 specialties that were surveyed, pathologists ranked 2 in believing that they were fairly compensated. "The Medscape Physician Income Surveys" by George D. Lunberg in 2019 reported that the average of the annual income of pathologists in the United States was \$239000 in 2013, ranked seventeenth of 25 physician categories in 2013, and in 2018 it was ranked eighteenth of 29 specialties at \$ 286000 income per year.⁴

In addition, 66% of pathologists find that there is something else to be happy about apart from compensation, that a pathologist is indispensable for making diagnostic decisions, a core aspect of the medical discipline and to be the most valuable aspect of their career. Pathologists also ranked among the highest group of physicians reporting pleasure and

happiness at work and among the lowest group reporting fatigue in their work. Pathology residents and fellows seeking their first position have handled a fairly stable job market during the last 5 years, with most accepting positions with which they were pleased². Overall, this 2016 survey shows that the majority of pathologists find deep satisfaction in their careers as pathologists (Huihong et al., 2016).

Expectation

The provisions of Article 4 of Law Number 20 of 2013 concerning Medical Education contain the provisions of the Objectives of Medical Education, namely Medical Education which aims to:

- a. Generate doctors and dentists who are noble, dignified, qualified, competent, cultured to help, ethical, highly dedicated, professional, oriented to patient safety, responsibilities, having good moral, humanistic, in accordance with the needs of society, able to adapt to the social environment, and having a high social spirit;
- b. Fulfill the needs of doctors and dentists throughout the unitary state of the republic of Indonesia in an equitable manner;
- c. Increase the development of science and technology in the fields of medicine and dentistry.

The quality of a good and qualified doctor is expected to be reflected in the 6 characteristics obtained by the doctor, including (1) interpersonal quality, (2) communication and patient involvement, (3) medical competence, (4) ethics, (5) management, (6) education, teaching, and research.¹³

Patients should also be increasingly aware of the importance of an accurate diagnosis or using the gold standard in cases of certain diseases. Every tissue or part of the body that is carried out by the surgical procedure, it should be examined by pathologist, so that it can make an accurate diagnosis and the patients can get the right treatment afterwards.¹⁴ Pathologists must be able to adapt to world opportunities in scientific matters and the

advancement of the development of new science and improve their quality to be a better doctor. This requires a difficult process and struggle. Pathologists not only have well-developed diagnostic skills, but also require evidence of a strong work ethic and outstanding professionalism. Pathologists must show willingness to assume responsibilities and flexibility regarding existing and new responsibilities.¹⁰

Conclusion

In carrying out his duties, a pathologist will be on duty in the laboratory, so that he does not meet the patient in person. However, the role of a pathologist is very important to assist clinicians in diagnosing a patient's disease. In addition to having qualified competencies, a pathologist must also follow the development of science and technology and have a good ethic. Therefore, doctors can provide the right treatment for the disease and give optimal results.

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