

# TARGETING ACADEMIC SURGEONS RESTORING THE DIGNITY OF SURGICAL EDUCATION-TRAINING IN INDONESIA: A MODEL OF EXCELLENCE IN PROFESSIONAL ACHIEVEMENT

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## ABSTRACT

**Background:** Due to the dynamic changes in the strategic environment and development of science and technology, the Indonesian national education system has undergone various adjustments, including surgeons' education training programs. To some extent, various essential changes, marginalization, and pragmatization of surgical services have degraded the dignity of surgical education-training programs in Indonesia. This study aims to analyse several causal factors appropriately to direct to an appropriate target based on the present and future situation to prevent inappropriate solutions.

**Methods:** This narrative review is based on related articles freely downloaded, which discuss the what and why of uncertainty in the provision of education-training today and suggest how changes must be made to restore the dignity of Surgeons in Indonesia. Current Indonesian conditions are mainly based on implementation at the Surgery Department, Medicine of Faculty Universitas Indonesia and Cipto Mangunkusumo Hospital.

**Results:** It is challenging to obtain data on evaluating the educational process and the quality of surgeon graduates. Based on observation, there are four main problems, including the recruitment of teaching staff, Ministry of Education and Culture policies, adequateness of learning materials, and the phenomenon of semester-based graduation. These problems lead to quasi-referral and case management of defensive surgery, which gradually declines the surgeon profession's dignity.

**Conclusion:** The fundamental solution to restoring the dignity of surgeons in Indonesia is to provide an education-training which produce academic surgeons.

**Keywords:** academic surgeon, challenges, dignity, education, training

## ABSTRAK

**Latar belakang:** Dinamika lingkungan akademik dan perkembangan ilmu pengetahuan serta teknologi membuat sistem pendidikan nasional Indonesia telah mengalami berbagai penyesuaian, termasuk program pelatihan pendidikan spesialisasi bedah. Berbagai perubahan esensial pada beberapa taraf tertentu dan marginalisasi pelayanan bedah serta pragmatisasi telah menyebabkan menurunnya marwah program pendidikan dan pelatihan bedah di Indonesia. Kajian ini bertujuan untuk menganalisis beberapa faktor penyebab secara tepat untuk mengarahkan ke sasaran yang tepat berdasarkan situasi saat ini dan masa depan untuk mencegah solusi yang mempersulit penyelesaiannya.

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**Metode:** Tinjauan naratif ini didasarkan pada artikel terkait yang diunduh secara bebas, yang membahas tentang apa dan mengapa ketidakpastian penyelenggaraan pendidikan dan pelatihan saat ini serta menyarankan bagaimana perubahan harus dilakukan untuk mengembalikan martabat Dokter Spesialis Bedah di Indonesia. Kondisi Indonesia saat ini terutama berdasarkan implementasi di Departemen/KSM Ilmu Bedah Fakultas Kedokteran Universitas Indonesia dan Rumah Sakit Cipto Mangunkusumo.

**Hasil:** Data-data terkait penilaian proses pendidikan dan evaluasi kualitas lulusan ahli bedah sangat sulit untuk didapatkan. Berdasarkan observasi mandiri, setidaknya terdapat empat permasalahan utama, yaitu: rekrutmen tenaga pengajar, kebijakan Kemendikbud, kecukupan materi pembelajaran, dan fenomena kelulusan berbasis semester. Masalah-masalah ini mengarah pada kuasi-rujukan dan manajemen kasus operasi defensif, yang secara bertahap menurunkan martabat profesi Dokter Spesialis Bedah.

**Kesimpulan:** Solusi mendasar untuk mengembalikan martabat dokter spesialis bedah di Indonesia adalah melalui pendidikan dan pelatihan yang menghasilkan Academic Surgeons.

**Kata kunci:** academic surgeons, martabat, pendidikan, pelatihan, tantangan

### PRACTICE POINTS

- The surgical specialists' education-training quality is dropping.
- There is perceptual ambivalence in the surgical specialists' learning environment.
- The fundamental solution to restoring dignity is to produce academic surgeons.
- Total policy execution must follow any resolution to the education system.

### INTRODUCTION

The dual membership and uncertain authorities between three institutions: Collegiums, Universities, and Teaching Hospitals, as stakeholders, are presumed as the cause of surgical specialists' education training quality dropping. Thus, these problems reduce the goal focus in providing surgical education-training. The absence of a common perception of the Professional-Education form has created ambivalence in the learning environment between the group with profession-based education (apprenticeship) by the collegium and the group concept of university-based academic education, which is applied based on the national education system.<sup>1,2</sup> Due to a lack of publications and data about surgical education training in Indonesia, we conduct this narrative review article. A narrative review is an appropriate and ideal way to provoke

scholarly dialog about broad perspectives on surgical educational methods and present a philosophical article. This study aims to raise the discussion about surgical-training methods and answer the educational-training strategy challenges to produce surgeons with practical skills and academic vision to maximize the health capability services.

### METHODS

This paper is a narrative review that tries to review the what and why of uncertainty in the provision of education training today and suggests how changes must be made to restore the dignity of Academic Surgeons in Indonesia. A selective journal was performed via online databases (PubMed, Scopus, Google Scholar, ProQuest) with the keywords academic surgeons, training, and challenges, including their mesh terms and

combination with the Boolean operators. Materials sourcing was primarily from manuscripts describing academic surgeons' roles as the answers to daily surgical problems in daily settings. The systematic review, meta-analysis, randomized controlled trials, prospective, and retrospective studies were preferred; observational studies, reviews, commentaries, and any other reviews were used when no other data sources were available due to the rarity of data. The general conditions in Indonesia are described mainly based on observation by personal teaching staff who has experienced more than 35 years of surgical education training at the Surgery Department Faculty of Medicine Universitas Indonesia and Cipto Mangunkusumo Hospital. Out of the existing literature, relevant theories from the collected manuscripts are discussed to propose an educational model recommendation suitable for resolving Indonesian surgeon education-training problems.

### **The main problem**

Four main problems alternate the provision of surgical education and training. First, the surgery department generally recruits teaching staff that prioritizes credentials in more than 95% of Ministry of Health hospitals. As a result, they only prioritize service orientation which can be observed from the small amount of the teaching staff who have functional responsibilities or any lecturer's certification, even academic achievements when admitted. This condition is compounded by the second problem, the policy of the Ministry of Education, which is more oriented towards academic path education in the recruitment process of students. Prospective students who lack experience and independence in pre-specialized clinics are not adequately screened. As a result, they form inappropriate personalities, traits, and characters to become surgical specialists.

In the past, well-known attributes: "Surgeons cut everything without knowing the pathophysiology." The third problem is the learning material factor and there are so many branches of surgery, nowadays. The reason for developing surgery branch was argued to improve services rather than developing science. However, in practice, many general surgery resident students are not exposed

to the general surgery learning material because of the divided knowledge into narrow boxes. General surgeons, other specialists with surgery, and sub-specialist professions should have formed their core and specific competencies. The evaluation results of the study program conducted by LAM-PTKes (independent accreditation institute for higher health education in Indonesia) supports that the module achievement is a descriptor or guide for competency achievement in each surgical specialist.<sup>3</sup> However, implementing the provisions regarding achieving these competencies has not been proper because each profession claims competence and causes many overlapping competencies problems. In addition, the situation of surgical cases in practice is very heterogeneous, so there is overlap between each discipline.

On the other hand, the need and awareness to complete a thesis due to university base study always get the last priority: the fourth problem detected.<sup>3</sup> Scientific paper is always a problem and is managed at the end of the education period. As a result, many theses with excellent quality only end up without publication. The demand for semester-based graduation on time phenomena is a priority, even though it is contrary to the principle of achieving a competency-based target. This phenomenon was proven when there COVID-19 pandemic. Many module achievements were delayed due to the decrease in cases and the lack of opportunities for students to manage instances, but they still graduated.

The problems stated above have been going on for quite a long time, and there is no conclusion between the surgery collegium, university, or teaching hospital in solving them. Therefore, it is necessary to make a comprehensive and actual effort to solve it.

### **Objective condition**

The difficulty of obtaining data has made it challenging to present a precise outcome on the issues discussed in this article. However, a national survey should have been conducted on surgical specialists' needs and performance assessment. The observations made while serving as a teaching staff and performing surgical services have caused great concern. The issue is that general surgery graduates

only can perform minor operations, simple and routine procedures such as appendectomy elective herniotomy and for benign breast lumps. This concern indicates how minimal their mastery is of standardized module competencies. Another problem is that in the Emergency Department, they can only be agents who refer cases to other surgical specialists. Emergency cases are handled to a diagnostic level, which they should be able to operate according to their area of competence but are referred to a regional or central Referral Hospital on the pretext of social security or limited facilities.

The most worrying thing is the demands of the public, who are increasingly exposed to information about surgical specialist services that intersect with issues of code of conduct and patient safety. This condition leads to quasi-referrals and defensive surgery case management. The reasons for payment and the lack of facilities are always an argument that is often echoed. Shouldn't surgeons be competent in managing surgical cases, not just performing operations? This phenomenon is why the dignity of surgical education-training is at issue in this article.

## RESULTS AND DISCUSSION

Academic surgeons, as the target of education training programs, have resulted in superior surgical service in developed countries.<sup>4</sup> LeMair shows four characteristics of academic surgeons a) Patient care that improves the sufferers' quality of life; b) Researching that benefits the advancement of science; c) Active in education-training that contributes to skills and knowledge development of the students and d) Act as a mentor that stimulates inspiration and innovation of the students.<sup>5</sup>

In the United States, the academic surgeon predicate is intended for surgical specialists who work in university hospitals and is more exclusive than a private surgeon group.<sup>5,6</sup> In Indonesia, everybody claims to have embraced and implemented it, but that is only an additional or extracurricular activity, not entirely applied as a core curriculum. This fact is shown by the graduates who regularly work more in services with minimal research or publication records.

DeBakey points out seven activities that characterize academic surgeons, namely a) being able to identify complex problems that cannot be handled or resolved; b) being experts in their fields; c) innovating any management or surgical procedures to face complex cases; d) initiate innovation based on ongoing procedural problems; e) being critical in the area they are mastered in to provide the best for patients; f) knowledge dissemination through publications and scientific presentations; g) educate and train surgical specialists and related scientists, as described by Rosengart et al.<sup>7</sup> Francis Moore supports the statement with arguing that academic surgeon is a bridge tender from the laboratory (bench) to patient care (bedside) and vice versa.<sup>5</sup> This profile shows the personification of surgical procedures based on the newest concept of science and art. Moreover, William Longmire calls it a profession that always develops itself, hones skills, and acts as a trained figure and expert in his field.<sup>8</sup> As a resume, "there is no career more rewarding than an academic surgeon. Through teaching, academic surgeons impart knowledge and skills to the next generation of surgeons."<sup>5</sup>

Character building is a critical strategy to be carried out in professional education training. The surgeons' characters have always differed from others, such as being tough, firm, fast, and precise in making decisions. This character is known as the surgeon's ego – which is a little arrogant.<sup>9-11</sup> However, the surgeon's ego is unsatisfactory in this global competition and transparency era. It has required the academic surgeon and surgery leadership character.<sup>5,12,13</sup> These characteristics are the ideal professional guideline and are urgently needed by students.<sup>13</sup> The character and traits transmitted from the mentor will determine the graduates' quality in the community.

John D. Mellinger states, "as an educator, character or virtue is our learners' greatest need and is our greatest contribution to their development." So, mentoring is the main characteristic of professional surgical education and is the primary culture of academic surgeons because it will motivate soon-to-be specialists to develop knowledge and clinical skills in establishing diagnosis and management.<sup>12</sup>

Therefore, the role of mentors is crucial in transferring knowledge, skills, and attitude to future generations, as was done by Bassini, Whipple, Billroth, and Halsted Makaucchi. Thomas Starzl states, "the history of medicine is that what was inconceivable yesterday and barely achievable today often becomes tomorrow's routine." In Indonesia, the mentors who have contributed to the surgeons' education history are Professor Soekarjo, Professor Sutan Assin, Professor Oetama, Professor Djamaloeddin, dr. Irawan Surya Santoso, and others.

### **Restoration Of The Dignity Of Surgeon Education-Training In Indonesia**

#### Proposed main stages

The first step is to study the lecturer's personality type using a personal style inventory (MBTI) to determine the best approach strategic in education and training. One of the personality types, ESTJ type, has the pleasure of working with people, organizing, and doing various practical activities but does not like changes if they feel the conditions provide comfort. Although tough, logical, analytical, and firm in making decisions, they are not patient. They still listen to others' opinions but sometimes do not pay attention to other people's values and feelings because they think those are subjective. If they do not have good emotional management, they are easily triggered by things, not in line with their expectations.<sup>14,15</sup> This personality style is suitable for a surgical skills trainer. The ISTJ/INFJ personality types are usually a minority, believed to be a think-tank, and manage the learning materials strategies. This strategy is effectively combined with a SWOT analysis and several faculty development programs involving third parties in determining a policy to enhance education-training programs.

The next step is improving the students' recruitment process, which not only assesses academics but also assesses the applicants' track record using behavioral interviews based on the STAR technique interview.<sup>16</sup> Past success is a positive indicator of future success, so it can be used as a determinator for surgeons' candidates by rating their experience and skills they possess during the general practitioner profession. Avoid the target number of students and

fulfill quotas that have the potential to reduce the applicants' competence and eligibility to participate in educational-training programs.

#### **Mentorship**

Re-implement character education is essential by applying mentorship to provide measurable assistance and right brain development. Mentorship facilitates residents with limited experience to gain competency transfer from lecturers with much experience. However, not a few residents claimed depression when undergoing a mentorship program. Mentors and mentees are needed to be aware of how beneficial mentorship is for both parties to avoid this situation.<sup>7</sup> For lecturers, being a mentor provides an opportunity to understand themselves better and improve their competence as a leader and communicators when they guide and help improve the talent of the mentee. Mentees will use the mentor's experience as a practical guide in enhancing competence and gaining role models about careers and life.

In line with the development of learning technology, implementing e-mentorship is a must, besides the conventional one. Mentors and mentees will communicate using various information technology devices such as zoom, WhatsApp, the internet, and others. The advantage is that it can overcome the barriers of distance and communication time between mentors and mentees. Therefore, it is very suitable for people who are too busy.<sup>18</sup> However, e-mentorship has disadvantages if we use a conventional method like email, digital classroom, and telephone. Many educators argue that technology-based learning is ineffective in affective learning because it only conveys messages in written form, static images, or voice that cannot present body movements and facial expressions. Audio-visual media can overcome this weakness through direct communication using online video platforms. During the Covid-19 Pandemic, zoom has become one of the mainstay learning tools that proves the argument that mentors and mentees can meet face-to-face in cyberspace in real time with comprehensive learning and display design.

### Study materials

Textbooks and references on surgical competence help candidates in the learning process. Lecturers use textbooks as the primary reference in learning, referring to specific educational programs' curricula. A reference book is a scientific paper containing a reasonably broad and in-depth discussion about a particular field of science published and marketed. Faculty should provide simulators and animal laboratories in pre-clinical services to help residents train in practical and process skills. The simulator plays a crucial role as an extrinsic motivator in learning psychomotor skills.<sup>20</sup>

Surgical specialist training modules produce competencies at a proficient level, while research has theses and publications from academic activities. So that the profession's achievement is an academic surgeon, it is essential to arrange competency-based modules based on the needs of tiered health services. For example, candidates are directed to resolving frequent cases in district service areas like emergency cases and acute conditions.

Every student must be motivated to be proficient the competence of the module that must meet the following five characteristics: a) Self-instruction that allows students to learn independently. The module contents' learning objective must be observable and measurable, such as specific parameters; illustrations that clarify the presentation of the material; questions, practice assignments, summaries, and self-evaluation instruments; and a list of references. b) Self-contained, covering every material needed to achieve the learning objectives. c) Stand-alone means students do not need other teaching materials to whole experience learning. d) Adaptive to the latest developments in science and technology. e) User-friendly, simple formats and language, and standard terms for easy understand.<sup>19</sup>

### Assessment

It must remember that pursuing competency improvement in education is a long and continuous process. Therefore, applying the Cumulative Summative Methodology (cusum) for assessment and proficient competency evaluation is necessary. It analyzes the outcomes obtained through

retrospective observational studies to determine the acceptability of action failure in an observed case series. This cusum objectively evaluates the performance by showing the cumulative number of procedures performed by a prospective specialist to meet the qualification criteria.<sup>21</sup> Through formative tests conducted at the end of each unit period, the success and handicap of each learning and teaching process are known periodically. Those results can be used as feedback for lecturers and students to improve learning productivity on an ongoing basis. At the end of the semester or educational programs, there is a summative to conclude whether students have mastered the relevant competencies. Furthermore, the formative and summative results are used to decide whether the candidate can continue his education to a higher level.<sup>22</sup>

### Research and scientific articles

Producing an academic surgeon needs comprehensive improvements in conducting research and publication by the lecturers and students. Collaborating with the Community Medicine Department is an example of increasing publication research for reputable international journals  $Q1,2,3,4/SJR >0.5$ .

To improve service knowledge, biomolecular and genetic analysis based on surgical cases must be carried out. For example, the article "Clinical Pathway Guideline on Complicated Intra abdominal Infection; Indonesia perspective" and "The Role of the Intestinal Glycocalyx in Intra-abdominal Infections through Blood Group Investigations" are just newly developed concepts.<sup>23,24</sup> Publication of the genetic profile of colorectal and breast malignancy mapping in the Journal of Plos one is the beginning of the application of Personalizes medicine.<sup>25</sup>

As one of the strategies to fulfill the Tri Dharma of Higher Education, it is necessary to provide a university-based academic journal publication.<sup>26</sup> For example, the New Ropanasuri Journal of Surgery is an open-access journal that coordinates with the Directorate of Research and Community Service of Universitas Indonesia. It is nationally accredited SINTA 3 by the Ministry of Education and Culture Research and Higher Education, Arjuna, which

Sinta-Dikti indexes, Garuda, Google Scholar, Copernicus Index in 2020, and collaboration with Elsevier's Digital Common platform as a strategy for Scopus indexing efforts. Many studies on the management result from difficult and complex cases like a live targeted therapy on surgery malignancy are published through this facility. As a result, currently, RSCM has been classified as a referral center with high-volume cases of Hepatopancreaticobiliary (HPB). It is undeniable that the research collections and published scientific papers are local content that becomes the reputation identity of scientific research for a higher education institution.<sup>23-25,27</sup>

#### Research strengths and limitations

Empirically and on paper, the partial designs of each component of the proposed educational and training model indicate its conformity with the concept underlying the design. However, because it is still conceptual, trials, reviews, and improvements have never been carried out on the education-training system in an integrated manner. Therefore, it is still open for discussion how this model will address when implemented as an integrated system, including compatibility between components and reliability against internal and external dynamics influences. One important thing that has not been considered is the disparity variation of situations and conditions between universities providing education for surgeons in Indonesia. It cannot be denied that, based on experience, this diversity is one of the challenges to standardizing the education system for surgeons in this country. However, this model design has already been implied smoothly in a single surgical education institution name Surgery Department of Cipto Mangunkusumo Hospital, Faculty of Medicine, Universitas Indonesia. This article was created based on academic observations and experience in implementing this surgeon education-training methods by a past chairman of the Department of Surgery, Faculty of Medicine, Universitas Indonesia

For accommodating field visit activity, FM PHN UGM collaborated with the home care unit of the DR Sardjito Hospital as the main teaching hospital. This collaboration activity was related to the use of home care unit patients to become

patients in the implementation of this IPE course. Several meetings were held between the teams and the home care unit to discuss several cases and problems that were suitable to be used as IPE patients. In the geriatric context, the selected patients were those who over 50 years of age with various health problems which can be approached collaboratively by various health professions, especially medical doctors, nurses, and health nutritionists. By the number of participant groups, namely 10 groups, for this reason, 10 home care patients were determined around the area covered by Dr. Sardjito Yogyakarta (Table 2).

Home care patients managed by Dr. Sardjito Hospital's home care unit is a general patient who regularly uses home care services in this hospital. Apart from the pilot program, Dr. Sardjito Hospital's home care unit regularly visits these patients to carry out clinical assessments and clinical interventions aimed at improving the patient's health status. Various health professionals, including doctors, dentists, nurses, physiotherapists, and nutritionists, visit these home care patients, but they do not come at the same time. However, patient health problems are discussed regularly in the home care unit by various health professionals, to get collaborative treatment.

#### **CONCLUSION**

The fundamental solution to restoring the dignity of education-training of surgeons in Indonesia is to produce academic surgeons. The various efforts to produce academic surgeons have begun in several teaching hospitals and have shown results. However, in non-academic hospitals, this has not been detected. Several studies have been carried out and propose a solution based on the problems encountered in handling referral case management by uniting two parties: academics and professionals known as Research University Hospital.

The concept is producing a surgical specialist with academic characteristics capable of actualizing "Indonesia's surgery service and research to the excellent and world-class level and becoming the referral center from surrounding Indonesia as the vastest equatorial archipelago."

Any resolution related to the system and structure must immediately follow with total policy execution. Stakeholders and lecturers must gradually shift the focus to carrying out the education-training function.

Responsibilities to become an academic surgeon depend on each individual who has had the opportunity to become a surgeon with the promise of the highest professionalism, quality, and measurably to serve patients. Even though the COVID-19 pandemic has dramatically affected surgeons' work, this can not be an excuse for reducing the surgical service and the competence qualities as the frontline services of invasive procedures.

### RECOMMENDATION

- The surgeon's education needs to implement the integrated model design to achieve measurable competencies as a reference in advanced case management by producing comprehensive current research and sustainable surgical services.
- All sub-systems between academics and professional associations need to carry out their functions synergistically to lead the production of an academic surgeon.
- Several universities are encouraged to conduct trials to implement the integrated model design, followed by the refinement of the design itself.

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### COMPETING INTEREST

The author declares that there are no competing interests related to the study.

### LIST OF ABBREVIATIONS

LAM-PTKes: Lembaga Akreditasi Mandiri  
Pendidikan Tinggi Kesehatan  
Indonesia

MBTI : Myers–Briggs type indicator  
ESTJ : Extrovert, sensing, thinking, judging  
ISTJ : Introversion, sensing, thinking, judging  
INFJ : Introversion, intuitive, feeling, judging  
SWOT : Strength, weakness, opportunity, threat)  
Garuda : Garba Referral Digital Dikti (Garuda)  
RSCM : Rumah Sakit Cipto Mangunkusumo  
HPB : Hepatopancreaticobiliary

### AUTHORS' CONTRIBUTION

*Toar Jean Maurice Lalisang* – collecting literature, literature analysis, writing manuscript, and publication manuscript. The manuscript is solely written by this author, and there are no other parties qualified as co-authors.

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