Revista Bioética
Print version ISSN 1983-8042 | On-line version ISSN 1983-8034

Rev. Bioét. vol.33 Brasília 2025

Cost-conscious training of the physician: ethical analysis

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Abstract

Waste in health is a global concern. The Choosing Wisely campaign proposes to discuss unnecessary costs in health care, a relevant ethical aspect in medical education. The objective of this study is to analyze the perception of medical professors of factors that interfere in the cost-conscious education of medical students. This is a qualitative study, carried out with medical professors of an internship program. The data were subjected to the thematic analysis technique. In total, 64 professors answered the questionnaire. The following categories emerged: poor medical training, defensive medicine/fear, influence of industry and consumption, lack of knowledge/commitment to the management of health services, patients' access to medical information online, and deficient patient care. Professors, as potential trainers, have gaps in professional ethical and humanistic training that hinder the applicability by the physician of the awareness campaign regarding costs.

Keywords: Ethics, medical. Health care costs. Faculty, medical. Bioethics.

Resumo

Formação custo-consciente do médico: análise ética

O desperdício em saúde é uma preocupação de âmbito mundial. A campanha Choosing Wisely ("escolher com sabedoria") propõe discutir custos desnecessários na assistência à saúde, aspecto ético relevante na formação médica. O objetivo deste estudo é analisar a percepção do docente médico de fatores que interferem na formação custo-consciente do estudante de medicina. Trata-se de estudo qualitativo, realizado com docentes médicos do internato. Os dados foram submetidos à técnica de análise temática. Responderam ao questionário 64 professores. Emergiram as categorias: formação médica precária, medicina defensiva/medo, influência da indústria e do consumo, falta de conhecimento/comprometimento com a gestão dos serviços de saúde, acesso do paciente a informações médicas na *web* e ausência do cuidado na atenção à pessoa. Os docentes, enquanto potenciais formadores, apresentam lacunas na formação ética e humanística profissional que dificultam a aplicabilidade da campanha de conscientização em relação a custos pelo médico.

Palavras-chave: Ética médica. Custos de cuidados de saúde. Corpo docente de medicina. Bioética.

Resumen

Formación médica consciente de los costos: análisis ético

El desperdicio en salud es una preocupación a nivel mundial. La campaña Choosing Wisely ("elegir sabiamente") propone discutir costos innecesarios en la atención sanitaria, un aspecto ético relevante en la formación médica. El objetivo de este estudio es analizar la percepción del docente médico sobre los factores que interfieren en la formación consciente de los costos del estudiante de medicina. Se trata de un estudio cualitativo, realizado con docentes médicos del internado. Los datos se sometieron a la técnica de análisis temático y 64 profesores respondieron al cuestionario. Surgieron las categorías: formación médica deficiente, medicina defensiva/miedo, influencia de la industria y del consumo, falta de conocimiento/compromiso con la gestión de los servicios de salud, acceso del paciente a información médica en la web y ausencia de cuidado en la atención a la persona. Los docentes, como potenciales formadores, presentan lagunas en la formación ética y humanística profesional que dificultan la aplicabilidad de la campaña de concienciación médica respecto a los costos.

Palabras-clave: Ética médica. Costos de la atención en salud. Docentes médicos. Bioética.

The authors declare no conflict of interest.
Approval CAEE: 57164216.1.0000.5544

Research

Cost-conscious thinking and what it represents in the training of medical professionals has been increasingly present in medical discussions [1]. It is the ethical and professional responsibility of physicians and other healthcare providers to avoid overuse and misuse of care that does not benefit patients. There is a crucial conflict between the quest for quality health care and the need to control rising costs [2].

The issue is not limited to cost management, but also highlights the importance of an ethical and responsible approach from healthcare providers in decision-making related to the use of health resources since the training of these professionals [2]. International studies in health care ethics and economics point out that, in the last three decades, the exponential increase in health technologies incorporated into the work processes of health services is associated with both the drop in mortality as to the growth in the volume of knowledge and information produced and the cost of medical care. The analysis of the sources of improvements in health and the effectiveness of treatments can significantly contribute to the development of more accurate and efficient approaches to health management and, thus, to the improvement of care and the allocation of resources with a view to improving the quality of life and promoting the longevity of the population [3].

The ethics content taught during the training of physicians and other healthcare providers must be worked on vertically and horizontally, and practice must be based on ethical guidelines [4]. It is necessary to create more favorable conditions for the health of populations using new technologies and fair distribution of health resources. In the efficient management of health service systems, there is the recognition of a potential conflict between health ethics and economic ethics. Prescribing professionals are considered pillars in the responsibility of health management since the request for tests and prescriptions are under their control. Although these professionals disagree that clinical practice can define excessive health expenditures, they agree that it is their responsibility to try to contain them [5,6].

The contribution of ethics and bioethics in education, understood as a continuous process of training, should contribute to train medical professionals aware of the need to adopt behavior guided by wise decisions in clinical practice [7,8]. Medical training is related to multiple contexts and factors at a given time, such as macrostructures, economic and political trends, concepts of health and health needs, as well as with the organization of health services and policies and, particularly, medical practice [7].

To reaffirm the principles and values of medical professionalism, the Choosing Wisely campaign emerged in the United States in 2012, launched by the American Board of Internal Medicine. It is a proposal for discussion and awareness-raising of physicians and patients about unnecessary costs in health care [1,2]. With its success, in 2014 the initiative was implemented in Canada and spread to various parts of the world [1].

Successful cost consciousness learning occurs by three processes: i) the effective communication of knowledge of the general economics of health and the prices of health services, of scientific evidence on clinical guidelines and benefits and harms of health care, and of the patient's personal values and preferences [9]; ii) mediation of a reflective practice to provide feedback on the student's praxis, monitoring their development; and the iii) creation of a supportive environment in which the organization of the health system and the presence of professors, physicians, and healthcare providers who serve as models in cost-conscious care establish an institutional culture that facilitates the student to achieve this goal [9].

With the understanding that medical students also learn by observing their professors, the purpose of this study was to analyze the perception of medical professors about factors that interfere in the cost-conscious ethical education of medical students.

Method

This is a study with a qualitative approach that had as inclusion criterion professors who make up the teaching staff of the internship period (fifth and sixth years, respectively) of one medicine course of a private institution in Salvador/BH, Brazil.

Data were obtained by applying a questionnaire consisting of two sessions: the first of which had questions about the professor's personal characteristics, time and place of training, graduate degrees or not, and performance as a professional and as a professor in the medicine course; the second of which contained an open-ended question that sought to understand participants' perception of the main factors that can hinder or prevent the adoption of cost-conscious ethical behavior by the physician.

The data obtained from the open question were subjected to the thematic analysis theorized by Bardin [10], which adopts three basic phases (material organization, data classification, and final analysis) that were separately carried out by three evaluators. At the end of analysis, consensus was sought by the evaluators on the established categories.

All the material from the open questions was organized in the first phase. The data were systematized to find perceptions related to the research objective in the second phase. Initially, a horizontal and exhaustive reading of the obtained answers was carried out and the registration units that gave rise to the nuclei of meaning were subsequently selected. The participants were identified by the letter "P" followed by a number corresponding to the order in which the questionnaires were answered. Once the classification process was carried out, it was possible to find connections between the registration units and proceed to the categorization to understand and interpret the relevance and representativeness of the acquired data. The final analysis, interpretation, and discussion with the pertinent scientific literature were carried out in the third phase.

The research project was submitted to and approved by a research ethics committee according to the precepts of the National Health Council Resolution 466/2012 [11].

Results and discussion

Of the total of 84 professors at the internship program at the time of the study, 64 answered the questionnaire. As characteristics, the predominance of women stands out, with a mean age of 49 years and about 24 years since their graduation. The general characteristics of the professors, medical school of origin, and highest degree are shown in Table 1.

Table 1. Characterization of the medical internship professors who participated in this research (Salvador/BA, 2019)

General characteristics of professors (n=64)	
Women, n (%)	33 (51.6)
Men, n (%)	31 (48.4)
Age, M±SD*	49.6±11.33
Length of training, M±SD*	24.5±11.63
Medical school of origin	
EBMSP, n (%)	26 (40.6)
UFBA, n (%)	29 (45.3)
Other, n (%)	9 (14.1)
Higher degree	
Residency, n (%)	25 (39.1)
Master's degree, n (%)	24 (37.5)
PhD, n (%)	12 (18.8)
Not informed, n (%)	3 (4.7)

** M±SD = mean±standard deviation*

Of the professors, 59 also work as assistant physicians. Their places of operation are described in Table 2. The analysis of the professors' field of activity is fundamental to understand the factors that can interfere in their cost-conscious behavior. Most also work in private health services, so it is important to reflect on conflicts of interest in medical practice and their possible influence on the indication of exams and procedures by professionals with no their real need [12]. The need for change in management models is also emphasized, including in training institutions [13,14]. The perception of the professors about the cost-conscious behavior and the potential wasteful behavior in their activities enabled us to outline strategies that contribute to their continued ethical education, which thus exert a more positive influence on the behavior of undergraduate students.

Table 2. Places of activity in the course of the professors who participated in this research (Salvador/BA, 2019)

Place of work	n (%)
Outpatient clinic	
Public	24 (37.5)
Private	48 (75.0)
Hospital	
Public	29 (45.3)
Private	37 (57.8)
Emergency	
Public	6 (9.3)
Private	8 (12.5)
Primary health care service	14 (21.9)

Role modeling is a powerful teaching strategy [15,16], specially to emulate specific professional behaviors, and about 90% of students remember the models that shaped their professional attitudes in their professional life. The literature finds characteristics and behaviors that students aim to emulate in the future professions, such as acquiring a solid base of knowledge; show genuine empathy, respect, and compassion for patients; have a broad understanding of the undergraduate academic curriculum; connect knowledge with more qualified teaching and learning; and to have respectful interactions with other healthcare providers [16]. The teaching of professionalism as a contribution to medical ethics must include the longitudinal integration of material throughout the educational continuum. The importance of establishing the appropriate professional identity training for the current practice of medicine is emphasized [17]. The Code of Medical Ethics [18] describes a set of principles of conduct for medical professionals crucial to ensure integrity, responsibility, and respect in the practice of medicine. The understanding and internalization of these principles by the medical student must occur progressively since the first years of training.

The ethical training of medical students aims not only to provide technical knowledge, but also to cultivate a solid moral conscience, promoting empathy, dignity, and commitment to the patient's well-being. Corroborating the teaching of medical ethics, the Choosing Wisely campaign has been used worldwide as a learning tool with the aim of promoting the wise use of resources in health considering the principles of professionalism [19], which are in line with the fundamentals of the Code of Medical Ethics [18].

The data obtained from the open question, when subjected to thematic content analysis, gave rise to the thematic categories in Table 3 and their respective registration units.

Table 3. Categories and numbers of registration units obtained from the thematic analysis of the content of professors' answers (Salvador/BA, 2019)

Category	Registration units (n=66)
1. Poor medical training	24
2. Defensive medicine/fear	17
3. Influence of industry and consumption	9
4. Lack of knowledge/commitment to the management of health services	7
5. Patients' access to medical information online	5
6. Deficient patient care	4

The categories that emerged indicate factors that can interfere with physicians' cost-conscious attitude. Poor medical education was the most frequent category. Answers about the perception of professors regarding poor medical education are shown below: "*Lack of effective communication and knowledge about cost consciousness and cost benefit to the patient and the health system*" (P7); "*Lack of knowledge on the subject, and the vices of the practice and routine of care*" (P8); "*Poor medical training that leads to protectionist medicine*" (P30); "*The prioritization of technology over clinical common sense*" (P41); "*Lack of practice in developing probability-based clinical reasoning*" (P49).

From the professors' point of view, the lack of knowledge on the topic of cost consciousness may be related to the impediment to the adoption of a cost-conscious attitude. The approach to this theme throughout the medical course in an applied and transversal way and with integration

between disciplines, such as medical ethics, bioethics, and collective and clinical health, is fundamental for the cost-conscious professional performance of the future physician. The student performance in the practice scenario must meet the demands of the community and service [20]. One should not lose sight of the fact that, in the current teaching scenario, the expansion of scientific knowledge and the technological appeal of tests and treatments can compromise the training process, basic clinical understanding, the adequate collection of information, clinical examinations, and the wise use of health resources by those involved in the care process, whether professors or students [16].

Although the National Curriculum Guidelines [21] frame a generalist, humanistic, critical, reflective, and ethical medical education that enables students to work at different levels of health care, and still in the 21st century there is a mismatch in medical training to meet the main health needs of the population. Part of this mismatch is related to the historical process of curriculum development, which is often decontextualized, fragmented, and focused on technique. The teaching of ethics is intertwined with the National Curriculum Guidelines from the development of health promotion, prevention, recovery, and rehabilitation actions as good professional practices in the individual and collective spheres to social responsibility and commitment to the defense of citizenship, human dignity, and the integral health of the human being [21].

Poor quality medical training can induce excessive requests for tests and/or procedures. Thus, it is important to incorporate in the curricular components of medical ethics in a longitudinal manner the elaboration of planned medical prescriptions covering different training contexts. Prescriptions must be aligned with the socioeconomic reality of patients and with the care capacities offered by the Unified Health System (SUS) [22]. With this in mind, the Choosing Wisely campaign could be carried out at different stages of medical education [8,23].

Another aspect highlighted by the professors was expressed in the category of defensive medicine/fear, as evinced in the following excerpts: "*I believe that the judicialization of medicine makes many physicians request too many exams*" (P13); "*There is a belief that one receives more support from more tests. Pressure from patients, family members, and society itself*" (P44); "*Fear of diagnostic error*" (P24).

Regarding litigation and the judicialization of medical practice, the Code of Medical Ethics, in Chapter II, which deals with the rights of physicians, item II, reinforces that the medical professional has the right to *indicate the appropriate procedure for the patient, observing scientifically recognized practices* [18]. The respective medical law has, to a certain extent, the function of supporting good medical practice, even in contexts of family pressure or from patients by requesting complementary tests or by unnecessary drug prescription. In emergency services, it is common for varied, expensive, and unnecessary tests to be requested, mainly as a measure of self-protection of physicians against possible administrative or judicial lawsuits. Defensive medicine has been a frequent practice, especially among younger professionals, who seek an illusory sense of security [24].

The category called the influence of industry and consumption was the third most frequent. Excerpts that evidence this influence are shown below: (...) "*financial interests or the media influence for the adoption of expensive/sophisticated tests*" (P26); (...) "*the idea that it is always necessary to do tests, forgetting clinical diagnosis*" (P14); (...) "*culture of the more exams, the better care*" (P33); (...) "*Many physicians have a bias toward receiving productivity and sometimes performing tests that they themselves request*" (P54).

The culture of consumption is permeated by conflicts of interest, a factor pointed out by the professors that compromises cost-conscious professional practice. The need for a curricular approach on transversal professionalism in medical education is evident. Curriculum implementation alone is insufficient to adequately address issues associated with conflicts of interest in medicine. It is also important to promote activities and broad debates on the interaction of industry and medical practice, as well as structural changes that restrict commercial influences in educational and research environments [4].

The Code of Medical Ethics prohibits the commercialization of medicine and establishes the duty to care for the well-being of patients, considered as an end in itself in their human dignity. It is also forbidden to link the medical prescription to the receipt of material advantages offered by laboratories or companies of equipment for use in the medical area, as well as it is forbidden to give lectures or write articles promoting pharmaceutical products or equipment without declaring the financial agents who finance these studies [19].

In view of the confrontation of this scenario that has been gaining strength in recent decades, the first principle of the charter on medical professionalism in the new millennium stands out [25,26]: the principle of patient well-being priority, which recommends attention to market forces, social pressures, and administrative requirements, which must not compromise patient safety and well-being [7,8,27].

In the category lack of knowledge/commitment to the management of health services, expressions emerged that indicate that the lack of knowledge in this area in professionals and the absence of commitment of services to care are factors that can contribute to inappropriate cost-conscious behavior, as can be seen in the following excerpts: (...) "*little commitment to the sustainability of the Unified System and to supplementary health*" (P28); "*The lack of management vision in the work process and the non-involvement of the professional in cost-effectiveness issues*" (P31); "*Disruption of the public health system associated with poor management and work overload*" (P34); "*I believe it is the physicians' lack of habit of adopting cost-effective conducts, especially if they work in a private service that has greater ease in performing exams*" (P51); "*Lack of health management knowledge*" (P52).

Medical training should include health service management activities, as well as enable the development of skills and competencies in leadership [28]. Medical training should also include the systematized approximation of students to the economic and labor aspects of the profession [28]. The cost-conscious theme is also not present in the syllabus of the political-pedagogical projects of medical courses in Brazil. Moreover, there are other issues involving medical students, residents, and physician assistants in the field of practice that contribute to the formation of the culture of overdiagnosis and overtreatment [14,29].

Regarding the disruption of health services, there are several challenges faced by SUS, such as scarcity of resources, low remuneration, repressed demand, among others. In this scenario, the center of attention is not on the user but on the diagnostic resources, which compromises the quality of care. It is necessary to implement improvements in the financing and management of SUS resources [30], including cost-conscious education of professionals and managers. Learning to offer high-value, cost-conscious health care can be promoted based on three main elements: effective knowledge transmission, reflective practice, and supportive environment. In addition to cost-conscious education, clinical guidelines, patient values, use of feedback, and the creation of a favorable institutional culture based on a supportive environment are fundamental for training physicians, residents, and students [9,31].

In the category patients' access to medical information online, the absorption of scientific knowledge by the population in the media is portrayed, which generates an extra source of pressure on physicians. This perception is represented in the following statements by the professors: "*The patient arrives with information already researched and wants a certain exam, specialty, or procedure*" (P11); "*Patients' knowledge via the internet*" (P33); "*Ignorance of the population, who, because they think they always lack care, request, often aggressively, tests and sometimes unnecessary medications*" (P34). It should also be considered that health information in contemporary times is made available by the mass media, such as the internet, television, radio, among others.

It is noteworthy that the mistaken idea of patients that the more numerous the tests, the better the care ends up pressuring physicians to request more tests without explaining their need. Moreover, the increasingly common practice of quick consultations, with financial incentives proportional to the volume of attendees, and not to the quality of care, only perpetuates this behavior [13]. Decision-making by professionals must meet the best interests of patients in the face of health care cost pressures.

The category deficient patient care deals with the valorization of patients as the protagonists in decisions about their health. This is represented in the following registration unit: "*A non-user-centered medicine*" (P1); "*Short time to be with the patient*" (P2); "*Lack of time*" (P26).

Physicians' work overload can partially contribute to the lack of trust in patients in addition to intensifying moral stress and burnout [32]. There is a need to implement shared decision models that enable greater autonomy for patients [33]. The principles for medical professionalism in the new millennium, published in a letter by the American Board of Internal Medicine, constitute professional responsibilities that physicians must have to ensure care in patient care, namely: the principle of patient well-being priority, patient autonomy, and social justice or equity [19,25]. These principles should also guide the training process of physicians.

The principle of patient well-being priority is based on dedication to care the needs of the patient. Altruism should contribute to the physician-patient relationship. Market forces, social pressures, and administrative requirements must not compromise this principle. The principle of patient autonomy proposes that the physician should be honest with patients and promote their empowerment so that they can make conscious decisions about treatment as long as they do not oppose ethical practice or lead to inappropriate care. The principle of social justice recommends that physicians promote justice in the use of the health care system, with a fair distribution of health resources. To this end, they must actively work to eliminate discrimination in health care, whether due to race, gender, economic situation, religion, ethnicity, etc. [19].

Analyzing the field of activity of professors was important to find the factors that can interfere in their cost-conscious behavior and influence the training process of physicians. The results show several opportunities in which cost-conscious training can be worked on and stimulated thanks to the transformative potential of professors as a model for training. This study brings contributions to bioethics by highlighting the importance of integrating ethical principles in medical education in a transversal way, especially in cost-conscious practice. By showing that factors such as poor medical training, defensive medicine, the influence of industry, and deficient patient care can compromise responsible decisions in the allocation of resources, this study reinforces the need to rethink and improve medical curricula with an approach that values both the ethical management of health services and the humanization of care.

Final considerations

The professors found the following factors that hinder the adoption of cost-conscious behavior in medical education: poor medical training, defensive medicine/fear, influence of industry and consumption, lack of knowledge/commitment to the management of health services, and deficient patient care, especially the short time spent with patients during training.

The reflections that emerged from this research enables us to trace the perception of professors and their training potential, as well as factors that hinder the cost-conscious performance of the physician and consequently the gaps to be bridged in medical training. As future research perspectives, this study points to the development of indicators of professors' profile and the impact of pedagogical interventions, as well as longitudinal studies that evaluate the effects of these changes in clinical practice to contribute to the construction of a sustainable and socially just model in health care.

Research

References

1. Levinson W, Kallewaard M, Bhatia RS, Wolfson D, Shortt S, Kerr EA. 'Choosing Wisely': a growing international campaign. BMJ Qual Saf [Internet]. 2015 [acesso 31 mar 2025];24(2):167-74. DOI: 10.1136/bmjqs-2014-003821
2. Hood VL, Weinberger SE. High value, cost-conscious care: An international imperative. Eur J Intern Med [Internet]. 2012 [acesso 31 mar 2025];23(6):495-8. DOI: 10.1016/j.ejim.2012.03.006

3. Cutler DM, McClellan M. Is technological change in medicine worth it?. Health Aff [Internet]. 2001 [acesso 31 mar 2025];20(5):11-29. DOI: 10.1377/hlthaff.20.5.11
4. Sanchez THB, Fraiz IC. Ética médica e formação do médico. Rev. bioét. (Impr.) [Internet]. 2022 [acesso 31 mar 2025];30(2):284-99. DOI: 10.1590/1983-80422022302525pt
5. Tilburt JC, Wynia MK, Sheeler RD, Thorsteinsdottir B, James KM, Egginton JS *et al*. Views of US physicians about controlling health care costs. JAMA [Internet]. 2013 [acesso 31 mar 2025];310(4):380-8. DOI: 10.1001/jama.2013.8278
6. Buist DSM, Chang E, Handley M, Pardee R, Gundersen G, Cheadle A, Reid RJ. Primary care clinicians' perspectives on reducing low-value care in an integrated delivery system. Perm J [Internet]. 2016 [acesso 31 mar 2025];20(1):41-6. DOI: 10.7812/TPP/15-086
7. Feuerwerker LCM. Mudanças na educação médica: os casos de Londrina e Marília. Interface – Comun Saúde, Educ [Internet]. 2002 [acesso 31 mar 2025];6(11):139-42. DOI: 10.1590/S1414-32832002000200018
8. Mendonça DR, Aguiar CVN, Lins-Kusterer L, Correia LCL, Vieira AVA, Menezes MS. Implementation of the choosing wisely campaign at a medical clinic internship. Rev Bras Educ Med [Internet]. 2020 [acesso 31 mar 2025];44(3). DOI: 10.1590/1981-5271v44.3-20190277.ing
9. Stammen LA, Stalmeijer RE, Paternotte E, Oudkerk Pool A, Driessen EW, Scheele F, Stassen LPS. Training physicians to provide high-value, cost-conscious care. JAMA [Internet]. 2015 [acesso 31 mar 2025];314(22):2384-400. DOI: 10.1001/jama.2015.16353
10. Mendes RM, Miskulin RGS. A análise de conteúdo como uma metodologia. Cad Pesqui [Internet]. 2017 [acesso 31 mar 2025];47(165):1044-66. DOI: 10.1590/198053143988
11. Conselho Nacional de Saúde. Resolução CNS nº 466, de 12 de dezembro de 2012. Aprova diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da União [Internet]. Brasília, 13 jun 2013 [acesso 2 abr 2025]. Disponível: https://bit.ly/4m2bMYb
12. Souza RP, Rapoport A, Dedivitis RA, Cernea CR, Brandão LG. Conflitos de interesses na pesquisa médico-farmacológica. Rev. bioét. (Impr.) [Internet]. 2013 [acesso 31 mar 2025];30(2):325-36. DOI: 10.1590/S1983-80422013000200006
13. Giovanella L, Stegmüller K. The financial crisis and health care systems in Europe: universal care under threat?: Trends in health sector reforms in Germany, the United Kingdom, and Spain. Cad Saude Publica [Internet]. 2014 [acesso 31 mar 2025];30(11):2263-81. DOI: 10.1590/0102-311X00021314
14. Ceccim RB, Feuerwerker LCM. O quadrilátero da formação para a área da saúde: ensino, gestão, atenção e controle social. Physis [Internet]. 2004 [acesso 31 mar 2025];14(1):41-65. DOI: 10.1590/S0103-73312004000100004
15. Cruess SR, Cruess RL, Steinert Y. Role modelling-making the most of a powerful teaching strategy. BMJ [Internet]. 2008 [acesso 31 mar 2025];336(7646):718-21. DOI: 10.1136/bmj.39503.757847.BE
16. Burgess A, Goulston K, Oates K. Role modelling of clinical tutors: a focus group study among medical students. BMC Med Educ [Internet]. 2015 [acesso 31 mar 2025];15:17. DOI: 10.1186/s12909-015-0303-8
17. Buss L, Hurst JR. Choosing wisely Canada: integrating stewardship in medical education. Clin Med [Internet]. 2015 [acesso 31 mar 2025];15(5):499. DOI: 10.7861/clinmedicine.15-5-499
18. Conselho Federal de Medicina. Código de Ética Médica: Resolução CFM nº 2.217, de 27 de setembro de 2018 [Internet]. Brasília: CFM; 2019 [acesso 31 mar 2025]. Disponível: https://bit.ly/40oksjb
19. ABIM Foundation, ACP-ASIM Foundation, European Federation of Internal Medicine. Medical professionalism in the new millennium: a physician charter. Ann Intern Med [internet]. 2002 [acesso 31 mar 2025];136(3):243-6. DOI: 10.7326/0003-4819-136-3-200202050-00012
20. Gomes AP, Costa JRB, Junqueira TS, Arcuri MB, Siqueira-Batista R. Atenção primária à saúde e formação médica: entre episteme e práxis. Rev Bras Educ Med [internet]. 2012 [acesso 31 mar 2025];36(4):541-9. DOI: 10.1590/S0100-55022012000600014
21. Conselho Nacional de Educação. Câmara de Educação Superior. Resolução CNE/CES nº 3, de 20 de junho de 2014. Institui diretrizes curriculares nacionais do curso de graduação em medicina e dá outras providências. Diário Oficial da União [Internet]. Brasília, 23 jun 2014 [acesso 31 mar 2025]. Disponível: https://bit.ly/44OVPNT

22. Wanderley VE, Maia JA, Vilela RQB. A prescrição medicamentosa ambulatorial no internato: formação e prática. Rev Bras Educ Med [Internet]. 2010 [acesso 31 mar 2025];34:216-26. DOI: 10.1590/S0100-55022010000200005

23. Mendonça DR, Aguiar CVN, Lins-Kusterer L, Oliveira RI, Menezes MS. Choosing wisely in pediatric internship. Glob Pediatr Heal [Internet]. 2019 [acesso 31 mar 2025];6:1-8. DOI: 10.1177/2333794x19848869

24. Perea-Pérez B, Garrote Díaz JM, Hernández Gil Á, Martínez Hernández S, García Martín ÁF, Santiago-Sáez A. Defensive medicine in hospital emergency services. Rev Esp Salud Publica [Internet]. 2021 [acesso 31 mar 2025];95:1-10. Disponível: https://bit.ly/4kR2lKb

25. Fajardo Castañeda JA. Learning to teach and professional identity: images of personal and professional recognition. Profile Issues Teach Prof Dev [Internet]. 2014 [acesso 31 mar 2025];16:49-65. DOI: 10.15446/profile.v16n2.38075

26. Giovanella L, Mendonça MHM, Almeida PF, Escorel S, Senna MCM, Fausto MCR *et al*. Saúde da família: limites e possibilidades para uma abordagem integral de atenção primária à saúde no Brasil. Ciênc Saúde Colet [Internet]. 2009 [acesso 22 jul 2024];14:783-94. DOI: 10.1590/S1413-81232009000300014

27. Mendonça DR, Aguiar CVN, Lins-Kusterer L, Correia LCL, Costa LMT, Menezes MS. Implementação do Programa Choosing Wisely no internato de cirurgia geral. Acta Med Port [internet]. 2021 [acesso 31 mar 2025];34(2):95-102. DOI: 10.20344/amp.12948

28. Maisonneuve CD, Martins JO. Public spending on health and long-term care: a new set of projections. OECD Econ Policy Pap [Internet]. 2013 [acesso 31 mar 2025];6:39. DOI: 10.1787/5k44t7jwwr9x-en

29. Kenny NP, Mann K V, MacLeod H. Role modeling in physicians' professional formation: reconsidering an essential but untapped educational strategy. Acad Med [Internet]. 2003 [acesso 31 mar 2025];78(12):1203-10. DOI: 10.1097/00001888-200312000-00002

30. Saldiva PHN, Veras M. Gastos públicos com saúde: breve histórico, situação atual e perspectivas futuras. Estud Avançados [Internet]. 2017 [acesso 31 mar 2025];32:47-61. DOI: 10.5935/0103-4014.20180005

31. Stammen LA, Driessen EW, Notermans CCVI, Scheele F, Stassen LPS, Stalmeijer RE. How do attending physicians prepare residents to deliver high-value, cost-conscious care? Acad Med [Internet]. 2020 [acesso 2 abr 2025];95(5):764-70. DOI: 10.1097/ACM.0000000000003051

32. Locke A, Rodgers TL, Dobson ML. Moral distress as a critical driver of burnout in medicine. Glob Adv Integr Med Health [Internet]. 2025 [acesso 2 abr 2025];14. DOI: 10.1177/27536130251325462

33. Cook DA, Hargraves IG, Stephenson CR, Durning SJ. Management reasoning and patient-clinician interactions: Insights from shared decision-making and simulated outpatient encounters. Med Teach [Internet]. 2023 [acesso 2 abr 2025];45(9):1025-37. DOI: 10.1080/0142159X.2023.2170776

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Miriam Pinillos Marambaia, Liliane Lins-Kusterer, and Marta Silva Menezes participated in the conception, design, results, discussion, and writing of this manuscript and approval of its final version. Mary Gomes Silva participated in the design, results, discussion, and preparation of the manuscript and approval of its final version. Carolina Villa Nova Aguiar participated in the preparation of the results, critical review of the content, and approval of the final version of this manuscript. Dilton Rodrigues Mendonça participated in the conception, design, critical review of the content and approval of the final version of this manuscript.

Editor in charge: Dilza Teresinha Ambrós Ribeiro

Received: 1.4.2024
Revised: 3.31.2025
Approved: 5.30.2025