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# IMPACT OF ETHICAL FRAMEWORKS IN CLINICAL CARE ON PRESCRIPTION PRACTICES AND PATIENT OUTCOMES

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*ABSTRACT*

***The ethical decision-making process in a clinical setting is vital in improving patient care. Yet, many a time, the quality of the physician's prescriptions is broken by outside forces like polypharmacy, private hospitals, and pathological laboratories. The research looks into the closely-knit workings of doctors and medical institutions, and how pharmaceutical companies reward strategies such as sponsored luncheons and conferences in order to sway health care policy. These become a problem because they lead to unnecessary treatment, higher costs of health care and even pain to the patients. Drawing on the analysis of the ethical problems created by such conflicts of interest, this essay seeks to highlight the need to incorporate rule utilitarianism in clinical decision making. Rule utilitarianism, which calls for adherence to core principles of ethics to enhance social good, is a solution to the problem of unscrupulous practices in medicine. The study suggests measures such as limiting the engagement of pharmaceutical marketers and adopting the use of Electronic Health Records (EHR) to enhance the quality of prescriptions. It has also proposed setting up an automated Prescription Quality Assessment System (APQAS) to monitor and maintain the quality of clinical prescriptions within and between healthcare facilities. Professional codes of ethics are seen as essential tools in upholding standard practices, especially for developing countries like Bangladesh and India, which have a poorly enforced regulatory environment and a culture of unethical behaviors. There is hope, that due conflicts of interest could be reduced with the use of ethical decision-making systems and modern health systems technologies such as emphasis on patients care.***

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*KEYWORDS*

*Ethical Decision-Making, Rule Utilitarianism, Pharmaceutical Industry, Prescription Quality, Healthcare Ethics, Electronic Health Records*

## 1 Introduction

It is absolutely important to make ethical decisions when delivering treatment to patients since it is aimed at providing quality care to the patients. Nevertheless, in real life, medical professionals at times do not make ethical decisions as they are supposed to. In some countries, these 'gifts' also come in the form of financial inducements to doctors to prescribe unnecessary or even harmful drugs, to do unnecessary pathology tests, and to admit people in hospitals or to ICUs even if there seems to be no medical necessity. This leads to overall deterioration in the quality of prescriptions, increased healthcare costs, and suffering on the part of the patients. As stated earlier, a doctor's prescription contains some instructions on the pathology tests as well as the procedures that should be carried out for the patient to heal. Therefore, the promotional strategies and selling of medical products differ from all other

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products. When it comes to advertising and selling the line of goods, manufacturing enterprises usually focus on the so-called final consumers, but with respect to health care products, this is not so as the focus is on physicians. In this case, it is the people who buy the products but only under the securing of a patient's physician for a treatment plan. Thus, the majority of the sales for pharmaceutical companies, pathology labs, private hospitals and clinics, nursing homes, and research companies come from the doctors themselves. It is easy to see, why the doctors and the pharmaceutical companies are in a symbiotic relationship. Doctors need drugs to treat patients, and so the patients will end up buying these products, but the patients will generally have to get those on a prescription from a doctor who also has to be paid.

According to Joel, medicine and the bio/pharmaceutical industry are fundamentally interrelated. There are those who misunderstand the need and the value of such natures because to them it is a relationship that resembles vice, corruption, and illegality. This form of support includes meals, a few samples of branded drugs to give out to patients, brochures, or even a holiday from the daily office activities. Still, every one of these gifts triggers in the doctors the obligation of reciprocation (Joel, 2017). In that light, the physicians are put into a situation where they have to accept an unfair and immoral proposition. Regulations and laws might not always be entirely useful in every circumstance. In such an instance, moral principles and ethical conduct can act as potent tool for withstanding pressure. After completing his medical training, the physician swears an oath committing to deliver the best treatment to the patient according to her or his knowledge (Hajar, 2017).

At the beginning of the Hippocratic Oath, a physician declares the following: "I swear by Apollo, the Physician and Aesculapius, and Hygeia and Panacea and all the gods and goddesses, making them my witnesses, that I will fulfill according to my ability and judgment this oath and this covenant" (Hajar, 2017). The first line of the oath conveys the commitment to ensure the transmission of knowledge to the next generation and to appreciate the contribution of the first generation from whom knowledge is derived. "Use dietary regimens in the treatment of the ill to the best of [the physician's] ability and judgment," is what the second stanza of the oath pledges to carry out (Hajar, 2017). Most medical schools in the world today use a modernized version of the Hippocratic Oath (Hajar, 2017). The physician's oath imposes an ethical obligation and resolve to the patients which the society readily upholds. Table 1 below illustrates the existing Hippocratic Oath.

Table 1: Hippocratic Oath: Modern Version (by Louis Lasagna, Academic Dean of the School of Medicine at Tufts University)

| |
|---|
| •I swear to fulfill, to the best of my ability and judgment, this covenant: |
| • I will respect the hard-won scientific gains of those physicians in whose steps I walk, and gladly share such knowledge as is mine with those who are to follow. |
| • I will apply, for the benefit of the sick, all measures (that) are required, avoiding those twin traps of overtreatment and therapeutic nihilism. |
| • I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug. |
| • I will not be ashamed to say, "I know not," nor will I fail to call in my colleagues when the skills of another are needed for a patient's recovery. |
| • I will respect the privacy of my patients, for their problems are not disclosed to me that the world may know. Most especially must I tread with care in matters of life and death. If it is given me to save a life, all thanks. But it may also be within my power to take a life; this awesome responsibility must be faced with great humbleness and awareness of my own frailty. Above all, I must not play at God. |
| • I will remember that I do not treat a fever chart, a cancerous growth, but a sick human being, whose illness may affect the person's family and economic stability. My responsibility includes these related problems, if I am to care adequately for the sick. |
| • I will prevent disease whenever I can, for prevention is preferable to cure. |
| • I will remember that I remain a member of society, with special obligations to all my fellow human beings, those sound of mind and body as well as the infirm. |
| • If I do not violate this oath, may I enjoy life and art, respected while I live and remembered with affection thereafter. May I always act so as to preserve the finest traditions of my calling and may I long experience the joy of healing those who seek my help. |

Source: Hajar

### *1.1 Understanding the Ethical Decision Making in Clinical Practise:*

An action may produce good consequences for an individual; however, it may not produce the same for others in society, which is not acceptable. Maximizing individual good is subject to others in society. Consequently, ethical judgment is a matter of interpersonal or societal values, and an individual's standards of conduct are derived from those values. The definition of ethics is the proper and improper behavior and intentions of a person toward another (Gilbert, 2016).

As a social being, the individual deals with other members of society. The behavior of the individual should be in such a way that it must not hamper the other members' peace and tranquility in searching for one's peace. "Ethics is generally considered to deal with relations of humans to each other" (Gilbert, 2016). The moral character of a person is displayed by his or her action or behavior. If an activity or behavior of a person brings positive result for the society, it is an ethical action. There are two forms of utilitarianism: act utilitarianism and rule utilitarianism. Act utilitarianism (AU) focuses on the individual action's outcome, while rule utilitarianism (RU) focuses on the type of actions' outcome. AU is the action that produces the best outcome among alternative actions. On the contrary, RU is an "action is morally permissible if and only if it is permitted by the rules whose general internalization has the highest expected value in terms of overall well-being" (Mokriski, 2020). Henceforth, people follow the rules to make the right decision that leads to maximizing utility. In this research project, rule utilitarianism is used to examine the physicians' decision-making process in clinical practice, which is discussed in the statement of the moral theory section. In a formal environment, decision-making is a systematic process, and ethics is ideally followed while the decision is made. Decision-making depends on problem identification, analytical ability, selecting the best alternative, implementation, and impact evaluation. Asking the correct questions, concentrate on the appropriate topics, strike a balance between resolve and accommodation are important for making ethical decisions, discuss potential solutions and make decisions based on these suggested actions. In ethical decision-making, physicians should obey rules, laws and professional codes of conduct in problem identification, information analysis, selecting the best alternative, implementation, and impact evaluation, giving up personal gain to achieve an efficient patient outcome. Usually, in clinical practice, the physicians follow some phases to diagnose the problem of the patients. In the first phase, the physician records the history of the patient and makes a physical examination. In this phase, the physician may recommend laboratory tests. Getting a test result and recorded history, the physician identifies the problem. In the second phase, the physician judges the severity of the problems, establishing the degree of illness. It is identified as mild, moderate, severe, and very severe. In phase three, the physician goes for management which is selecting the intervention. Interventions are for the mild-home measure and for moderate specific therapy; for severe cases, there will be hospitalization and particular treatment, and for very severe cases, hospitalization in an intensive care unit (ICU) with specific treatment, supportive care, and follow-up (Berman 2011). Usually, physicians follow this particular technique to identify the patient's problem and select therapeutic interventions in clinical practice. However, every physician may not go through four phases in identifying the disease and treating every patient; it depends on the patient's severity and the physicians' ethical strength. If a physician can identify the problem in the first phase, he or she should not go for the second or other phases, but in unethical practice, he or she can go for additional phases.

A patient goes to a physician with a clinical complaint, and the physician examines him or her following the clinical procedure. After understanding the problem, the physician advises the patient about therapeutic approaches such as medication, pathology examination, surgery, hospital admission, physical therapy, counseling, or no intervention. The physician writes clinical decisions, including the patient's problem on a piece of paper or in an electronic device, which is commonly known as a prescription. A prescription is legal and written advice for a patient prepared by a licensed physician or any other licensed medical practitioner or a licensed medical service provider (Bhadiyadara, 2019). Whatever the clinical decision a physician or any other health service provider makes for treating the patient, they write it on a piece of paper or in an electronic device, as a prescription.

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### *1.2 Study Objective*

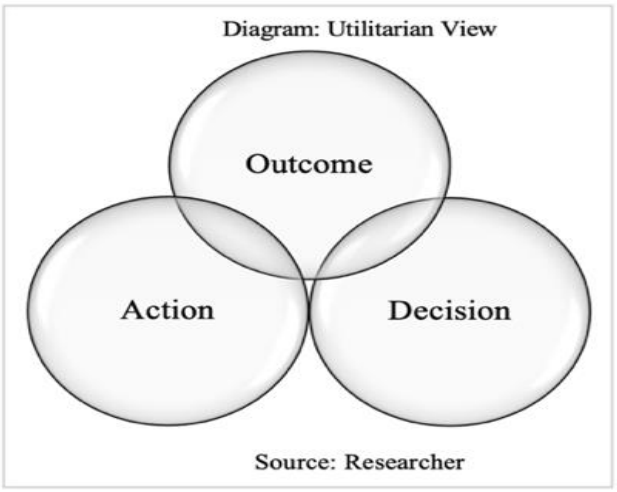
The physician promises to provide the best treatment according to her or his knowledge in oath at the time of graduation (Hajar, 2017). In some countries, the physician also submits a written declaration to the registering body pledging to consecrate his or her life to humanity's service at time of registration. The doctor's oath and declaration establish an ethical duty to the patients. Sometimes, being influenced by external factors, the physician makes unethical decisions in treating the patients. This unethical decision in clinical practice affects the quality of the prescription. In this research project, I will argue that there is a rule utilitarian presumption against breaking the oath and declaration when it comes to conflicts of interest around the prescription. The point of doing this is to provide a form of consequentialist confirmation to the deontological framework provided by the Hippocratic Oath and Declaration.

## 2 Literature Review

### *2.1 Analysing Ethical Theories*

Ethical knowledge, theories, and professional ethics can guide the physician to make an appropriate decision to serve the patient well. According to the consequentialist view, the rightness and wrongness of action solely depend on consequences. People always prefer to produce better result than worse. Therefore, an action that produces excellent results is ethical. The principle of moral "utility" or "the greatest happiness principle" holds that right actions are in proportion as they tend to promote happiness along that wrong actions are tend to produce the reverse of happiness (Mill, 1969). In utilitarianism, happiness is also synonymous with welfare and the positive effect of the action. Utilitarian moral theory also argues for the maximum benefit for the maximum number of people. However, in the definition part, I have explained that utilitarianism falls into two categories: act utilitarianism and rule utilitarianism. Act utilitarianism emphasizes the effects of the individual action, while rule utilitarianism emphasizes the type of actions. According to act utilitarianism, people should act in a way that produces maximum good. On the other hand, rule utilitarianism claims that the maximum good results from following rules. Hence, I like to emphasize the RU because, following the rules, the physicians can ensure the patients' maximum welfare with the least cost. Consequentialist theory does not say anything about decision; however, before doing any action, people usually make decisions about the problems at hand. The later stage of the decision is action. The utilitarian defines right or wrong, good or bad, considering the outcome. In an uncertain situation, a decision is made depending on intuition or reason. When someone makes a decision based on intuition, and action is taken accordingly, the outcome can be positive or negative. Utilitarians only consider the positive effect as right and the negative impacts as wrong. In this situation, rule utilitarianism can be effective to achieve positive. The following diagram shows how the utilitarian view works in the case of taking action. First, decide on action or inaction, then act accordingly and achieve the outcome. Rule utilitarianism is a code of moral rules following which everyone can achieve good outcome. If the individual acts independently, that falls into act utilitarianism. "The ideal code is the set of rules where the consequences of everyone following them would be better than the consequences of everyone following any other set of rules" (Mulgun, 2014). One should act in accord with the rules which, if accepted and followed, would maximize the good (Rajczi, 2016). It is necessary to discuss how to rule utilitarian understands the idea of accepting a rule. Rule utilitarianism can be characterized in terms of two tenets, such as whether an activity is good or immoral relies on whether the agent's authoritative moral code allows or prohibits such

***Figure 1: Diagram of the Utilitarian View***



behavior, and the authoritative moral is acknowledged by all or almost all group members (Eggleston, 2010). A specific society should accept the rule and act accordingly; if they do not follow and act separately, that falls into act utilitarianism. These are the rules based on the tendencies of actions that have been developed over a considerable time. These rules are taught to the young and also enforced by law and opinion (Eggleston, 2010). Intending to follow the utilitarian rule type of ethics, the physician community needs to make a clinical decision depending on knowledge and experience and keeping them aloof from any sorts of emotion, affection, greediness and disliking. The physician should consider the consequences of actions taken as they are committed to doing so.

### *2.2 Medical Ethics of Different Association*

#### 2.2.1 American Medical Association

The preamble of the ethical code of the American Medical Association says that "[t]he medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility to patients first and foremost, as well as to society, to other health professionals, and to self" (Riddick, 2003). It contains principles of medical ethics encompassed with nine sections, which are as follows: Section I of the code, concerning competent medical care human dignity and rights, has priority, stating that "a physician shall be dedicated to providing competent medical care, with compassion and respect for human dignity and rights" (A. M. Association, 2012). Section II stresses professionalism, honesty, and reporting against incompetence and fraud. It says that "[a] physician shall uphold the standards of professionalism, be honest in all professional interactions, and strive to report physicians deficient in character or competence, or engaging in fraud or deception, to appropriate entities" (A. M. Association, 2012). Section III of the code emphasizes respect for the law and requires changes in quality for the patients' interest. It says that "[a] physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient" (A. M. Association, 2012). Section IV highlights the rights of the patients, colleagues, and other professionals and patients' privacy, asserting that "[a] physician shall respect the rights of patients, colleagues, and other health professionals, and shall safeguard patient confidences and privacy within the constraints of the law" (A. M. Association, 2012). Section V gives importance to continuous study and application of scientific knowledge. It says that "[a] physician shall continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated" (A. M. Association, 2012). Section VI of the code emphasizes the doctor's choice when serving the patient in an emergency. It notes that "[a] physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical care" (A. M. Association, 2012). Section VII recommends the participation of physicians in community activities to contribute to public health improvement. The section declares that "[a] physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health" (A. M. Association, 2012). According to section VIII, the physicians' prime responsibility is to ensure patients' care, which it says that "[a] physician shall, while caring for a patient, regard commitment to the patient as paramount" (A. M. Association, 2012). Section IX of the code urges physicians to support access to medical care, explaining that "[a] physician shall help access to medical care for all people" (A. M. Association, 2012). The Code of Medical Ethics of the American Medical Association emphasizes the interest of patient care, continuous knowledge improvement and sharing with others for the betterment of humanity, where there is no trace of personal interest, and physicians are committed to following these rules. In the US, physicians have to take a Hippocratic oath at the time of graduation, where they solemnly swear to God to serve humanity and transmit their knowledge to others.

#### 2.2.2 Canadian Medical Council

The board of directors of the Canadian Medical Association approved the Code of Ethics and Professionalism in December 2018 to guide medical professionals in performing their duties, responsibilities, and commitments to the profession. There is an existence of codes, to which doctors have to adhere, that provide several ethical principles that assist them in the

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best possible treatment to be offered, as well as gaining and maintaining the trust patients and the public have in them and the practice of medicine. The code has three sections labeled A, B and C. Section B deals with responsibility, Section C deals with obligations and Section A deals with moral qualities. (Canadian Medical Association, 2018).

Part A of the code describes the virtues that should be exemplified by ethical physicians. In this section, virtues such as compassion, honesty, humility, integrity, and prudence are explained, which physicians should possess. Part B describes the fundamental commitments of the medical professional (Canadian Medical Association, 2018). In commitment to patients' well-being, the code explains that medical professionals have to consider the patients' well-being, act to benefit the patients and promote the patients' good. They must communicate risk and harm, take all reasonable precautions to prevent or limit patient harm, and provide appropriate treatment and management across the care continuum. Additionally, they are dedicated to weighing the possible advantages and disadvantages of every medical procedure (Canadian Medical Association, 2018). It is imperative that they are dedicated to treating patients with dignity and honoring their inherent value and equality. They should respect patients' autonomy, refrain from using patients for their own gain, and never engage in or condone actions that infringe upon fundamental human rights. Promoting community well-being, enhancing health outcomes and access to treatment, lowering health inequities and disparities in care, and encouraging social accountability are all ways that medical practitioners may demonstrate their commitment to justice (Canadian Medical Association, 2018). Part C of the code explains the professional responsibilities of the patient-physician relationship, such as decision-making, patient privacy, the duty of confidentiality, and the need to manage and minimize conflicts of interest (Canadian Medical Association, 2018).

### 2.2.3 Bangladesh Medical and Dental Council

The Bangladesh Medical and Dental Councils oversee the behavior of Bangladesh's medical practitioners; however, the Bangladesh Medical Research Council, a distinct body, handles medical ethics in research and oversees studies pertaining to clinical, epidemiological, and sociological facets of health and illness. The regulations for the physicians of Bangladesh are called "Bangladesh Medical and Dental Council: Code of Professional Conduct, Etiquette and Ethics," which contains five chapters and five annexures, and all physicians have to follow it during medical practice. Annexure-I is used by the newly licensed physician for making a declaration at the time of registration that allows said physician to engage in medical practice. Section 2.2 of the code says that a doctor must provide good standard care, and he or she must adequately assess the patient's condition, taking account of history, including the symptoms, psychological, spiritual, social and cultural factors, views, and values (BM& DC, n.d.) Section 2.3 of the code says about the clinical care of patients. Physicians are mandated first and foremost, to meet the obligation they owe to their patients' best interests basing the priority on clinical needs of the patients without consideration for race, religion, sex and disability, culture, economic status, geography, or political opinions. Furthermore, this guidance goes on to encourage the physician that he/she should treat the patient to the best of his/her ability and devote the time required to arrive at a diagnosis using the highest standards of scientific practice. It added that a practitioner must not recommend or promise to a patient or agent any impractical or fanciful modalities as though they were effective and safe (BM& DC, n.d.). Section 2.3.2 of the code explains the new medical procedure that should be applied with the patient's voluntary consent following the ethical principles and without violating the patient's human rights, which should be beneficial to the patient's healing (BM& DC, n.d.)

In section 2.3.4 of the code, it says that the doctor should clearly explain to the patient the nature of the surgical procedure, graft, implant or mediation as well as alternative methods of available treatment; in this case, the doctor should consult and obtain approval from the ethics committee before using the procedure (BM& DC, n.d.). The necessities of medical record-keeping and confidentiality are also discussed in section 2.4 of the code. The history, physical examination, investigations, therapy, and clinical development of the patient should all be documented in the doctor's medical file.

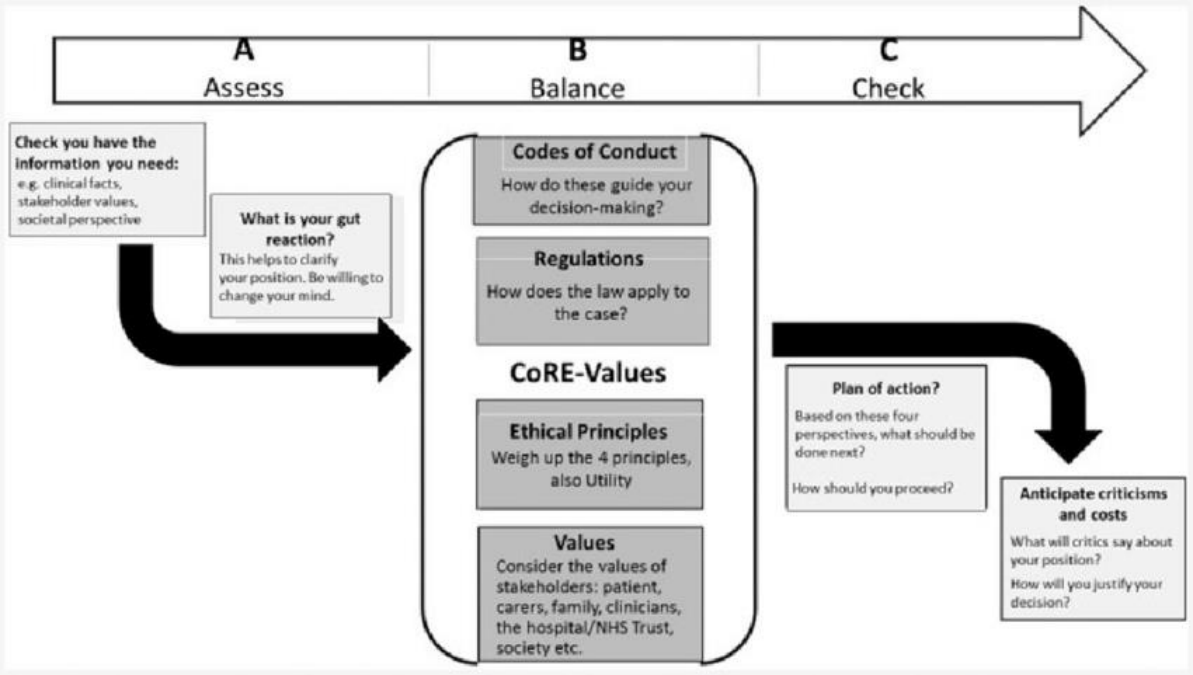
Section 4.3 of the code describes improper financial transactions. This section states that a doctor cannot offer or accept any financial or other inducements, such as free or subsidized consulting space or secretarial support for the referral of patients for consultation,

investigation, or treatment, from any individual or organization, including diagnostic labs, hospitals, nursing homes, health centers, beauty centers, or similar establishments (BM& DC, n.d.). Section 5 of the code defines the misconduct and punishment of physicians in Bangladesh.

### 2.2.4 Indian Medical Council

The physicians of India follow the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulation, 2002. The regulation is comprised of eight chapters video play my number is because of thatand four appendixes. The medical code is explained in Chapter 1, followed by Chapter 2 on the duties of doctors to their patients, Chapter 3 on their duties in consultation, Chapter 4 on their duties to one another, Chapter 5 on their duties to the public and the medical profession, Chapter 6 on unethical acts, Chapter 7 on misconduct, and Chapter 8 on punishment and disciplinary action. The primary goal of the medical profession, according to Section 1.1.2 of the rules, is to serve mankind; compensation or financial gain comes in second. The person who chooses his or her profession assumes the obligation to conduct himself or herself following its ideals. A doctor need to be a good guy or woman who has received training in healing techniques. He or she will possess the unadulterated moral fortitude to adhere to professional standards and provide meticulous care for the ill. According to Council (2002), he or she must be humble, sober, patient, and timely in carrying out their duties without worry and behave themselves appropriately in both their personal and professional lives. According to Section 1.2.1 of the laws, the primary goal of the medical profession is to serve mankind, and doctors should constantly enhance their professional excellence by learning new things and sharing them with their patients and colleagues (Council, 2002). Section 1.3 advises physicians to keep records of indoor patients for three years from the date of commencement of the treatment standard. They are also instructed to deliver copies of the records within 72 hours if any patient or representative or the court asks for it (Council, 2002). Section 1.8 argues that physicians shall give priority to the interest of patients; physicians' personal financial interests should not conflict with the medical interest of patients. They are also advised to follow the health-related laws of the country during the practice (Council, 2002). Section 2.1.1 says that physicians should only treat the sick and injured person, and while treating patients, physicians should bear in mind that the health and lives of persons entrusted to their care depend on their skills and attention (Council, 2002). Chapter 3 of the regulations explains that unnecessary consultations should be avoided; consultation should be for the patient's benefit, and punctuality in the consultation should be maintained

***Figure 2: Framework of Ethical Decision Making (Manson, 2021)***



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(Council, 2002). Except for this, every physician in India has to make a declaration accepting the terms of the condition of the regulations in the prescribed form at the time of graduation, which can be considered the alternative to the oath.

## 3 Rule Utilitarianism at Crossroads: Conflicts of Interest and Ethical Breaches

### *3.1 Drug Research at a Crossroads: Addressing Conflicts of Interest*

Companies also sponsor research or clinical trials; the objective and the procedure of the research and trial sponsorship is different; it is conducted under a protocol which ensures patient's rights, safety, and well-being, as well as data credibility (Mihajlovic-Madzarevic & Vera, 2010). Following the protocol, if any research is conducted that is fair and beneficial to the society, bypassing protocol is unethical. The physician helps the clinical trial of a new medicine before its commercial production and sale. Similarly, the physician's prescription is one of the significant ways of marketing medicine. The relationship between the industry and research institutions and researchers is often mutually beneficial and essential; they serve society by producing preventive, diagnostic, and therapeutic products. However, at the same time, the individual relationship jeopardizes scientific research integrity and conflicts with the ethical condition for research with human subjects (Lo and Field, 2009). When physicians use medicine for experimentation, in most cases, that is not a suitable medicine for the patient. It also may prove harmful to the health of the patient. Sometimes, without the consent of the patient, the physician prescribes new drugs for experimentation. For the sake of the pharmaceutical company, the physician performs the testing; it is not for the patient's interest (Flynn, 2000). The most horrible and unethical medical experiments were done under the direction of the Nazi physician, Josef Mengele, to discover a formula for breeding a superior human. This involved horrible abuse, including torture, barbarous treatment, and killing After World War II, the Nuremberg code of medical research on the human subject came into force, and in 1964 the World Medical Association adopted the Helsinki Declaration, which was the first guideline for ethical regulation globally. Although more than half a century has been passed, it is not well-acclaimed (Bhupathi and Ravi, 2014). A clinical trial is essential for new medicine; it is unethical to conduct the trial without voluntary consent. There is a connection between malpractice in a clinical trial and patient physician's relationship. For example, in Bangladesh, the patient-physician relationship is very paternalistic, where patients do not enjoy the privilege of informed consent. It is no more than taking a signature on a piece of paper to avoid legal litigation in case of a patient's harm or death (Talukdar, 2016). However, the situation in the USA and Canada is much better than that of Bangladesh.

### *3.2 Malpractice and Conflicts of Interest: Ethical Implications*

Selling medical products mostly depends on the physician's prescription. In this field, physicians are the professional who can help the sale of companies a lot. Pharmaceutical companies in all countries are not allowed to use social media for marketing purposes. As the ultimate consumer, the patient is unable to select the medicine. For selecting intervention, technical knowledge and expertise is required; the patient does not know what intervention is suitable for the therapeutic purpose; moreover, the patient's autonomy is also questionable, and that depends on the physicians' will and openness. In that case, the patient may have such knowledge and expertise, not general, but the patient's autonomy is vital in selecting therapeutic measures. Unfortunately, the patient's autonomy is often not appropriately addressed, or it is neglected (Shamim, 2022). For marketing purposes, the physicians are the target of the pharmaceutical companies, pathology labs, and private hospitals, although the ultimate user of the medical drug is the patient. Therefore, the physician's prescription habit affects patients' habits in prescription drugs and other health-related products. Other recognized factors also influence the physician's decision to prescribe a given medication (Smith, 2009). The pharmaceutical companies organize seminars by paying the senior physicians followed by lunch or dinner to explain the effectiveness of a specific drug of that company before other physicians who have significant impacts on enhancing the sale of that drug. "Marketing strategies in which drug companies pay prominent physicians to endorse a particular brand of medicine — either explicitly during the lecture, or psychologically through associating themselves with a given brand name — capitalize on the presupposition

that the physician is impartial" (Haque, 2013).

Another study was conducted in the Columbia district of Washington, DC, in 2013, on prescription drugs. In the United States of America, the total prescribed drugs expenditure was $507.9 billion in 2019 (Tichy et al, 2020). The researchers found that a prescriber received gifts from the pharmaceutical companies, including cash, meals, and ownership interests, worth $7 to $200,000. The gift recipients submitted an average cost per claim of $135, whereas the non-gift recipients claimed $85 per prescription (Susan, 2017). This influenced prescription habit that enhances the treatment cost and patient's sufferings, but it can bring a bit of financial gain for the physicians. The popular media of the United States has reported about unethical practices of physicians (Deshpande, 2009). The Massachusetts Medical Society reported that a survey was conducted on 900 physicians, where 83% of physicians say fear of being sued is driving them to order 18 to 28% of unnecessary tests, procedures, referrals, and even hospitalizations, a phenomenon that is adding at least $1.4 billion to annual healthcare costs (Deshpande, 2009). This malpractice is because of defensive medicine, which is to avoid the physicians' litigation risk in the US, which occurs unproductive cost and harm and protects the physician's interest instead of the patients (Kass & Rachel, 2016) . The intention of medical malpractice in the USA is not the physicians' direct financial gain; however, it impacts the treatment cost and sufferings of the patients. The physicians of Canada are also not free from the accusation of engaging in malpractice. However, the form of malpractice in Canada is different from that of Bangladesh, India, and other developing countries.

According to the Canadian Institute of Health Information (CIHI), in Canada, public drug programs spent $14.5 billion in 2018. Legal litigation in Canada is mostly for pain and suffering. Common forms of malpractice in Canada include the failure to attend patients in a timely manner, failures in diagnosis, referrals or consultation, and poor treatment. Malpractice in general is defined as adverse events. In Canada, Ross Backer and his colleagues have conducted an adverse event study and showed a conservative estimate of 7.5% adverse events in all hospitals (Baker et al., 2002). Although not all the adverse events have any physical impairment or disability, approximately 20% of them were estimated to cause the death of the patient representing 40,000 deaths in Canadian hospitals per year. Among the deaths, 16,500 were deemed estimated highly preventable in the study. Another common type of adverse event is a nosocomial infection. There are approximately 235,000 nosocomial infections in Canadian hospitals each year, resulting in approximately 10,000 deaths per year, which is the fourth leading cause of death in Canada (Flood and Thomas, 2011). Some physicians are not giving proper treatment and attention to the patient's recovery. Neither practice follows the principles of rule utilitarianism or the ethical code of the professionals.

In Bangladesh, the situation is terrible because of physicians' shortage and the unethical practice of physicians. There are 3.05 doctors for 10000 people in Bangladesh, and a structured referral system does not exist; as a result, some government-paid post-graduate doctors have to see hundreds of patients after office hours in their private clinic (Andalib and Arafat, 2016). Doctors cannot spend sufficient time examining patients because of the excessive pressure of patients and doctors hidden intention of earning money. Research conducted in 67 countries shows that in Bangladesh, the average consultation length was 48 seconds, and in Sweden, it was 22.5 minutes. The short consultation hurts the patient's health care and increases the physician's workload and stress (Irving, 2017). In this situation, patients suffer from the wrong diagnosis, delayed diagnoses, the high cost of different diagnoses, unnecessary diagnoses, unnecessary hospitalization, errors in anesthesia or surgery, and the widespread practice of performing unnecessary surgery to earn more money (Sultana, 2019). Pharmaceutical companies influence the prescription behavior of Bangladeshi physicians a lot.

In Bangladesh, physicians often advise patients to have unnecessary pathology tests or sometimes recommend going to a specific pathology laboratory. From referring patients, physicians receive 30%-50% commission from this pathology laboratory based on the patients they send to the diagnosis centers(Sultana, 2019). The other healthcare providers also make money from this unethical business. The regulatory system is too weak in Bangladesh to identify negligence and wrong clinical decision-making, which leads to producing substandard prescriptions. As a result, the patient has to pay more money and this type of corruption is still a big problem in Bangladesh. All additional and unnecessary

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interventions including unnecessary or excessive medicine and surgery cause temporary or permanent health problems.

### *3.3 Interests in Healthcare Management and Their Impact on Malpractice*

Private health care is one of the worst causes of unhealthy clinical practice. In a country where there is no private practice, the possibility of doing malpractice is shallow. In the private health care system, all the health care providers consider their benefit first and then think about the welfare of the patient. They always keen to maximize their business as it is more than a public service to them. The bill of patients depends on the strength of patients' pocket. In healthcare, the US and Canada follow very similar system, where physicians do not have scopes of private practice. Physicians are paid through health insurance based on services they provide to patients. The ten Canadian provinces and three territories must adhere to the federal criteria outlined in the Canada Health Act (CHA) in order to be eligible for federal funding (Flood and Haugan, 2010). Universal insurance in Canada uses a one-point payment system for healthcare. Additionally forbidden are the doctors' private practices and extra-billing (Flood and Haugan, 2010). In Canada, public health care is provided on a not-for-profit basis in accordance with the Canada Health Act (CHA). Nonetheless, the majority of hospitals and community organizations are privately held businesses that operate on a non-profit basis. Additionally, some providers—technically tiny businesses—collect fees from the public, private, or both sources in order to make a profit. Physicians, physiotherapists, pharmacies, and pathology labs are all part of this type of private health care (Daber, 2009). The Canadian Institute for Health states that private insurance and other sources pay 30% of medical expenses, while the government pays 70% (CIHI, 2019). Private insurance and an out-of-pocket method are used to pay for these restricted treatments.

In Bangladesh and India, public and private health care go side by side, but private hospitals are on a profit basis. Government employees manage government hospitals, and patients have to pay an insignificant amount for their services, but the quality of services is not satisfactory. Therefore, patients like private hospitals where quality is better, but the extra billing rate is very high. Due to the lack of comprehensive health insurance coverage in India, additional medical bills force over 40% of hospitalized patients to take out loans or liquidate assets, and the expenses of medical treatment push 25% of farmers below the poverty line (Jilani, 2013). Only 20% of health services in India are provided by the government; the remaining 80% are provided by private healthcare providers (Agarwal, 2013). In Canada, the government pays for medically essential treatment, which is mostly provided on a not-for-profit basis. In India, private health care is like a commercial commodity. In Canada, certain services—like cosmetic surgery—are provided only for financial gain.

India's poverty is partly a result of private health care. Some sell their homesteads to cover the cost of private health care. In these circumstances, the government's assistance in funding medical treatment becomes crucial in preventing individuals from falling into the medical poverty trap (Bose and Dutta, 2018).

In Bangladesh, health care is mostly provided privately by the out-of-pocket system. More than two-thirds of the total expenditure is privately financed. On the other hand, the government covered one-third, among which the government finances about 60% out of tax revenues and development outlays, and the remaining 40% through international development assistance. Most of the patients have to go to private hospitals and clinics for treatment as the government's arrangement is limited. The private hospital charge significantly higher than that of the government hospital in Bangladesh Siddiqui & Khandaker, 2007). Private clinics, nursing homes, and pathology laboratories charge higher cost. The profit-making approach of private health service providers is one of the causes of unethical billing and practice. Bangladesh has not yet introduced health insurance policy coverage. The National Social Security Strategy of Bangladesh has suggested that the government introduce a national health insurance scheme (Joarder et al. 3). Physicians working as government employees can work in private clinics or hospitals before and after office hours. In many cases, private clinics, hospitals, and pathology laboratory owners offer them space free of cost. They do private practice and think about the owners' interest in exchange for their benefits. Besides, Bangladeshi and Indian physicians do not keep medical records of their practice, and there is no auditing system to verify the prescriptions or treatment quality. Therefore, the scope

of malpractice is much higher than that of the US and Canada. Paternalistic, informative, interpretive, and deliberative models investigate what should be the ideal physician-patient relationship (Emanuel and Emanuel, 1992). Emanuel and Emanuel (1992) argue that in the four models, such as paternalistic, informative, interpretative, and deliberative of the physician-patient relationship, the deliberative model is the best. If the physician discusses disease and intervention, giving details as per the deliberative model to the patient, the patient can express his or her opinion, and it may be a helpful way of making an ethical decision in clinical practice. Whatever the decision is made, the consequences of it affect the patient. As the interest groups induce them, the patient should have a role in decision-making. However, the patient needs to depend on the physician to receive quality information about clinical decision-making.

## 4 Measuring Prescription Quality and Finding a Way Forward

### *4.1 Restrict the Activities of Medical Representatives:*

Medical representatives (MRs) from the corporations are not allowed to visit doctors to share medication information. There must to be a different method for alerting the doctor about new medications. The World Health Organization (WHO) established the 1988 Ethical Criteria for Medicinal Drug Promotion in order to promote and support the rational use of medications to improve health care. Companies are in charge of the comments and actions of their medical representatives, and they are not allowed to provide inducements to prescribers and dispensers, according to Section 19 of the criteria. Such inducements should not be sought by prescribers or dispensers (Ethical Criteria for Medical Drug Promotion, 1988). Since it is only a directive with no legal enforcement, it is regrettably not followed. Let's say a promotional visit aims to educate doctors about medications. In such instances, the businesses can use their websites to notify doctors about the new drugs, including the name, dosage, ingredients, price, and efficacy, in accordance with WHO recommendations. By looking over the firms' websites, the doctors can choose the intervention.

### *4.2 Electronic Health Record System:*

Establishing the code of professional ethics and other governmental regulations can be greatly aided by the use of electronic health records. By enacting the Health Information Technology for Economic and Clinical Health (HI-TECH) Act in 2009, the United States of America implemented an electronic health record-

***Figure 3: Data Record of an Electronic Health Record System***

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keeping system to enhance the effectiveness, safety, and quality of healthcare. Patient treatment records are electronically stored in an electronic health record (EHR), a technology-based record-keeping system. A longitudinal electronic record of a patient's health data created by one or more interactions in a care delivery context is called an electronic health record, or EHR. It contains information on the patient's demographics, lab results, radiological reports, issues, medicines, vital signs, and previous medical history. The clinician's process is automated and streamlined by the EHR. Through an interface, it may provide a comprehensive record of a clinical patient encounter that can directly or indirectly assist other care-related tasks, such as quality monitoring, outcome reporting, and evidence-based decision support (Seymour, 2012). Reports needed for financial management, quality assurance, chronic disease management, public health data collection, consents, authorizations, and directives, clinical decision supports, and patient demographic and care management data recording on patient visits are among the common uses of electronic health records (EHRs) in the United States (Knox et al., 2015). They employ the EHR in three phases: the first involves exchanging information and moving data to EHRs, while the second phase involves more thorough health information exchange, patient information sharing, and tasks like e-prescribing and stage 3 focuses on achieving patients' outcomes (Knox et al., 2015). In order to promote and expedite the development of a pan-Canadian electronic health record network that would handle the health information of Canadians, Canada established Canada Health Infoway in 2001, which is creating an interoperable EHR network. By connecting all clinics, hospitals, pharmacies, and other locations of care, Canada hopes to increase patient safety and quality of treatment, improve access to health services for Canadians, and contribute to the efficiency of the health care system (McGinn et al, 2012). Canada Health Infoway, which is building an interoperable EHR network, was founded in 2001 to encourage and accelerate the creation of a pan-Canadian electronic health record network that will manage the health information of Canadians. Canada aims to enhance patient safety and treatment quality, increase Canadians' access to health services, and boost the effectiveness of the health care system by integrating all clinics, hospitals, pharmacies, and other care facilities (McGinn et al, 2012).

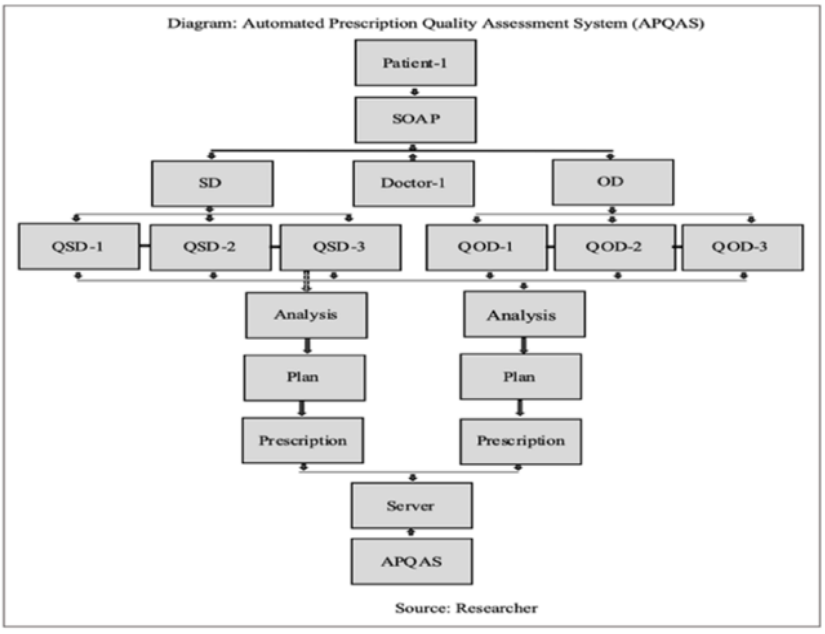
The subjective part of the format is the patients' information regarding their health that directly passes to the physician. It includes present problems, current medication, past medical history, allergies, immunizations, family history, social history, review of body symptoms, and other patients' answers to physicians' questions (Gagan, 2009). The objective part of the format involves listening to the patient; physicians make decisions for some investigations to be confirmed about the patients' problem. This category includes vital signs, general appears, and patients' mental status, observations from each system that the physician has examined, the previous record, or X-Ray report (Gagan, 2009). In the analysis component, the physicians analyze the data they collect form the patients in subjective and objective parts. Analysis must be completed based on the previous parts. This part guides the fourth part that is the planning part of the format. This part is not the repetition of the first two; it is the conclusion based on the previous data (Gagan, 2009). The planning part is divided into four sections. The first section of the plan includes all medication, devices, or appliances, recommended for the patients based on the SOAP's subjective part. If nothing is recommended in the subjective part, this portion of planning is omitted. The second section of this part refers to the ordered diagnostics test that results are not yet received or the future order through which patients have to undergo. The third section of this part is called the "patient teaching," where everything is discussed with the patient, family, and caregivers. It is essential to document everything, whatever is given to the patient during the physician's consultation, and the final section of this part is writing future referrals, consultations, and follow-ups (Gagan, 2009). The SOAP is a chronologically written document of the physicians against the patients used to make the physician accountable for their work connecting with the computer-based EHR system. It can also save physicians from any illegal or false allegation brought by the patients. The data, which is documented in the EHRs, can be analyzed automatically with software. It can be judged to find out the accuracy of the physicians' decision. On the other hand, an APQAS of the clinical practice of the physician examines the unethical and intentional practice for personal gain leaving the patient's interest. Hence, a device needs to be developed

by which, from the EHR, the physicians' prescription quality can be measured electronically without manual touch. An APQAS can automatically analyze the quality of the prescription using the data from the records. It can provide the result regarding the physician's performance, treatment quality, and cost. Whenever it needs, the physician and the authority also can perceive the performance of the physician from the APQAS.

### *4.3 Activities of APQAS*

According to the SOAP, the physician analyzes subjective and objective data and makes a plan and prepares prescriptions. If the physician can confirm a diagnosis by analyzing subjective data, they can make an intervention plan; otherwise, they advise the patient for a pathology test. After receiving the pathology test result, the physician analyzes subjective and objective data and make a plan, and he or she prepares prescriptions. In this diagram, qualitative and quantitative subjective data (QSD) data, for example, are indicated by QSD-1, QSD-2 and QSD-3, QOD-1, QOD-2 and QOD-3 qualitative and quantitative objective data. Data can be more than 3, 4, 5, and so on. It can work in two stages, (i) problem identification and (ii) intervention selection. In problem identification, the patient's information can be converted into quantitative data, such as temperature, blood pressure, blood counting, etc. and by analyzing data, the software can identify the patient's problem. In addition to this, qualitative data can be included as yes or no in the proposed software. When the problem is identified, the intervention suggestion is easy, and this system can give the best option for intervention. To design software for APQAS, an IT team needs to work closely with a specialists' group of physicians comprising all the departments of specialization. The prescription quality automatically can be assessed using the new software, specially made for this purpose. Lastly, the authorized person can log into the computer and obtains the result of a physician's prescription quality for a calendar year or any period. The concerned authority can print the required physician's overall quality of prescription and cost against each prescription. As all physicians are under a single network, it can save time and travel for the officials engaged in this regard. By Checking prescriptions from the records, the authority can advise the physician for quality improvement or can send them for further training or recommend punitive action. Consequently, if the authority finds some good practices that produce excellent healing and cost-effective results, it can advise physicians to use it as a therapeutic intervention.

***Figure 4: APQAS system with one physician***




[Here, subjective data (SD), objective data (OD), quantitative subjective data (QSD), quantitative objective data (QOD), qualitative and quantitative (Q), and automated prescription quality assessment system (APQAS) are used in the diagram.]

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### *4.4 Data Preservation*

In general data is stored centrally in a server. It can be stored regionally and nationally and at the same time categorically for assessment and quality develop purposes. In the case of the US, Canada, and India, data can be preserved state or province-wise and in Bangladesh it can be preserved administrative division-wise. On the other hand, data can be preserving in categories like general practitioner (GP) and other specialized subjects. In every administrative unit, there should be a team that can check the prescription's quality by logging into the system. Based on the prescription quality, which is problem identification and intervention, the team can send a message to the concerned physician for improvement or cling to the current quality. The court can use data as documentary evidence in civil suits filed by the patient against the physician. Once data is entered into the system, it must not be erased. The physician who has posted data into the system can correct it, but the time and date of correction shall automatically be written beside the new entry. Although APQAS is proposed as the better way to quality assessment and improvement, which can ensure quality treatment with the least suffering and cost, as an idea for implementation, it requires more research.

## 5 Conclusion

In order to provide the patient with the finest care at the lowest possible cost, the doctor needs make an ethical choice. Pharmaceutical firms, private hospitals, and pathological laboratories are examples of external entities that attempt to sway doctors' clinical judgments in order to boost their income. Interdependency between businesses and doctors is crucial for developing new medicines and promoting health-related items, however patients do not find the unethical financial purpose convenient. In clinical practice, rule utilitarianism—including the code of ethics—may assist the doctor in making the right choice, which aids in writing a high-quality prescription.

The quality of the prescription and the cost of therapy will both improve if the doctor makes an ethical choice. Additionally, healthcare management differs from that of poor nations. The introduction of government-funded insurance programs in OECD nations helps to guarantee high-quality prescriptions. In contrast, government hospitals in poor nations offer free medical care, while private hospitals that are for-profit do not, and health insurance is not offered. Patients can seek recompense for their pain and suffering in wealthy nations like America and Canada, but in developing nations like Bangladesh and India, they have little or no access to the legal system.

In OECD nations, patients or their representatives can participate in clinical decision-making, which helps to prevent clinical malpractice. In developing nations like Bangladesh and India, patients have little to no say in clinical decision-making. The patient experiences both financial strain and physical suffering as a result. EHR is necessary to guarantee high-quality prescriptions and therapeutic advancement. Software is needed to automatically evaluate data from the EHR and produce findings regarding the performance, cost, and quality of care provided by the doctors. It can also be applied to an APQAS, which can greatly aid in establishing rule utilitarianism and quality assurance. This system needs more investigation.

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