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Defensive Medicine: Effect on Costs, Quality, and Access to Healthcare

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Abstract
Defensive medicine occurs when doctors deviate from sound medical practice in an attempt to minimize the possibility of malpractice liability. According to Studdert et al. (2005) the practice of defensive medicine affects healthcare in various ways by (a) supplementing care through additional testing or treatment, (b) replacing care when doctors refer patients to other doctors or institutions, and (c) reducing care by refusal to treat certain patients. Of primary concern is the growing evidence that defensive medicine is widely practiced and that it may increase the cost and lower the quality of care (Studdert et al.; Robeznieks, 2005). Any increased healthcare costs and lowered quality of healthcare as a result of defensive medicine could impact negatively on resource poor sub-saharan African countries already experiencing major healthcare issues. The practice of defensive medicine has a negative impact on health care providers, patients, and the broader healthcare system. There is a need for medical malpractice reforms to reverse its adverse effects.
Key words: Healthcare, malpractice, quality, costs, defensive medicine, healthcare access.

Introduction
The increase in applying criminal law and civil penalties to healthcare professionals has become a widely acknowledged source of concern for health care providers, third party payers, and administrators. Frivolous lawsuits, irregular and uncontrolled damage awards to victims, large lawyer contingency fees, loosely regulated insurance companies, and better informed patients about medical errors, have made health care professionals wary of the amount, quality, and type of treatment they offer (White, 2005; Miller, 2006). Consumers' expectations have risen with the improvement in delivering quality medical interventions and they have developed a tendency to sue their doctor when the doctor delivers care they presume to be less than perfect ((Rutsohn & Sikula, 2007). Consequently, lawsuits easily arise when the results of these interventions are less than anticipated. Regardless of the actual reasons for the surge in medical malpractice claims, medical insurance companies have countered by increasing premiums for doctors or completely denying coverage for some high-risk medical specialties. In Kenya alone, the premiums provided by international and local medical insurance companies have quadrupled in the last ten years as exemplified by 2013. This essay will first look at the background of medical liability laws and their role in the prevalence of defensive medicine and doctor attitudes. It will then critically analyze the effects of defensive medicine on access to healthcare and its related costs. Finally, possible solutions in both the administrative and clinical contexts will be proposed, based on the available evidence.

Background
Insurance providers deny liability coverage or demand the payment of often unaffordable premiums from high-risk medical specialties like obstetrics and gynecology. Miller (2006) argues that the underlying problem with the tort system is the use of a standard of care that is ultimately unachievable as is already the case with obstetrical care in some regions of the United States. Other industrialized countries have also been similarly affected by increasing malpractice premiums with obstetricians in Ireland becoming literally uninsurable and they have had to depend on government for protection from lawsuits (Rutsohn & Sikula, 2007). The Kenyan medical liability insurance costs have not reached the high levels observed in developed countries, but are alarmingly on the rise with the highest risk specialties paying medical liability premiums of about 10 thousand dollars in 2013. The American Medical Association cited 19 states as having a malpractice crisis pertaining to liability coverage for doctors and the number is probably still rising (White, 2005). Early retirements and curtailing of practices by doctors due to the unrealistic and sometimes unaffordable escalating liability insurance

costs, and demoralization, could be restricting the public's access to essential health services (White). Yet, doctors' calls for tort reforms are often labeled as an effort to improve their allegedly already bloated income.
In spite of claims that the calls for tort reforms are in response to microeconomic concerns by doctors, most health care providers are committed to improving their operations and standards of practice to reduce errors. Although much has been learned and implemented, the tort system has been blamed for usually impeding the improvement process rather than supporting it (Miller, 2006; Rutsohn & Sikula, 2007). Not withstanding the rights of the patient, this trend is impacting negatively on the provision of healthcare as administrators and health care providers consider it diverts time, resources, and attention from process improvement. Fear of litigation discourages the open information flow that can identify and resolve issues because divulging such information could be used as a basis for litigation. Such fear also creates an atmosphere of mistrust among doctor associates in the healthcare organization and encourages the blame game when things go wrong. Not surprisingly, the doctor continues to counter the threat of tort laws with the practice of defensive medicine. Perhaps the establishment of achievable healthcare standards could level the playing field. Unfortunately, weak regulatory mechanisms could hinder any concerted efforts to set achievable standards and curtail defensive medicine.
In order to balance cost, access to care, and quality of care, society needs to find ways of establishing achievable standards that can be applied consistently by the average health professional and health care institution. Proposed reforms have included reducing the punitive consequences of disclosing medical errors to allow health care providers to report errors and learn from their mistakes (Carpenter, 2006). Presumably, removing the disincentive to report errors would reduce the number of unnecessary tests ordered by doctors and encourage them to carry out medically risky procedures. Clinical medical practice is not an exact science and imposing standards that are not achievable by the average medical practitioner is not realistic. It would also not be justified to set the same standards of care for developing countries where many doctors work under less than ideal conditions. Much of medicine is still based on experience and professional judgment, in spite of the laudable efforts of doctors to promote evidence-based medicine. The public should permit the medical profession to strive for higher standards of achievement without the liability imposed upon them for their effort.

Defensive Medicine

Healthcare administrators and other stakeholders suspect that many doctors change their clinical behavior as a response to the threat of malpractice liability. Studdert et al. (2005) exposed the magnitude of the problem in a survey research study of Pennsylvania-based doctors in the following 6 medical specialties at high risk of litigation : Emergency Medicine, General Surgery, Orthopedic Surgery, Neurosurgery, Obstetrics/Gynecology, and Radiology) Among the 824 doctors who completed the survey: (a) Forty three percent reported ordering tests and performing diagnostic procedures in clinically unnecessary circumstances; (b) more than 92% admitted avoiding patients and procedures deemed to be risky; and (c) about 42% reported restricting their practice in the last 3 years by avoiding procedures prone to complications and shunning patients perceived to be litigious (Studdert et al.). The research findings did not come as a surprise to many observers but some experts expect they will revitalize the state's medical liability reform efforts as well as public demands for a solution (Robeznieks, 2005). No such reforms are currently evident in the East African region although there is evidence that defensive medicine is widely practiced, especially in the private healthcare sector. The main concern for the health care system and the public is the effect of defensive medicine on the costs, access, and quality of care.

Defensive clinical practice in all its forms negatively impacts the cost effectiveness and efficiency of managing a healthcare organization. In the absence of a permanent solution to this type of practice, healthcare administrators should address defensive clinical practice in the best way they can while prioritizing avoidance of risk to quality patient care. The healthcare administrator needs to perform the delicate balance of managing the interests of the healthcare institution, the doctor, and the patient. Yet, such a task would be difficult to achieve without harnessing the support and cooperation of the independent practitioners associated with the health care organization. One common activity associated with defensive medicine is the use of medically questionable extra diagnostic tests that are ordered by doctors.

Extra Diagnostic Tests

Accumulating evidence suggests that doctors frequently order unnecessary diagnostic tests for their patients to avoid being sued. In a research investigation of doctors in specialties considered to be at high risk for litigation, as many as 59% of participants ordered additional tests and requested medically questionable diagnostic procedures as liability shields (Lefton, 2008; Studdert et al., 2005). Similarly, it is not unusual for an emergency room doctor to order an abdominal CT scan for a minor abdominal complaint such as a suspected ovarian cyst

that could have been diagnosed by a ordering a less expensive ultrasound procedure, which is less than one quarter of the cost of a CT scan. Such insensitivity to the cost of health care can be catastrophic in resource limited countries where most patients survive on a few dollars a day. Granted, the doctor could argue that an ultrasound might miss a more sinister condition like an inflamed appendix or a renal stone. Yet, the hidden logic probably has to do with the ease of defending the fact that a more advanced technology test procedure was ordered than defending the failure to order one. Inexperienced doctors, doctors in high risk environments, and emergency room staff would be more susceptible to this type of practice as a protective shield against liability for malpractice.

The fear of litigation undermines accepted and evidence-based clinical practices. It befalls the healthcare administration to support the medical staff and allay their fears of litigation in order to provide cost effective and safe health care delivery. Healthcare administrators cooperating with doctors in the provision of care becomes more pertinent in a capitated environment where a hospital depends on independent practitioners to run some of its departments or clinics. The ready availability of senior emergency department staff would ensure that junior colleagues do not overuse diagnostic facilities due to their lack of experience. However, any unified approach by hospital administration and medical staff to minimize defensive practice through the elimination of non-indicated tests may be frustrating due to the emergent concept of patient centered care. The doctor's former absolute authority in determining the type of tests required for a patient may have been eroded as patients become increasingly empowered to decide upon their health care needs. Demands by patients for specific tests and investigations have become a reality in modern medical practice in both developed and developing countries.

Many patients search the Internet for their symptoms or diagnosis before scheduling an appointment with their doctors and they are likely to arrive at the clinic armed with the latest information on the required tests and treatments for their supposed disease or disorder. Pacifying demanding patients, bolstering self-confidence, and creating a paper trail to document that all of the necessary tests have been done, were the reasons given by a group of medical specialists for ordering costly imaging procedures and other advanced technology tests (Robeznieks, 2005; Studdert et al., 2005) . In support of defensive medical practice, there is research evidence that indicates that medical malpractice litigation commonly arises from failure of doctors to order appropriate diagnostic tests or to adequately follow-up with their patients ("Medical Errors", 2006). Probably the substantial costs of high technology tests have attracted more attention from the public and policy makers because of the outcry and publicity from health insurance providers who often cover the costs. Nevertheless, the over ordering of tests because of patient demands is not normal practice nor is it acceptable in view of the overall escalating health care costs. Such increased healthcare costs would form a significant portion of the budgets of developing countries. Healthcare administrators and medical staff should adopt clear cut guidelines on the requisition of costly tests. Gains could be made by introducing practice guidelines that allow doctors to withhold some low-yield tests or request patients to share some of the costs. In addition, conducting the invasive tests associated with defensive medicine might come with significant risks to the patient that could ultimately lead to medical complications and subsequent litigation.

The performance of unwarranted invasive medical tests and procedures is not only costly but could also be unsafe and limit access to care. For example, a life threatening bleeding episode or a serious allergic reaction from an injected dye can occur during invasive radiological tests involving blood vessel cannulations (Massachusetts Medical Society, 2008). More serious medical complications can arise following procedures such as a caesarian section. This type of surgery has increased as a defensive measure because of litigation concerns when birthing mishaps occur (Massachusetts Medical Society). Unnecessary surgical procedures that result in major complications typify the effects of defensive medicine on quality patient care. Perhaps the practice of over investigating patients provides an element of protection for the doctor and a marginal benefit for the patient, but the overwhelming evidence suggests it increases the cost of care and may increase patient risk. Typically, health insurance companies hike their premiums or co-payments in line with the extra expenses on healthcare services for their members, which further escalates overall healthcare costs. Another alleged practice in defensive medicine is the referrals of risky patients and a doctor's reluctance to perform certain procedures.

Limitation of Access to Care

Unnecessary referrals by doctors to other specialists has been claimed to be a common practice in defensive medicine. The claim is supported by the finding that 52% of specialists who responded to a research survey referred their patients to other specialists in unnecessary circumstances, a particularly common practice in Obstetrics and Gynecology (Studdert et al., 2005). The finding of such a high degree of avoidance of treating risky patients without referring them to other specialists further indicates that defensive medicine not only raises

the cost of healthcare but also limits access to services (Robeznieks, 2005). Similarly, a recent study by the Massachusetts Medical Society (2008) indicated that overall 38% of doctors scaled down the number of high risk patients and procedures they performed mainly due to concerns about possible litigation

The tendency to avoid risky patients and procedures is referred to as negative defensive medicine in contrast to positive defensive medicine that is said to occur when unnecessary services are provided by doctors and other providers (Carpenter, 2006). The assumption here would be that the deviation from the health care providers norms of practice have been mitigated by concerns about litigation. Yet, the doctor has moral and professional obligations to the patient to uphold beneficence as dictated by the Hippocratic Oath.

It can be argued that there is a moral reason that justifies the practice of defensive medicine. According to Beauchamp and Childress (2009) Kantian theory asserts that the moral worth of an individual's action depends exclusively on the moral acceptability of the rule on which the person acts. This concept would support the moral justification used by doctors to practice defensive medicine. However, if the practice was instigated by desire, ambition, or self-interest, the action would be considered heteronymous or as motivated by other factors outside moral principles (Kant as cited in Beauchamp & Childress). The categorical imperative advocated by Kant dictates what one needs to do irrespective of one's desires. Evidently, performing the right thing for the wrong reason does not attract a moral credit for the action. The Hippocratic Oath remains the pillar of medical ethics that ensures no harm is to be done to patients and that their welfare remains a priority in the delivery of health care services. Yet, the truth may not always dwell in what meets the eye.

Conflicts of Interest in Defensive Medicine

Ulterior motives like profit making can also be difficult to differentiate from defensive medicine. Lefton (2008) claims it would be idealistic to fail to acknowledge that doctors as well as hospitals have both economic and humanitarian interests as they treat patients or order diagnostic tests. However, the overriding mission for health care providers is to ensure that patients receive high quality care at the lowest possible cost (Lefton). Barring the usual constraints of economic competition between hospitals and doctors, hospital administrators and admitting staff have a moral, legal, and ethical duty to ascertain that cost effective quality patient care is available to all patients. Quality care would be utopic if the administrative and the clinical stakeholders do not work together to manage and continuously improve the organizational processes. Protecting the financial stability of a health care institution, important as it is, should not put the patient at risk or result in suboptimal healthcare services. In order to maintain a healthy balance between cost effectiveness and quality patient care, healthcare administrators have to grapple with individual doctor conflicts of interest especially in the patient referral system.

Although laws like the Stark laws that control the practice of kickbacks, fraud, and abuse exist in healthcare practice, it is generally known that doctors gain economically from referrals. This is supported by the competition between hospitals and doctors on their own medical staffs who conduct diagnostic and treatment services (Lefton, 2008). It is not a secret that radiologists own diagnostic imaging centers and surgeons run ambulatory surgery units. Such facilities inevitably lead to underutilization of hospital imaging and ambulatory surgical services. Inevitably, the doctor in solo or group practice would be more inclined to refer to his or her own facility than to the hospital facility. Patients may also find access to cost effective healthcare easier in doctor run facilities.

Self-referrals by individual patients to doctor run facilities may also be encouraged by often more consumer oriented and less costly services, devoid of time consuming hospital bureaucracies and queues. In view of the perceived unfair competition from doctor run facilities, hospitals may need to compromise and accept lower payment for services as well as lobby for firmer enforcement of laws that prohibit doctors from referring patients to entities where they have financial interest (Lefton). Developing countries have their versions of laws similar to the Stark laws that currently control doctor referrals of patients in the United States. Unfortunately, awareness of such laws remains low among both healthcare administrators and doctors. Although no research data is available on such practice in Kenya, there is empirical evidence that may indicate rampant violation of referral laws in both general medicine and specialist practices. Defensive medicine may be difficult to prove when dealing with non-critically ill patients. However, when defensive medicine is practiced in a critical and terminal care service it becomes more obvious but more difficult to justify.

The critical care doctor could inadvertently violate the rights of a patient in what could be construed as defensive medicine. For example, biomedical ethics based on the principles of nonmalficence and beneficence favor providing safe healthcare to individuals but may occasionally violate their interests when a vegetative state of life is maintained (Beauchamp & Childress, 2009). In the absence of end-of-life directives, removing a life sustaining machine or nourishment could lead to malpractice claims by family members, a legal entrapment which is avoided by emergency care clinicians. On the other hand, maintaining the costly life support system for

a patient who has no chance of recovery is an explicit defensive medicine practice. The logic that may elude the principle of doing no harm is that the burdens entailed by 'unnecessary' but ethically desired investigations and treatments far outweigh the benefits for both the patient and the healthcare organization. Viewed from another angle, the principle of nonmalficence may be violated by an overzealous and unnecessary application of the principle of beneficence.

Health care administrators are understandably concerned when doctors over utilize investigative procedures in a capitated healthcare environment. According to Marco (2005) the appropriate stewardship of resources becomes an important consideration when making decisions on costly, lengthy, or invasive procedures whose benefit to the patient may be dubious. However, moral objections to withholding care because of financial considerations often generate heated debates between doctors and cost conscious healthcare administrators. The doctor practicing defensive medicine avoids colliding with tort laws by ordering medically unnecessary tests among other defensive actions. The extra costs to the healthcare system as a result of the practice become secondary to the concerns about self-preservation. Yet, it would be inappropriate in some circumstances to disregard the potential costs to the individual patient, family, health care provider, and society. The proper management of healthcare financial resources cannot be disregarded and needs careful balancing with access to quality healthcare delivery services. In the final analysis, neither of these factors can exist without the other and the symbiotic relationship between cost and care requires careful nurturing by healthcare administrators, doctors, and other stakeholders.

Solutions and Recommendations

The evidence clearly indicates that the medical liability issue affects the whole health care system because of the substantial costs entailed by defensive practice as well as the negative impact on quality and access to care. Evidently, the health care system has to find ways and means to ameliorate, if not eliminate, the practice of defensive medicine through a major policy change in the current medical liability system. Such a reform of healthcare liability laws in industrialized countries could impact positively on defensive medicine practices in developing countries. Until such a major policy change emerges, health care administrators will have to continue addressing defensive medical issues at the organizational level striving to obtain full cooperation from doctors and other healthcare workers.

Healthcare administrators can encourage behaviors directed at minimizing medical litigation through honesty and striving to resolve all disputes by mediation and arbitration. The doctor and hospital management should fully disclose to a patient when an adverse event occurs and offer a fair and timely compensation (Massachusetts Medical Society, 2008). The healthcare organization should cultivate a culture of safety that fosters open communication and that allows discussion of every missed and near missed medical error in conjunction with the practice of evidence-based medicine. Patients trust doctors with whom they have a good doctor-patient relationship and have fewer tendencies to sue them when medical errors occur. Yet, a good relationship with the patient should not invite laxity on the part of the doctor who should adhere to evidence based medical practice guidelines. Doctors are under pressure from aggressive marketing from biomedical product manufacturers and the demands of increasingly informed patients on healthcare matters. Quality evidence based healthcare does not translate to succumbing to patient demands to prescribe medicines of questionable value and order costly and probably unnecessary medical tests.

It is generally accepted by the medical community that the adoption of evidence-based decision-making will support continuous quality improvement goals in patient care. However, doctors should analyze and appraise whether or not they are correctly applying the best evidence-based medicine in argumentations and decisions about health problems under consideration (Jenicek, 2006; Esposto, 2008). Research evidence supports the claim that the use of expensive advanced medical technologies used by doctors as a protective measure against litigation is related to the current medico-legal environment that encourages defensive medicine (Esposto). Healthcare administrators and doctors know better than to accept what the pharmaceutical company representative or the paid speaker says about the virtues of new costly medicines and technologies that do not add value to patient care. This remains a sacred duty for all critically thinking healthcare providers as even the best evidence may be used in flawed arguments. Besides adherence to evidence-based medicine, another possibility of eliminating defensive medicine entails removing liability from the individual doctor and giving the responsibility to the healthcare institution... Such a reform will resonate well with doctors in developing countries who could hardly keep up with their medical malpractice premiums.

Removing doctors entirely from the medical malpractice system could be a sure way of eliminating defensive medicine. According to Joyce (as cited in Sataloff, 2008) the cost of defensive medicine adds about $ 50 billion annually to the health care costs in the United States. The tort reform should aim to place caps on what is

awarded economically to plaintiffs similar to the current practice in some states that limit non-economic damages to $ 250,000. Such capitation measures would reduce the current unaffordable insurance premiums demanded by insurance companies for medical malpractice coverage as well as discourage frivolous litigations for minor aberrations in clinical practice. In the absence of the legal threat, doctors will no longer be pressured to over investigate patients as a shield from litigation. The resultant reduction in healthcare cost would likely improve access to healthcare. Public worries about whether the quality of healthcare would suffer when the doctor is no longer directly responsible for medical errors will probably persist. Yet, it is expected that quality gains could arise from improved patient-doctor relationships with fewer referrals and avoidance of risky procedures.

Conclusions

Current evidence shows that defensive medicine is widely practiced, increases cost, and decreases access to health care. Defensive medicine in developing countries is on the rise as a result of the current medical liability climate in western countries. Legislative changes similar to the ones proposed in developed countries to reverse the trend need to be instituted in resource limited countries considering the sensitivity of the issue in the public and political arena. Expected reforms to address the defensive use of advanced technology procedures might include practice guidelines to limit the ordering of low-yield tests and commit patients to bear some of the costs of those tests. Furthermore, unnecessary referrals of risky patients or patients perceived to be litigious could be resolved through major medical malpractice law reforms that would address the current spiraling costs of malpractice insurance and the risk of litigation. The idea of removing doctors altogether from the medical malpractice system has been muted, but has its opponents.

The expected changes may not materialize in the near future considering the vested interests of opposing opinions and the slow process of policy making. The complexity of the problem has led to the relegation of the medical malpractice reform system to individual states in the United States of America, as there is no forum for a unified effort at the federal level. Inherited colonial laws heavily influence tort laws in developing countries and any future medical malpractice law reforms will probably mimic changes that emerge from western countries. The healthcare workforce in the third world is heavily dependent on state employed healthcare workers who are not exempt from litigation by patients whose expectations are not met by the healthcare institutions. Medical malpractice law reforms appear necessary sooner other than later in resource poor healthcare environments where doctor income and institutional budgets cannot support heavy medical-legal insurance coverage.

Urgent legislative reforms are needed in developing countries to protect healthcare workers in order to improve access to healthcare and reduce the costs of defensive medicine. In the meantime, healthcare administrators will have to ensure that access to quality and affordable healthcare does not completely elude the public, especially the rural poor. Organizational culture and leadership qualities may eventually determine the success or failure of limiting the effects of defensive medicine on a healthcare organization. Healthcare administrators and independent staff can work together to minimize medical litigation through a culture of safety that fosters open communication and allows discussion of every missed or near missed medical error. Full disclosure by both doctors and health facilities' genuine apologies when medical errors occur could be introduced, backed by timely offers of compensation through an arbitrative process of resolving medical malpractice issues. Any legislative changes should not be allowed to undermine the freedom of the individual to make choices.

The ill effects of defensive medicine are part of the price individuals pay for living in a free and democratic society. For example, the ability to sue another for causing grievous bodily harm is the right of every citizen... This right is arguably the root cause of the vicious cycle of medical litigation, high awards to plaintiffs, escalating indemnity insurance costs, defensive medicine, reduced access to care, and escalating healthcare costs. Perhaps, doctors have to learn to co-exist with defensive medicine in a democratic society while striving to minimize its effects. It may be impossible to eliminate defensive medicine completely as long as we recognize and respect the self-autonomy and freedom of the citizen as universally enshrined in most modern constitutions, but we can certainly contain its effects. Future research and analysis of this critical aspect of healthcare is necessary, especially in resource poor healthcare environments that cannot afford the heavy costs of defensive medicine.

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