

# Prevention of Malpractice in the Field of Health, as the Other Type of Prevention

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## Abstract

**Background:** So far, five types of prevention including: primordial, primary, secondary, tertiary and quaternary prevention levels have been defined in literatures. **Aim:** In this study, we have proposed “prevention of malpractice” as the other level of prevention. **Methods:** Qualitative comparison of the data, obtained from the review of conducted studies by using of scientific literatures, registered in PubMed, Google Scholar and Scopus sites. **Results:** Bringing dozens of examples of “malpractice” in the five areas of prevention. **Conclusion:** We concluded that, “malpractice” may be occurred at all levels of prevention and preventing it can be considered as the other level of prevention.

## Keywords

Malpractice, Prevention Levels, Diseases, Disorders, Responsible

## 1. Introduction

Based on the Oxford Dictionary, Malpractice is “improper, illegal, or negligent professional behavior. The wrong doing, dereliction of duty, professional misconduct, breach of ethics, unprofessional behavior, unprofessionalism, unethical behavior, negligence, carelessness and incompetence” [1].

By this definition, malpractice will be considered at all levels of prevention. In Cambridge English Dictionary, malpractice defined as: “failure to act correctly or legally when doing your job, often causing injury or loss. They are accused of medical/financial/electoral malpractice” [2].

So far, five types of prevention have been defined. Primordial p. [reducing risk factors in community], Primary p. [reducing of diseases prevalence], Secondary

p. [Early diagnosis, treatment and screening], Tertiary p. [reducing disabilities], and quaternary p. [reduce unnecessary medical interventions] [3] [4].

We believe that, “malpractice” may be occurred at all levels of prevention and this problem is a preventable subject at any level.

In our opinion, malpractice in the health field can occur in all levels of prevention by physicians, nursing, paramedical personnel, community health officials, policymakers, legislators and the patients or clients themselves, as well as, their family members.

In this study, we are going to discuss the “malpractice” in the framework of five levels of prevention, with common examples, and present some activities to prevent it.

## 2. Methods

This is a qualitative study in which, we have categorized information and data, obtained from the review of conducted studies by using of scientific literatures, registered in PubMed, Google Scholar and Scopus sites.

## 3. Results

We have tried to analyze “different types of malpractices” at each of the five known levels of prevention in this study. Some following examples can clarify the above explanation. In these examples, we have identified the health problems, malpractices and the main responsible for prevention of them among individuals or community.

### 3.1. Primordial Prevention

To prevent “malpractice” at the level of primordial, some examples are given in the **Table 1**. At this level of prevention, we address to socio-cultural and environmental factors.

### 3.2. Primary Prevention

To prevent “malpractice” at the level of primary prevention, some examples are given in the **Table 2**. At this level of prevention, we will pay more attention to individual factors.

### 3.3. Secondary Prevention

Include: Unreasonable request for medical diagnostic tests, late and misdiagnosis, mistake in timely treatment, irrational administration of drugs or blood transfusion, surgical or procedural errors and performing screening tests incorrectly [20].

#### 3.3.1. Unreasonable Request for Medical Diagnostic Tests Examples

- Unreasonable request to perform various Lab. Examinations and imaging tests such as imaging for pregnant women, etc.

**Table 1.** Primordial prevention examples including: health problems, malpractices and main responsible.

Community health problems	Malpractice examples	Main responsible for prevention	Ref.
<p>Socio cultural and environmental problems* such as:</p> <ul style="list-style-type: none"> <li>child abuse, spouse abuse, elderly abuse, violence, poor rules and laws, cultural, social problems, unemployment, rapid social changes, limited educational opportunities, begging, addiction, prostitution, internet crimes, road and street accidents, unequal access to healthcare, etc.</li> </ul>	<p>Socio cultural and environmental malpractices can be as following:</p> <ul style="list-style-type: none"> <li>Ineffective legislation</li> <li>wrong socio economic policies</li> <li>Weak management               <ul style="list-style-type: none"> <li>Poor planning</li> <li>Inconsistency</li> <li>Inadequate supervision.</li> </ul> </li> </ul>	<p>Can be as follows:</p> <ul style="list-style-type: none"> <li>Legislators</li> <li>sociocultural authorities</li> <li>Health managers</li> <li>drug control officials</li> <li>social sciences experts</li> <li>welfare organization authorities</li> <li>municipalities</li> </ul>	[5]-[12]
<p>Economical related problems such as:</p> <ul style="list-style-type: none"> <li>Poverty</li> <li>Low Income</li> <li>Expensiveness</li> <li>Inflation</li> <li>Unfair distribution of wealth</li> <li>Multiple Job Life</li> <li>Economic downturn etc.</li> </ul>	<p>Malpractice examples in economy can be as follows:</p> <ul style="list-style-type: none"> <li>Inappropriate economic policies</li> <li>Weakness in smuggling control</li> <li>Immoderate imports, etc.</li> </ul>	<p>Can be as follows:</p> <ul style="list-style-type: none"> <li>Economists</li> <li>Economic authorities</li> <li>Customs authorities</li> <li>Ministry of Labour and Social Affairs, etc.</li> </ul>	[8] [9] [10] [11] [12]
<p>Environmental health problems including:</p> <ul style="list-style-type: none"> <li>Air, water and noise pollution</li> <li>Dispersion of solid waste and sewage</li> <li>Non-sanitary physical environment</li> <li>Increased cancer rates, etc.</li> </ul>	<p>Environmental associated malpractices such as:</p> <ul style="list-style-type: none"> <li>Inappropriate environmental health policies</li> <li>Inappropriate methods such as: Illegal dumping and incineration of wastes</li> <li>Uncoordinated responsible organs, etc.</li> </ul>	<p>Environmental health authorities</p> <ul style="list-style-type: none"> <li>Environmental Protection Agency [EPA]</li> <li>Ministry of Health</li> <li>Municipalities, etc.</li> </ul>	[13] [14]

\* That is the same as Social Determinants of Health (SDH) [9] [10] [11] [12] [13] [15].

**Table 2.** Primary prevention examples for reducing the malpractices.

Malpractice examples at the individual level*	Main responsible for prevention	Ref.
*Unsafe transfer of a person suffering from spinal cord injury from the place of injury to a hospital	<ul style="list-style-type: none"> <li>Ordinary people on the crash scene</li> <li>Pre-hospital emergency staff</li> </ul>	[15]
Neglect of the patients with major depression for suicide prevention, especially in patients with an attempt in the preceding year.	<ul style="list-style-type: none"> <li>Patient's family members</li> <li>Hospital personnel</li> </ul>	[16]
Tooth staining of infants due to iron drip just on the teeth	<ul style="list-style-type: none"> <li>Pediatrician</li> <li>Baby parents</li> </ul>	[17]
Neglect of the foot hygiene [nail care and proper footwear]	<ul style="list-style-type: none"> <li>Diabetic patients themselves</li> <li>Family physicians</li> </ul>	[18]
Forgetting care of long sleep apnea	<ul style="list-style-type: none"> <li>The patient him/herself or his/her wife</li> </ul>	[14]
Self-medication	<ul style="list-style-type: none"> <li>The patient him/herself</li> </ul>	[19]

\*Hundreds of common examples can be brought to person's malpractices on their own health status.

### 3.3.2. Late and Misdiagnosis Examples

- Inaccurate or late diagnosis, e.g. late HIV diagnosis which remains a major contributor to the mortality and morbidity in AIDS [21].
- Misinterpretation of para clinical test results, e.g. misinterpretation of false positive tests which may lead to wrong diagnosis and followed by doing wrong interventions, unnecessary medications and even drugs abuse [22].

- Mistakes in differentiating health problems such as, differentiation between septic arthritis and gout [23].
- Attribution of somatic symptoms to mental disorders [e.g. hypochondriasis] incorrectly [24].

### 3.3.3. Mistake in Timely Treatment Examples

Interfere with factors like: Neglect—forgetting—and not being succeeded in control of diseases. Examples include:

- **Neglect:** This mistake can lead to bigger problems, such as: neglect the cholecystitis in diabetic patients which may lead to gallbladder perforation and early surgery is highly recommended in symptomatic gallstones and acute cholecystitis in these patients [25]. As well as, hyperbilirubinemia in neonates which can lead to permanent and irreversible brain damage due to bilirubin encephalopathy and Kern icterus [26], prehypertension which even in the low range, elevates the risk of cardiovascular disease [CVD] [27], child abuse which may threaten the child's life [5], etc.
- **Forgetting:** To forget the co-infections or super-infections treatment, to forget the sexual partner's treatment [if needed] in STIs, which may lead to survival of the disease, etc.
- **Unsuccessful disease treatment:** hypertension [stroke] [28], diabetes mellitus [gradual occurrence of blindness—kidney failure and diabetic foot—CVA etc.] [29], Failure of Helicobacter Pylori control [increased risk of stomach cancer] [30] and failure of STIs control [infertility—chronic PID ectopic pregnancy—neonatal infections—Genital Cancer—impregnation—spontaneous abortion—Congenital anomalies etc.] [30].

### 3.3.4. Irrational Administration of Drugs Examples

- Mistake in dosage regulation and application methods of drugs which may lead to occurrence of complications, e.g. Overdosing of theophylline can cause arrhythmias and seizures [31].
- Widespread and irrational use of antibiotics by practitioners, veterinarians, breeders and farmers which can provide conditions for fungal growth or broadcasting of microbial resistance and improper ecological and environmental damages [32].
- Irrational use of corticosteroids which can lead to numerous complications like, flare up the latent tuberculosis—immunosuppression—adrenal suppression—Cushingoid appearance and weight gain—hypertension—osteoporosis—pathologic fractures and osteonecrosis—myopathy—hyperglycemia and flare up of diabetes mellitus and latent dyslipidemia—cataracts and glaucoma—skin atrophy—hyperpigmentation—telangiectasis—psychiatric and cognitive disturbances and the other complications [33].
- Irrational use of hypnotic and confusing drugs, especially in the elderly patients which increases the risk of falling [34].
- Prescribing aspirin for children and teenagers <18 years of age in influenza

outbreaks and chicken pox which facilitating the development of Ray's syndrome [acute encephalopathy] [35].

- Administration aspirin in asthmatic patients and chronic rhinosinusitis with nasal polyposis which may lead to exacerbation of respiratory disease [36].
- Administration of antibiotics in upper respiratory viral infections, asthma and bronchitis, and skin abscesses which often they are useless and cause microbial resistance.
- Uncontrolled administration of anticoagulants which may cause various bleeding in all parts of the body especially GI and intracranial hemorrhage [37].
- Prescription of contraceptives without confirmed indication can increase the risk of some complications like obesity, venous and arterial thrombosis such as DVT, myocardial infarction and ischemic stroke [38].
- Irrational prescription of diuretics which can lead to electrolyte disturbances like hyperkalemia or hypokalemic, hypochloremic, hyponatremia, volume depletion, ototoxicity, nephrocalcinosis, nephrolithiasis, hypomagnesemia, hyperuricemia, noncardiogenic pulmonary edema, pancreatitis, and myalgias [39].
- Administration of toxic drugs without accurate monitoring in patients with a prone background can lead to severe complications. Current drugs such as isoniazid, rifampicin and pyrazinamide, used in tuberculosis are potentially hepatotoxic and may lead to drug hepatitis [40]. Administration of hepatotoxic anti-tuberculosis drugs in a patient with hepatitis can lead to liver failure, since many diabetic patients have chronic kidney disease, nephrotoxic drugs should be prescribed with caution, or long-term use of ototoxic drugs such as streptomycin in elderly patients can cause hearing loss or deafness, because of streptomycin has a serious ototoxic effect [41].
- Over dosage of calcium and vitamin D can cause renal damage.
- Iron prescription in thalassemia may lead to hemosiderosis. Patients with major thalassemia need lifelong transfusions. The consequence of these repeated transfusions is iron accumulation in heart, liver and pancreas [42].
- Inappropriate Prescribing of hypoglycemic drugs may lead to hypoglycemia, Coma [the most common neurological symptom], epileptic seizures [not as common as previously assumed], loss of brain cells and death [43].
- Irrational use of high-dose of antihypertensive drugs, especially in elderly patients can lead to sudden drop in blood pressure and stroke.
- Use of inappropriate doses of anti-fatty drugs such as lovastatin and gemfibrozil can lead to liver biliary, muscle and kidney disturbances.
- Delay in timely administration of oseltamivir in the elderly patients with severe influenza can even lead to death among them.
- Simultaneous administration of MAOIs with opioids in addicts can cause delirium and death.
- Prescription of sexual stimulant drugs for impotence and many other examples in this field.

### 3.3.5. Examples of Mistakes That May Occur in Surgeries

- Anesthesia and surgeries done by people who are not skilled.
- Unnecessary surgeries, such as some prostatectomies which can lead to impotence, splenectomies which may lead to invasive pneumococcal infections [44], improper limbs amputations or unnecessary mastectomies which cause permanent disabilities, etc.
- Surgery of healthy side, e.g., a healthy eye instead of a defective eye, right inguinal hernia instead of the left one, etc.
- Surgical mistakes of patients with name similarity which impose the physical and financial impose to the patient.
- Use of contaminated equipment which may lead to nosocomial infections.
- Delay in the treatment of malignant tumors which causes progression of tumor and metastasis of the cancers.
- Resection of tumors with insufficient affected margin which causes relapse.
- Surgery of patients with severe metastasis which impose pain and cost.
- Additional abdominal surgery with diagnosis of acute abdomen due to abdominal muscle spasms in tetanus.
- Postponing the surgery and entering additional stress to the patients.
- Slicing of tuberculosis abscesses that lead to chronic fistula and scarring.
- Leaving the equipment in the patient's body.
- Over dosage of anesthetics drugs which can lead to serious complications.
- Mistaken use of toxic gases instead of oxygen in the patient's anesthetic process which can lead to death.

### 3.3.6. Examples of Mistakes That May Occur in the Other Procedures

- Impose discomfort, pain and cost to the patients in the endoscopic technics.
- Injection of expired date BCG, more than recommended doses or selecting an inappropriate place for injects which may lead to tuberculosis lymphadenitis in baby.
- Sudden evacuation of ascites fluid without blood replacement which may causes shock.
- Dressing the wound of the bite location from a suspected rabid animal which my facilitated the rabies.
- Damage of adjacent teeth when working on decayed teeth.
- Carrying out the exercise test without exact supervision which may lead to heart attack or even death.
- Uncontrolled phlebotomy [patient hemoglobin should not be normalized to phlebotomy.
- Repeated injection of corticosteroids into the joints which can lead to infections.

## 3.4. Tertiary Prevention

To prevent “malpractice” at the level of tertiary prevention, some examples are given in the **Table 3**. At this level of prevention, we will pay more attention to

**Table 3.** Examples for, rehabilitation measures to compensate the complications due to malpractice.

Background	Malpractice	complication	Compensatory rehabilitation measures	Ref.
Old age	Irrational administration of hypnotic drugs	Falling (fractures e.g. Hip fracture)	Use of prosthesis, walker, cane, etc.	[25]
	Administration of streptomycin without hearing monitoring forearly detection of ototoxicity	Hearing loss, Deafness	Use of hearing aids	[45]
Diabetes mellitus	Amputation without indication in diabetic foot	Disability	Use of artificial limb	[46] [47]
	Neglect of Periodic Examination of the eyes	Diabetic retinopathy	Use of the laser	[48]
Tuberculosis skin abscess/Joint tuberculosis	Excision the abscess without medication	Persistent fistula, chronic scar	plastic surgery	[49]
	Late diagnosis (The infection requires immediate surgical debridement or drainage).	Destruction of the joint	Hip replacement)	[50]
Sexual transmitted infections [STIs]	Failure in correct treatment	Adhesion of pelvic tissues [infertility—PID—etc.]	Pelvic physiotherapy IUI IVF	[51] [52]

individual factors. Please refer to **Table 3**.

### 3.5. Quaternary Prevention

“Quaternary prevention is a group of measures taken to prevent, decrease and/or alleviate the harm caused by health activities” [44]. In our view, carrying out of any unnecessary medical activity without none necessary scientific backing up is the same “malpractice”. This concept requires a brief discussion that we have dealt with it in the discussion section.

## 4. Discussion

Primordial level of prevention, emphasis on prevention of emergence the social and environmental predisposing conditions which can lead to diseases [4]. Usually, the responsible for organizing of social and environmental health problems are social officials such as: Legislators—policymakers—sociocultural authorities—managers—social workers—social science specialists—welfare authorities—Municipalities etc. All of these officials can make mistakes in their works and activities.

In primary, secondary and tertiary levels, usually we emphasize on individual practices. In these cases, the activities are focus on self-care or doctor interventions.

For definition of quaternary level of prevention, there are used some terms such as: excesses of medicine, over-medicalization, overuse of drugs, over diagnosis, unnecessary treatment and unnecessary medical interventions. What is certain is that, these measures impose considerable discomforts, complications or costs. In quaternary prevention, “attitude” has the first role in practices.

The main question is whether these measures, which are often carried out by the physicians, are not really a kind of malpractice? Are these as “good” practices? In our opinion, all these expressions represent “bad” or “mal” acts in the sacred profession of medicine, and physicians must endeavor to offer the heal-

thiest services to the people. If so they use a guideline in their practice, the guideline needs to be revised and the main culprits in this phenomenon are compilers of the guide lines.

**Practical suggestions for reducing malpractices:**

- Taking an accurate medical history and examining all the organs of the body.
- Paying more attention to the warning signs.
- Use of the valid guide lines.
- Pay attention to indications in carrying out of any medical measures and procedures.
- Rational administration of drugs, especially antibiotics [prescribing according to age, sex, history, dosage, duration of use, route of administration, drug interactions, complications, etc.] By doctors and pharmacists.
- To avoid from “unreasonable request for medical diagnostic tests” for laboratory and imaging tests.
- Monitor the function of target organs such as the liver, kidneys, the hearing system, etc. when using drugs, especially antibiotics.
- Carrying out the timely surgery or any other diagnostic and curable measures.
- Mark on the side which is candidate for surgery.
- Reduce the duration of surgery as much as possible.
- Reduce the length of hospital stay as much as possible.
- Proper refinement, purification and correct use of the blood and blood products.
- Precise monitoring of water and electrolytes balance in the body.
- Psychological, psychiatric, nutritional and the other specialties counseling.
- Timely and accurate referral of the patients to specialized centers.
- Enhance professional skills training.
- Applying experienced people in all interventions.
- Use of standard equipment for diagnostic, remedial and rehabilitation destinations.
- Gradually taper of the corticosteroids. And many other preventive measures.

## **5. Conclusion**

We concluded that, “malpractice” may be occurred at all levels of prevention and reducing of malpractices can be considered as the other level of prevention.

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Of the fourth level of prevention.

## **Conflict of Interests**

There is no conflict of interest in the study.

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