THE PREVENTION OF MEDICAL ERRORS
A COMPREHENSIVE GUIDE

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THE PREVENTION OF MEDICAL ERRORS
A COMPREHENSIVE GUIDE

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This course was developed to help expand the knowledge and skills of massage therapists and bodyworkers with respect to the subject of prevention of medical errors. The information in this course has been derived from various professional sources enumerated on the reference list at the end of this book.

It is the responsibility of the massage therapist or bodyworker to determine which principles and theories contained herein are appropriate with respect to his/her personal limitations and scope of practice.

The information in this course has been carefully researched and is generally accepted as factual at the time of publication. The Institute for Advanced Therapeutics, Inc. disclaims responsibility for any contradictory data prior to the publication of the next revision of this course.

NOTE: In this book and test, the use of the words patient and client can be interchanged. In this book and test, the use of the words massage therapist, therapist, and practitioner can be interchanged.

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HOW TO BEST PROCEED WITH THIS COURSE

Each chapter should be approached systematically in a careful and objective manner. It is important to master each page before going on to the next. Relax, take your time, and go at your own pace. As 2 credits of continuing education are rewarded after successfully completing this course, the reading of this manual and completion of the test questions should not take less than 2 hours. Only after you have successfully mastered all the material in the course should you proceed to the test questions.

COMPLETING THE TEST

Before beginning, please clearly write your name, address, zip code, license number, state of license, and phone number on your Prevention of Medical Errors test answer card. Read each question carefully before answering. Please use a ballpoint to fill-in your answers on the answer card by completely shading your choice. Keep in mind that each question has only one correct answer. The test consists of 20 questions. For a passing grade, you must correctly answer 16 questions. We encourage your input and welcome any suggestions to improve our course or test questions. Please feel free to note your suggestions or comments on the course evaluation found at the bottom of the test answer card.

INFORMATION FOR CERTIFICATION

In order to receive your 2 hours of continuing education credit, you must be a registered purchaser of this course. Please notify us of any address or name changes as we keep permanent records for certification and licensure.
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COURSE OBJECTIVES

Upon completion of this course, you will be able to:

1. Define factors that can contribute to medication errors.

2. List several ways to prevent or reduce incidence of treatment errors.

3. Identify ways to prevent errors in diagnosis.

4. Learn how to create a systems approach to prevent or reduce medical errors in the workplace.
An alarming number of Americans are harmed or killed as a result of medical errors at the hands of health care providers. The Institute of Medicine published a report in November of 1999 on medical errors defining an error as “the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim.” These adverse events are largely preventable. The Institute of Medicine report estimated that at least 44,000 and as many as 98,000 people die in the hospital each year in the United States due to medical errors that could have been prevented. If we assume the top number is correct, hospital deaths as a result of medical errors would become the fourth leading cause of death in this country. In the report To Err is Human: Building a Safer Health Care System, the number of patients who die in hospitals each year due to medical errors exceeds those who died from motor vehicle accidents, breast cancer, or AIDS.

Data suggests that approximately 70% of adverse events are thought to be preventable. Technical errors top the list at an estimated 44% of total errors followed by errors in diagnosis at about 17%, failure to prevent injury at approximately 12%, and medication errors falling closely behind at about 10%.
Fortunately, there are many ways to reduce the number of adverse incidents by creating a specialized plan for the workplace designed to make errors more difficult to make and make correct patient care easier to administer. Identifying the factors that contribute to medical errors can play a key role in developing this plan.

Throughout this course, we will address many different types of medical errors, factors that contribute to them, and ways to improve patient safety by adopting a multidisciplinary approach aimed at reducing costly errors.

1. Medication errors.
2. Treatment errors.
3. Diagnostic errors.
4. System failures.

NOTES
MEDICATION ERRORS

Although deaths caused by medication errors are infrequent, the importance of accuracy with regard to medication cannot be underestimated. Sources estimate that approximately 150 people die each year in the United States as a result of medication errors and approximately 1.3 million are injured each year by medication errors. Medication errors can occur in the following processes.

1. Prescribing.
2. Dispensing.
3. Administering.

Types of medication errors include:

1. Wrong drug.
2. Wrong dose or quantity of the drug.
4. Wrong patient.
5. Wrong administration technique.
6. Wrong time of administration.
There are many factors that can contribute to medication errors that are often preventable.

1. Poor staff communication.
2. Incorrect abbreviations or directions for use.
3. Poor administrative technique.
4. Similarities in medication names.
5. Staff fatigue or distraction.
6. Inadequate experience or knowledge.
7. Failure to monitor the patient adequately.
8. Poor handwriting on prescription pads or patient charts leading to misinterpretation.

Several studies have demonstrated that up to 18% of serious adverse medication errors occur because the practitioner lacks sufficient knowledge of the medical history of the patient before prescribing, dispensing, and administering drug therapy. It is the responsibility of the practitioner to assess the need for a drug before prescribing one. Once the need is assessed, the next step is to select the correct drug.

The importance of staying abreast of current medication therapy cannot be understated. One study suggested the most common cause of medication errors is inadequate knowledge of new drug therapies. This lack of knowledge could result in the patient receiving the wrong drug or wrong dosage inadvertently resulting in serious injury or death. There are various sources where health care providers can obtain up-to-date drug information.

1. Texts, medical journals, and monthly prescribing references.
2. Computerized software programs that integrate patient information for screening purposes.
3. Frequent contact with pharmacists.
4. Seminars and continuing education courses.
5. Drug protocols.
6. Controlled drug formularies.
7. FDA-sponsored e-mail updates or internet websites.
The practitioner must establish in each individual factors that affect drug therapy including the following:

1. Previous medication allergies or sensitivities.
2. Contraindications to a particular drug.
3. Possible adverse reactions with other medication the patient may be taking and including over-the-counter medicine, supplements, food, or drink.

Age, weight, diagnoses, pregnancy status, vital signs, and lab results are also important considerations. Before prescribing any drug, the indications, contraindications, drug interactions, warnings, side effects, complications, and laboratory tests required before or during the drug therapy need to be fully understood. Furthermore, the desired therapeutic response must be clearly designated before drug therapy is administered.

Care must be taken in providing clear and well-understood prescriptions. Mistakes can occur when prescriptions are written haphazardly with poor penmanship and incorrect or vague abbreviations or directions for use. Be aware of look-alike and sound-alike drugs. Over the phone, sound-alike drug names can pose a serious threat. There are hundreds of such drugs. The following is a partial list of frequently confused drugs.

- Lanoxin and levoxine
- Tobrex and Tobralex
- Alustra and Lustra
- Donnagel and Donnatal
- Elavil and Eldepryl
- Isomil and Esimil
- Accupril and Accutane
- Perdiem and Pyridium
- Prazepine and prazepam
- Prednisone and prednisolone
- Restoril and Zestril
- Septa and Septra
- Xanax and Zantac
- Slo-Bid and Dolobid
- Uracid and Urised and Urocit and Uracel
Medications should never be abbreviated and extra care should be taken to write clearly in a manner that is not ambiguous. Verbal orders should be spelled out clearly to avoid being misheard. A telephone order protocol should be established by clearly restating the patient’s name, spelling the drug name, and pronouncing the dose in single digits such as “one-five” to indicate 15. Erroneously saying “fifteen” can result in someone hearing “fifty” as both can sound alike during fast conversation, transcription, or telephone conversation. Ask that the prescription be repeated back to you to make certain you were heard correctly. Careless and ambiguous medication instructions while dictating patient notes can also result in patient harm should the drug be inaccurately transcribed in the patient’s chart.

Another leading cause of medication errors includes incorrect decimal point placement. There are two important rules to remember when using decimal points.

1. A zero should always precede the decimal if the dose is less than 1. For example, 0.5 mg would be equal to a half of 1 mg. Writing this dosage without the zero preceding the decimal could result in the administration of an overdose of 5 mg if the decimal were to be overlooked.

2. Never place a decimal and a zero after a whole number. This could result in a ten-fold overdose of the medication. For example, 5.0 mg could easily be mistaken for 50 mg. The correct way to write the dosage would be 5 mg.

Occasionally, drugs with similar names and packaging can be confused so every attempt should be made not to store such drugs close to one another. Standardize and restrict drug storage, stock, and distribution to help identify discrepancies.
Before dispensing the drug, check to see that the expiration date has not been exceeded. Warning labels should be affixed to certain drugs when appropriate. To reduce the risk of serious medication error or death, pre-filled and pre-labeled syringes should be dispensed whenever possible. Bulk supplies and unit stock can potentially be dangerous as nurses may have to calculate, draw up, and mix doses opening the door for human error.

Drug delivery devices should be checked for safety before purchasing and when in use. Preventative maintenance should also be performed on these units as well. Staff should be trained to use these devices safely and expertly to prevent errors during drug administration. Care must be exercised in selecting the correct drug, correct concentration, and flow rate. Medications that can cause serious injury or death if misused are commonly called “high-alert” medications. Safeguard these drugs by standardizing communication and dosing methods, differentiating these drugs from others by location, creating a system of checks and balances, and restrict access or use of these drugs.

Patients should also be monitored for adverse drug reactions and desired therapeutic responses. The physician should be alerted immediately to adverse drug reactions so therapy can be adjusted. Any changes in the condition of the patient should be reported promptly and accurately recorded in the medical chart. The patient's response to the medication should also be documented. The physician should periodically reevaluate the drug selection and regimen including frequency, dosage strength, and duration.
TREATMENT ERRORS

There are several ways to prevent or reduce the incidence of treatment errors.

1. Communicate medical orders clearly and precisely. Whenever possible, put the information in writing.

2. Involve patients in their treatment plan by educating them about their diagnosis, medications, and procedures that are required. Ask the patient if they understand the treatment plan.

3. Check medical equipment for safety.

4. Check medication for accuracy.

5. Employ qualified, well-trained, and knowledgeable staff.

6. Provide a safe work environment by providing adequate lighting, an uncluttered workspace, and noise reduction measures.

7. Educate staff in worker injury prevention methods.

8. Be alert that understaffing and excessive workloads can greatly increase the risk of treatment errors.

9. Confirm the identity of the patient before administering treatment or performing surgery and confirm the correct site to be treated or operated on by referring to the patient’s identification bracelet and chart.
DIAGNOSTIC ERRORS

To help prevent errors in diagnosis, carefully document the history and physical examination. Discuss the severity and duration of symptoms. Whenever possible, obtain the patient’s medical records from previous health care providers and facilities. These should include any laboratory tests, diagnostic scans, and any medical or surgical procedures. These records could aid the practitioner in establishing an accurate diagnosis. Keep detailed and legible records including patient history, physical findings, differential diagnoses, plan of treatment, treatment rendered, advice and prescriptions given. Make sure all entries are initialed or signed. Include an allergy alert warning on the front of the patient’s chart and include any allergies or sensitivities. Listen carefully as patients explain their concerns. Ask if they have any questions or anything to add.

Should a mistake be entered in the chart, do not write over or erase the error. This can make the chart less legible to other health care providers. Simply draw a single line horizontally through the error and make a note in the margin including the date, time, and your initials.

When ordering a diagnostic test, make sure that the facility performing the test knows why the test has been ordered. Provide the patients with clear pre-testing instructions including information on fasting if necessary.
At times, the accuracy of diagnostic tests depends on patient compliance with pre-procedure instructions. Before performing any diagnostic test, ask the patient about their compliance with pre-testing instructions.

If in doubt about a diagnosis, send the patient to get a second opinion from a specialist. Schedule the patient back for an appointment following the visit with the specialist and review with the patient all the findings. Order any additional tests or procedures that may be necessary before making a diagnosis.

NOTES
There are several reasons why medical errors occur.

1. Insufficient knowledge regarding the drug therapy and failure to safeguard “high-alert” drugs.

2. Poor communication of medication and usage such as misheard verbal orders and incorrect interpretation of prescriptions or orders with poor handwriting.

3. Insufficient or erroneous information regarding the patient’s medical history, diagnosis, or allergies.

4. Misinterpretation of drug nomenclature, labeling, or packaging.

5. Medical equipment failure due to lack of safety checks and preventative maintenance.

6. Poor work environment.

7. Inadequate staff qualifications or training.

8. Failure to ensure the patient clearly understands the therapy and instructions.

9. Overworked and fatigued staff.
To avoid medical missteps, a systems approach to avoid medical errors must be implemented to make mistakes more difficult to make and make correct patient care easier to administer. The following advice can be helpful in creating a system to prevent or reduce medical errors in the workplace.

1. Mandate a system of reporting medical mishaps. Employees should be made to feel free to report medical errors without fear of reprisal. When mistakes are identified, methods to prevent the same error from happening in the future can be implemented.

2. Write prescriptions legibly and carefully.

3. Prescribe medication only after fully understanding the indications, side effects, complications, contraindications, warnings, interactions with other drugs, and laboratory tests required before and during the drug therapy.

4. Educate the patients or caregivers regarding their therapy. Make sure they understand oral and written instructions regarding their treatment plan.

5. Keep detailed, legible, and accurate medical records and record all adverse treatment reactions.

6. Communicate openly with other health care providers, pharmacists, and caregivers.

7. Provide a safe and comfortable work environment by maintaining adequate lighting, removing clutter, and taking steps to reduce noise levels. Make sure staff member responsibilities are clearly defined and ensure adequate staffing to prevent errors due to fatigue and stress. Hire only qualified and licensed individuals to administer patient care.

8. Schedule regular staff meetings to identify and discuss safety measures and preventative strategies. Previous medical errors should be discussed and ways to prevent the same errors from happening in the future should be implemented.
9. Create a system of checks and balances to ensure patients follow up with appointments and medical advice.
10. When appropriate, include the patient’s age and weight on a prescription so that the pharmacist and recheck your calculation of the dosage.
11. Avoid using “as directed” on a prescription. The patient may have forgotten how to take the medication. The more information provided on the prescription, the less likely an error is to occur.
12. Whenever possible, provide written instructions as opposed to verbal instructions.
13. Avoid Latin abbreviations or symbols when writing orders. They can sometimes be misread. Instead write orders using clear and concise English phrases such as “twice a day” or “more than” to avoid errors in interpretation.
14. Do not rely on your memory when documenting. Use pre-printed forms to standardize your documentation and prevent errors of omission.
15. Keep current with the latest in medical developments in your field. Frequently attend seminars and lectures. Replace outdated reference materials in your office with the latest editions. Subscribe to medical journals relating to your field of expertise.
16. Schedule regular maintenance of equipment.
17. Create a standardized system regarding the use of “high alert” medications and have a qualified staff member double-check the drug and dosage before administering.
18. Adopt safety measures to prevent worker injury.
19. Create a system of checks and balances to ensure patient follow up and compliance with recommendations.

END
REFERENCE LIST


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