

# **CLINICAL WORKBOOK in Medical - Surgical Nursing**

**KURTZ AND MILLER**

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# Preface

We are currently living in a challenging and dynamic era during which major health problems of contemporary life are constantly occurring and the individuals who are affected by them are seeking more and better nursing care. Faculties are constantly revising course content, and newer approaches are being sought continually. In medical-surgical nursing, copious materials—textbooks, manuals, modules, and programs—are being published every day.

It is impossible to teach or to learn, in an academic setting, all that will ultimately be needed to practice nursing effectively, but it is possible to provide an approach to selected major health problems that will encourage independent study and will better equip present and future students to meet their professional responsibilities.

The purpose of this handbook is to present patient studies typifying major health problems of today and to provide opportunities for the student to analyze the various types of nursing problems encountered. The study questions for each situation are intended to be broad enough in scope to apply to patients encountered in other clinical situations.

A bibliography containing specific references to all the major textbooks in medical-surgical nursing follows each unit. Pertinent journal references also are provided. Consulting this selected bibliography will permit students to supplement their classroom discussions and clinical experience and will enable them to provide more effective care to the individual patient.

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# NURSING CARE OF THE PATIENT WITH DIABETES MELLITUS

## Unit 1

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Mrs. Vera Dolce is a 48-year-old housewife who emigrated to the United States from Italy shortly after her marriage about 30 years ago. Mrs. Dolce has two children who are now married but live in the same town. They visit frequently with the grandchildren and like to come on Sundays when Mrs. Dolce prepares a typical Italian meal for them. Mr. Dolce owns a small grocery store in town and, whenever she can, Mrs. Dolce helps him out. Mrs. Dolce has two older brothers and a younger sister still living in Italy.

### Situation

During the past several months Mrs. Dolce complained of “feeling tired all of the time,” and in the last two weeks she curtailed all her activities owing to severe fatigue, managing only to prepare meals for her husband. Mr. Dolce became quite concerned and asked his daughter to take her mother to the doctor.

On physical examination, Mrs. Dolce seemed to be quite healthy. She was overweight for her height—165 pounds and only five feet three inches tall—and her urinalysis indicated a mild glycosuria. When the doctor told her that he would put her on a diet to lose weight, Mrs. Dolce replied, “But, Doctor, I’ve been losing weight for the past two months.” On further questioning, the doctor learned that she was “hungry and thirsty all of the time.” He recommended that she spend a few days in the hospital for further tests and explained that she might have diabetes.

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### DEFINITION AND DESCRIPTION

Diabetes mellitus is a chronic metabolic disease involving a disorder of carbohydrate metabolism and subsequent derangement of protein and fat metabolism. The disease involves disturbances in production, action, or





DIAGNOSTIC TESTS

Mrs. Dolce was admitted to the hospital for a complete diagnostic work-up. In order to plan nursing care during this phase of diabetes mellitus the nurse should know about the laboratory tests used in making the diagnosis.

1. Complete the following table of laboratory tests used in establishing the diagnosis of diabetes mellitus.

Test	Normal Levels	Levels in Diabetes	Physiologic Explanation	Nursing Responsibilities
<i>Fasting blood sugar</i>				
<i>Glucose tolerance</i>				
<i>Postprandial blood sugar</i>				
<i>24-hour urine for glucose</i>				
<i>Fractional urine</i>				

TREATMENT AND NURSING CARE

After several days, during which frequent blood sugar tests and fractional urine examinations were done, it was determined that Mrs. Dolce had diabetes mellitus of the adult type. The doctor ordered that Mrs. Dolce be

started on Diabinese, 250 mg. b.i.d., and on a 1500-calorie diet consisting of 150 gm. carbohydrate, 75 gm. protein, and 75 gm. fat.

1. In general, when are oral hypoglycemic agents considered to be of value?

2. Complete the following table of oral hypoglycemic agents.

Trade Name	Generic Name	Usual Daily Dose	Max. Recommended Dose	Duration of Action
<i>Diabinese</i>				
<i>Orinase</i>				
<i>Dymelor</i>				
<i>Tolinase</i>				

A major responsibility in nursing care for Mrs. Dolce will be to teach her the importance of the dietary regime she must follow.

3. State the fundamental principle of the diet for a patient with diabetes.

4. How is the total caloric requirement of the diabetic patient calculated?

5. Review the diet for Mrs. Dolce. Assuming that the total daily amount of each nutrient (carbohydrate, protein, and fat) is to be divided  $\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{2}{5}$ , plan meals for her for one day.

6. List three fruits and three vegetables with high carbohydrate content and three of each with low carbohydrate content. List four “free” foods.
7. What should Mrs. Dolce be taught about the use of commercially prepared diabetic foods that can be found in the supermarkets?

After she was hospitalized for ten days, Mrs. Dolce’s blood and urinary sugar levels were brought under control. She was advised that she could return home over the weekend, and emphasis was placed on the importance of adhering to her diet, taking the medication as ordered, and testing her urine regularly.

8. Outline both the immediate and the long-term objectives of the teaching plan for Mrs. Dolce.
9. Discuss briefly what Mrs. Dolce must understand with regard to each of the following:
  - a. Diet
  - b. Exercise
  - c. Care of skin and nails
  - d. Future medical care

Mrs. Dolce was discharged from the hospital and apparently adjusted well to her new mode of living until about six months later, when her husband underwent major surgery and was hospitalized for seven weeks. One day during this time her daughter (who called regularly) was unable to reach her by phone. When she went to the apartment, she found her mother lying on the floor unconscious. Arrangements were made to take Mrs. Dolce by

ambulance to the emergency room, where the diagnosis of diabetic acidosis was confirmed.

## COMPLICATIONS

1. In outline form, differentiate between diabetic acidosis (coma) and hypoglycemic reactions with regard to:
  - a. Onset
  - b. Causes
  - c. Symptoms and signs
  - d. Treatment
2. List the pertinent observations that should be made by the nurse while caring for a comatose patient.
3. Inasmuch as Mrs. Dolce's diabetes appeared to be totally out of control, it was deemed necessary to start her on insulin. Complete the following table pertaining to the various available forms of insulin.

Type of Insulin	Appearance	Indications	Onset of Action	Peak Action	Duration	Time of Reaction
<i>Rapid-acting</i>						
Regular						
Semilente						
<i>Intermediate-acting</i>						
Globin zinc						
Isophane (NPH)						
Lente						
<i>Slow-acting</i>						
Protamine zinc (PZI)						
Ultralente						

Laboratory tests confirmed that Mrs. Dolce's diabetic condition was totally out of control. Once she regained consciousness, she was started on oral fluids and, on the following day, was started on regular food in accordance with the previously prescribed dietary regime. This time, however, insulin injection was ordered after each meal. Two days later Mrs. Dolce was started on lente insulin, 20 units U 100 in A.M. Plans were initiated for her to be discharged by the end of the week, provided she could administer her own insulin.

4. In outline form, list the specific information Mrs. Dolce must know about each of the following in order to give herself insulin injections when she goes home:
- a. Preparation of the syringe
  - b. Administration of insulin
  - c. Rotation of injection sites
  - d. Provisions for travelling
  - e. Future medical care

Mrs. Dolce and her husband were discharged from the hospital at the same time. They were referred to the visiting nurse service so that Mrs. Dolce could have assistance in learning to control her diabetes and Mr. Dolce could get the care he required during convalescence. While under the supervision of the visiting nurse, Mrs. Dolce learned more about administering her insulin and preparing her diet. The services of the visiting nurse were discontinued after Mr. Dolce was able to take care of his personal needs.

Six months later, Mr. Dolce died suddenly of a massive coronary occlusion. Mrs. Dolce became very depressed and, once again, ignored the prescribed routine. She took her insulin when she thought to take it, stopped testing her urine, and began to eat compulsively. Early one morning, she got up to go to the bathroom and tripped over a small scatter rug. Her big toe hurt at the time, but she did nothing about it. A week later, she had severe pain in her foot and noticed that the big toe was very dark, as was the instep. The pain persisted, and Mrs. Dolce finally made an appointment with the doctor.

After examining Mrs. Dolce, the doctor recorded that the left popliteal pulse was absent and the left femoral pulse was diminished but palpable. His diagnosis was gangrene of the left great toe. Mrs. Dolce was admitted to the hospital immediately, and the following orders were written:

- Bed rest
- Chest x-ray
- FBS q.A.M.
- Fractional urines a.c. and h.s.
- Lente insulin 20 units of U 100 q.A.M.
- Darvon 65 mg. q.4h. p.r.n. for pain
- Seconal 100 mg. h.s.
- Foot soak with Betadine and H<sub>2</sub>O b.i.d.
- 1500 Cal. diet (150 gm. carbohydrate, 75 gm protein, 75 gm. fat)

This regime was carried out for ten days. By then, the gangrene had progressed to midcalf level. The doctor told Mrs. Dolce and her daughter that a below-the-knee amputation would be necessary, both to relieve the pain and to save her life.

Initially, Mrs. Dolce could not accept the fact that her leg would have to be "cut off." She would talk to no one, refused meals, and cried intermittently. The next day, her daughter was able to talk to her, and she urged Mrs. Dolce to have the surgery. Later that afternoon, when the doctor was making his rounds, Mrs. Dolce told him that she would agree to do whatever he thought best. He explained the operative procedure, answered her questions, and informed her that she could have a prosthesis as soon as the wound healed completely.

The operation was scheduled for the next morning. The following orders were written:

- Prep left leg for B/K amputation:
  - Betadine scrub
  - Wrap extremity with sterile towels
- Fleet enema h.s.
- NPO after midnight

Seconal 100 mg. h.s.  
 Hold lente insulin in A.M.  
 Type and cross-match for two units blood  
 FBS, total proteins, K, Na, Cl, and CO<sub>2</sub>  
 5% D/W 1000 ml. IV c̄ 10 U reg. insulin @ 6:30 A.M.  
 Demerol 50 mg.        }  
 Atropine 0.4 mg.     }       IM @ 7 A.M.  
 To OR @ 8 A.M.

- A surgical procedure is very stressful for a diabetic patient. What stresses associated with surgery can cause the diabetic condition to be “thrown out of control”?
- List the types of anesthesia that may be used for a patient having an amputation.
- Complete the table below for the various drugs which Mrs. Dolce received.

Medication	Generic Name	Dose and Route	Action	Use	Untoward Effects
<i>Darvon</i>					
<i>Seconal</i>					
<i>Demerol</i>					
<i>Atropine</i>					

8. What is meant by “phantom limb sensation”? What are the causes?
9. Prepare a nursing care plan that will be used for Mrs. Dolce when she returns to the floor after surgery. Include equipment needed at the bedside, initial nursing responsibilities on admission to the unit, and care essential for the first 24 postoperative hours.
10. Complete the table listing the complications that Mrs. Dolce may encounter following amputation.

Complication	Signs and Symptoms	Treatment	Nursing Implications
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Mrs. Dolce had an uneventful recovery from the operation. On the second postoperative day, her original insulin and diet orders were resumed and the dressing was changed, at which time the Penrose drains were removed. She was then allowed up in a wheelchair for one hour three times a day. On the fourteenth postoperative day, the sutures were removed, and the doctor ordered physical therapy for crutch walking. Orders were also written telling the nurse to teach stump care, insulin administration, and crutch walking, and to reinforce diet instruction.

11. Briefly list what the nurse should explain to her patient about each of the following:
- Care of the stump
  - Wrapping of the stump
  - Exercises
  - Crutch walking