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# OBSTETRICAL NURSING

Carolyn Conant Van Blarcom, R. N.

*Revised by*

Erna Ziegel, R. N., B. S.

Instructor of Clinical Nursing and Supervisor of  
Obstetric and Gynecologic Services, University  
of Wisconsin School of Nursing and Hospitals,  
Madison, Wisconsin

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## Foreword to the Fourth Edition

This textbook has been completely rewritten because obstetric nursing, like medicine as a whole, is ever changing. New advances in medical science necessitate revision, additions, and deletions to achieve a modern textbook. It is significant that this book on obstetric nursing has been written by a nurse reflecting her practical experience as a supervisor and instructor of obstetric nursing in a service associated with a medical and a nursing school and in a large general hospital.

The author obtained authoritative information for her revision from obstetricians, pediatricians, and practitioners in allied branches of medicine.

Normal obstetrics and its complete nursing care have been emphasized; in addition, the obstetric complications have been given adequate discussion. Basic anatomy, physiology, and fetal development have been covered thoroughly, as well as physiologic changes during pregnancy, labor, and the puerperium. Prenatal care has been presented well with especial emphasis on the nursing aspects. Nutrition of the pregnant woman has been given the attention that the subject now merits.

Important and ancillary considerations, such as education for childbirth, mental hygiene, social and economic factors, and community health services, have been given appropriate coverage.

The section on care of the fetus and newborn has been enlarged and extended in all its aspects from the standpoint of both the normal and abnormal.

The organization of the book is excellent and indicates considerable thought, time, and preparation. The select illustrations throughout the book will aid understanding and teaching. I am sure that this textbook

will be of value to medical students and doctors, as well as to the nurse.

Miss Ziegel and her collaborators are to be commended, and it is my opinion that this textbook will have wide acceptance and continued success.

Ralph E. Campbell, M.D.  
Professor of Obstetrics and  
Gynecology, University of  
Wisconsin School of  
Medicine

## Preface to the Fourth Edition

The purpose of this revision is to present in a modern and comprehensive form the many recent advances in obstetrics and obstetric nursing. With such complete coverage the nurse can acquire an understanding of her role in all phases of care to be given to the mother, the newborn infant, and the family during and following pregnancy. This is a textbook for student nurses, and it should, because of its enlarged scope, also serve as a reference for graduate nurses.

Nursing practice is the main theme, and its presentation is based on the underlying principles of obstetric care. To clarify these principles, essential scientific information regarding physiologic processes, pathologic conditions, and therapy has been included. Because the emotional aspect of care during pregnancy and childbirth is important, the discussion includes subjects such as parents' classes during the prenatal period and the experience of rooming-in after delivery. Care of the newborn infant is emphasized, because I believe that the nurse's responsibility in the first few days of life is of particular importance.

Medical practice is described according to information obtained from authoritative sources, and with the advice of obstetricians, pediatricians, and members of allied medical sciences. Of necessity, only certain generally recognized medical practices have been presented, since the basic purpose of this text precluded more detailed description. Current nursing practice has been presented in more detail, and, in important ways, it reflects my own experience and my ever-continuous evaluation of obstetric nursing. It is my hope that the nurse reading this book will be stimulated to think through the total care she gives each patient, to make adaptations of care with insight, and to be always aware of further advances in scientific knowledge as they relate to, and influence, her professional responsibilities.

Changes in the obstetric regimen have affected the nursing care given to mothers and newborn babies, and have necessitated some reorganization of Miss Van Blarcom's book. For example, in Part IV, "The Birth of the Baby," I have added Chapter 13, "Analgesia and Anesthesia"; the subject of nutrition for both the mother and baby has been incorporated into Chapter 6, "Prenatal Care," and Chapter 17, "The Nursing Mother," where this subject can be more properly presented as part of the total care given. Since so many women are now being admitted to hospitals for childbirth, the material on "The Preparations for Home Delivery" is included in the Appendix rather than Part VI, "The Maternity Patient in the Community." To Part VII, "The Care of the Baby," has been added Chapter 23, "The Premature Infant: Characteristics and Nursing Care"; Chapter 24, "Abnormalities and Diseases of the Newborn Infant—Medical Aspects and Nursing Care," has been expanded to include a full discussion of respiratory disturbances at birth and of erythroblastosis fetalis.

Because I am in agreement with Miss Van Blarcom's philosophy—the importance of the nurse "adopting a sympathetic, understanding attitude toward the patient"—I have made every effort to weave this belief throughout the text discussion. I have also continued the emphasis that Miss Van Blarcom placed on the nurse's function of *teaching* patients, as well as the role the nurse plays in assisting the doctor on the medical team in striving for the safety and well-being of mothers and babies.

In the individual chapter "Bibliography and Student References," I have included a majority of the articles on maternal and child care that have appeared in the *American Journal of Nursing* and *Nursing Outlook* for the past five years; by so doing, I felt this comprehensive listing would give the student ample opportunity to know the scope and coverage that these two journals have to offer. I have included other articles from obstetric and pediatric journals because I felt this would help the student become acquainted with material in medical libraries. In order to present a complete over-all coverage of bibliographic material, there are also suitable textbooks for reference.

Madison, Wisconsin  
March 12, 1957

Erna Ziegel, R.N.



## Acknowledgments

As in the first three editions of this book, valuable assistance was given by the late Dr. John W. Harris. During many years of association with Dr. Harris, I came to appreciate his interest and skill in teaching nurses, and I was pleased to undertake this revision with his assistance. Dr. Harris' interest in promoting the welfare of mothers and babies and his genuine concern for each patient as an individual were an inspiring influence. Through this influence and his interest in teaching nurses he was able to give the same help and encouragement in this revision that he gave to the original preparation of this text and its subsequent revisions. His generous guidance and wise counsel were a continuous source of encouragement.

I acknowledge the assistance I received from faculty members of the University of Wisconsin Medical School and School of Nursing. I express my appreciation to Dr. William Kiekhofer for his valuable assistance and advice regarding many aspects of obstetric care, and to Dr. H. Kent Tenney for his critical reading and counsel with Part VII, "The Care of the Baby." My long-continued association with the late Dr. John E. Gonce resulted in an understanding of the newborn infant and his care which contributed immeasurably to the content of this book. I wish to thank Dr. Karl Siebecker for reading Chapter 13, "Analgesia and Anesthesia," and for his helpful suggestions. I gratefully acknowledge the assistance I received from my nursing colleagues in the preparation of this text. Miss Margaret Crump gave valuable help in various sections and especially with Part VII, "The Care of the Baby." Miss Eugenia Schoen made helpful suggestions regarding Chapter 7, "Mental Hygiene of the Expectant Mother," and Mrs. Signe Cooper read many portions of the manuscript and generously gave constructive advice.

Many of the illustrations in this edition are new. All new photographs were made by Mr. Homer Montague, photographer, University Hospitals, Madison, Wisconsin. I express my appreciation for his expert photography and for his cooperation in obtaining the desired illustrations. I also thank

the patients who were willing to assist, and the administration of University Hospitals, Madison, Wisconsin, for the use of available facilities.

I especially wish to express my gratitude to Mr. W. Holt Seale and Miss Barbara Russell of the Medical-Public Health Department, The Macmillan Company, for their assistance throughout the preparation of this text.

E.Z.

## OBSTETRICAL NURSING

# Contents

Foreword to the Fourth Edition	v
Preface to the Fourth Edition	vii
<b>PART I. ANATOMY AND PHYSIOLOGY</b>	<b>1</b>
<i>Chapter</i>	
1. Anatomy of the Female Pelvis and Reproductive Organs <i>Bony Pelvis. Pelvic Measurements. Contracted Pelves. Female Organs of Reproduction. Uterine Ligaments. External Geni- talia. Breasts</i>	1
2. Physiology of the Female Reproductive Organs <i>Puberty. Ovarian Cycle. Menstruation. Menopause</i>	31
<b>PART II. THE DEVELOPMENT OF THE BABY</b>	<b>48</b>
3. Development of the Embryo and Accessory Structures	48
4. Growth and Development of the Fetus	69
<b>PART III. THE EXPECTANT MOTHER</b>	<b>88</b>
5. Signs, Symptoms, and Physiology of Pregnancy <i>Estimating the Probable Date of Confinement. Signs and Symptoms of Pregnancy. Pregnancy Tests. Physiology of Pregnancy</i>	88
6. Prenatal Care <i>Parents' Classes. Hygiene of Pregnancy. Common Discom- forts during Pregnancy. Early Signs of Complications of Pregnancy</i>	109
7. Mental Hygiene of the Expectant Mother	167
8. Some Special Problems of the Maternity Patient	180
9. Complications and Accidents of Pregnancy <i>Premature Terminations of Pregnancy. Antepartum Hemor- rhage. Pernicious Vomiting of Pregnancy. Toxemias of Preg- nancy. Other Complications of Pregnancy</i>	191

# PART IV. THE BIRTH OF THE BABY 260

## Chapter

10. Presentation and Position of the Fetus 260
11. Symptoms, Course, and Mechanism of Normal Labor 277  
*First State (Stage of Dilatation). Second Stage (State of Ex-  
pulsion). Third State (Placental Stage)*
12. The Nurse's Duties during Labor 291  
*First State (Stage of Dilatation). Second Stage (Stage of Ex-  
pulsion). Care of the Baby in the Delivery Room. Third Stage  
(Placental Stage). Repair of Episiotomy or Perineal Laceration.  
Immediate Aftercare of the Patient. Possible Emer-  
gencies during Labor*
13. Analgesia and Anesthesia 355  
*Physiologic Labor. Analgesic and Amnesic Drugs. Inhalation  
Analgesia and Anesthesia. Regional Anesthesia. Intravenous  
Anesthesia*
14. Obstetric Operations and Complications of Labor 378

# PART V. THE CARE OF THE MOTHER 418

15. Physiology of the Puerperium 418  
*Anatomic Changes. Clinical Aspects*
16. Nursing Care during the Normal Puerperium 427  
*Emotional Aspects. Physical Aspects. Discharge Examination  
and Instructions*
17. The Nursing Mother 472  
*Factors Important to Successful Breast Feeding. Instruction  
and Assistance to the New Mother. Personal Hygiene of the  
Nursing Mother*
18. Complications of the Puerperium and Nursing Care 498  
*Postpartum Hemorrhage. Puerperal Infection. Thrombophle-  
bitis. Mastitis. Cystitis and Pyelitis. Subinvolution. Retrover-  
sion of the Uterus. Mental Disturbance*

# PART VI. THE MATERNITY PATIENT IN THE COMMUNITY 523

19. Beginnings of Prenatal Care 523  
*The Maternity Patient in Early Times. Maternity Care about  
1900. The Beginning of Prenatal Care*

<i>Chapter</i>	
20. Recent Trends in Maternity Care	534
<i>Community Health Services for Mothers and Children. Midwifery. Development of Complete Maternity Care. Teaching the Community about Maternity Care. Medical Social Worker. Homemaker Service. Maternity Nursing Consultant. Natural Childbirth. Rooming-in. The Role of the Nurse</i>	
 PART VII. THE CARE OF THE BABY	 578
21. Characteristics and Development of the Normal Newborn Baby	578
<i>Weight. Length. Skeleton. The Respiratory System. Thymus. The Circulatory System. Heat Regulation and Body Metabolism. The Gastrointestinal Tract. Liver. Spleen. The Genitourinary System. The Nervous System. Special Senses. The Umbilical Cord. Skin. Hormone Reactions. Immunity. General Appearance and Behavior</i>	
22. Nursing Care of the Newborn Baby	617
<i>The First Day of Life. Body Temperature. Weight. Position. Care of the Umbilical Cord. Care of the Skin. Special Organs. Clothes. Psychologic Care. Feeding. Artificial Feeding. Formula Preparation. Water. Vitamins. Urine and Stools. Prevention of Infection. Room Temperature. Fresh Air and Sunshine. Records. Birth Registration. Teaching Parents. Discharge from the Hospital</i>	
23. The Premature Infant: Characteristics and Nursing Care	688
<i>Characteristics at Birth. Medical and Nursing Care. Psychologic Care. Prevention of Infection. Common Physiologic Disturbances. The Nurse's Daily Record. Future Development. Discharge from the Hospital. General Considerations. Community Responsibility</i>	
24. Abnormalities and Diseases of the Newborn Infant—Medical Aspects and Nursing Care	733
<i>Congenital Anomalies. Birth Injuries. The Respiratory System. Disturbances of the Blood. Infections. Metabolic and Nutritional Disturbances. Care of the Baby of a Diabetic Mother. Postmaturity</i>	
Appendix. The Preparations for Home Delivery	807
Glossary	820
Index	833

# PART I. ANATOMY AND PHYSIOLOGY

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## *Chapter 1*

### Anatomy of the Female Pelvis and Reproductive Organs

#### THE BONY PELVIS

Detailed knowledge of the anatomy of the female pelvis has resulted in an enormous reduction in injury and death among obstetric patients and their babies. This knowledge of the pelvic anatomy, relating as it does to both normal and malformed pelves, has made possible a system of measurements, termed *pelvimetry*, which gives the obstetrician a fair idea of the size and shape of the patient's pelvis. Such data, coupled with observations upon the size of the child's head, provide the obstetrician with information upon which to base his expectation of the ease or difficulty with which the approaching delivery is likely to be accomplished.

Since each patient's pelvic measurements are considered from the standpoint of their comparison with normal dimensions, it is manifestly important that the obstetric nurse have a clear idea of the structure of the normal female pelvis, and also of its commonest variations.

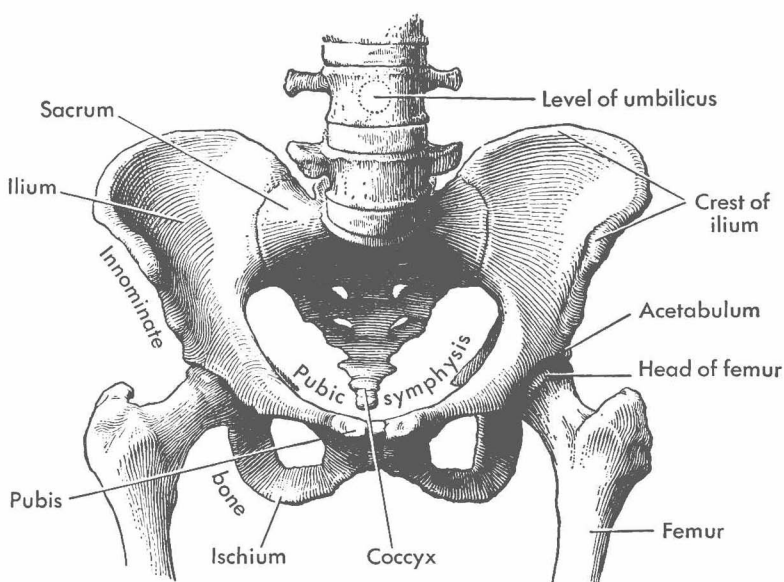
The obstetric significance of pelvic measurements may be more apparent to the nurse if we pause for a moment and mention the factors concerned in labor, "powers, passenger, and passage," as described by Matthews Duncan, a Scotch obstetrician, who wrote over 75 years ago. The "powers" that force the child through the birth canal are supplied by contractions of the uterine muscle and muscles of the abdomen. The "passenger" is the baby who must travel through

the "passage," or bony pelvis and soft parts, during the process of labor. In the following pages we shall study the passage through which the infant passenger must make his way. It will be seen that the shortest diameters of the "passage" must accommodate the greatest diameters of the "passenger" if delivery is to take place safely through the birth canal.

### NORMAL PELVIS

Viewed in its entirety, the pelvis is an irregularly constructed, two-storied, bony cavity or canal situated below and supporting the movable parts of the spinal column, and resting upon the femurs or thigh-bones (Fig. 1).

Four bones enter into the construction of the pelvis: the two hip-bones, or *ossa innominata*, on the sides and in front, with the *sacrum* and *coccyx* behind.



**Fig. 1.** The bony pelvis. It has the shape of a ring and is made up of four bones—the two innominate bones, the sacrum, and the coccyx. Each innominate bone consists of three parts—the ilium, ischium, and pubis. (Brady, L.; Kurtz, E.; and McLaughlin, E.: *Essentials of Gynecology*, 2nd ed. The Macmillan Company, New York, 1949.)



**The innominate bones** (*ossa innominata*), symmetrically placed on each side, are broad, flaring, and scoop-shaped. Each bone consists of three main parts, which are separate bones in early life, but firmly welded together in adults: the *ilium*, *ischium*, and *pubis* (Fig. 1). The ilia are the broad, thin, plate-like sections above; their upper, anterior prominences, which may be felt as the foremost angles of the hipbones, are the *anterior superior spinous processes* sometimes used in pelvic measurements. The margins extending backward from these points are termed the *iliac crests*.

The ischia are below, and it is upon their projections, known as the *tuberosities*, that the body rests when in the sitting position, and which also serve as landmarks in pelvimetry. The two pubic bones unite in the median line by means of heavy cartilage to form the *symphysis pubis* (Fig. 1).

**The sacrum and coccyx** behind are really the termination of the spinal column, the sacrum usually consisting of five rudimentary vertebrae which have fused into one bone (Fig. 1). It sometimes consists of four bones, sometimes six, but more often of five. It has both a vertical and lateral concavity. The sacrum completes the pelvic girdle behind by uniting on each side with the innominate bones by means of strong cartilages, thus forming the *sacroiliac joints* (Fig. 2). The spinal column rests upon the upper surface of the sacrum. The coccyx is a little wedge-shaped, tail-like appendage, which is the vestige of the tail seen in the early embryo. Ordinarily it has but slight obstetric importance. It extends in a downward curve from the lower margin of the sacrum, to which it has a cartilaginous attachment, the *sacrococcygeal joint*. This joint between the sacrum and coccyx is much more movable in the female than in the male.

We find, therefore, that although the pelvis constitutes a rigid, bony, ring-like structure, there are four joints: the symphysis pubis, the sacrococcygeal, and the two sacroiliac articulations. As the cartilages in these joints become somewhat softened and thickened during pregnancy, because of the increased blood supply, they all permit of a certain, though limited, amount of motion at the time of labor. This provision is of considerable obstetric importance, since the sacrococcygeal joint allows the child's head to push back the forward-protruding coccyx, as it passes down the birth canal, thus removing what otherwise might be a serious obstruction.

The normal *male pelvis* is deep, narrow, rough, and massive as compared with the female structure (Figs. 2 and 3), and the angle of