MANUAL OF ANESTHESIOLOGY

HERMAN SCHWARTZ, M.D. • S. H. NGAI, M.D. • E. M. PAPPER, M.D.
From the Anesthesiology Service
The Presbyterian Hospital, and Department of Anesthesiology
Columbia University, College of Physicians and Surgeons
New York, New York

FOR RESIDENTS AND MEDICAL STUDENTS

The purpose of this book is to present to the resident in anesthesiology, the intern, and the medical student a condensed but complete source of primary and basic information in anesthesiology, and to serve as a ready reference during this early stage of training.

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SYMBOL OF LEADERSHIP

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CHARLES C THOMAS · PUBLISHER
Springfield · Illinois · U.S.A.

CHARLES C THOMAS • PUBLISHER
BANNERSTONE HOUSE
301-327 East Lawrence Avenue, Springfield, Illinois, U.S.A.

Published simultaneously in the British Commonwealth of Nations by
BLACKWELL SCIENTIFIC PUBLICATIONS, LTD., OXFORD, ENGLAND

Published simultaneously in Canada by
THE RYERSON PRESS, TORONTO

Library of Congress Catalog Card Number: 56-11488

Printed in the United States of America

MANUAL OF ANESTHESIOLOGY FOR RESIDENTS AND MEDICAL STUDENTS

Publication Number 298

AMERICAN LECTURE SERIES®

A Monograph in

The BANNERSTONE DIVISION *of*
AMERICAN LECTURES IN ANESTHESIOLOGY

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INTRODUCTION

ANESTHESIOLOGY is a specialty in medicine requiring the diagnostic skills of the physician and the technical dexterity of the surgeon. These twin facets must be developed to the greatest possible degree in the course of the training program. But there must be a beginning somewhere. It is not sufficient to start technical training without scientific learning. Didactic teaching without practical work also omits something of value.

After some trial and much error, a reasonably satisfactory solution was found. Beginners were taught practical work in the operating rooms as part of a unit consisting of the instructor and one or two students. They worked together every day as a team for several weeks. The confusions of haphazard starts were reduced to a minimum. During this period beginners meet thrice weekly to learn "what every young anesthesiologist should know." This manual is their guide. The learning process is developed hopefully and possibly even effectively when the manual becomes less important than the reading of original source material and when increased responsibility in the operating room is possible and productive.

The manual proved popular with residents in anesthesiology and surgery. Medical students wished it: whether for knowledge or the passage of examinations was never quite clear. In any event, the large demand suggested that its availability in book form would be valuable. It is our sincere hope that it will prove useful to beginners everywhere.

ACKNOWLEDGMENTS

THE MANUAL had many contributors in encouragement, planning, and the writing of earlier versions. Gratitude is due them for their unselfish devotion to the preparation of this teaching guide for residents in The Presbyterian Hospital and students in the College of Physicians and Surgeons of Columbia University. Some omissions are inevitable and apologies are due them. Particular appreciation is freely and gratefully offered Drs. Virginia Apgar, M. Jack Frumin, Duncan A. Holaday, William Howland (now Director of Anesthesiology at Memorial Cancer Center, New York City), Herbert Rackow, and Daniel Tausig (now Director of Anesthesiology, North Shore Hospital, Manhasset, New York).

H.S.
S.H.N.
E.M.P.

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MANUAL OF ANESTHESIOLOGY FOR RESIDENTS AND MEDICAL STUDENTS

I

RECORDS AND CHARTING

THE ANESTHESIA RECORD

THE CAREFUL and frequent recording of data on anesthesia records during the progress of an anesthetic procedure is imperative:

1. To insure frequent attention to the patient's vital signs.
2. To provide a ready reference of the patient's reaction to anesthesia and operation.
3. To establish the sequence of any untoward changes in the vital signs or physiology of the patient should these occur.
4. As a source of reference, teaching, and statistical material.
5. As a medicolegal record.

A copy of the anesthesia record used at the Columbia-Presbyterian Medical Center is provided in this section. This consists of an anesthetic chart in duplicate. The carbon copy is incorporated in the patient's chart, the original filed in the anesthesia office. This is the most important record as it is both a source of material for teaching and research, and a basis for the acquisition of statistical data.

Preparation of the chart before starting the case is an important aid in reviewing the patient's condition in detail and recalling the findings acquired during the preanesthetic examination.

For purposes of instruction this chart may be divided into three sections.

Section I

(Top of the Record)

This section is filled out from the patient's clinical chart. The following points are important:

Blood Pressure. If there are a variety of readings the range is recorded.

Hemoglobin and Red Blood Count. (Hematocrit if it is available.)

Habitus. Record as average, thin, obese, weight loss, muscular or debilitated.

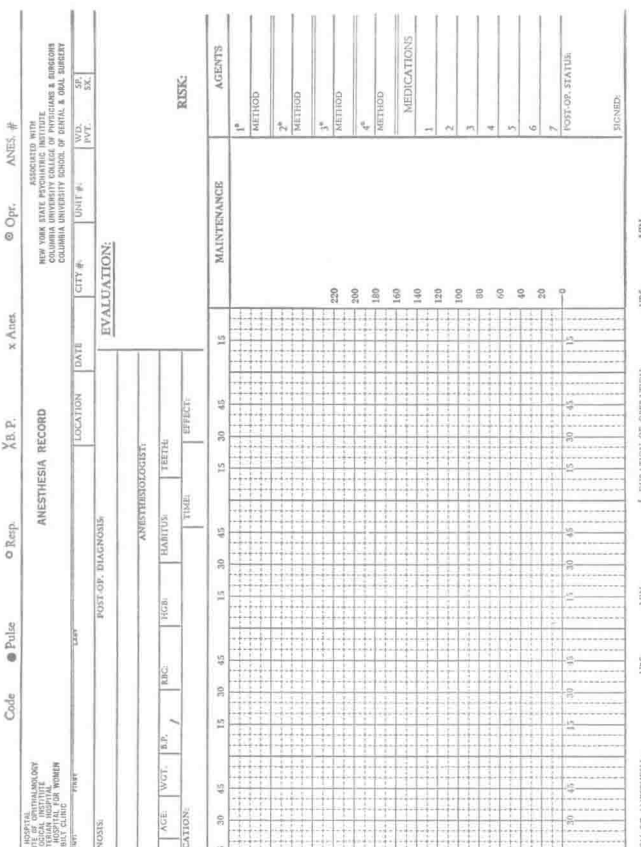
Teeth. Record as bridges, plates, caries, broken, missing, edentulous.

Preoperative medication is ordered by the anesthesiologist. The amount, time, and effect are recorded for two reasons. The patient may be anesthetized again by someone else. If the medication was unsatisfactory, it can be changed for the next procedure. Secondly, a study of the time, dose, agent, and route of administration will enable one to judge the effects of various medications and to use them more intelligently as experience is acquired.

Evaluation. This consists of the pertinent physical data, unusual laboratory findings, special tests, and preoperative complications.

Risk. This is a standard evaluation and consists of seven physical states as recommended by The American Society of Anesthesiologists.[1]

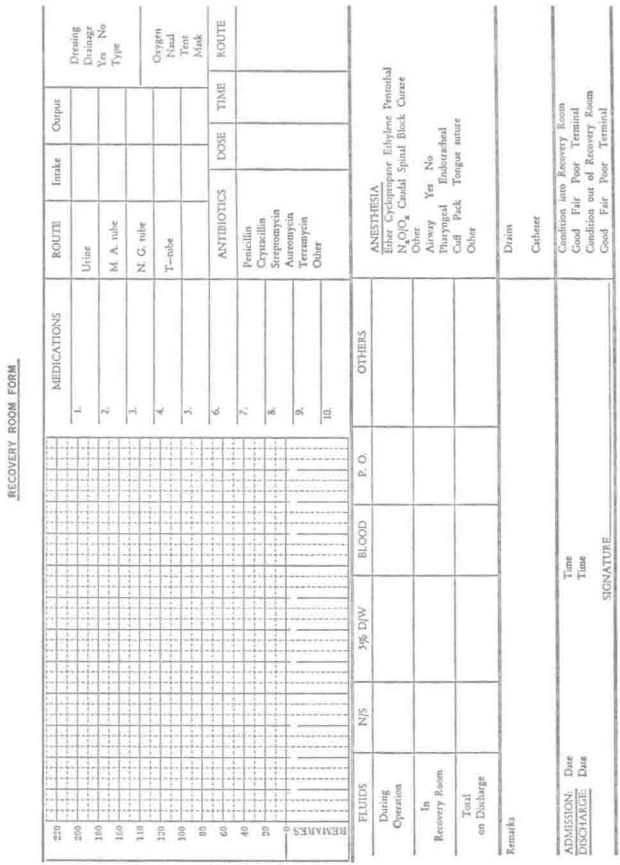
1. A patient who has no organic disease or who has localized disease without systemic disturbance.
2. A patient showing a moderate degree of systemic disease.



3. A patient showing a severe degree of systemic disease.

4. A patient with extreme systemic disturbances of imminent danger to life.

5. Patients who are to have an emergency operation who would otherwise be regarded as 1 or 2.



6. Patients who are to have an emergency operation who would otherwise be classified as 3 or 4.

7. The patient who is moribund before emergency operation.

Section II

This is the dynamic portion of the chart and during the conduct of the anesthesia gives a minute to minute account of the patient's physiologic status, i.e., depth of