



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.



American Lecture Series



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AND MEDICAL STUDENTS

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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.

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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).

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MANUAL OF ANESTHESIOLOGY FOR
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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 pre-anesthetic 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.

ANESTHESIA RECORD <small>ASSOCIATED WITH NEW YORK STATE PSYCHIATRIC INSTITUTE COLUMBIA UNIVERSITY SCHOOL OF DENTAL & ORAL SURGERY</small>		Code ● Pulse ○ Resp. x Area. @ Opr. ANES. #
PRE-OP. DIAGNOSIS: _____ OPERATION: _____ SURGICONS: _____ PRE-OP. MEDICATION: _____ EFFECT: _____		NAME: _____ SEX: _____ RACE: _____ AGE: _____ WGT.: _____ HGT.: _____ HCB: _____ R.P.: _____ TEETH: _____ TIME: _____ EFFECT: _____
LOCATION: _____ DATE: _____ CITY: _____ UNIT #: _____ W.D.: _____ PVT.: _____ SP.: _____ SK.: _____		EVALUATION: _____ RISK: _____ MAINTENANCE: _____ AGENTS: _____ METHOD: _____ MEDICATIONS: _____ 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ POST-OP. STATUS: _____ SIGNED: _____

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.

RECOVERY ROOM FORM

220 200 180 160 140 120 100 80 60 40 20 0	REMARKS	MEDICATIONS										ROUTE	Inake	Output	Draining Drainage Yes No Type
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	Urize			
											M. A. rule				
											N. G. rule				
											T-tube				Oxygen Nasal Test Mask
											ANTIBIOTICS	DOSE	TIME	ROUTE	
											Penicillin				
											Cystacillin				
											Sterptomycin				
											Aureomycin				
											Terramycin				
											Other				
											ANESTHESIA				
											Enter Cyclopropane				
											N ₂ O ₂ %				
											Other				
											Awake	Yes	No		
											Pharyngeal	Endotracheal			
											Cuff	Pack	Tongue suture		
											Other				
											OTHERS				
											P. O.				
											BLOOD				
											5% D/W				
											N/S				
											FLUIDS				
											During				
											Operation				
											In				
											Recovery Room				
											Total				
											on Discharge				
											Remarks				
											Drain				
											Catheter				
											Condition into Recovery Room				
											Good	Fair	Poor	Terminal	
											Condition out of Recovery Room				
											Good	Fair	Poor	Terminal	

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