



# handbook of CLINICAL DRUG DATA

FIFTH EDITION

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**James E. Knoben, Pharm.D.**  
**Philip O. Anderson, Pharm.D.**

*Assistant Editor*

**Larry Jay Davis, Pharm.D.**

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## PREFACE TO THE FIFTH EDITION

WITH THE INTRODUCTION OF EVER-INCREASING NUMBERS OF DRUGS and the concomitant growth in the drug literature, the need for a concise, yet comprehensive, compilation of clinically useful drug information is essential. The *Handbook of Clinical Drug Data* was developed to meet this need.

The Fourth Edition was especially well received, reflecting the utility of a new format and an expanded scope of information. Those familiar with the Fourth Edition will therefore be pleased with the even greater attention to clinically relevant data and extensive documentation (over 2300 cited references) in this edition. The addition of expert contributors, each of whom wrote within his or her area of clinical specialty, is largely responsible for this improved perspective.

Other major improvements are the inclusion of new areas achieving recent clinical advancements, such as nutritional assessment, parenteral nutrition and cancer chemotherapy. The drug monograph format has also been enhanced by the addition of new headings dealing with pharmacologic action and individualization of drug dosage. New topics have been added to both the Drug-Induced Diseases and Medical Emergencies chapters. All other chapters in the book have been completely revised and updated.

This revision could not have been accomplished without the assistance of many people. Larry Davis, Bill Ball and Bill Troutman have been instrumental in the development of the book over the years and have helped greatly in the preparation of this edition. The contributions of Dr. Art Watanabe to the development of previous editions of the book are also appreciated. We owe a real debt of gratitude to the many Contributors who spent countless hours researching and distilling the current literature and to Dr. Dianne Tobias who compiled the index. And to our distinguished medical and pharmacy colleagues for their invaluable review and critique of the manuscript, we are most appreciative: David N. Bailey, M.D., Steven L. Barriere, Pharm.D., Robert A. Bauernfeind, M.D., C.H. Beck, Jr., M.D., Kanu Chatterjee, M.D., Gerald F. Chernoff, Ph.D., Unamarie Clifton, Pharm.D., Martin G. Cogan, M.D., R. Dennis Collins, M.D., Robert A. Curtis, Pharm.D., Alexander M. Gilderman, Pharm.D., Mark R. Green, M.D., Leslie Hendeles, Pharm.D., Jon I. Isenberg, M.D., H. William Kelly, Pharm.D., Mary Anne Koda-Kimble, Pharm.D., James R. Lane, Pharm.D., Anthony S. Manoguerra, Pharm.D., Arnold S. Milstein, M.D., Robert J. Michocki, Pharm.D., Katherine L. Sheehan, M.D., Carol A. Stoner, Pharm.D., John F. Thompson, Pharm.D., and Helmuth Vorherr, M.D. Finally, Mary Ann Jaske of Drug Intelligence Publications deserves special thanks for her exceptional efforts in preparing the manuscript for publication.

JAMES E. KNOBEN  
PHILIP O. ANDERSON



## NOTICE

THE INDICATIONS, DOSAGES, and other drug information presented in this *Handbook* conform to that found in the medical literature or in the manufacturer's product literature. However, this *Handbook* provides only the more important elements of prescribing data, and is *not* a comprehensive drug information source. The manufacturer's current product information or other standard references should always be consulted for more detailed information, especially before prescribing is undertaken.

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AMK, E. W. BEN  
PHILIP O. ALPERT



## EDITORS AND CONTRIBUTORS

### Editors

**James E. Knoben, Pharm.D., M.P.H.**

Chief, Drug Information Analysis Branch  
Division of Drug Information Resources  
National Center for Drugs and Biologics  
Food and Drug Administration  
Rockville, Maryland

**Philip O. Anderson, Pharm.D.**

Director, Drug Information Service  
University of California Medical Center  
Assistant Clinical Professor of Pharmacy  
University of California, San Francisco,  
San Diego Program  
San Diego, California

### Assistant Editor

**Larry Jay Davis, Pharm.D.**

Clinical Pharmacist, Moffitt Hospital  
University of California Medical Center  
Assistant Clinical Professor of Pharmacy  
University of California, San Francisco  
San Francisco, California

### Contributing Editors

**William D. Ball, Pharm.D.**

Clinical Pharmacist  
Department of Pharmacy Services  
University Hospitals of Cleveland  
Cleveland, Ohio

**William G. Troutman, Pharm.D.**

Director, New Mexico Poison, Drug  
Information and Medical Crisis Center  
Associate Professor of Pharmacy  
University of New Mexico  
Albuquerque, New Mexico



## CONTRIBUTORS

**Richard C. Anderson, Pharm.D.**

Clinical Pharmacist, San Francisco Poison Control Center  
Assistant Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco  
San Francisco, California

**Jerry L. Bauman, Pharm.D.**

Clinical Pharmacist/Cardiology, Department of Pharmacy,  
University of Illinois Hospital  
Assistant Professor of Pharmacy Practice, College of Pharmacy,  
University of Illinois  
Chicago, Illinois

**Lawrence R. Borgsdorf, Pharm.D.**

Clinical Pharmacist, Department of Medicine, Kern Medical Center  
Assistant Professor of Medicine, School of Medicine,  
University of California, Los Angeles,  
Kern Medical Center Program  
Bakersfield, California

**Ronald R. Conte, Pharm.D.**

Clinical Pharmacist, Outpatient Department,  
San Francisco General Hospital  
Associate Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco  
San Francisco, California

**Betty Jean Dong, Pharm.D.**

Clinical Pharmacist, Family Practice, San Francisco General Hospital  
Associate Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco  
San Francisco, California

**Robert T. Dorr, M.S.**

Chief, Cancer Research Pharmacy Service, Cancer Center Division, and  
Research Associate, Department of Internal Medicine,  
University of Arizona  
Tucson, Arizona

**Robert C. Eschbach, Pharm.D.**

Assistant Professor of Clinical Pharmacy, College of Pharmacy,  
University of New Mexico  
Albuquerque, New Mexico

**John G. Gambertoglio, Pharm.D.**

Clinical Pharmacist, Kidney Transplant Service, and  
Adjunct Associate Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco  
San Francisco, California

**Phillip D. Hansten, Pharm.D.**

Associate Professor of Clinical Pharmacy, College of Pharmacy,  
Washington State University  
Pullman, Washington



**George M. Lasezkay, Pharm.D.**

Assistant Professor, Clinical Pharmacokinetics Laboratory, Department  
of Pharmacy, Millard Fillmore Hospital,  
State University of New York at Buffalo  
Buffalo, New York

**Tara K. Mochizuki, Pharm.D.**

Clinical Pharmacist, Department of Pharmacy,  
University of California Medical Center  
Assistant Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco, San Diego Program  
San Diego, California

**Robert E. Pachorek, Pharm.D.**

Clinical Pharmacist, Department of Pharmacy,  
Mercy Hospital and Medical Center  
San Diego, California

**Fred Shatsky, B.S. Pharm.**

Coordinator, Nutritional and Metabolic Support,  
University of California Medical Center  
Assistant Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco, San Diego Program  
San Diego, California

**Sam K. Shimomura, Pharm.D.**

Vice Chairman, Division of Clinical Pharmacy, and Associate Clinical  
Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco, U.C. Irvine/Long Beach  
Memorial Hospital Program  
Irvine, California

**John K. Slepier, Pharm.D.**

Clinical Pharmacist, Department of Pharmacy,  
University of California Medical Center  
Davis, California

**Raymond E. Smith, Pharm.D.**

Clinical Pharmacist, Department of Pharmacy,  
University of California Medical Center  
Assistant Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco, San Diego Program  
San Diego, California

**Glen L. Stimmel, Pharm.D.**

Associate Professor of Clinical Pharmacy, Psychiatry and the  
Behavioral Sciences, Schools of Pharmacy and Medicine,  
University of Southern California  
Los Angeles, California

**Dianne E. Tobias, Pharm.D.**

Consultant Pharmacist, Long Term Care Practice  
Assistant Clinical Professor of Pharmacy, School of Pharmacy,  
University of California, San Francisco, U.C. Irvine Program  
Irvine, California

**Lai J. Wong, Pharm.D.**

Pharmacist Specialist, Inpatient Pharmacy,  
Kaiser Foundation Hospital  
Los Angeles, California





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# 1 ABBREVIATIONS AND CONVERSION FACTORS

THE FOLLOWING medical record and prescription abbreviations are in common usage, but variations will occur by institution or geographic area.

## Medical Record Abbreviations

<b>A</b>	Apical; Artery; Assessment (POMR)	<b>ASHD</b>	Arteriosclerotic heart disease
<b>A:</b>	Aortic second sound	<b>ASO</b>	Arteriosclerosis obliterans
<b>AAL</b>	Anterior axillary line	<b>ATN</b>	Acute tubular necrosis
<b>Ab</b>	Abort; Abortion; Antibody	<b>AV</b>	Arteriovenous; Atrioventricular
<b>Abd</b>	Abdomen; Abdominal	<b>A &amp; W</b>	Alive and well
<b>ABE</b>	Acute bacterial endocarditis	<b>Ax</b>	Axillary
<b>ABG</b>	Arterial blood gases	<b>BaE</b>	Barium enema
<b>ACD</b>	Acid citrate dextrose; Anterior chest diameter	<b>BBB</b>	Bundle branch block
<b>ACT</b>	Activated clotting time	<b>BBT</b>	Basal body temperature
<b>ACTH</b>	Adrenocorticotrophic hormone	<b>BCG</b>	Bacille Calmette-Guerin
<b>ADH</b>	Antidiuretic hormone	<b>BE</b>	Bacterial endocarditis; Barium enema
<b>ADL</b>	Activities of daily living	<b>BEI</b>	Butanol-extractable iodine
<b>ADR</b>	Adverse drug reaction	<b>BJ</b>	Biceps jerk; Bone and joint
<b>AF</b>	Atrial fibrillation	<b>BK</b>	Below knee
<b>AFB</b>	Acid fast bacillus	<b>Bl Obs</b>	Bladder observation
<b>Ag</b>	Antigen	<b>BLS</b>	Basic life support
<b>A/G</b>	Albumin/globulin ratio	<b>BM</b>	Bone marrow; Bowel movement
<b>AGL</b>	Acute granulocytic leukemia	<b>BMR</b>	Basal metabolic rate
<b>AGN</b>	Acute glomerular nephritis	<b>BP</b>	Blood pressure
<b>AHF</b>	Antihemophilic factor	<b>BPH</b>	Benign prostatic hypertrophy
<b>AHG</b>	Antihemophilic globulin	<b>BR</b>	Bathroom; Bedrest
<b>AI</b>	Aortic insufficiency	<b>BRP</b>	Bathroom privi, ces
<b>AJ</b>	Ankle jerk	<b>BS</b>	Blood sugar; Bowel sounds; Breath sounds
<b>AK</b>	Above knee	<b>BSA</b>	Body surface area
<b>ALL</b>	Acute lymphocytic leukemia	<b>BSO</b>	Bilateral salpingo-oophorectomy
<b>AMA</b>	Against medical advice	<b>BT</b>	Bedtime; Brain tumor; Breast tumor
<b>AML</b>	Acute myelocytic leukemia	<b>BTFS</b>	Breast tumor frozen section
<b>ANA</b>	Antinuclear antibodies	<b>BTL</b>	Bilateral tubal ligation
<b>AODM</b>	Adult onset diabetes mellitus	<b>BU</b>	Bodansky unit
<b>AP</b>	Antepartum; Anteroposterior; Apical pulse	<b>BUN</b>	Blood urea nitrogen
<b>A &amp; P</b>	Anterior and posterior; Auscultation and percussion	<b>BVL</b>	Bilateral vas ligation
<b>Appy</b>	Appendectomy	<b>BW</b>	Body weight
<b>APTT</b>	Activated partial thromboplastin time	<b>Bx</b>	Biopsy
<b>ARD</b>	Acute respiratory disease; Acute respiratory distress	<b>C:</b>	Second cervical vertebra
<b>ARF</b>	Acute renal f: lure	<b>CA</b>	Cancer; Carcinoma; Chronologic age
<b>AS</b>	Anal sphincter; Aortic stenosis; Arteriosclerosis	<b>CABG</b>	Coronary artery bypass graft
<b>ASCVD</b>	Arteriosclerotic cardiovascular disease	<b>CAD</b>	Coronary artery disease
<b>ASD</b>	Atrial septal defect	<b>CAPD</b>	Chronic ambulatory peritoneal dialysis
		<b>CAT</b>	Computerized axial tomography
		<b>CBC</b>	Complete blood count
		<b>CBS</b>	Chronic brain syndrome
		<b>CC</b>	Chx † complaint

## 2 CLINICAL DRUG DATA

CCU	Coronary care unit	EKG	Electrocardiogram
CF	Complement fixation; Cystic fibrosis	EMG	Electromyogram
CGH	Chorionic gonadotropic hormone	ENT	Ears, nose and throat
CGL	Chronic granulocytic leukemia	ER	Emergency room
CHD	Congenital heart disease; Coronary heart disease	ESR	Erythrocyte sedimentation rate
CHF	Congestive heart failure	EST	Electroshock therapy
CHO	Carbohydrate	EUA	Examine under anesthesia
CI	Cardiac index; Color index	FAS	Fetal alcohol syndrome
CLL	Chronic lymphocytic leukemia	FB	Finger breadths; Foreign bodies
CML	Chronic myelocytic leukemia	FBS	Fasting blood sugar
CNS	Central nervous system	F Cath	Foley catheter
CO	Cardiac output	FEV <sub>1</sub>	Forced expiratory volume in one second
CO	Complaint of	FF	Filtration fraction
COLD	Chronic obstructive lung disease	FFA	Free fatty acids
COPD	Chronic obstructive pulmonary disease	FH	Family history; Fetal heart
C & P	Cystoscopy and pyelogram	FHR	Fetal heart rate
CPAP	Continuous positive airway pressure	FHS	Fetal heart sounds
CPK	Creatine phosphokinase	FP	Family planning
CPP	Cerebral perfusion pressure	FRC	Functional residual capacity
CPR	Cardiopulmonary resuscitation	FSH	Follicle stimulating hormone
CRF	Chronic renal failure; Corticotropin releasing factor	FTA	Fluorescent titer antibody; Fluorescent treponemal antibody
CRP	C-reactive protein	FTND	Full-term normal delivery
CS	Cesarean section; Coronary sclerosis	FUO	Fever of undetermined origin
C & S	Culture and sensitivity	FVC	Forced vital capacity
CS & CC	Culture, sensitivity and colony count	Fx	Fracture
CSF	Cerebrospinal fluid	GA	Gastric analysis; General appearance
CT	Circulation time; Clotting time; Computerized tomography	GB	Gallbladder
CUC	Chronic ulcerative colitis	GC	Genococcal; Gonococcus
CV	Cardiovascular; Conjunctiva vera	GFR	Glomerular filtration rate
CVA	Cerebral vascular accident; Costovertebral angle	GH	Growth hormone
CVI	Cerebral vascular insufficiency	GI	Gastrointestinal
CVP	Central venous pressure	GMP	General medical problem(s)
CVS	Clean voided specimen	G-P	Gravidity, para-
Cx	Cervical; Cervix	G6PD	Glucose-6-phosphate dehydrogenase
CXR	Chest x-ray	GTT	Glucose tolerance test
DC or	Discharge; Discontinue	GU	Genitourinary
D/C	Dilatation and curettage	Gyn	Gynecology
D & C	Dilatation and curettage	HA	Headache; Hyperalimentation
DD or	Differential diagnosis	HAA	Hepatitis-associated antigen
DDX	Differential diagnosis	HBAg	Hepatitis B antigen
DDD	Degenerative disc disease	HB/BW	Hold breakfast for blood work
DHL	Diffuse histiocytic lymphoma	HBP	High blood pressure
DH	Differential blood count	HCG	Human chorionic gonadotropin
DJD	Degenerative joint disease	Hct	Hematocrit
DM	Diabetes mellitus; Diastolic murmur	HCVD	Hypertensive cardiovascular disease
DOA	Date of admission; Dead on arrival	HDL	High-density lipoproteins
DOE	Dyspnea on exertion	HEENT	Head, eyes, ears, nose, throat
DPT	Diphtheria-pertussis-tetanus	Hgb	Hemoglobin
DSO	Dry sterile dressing	HHD	Hypertensive heart disease
DTR	Deep tendon reflex	HNV	Has not voided
DTs	Delirium tremens	HO	House officer
DU	Duodenal ulcer	H/O	History of
DW	Dextrose in water; Distilled water	HPF	High power field
D5W	Dextrose 5% in water	HPI	History of present illness
Dx	Diagnosis	HPLC	High pressure liquid chromatography
EBL	Estimated blood loss	HR	Heart rate
ECF	Extracellular fluid	HT	Hypertension; Hypodermic tablet
ECG	Electrocardiogram	HTN	Hypertension
ECT	Electroconvulsive therapy	HTVD	Hypertensive vascular disease
EDTA	Ethylenediaminetetraacetate	Hx	History
EEG	Electroencephalogram	I	Impression (POMR)
EENT	Eyes, ears, nose, throat	IA	Intra-amniotically
EFA	Essential fatty acids	IASD	Interatrial septal defect
		IBC	Iron binding capacity
		IBI	Intermittent bladder irrigation
		ICF	Intracellular fluid



ICG	Indocyanine green	LVH	Left ventricular hypertrophy
ICM	Intercostal margin	L & W	Living and well
ICS	Intercostal space	Lytes	Electrolytes
ICSH	Interstitial cell-stimulating hormone	M	Meter; Molar; Murmur
ICU	Intensive care unit	M,	Mitral first sound
ID	Initial dose; Intradermal(ly)	MA	Mental age
I & D	Incision and drainage	M/A	Mood and/or affect
IF	Inspiratory force; Interstitial fluid; Intrinsic factor	MAP	Mean arterial pressure
Ig	Immunoglobulin	MBC	Maximum breathing capacity; Minimum bactericidal concentration
IHD	Ischemic heart disease	MCH	Mean corpuscular hemoglobin
LDL	Intermediate low-density lipoproteins	MCHC	Mean corpuscular hemoglobin concentration
IM	Intramuscular(ly)	MCL	Midclavicular line; Midcostal line
IMP	Impression	MCV	Mean corpuscular volume
IMV	Intermittent mechanical ventilation	MDV	Multiple dose vial
I & O	Intake and output	MF	Myocardial fibrosis
IOP	Intraocular pressure	MH	Marital history; Menstrual history
IP	Intraperitoneal(ly)	MI	Mitral insufficiency; Myocardial infarction
IPPB	Intermittent positive pressure breathing	MIC	Minimum inhibitory concentration
IT	Inhalation therapy; Intrathecal(ly)	ML	Midline
IU	International unit	MLD	Minimum lethal dose
IUCD or	Intrauterine (contraceptive) device	MS	Mitral stenosis; Morphine sulfate; Multiple sclerosis
IUD		MSL	Midsternal line
IUP	Intrauterine pregnancy	N or-NL	Normal
IV	Intravenous(ly)	NAD	No acute distress
IVP	Intravenous push; Intravenous pyelogram	NAS	No added salt
IVPB	Intravenous piggyback	NG	Nasogastric
IVSD	Interventricular septal defect	NGU	Nongonococcal urethritis
JVD	Jugular-venous distention	NKA	No known allergies
JVP	Jugular-venous pulse	NPN	Nonprotein nitrogen
KJ	Knee Jerk	NPO	Nothing by mouth
KO	Keep open	NS	Normal saline
KUB	Kidneys, ureters, bladder	NSFTD	Normal spontaneous full-term delivery
KVO	Keep vein open	NSR	Normal sinus rhythm
KW	Keith-Wagener (ophthalmoscopic findings)	NSU	Nonspecific urethritis
L	Left	N & T	Nose and throat
L,	Second lumbar vertebra	N & V	Nausea and vomiting
LA	Left atrium	NVD	Nausea, vomiting, diarrhea
Lap	Laparotomy	NYD	Not yet diagnosed
LATS	Long-acting thyroid stimulator	O	Objective data (POMR)
LBBS	Left bundle branch block	Ob	Obstetrics
LCM	Left costal margin	OB	Occult blood
LD	Lethal dose; Liver disease; Longitudinal diameter (of heart)	OBS	Organic brain syndrome
LDH	Lactic dehydrogenase	O/E	On examination
LDL	Low-density lipoproteins	OOB	Out of bed
LE	Lower extremities; Lupus erythematosus	OPV	Outpatient visit; Oral polio vaccine
LFS	Liver function series	OR	Operating room
LFT	Liver function test(s)	OT	Occupational therapy; Old tuberculin
LH	Luteinizing hormone	P	Plan (POMR); Pulse
LKS	Liver, kidneys, spleen	PA	Pernicious anemia; Posteroanterior; Pulmonary artery
LLD	Left lateral decubitus	P & A	Percussion and auscultation
LLL	Left lower lobe	PABA	Para-aminobenzoic acid
LLQ	Left lower quadrant	PAT	Paroxysmal atrial tachycardia
LMP	Last menstrual period	PBI	Protein bound iodine
LOA	Left occipital anterior	PC	Porto-caval; Present complaint
LOM	Limitation of motion	PCS	Porto-caval shunt
LOP	Left occipital posterior	PCV	Packed cell volume
LP	Light perception; Lumbar puncture	PE	Physical examination; Pulmonary embolism
LPF	Low power field	PEEP	Positive end-expiratory pressure
LT	Levine tube; Luken's trap	PEG	Pneumoencephalogram; Polyethylene glycol
LTC	Long term care	PERLA	Pupils equal, react to light and accommodation
LUL	Left upper lobe		
LUQ	Left upper quadrant		

# 4 CLINICAL DRUG DATA

PFT	Pulmonary function test(s)	RTC	Return to clinic
PGH	Pituitary growth hormone	RUL	Right upper lobe
pHa	Arterial blood pH	RUQ	Right upper quadrant
PH	Patient history	RVH	Right ventricular hypertrophy
PI	Present illness	S	Subjective data (POMR)
PID	Pelvic inflammatory disease	S <sub>1</sub>	First heart sound
PIE	Pulmonary infiltration with eosinophilia	S <sub>2</sub>	Second heart sound
PKU	Phenylketonuria	S-A	Sino-atrial
PMH	Past medical history	SBE	Subacute bacterial endocarditis
PMI	Point of maximal impulse; Point of maximal intensity	SBO	Small bowel obstruction
PMN	Polymorphonuclear leukocytes	SC	Sickle cell; Static compliance; Subclavian; Subcutaneous(ly)
PMP	Past menstrual period	SGOT	Serum glutamic oxaloacetic transaminase
PM & R	Physical medicine and rehabilitation	SGPT	Serum glutamic pyruvic transaminase
PMT	Premenstrual tension	SH	Serum hepatitis; Social history
PND	Paroxysmal nocturnal dyspnea; Post-nasal drip	SIADH	Syndrome of inappropriate ADH (secretion)
Pnx	Pneumothorax	SL	Sublingual(ly)
PO	By mouth	SLE	Systemic lupus erythematosus
POLYS	Polymorphonuclear leukocytes	SMA	Serial multiple analysis
POMR	Problem oriented medical record	SMR	Somnolent metabolic rate
POR	Problem oriented record	SOAP	Subjective, objective, assessment and plans (POMR)
PP	Postpartum; Postprandial	SOB	Shortness of breath
PPBS	Postprandial blood sugar	S/P	Status post
PPD	Purified protein derivative	SQ	Subcutaneous(ly)
ppm	Parts per million	SR	Sedimentation rate; Systems review
PR	Per rectum	SSE	Saline solution enema; Soap solution enema
P & R	Pulse and respiration	STD	Sexually transmitted disease; Skin test dose
PSP	Phenolsulfonphthalein	STS	Serologic test for syphilis
PT	Patient	Sx	Symptom(s)
PT	Physical therapy; Prothrombin time	T	Temperature
PTA	Plasma thromboplastic antecedent; Prior to admission; Prothrombin activity	T & A	Tonsillectomy and adenoidectomy
PTC	Plasma thromboplastin component	Tab	Therapeutic abortion
PTT	Partial thromboplastin time	TAH	Total abdominal hysterectomy
PU	Peptic ulcer	TAO	Thromboangiitis obliterans
PUD	Peptic ulcer disease	TAT	Tetanus antitoxin
PVC	Premature ventricular contraction	TB	Tuberculosis
PVT	Paroxysmal ventricular tachycardia	TBA	To be administered; To be arranged
Px	Physical examination; Pneumothorax	TBG	Thyroxine binding globulin
R	Respiration; Right	TBW	Total body water
RA	Rheumatoid arthritis; Right atrium	T & C	Type and crossmatch
RAI	Radioactive iodine	TD	Transverse diameter (of heart)
RBBB	Right bundle branch block	TEA	Thromboendarterectomy
RBC	Red blood cell; Red blood count	TIA	Transient ischemic attack
RBF	Renal blood flow	TIBC	Total iron-binding capacity
RCM	Right costal margin	TKO	To keep open
RDS	Respiratory distress syndrome	TL	Tubal ligation
REM	Rapid eye movement	TLA	Trans-lumbar aortogram
RF	Renal failure; Rheumatic fever; Rheumatoid factor	TLC	Tender loving care; Thin layer chromatography
Rh	Rhesus factor	Tm	Maximal renal tubular clearance
RHD	Rheumatic heart disease	TM	Tympanic membrane
RIA	Radiolimmunoassay	TOPV	Trivalent oral polio vaccine
RLD	Right lateral decubitus	TP	Thrombophlebitis; Total protein
RLI	Right lower lobe	TPI	Treponema pallidum immobilization
RLQ	Right lower quadrant	TPN	Total parenteral nutrition
R/O	Rule out	TPR	Temperature, pulse, respiration
ROM	Range of motion	T-set	Tracheotomy set
ROS	Review of symptoms; Review of systems	TSH	Thyroid stimulating hormone
ROT	Right occipital transverse	TURP	Transurethral resection of prostate
RPF	Renal plasma flow	TV	Trichomonas vaginalis
RQ	Respiratory quotient	TVC	Triple voiding cystogram
RR	Recovery room; Respiratory rate	TWE	Tap water enema
RSR	Regular sinus rhythm	Tx	Treatment
RTA	Renal tubular acidosis		