

# **Textbook of Emergency Medicine Technology**

## **(II Year - B.Sc. EMT)**

**(B.Sc. Accident and Emergency Care Technology Academic Year)**

**II Year - Emergency Medicine & Emergency Medical Services II**

**Dr. Chandrashekar R**



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**- Dr. Chandrashekar R**

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*Dedication*

*This book is dedicated to My*

Father  
**Late Rajan. C**



Mother  
**Nagamani R.**



Wife  
**Mrs. Rashmi B.R**



Son  
**Thrijal Raj**



Daughter  
**Bhanvi Raj**





# PREFACE

Emergency medicine is a dynamic and rapidly evolving field that plays a crucial role in saving lives. In modern healthcare, emergency physicians must make quick and accurate decisions under high-pressure situations. This book is designed to serve as a **comprehensive guide** for students pursuing **II-year graduation course in emergency medicine**, equipping them with essential knowledge, clinical skills, and decision-making strategies.

This textbook covers **fundamental concepts, common emergency conditions, and practical management approaches** required in real-world scenarios. The content is structured to provide a **step-by-step understanding** of emergency assessment, diagnosis, and treatment. Special emphasis is given to **case-based learning, evidence-based practices, and recent advancements** in the field.

This book is intended for:

- **Undergraduate and graduate students** in emergency medicine
- **Medical interns and residents** who want to strengthen their emergency care skills
- **Healthcare professionals** seeking a reference guide for emergency management

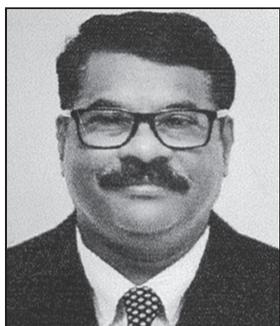
Each chapter is designed to be **concise, easy to understand, and clinically relevant**. The inclusion of **illustrations, flowcharts, and real-world case scenarios** enhances learning and retention. **Practical insights, key takeaways, and self-assessment exercises** at the end of each chapter will help students reinforce their knowledge.

**Wishing you success in your medical career!**

**Dr. Chandrashekar R**

*(Author)*

# FOREWORD



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Emergency medicine stands at the forefront of modern healthcare, requiring quick decision-making, clinical expertise, and the ability to handle critical situations under immense pressure. As medical advancements continue to evolve, the need for well-trained emergency physicians has never been greater.

Dr. Chandrashekar's textbook on **Emergency Medicine** is a well-structured and comprehensive guide tailored for students pursuing a **graduation course in emergency medicine**. This book presents complex medical concepts in a simplified manner, making it accessible to students, medical professionals, and anyone interested in mastering emergency care.

The book effectively combines **theoretical knowledge with practical applications**, ensuring that learners gain a strong foundation in emergency assessment, triage, resuscitation, and acute care management. **Case-based discussions, clinical algorithms, and evidence-based guidelines** further enhance the book's practical value, making it an essential companion for medical students and practitioners alike.

Having known Dr. Chandrashekar and his commitment to medical education, I am confident that this book will serve as an invaluable resource for students stepping into the challenging yet rewarding field of emergency medicine. I strongly recommend this book to all aspiring emergency medicine professionals and hope it will guide them toward excellence in patient care.

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# Abbreviations

AADMER	Asean Agreement on Disaster Management and Emergency Response
ABGs	Arterial Blood Gases
ACLS	Advanced Cardiovascular Life Support
ACLS	Advanced Cardiac Life Support
AEDs	Automated External Defibrillators
ALS	Advanced Life Support
AMPLE	Allergies, Medications, Past medical history, Last meal, Events leading to injury
ATLS	Advanced Trauma Life Support
BLS	Basic Life Support
BVM	Bag-Valve-Mask
CBC	Complete Blood Count
CBDRM	Community- Based Disaster Risk Management
CBT	Cognitive Behavioural Therapy
CERT	Community Emergency Response Team
CMT	Crisis Management Team
CPCB	Central Pollution Control Board
CSOs	Civil Society Organizations
CT	Computed Tomography
DEC	Disaster Emergency Committee
DNR	Do Not Resuscitate
ECG	Electrocardiogram
ECMO	Extracorporeal Membrane Oxygenation
ED	Emergency Departments
EERI	Earthquake Engineering Research Institute
EMAC	Emergency Management Assistance Compact
EMDR	Eye Movement Desensitization and Reprocessing
EMS	Emergency Medical Services
EOCs	Emergency Operations Centres
ETTs	Endotracheal Tubes
GCS	Glasgow Coma Scale
GDEC	Global Disaster Emergency Committee
GHSA	Global Health Security Agenda
HDMP	Hospital Disaster Management Plan
HFA	Hyogo Framework for Action
HVRA	Hazard, Vulnerability, and Risk Assessment
IASC	Inter-Agency Standing Committee
ICS	Incident Command System
ICU	Intensive Care Unit

IDSP	Integrated Disease Surveillance Programme
IFRC	International Federation of Red Cross and Red Crescent Societies
IHR	International Health Regulations
IO	Intraosseous
IV	Intravenous
KE	Kinetic Energy
LSGIs	Local Self-Government Institutions
MSDMA	Maharashtra State Disaster Management Authority
NCRMP	National Cyclone Risk Mitigation Project
NDMA	National Disaster Management Authority
NDMP	National Disaster Management Plan NDMP
NDRF	National Disaster Response Force
NGO	Non-Governmental Organization
NHM	National Health Mission
NIDM	National Institute of Disaster Management
NIMS	National Incident Management System
OCHA	Office for the Coordination of Humanitarian Affairs
PALS	Paediatric Advanced Life Support
PPE	Personal Protective Equipment
PTSD	Post-Traumatic Stress Disorder
PWD	Public Works Department
RRTs	Rapid Response Teams
RTS	Revised Trauma Score
SAARC	South Asian Association for Regional Cooperation
SALT	Sort, Assess, Lifesaving Interventions, Treatment Transport
SDMA	State Disaster Management Authorities
SEOC	State Emergency Operations Centre
SOPs	Standard Operating Procedures
TSST-1	Toxic Shock Syndrome Toxin-1
UDRR	Urban Disaster Risk Reduction
ULBs	Urban Local Bodies
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nation Framework Convention on Climate Change
UPSDMA	Uttar Pradesh State Disaster Management Authority
VDMCs	Village Disaster Management Committees
VF	Ventricular fibrillation
VT	ventricular tachycardia
VT	Ventricular tachycardia
WHO	World Health Organization
WWF	World Wildlife Fund