



SwissACS



SAPIENZA
UNIVERSITÀ DI ROMA

11th

Swiss Trauma
& Acute Care Surgery Days

ACUTE CARE SURGERY

Salomone Di Saverio MD, FACS, FRCS (Eng), F. SAGES (Colorectal Surgery, Acute Care Surgery, FLS), FFAST

Associate Professor of Surgery
Università degli Studi di Roma «LA SAPIENZA»

Director of General Surgery
ASUR Marche, AV5, Hospital of San Benedetto del Tronto (AP)

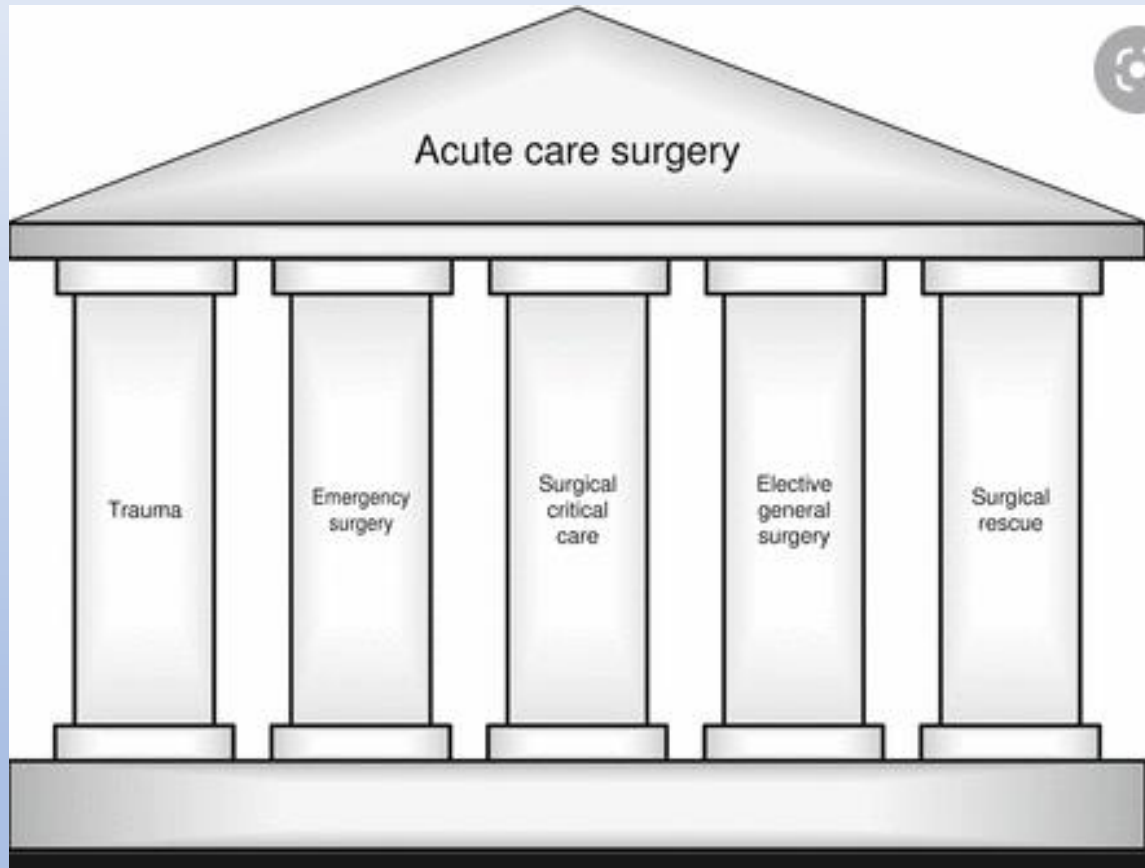
Early General Surgery

- Every general surgeon operated everywhere
 - Thyroids and parathyroids
 - Thoracic
 - Peripheral vascular
 - Breast
 - Everything in the abdomen
- Emergency Department coverage for all emergent care was the norm

Early Subspecialization

- ENT claimed everything in the neck
- GI declared endoscopy was theirs
- Thoracic became a specialty
- Transplant and pediatrics followed
- Vascular was next
- Now we have subspecialization in breast, endocrine, minimally invasive surgery, upper GI, abdominal wall and colorectal
- **Less penetrating, most of blunt became NOM plus ortho**

Acute Care Surgery: Defining the Specialty



- The original solution was the European model of 70s – 80s
- Emergency care all over the body was the proposal
- We settled on emergency general surgery with some caveats
- Knowledge of the pathophysiology of critical illness
- Team work
- Surgical critical care at least as a knowledge of the problems

Technical skills for ACS:

- Emergency room (damage control)
- Diagnostic tools
- Operating room (damage control, staged surgery)
- Intensive care unit management
- Ward, Rehabilitation



General Emergency Surgery

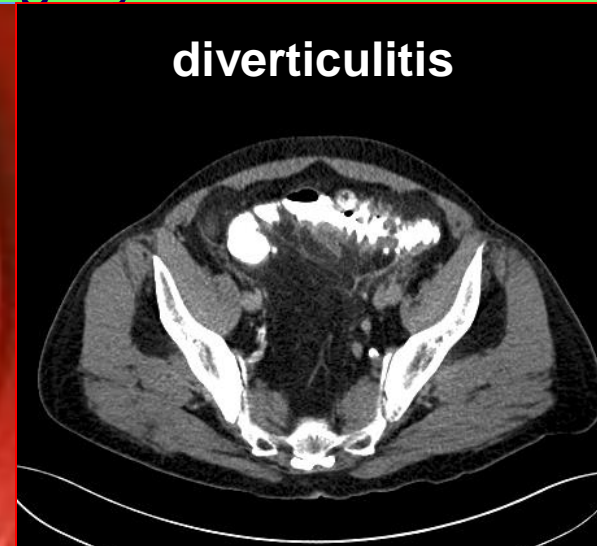
Bowel obstruction



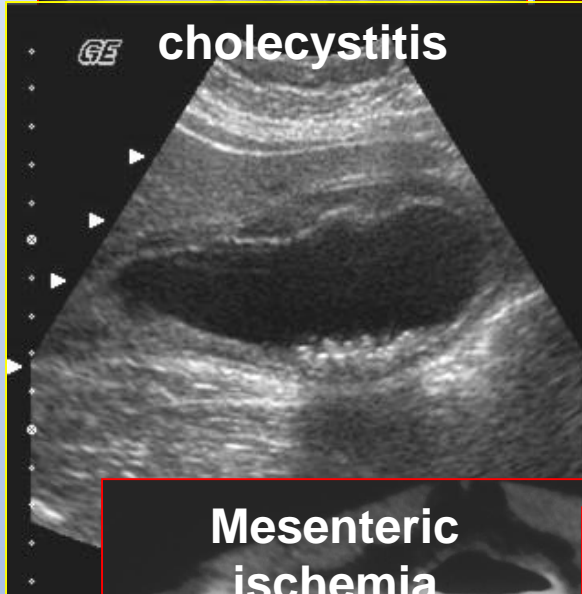
GI bleeding



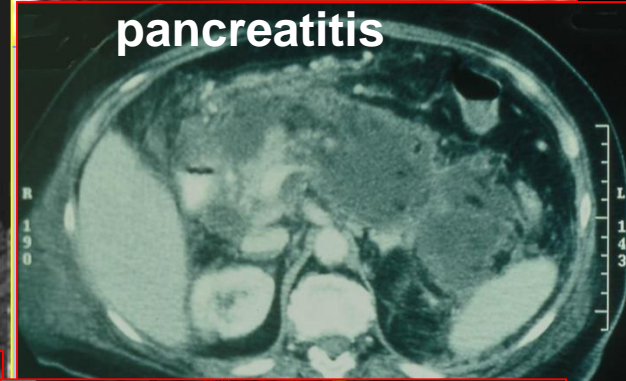
diverticulitis



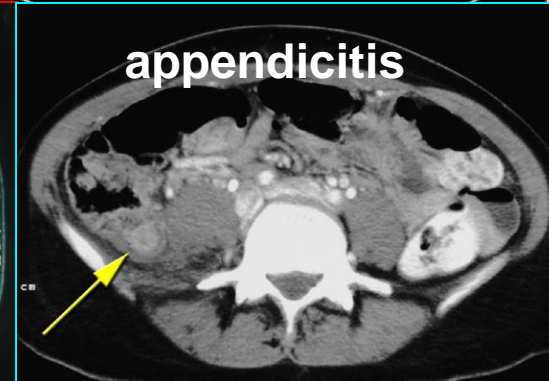
cholecystitis



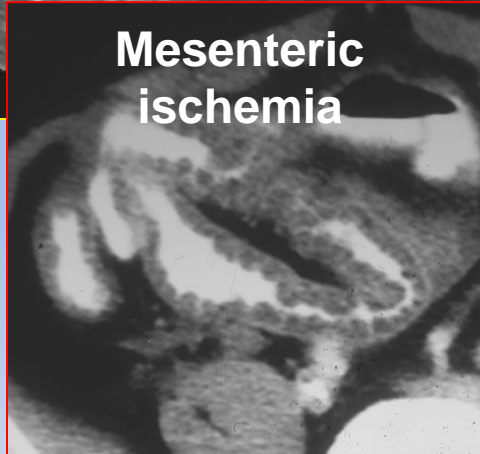
pancreatitis



appendicitis



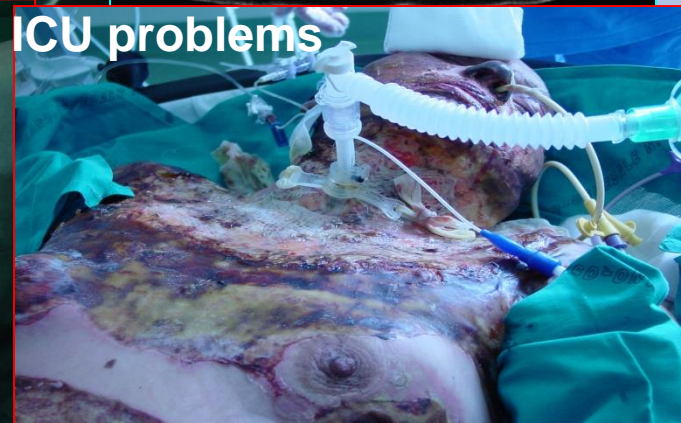
Mesenteric ischemia

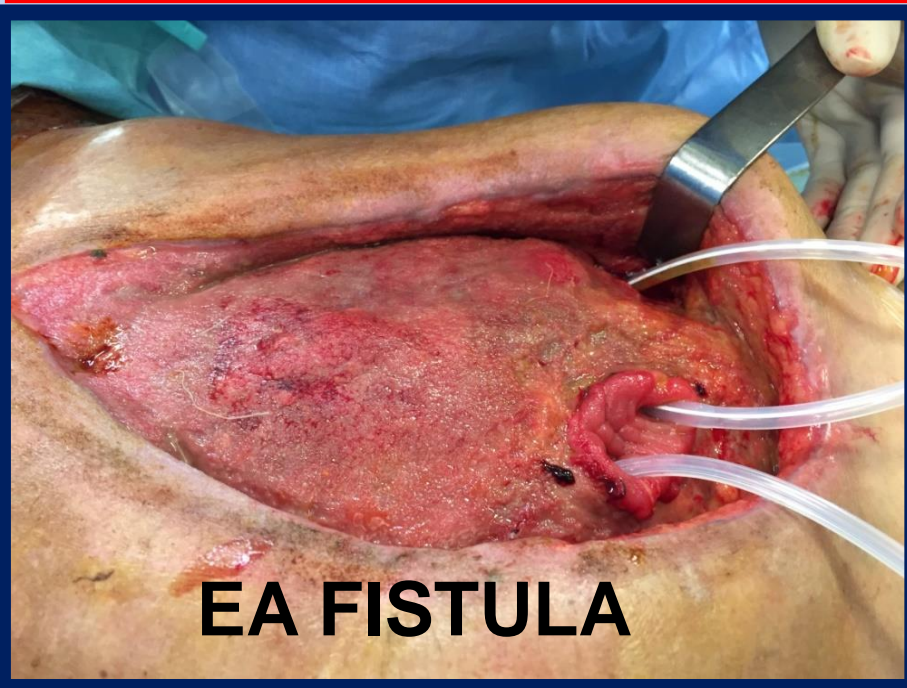


NSTI



ICU problems





**Common community
general surgery
problems start being
referred to specialty
centers**

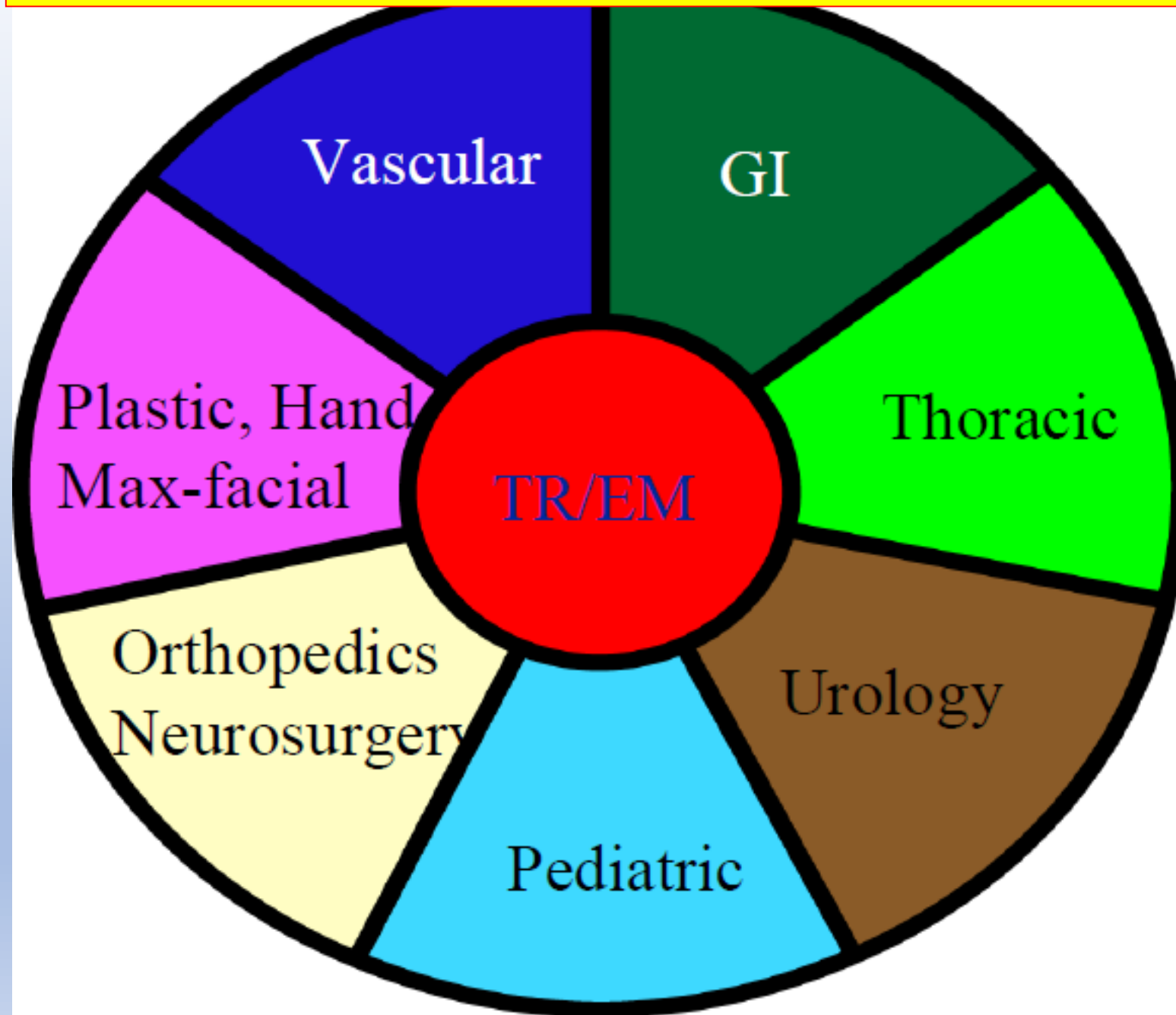
A photograph of an operating room. Several medical professionals in blue scrubs and masks are gathered around a patient on a table. Large overhead surgical lights illuminate the scene. Medical equipment, including monitors and IV stands, is visible in the background. A yellow biohazard waste bin is in the foreground on the right.

Non Technical skills

- Team working
- Task management
- Situational awareness
- Decision making

Together Everybody
Achieves More

ACUTE CARE SURGERY (ESTES)

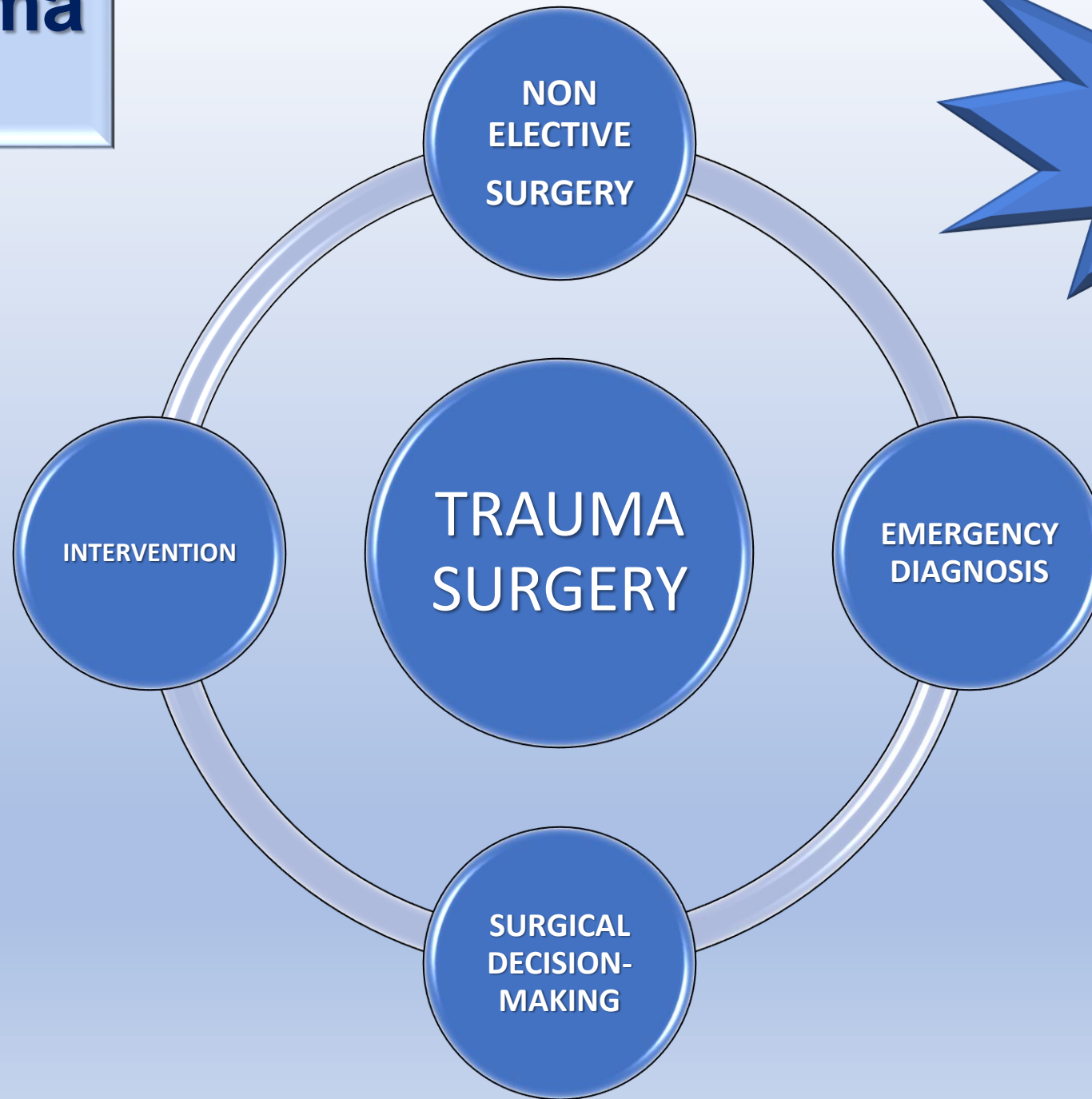


Acute Care Surgery: the essential pillars.

+ rescue surgery

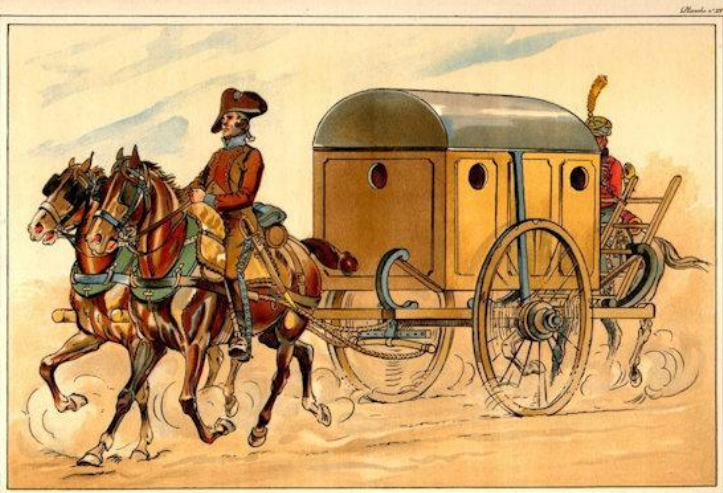


What is trauma surgery?



The two roots of trauma surgery:

1. an empiric-historical basis deriving from the battle fields



*Ambulance Volante
du Baron Larrey 1807*

Military Army Surgical Hospital M. A. S. H



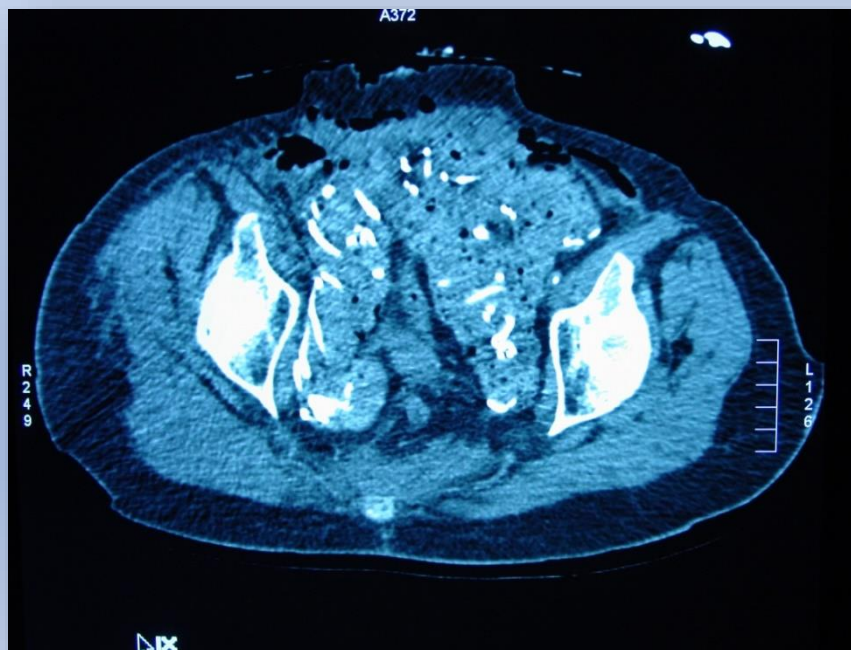
2. Understanding the pathophysiology of trauma as a disease well defined discipline which becomes a science in Korean and Vietnam wars

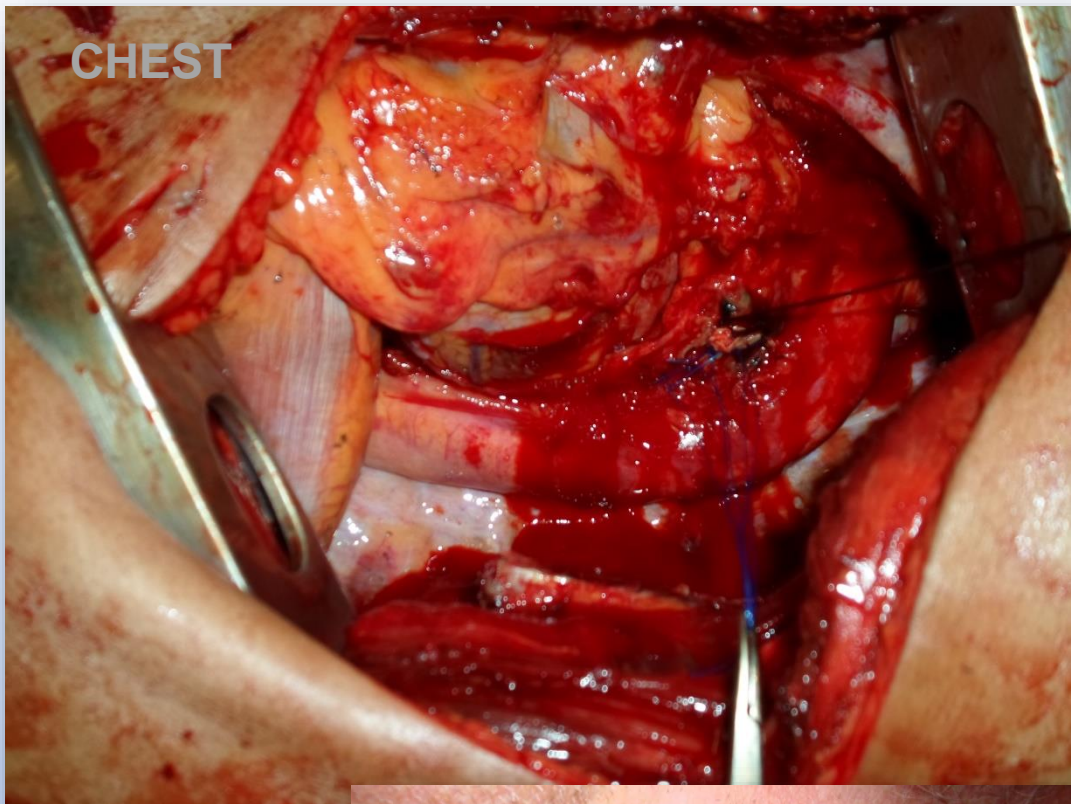


Orange County, San Francisco, Baltimore

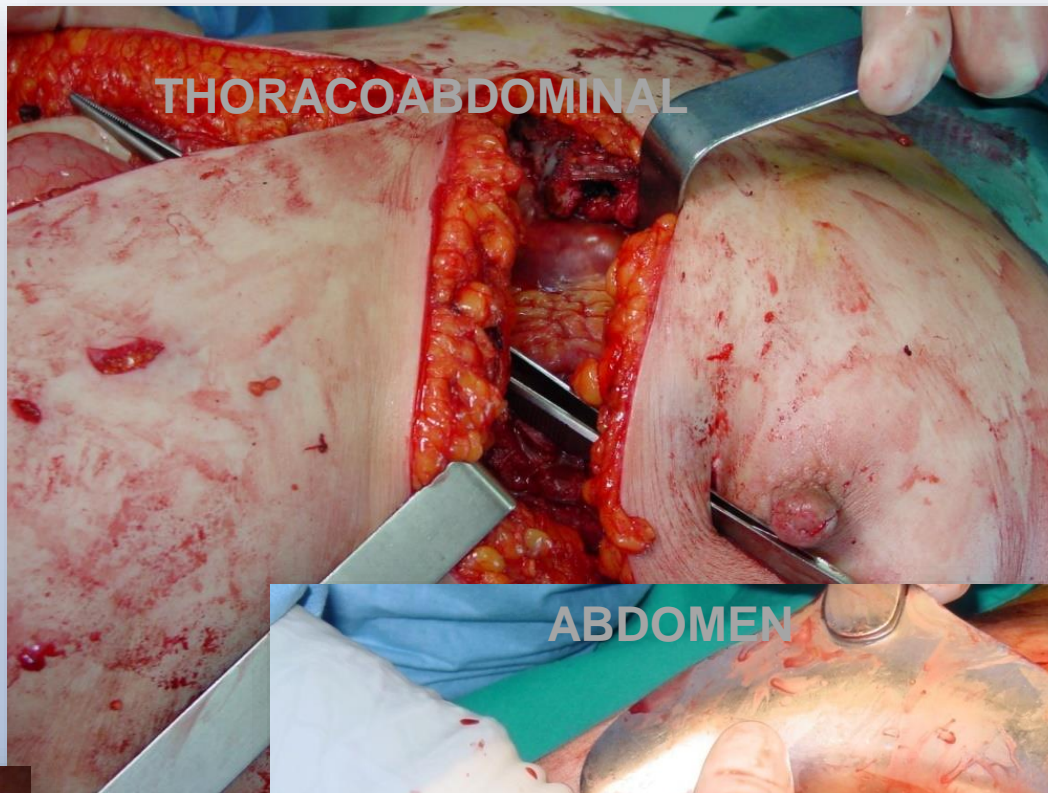
Trauma Center – Trauma Team

ER





CHEST

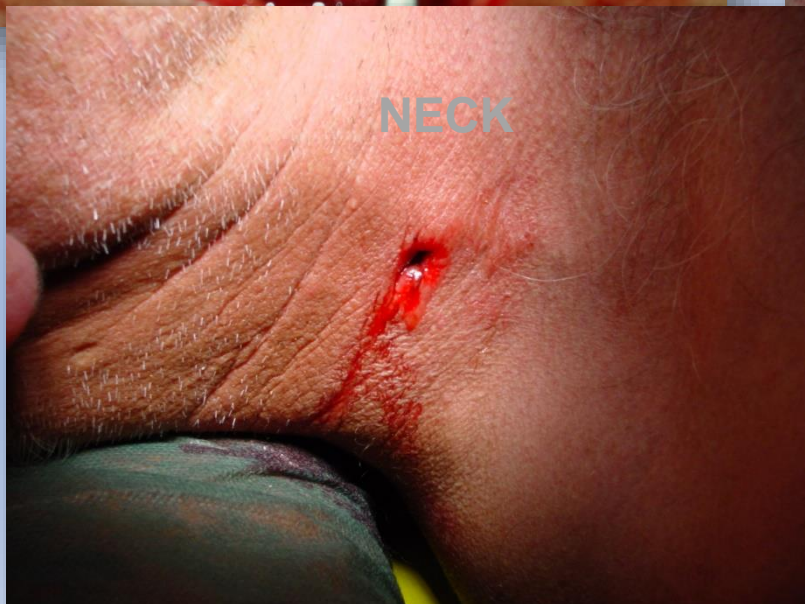


THORACOABDOMINAL

OR

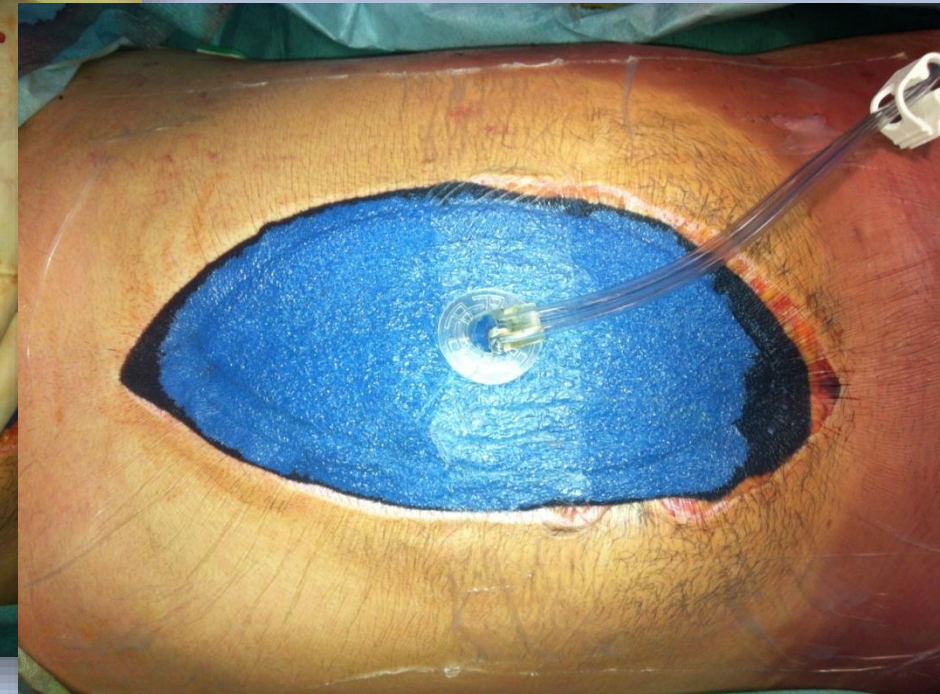
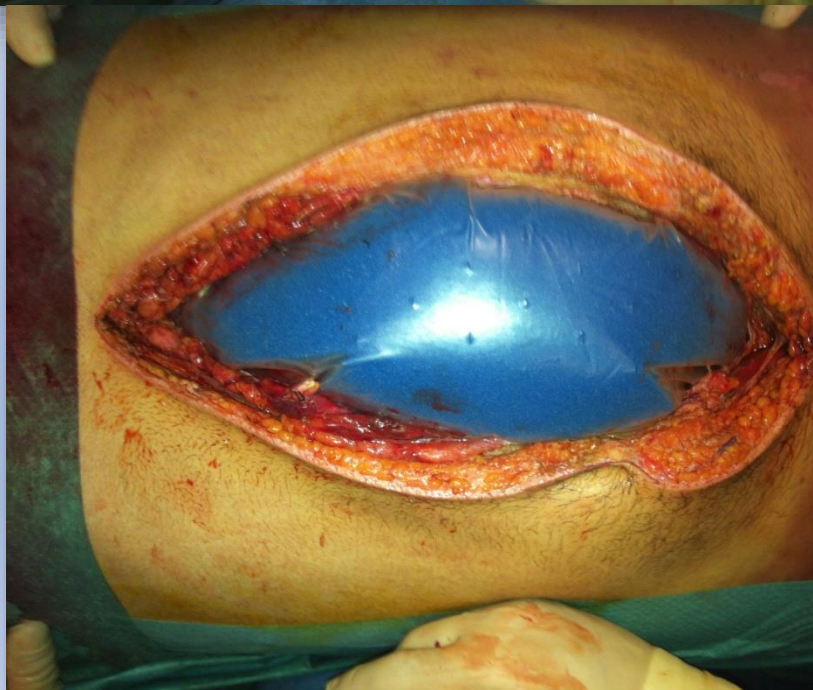
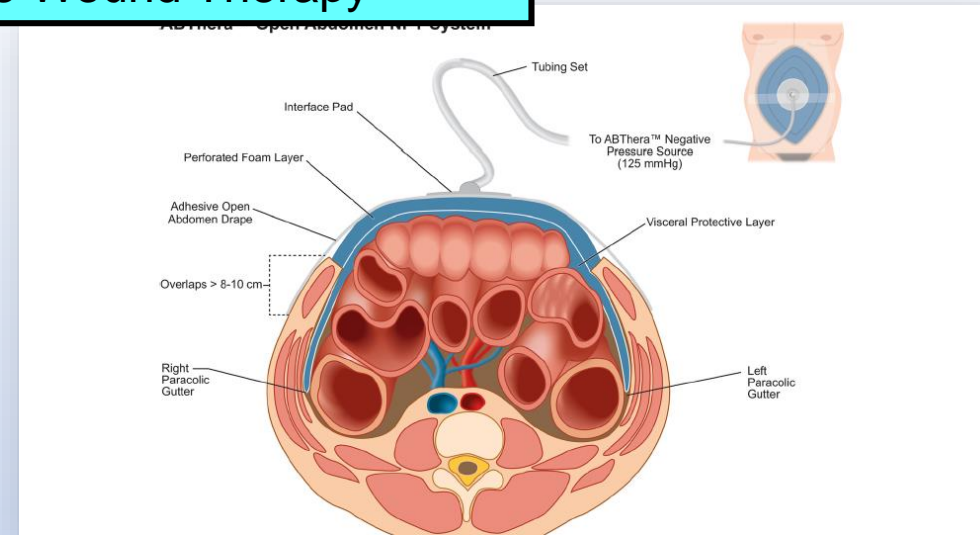
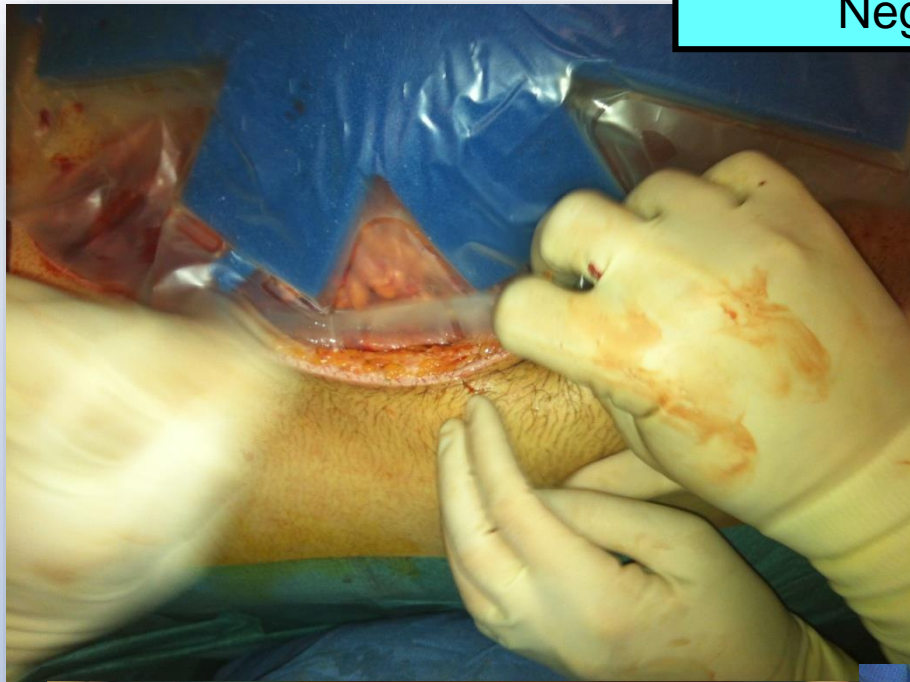


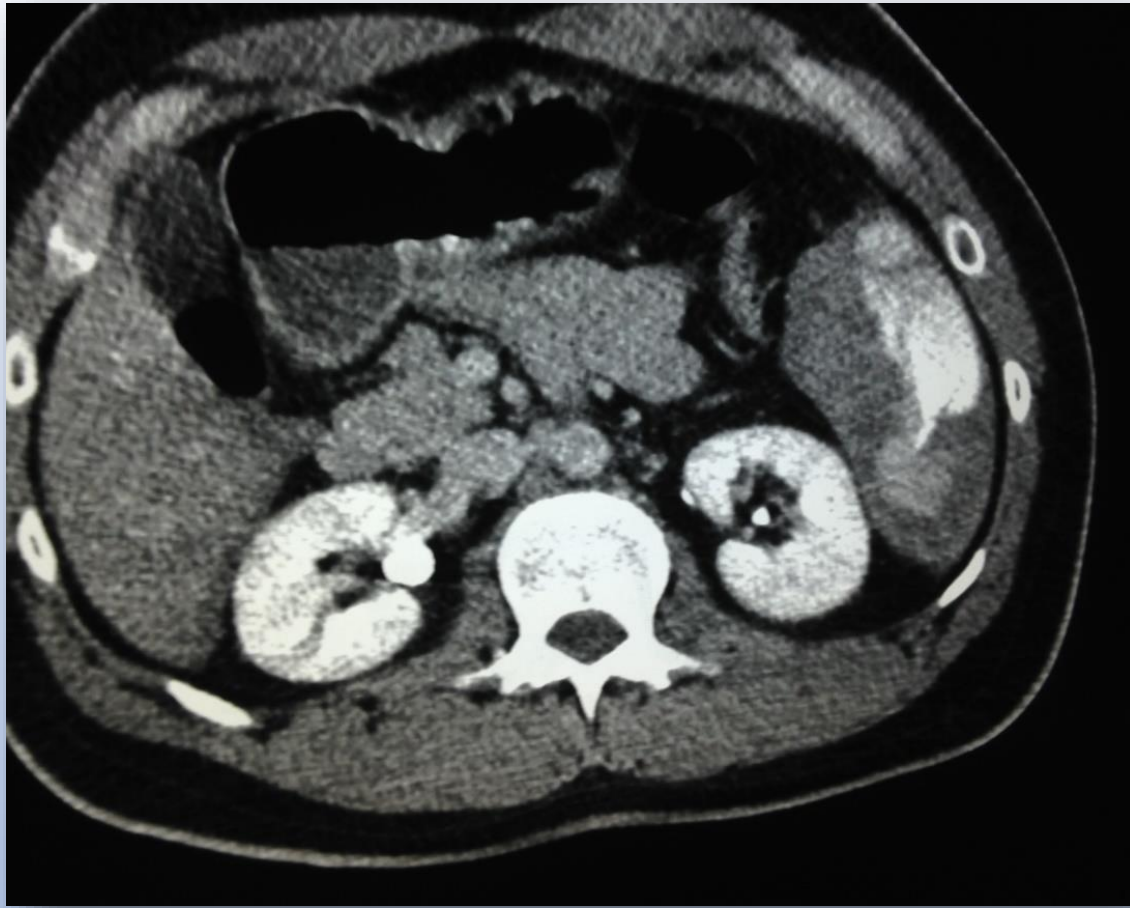
ABDOMEN



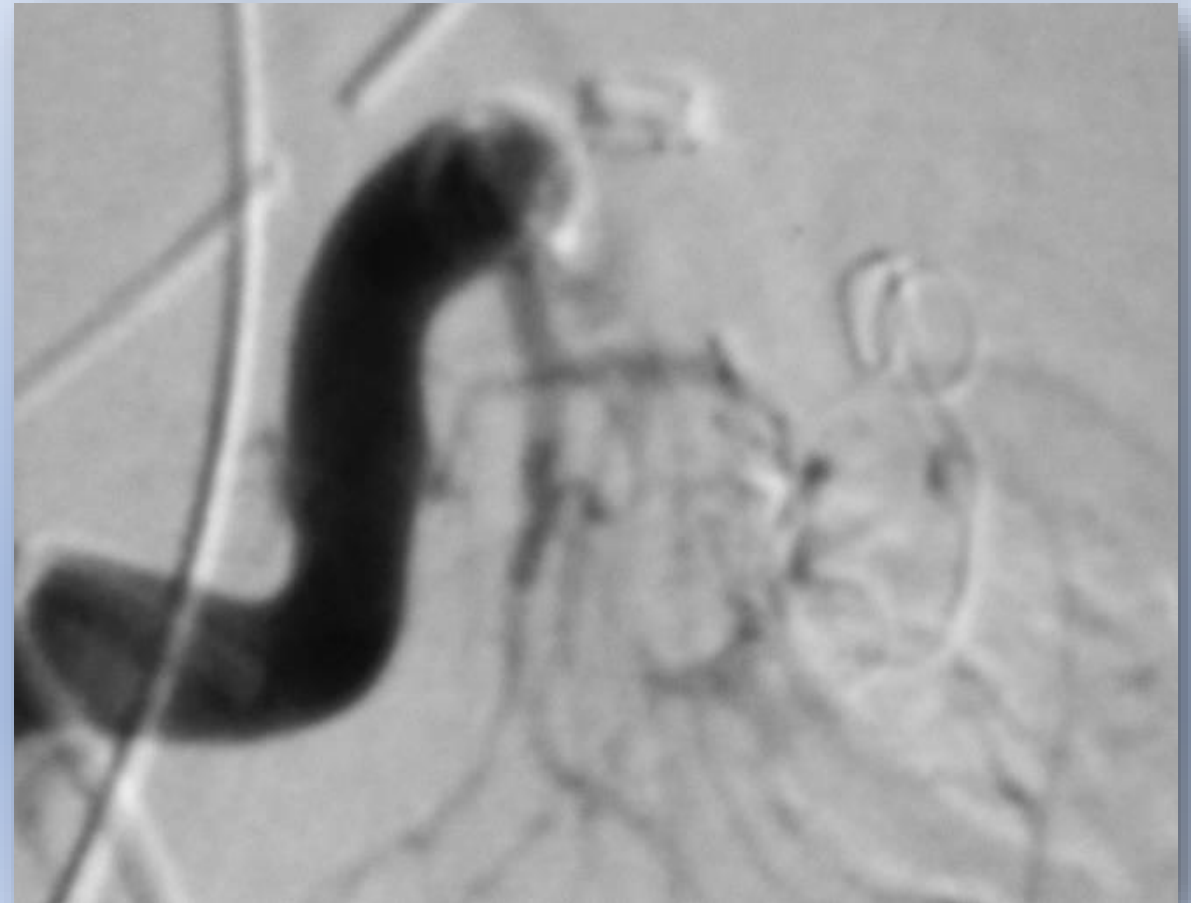
NECK

Negative Pressure Wound Therapy



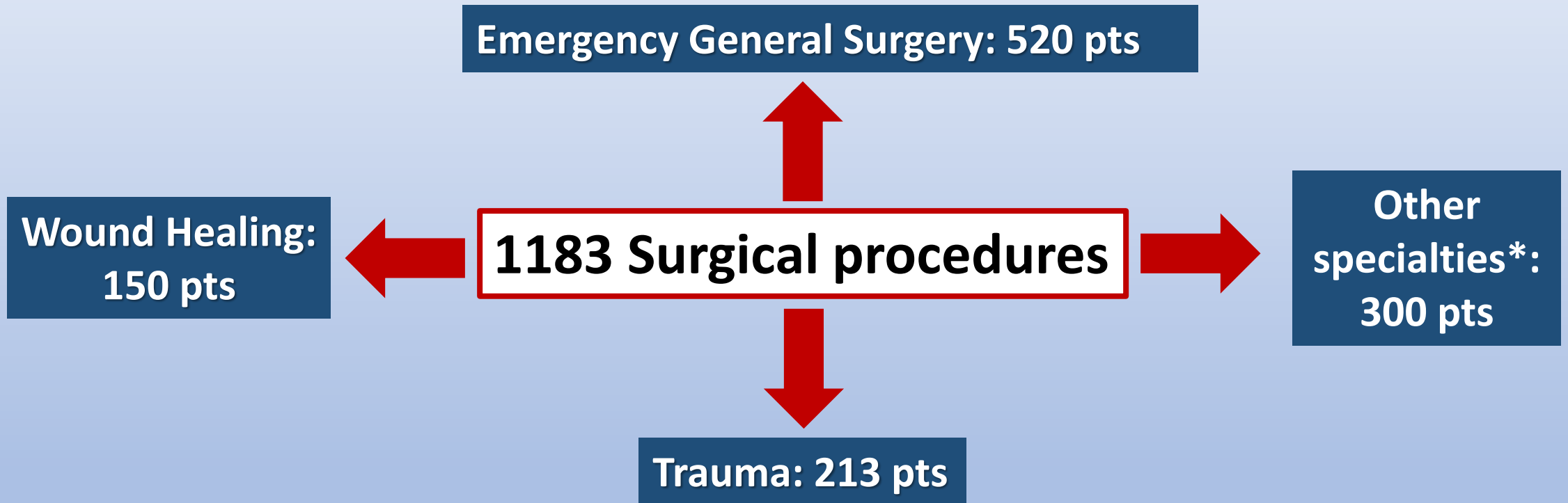


**Strategies for NOM
and use of AE**



Bologna Operating Theatre

(January 1, December 31 2016)



*orthopedics, neurosurgery, vascular surgery, plastic surgery, maxillofacial surgery, urologic surgery, gynecologist, pediatric surgery, harvest

Young fellow experience»

Emergency Surgery

Intervento	N. Interventi	Primo Operatore	Secondo Operatore
Colecistectomia laparoscopica	25	13	12
Colecistectomia laparotomica	9	5	4
Appendicectomia laparoscopica	15	6	9
Appendicectomia laparotomica	6	4	2
Ernioplastica inguinale per ernia incarcerata	9	3	6
Ernioplastica ombelicale per ernia ombelicale incarcerata	5	2	3
Rafia di ulcera gastrica	4	4	
Gastroresezione per ulcera peptica	2	2	
Laparotomia esplorativa, rimozione CE	2	2	
Lisi aderenziale per quadro occlusivo	4	3	1
Resezione ileale	8	7	1
Derotazione volvolo ileale	2	2	
Confezionamento di colostomia laparoscopica in paziente paraplegico	6	5	1
Emicolectomia destra laparotomica	7	5	2
Emicolectomia sinistra laparotomica	3	3	3
Colectomia subtotale	3	2	1
Resezione sec. Hartmann	3	2	1
Laparoscopia esplorativa	4	3	1
Controllo vascolare per rottura AAA	1	1	
Controllo emostasi (emorroidi)	1	1	
	122	76	47

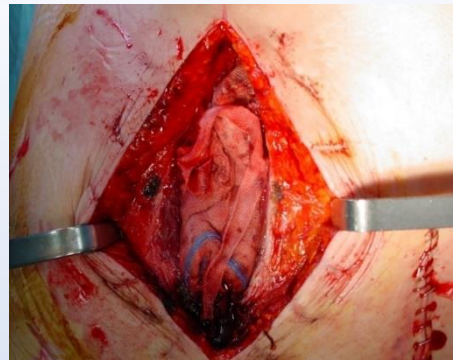


Young fellow experience»

Trauma

Intervento	N. Interventi	Primo Operatore	Secondo Operatore
Medicazioni complesse	48	16	32
Fasciotomie decompressive	2	2	
Escarectomia e posizionamento innesti dermo-epidermici	3	1	2
Tracheostomia per insufficienza respiratoria in Paziente politraumatizzato	10	8	
Controllo emostasi e sutura ferite complesse dei tessuti molli	9	6	
Controllo vascolare FAB arto superiore	1		
Posizionamento di drenaggio toracico	15		
Apertura/chiusura di parete toraco-addominale per accesso anteriore in intervento di fissazione di colonna			3
Laparotomia DC, resezione ileo		2	
Laparotomia DC, sutura		1	
Laparotomia	1		1
Lapar	1		1
	1		1
minale	4	3	1
zione diaframma	1		1
extraperitoneale	4	3	1
ing	7	7	
Toracotomia e toilette del cavo per emotorace residuo	4		4
Esofagoectomia per ingestione caustici	2		2
Amputazione transomerale	1		1
Amputazione arto inferiore	4	1	3
Fissatore esterno arti inferiori	3		3
Sintesi definitiva bacino	1		1
Sintesi definitiva radio-ulna	2		2
Orchiectomia per lesione traumatica	2	1	1
	139	68	71

Multidisciplinary approach



1.

Basic concepts in trauma care, the ABCDE priorities

ATLS®



ETC®

Resuscitation (2007) 74, 135–141



ELSEVIER

TRAINING AND EDUCATIONAL PAPER

RESUSCITATION



www.elsevier.com/locate/resuscitation

The European Trauma Course—From concept to course[☆]

Karl Thies^a, Carl Gwinnutt^{b,*}, Peter Driscoll^b, António Carneiro^c, Ernestina Gomes^c, Rui Araújo^c, Mary Rose Cassar^d, Mike Davis^e

2.

TECHNOLOGIES



Promoted by



**Modular
UltraSound
ESTES
Course**

Basic Endovascular Skills for Trauma (BEST)

Materials

- Vascular Intervention System Training Simulator – C (Mentice VIST-C, Evanston IL)
- Didactic session
- Pre-test
- 6 timed trials REBOA
- 3 in Zone I, 3 in Zone III
- Post-test





ReTraCT

Reboa Training Course for Trauma

WHEN: Reboa in Trauma

Sponsored by



**PRYTIME
MEDICAL™**

The REBOA Company™

TRAUMA
TEAM

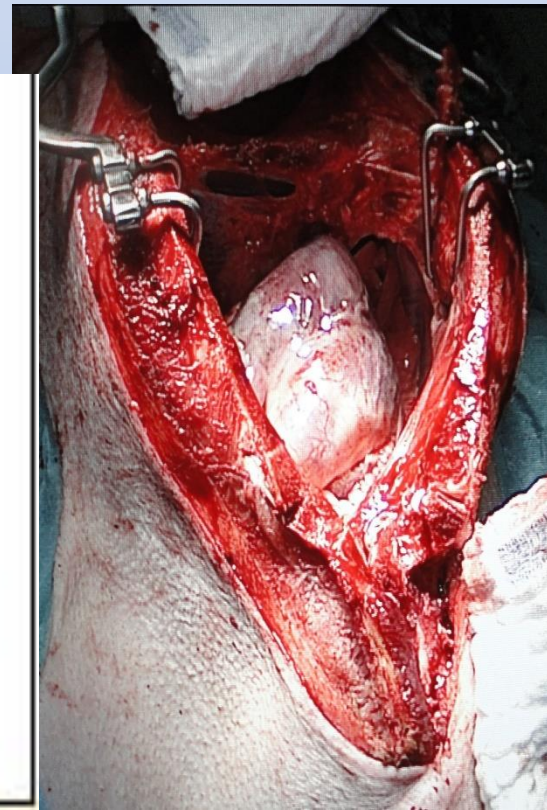
DSTC teaching and lab



5 hours lab

student/teacher 1:1 (12 injuries)

6 lectures about DCS
techniques (textbook)



Pre- and Post
course Test



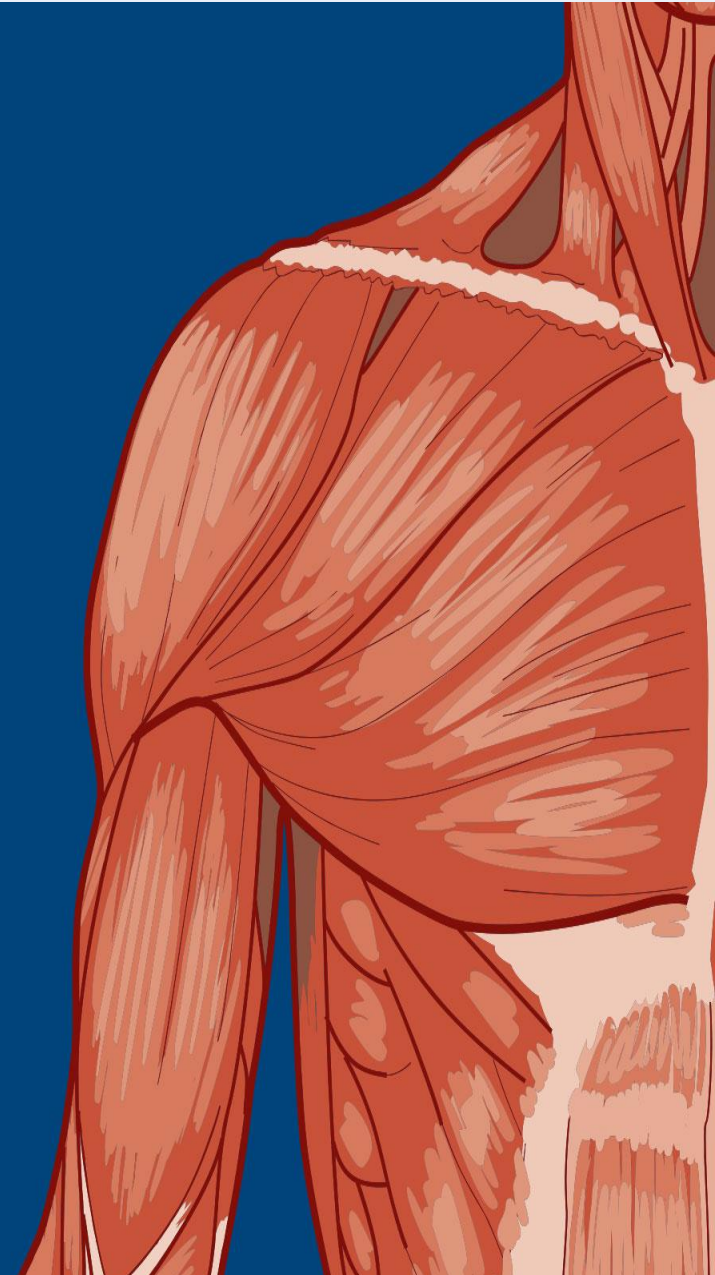
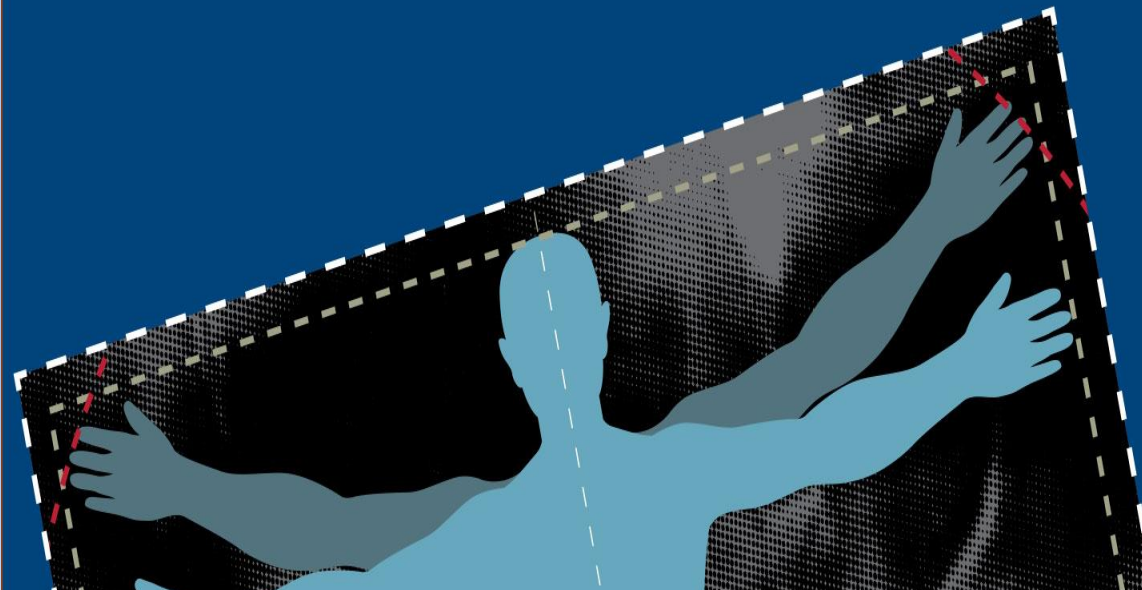
Advanced Trauma Operative Management

4.

CADAVER LAB

ASSET

ADVANCED SURGICAL SKILLS
FOR EXPOSURE IN TRAUMA





LIBRO

Atlante di tecniche chirurgiche nel trauma / a cura di Demetrios Demetriades, Kenji Inaba, George Velmahos ; edizione italiana a cura di Salomone Di Saverio, Gregorio Tugnoli

Inaba, Kenji; Demetriades, Demetrios; Tugnoli, Gregorio; Di_Saverio, Salomone; Velmahos, George C.
2016; Padova : Piccin

Disponibile presso Biblioteca Universitaria Biblioteca Universitaria - Non prestabile (

Atlante di tecniche chirurgiche nel trauma

A cura di

Demetrios Demetriades MD PhD FACS

Professor of Surgery at the University of Southern California, and Director of Trauma, Emergency Surgery and Surgical Critical Care at the Los Angeles County and University of Southern California Medical Center, Los Angeles, California, USA

Kenji Inaba MD MSc FACS FRCS

Associate Professor of Surgery and Emergency Medicine and Program Director for the Surgical Critical Care Fellowship and Surgery Residency at the University of Southern California, Los Angeles, California, USA

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John F. Burke Professor of Surgery at Harvard Medical School, and Chief of Trauma, Emergency Surgery and Surgical Critical Care at Massachusetts General Hospital, Boston, Massachusetts, USA

Edizione italiana a cura di

Salomone Di Saverio, MD, FACS, FRCS

Responsabile attività laparoscopica nel trauma

U.O.S.D. Chirurgia del Trauma

Ospedale Maggiore, Bologna

Gregorio Tugnoli, MD

Direttore Scuola Speciale A.C.O.I. Chirurgia del Trauma

Responsabile U.O.S.D. Chirurgia del Trauma

Ospedale Maggiore, Bologna



Book series

Hot Topics in Acute Care Surgery and Trauma

 [Editorial board](#)

About this book series

This series covers the most debated issues in acute care and trauma surgery, from perioperative management to organizational and health policy issues. Since 2011, the founder members of the World Society of Emergency Surgery's (WSES) Acute Care and Trauma Surgeons group, who endorse the series, realized the need to provide more educational tools for young surgeons in training and for general physicians and other specialists new to this discipline: WSES is currently developing a systematic scientific and educational program founded on evidence-based medicine and objective experience. Covering the complex management of acute trauma and non-trauma surgical patients, this series makes a significant contribution to this program and is a valuable resource for both trainees and practitioners in acute care surgery.

[show less](#)

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2520-8292

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2520-8284

Series Editor
Federico Coccolini, Raul Coimbra, Andrew W. Kirkpatrick, Salomone Di Saverio

Series Editor
Federico Coccolini, Raul Coimbra, Andrew W. Kirkpatrick & Salomone Di Saverio

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The World Society of Emergency Surgery



The World Society of Emergency Surgery

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SAVE THE DATE.

PERTH, WA.

WSES

27-30 OCT. 2022

NINTH INTERNATIONAL CONGRESS OF THE WORLD
SOCIETY OF EMERGENCY SURGERY

Courses

World Society of Emergency Surgery Courses

World Journal of Emergency
Surgery (WJES)

GAIS

Global Alliance for Infections in Surgery



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vEASC program 2021... [Read more...](#)



EASC 2019 Dublin

dublin 2019... [Read more...](#)



FIAT Courses project

WSES launches a comprehensive educational ... [Read more...](#)



Mass Casualty Incident Management

4-5 November, 2016, Bergamo, Italy... [Read more...](#)



9th International Congress of the WSES

Perth, Western Australia
27-30 October, 2022



WORLD JOURNAL OF
EMERGENCY SURGERY

World Journal of Emergency Surgery
Impact Factor: 5.4

International Register of Open
Abdomen (IROA)

International Register of Open
Abdomen

International Register of Biological
Prosthesis (IRBP)

International Register of Biological
Prosthesis



Clinical Registers
AN ELEPHANT-SIZE MEMORY

S. Di Saverio · G. Tugnoli · F. Catena
L. Ansaloni · N. Naidoo *Editors*

Trauma Surgery

Volume 1

Trauma Management,
Trauma Critical Care,
Orthopaedic Trauma and
Neuro-Trauma

Foreword by Zsolt J. Balogh



 Springer

S. Di Saverio · G. Tugnoli · F. Catena
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Trauma Surgery

Volume 2

Thoracic and
Abdominal Trauma

*Forewords by
Kenneth Mattox and Franco Baldoni*



 Springer

335 × 499

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Federico Coccolini · George Velmahos *Editors*

Acute Care Surgery Handbook

Volume 1

General Aspects,
Non-gastrointestinal and
Critical Care Emergencies

Foreword by David Feliciano



 Springer

Salomone Di Saverio · Fausto Catena · Luca Ansaloni
Federico Coccolini · George Velmahos *Editors*

Acute Care Surgery Handbook

Volume 2

Common Gastrointestinal
and Abdominal Emergencies

Foreword by Kenneth Mattox



EXTRAS ONLINE

 Springer



60 Crediti ECM

34 crediti FAD cartacea - 26 crediti corso RES

Corso
aggiornato
secondo la 4^a
edizione

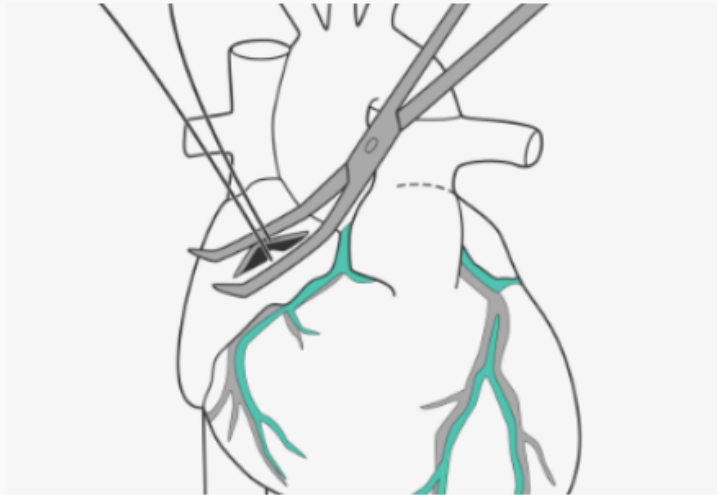
Definitive Surgical Trauma Skills (DSTS)

Taught over two days by skilled and knowledgeable faculty, you will learn how to make life-saving surgical decisions and perform damage control under pressure in a trauma and emergency environment.

Through practical workshops on unembalmed cadavers, you will learn surgical procedures to manage a broad range of trauma situations, as well as covering decision-making, epidemiology and emerging technologies.

RCS membership entitles you to a 10% discount on this course at partner centres. Find out if you're [eligible to join or transfer](#).

To see a list of our current Definitive Surgical Trauma Skills course centres please [click here](#) (correct as of May 2020)



DSTS is a highly practical course that teaches procedures and surgical techniques required to manage exsanguinating polytrauma. The majority of the course is spent in the skills lab, working in small groups on unembalmed (fresh frozen) cadavers. Alongside this, there are lectures, case studies and on-going opportunities to discuss trauma management with expert faculty. You will also be given access to videos and accompanying procedural steps on our virtual learning environment that demonstrate many of the procedures taught on the course.

This is to certify that

Dr Salomone Di Saverio

acted as faculty on the course

Definitive Surgical Trauma Skills (DSTS)

at

Manchester Surgical Skills and Simulation Centre

Course dates

03 Oct 2019 - 04 Oct 2019



Tim Mitchell

This is to certify that

Dr Salomone Di Saverio

acted as faculty on the course

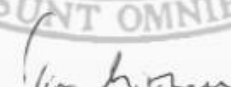
Definitive Surgical Trauma Skills (DSTS)

at

Ad Hoc External Venue - System Only

Course dates

03 Mar 2020 - 04 Mar 2020



Following the course, you will be able to:

- organise and plan life-saving decision making for the polytrauma patient;
- describe the philosophy of damage control surgery and resuscitation and the principles underlying its application in a variety of scenarios;
- discuss the science of ballistics, the effects on human tissue and how to manage penetrating ballistic injury;
- recognise and respond to the exsanguinating patient, in particular recognising and / or searching for the most compelling source of bleeding;
- recognise the patient in need of immediate life-saving surgery for haemorrhage control.

Following the course, you will be able to undertake procedures in cadaveric simulation relating to:

- thoracic trauma and thoracic damage control;
- left lateral thoracotomy and clamshell thoracotomy;
- vascular trauma and vascular damage control;
- how to approach and manage penetrating neck injuries;
- managing injuries at the thoracic outlet and upper limb;
- lower limb trauma;
- abdominal trauma;
- pelvic trauma and pelvic damage control;
- management of solid organ injury;
- management of hollow organ injury .

Training for ACS and Trauma: The Future



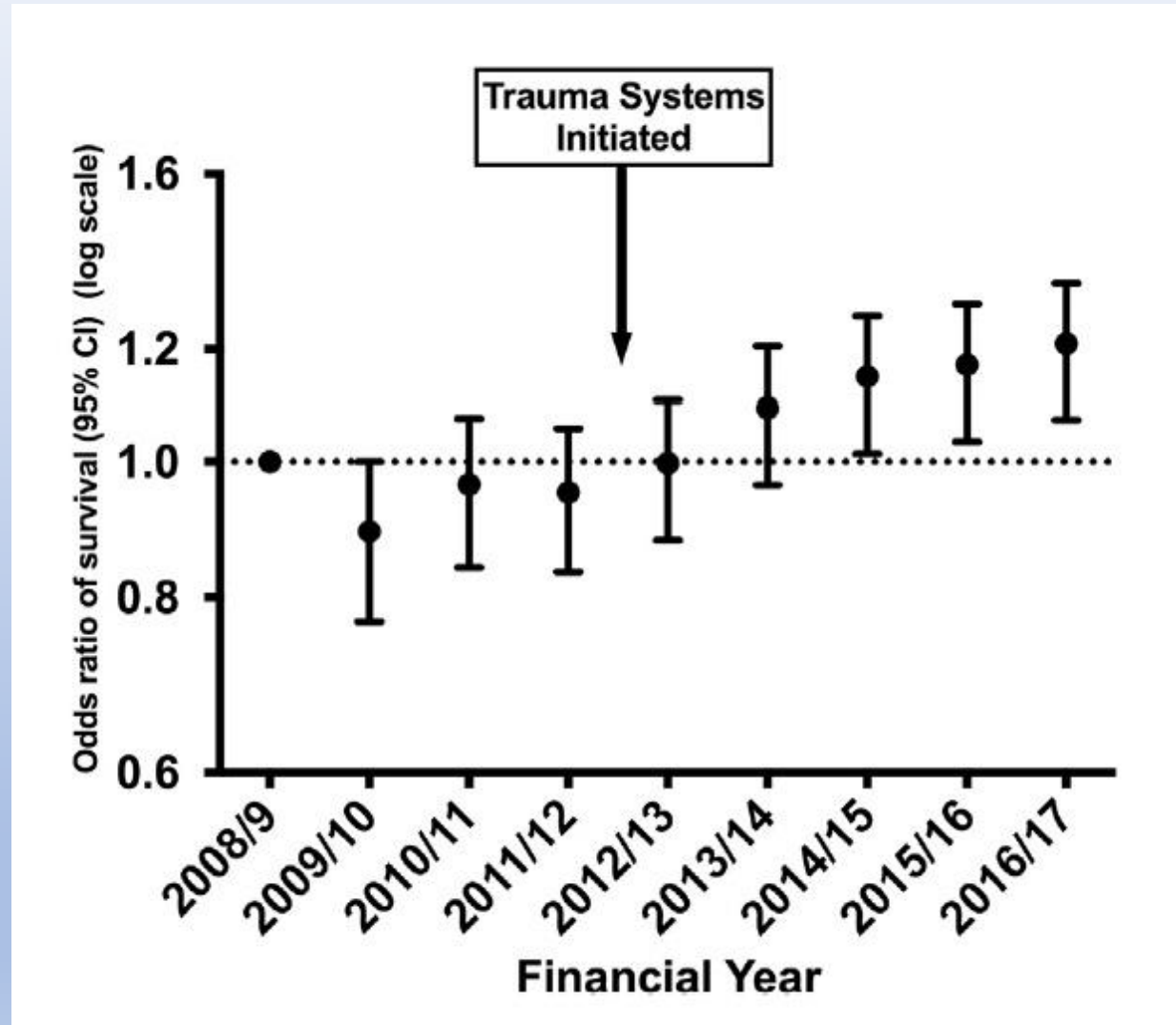
Mansoor Ali Khan
MBS PhD PGDip FRCS FEBS FACS CMgr FCMI
Honorary Clinical Professor of Trauma Surgery

Course Director, Definitive Surgical Trauma Skills Course,
Royal College of Surgeons of England

Objectives

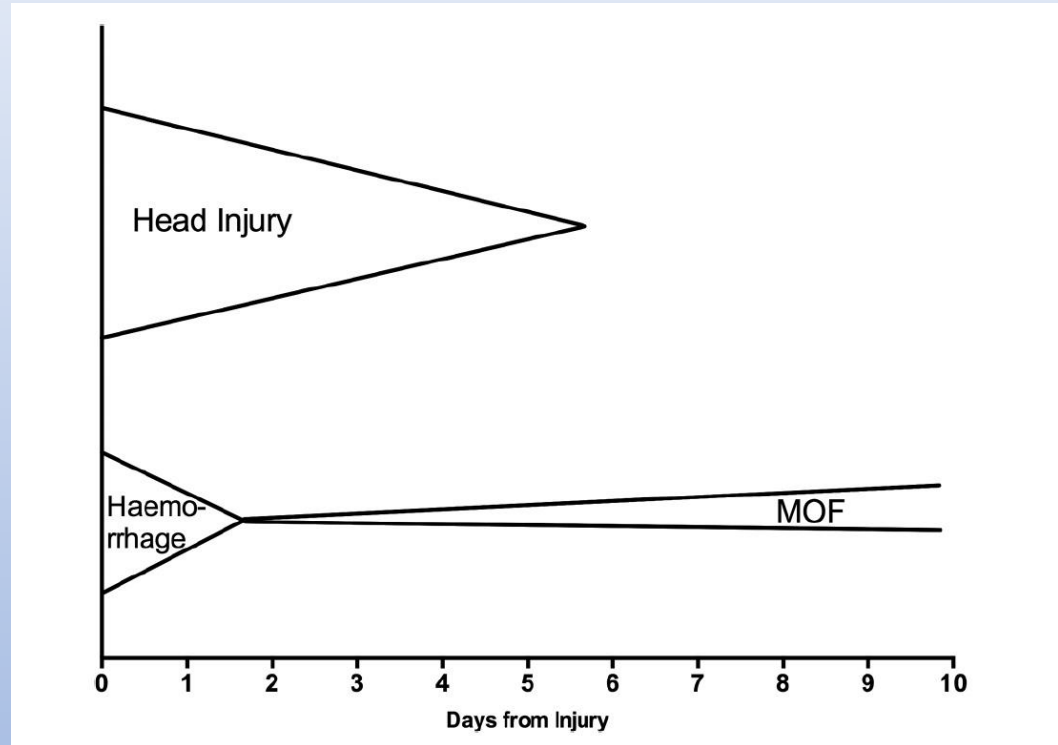
Provide an overview of current UK trauma and EGS training pathway and Resuscitative Surgery Course

Train the system and not the individual!



Moran et al, 2018

What kills you after major trauma?



Keene DD, et al. *J R Army Med Corps* 2016;**162**:355–360. doi:10.1136/jramc-2015-000490

What is Damage Control Surgery?

Physiological Surgeons

We are operating to help restore patient physiology.

Do what you need to do now, but pre-empt what needs to be done later

Sub-specialisation

- Focusing on specific operations
- Less 'open work'
- Minimally invasive surgeons – Laparoscopy/Endovascular
- Fellowships now concentrating on open work

What do we need in the Future?

The General Surgeon

Training Pathway

FY/CT

HST

Fellowship

MRCS

ATLS

CCrISP

HST
COURSES

FRCS

DSTS

Specialist
Courses



Definitive Surgical Trauma Skills

Day One

Time	Content
0800-0815	Faculty Meeting
0800-0815	Registration and Refreshments
0815-0830	Introduction to course & themes
0830-0910	Damage Control Philosophy
0910-0945	Review of thoracic trauma
0945-1100	<u>Thoracic Trauma I (participant skills practice)</u> <ul style="list-style-type: none"> • Penetrating chest injury • Finger thoracostomies • Left antero-lateral thoracotomy • Clamshell thoracotomy • Repair of cardiac injuries
1100-1115	Refreshments
1115-1230	<u>Thoracic Trauma II</u> <ul style="list-style-type: none"> • Hilar injuries • Pulmonary injuries • Superior mediastinum • Closure & drains
1230-1300	Lunch
1300-1330	<u>Principles of Vascular Trauma</u> <ul style="list-style-type: none"> • Vascular trauma • Vascular control and dissection • Vascular damage control • Junctional zone injuries • Endovascular techniques & REBOA
1330-1500	<u>Penetrating Neck Injuries</u> <ul style="list-style-type: none"> • Trauma airway • Management of penetrating neck injuries • Median sternotomy & control of arch vessels
1500-1515	Refreshments
1515-1700	<u>Thoracic outlet & upper limb injuries</u> <ul style="list-style-type: none"> • Subclavian artery injuries • Axillary artery injuries • Brachial artery injuries • Forearm fasciotomy
1700-1715	Debrief
1715-1730	Faculty Meeting

Day Two

<i>Time</i>	<i>Content</i>
0815-0830	Registration and Refreshments
0830-0945	Ballistics
0945-1100	Lower Limb Trauma Ileo-femoral injuries Popliteal injuries Principles of tourniquet use Shunting techniques Lower limb fasciotomy External pelvic binding Extraperitoneal pelvic packing I
1100-1115	Refreshments
1115-1230	Lower Limb Trauma continued
1230-1300	Lunch
1300-1330	The Trauma Laparotomy
1330-1615	Abdominal - Pelvic Trauma Trauma Laparotomy & damage control Supraceliac control of the aorta Extraperitoneal pelvic packing II Approach to abdominal organ injuries: <ul style="list-style-type: none"> • Spleen • Liver • Renal • Small & Large bowel Retroperitoneal injuries: <ul style="list-style-type: none"> • Right medial visceral rotation & IVC injuries • Retrohepatic IVC injury • Left medial visceral rotation & aortic injuries • Visceral aortic injuries Temporary abdominal closure Stage II damage control surgery
1615-1630	Refreshments
1630-1730	Discussion & Summary Scenarios
17.30	Faculty meeting

TRAUMA: CODE RED

Based on the popular Royal College of Surgeons of England's *Definitive Surgical Trauma Skills Course*, this new textbook teaches the reader how to make life-saving surgical decisions in a time-critical trauma and emergency environment. No member of the trauma team should be without it. It concisely, but comprehensively teaches the clinical skills required to effectively manage the severely injured and polytrauma patient. This essential guide focuses on thoracic, abdominal and vascular injuries including additional teaching on damage control techniques, penetrating and ballistic injuries. It shares invaluable practical experience from military and civilian leaders from around the world specifically chosen for their trauma and educational expertise.

Clearly illustrated and succinctly written **Trauma: Code Red** is an invaluable manual for all surgeons dealing with trauma patients.

About the Editors

Surgeon Commander Mansoor Khan is a Military Trauma Surgeon at the North West London Major Trauma Centre based at St Mary's Hospital, London. He has served on multiple military operations, including Iraq and Afghanistan.

Morgan McMonagle is a Consultant Vascular and Trauma Surgeon, award winning author and impassioned educator, based at the North West Major Trauma Centre, London and the South-South East Hospital Group, Ireland. Having trained at some of the world's leading trauma centres in the US, UK and Australia he has played a key role in managing numerous mass casualty disasters within London, including the Westminster Bridge Attack. In addition he has passed on his trauma expertise to surgeons around the world in his role as DSTS course director and instructor.

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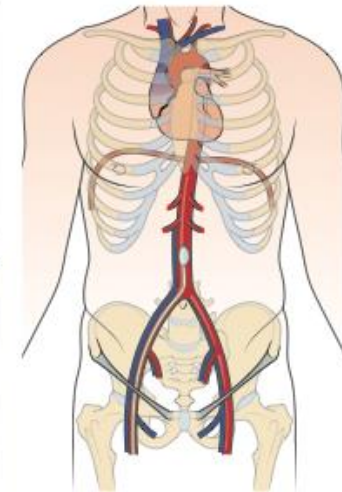
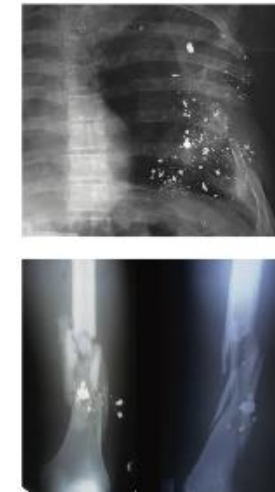
TRAUMA: CODE RED

Khan • McMonagle

CRC Press

TRAUMA: CODE RED

Companion to the RCSEng Definitive Surgical Trauma Skills Course



EDITED BY

Mansoor Khan and Morgan McMonagle
with David Nott



Summary

A Good Trauma Surgeon must first be a Good General Surgeon

A Course in isolation cannot teach you how to be a Trauma Surgeon

Regular exposure to Trauma is the key to maintaining skills

Conclusions.....I have been an Acute Care Surgeon for 40 years. For most of that time, I did not realize that was the name of my profession !!!

1.

Trauma and emergency surgery require special knowledge and skills that are not automatically included in the elective general surgery training

2.

Propedeutic courses (ATLS, ETC, DSTC, ATOM, ASSET, CRISP) + adjunctive skills (ultrasound, endovascular, REBOA) are available

3.

A university educational program after surgery school, with formal teaching and active rotation in acute care surgery is going to start

Thank you!

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