

# EMERGENCY NURSING: AN OVERVIEW



**MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S  
SMT. BAKUL TAMBAT INSTITUTE OF NURSING EDUCATION  
KARVENAGAR, PUNE-4110 52  
020-25475020, 25477557, 65275020  
[www.mksssbtime.ac.in](http://www.mksssbtime.ac.in)**

Email ID-[btine03@gmail.com](mailto:btine03@gmail.com), [btine09@gmail.com](mailto:btine09@gmail.com)



## **MESSAGES**

- From Editors' And Organizing Chairperson's Desk
- From Secretary
- From Medical Director, Deenanath Mangeshkar Hospital
- From Secretary-General, TNAI, New Delhi
- From President, TNAI, Maharashtra State Branch
- From President, TNAI, Pune City Branch

## **ARTICLES**

1. Need for emergency nursing by Mrs. Tripti Nanda
2. Critical thinking in emergency nursing by Mr. Shoukkathali V
3. Medico-legal and ethical aspects in emergency by Dr. Saket Tilekar
4. Legal and ethical emergency room nursing by Mrs. Phalakshi Manjrekar
5. Trauma incidence, assessment & primary survey: ATLS management at home, on transit & in the hospital by Lt. Col. Mrs. Vandana Agnihotri
6. Secondary survey and intervention by Mrs. Elaine Furtado
7. Management of neurological emergencies by Dr. Ravi Pratap
8. Initial assessment and management in trauma by Dr. Gouri Ranade
9. Pediatric emergencies by Dr. Charusha Salunke
10. Panel discussion on Obstetrical emergencies by Dr. Ponkshe and team.
11. Pediatric emergencies by Dr. Charusha Salunke
12. Pediatric emergencies by Mrs. Meena Sonawane
13. Psychiatric emergencies by Dr. Nischol Rawal
14. Role of nurse in psychiatric emergency by Mrs. L. Bijayalakshmi
15. Disaster preparedness by Dr. Yogesh Gawali
16. Disaster preparedness: triage by Dr. Sangeeta Bhujbal

## **ABSTRACTS**

- Assessment of knowledge, attitude and practices regarding psychiatric emergencies among relatives of schizophrenic patient.
- Challenges faced by nurses in the intensive care units – a case study.
- Awareness regarding road safety rules among school children.





**MESSAGE**

**"Nursing: The balance of mind, body and spirit"**

**American Nurses Association, 2017**

**Dr. Rajrani Sharma**





### **DISCLAIMER**

The publisher, Smt Bakul Tambat Institute of Nursing Education, Karvenagar, Pune and scientific committee cannot be held responsible for errors or any consequences arising from the use of information contained in this booklet on “emergency nursing: an overview”. Views and opinions expressed in the articles/ papers do not necessarily reflect those of the publisher and editors. All efforts are made to ensure that published information is correct.

The publishers and editors are not responsible for any errors caused due to oversight or otherwise.

Accuracy and liability and originality of the articles: All contribution is accepted on the understanding that the accuracy and originality of all the information in the contribution is the individual author’s responsibility.

### **MKSSS BTINE FACULTY PHOTOGRAPH**





## COLLEGE ADVERTISEMENT

### BASIC B. SC. NURSING [B.B.SC(N)] :

**Duration** : 4 years  
**Intake** : 50 students  
**Eligibility** : 12th Std Passed or its equivalent with Biological & Physical, Sciences (P.C.B) with 45% marks and Passed in English  
**Admission Procedure** : NEET is mandatory  
 Website: dmer.org mahacet.org

### POST BASIC B. SC. NURSING [P.B.B.SC(N)] :

**Duration** : 2 years  
**Intake** : 30 students  
**Eligibility** : RGNM passed with Nurse & Midwife registration

### MASTERS IN NURSING [M.SC. (N)]

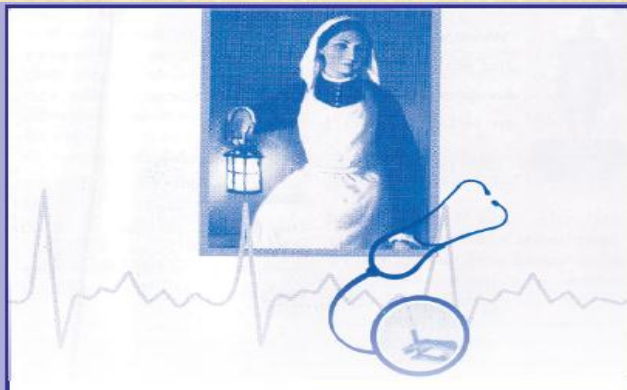
**Duration** : 2 years  
**Specialties** : Medical Surgical Nursing, Mental Health Nursing, Obstetric & Gynecology Nursing.  
**Eligibility** : B.Sc Nursing/Post Basic B.Sc Nursing with 55% aggregate, with one year experience after MNC registration.

### Ph.D. NURSING CENTRE STARTED FROM 2011.

**Duration** : 3 years  
**Eligibility** : M.Sc(N)  
**Admission Procedure** : PET Pass from MUHS



Maharshi Karve Stree Shikshan Samstha's  
**SMT. BAKUL TAMBAT INSTITUTE OF NURSING EDUCATION**  
 (Affiliated to INC, MNC, MUHS & NAAC Accredited)  
 Karvenagar, Pune 411 052  
 Telefax: 25475020, 25477557, 65275020 Fax : 020 - 2547 5020  
 E-mail: btine03@gmail.com, btine09@gmail.com  
 Website: mkssbtine.ac.in, mkssbtine.org



"Committed to developing conscientious, confident and caring quality nursing professionals of international repute."



Maharshi Karve Stree Shikshan Samstha's  
**SMT. BAKUL TAMBAT INSTITUTE OF NURSING EDUCATION**  
 (Affiliated to INC, MNC, MUHS & NAAC Accredited)  
 Karvenagar, Pune 411 052 Telefax : 020 - 25475020, 25477557, 65275020  
 E-mail: btine03@gmail.com, btine09@gmail.com  
 Website: mkssbtine.ac.in, mkssbtine.org



"Women's education and national development are closely related"  
 - Maharshi Karve

Maharshi Karve Stree Shikshan Samstha has a century long history of dedicated work towards making women educated and self-reliant. The samstha runs many educational institutions like the Smt. Bakul Tambat Institute of Nursing Education. The Institute was started in the Pune campus of the samstha in August 2000.

The Institute is approved by Indian Nursing Council (INC), Maharashtra Nursing Council (MNC), Maharashtra State Government and Maharashtra University of Health Sciences. The Institute offers a 2-year Revised Auxiliary Nurse and Midwife Programme, 3 years diploma programme in General Nursing and Midwifery (G.N.M.), 4 years degree programme in Basic (B.Sc) in Nursing,

2-years degree programme in Post Basic B.Sc. Nursing (P.B.B.Sc), 2-years Post graduate degree programme (M.Sc) in Nursing and Ph.D (N) centre for the benefit of 600 girl students.

#### MISSION :

The Institute is "committed to developing conscientious, confident and caring quality nursing professionals of international repute".

#### FEATURES :

- Green, spacious campus with essential facilities like bank, hostels, health club and post office.
- Own building with spacious classrooms, counseling center, a conference room and nursing arts laboratory.
- Library with latest 10,000 books from USA, UK and India on nursing, allied and general topics.
- Hostel with mess and recreational facilities.
- Experienced and committed faculty comprising full time and external lecturers.



- Spacious nursing arts laboratory with mannequins, models and audiovisual aids from Germany & USA.
- Various co-curricular and extra-curricular activities throughout the year.
- Collaboration with Jnana Probodhini Medical Trust and Lata Mangeshkar Medical Foundation which runs the 1000 bedded Deenanath Mangeshkar Hospital in Pune.
- Deenanath Mangeshkar Hospital is a multi specialty hospital.

#### ALUMNI ASSOCIATION

Tie-up for providing job opportunities to students after completion of course.

#### ALUMNI ASSOCIATION

The Institute of Nursing Education has achieved 80-100% results in the Maharashtra Nursing Council final examinations of Mumbai & Maharashtra University of Health sciences, Nashik till date.

### PROGRAMMES OF MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S SMT. BAKUL TAMBAT INSTITUTE OF NURSING EDUCATION

#### REVISED AUXILIARY NURSING MIDWIFERY (R.A.N.M.)

**Duration** : 2 years  
**Intake** : 30 students per annum  
**Eligibility** : 12th std. passed, any faculty  
**Admission Procedure** : On merit basis.

#### GENERAL NURSING AND MIDWIFERY (G.N.M.)

**Duration** : 3 years  
**Intake** : 60 students  
**Eligibility** : 12th std passed or its equivalent, preferably with Science, with 40% marks.  
**Admission Procedure** : On merit basis.





# CONFERENCE BROCHURE

## SCHEDULE

Time	Session	Resource Person
<b>7<sup>th</sup> April 2017 (Day -1)</b>		
7:30 – 9:00am	Registration & Breakfast	
7:30 – 9:00am	Poster Presentation	Parallel session
9:00-10:00am	<b>Emergency Nursing Overview:</b> <ul style="list-style-type: none"> <li>Need for emergency nursing</li> <li>Critical thinking in emergency nursing</li> </ul>	Mrs. Tripti Nanda CNS, Columbia Asia Hospital, Pune Mr. Shoukathali V Nursing Officer, AIIMS Delhi
10-10:30am	<b>Inauguration of Conference</b> Keynote address	Dr. Meena Ganapathy Ph.D(N), Principal/Professor, MKSSS BTNE, Pune Dr. Ajay Chandanwale, Dean, B J Govt. College, Pune.
10:30-10:45	<b>Tea Break</b>	
10:45 -11:30 am	<b>Legal Aspects in Emergency Nursing</b>	Dr. Saket Tilekar Head Training EMS Mrs. Phalakshi Manjrekar Director, Hinduja Hosp. Mumbai.
11:30-12:30pm	<b>Emergency Nursing Assessment and Intervention:</b> Primary Survey & Intervention Secondary Survey & Intervention	Lt.Col. Vandana Agnihotri, Professor, AFMC, Pune Mrs. Elaine Furtado Mumbai
12:30-1:30pm	<b>Lunch</b>	
1:30 – 2:15pm	<b>Neuro Emergency Management</b>	Dr. Ravi Pratap Consultant & In charge, Dept. of Emergency Medicine & Trauma Care, Colombia Asia, Pune
2:15-3:00 pm	<b>Trauma Management</b>	Dr. Gouri Ranade Consultant in Emergency Medicine, DM Hospital, Pune
3:00-3:45 pm	<b>Skill Station-I</b> Neuro Assessment	Mrs. Nupoor Bhambid Asst. Prof. MKSSS BTNE, Pune
3:45-4:30 pm	<b>Skill Station-II-</b> Advanced Trauma Life Support (ATLS)	Mr. Shoukathali V ATLS Nursing Officer, AIIMS, Delhi

Time	Session	Resource Person
<b>8<sup>th</sup> April 2017 (Day -2)</b>		
8:00 – 9:00am	Registration & Breakfast	-
9:00-10:00 am	<b>Obstetrics Emergencies Overview:(Panel discussion)</b>  Antenatal, Intranatal and postnatal emergencies	Dr. Janhavi Dangre Gawade DNB, DGO, Madhukar Hospital Pune Dr. Gopal Gawade DNB, DGO, Madhukar Hospital Pune Mrs. Madhura Waghmare Head Nurse Labour room, DMH Pune
10:00-10:15 am	<b>Tea Break</b>	
10:15-11:15am	<b>Pediatric Emergency Overview:</b> <ul style="list-style-type: none"> <li>Febrile convulsion</li> <li>Drowning</li> <li>Foreign body obstruction</li> </ul>	Dr. Charusha Sahmke DCH, Paediatric Dept. RMO, Kamala Nehru Hospital. Mrs. Meena Sonawane Professor, JJ INE, Mumbai
11:15-12:15pm	<b>Psychiatric Emergency Overview.</b> <ul style="list-style-type: none"> <li>Rape trauma syndrome</li> <li>Physical assaults</li> <li>violence</li> </ul>	Dr. Nihal Ravai Sahyadri Hospital, Pune Mrs. Bijayalakshmi Devi. Asst. Professor, MKSSS. BTNE, Pune
12:15-1:15 pm	<b>Lunch</b>	
1:15 – 2:00pm	<b>Disaster preparedness</b> Triage	Dr. Yogesh Gawali Asso Prof, Anesthesia, B J Govt. Medical, Pune
2:00-2:45pm	<b>Role of Nurse in Disaster Management</b>	Dr. Sangeeta Blunjal Lecturer, B.J. Medical CON, Pune
2:45-3:30 pm	<b>Skill Station-I -Mass Casualty Incidence</b>	Mrs. Shailaja Mathews Asst. Prof. MKSSS'S, BTNE, Pune
3:30-4:15 pm	<b>Skill Station-II- Triage</b>	Ms. Smita Devi Asst. Prof. MKSSS'S, BTNE
2:45-4:15 pm	<b>Scientific Paper Presentations Parallel Session</b>	
4:15-4:45 pm	Valedictory	Dr. Molly Sam RN,MSN Chief Editor, Nurses of India, Bangalore



**NATIONAL CONFERENCE  
ON**

**EMERGENCY NURSING:  
SAVING LIVES ON THE FRONTLINE**

**7<sup>th</sup> and 8<sup>th</sup> April 2017**

Organized by

**MKSSS'S SMT. BAKUL TAMBAT INSTITUTE OF  
NURSING EDUCATION KARVENAGAR, PUNE-52.**

NAAC Accredited

Email:- btine03@gmail.com, btine09@gmail.com,

confbtine@gmail.com

Phone: +91-20-25477557, 25475020

Website: www.mkssine.ac.in



**VENUE**

**MKSSS Dr. Bhanuben Nanavati College of Architecture  
Auditorium, 4<sup>th</sup> floor, Karvenagar,  
Next to MKSSS BTNE, Pune.**





**"Women's education and national development are closely related"**

Maharshi Karve Stree Shikshan Samstha, our parent body has been committed to "Empowerment of women through education" for over a century. Maharshi Karve Stree Shikshan Samstha was founded by the great visionary and social worker Bharat Ratna Maharshi Dhondo Keshav Karve in 1896. The Samstha runs 60 branches with 10 higher education institutes giving education to 16,000 girl students in various branches. It has maintained the standard of quality of education with a transparent administration.

#### **MKSSSBTINE**

The Maharshi Karve Stree Shikshan Samstha's Smt. Bakul Tambat Institute of Nursing Education was started in the expansive campus of the Samstha in Pune in August 2000. The Institute is approved by the Indian Nursing Council, Delhi, Maharashtra Nursing Council, Maharashtra Government and Maharashtra University of Health Sciences, Nashik. The Institute runs RANM, RGNM, B. B.Sc. Nursing, P.B.B.Sc Nursing, M.Sc. Nursing & Ph.D. in Nursing. Clinical learning is conducted in the parent hospitals i.e. Deenanath Mangeshkar Hospital and Mai Mangeshkar Hospital.

The Principal, faculty and students of MKSSSBTINE invite you for the conference on

#### **EMERGENCY NURSING SAVING LIVES ON THE FRONTLINE**

Emergency Nursing is a specialty within the field of professional nursing focusing on the care of patients with

medical emergencies that are those who require prompt medical attention to avoid long term disability or death. Emergency Nursing is challenging, yet rewarding as long as we are in the right mindset to take care of people in any set of circumstances.

Revision of theory and practice of Emergency Nursing is essential for every nurse to handle all types of emergencies, using patient centered approach to care and an evidence based approach to practice. It also considers legal and ethical obligations and issues, workplace, health and safety risks and challenges of providing holistic care in any emergency situations. Taking up the challenge of emergency management as a nurse in any situation is considered to be the "front line" of patient care.

Nurses face many challenges on a day to day basis working as a part of a team evaluating and treating patients who have suffered a crisis, prioritizing the urgency of their care and providing emotional support to the patients and their family. Nurses need to have a broad set of skills, be familiar with a range of illness and emergencies to be able to "think on the run".

Nurses can also be members of disaster team carrying out rescues or assisting at the scene of a disaster. The nurses need to act with a high degree of autonomy and have the ability to initiate treatment with limited directions.

**"SO LET'S SUMMON OURSELVES FOR  
EMERGENCY NURSING."**

#### **Sub themes**

- Emergency Nursing Overview.
- Legal Aspects in Emergency Nursing.
- Trauma Emergency Overview.
- Neuro Emergencies.
- Obstetrics Emergencies
- Pediatric Emergency Overview.
- Psychiatric Emergency Overview
- Disaster Preparedness.

#### **Objectives**

1. Gain insight into scope and enhance critical thinking in practicing emergency nursing.
2. Critically analyze the legal aspects in emergency nursing.
3. Recognize the neuro emergencies and enhance skills to assess and manage neuro emergencies.
4. Recognize the trauma emergencies and enhance skills to provide primary advance trauma life care.
5. Recognize the obstetric emergencies and develop skills to manage antenatal, intranatal and postnatal emergencies.
6. Critically evaluate paediatric emergencies and develop skills to manage paediatric emergencies.
7. Critically evaluate psychiatric emergencies and develop skills to manage a violent patient.
8. Critically analyze the disaster situation and develop skills to manage it.



## **EDITORS' AND ORGANIZING CHAIRPERSON'S DESK**

**SMT BAKUL TAMBAT INSTITUTE OF NURSING EDUCATION, PUNE.**



This conference and its theme was a brainchild of our organizing secretary Ms. Nupoor Bhambid and our M. Sc (N) students. They wanted all nurses working in all specialties and all areas of work to attend this conference. They wanted a theme which all of us as nurses would have faced, are facing and are yet to face in future.

Our world's history of mankind reveals reports of war, diseases, plague and disaster. Throughout history we find somebody who took charge of helping the others in an emergency or crisis situation. Those early helpers were our forefathers and mothers of emergency nursing.

Emergencies are episodic, unscheduled and their management range from minimal intervention to life saving and advanced life support. Provision of appropriate, competent and quality nursing care in an emergency requires specialized knowledge, skills and aptitude. Emergency can occur at anytime, anyplace and to any person of any age, and its diversity ranges from individual illness, calamity to disaster affecting society.

Emergency nursing requires an amalgamation of assessment skills, intervention skills and management skills. Nurses are the frontline soldiers in saving the lives of those involved in an emergency. They are the unsung heroes who save several lives.

Our conference covered all the areas of emergency care ranging from need, critical thinking, legal aspects, primary, secondary survey and care, neurological assessment, advanced trauma life support. It also covered emergencies in obstetrics, gynecology, pediatrics and psychiatric with disaster management and triage.

I once again thank and appreciate my organizing secretary, her team and the scientific and souvenir committee for doing a great job.

It gave me immense pleasure to organize the conference and edit the souvenir on emergency nursing.

**Dr. Meena Ganapathy**  
**Principal & Organizing Chairperson**  
**MKSSS's BTINE, Pune.**



## **MESSAGE FROM SECRETARY**

### **MAHARSHI KARVE STREE SHIKSHAN SAMSTHA**



I congratulate the organizing and the technical committee of this national conference. Nursing education has started getting good registration while the demand for nursing assistance at hospital is still higher. The title of the conference is very relevant, to meet this demand qualitatively. Technological advances in use of tools in therapeutic as well as in patient care has definitely lead the medical sciences to new height. However, well preparedness of nursing staff to new tools and technics would consolidate the same.

I also congratulate the participants for coming up with rich content in their research papers and posters. I definitely could say that this conference would be remembered long for its academic and research value. These two days at BTINE campus would bring all academicians and practicing professionals together to share and contribute their experience for even better cause.

**Dr. P.V.S. Shastri**  
**Secretary**  
**Maharshi Karve Stree Shikshan Samstha,**  
**Karvenagar, Pune**



**MESSAGE FROM MEDICAL DIRECTOR**  
**DEENANATH MANGESHKAR HOSPITAL**



**Pt. Hridaynath Mangeshkar**  
Chairman  
**Dr. Dhananjay Kelkar, M. S.**  
Trustee & Medical Director

**LATA MANGESHKAR  
MEDICAL  
FOUNDATION**

Regd. No.: E/3068 (Pune)

**Message**

I am pleased to know that MKSSS's Smt. Bakul Tambat Institute of Nursing Education is organizing a National Conference on **Emergency Nursing: Saving Lives on the Frontline** on 7<sup>th</sup> and 8<sup>th</sup> April 2017.

Emergency Department is an area of the hospital where most seriously ill patients arrive. Immediate life saving treatment has to be given to these patients. The doctors and nurses in the Emergency Department have to be well trained and adequately skilled to **save lives**.

I am sure this conference on Emergency Nursing will introduce the nurses to this important specialty of Emergency Nursing.

I wish a grand success for this conference.

**Dr. Dhananjay Kelkar**  
Medical Director  
Deenanath Mangeshkar Hospital, Pune



PST747

**LATA MANGESHKAR MEDICAL FOUNDATION**

GEN007

C/o. DEENANATH MANGESHKAR HOSPITAL & RESEARCH CENTER  
Erandawane, Near Mhatre Bridge, Pune 411 004. Tel. : 66023000 / 40151000, Fax : 25420104. E-mail : [jprmt@vsnl.com](mailto:jprmt@vsnl.com) Website : [www.dmhospital.org](http://www.dmhospital.org)



## MESSAGE FROM SECRETARY-GENERAL

TNAI, NEW DELHI



I am happy to learn that Maharshi Karve Stree Shikshan Samstha's Smt. B .T Institute of Nursing Education is organizing National Conference on "Emergency Nursing: Saving Lives on the Frontline" and also releasing a souvenir on this occasion during April 7-8, 2017.

While emergency nursing has been in practice since ages, now it has become quite complex and challenging. Due to fast emerging changes in technology and life styles, novel sorts of emergencies are appearing in hospitals and other health settings.

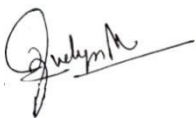
The life-threatening emergencies cut across all categories of age, gender, race, ethnicity and socioeconomic status. Therefore, emergency nursing is virtually synonymous with diversity.

Further, the increase in victims of road accidents and substance abuse necessitates emergency room nurses to stay more vigilant and be better equipped to handle the new categories of critical cases. I hope the deliberations of this conference shall help the participants' knowledge in this area.

I extend warm welcome to the resource persons and delegates participating in this Conference.

My regards to seniors and blessings to my dear students!

With Best Wishes

A handwritten signature in black ink, appearing to read 'Evelyn P. Kannan'.

**(Mrs.) Evelyn P. Kannan**  
**Secretary-General**



**MESSAGE FROM PRESIDENT**  
**TNAI MAHARASHTRA STATE BRANCH**



It's my great pleasure to interact with you. I appreciate the Team of Maharshi Karve Stree Shikshan Samstha's Smt. Bakul Tambat I.N.E., Pune for organizing National Conference on **"Emergency Nursing: Saving Lives on the Frontline"** Smt. Bakul Tambat was my Principal when I graduated from INE of J.J. Hospital. It is great to hear from her institution that such events are organized for development of nursing profession.

Emergency nurses play pivotal role in emergency department while performing as triage nurse. Their ability to rapidly assess and treat patients saves life of patients. Her continuous monitoring and vigilant observation prevents complications thus improving quality of life of her patients.

I am sure various deliberations in conference will provide knowledge about advanced nursing practices.

I wish the conference a great success!!!

**Mrs. Swapna Joshi**  
**Professor & Nursing Superintendent.**  
**Tata Memorial Hospital**  
**President**  
**TNAI MAHARASHTRA STATE BRANCH**



**MESSAGE FROM PRESIDENT  
TNAI PUNE CITY BRANCH**



I am elated to note that MKSSS's BTINE has taken the burden to develop skill/upgrade / the nursing fraternity by organizing a national conference on **“Emergency Nursing: Saving Lives on the Frontline”** An efficient and effective nurse is the ambassador of the profession.

We keep momentum of life by a process of continual value additions. This is particularly the need of our digital era when the pace of technology, rate of accumulating knowledge and ease of sharing is faster than any time in history. By understanding, learning and putting to use what better others are doing, one can definitely empower oneself with apt skills, hence the relevance of the theme of conference.

Nurses are charged with providing safe and effective care in both routine and emergency situations. Nurses are the key professionals in timely recognition, service availability, appropriate management, prompt referral and safe transportation to avoid further damage during emergency.

I am sure this conference will pave the way for new learning and the deliberations and will help the participants / delegates to develop nursing standards at global level. With participation of eminent nursing veterans as speakers, I am sure the conference delegates attending the conference shall find its transactions immensely beneficial.

I appreciate team of MKSSS's BTINE for their great efforts they have put to bring this event success. I wish good luck to the organizers and applaud the delegates who have joined them in great numbers.

A handwritten signature in blue ink that reads "Lpodder" with a horizontal line underneath.

**Dr. Lily Podder**  
**Associate Professor**  
**BVDU College of Nursing, Pune-43**  
**President, TNAI Pune city Branch**



## NEED FOR EMERGENCY NURSING



**Mrs. Tripti Nanda**  
**Chief of nursing services**  
**Columbia Asia hospital, Pune**

### **Components of emergency room**

- Health care team
- Well-equipped emergency room
- Patient

### **What is emergency nursing?**

The specialty of nursing in which nurses' care for the patient in the emergency or critical phase of their illness or injury.

### **Admirable attributes of an Emergency Nurse**

- ARE YOU suited for the fast life?
- ARE YOU good in people management?
- ARE YOU ready to accept the "organized Chaos"?
- ARE YOU a quick thinker?

### **Waiting room....**

- Middle aged person with sore ankle.
- Teenager is moaning and clutching his belly.
- The woman is coughing into her mask.
- An ambulance arrives- paramedics performing CPR.

### **WHAT DO WE NEED?**

- Need to use range of TECHNICAL knowledge
- Need to use range of INTUTIVE knowledge
- Need to use range of PERSONAL knowledge

**ULTIMATE DECISION:** how to best manage the patient?

**Let us work out ...**

- Middle aged person with sore ankle.
- Teenager is moaning and clutching his belly.
- The woman is coughing into her mask.
- An ambulance arrives- paramedics performing CPR.

### **PRINCIPLE OF EMERGENCY CARE**

- GA :38 weeks, unconscious
- Snake bite



- No pulse detected, no respiration
- 85 year old unconscious

### Interesting facts about emergency nursing

- Category of patient
- Diagnosis of patient
- Etiology
- Emergency and non – emergency case

### Triage

French, from trier, *to sort*

A method of quickly identifying victims who have immediately life-threatening injuries AND who have the best chance of surviving

### Tagging

- Rapid Identification of patient
- Color Coded / Bar Coded system
- Plastic “bands” can substitute tags

### Goals of Triage

- Rapidly identify patients with life threatening conditions
- Assess severity and acuity of the presenting problem
- Direct patients to appropriate treatment areas
- Re-evaluate patients awaiting treatment

### Principle of triage system

- Triage is a dynamic process.
- Reassessment & Re-assessment.
- A patient’s condition may improve or deteriorate during the wait for treatment.

### Advantages of Triage

- Streamlines patient flow.
- Reduces risk of further injury.
- Improves communication and public relations.
- Enhances teamwork.
- Identifies resource requirements.
- Establishes national benchmarks

Colour	Priority	Description
Red	1	May survive if given immediate simple life saving measures
Yellow	2	Should survive if given care within a few hours
Green	3	Walking wounded: minor injuries that do not require rapid care
Black	4	Deceased or severely injured patients unlikely to survive



## **Start system**

### **simple triage and rapid system**

- Created in the 1980's by Hoag Hospital and the Newport Beach CA Fire Department
- Allows rapid assessment of victims
- It should not take more than 15 sec/ Patient
- Once victim is in treatment area more detailed assessment should be made

## **Start system**

Classification is base on three ítems

- Respiratory
- Perfusion
- Mental status evaluation

### **START First Step**

Can the Patient Walk?

IF YES, Green (Minor)

IF NO, Evaluate Ventilation (Step-2)

### **START Step-2**

#### **Ventilation Present?**

IF YES,

> 30/Min **Red/ Immediate**

< 30/min ➡ **Evaluate Circulation (Step-3)**

IF NO,

**Open Airway Ventilation Present?**



↓  
**NO**



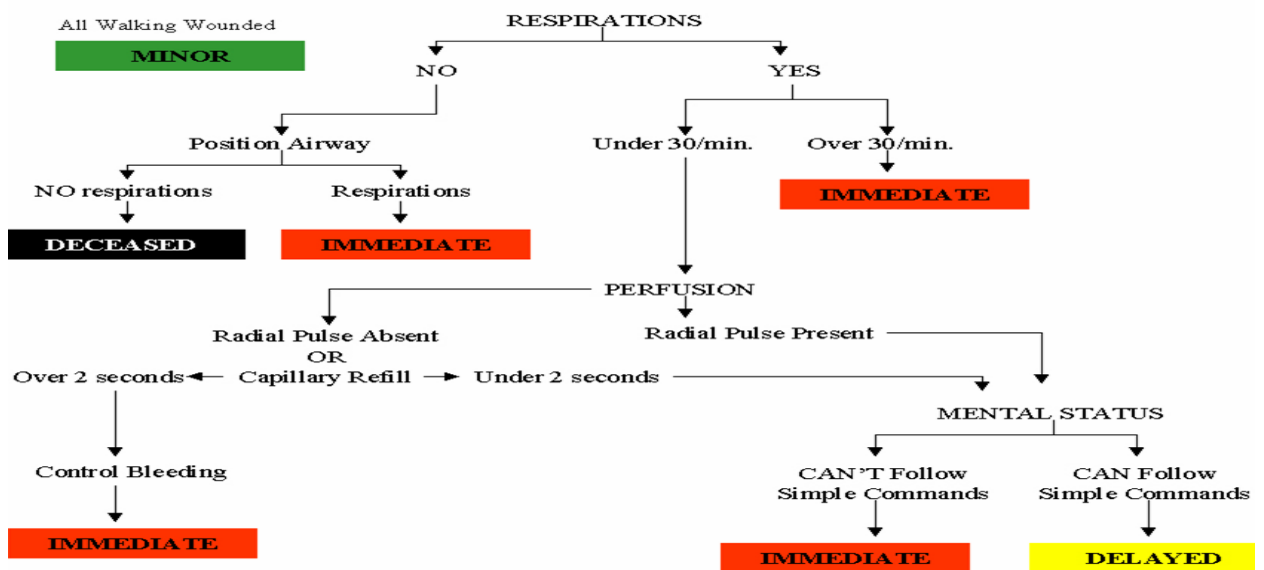
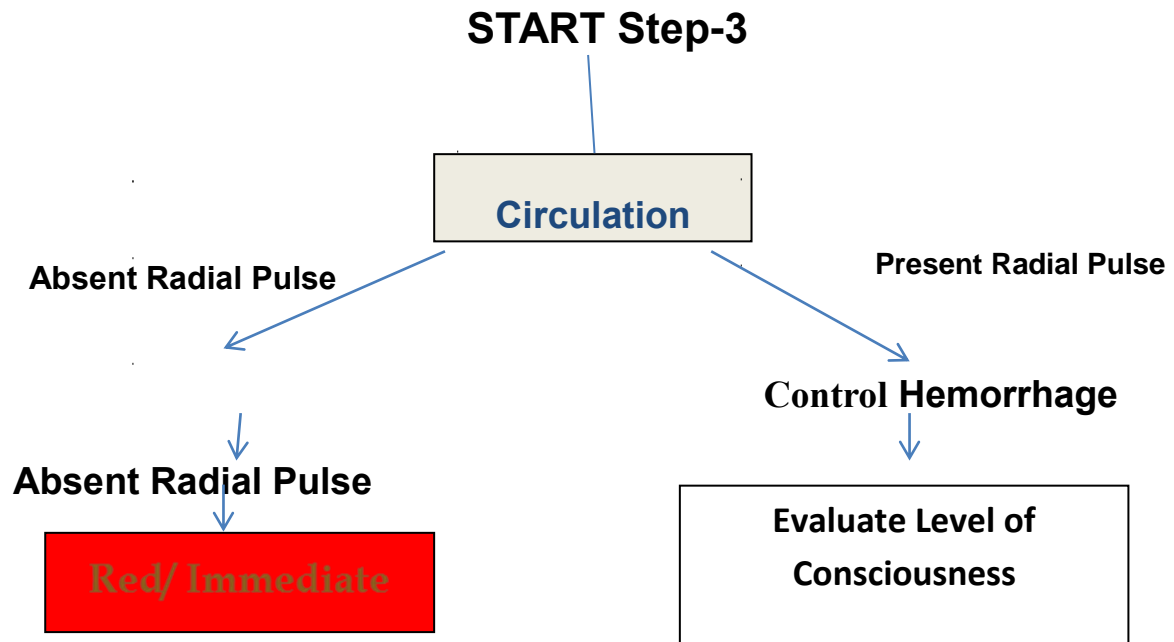
**Black**

↓  
**YES**



**Red/ Immediate**





### START-Overview

- Remember RPM
- R-Respirations- 30
- P-Perfusion- Radial Pulse
- M-Mental- Follows Commands

### What are resources?

RESOURCES	NOT RESOURCES
Labs	HX and physical exam.



ECG-X-rays C-T MRI	Point of care testing
IV Fluids /hydration	Saline or Hep lock
IV /IM Medication	PO. Medication
Specialty consult	Simple wound care (dressing check /recheck) crutches ,splints, slings
Simple procedure	
Complex procedure	

### **Key concept**

- Discontinue assessment and transport the patient immediately to the treatment area if immediate care is needed. Do not delay treatment to finish the assessment
- Never assume the accident caused the presenting condition. The presenting condition may have caused the accident.

### **Triage decision**

- Step1- visual
- Step 2- chief complaints
- Step3- focused assessment
- Step 4- pose hypothesis
- Step 5- determine acuity
- Step 6- reassess the acuity

### **Remember That:**

- Effective triage gets the patient
- To the right place.
- At the right time.
- With the right care provider.

### **Triage Robots**

- Robotics engineers at Vanderbilt University announced in December 2010 that they're building a prototype robot assistant called "Triage Bot" that registers ED patients, takes initial medical histories and alerts staff to critical symptoms such as chest pain. The robots also notify patients of wait times and provide directions to the waiting room. Other robots may check waiting-room patients' blood pressure, pulse and other vital signs and monitor changes in pain level, notifying staff if serious changes occur.

### **“Triage Bot System” would handle the 60 percent of patients in the ER who are not suffering life-threatening conditions”.**

- A robot registration assistant: It is capable of basic conversation that would register patients, gathering basic data including simple diagnostic data. It would ask what the chief complaint is, where it hurts and how high the pain level is. This robot may be a "smart kiosk," which consists of touch sensitive screens. It will enter data into the patient's file and direct the patient to the robot triage nurse assistant.
- A triage nurse assistant to take measurements. This robot could be a "smart" chair equipped with sensors to measure blood pressure, pulse, blood oxygen saturation,



respiration rate, height and weight. Those variables will help generate a score that assesses the patient's condition and priority in the triage queue. The patient then will be sent back to the waiting room. Mobile robot assistants to periodically check that patients in the waiting room are still conscious. These may take blood pressure and pulse measurements. If they encounter critical changes, they would alert human staff.

- A supervisor robot to act as the central manager. This robot would monitors the waiting room and calculate possible diagnoses and possibly suggest early testing or other non-physician care. It would link to hospital databases and communicate with the human ER staff.
- Mobile robot assistants to periodically check that patients in the waiting room are still conscious. These may take blood pressure and pulse measurements. If they encounter critical changes, they would alert human staff.



## CRITICAL THINKING IN EMERGENCY NURSING



**Mr. Shoukkathali V**  
**Nursing Officer,**  
**In charge Emergency Nursing Academic and Research Wing**  
**Dept. Of Emergency Medicine,**  
**JPN Apex Trauma Centre**  
**AIIMS, New Delhi**

### **Introduction**

Critical thinking is a method to evaluate information as a means to determine the best plan of action in a given situation. The role of the Emergency Nurse is to avoid creativity and imagination and focus on maintaining a level of professionalism to ensure the best decision is made. Emergency Nurse must probe, engage, be active, and ask questions to clarify the situation.

### **Purpose of Critical thinking In Emergency Nursing**

For nurses, this is not a new trend. Without even being aware of it, half the time, and nurses critically think their way through every day in Emergency. The thinking process that guides nursing practice must be organized, purposeful and disciplined because nursing decisions often profoundly affect their patient's lives.

Critical thinking is not limited to problem solving or decision making; professional nurses use critical thinking to make observations, draw conclusions, create information and ideas, evaluate, and improve their knowledge base.

- Nurses deal with change in stressful environments.

A client's condition may rapidly change and routine protocol may not be adequate to cover every unexpected situation. Critical thinking enables the nurse to recognize important cues, respond quickly, and adapt interventions to meet specific client needs at the right time.



- Nurses make important decisions.
- Generate many ideas rapidly.
- Create original solutions to problems.
- Be independent and self confident, even when under pressure.
- Demonstrate individuality

### **Components of critical thinking in emergency nursing**

- Scientific Knowledge Base
- Experience
- Competencies
- Attitudes
- Standards

#### **1. Scientific Knowledge Base,**

Emergency nurse needs high level of scientific knowledge of critical treatment decision (CTD) to think critically and end up with a fruitful conclusion. Without the basic knowledge regarding

the client's condition and the pathophysiology of the disease she can't start a open thinking.

2. Experience

Experience in the concern department especially emergency department and the experience of situation gives more ways to open the thinking process ,handle the situation and crisis.

3. Competencies

Nursing professional working in the Emergency department should be competent to handle the situation

4. Attitudes

Positive attitude to work and serve the emergency increase the level of thinking, Attitudes that foster the critical thinking are

- Independence
- Fair-mindedness
- Insight into egocentricity
- Intellectual humility
- Intellectual courage to challenge status quo
- Integrity
- Perseverance
- Confidence
- Curiosity

5. Standards

- Ethical criteria for Nursing judgment- Code of Ethics
- Criteria for evaluation- Standards of care
- Standards of professional responsibility that nurses strive to achieve are cited in Nurse Practice Acts

### **Critical Thinking in the ED (Real Life Examples From The Emergency Room)**

#### **Shortness of Breath:**

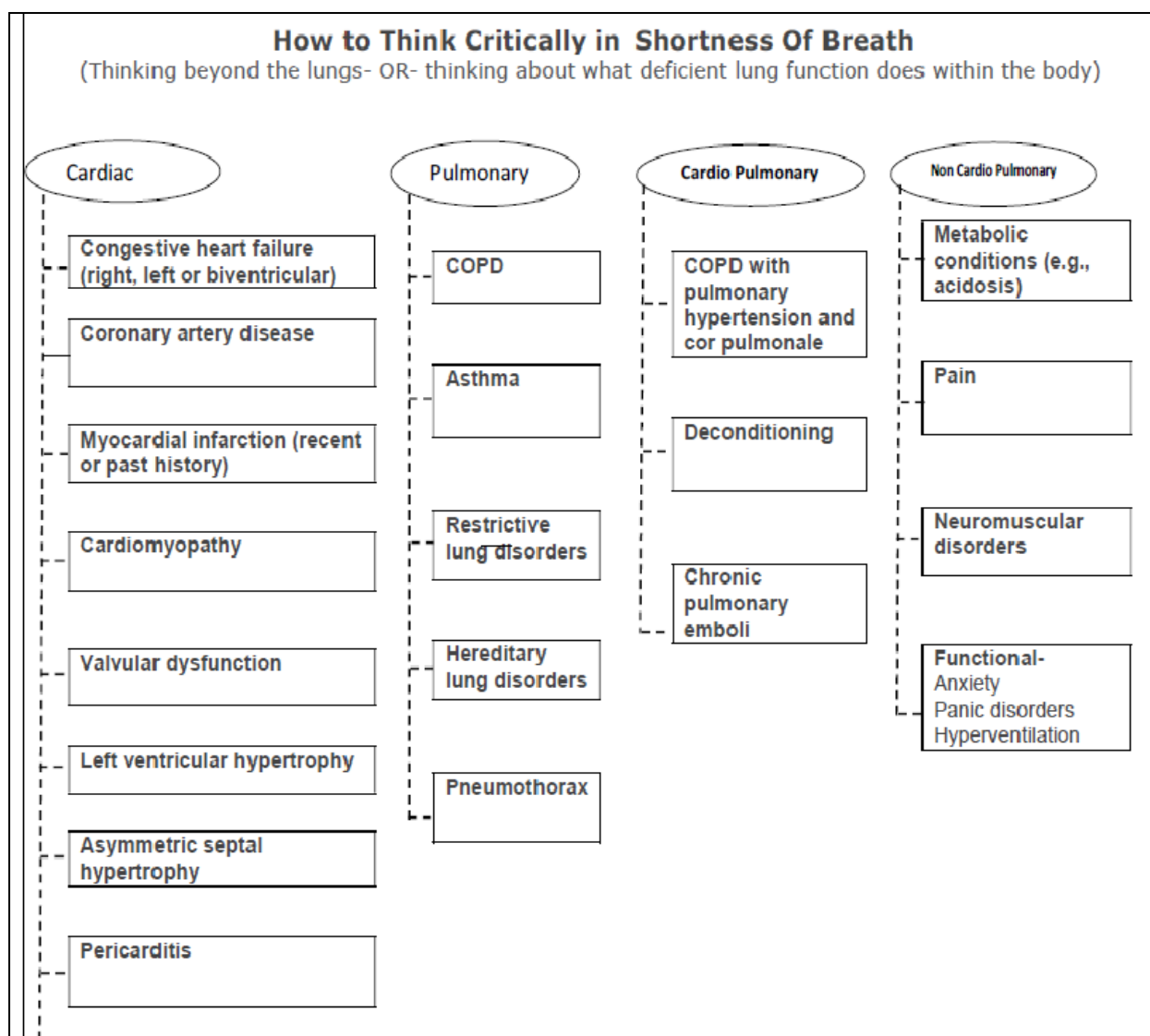
A young lady presented to emergency department with complaint of shortness of breath after assault by her boyfriend. Doctor assessed the client and diagnosed as functional disorder and advised to give inj Ativan, Nurse administered drug after getting the order, Patient's condition worsened and intubated and shifted to ICU.

- Was the patient assessed properly?
- Critical thinking was done?
- Treatment decision was right?
- Whether the all life threatening condition was ruled out?

#### **Thinking of Emergency nurse,**

As per history of the client the Doctor and Emergency nurse thought that the client was under anxiety,





1. Thinking beyond the lungs- OR- thinking about what deficient lung function does within the body!
2. Get Proper history-Past medical Condition
3. Get Vital Signs guides you to think in right direction
4. Get an EKG- to ruled out the cardiac cause
5. Get an Chest Xray Tell the clear picture of pulmonary system
6. Get The Blood sample report provides the information regarding metabolic cause
7. After ruling out the all critical causes ,Now we can thing about functional causes

## MEDICO-LEGAL AND ETHICAL ASPECTS IN EMERGENCY



**Dr. Saket Tilekar**  
**Professor, Deenanath Mangeshkar Hospital, Pune.**

### **Objectives:**

- Guiding principles for Healthcare professionals for complete patient care
- Learning's from judgments from supreme and high courts India
- Negligence and its legal liability on EM professional
- Consent and its legal liability on EM professional
- Documentation in EM and its legal liability on EM professional
- Ethics in Healthcare

### **Need of EM**

- EM intervention significantly reduce mortality and morbidity
- Fundamental rights to the citizens of India including
  - Right to health
  - Right to Doctor's assistance when needed.

### **General guidelines**

#### **A) Prognosis:**

- Should neither exaggerate nor minimize the gravity of a patient's condition.
- Knowledge of the patient's condition

#### **B) Incidences which needs to report without fail (Mandatory reporting):**

- Spouse abuse
- Child abuse and neglect
- Elder abuse
- Sexual assault
- Gunshot and stab wounds
- Animal bites
- Communicable diseases
- Notifiable diseases

#### **C) General instructions**

- Give respect.
- Maintain your skills and medical knowledge.
- Participate in continuing education.
- Critically review your performance, and constantly seek improvement.
- Report honestly and with respect for patient confidentiality.
- Work cooperatively and with respect for other emergency professionals

### **High Court and Supreme Court decisions**

- Parmanand Katara V. Union of India – Important points for EMS



- EMS response to Emergency
- EMS for all
- Hospital's liability to admit the patient
- Treating every patient
- Patient should not be neglected
- Role of police in medical-legal emergency

### **Negligence – implications for EM professional**

- Deviation from accepted standards of care recognized by law for the protection of others against the unreasonable risk of harm is called negligence

### **Components of Negligence claim**

- Duty to act. - Formal contractual or informal legal obligation to provide care
- Breach of duty - Action or inaction that violates the standard of care expected from the professional
- Actual damages –
  - Malfeasance—performance of a wrongful or unlawful act by a professional.
  - Misfeasance—performance of a legal act in a harmful or injurious manner.
  - Nonfeasance—failure to perform a required act or duty.
- Proximate cause- Refers to compensable physical, psychological, or financial harm

### **Medical Negligence under IPC**

- Where it jeopardizes human life and safety, but does not even cause hurt (section 336 of IPC) – Act endangering life of personal safety of others.
- Where it causes hurt, as defined in section 319 of IPC (section 337 of IPC)
  - ❖ whoever causes bodily pain, disease or infirmity to any person is said to cause hurt
- Where it causes grievous hurt, as defined in section 320 of IPC (section 338 of IPC) –
  - First – emasculation
  - Secondly- permanent privation of sight of either eye
  - Thirdly- permanent privation of the hearing of either ear
  - Fourthly- privation of any member of joint
  - Fifthly – destruction or permanent impairing of the powers of any joint
  - Sixthly- permanent disfigurement of head or face
  - Seventhly – fracture or dislocation of a bone or tooth
  - Eighthly- any hurt which endangers life or which causes the sufferer to be during the space of twenty days in severe bodily pain, or unable to follow his ordinary pursuits
- Where it causes death (section 304 A of IPC)
  - ❖ whoever causes death of any person by doing any rash or negligent act not amounting to culpable homicide, shall be punished with imprisonment of either description for a term which may extend to two years or with fine or both

### **Defences in criminal prosecution**

- Section 52- good faith – consent
- Section 80- accident in doing a lawful act
- Section 81- act likely to cause harm, but done without criminal intent, and to prevent other harm
- Section 87- act not intended and not known to be likely to cause death or grievous hurt, done by consent

- Section 88- act not intended to cause death, done by consent in good faith for persons benefit

## **Death**

- Resuscitation Issues - A death must be appropriately dealt with and documented by following death protocol

## **Crime and accident scenes**

- If you believe a crime has been committed, involve police.
- Protect yourself and other personnel.
- Initiate patient care only when the scene is safe.
- Preserve the scene as much as possible:

## **Documentation**

- General instructions
  - Don't indulge in falsification of records
  - Don't write long, defensive or derogatory comments and extraneous remarks
  - Don't write criticism, complaints, emotional comments, and extraneous remarks
  - Don't ,make erasures or use correction fluid to cover up entries, or tamper with the chart in any form
  - Draw a single line through error and then write it fresh with sign and date
  - Don't make entries made by others, especially paramedical staff, remember a medical record

## **Documentation of death on arrival patients**

- Report to police
- Make report in duplicate
- Make acknowledgement by police
- Retain your copy for records
- Mention following things in report to police
  - Name (if known)
  - At least two identification marks over exposed parts
  - Address
  - Person accompanying
  - From where the patient is brought
  - Cause of injury stated by patient or accompanying person
  - Injury present
  - Consciousness status when saw/brought
  - Vital signs
  - Time and date



### Diagnosing Death Checklist

Criteria	check (✓) wherever applicable	Comments
<i>No pulse on either side</i>		
<i>No Heart sounds</i>		
<i>Not recordable on either side</i>		
<i>No visible movements of the chest wall or abdomen.</i>		
<i>No breath sounds</i>		
<i>Dilated Pupils</i>		
<i>Fixed Pupils(no reactions)</i>		
Decapitation/ Decomposition		
<i>No Blinking of Eye lids</i>		
Rigor mortis		
ERCP conference for confirmation of above checklist before pronouncement of death		

### Death in Field

#### What is a Medico-Legal Case (MLC)?

- Any suspected HOMICIDE
- Any suspected SUICIDE
- Any death involving any ACCIDENT or INJURY
- Any death of a CHILD
- Any death in CUSTODY
- Deaths caused by SUSPECTED GROSS NEGLIGENCE during a Medical Procedure
- SUDDEN DEATH from an UNKNOWN cause or any death where there is no private attending physician
- UNIDENTIFIED persons
- OCCUPATIONAL Deaths (Work related)
- Unnatural Deaths in any Facility
- Any death that might ENDANGER or THREATEN the Public Health

### Documentation of death on arrival patients

- Provision of death certificate -
  - Nursing personal **do not issue death certificate** so advice appropriately to get the death certificate from relevant authority

### Documentation for Injury cases

- Name (if known)
- Two identification marks
- Address (if known)

- Person accompanying
- From where the patient is brought
- Cause of injury
- Level of consciousness
- Vital signs
- Patient clinical condition accurately
- Details of injury
- Prognosis
- Time and date

### **Confidentiality**

- Disclosure is permitted in following situations
  - Order from court of law
  - In criminal investigations
  - Healthcare professionals working with the patients
  - Incase communicable diseases, gunshot wound, child abuse, etc.
  - Public interest
  - Purpose of research, statistical evaluation and education
  - When assessing patient on behalf of insurance company or employer – written consent from patient is required
  - When assessing patient in private healthcare - written consent from patient is required

### **Documentation**

- Important points
  - Complete promptly after patient contact.
  - Be thorough.
  - Be objective.
  - Be accurate.
  - Maintain patient confidentiality.
  - Never alter a patient care record.

### **Referring Patients**

- When to refer/transfer patient
- Duties of referring professional

### **Other Laws**

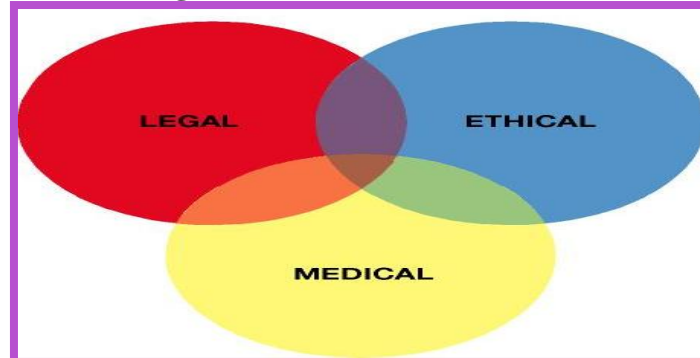
- Drugs and Cosmetics Act, 1940;
- Pharmacy Act, 1948;
- Narcotic Drugs and Psychotropic substances Act, 1985;
- Medical Termination of Pregnancy Act, 1971;
- Transplantation of Human Organ Act, 1994;
- Mental Health Act, 1987;
- Environmental Protection Act, 1986;
- Pre-natal Sex Determination Test Act, 1994;
- Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954;
- Persons with Disabilities (Equal Opportunities and Full Participation) Act, 1995 and
- Bio-Medical Waste (Management and Handling) Rules, 1998
- Consumer protection act



## Ethics VS. Morals

- **Morals** are the social, religious, or personal standards of right and wrong.
- **Ethics** are the rules or standards that govern the conduct of members of a particular group or profession.

## Relationship of Ethical and Legal Issues with Medicine



## Approaches to Making Ethical Decisions

- Ethical relativism suggests that each person must decide how to behave and whatever decision that person makes is okay.
- Some say, “Just do what is right.”

## Code of Ethics

- Many organizations have developed a code of ethics over the years for their members.
- Most codes of ethics address broad humanitarian concerns and professional etiquette.
- Very few provide solid guidance on the kind of ethical problems commonly faced by practitioners.

**To gain and maintain the respect of their colleagues and their patients, it is vital that individual EMSOs exemplify the principles and values of their profession.**

The single most important question an EMSO has to answer when faced with an ethical challenge is:

## WHAT IS IN THE PATIENT’S BEST INTEREST?

### 4 Principles to Resolve Ethical Problems

- Beneficence is the principle of doing good for the patient.
- Non-male faience is the obligation not to harm the patient.
- Autonomy is a competent adult patient’s right to determine what happens to his or her own body.
- Justice refers to the obligation to treat all patients fairly.

## Quick Ways to Test Ethics

- **Impartiality test**---asks whether you would be willing to undergo this procedure or action if you were in the patient’s place.
- **Universalizability test**---asks whether you would want this action performed in all relevantly similar circumstances.
- **Interpersonal justifiability test**---asks whether you can defend or justify your actions to others.

**Resuscitation Attempts**

- Learn the local laws regarding do not resuscitate (DNR) orders.
- Understand your local policy.
- “When in doubt, resuscitate.”

**Confidentiality**

- Your obligation to every patient is to maintain as confidential the information you obtained as a result of your participation in the medical situation.
- Reporting certain information such as child neglect or elder abuse are exceptions.

**Consent**

- Patients of legal age have the right to decide what healthcare they will receive.
- Implied consent may apply in cases where the patient is incapacitated or unable to communicate.
- Patients are generally able to consent or refuse care if they are alert and oriented, aware of their surroundings, and making sound judgments.
- When leaving the patient, he or she must understand the issues at hand and be able to make an informed decision.

**Allocation of Resources**

- Several approaches to consider...
  - All patients could receive the same amount of attention.
  - Patients could receive resources based on need.
  - Patients could receive what someone has determined they’ve earned.
- Triage is a common activity that demonstrates one method of allocating scarce resources.

**Obligation to Provide Care**

- A Health care professional
  - Has a responsibility to help others.
  - Is obligated to provide care without regard to the ability to pay or other criteria.
  - Has a strong ethical obligation to help others even while off-duty.

**Professional Relations**

- A healthcare professional answers to the patient, the physicians, medical director, and to his employer.
- Sometimes conflict arises out of such relationships.
- Know your policies and communicate.

**Summary**

- Medico-legal issues in healthcare
- Ethical issues in patient care

## LEGAL AND ETHICAL EMERGENCY ROOM NURSING



**Mrs Phalakshi Manjrekar**  
**Director Nursing**  
**P D Hinduja Hospital & MRC**  
**Mumbai**

*Justice is better when it prevents rather than punishes with severity.*

Will Rogers

Law is the result of the minimum level of shared values or ethics of a community of people. Law and ethics are related and Nurses may act in ways that are legal but not ethical, both law and ethics are related to politics. Hence the implications in Nursing are guided by an imaginary line the nurse needs to recognize, respect and follow.

Law reflects a body of rules to guide human action, failure to follow this, may lead to an act that may be punishable as depicted in the Indian Penal Code.

Laws are “rules of conduct, established and enforced by authority, which prohibit extremes in behavior so that one can live without fear for oneself or one’s property”. - Sullivan and Decker, 2001.

**EMERGENCY ROOM** is that department in any Hospital set up that caters to an individual, family or a group of citizens who have been afflicted by a medical situation that is unpredicted, unforeseen or has occurred in a mode of a minor or major disaster.

The Medical TEAM in the ER that include nurses are bid legally by

1. Common law
2. Criminal law
3. Civil law

The most common incidences noted in medico legal practices that affected the ER nurse in India during the past two decades were:

1. Intentional torts
2. Assault
3. Battery
4. Invasion of Privacy
5. Defamation of character
6. Unintentional torts
7. Malpractice Legal
8. Negligence



## **Ethics and ER**

Ethics have always been an integral part of nursing. Nurses at all levels/areas of practices experience a range of ethical issues during the course of their day- to-day work. Emergency care has come to be associated with high- tech, aggressive & often risk-filled medical care.

### **Ethical Principles include**

- Autonomy
- Beneficence
- Nonmaleficence
- Justice
- Veracity
- Fidelity

### **Implication of Law to the Nurse:**

Nurses have more responsibility in implementation and critical decision making in the ER and the increased numbers of Practice level Nurses multiplies these situations tenfold.

Law assists in the decision-making process involved in nursing practice and Law is there for the protection of nursing practice and also Law is there for the identification of the risk of liability.

### **THIS NEEDS TO BE UNDERSTOOD AND PRACTICED BY THE ER NURSE.**

#### **Basic Initiatives:**

The most basic initiatives which need to be classified are -

1. Signature and issues
2. Documentation affirmatives
3. Report It or Tort It
4. Rights to Privacy
5. Consent and regulations
6. Advance directives
7. Use of equipment – Functional tests and memory.
8. Assess, monitor and communicate
9. Who is the patient advocate?

## **DIRECTIVES**

**#HIPAA (Health Insurance Portability and Accountability Act of 1996)** -HIPAA defines numerous offenses relating to health care and sets civil and criminal penalties for them. It also creates several programs to control fraud and abuse within the health care system.

HIPAA AND ER NURSING: What are the implications?

**#EMTALA (Emergency Medical Treatment and Active Labor Act )** –patients treated under EMTALA may not be able to pay or have insurance or other programs pay for the associated costs, they are legally responsible for any costs incurred as a result of their care under civil law. Patients whose advance intention it is to receive medical care and fail to pay cannot be held criminally liable unless they intentionally and knowingly provide false identifying information to dodge billing.

## EMTALA AND ER NURSING IN HOSPITALS- PRIVATE/PUBLIC TRUSTS/GOVERNMENT OWNED

#Electronic health record - An electronic health record (EHR) is an evolving concept defined as a systematic collection of electronic health information about individual patients or populations.

### **EHR AND EMERGENCY NURSING – WHAT IS THE RELATION?**

NPA: - Nurse Practice Act – Rules and Regulations

#### **NPAs include:**

- Authority, power and composition of a board of nursing – Not adaptable
- Education program standards - Adaptable
- Standards and scope of nursing practice - Adaptable
- Types of titles and licenses – Partially adaptable
- Requirements for licensure – Mostly Adaptable
- Grounds for disciplinary action, other violations and possible remedies – May be formatted

To summarize medico legal nursing has a thin marking whilst practicing Emergency Room nursing and has a direct or indirect implication on the medical and the paramedical team.

Clinical nursing negligence cases are often complex cases requiring lawyers and their experts to unpick treatment offered to patients and determining if this fell below a reasonable standard. The majority of lawyers are not dual qualified as medical staff and therefore are reliant on nursing professionals to assist them with the interpretation of claimants' treatment via medical notes and records. A growing number of nurses work within the legal industry for both the claimant and defendant sides. There are two types of nursing roles: nurses assisting in the review and preparation of cases, and those providing an opinion as to the standard of care and future care needs of the injured patient. **The Medico-Legal Nurse Consultant** is now a new role which encompasses the nurse to assist a nurse in all nursing aspects inclusive of ER.

“In law a man is guilty when he violates the rights of other. In ethics he is guilty if he only thinks of doing so”.

Immanuel Kant

## **TRAUMA INCIDENCE, ASSESSMENT & PRIMARY SURVEY: ATLS MANAGEMENT AT HOME, ON TRANSIT & IN THE HOSPITAL**



**Lt. Col. Mrs. Vandana Agnihotri,  
Professor, College of Nursing,  
AFMC Pune**

### **“Trauma - The Neglected disease of Modern Developing Nations”**

#### **Introduction**

Trauma is the fourth leading cause of death in India and accounts for 8.5% of all deaths. A trauma-related death occurs in India every 1.9 minutes. The majority of fatal road-traffic accident victims are pedestrians, two wheeler riders and bicyclists. Increased pace of life in human pursuit of economic betterment & the consequences there of increases the vulnerability of human to trauma. The spectrum of trauma varies from the most trivial to fatal. At the extreme right of the spectrum is the poly trauma, which is potentially fatal situation. 22.8% of all Trauma is Transport related Injuries. Majority 77.2% is other trauma like:

- » Falls (pediatric age group)
- » Agricultural related trauma
- » Fire Arms, Intentional self-harm
- » Assault, Fall of objects
- » Burns, Drowning
- » Natural Disasters
- » Terrorist Attacks
- » Possibility of “NBC” events

The sooner a patient can get to a trauma centre the better his chance for survival. For every 30 min that passes beyond the first golden hour after injury, the odds against survival triple. Hence initial assessment and primary survey plays an important role.

#### **Initial assessment & Evaluation**

The first and key part of the assessment of patients presenting with trauma is called the primary survey. Aim of the Primary survey

- To detect respiratory and cardiovascular instability
- Rapidly Identify immediate life threatening injuries
- Prevent damage to spinal cord



- Efficiently organize either definitive therapy or transfer to a facility that provides definitive therapy

## **Triage**

a) Triage is the sorting of patients according to their need for treatment and the resources available. It starts at the scene and continues at the receiving hospital.

**Objective** of triage is to prioritize patients with a high likelihood of early clinical deterioration. Triage of trauma patients considers vital signs and pre hospital clinical course, mechanism of injury, patient age, and known or suspected co morbid conditions. During the primary survey, life threatening conditions are identified and management is begun simultaneously.

**Triage:** is done according to the 'ABCDE' principles

**A-Airway** maintenance with cervical spine control

**B-Breathing** and ventilation

**C-Circulation** with hemorrhage control

**D-Disability:** neurological status

**E-Exposure:** completely undress the patient

**Hence perform “ABCDEs.”**

## **A- Airway maintenance & cervical spine protection**

- Look- chest wall movements, retraction, nasal flaring.
  - Listen- breath sounds, stridor, obstructed ventilation.
  - Feel- air movements.
- Are there signs of airway obstruction, foreign bodies, facial, mandibular or laryngeal fractures?
  - Management may involve secretion control, intubation or surgical airway (E.g., cricothyroidotomy, emergency tracheostomy).
  - Establish a clear airway (chin lift or jaw thrust) but protect the cervical spine at all times. If the patient can talk, the airway is likely to be safe; however, remain vigilant and recheck. A nasopharyngeal airway should be used in a conscious patient; or, as a temporary measure, an oropharyngeal airway in an unconscious patient with no gag reflex. Definitive airway should be established if the patient is unable to maintain integrity of airway; mandatory if Glasgow Coma Scale (GCS) is less than 8.
  - Cervical spine protection is critical throughout the airway management process. Movement of the cervical spine could cause spinal injury so movement of the cervical spine should be avoided unless absolutely necessary for maintaining an airway. The trauma mechanism or history may suggest the likelihood of a cervical spine injury, but always assume there is a spinal injury until proven otherwise, especially in any multisystem trauma or if there is an altered level of consciousness. Inline immobilization and protection of the spine should be maintained and X-rays can be taken once immediately life-threatening conditions have been dealt with.

## **B-Breathing & Ventilation**

- Determine adequacy of ventilation.
- Exclude hemo/ pneumothorax, sucking chest wounds, flail segment.
- Assist ventilation as reqd.

Provide high-flow oxygen through a rebreather mask if not intubated and ventilated.

Evaluate breathing: lungs, chest wall, and diaphragm.

Chest examination with adequate exposure: watch chest movement, auscultate, and percuss to detect lesions acutely impairing ventilation:

- Tension pneumothorax - requires needle thoracotomy followed by drainage.
- Flail chest - management involves ventilation.
- Haemothorax - will usually require intercostal drain insertion.
- Pneumothorax - may require intercostal drain insertion.

It can be difficult to tell whether the problem is an airway or ventilation problem. What appears to be an airway problem, leading to intubation and ventilation, may turn out to be a pneumothorax or tension pneumothorax which will be exacerbated by intubation and ventilation.

## **C-Circulation with hemorrhage control**

- check pulse, capillary filling, BP
- obtain ECG
- grade shock according to vital signs
- obtain blood samples & correct hypo-volemia

a) Blood loss is the main preventable cause of death after trauma. To assess blood losses rapidly observe:

- Level of consciousness.
- Skin color.
- Pulse.
- Bleeding - this should be assessed and controlled:

b) IV access should be achieved with two large cannula (size and length of cannula is determinant of flow not vein size) in an upper limb. Access by cut down or central venous catheterization may be done according to skills available. At cannula insertion, blood should be taken for cross match and baseline investigations.

c) IV fluids will need to be given rapidly, usually as 250 ml to 500 ml warmed boluses (10-20 ml/kg in children). Often a total of 2-3 L of IV fluids is necessary (40 ml/kg in children), which will then need to be followed by blood transfusion (O negative to begin with, if typed blood is not available). Ringer's lactate is the preferred initial crystalloid solution.

d) Direct manual pressure should be used to stem visible bleeding (not tourniquets, except for traumatic amputation, as these cause distal ischemia).

e) Transparent pneumatic splinting devices may control bleeding and allow visual monitoring; surgery may be necessary if these measures fail to control hemorrhage.

f) Occult bleeding into the abdominal cavity and around long-bone or pelvic fractures is problematic but should be suspected in a patient not responding to fluid resuscitation. **Note:** response to blood loss differs in:

- Elderly - limited ability to increase heart rate; poor correlation between blood loss and blood pressure.
- Children - tolerate proportionately large volume loss but then rapidly deteriorate.
- Athletes - do not show the same heart rate response to blood loss.
- Chronic conditions and medication may affect response and early on in trauma management will not be known about.

## **D-Disability neurological status**

### **Evaluate central function**

- A: alert
- V: responds to vocal stimulus
- P: responds to painful stimulus
- U: unresponsive
- E: Evaluate pupil response to light

After A, B and C above, rapid neurological assessment is made to establish:

- Level of consciousness, using GCS.
- Pupils: size, symmetry and reaction.
- Any lateralizing signs.
- Level of any spinal cord injury (limb movements, spontaneous respiratory effort).
- Oxygenation, ventilation, perfusion, drugs, alcohol and hypoglycemia may all also affect the level of consciousness.
- Determine the disability of the patient by performing gross mental status and motor examinations. Determine whether a serious head or spinal cord injury exists. Assess the gross mental status using the Glasgow Coma Scale Examine the pupils for size, symmetry, and reactivity to light. Obtain an early assessment of spinal cord injury by observing spontaneous movement of the extremities and spontaneous respiratory effort.
- Pupillary asymmetry or dilation impaired or absent light reflexes, and hemiplegia or weakness suggest impending herniation of the cerebrum through the tentorial incisura due to an expanding intracranial mass or diffuse cerebral edema. These findings indicate the need for emergency treatment of intracranial hypertension, including administration of IV Mannitol, hypertonic saline, sedatives, and muscle relaxants, after obtaining a definitive airway. Urgent neurosurgical consultation is mandatory.



In the absence of a depressed level of consciousness, paraplegia or quadriplegia indicates spinal cord injury. Possibility of a spinal cord injury requires full spinal immobilization. If inspiratory efforts are weak or when a high cervical cord lesion is suspected, perform an endotracheal intubation.

Patients should be re-evaluated frequently at regular intervals, as deterioration can occur rapidly and often patients can be lucid following a significant head injury before worsening. Signs such as pupil asymmetry or dilation impaired or absent light reflexes and hemiplegia/weakness all suggest an expanding intracranial mass or diffuse oedema.

This requires IV Mannitol, ventilation and urgent neurosurgical opinion. Hypertonic saline can be used as an alternative to Mannitol especially in hypovolaemic patients.

- **E-Exposure for complete examination/environmental control**

- The final step in the primary survey includes patient exposure and control of the immediate environment. Completely remove patient clothes for a thorough physical examination. Undress the patient, but prevent hypothermia. Clothes may need to be cut off but, after examination, attend to prevention of heat loss with warming devices, warmed blankets. Treat prophylactically with the administration of warmed IV fluids, blankets, heat lamps, and warmed air-circulating blankets as needed etc. Also check blood glucose levels.

### **Resuscitation and Comprehensive Assessment**

- Perform several monitoring and diagnostic adjuncts in concert with the primary survey. Place ECG and ventilatory monitoring leads, and start continuous pulse oxymeter as soon as possible. Monitors provide data that are critical to guiding resuscitation.
- During the primary survey, when making diagnoses and performing interventions, continue until the patient condition is stabilized, the diagnostic workup is complete, and resuscitative procedures and surgeries are complete. This ongoing effort involves monitoring patient vital signs, protecting the airway with assisted ventilation and oxygenation as required and providing resuscitation with IV fluids and blood products.
- Patients with multiple injuries may require several liters of crystalloid over the first 24 hours to sustain intravascular volume, tissue and vital organ perfusion, and urine output. Administer blood for hypovolemia, which is unresponsive to crystalloid bolus. If ongoing blood loss is not controlled by direct pressure and transfusion with blood or blood products, surgery or imaging-based procedures may be required to attain hemostasis. The endpoints of resuscitation are normal vital signs, absence of blood loss, adequate urine output (0.5-1 cc/kg/h), and no evidence of end-organ dysfunction. Parameters, such as blood lactate levels and base deficit on an arterial blood gas, may be helpful with patients who are severely injured.

- An abundance of standard vital sign data guides evaluation and resuscitation of the injured patient.

If the patient requires an artificial airway, perform a gastric intubation to decompress the stomach and to lessen the likelihood of aspiration of gastric contents.

During the resuscitation phase, insert a urinary catheter to facilitate measuring the response to fluid resuscitation. Placement of a Foley catheter is contraindicated if urethral injury is evident. Signs of urethral injury include blood at the meatus, ecchymosis in the scrotum or labium majora, or a high-riding prostate, which can be identified during a rectal examination. Any of these findings mandate a retrograde urethrogram to exclude urethral injury prior to bladder catheterization.

When performing a triage with patients who have different types of injuries, the priorities of the primary survey help to determine precedence (e.g., a patient with an obstructed airway receives greater priority for initial attention than a relatively stable patient with a traumatic amputation).

When the primary survey is completed, resuscitation efforts are well established, and the vital signs are normalizing, the secondary survey can begin. The secondary survey is a head-to-toe evaluation of the trauma patient, including a complete history and physical examination, including the reassessment of all vital signs. Each region of the body must be fully examined. X-rays indicated by examination are obtained. If at any time during the secondary survey the patient deteriorates, another primary survey is carried out as a potential life threat may be present. The person should be removed from the hard spine board and placed on a firm mattress as soon as reasonably feasible as the spine board can rapidly cause skin breakdown and pain while a firm mattress provides equivalent stability for potential spinal fractures

### **The pre-hospital & Transit Phase**

- Co-ordination and communication with the receiving hospital so that the trauma team can be alerted and mobilized.
- Airway maintenance.
- Control of external bleeding shock.
- Keeping the patient immobilized.
- Information gathering: time of injury; related events; patient history. Key elements are the mechanism of injury to alert the trauma team to the degree and type of injury.
- Keeping time at the scene to a minimum.
- Continuous monitoring during the transportation

### **8. The hospital phase**

- Preparation of a resuscitation area.
- Airway equipment - laryngoscopes, etc. (accessible, tested).

- Intravenous (IV) fluids (warming equipment, etc.).
- Immediately available monitoring equipment.
- Methods of summoning extra medical help.
- Prompt laboratory and radiology backup.
- Transfer arrangements with trauma centre.

## 9. Imaging and Laboratory Studies

a) Radiographic imaging studies provide crucial diagnostic data that guide the initial evaluation. The sequence and timing of these studies are important. Stage the imaging studies so that lifesaving interventions identified in the primary survey and resuscitation phases are not impeded. Also, ensure that the patient is hemodynamically stable enough for transfer to the radiology suite.

### b) Anteroposterior radiographs

The AP chest radiograph is the most common imaging study performed on trauma patients. It can be easily obtained during the resuscitation phase, and it provides information on the presence of a hemothorax, pneumothorax, or pulmonary contusion. The AP chest radiograph also aids in the placement of chest and endotracheal tubes, which are critical to the resuscitation effort and the primary survey.

- This chest radiograph demonstrates bilateral pulmonary contusions in a trauma patient.
- For patients with blunt trauma, a portable AP pelvis film can easily be obtained during the resuscitation phase. This film can help confirm the presence of significant pelvic fractures which are often the sites of hemorrhage that require external fixation and/or angiographic embolization for control.
- The anteroposterior pelvis radiograph quickly helps identify major pelvic fractures and joint disruptions.

### c) Focused abdominal sonogram

- The focused abdominal sonogram for trauma (FAST) complements the portable chest and pelvis films. It is used to identify free fluid in the peritoneal cavity, pericardial effusion, hemothorax, and pneumothorax.<sup>[20]</sup> Because of its speed, sensitivity, and noninvasive character, FAST largely has supplanted other techniques for rapid assessment of unstable trauma patients.

### d) CT scan

- The CT scan is the definitive radiographic study in most patients with trauma. CT imaging of the abdomen, pelvis, chest, cervical spine, and head is the most sensitive and accurate noninvasive diagnostic tool for identifying major injury. Bedside assessment of blunt traumatic injury was recently evaluated to assess the impact of CT scans.
- CT scan of the abdomen identifies significant soft tissue injury with high sensitivity and specificity. A traumatic liver laceration due to blunt trauma with rib fragment penetration into the liver parenchyma is shown.



- Obtain a CT scan of the head to identify intracranial bleeding. The head CT scan for trauma identifies space-occupying lesions and directs operative evacuation.
- Obtain a CT scan of the chest to evaluate mediastinal injuries. For most patients with trauma, CT scans of the head, chest, abdomen, and pelvis are sufficient to guide operative and nonoperative management of injuries in their respective regions of the body. CT scans of the abdomen and pelvis usually are performed together, using both IV and oral contrast.

e) Spine evaluation

- CT scanning is replacing plain radiographs in many patients being evaluated for spine trauma. Many clinicians will scan the cervical spine in patients with other indications for scans of the head or the head and torso. Orthopedic and neurosurgical consultants are making increased use of CT in evaluation of the spine.
- Obtain plain x-ray films of the spine in patients with high-energy blunt trauma and in other trauma patients with known or suspected neurologic deficits if CT scanning is unavailable or if a complimentary image is desired.<sup>1</sup>

f) Angiography

- Angiography can be both a diagnostic procedure and a therapeutic procedure, and it is valuable in selected trauma patients. The most common indication for emergent angiography in trauma is to identify and control arterial bleeding from pelvic fractures or in the retro peritoneum. Angiography also facilitates non - operative management of injury to the liver, spleen, and kidney following blunt trauma.

g) Lab studies during the initial evaluation

- The most important lab study is the type and cross match, which often can be completed within 20 minutes of receipt of the blood sample.
- Arterial blood gases are also useful in the initial assessment period, although their use for serial monitoring has declined since the introduction of continuous pulse oximetry.
- A baseline hemoglobin or hematocrit determination is useful on arrival, with the understanding that in acute hemorrhage, a fall in hematocrit may not be apparent until autogenous mobilization of extravascular fluid or administration of IV resuscitation fluids commences.
- Urine screens for drugs of abuse commonly are ordered in trauma centers. For similar reasons, check blood alcohol and glucose levels to identify correctable causes of a decreased level of consciousness
- For most trauma patients, serum electrolytes, coagulation parameters, cell blood counts, and other common laboratory studies are less useful during the first 1-2 hours than they are after stabilization and resuscitation

In trauma centres, teamwork should ensure critically injured patients are evaluated as diagnostic procedures are performed simultaneously, thus reducing the time to treatment. A team approach is demanding of personnel and resources and, in smaller institutions, non-hospital settings or with mass casualties, available personnel and resources can rapidly be overwhelmed:

- **Selection of hospital:** is according to available services, so that trauma patients should be taken to trauma centres.
- **Multiple casualties:** where the number of patients and severity of injury do not exceed the capacity of the treatment centre, life-threatening injuries and multiple system injuries are treated first.
- **Mass casualties:** when the number of patients and severity of injury do exceed capacity of the treatment centre, patients are selected for treatment according to best chance of survival with least expenditure of resources (time, personnel, equipment, supplies).

## Conclusion

Since its inception, ATLS has become the standard for trauma care in American emergency departments and advanced paramedical services. The Society of Trauma Nurses has developed the Advanced Trauma Care for Nurses (ATCN) course for registered nurses. For speed and efficacy a logical sequence of assessment to establish treatment priorities must be gone through sequentially although, with good teamwork, some things will be done simultaneously (resuscitation procedures will begin simultaneously with the assessment involved in the primary survey, i.e. lifesaving measures are initiated when the problem is identified). Special account should be taken of children, pregnant women and the elderly as their response to injury is modified. The initial evaluation follows a protocol of primary survey, resuscitation, secondary survey, and either definitive treatment or transfer to an appropriate trauma center for definitive care. This approach is the heart of the ATLS system, which is designed to identify life-threatening injuries and to initiate stabilizing treatment in a rapidly efficient manner. Absolute diagnostic certainty is not required to treat critical clinical conditions identified early in the process. When resources are limited (e.g., one clinician), do not perform subsequent steps in the primary survey until after addressing life-threatening conditions in the earlier steps

## SECONDARY SURVEY AND INTERVENTION



**Mrs. Elaine Furtado**  
**Nursing consultant**  
**Mumbai**

Assessment and management of seriously injured patients is a challenging task and requires a rapid and systematic approach. This systematic approach can be practiced to increase speed and accuracy of the process, but good clinical judgment is also required. Although described in sequence, some of the steps will be taken simultaneously.

Sole reliance on the use of vital signs assessment may direct nurses' attention in detecting late stages of clinical deterioration. The importance of performing in-depth physical assessment to detect early signs of clinical deterioration needs to be highlighted to nurses. Studies done show that nurses/midwives use only 7.5% (i.e. 10/133) physical assessment skills. These skills mainly comprised of routine vital signs assessment and two additional core skills: skin and wound inspection.

The initial evaluation of a person, who is injured critically from multiple traumas, is a challenging task. Every minute can make the difference between life and death. Over the past fifty years, assessment of trauma patients has evolved because of an improved understanding of the distribution of mortality and the mechanisms that contribute to morbidity and mortality in trauma.

Mortality can be grouped into immediate, early, and late deaths. Immediate deaths are caused by fatal injury to the great vessels, heart, or neurological system. Immediate mortality occurs at the scene of injury. Early deaths may occur from minutes to hours after the injury. The aim of good trauma care is to prevent early trauma mortality. Early trauma deaths may occur because of failure of oxygenation of vital organs or central nervous system injury or both.

Principles involved in the initial assessment of a patient with major trauma are those outlined by the American College of Surgeons (ACS) in their Advanced Trauma Life Support (ATLS) guidelines or those of the Australasian College of Surgeons in the Early Management of Severe Trauma guidelines. These principles are –

- (1) Preparation and transport
- (2) Primary survey and resuscitation, including monitoring, urinary and nasogastric tube insertion and radiography
- (3) Secondary survey, including special investigations, such as CT scanning or angiography
- (4) On-going re-evaluation
- (5) Definitive care

The assessment and management in secondary survey presents a particular challenge in the community, as the differential diagnosis may be wide, and include potentially serious conditions. Whilst the practitioner may commonly encounter conditions such as stroke, MI and ACS, all patients will require careful assessment, to avoid the pitfalls of missing a serious

underlying diagnosis. Some symptoms may be non-specific, but indicate the possibility of rare conditions / situations, requiring urgent investigation and treatment.

Secondary survey begins after the 'ABCDE' of the primary survey - once resuscitation is underway and the patient is responding with normalization of vital signs. It is essentially a head-to-toe examination, with completion of the history and reassessment of progress, vital signs, etc. It requires repeat physical examinations and may require further X-ray and laboratory tests.

In simple terms, secondary survey refers to “**the performance of complete, thorough patient examination** to ensure no other injuries are missed”.

It comprises of 3 parts -

- \* History
- \* Examination
- \* Treatment (which basically involves monitoring, insertion of tubes and diagnostics)

## **HISTORY**

It is done using DeMIST, AMPLE, PQRST - It can be done at the same time as examination. Record/document what you are told by witnesses, what you see for yourself and what the person tells you

Document (DeMIST)

**D**escription of incident or illness

**M**echanism of injury

**I**njuries sustained

**S**igns and **S**ymptoms **T**reatment so far

Then, ask questions regarding (AMPLE) -

**A**llergies **M**edicines or current illness

**P**ast history of illnesses, injuries, surgical operations, admission in hospital

**L**ast time they ate or drank

**E**vent — what happened to cause the injuries, eg vehicular accident, burns

To find out how severe a symptom is ask (PQRST) -

**P**rovokes — increases or decreases it

**Q**uality — what is it like

**R**egion and **R**adiation — where is it, does it spread or stay in one place

**S**everity — how bad is it

**T**iming — when did it start, is it there all the time

## **EXAMINATION**

\* **Look** — use eyes, torch, otoscope, and ophthalmoscope

\* **Listen** — with ears, stethoscope

\* **Feel** — with your hands for injuries, do chest percussion

\* Start at top and work down — **head to toe, front and back**

### **Physical examination**

Physical examination will repeat some examinations already undertaken in the primary survey and will be further informed by the progress of the resuscitation. It aims to identify serious injuries, occult bleeding, etc. In this phase we carefully look and feel for the following signs of injury, using the acronym **DCAP-BTLS** (**D**eformities, **C**ontusions/bruise, **A**brasions, **P**enetrations, **B**urns, **T**enderness, **L**acerations and **S**welling)

**Head, neck and spinal examination:** First make sure the mouth and nose are clear. After checking airway, carefully look at the face, scalp, ears, eyes, nose and mouth using DCAP-



BTLS. A review of neurological status, including GCS score, is also undertaken. A full neurological examination should be performed including signs of meningeal irritation, higher mental function and cranial nerves if head injury is suspected. Inspect the neck anteriorly for evidence of airway or great vessel injury. Back and spinal injuries are commonly missed and pelvic fractures cause large blood loss, which is often underestimated. Logroll the patient with in-line stabilization of the head and neck. Palpate posteriorly for bony abnormality or tenderness, suggestive of cervical spine injury. Inspect the entire spine from the occiput to the sacrum for bony abnormalities, deformities, and tenderness. At the same time, perform a detailed survey of the back to identify penetrating injuries, ecchymosis or other injuries.

**Chest examination:** Palpate the chest wall for tenderness, instability or crepitation, followed by auscultation of the lungs and heart. In the patient with penetrating trauma, perform a thorough search for additional entry or exit wounds, including examining the axillae and back.

**Abdomen and pelvis examination:** Inspect the abdomen for distension or other evidence, suggesting gross intra-abdominal bleeding or injury. In patients with penetrating trauma, locally explore low-velocity wounds to determine if the muscular fascia is penetrated. Urgently explore high-velocity penetrating injuries in the operating room. Palpate the iliac crests for instability to detect significant pelvic fractures. Inspect for evidence of bleeding (ecchymosis) on the perineum, gross blood on vaginal and rectal examinations, and urethral injury.

**Extremities:** Check pulses, power, tone, reflexes, sensation, co-ordination, balance and gait. Assess for: burns (fluid requirements, inhalation injury); cold injury (continue resuscitation until re-warmed); high-voltage electricity injuries (extensive muscle injury likely to be concealed).

#### **TREATMENT/additional adjuncts to secondary survey:**

Monitoring, Pulse oxymetry, urinary and naso-gastric tube insertion and radiography if not already done in primary survey, need to be performed. Secondary survey also includes special diagnostic and laboratory investigations, as detailed below.

A range of further diagnostic tests and procedures may be required after the secondary survey. These include CT scans, ultrasound investigation; contrast X-rays, angiography, bronchoscopy or oesophageal ultrasound. The focused abdominal sonogram for trauma (FAST) complements the portable chest and pelvis films. A trauma clinician, who has been formally trained in the technique, quickly and easily performs this portable ultrasound examination in the trauma resuscitation room. It is used to identify free fluid in the peritoneal cavity, pericardial effusion, hemothorax, pneumothorax, etc.

Generally, do not perform diagnostic studies if the capability to act on the information gained is not immediately present. For example, patients with blunt trauma initially transported to small rural emergency departments frequently have indications for advanced imaging. If an appropriately trained surgeon is not present in the institution, then these studies are of questionable value, since they may delay the transfer of the patient to a trauma centre. Consequently, stage imaging studies and prioritize them based on patient stability, the practical utility of the data to be obtained and the imperative need for early transfer to obtain definitive care.

#### **Lab studies during the initial evaluation**

The most important lab study is the type and cross-match, which often can be completed within 20 minutes of receipt of the blood sample. Arterial blood gases are also useful in the initial assessment period, although their use for serial monitoring has declined, since the introduction of continuous pulse oximetry. A baseline hemoglobin or hematocrit determination is useful on arrival, with the understanding that in acute hemorrhage, a fall in hematocrit may not be apparent until autogenous mobilization of extravascular fluid or administration of IV resuscitation fluids commences. Urine screens for drugs of abuse commonly are ordered in trauma centres. For similar reasons, check blood alcohol and glucose levels to identify correctable causes of a decreased level of consciousness.

**Documentation:**

Keep meticulous records at all times. Teamwork with time-keeping and recording of clinical measurements and observations can be helpful. Some units have a member of the nursing staff, whose sole role is to record and collate patient care information accurately. Consent for treatment is not always possible with lifesaving treatment and consent may have to be taken later. Forensic evidence may be required in injuries caused by criminal activity.

A one-day workshop cannot be helpful to improve nurses' knowledge about triage and emergency nursing. The Emergency Department (ED) is all about prioritizing, being decisive about your plan and course of action, fostering a good team environment and following up on your actions, to determine when changes need to be made. ED nurses should show up on time, stay late and be eager to see patients and do procedures. Because of the fast-paced nature of the ED, be active in your pursuit to see particular cases and get procedures. Emergency nursing is not for the passive student/nurse. If taken advantage of, your clinical skills and procedural prowess will expand substantially during your time spent in the ED.

Management of emergency patients can be influenced by education and past experience. In health care, contemporary education approaches emphasize the need for active learning and increased use of simulated environments to reduce medical and nursing errors in the ED. In a study, it was found that nurses had good theoretical knowledge but that they often failed to respond appropriately. However, findings also indicated that the educational experience had a significant impact on nurses' reported learning and significant improvements in patient management skills. Encourage students and nurses to "think, decide and act". Clinical simulation, which should always include feedback techniques, can be enacted through mannequins, actors and role play, consolidating theory into practice, in a safe environment, whilst reducing the pressure on hospital learning environments. Simulation-based training increases self-reported knowledge and / or confidence in nursing and medical students, has benefits over didactic teaching techniques and most importantly, positively impacts patient care.

## MANAGEMENT OF NEUROLOGICAL EMERGENCIES



**Dr. Ravi Pratap**  
**MBBS, Dip. EMS, DEM**  
**FAEM (CMC Vellore), MEM**

Neurological emergencies can be broadly classified into –

1. Acute onset altered sensorium
2. Seizure Disorder
3. Stroke
4. Head Injury

### 1. Approach to altered sensorium

Acute onset altered sensorium can be because of many reasons. A patient who comes to the Emergency Department needs to be quickly and effectively evaluated and triaged per the presentation for a swift management.

The primary assessment includes assessment of the Airway. If compromised, the patient should be triaged as Priority One and attended to immediately.

Next come Breathing and Circulation. Respiratory rate and SpO<sub>2</sub> is a quick guide to the breathing, and Pulse and BP is a quick guide to the circulation. Capillary refill time and the hydration status are an important assessment points.

A quick blood sugar level at the bed side rules in or out a possibility of hypoglycemia. A thorough Glasgow Coma Scoring (GCS) evaluation is essential in managing a patient with altered sensorium.

An Emergency Nurse it is essential to elicit a brief but efficient history from the patient's attenders. One must not forget to ask for past-history and medication history from the patient.

Always remember to look for fever and nuchal rigidity in all patients with altered sensorium.

An acute altered sensorium can be because of –

1. Febrile delirium
2. Hypoglycemia
3. Encephalopathy
4. Alcohol intoxication
5. CNS Infection

6. Drug overdose/Poisoning
7. Intracranial bleeding
8. Seizure
9. Dyelectrolytemia
10. Head Injury
11. Stroke etc.

As an emergency nurse, it becomes a mandate to evaluate such patients and secure ABC at the earliest. Always find out the history and inform the doctor accordingly.

2. Seizure: Seizure is defined as an uncontrolled electrical activity in the brain causing physical convulsions and / or loss of consciousness

Management:

1. Maintain the airway
  2. Oxygen supplementation
  3. Prevent further injuries
  4. Keep the patient in left lateral position if possible
  5. Keep suction apparatus ready and use SOS to clear secretions
  6. Secure IV line as soon as possible
  7. If the patient is actively seizing – Inj. Lorazepam or Midazolam can be given IM or IV after doctor's order.
  8. Once seizure has been controlled – Strict monitoring of vitals is essential
  9. Never forget to check for blood glucose
  10. Ask for past-history and medication history
  11. Always ask for history of antiepileptic medication.
3. Stroke: Stroke is defined as sudden death of brain cells due to lack of blood flow to then, causing physical disability in the body.

Stroke is of 2 types – Hemorrhagic and Ischemic

- a. Hemorrhagic stroke is due to rupture of the blood vessel in the brain causing reduced blood supply to the brain cells.
- b. Ischemic stroke is due to blockage in the blood vessels carrying blood in the brain due to either an embolus or an atherosclerotic plaque.

Management:

Spot a stroke – Look for facial weakness/drooping  
 Look for one sided weakness or arm drift  
 Look for slurring of speech  
 Immediately shift [patient to tertiary care hospital

In hospital management – Stroke is a priority one patient  
 Secure airway  
 Start IV line and Draw samples  
 Take an ECG  
 Check blood sugar  
 Prepare for shifting to MRI / CT  
 Follow further doctor's orders



Remember – We only have 3 and ½ hours to treat the patient, so all work needs to be done swiftly and efficiently.

#### 4. Head Injury –

It is the commonest injury that a patient suffers in a road traffic accident. It can be fatal if not treated promptly.

Signs of head injury-

1. Loss of Consciousness
2. Projectile vomiting
3. Headache
4. Event/retrograde amnesia
5. Bleeding from ear/nose/throat
6. Battles' sign – Bruising over mastoid
7. Racoon's eye – Periorbital bruising

Management –

1. Secure airway and stabilize cervical spine
2. Secure a large bore cannula and draw samples
3. Supplement oxygen if spo2 is less than 94%
4. Assess GCS – Grade severity accordingly
5. Look for the pupils and rule out anisochoria if any
6. Prepare for a CT brain at the earliest

GCS- 14 and 15 – Mild head Injury

9-13 – Moderate Head Injury

8 and below – Severe Head Injury

If Head Injury has been established –

1. Monitor GCS very closely – Inform if you see a drop
2. Monitor vitals
3. Look for seizure
4. Keep a 15' head high position
5. Follow doctors' orders

## INITIAL ASSESSMENT AND MANAGEMENT IN TRAUMA



**Dr. Gouri Ranade**  
**Consultant in Emergency Medicine and Critical Care**  
**Deenanath Mangeshkar Hospital, Pune.**

### Case Scenario

- 46 year old male driver on a bike
- Lost control and hit a tree
- Was thrown off the bike
- Ambulance crew found him unconscious at the site
- Was brought to the hospital with cervical collar in place and bag mask ventilation

### What do you do?

- What is the sequence of priorities in assessing this patient?

### Objectives

- Identify the correct sequence of priorities for assessment.
- Apply the principles outlined in the primary and secondary surveys
- Understand why patient's medical history and the mechanism of injury are important
- Identify associated pitfalls
- Recognize patients who will require transfer for definitive management.

### Standard precautions

- Cap
- Gown
- Gloves
- Mask
- Shoe covers
- Protective eyewear / face shield

### Initial Assessment

- Primary survey and resuscitation of vital functions are done simultaneously using a team approach

## Concepts of Initial Assessment



**What is a quick, simple way to assess a patient in 10 seconds?**

- Ask the patient his or her name
- Ask the patient what happened



**What does that tell?**

- A Patent airway
- B Sufficient air reserve to permit speech
- C Sufficient perfusion
- D Clear sensorium

### **Primary Survey**

- Airway with c-spine protection
- Breathing and ventilation
- Circulation with haemorrhage control
- Disability: Neuro status
- Exposure / Environmental control

**What about .....?**

- Pregnant patients
- Elderly
- Obese
- Children
- Someone is stabbed
- Someone who has head on collision with a truck
- Someone who has jumped off a say a 4 storey building?

### **Airway**

- Establish patent airway and protect C-spine
  - Occult airway injury
  - Progressive loss of airway
  - Equipment failure
  - Inability to intubate

### **Breathing and Ventilation**

- Assess and ensure adequate oxygenation and ventilation
- Respiratory rate
- Chest movement
- Air entry
- Oxygen saturation

### **Circulation including haemorrhage control**

- Assess for organ perfusion
- Level of consciousness

- Skin color and temperature
- Pulse rate and character

### **Circulation management**

- Control haemorrhage
- Restore volume
- Reassess patient

### **Disability**

- Baseline neurologic evaluation
- Glasgow Coma Scale score
- Pupillary response

### **Environment/Exposure**

- Completely undress the patient
- Look for missed injuries
- Prevent hypothermia
- Log- roll
- Resuscitation Protect and secure airway
- Ventilate and oxygenate
- Stop the bleeding!
- Crystalloid / blood resuscitation
- Protect from hypothermia

### **Primary Adjuncts**

- Vital signs
- ABG
- ECG
- Urinary output
- Pulse oxymeter and EtCO<sub>2</sub>
- Urinary and gastric catheters unless contraindicated
- Diagnostic tools

### **Diagnostic Tool**

- Chest X-ray
- Pelvic X-ray
- FAST
- Cervical spine X-rays?

### **Primary Survey**

- The primary survey should be repeated frequently to identify any deterioration in the patient's status that indicates the need for additional intervention

### **Consider early transfer**

- Use time before transfer for resuscitation
- Do not delay transfer for diagnostic tests

### **Secondary Survey**

- The Complete History and Physical Examination



## **When to start the Secondary Survey?**

After:

- Primary survey is completed
- ABCDEs are reassessed
- Vital functions are returning to normal

## **Secondary Survey**

- History
- Physical exam: Head to toe
- Complete neurologic exam
- Special diagnostic tests
- Reevaluation

## **History**

- A-allergies
- M-medications
- P-pregnancy/past history
- L-last meal
- E-events/environment/mechanism

## **Mechanisms of injury**

- Pedestrian hit by car
- Head on collision with a fast moving truck
- Fall from height
- Assault



## **Minimise missed injuries**

- High index of suspicion
- Frequent re-evaluation and monitoring

## **Pain management**

- Relief of pain / anxiety as appropriate
- Administer intravenously
- Careful monitoring is essential

## **Transfer to definitive care**

- Those whose injuries exceed institutional capabilities
- Multisystem or complex injuries
- Patients with co morbidity or age extremes

### When to transfer?

- As soon as possible after stabilizing measures are completed

### Summary



## PANEL DISCUSSION ON OBSTETRICAL EMERGENCIES



**Dr. Shubhada Ponkshe**

**Associate Professor**

**MKSSS BTINE, Pune**

**Panel Members:**

**Dr. Gopal Gawade; Dr. Janhavi Dangare; Mrs. Madhura Waghmare.**

Ensuring quality of services at health facilities, particularly with references to pregnant women, mother and newborns is important. At present the quality of pre-service teaching and in-service training are largely focused on knowledge and provides limited opportunity for practicing the skill.

However today we have an opportunity for refreshing our knowledge and skills in managing most common obstetrical emergency conditions. There are numerous emergencies in obstetrics, however here we will be focusing on two major obstetrical emergencies namely APH, PPH, and PIH with convulsion.

### **BRIEF ACCOUNT OF ANTEPARTUM HEMORRHAGE (APH)**

Antepartum hemorrhage (APH) and Post-partum Hemorrhage PPH are contributing  $\frac{1}{4}$  of all maternal mortality rate or we can say 30% of all maternal deaths are due to hemorrhages. Antepartum hemorrhage (APH) is a grave obstetrical emergency and is a leading cause of maternal and perinatal mortality and morbidity in our country.

APH is defined as hemorrhage from the genital tract after 22 weeks of gestation but before the delivery of the baby. APH can be due to placenta praevia, abruption of placenta, or extra placental causes such as cervical polyp, carcinoma cervix, varicose veins, local trauma, condylomata, cervical erosion etc.

Three main causes of APH can be due to 3 causes:

- \* Placenta praevia: This is defined as implantation of the placenta at or near the cervix.
- \* Abruptio placentae (accidental haemorrhage): This is due to detachment of a normally located placenta from the uterus before the foetus is delivered.
- \* Ruptured uterus: Bleeding from a ruptured uterus may occur vaginally unless the foetal head blocks the pelvis. Bleeding may also occur intra-abdominally. Rupture of the lower uterine segment into the broad ligament, however, will not release blood into the abdominal cavity. Rather, it may form a hematoma in the broad ligament. Let us learn about management of cases with the condition below:

Presentation of case:

Primi gravida woman, 26 years old, 29 weeks of gestation, Comes to emergency room with complaint of per vaginal bleeding (Spotting) noted two hours back; hence she used sanitary pad.

## EXPERT SISTER

**Question:** Being a midwife what setup you should suggest for treating obstetric hemorrhagic emergencies?

**Response of expert nurse:** Setup for treating obstetric hemorrhagic emergencies:

### Labour room set up with reference to physical set up

- Labour room should be located near the operation theatre
- Proximity to other areas and essential support services such as the main wards, ICU, radiology, laboratory, blood bank, NICU etc.
- Store Room for Equipment: A separate room should be made to keep the equipment such as the sonography machine, portable X-ray machine, transport ventilator, nebulizer, radiant warmer, blood warmer, crash cart(s), BIPAP/ CPAP machine, etc.
- The beds should be at least 2 ft. from the back wall to give caregivers an easy access to the head in case of any emergency, bed with side railing and IV stand.
- There should be a partition between the rooms for ensuring privacy of the patients
- Proper Lighting
- General Store Room: A general store room should be made to keep bed linen, disposables and consumables, personal protective attire like caps and masks, slippers, etc.
- Proper hand hygiene equipment and prevention of Infection
- Laboratory backup facility for 24 hours.
- Nurse calling system with a central display and an audio-visual alarm.
- Trolley with, mouth gag ,tongue depressor ,airway , hammer, ophthalmoscope
- Suction machine with suction catheter.
- Medicine trolley includes Inj. mgso4, Inj. calcium gluconate, etc.
- Crash trolley includes all emergency drugs
- Patient monitor that includes BP monitor, spo2, pulse.
- Pharmacy should be well maintained with all drugs consumables etc.

**Moderator comments:** As sister said above physical setup is essential to treat obstetrical emergencies. We cannot predict immediately what will be diagnosis of patient came with. Hence additional to above we need supplies at near reach to manage obstetric emergency that are: Sterile IV cannula (18 gauge to 24 gauge) /IV catheter ; Sterile needles ; Sterile syringes; IV line/tubing ;Saline solution and/or Lactated Ringer's solution and plasma expanders, Sterile gloves; IV/IM and oral drugs that may be needed during an emergency: e.g., in ampoules (hydralazine, labetalol, magnesium sulfate, oxytocin, diazepam, ergotamine, etc.), in pill form (nifedipine, misoprostol, etc.).

## EXPERT SISTER

**Question:** In present case what condition do you suspect, how much blood loss do you expect and what will be your nursing actions?

**Response of expert nurse:** No answer

**Moderator comments:** As per the definition of APH is the hemorrhage from the genital tract after 22 weeks of gestation, in above case woman is 29 weeks of gestation hence she can be suspected as APH but need to find out the etiology behind it.

Blood loss estimation can be done by assessing sanitary napkin and patient history related to bleeding. Blood loss can be because of a small amount of blood on toilet paper or underwear, or is it post-coitally or pools of blood gushing down legs, on floor. Blood loss estimation is essential to classification of hemorrhage it is as:

1. Spotting – staining or streaking noted on underwear.



2. Minor haemorrhage – blood loss less than 50 ml which has settled.
3. Major haemorrhage – blood loss of 50-1000 ml, with no clinical signs of shock.
4. Massive haemorrhage - blood loss greater than 1000ml and/or signs of shock.

**Nursing actions:**

**In case of placenta praevia speculum examination is excluded.**

1. Inform obstetric consultant, registrar.
2. Consider insertion of 18 gauge or/ big bore cannula to gain venous access if there is evidence of fresh blood loss or placenta praevia. Take blood samples for full blood count, group and cross match.
3. If preterm delivery is anticipated, a single course of antenatal corticosteroids (dexamethasone 12mg 12 hourly, 2 doses) to women between 24 and 34 weeks 6 days of gestation.
4. In the event of major APH, vigilant approach to care and admission is required. Addition to above insert 2 big bore cannula.
5. Assess airway, breathing, evaluate circulation, oxygen by face mask at 10-15 litres /minute; Left lateral tilt and keep the woman warm.
6. Insert an indwelling urinary catheter with urometer record hourly urine output
7. With doctor consultation, administer Transfuse blood as soon as possible ; If cross-matched blood is still unavailable, infuse up to 3.5 litres of warmed crystalloid Hartmann's solution (2 litres) and/or colloid (1-2 litres) as rapidly as required.
8. Maintain strict fluid balance chart.
9. Continuous monitoring of the fetal heart to assess fetal wellbeing; arrange an ultrasound scan on labour ward.

**EXPERT DOCTOR**

**Question:** Please highlight your expectation from nurse, in this case.

**Answer:** As in this case patient is presented with minor APH, hence we can call it as an imminent emergency but many times it may be immediate emergency. Hence we expect registered Nurse Midwife must be prepared to provide the best possible management for unexpected events.

**Question:** Please explain us the differential diagnosis in this case.

**Answer:** Descriptions of the clinical features associated with placenta abruptio and placenta previa. The information may be used to help differentiate between these two types of APH, and plan care accordingly.

<b>Abruptio Placenta</b>	<b>Placenta Previa</b>
May be associated with hypertensive disorders, uterine overdistension, abdominal trauma	Associated with previous uterine surgery, including cesarean section
Presenting part may or may not be engaged	Head or presenting part is high, or the lie may be unstable
Abdominal pain and/or backache (often unremitting)	Painless (unless in labour)
Uterine tenderness	Uterus not tender
Increased uterine tone	Uterus soft
Uterine irritability or contractions	No uterine irritability or contractions
Usually normal presentation	Malpresentation and/or high presenting part
Fetal heart may be abnormal or absent	Fetal heart usually normal
Shock and anemia out of proportion to apparent blood loss	Shock and anemia correspond to apparent blood loss
May have coagulopathy	Coagulopathy very uncommon initially
Abruptio may be seen on transabdominal ultrasound, but a negative ultrasound does not rule out abruptio	Transvaginal ultrasound is the definitive diagnostic test for placenta previa (see Appendix 1 – Obstetrical Imaging)

### EXPERT DOCTOR:

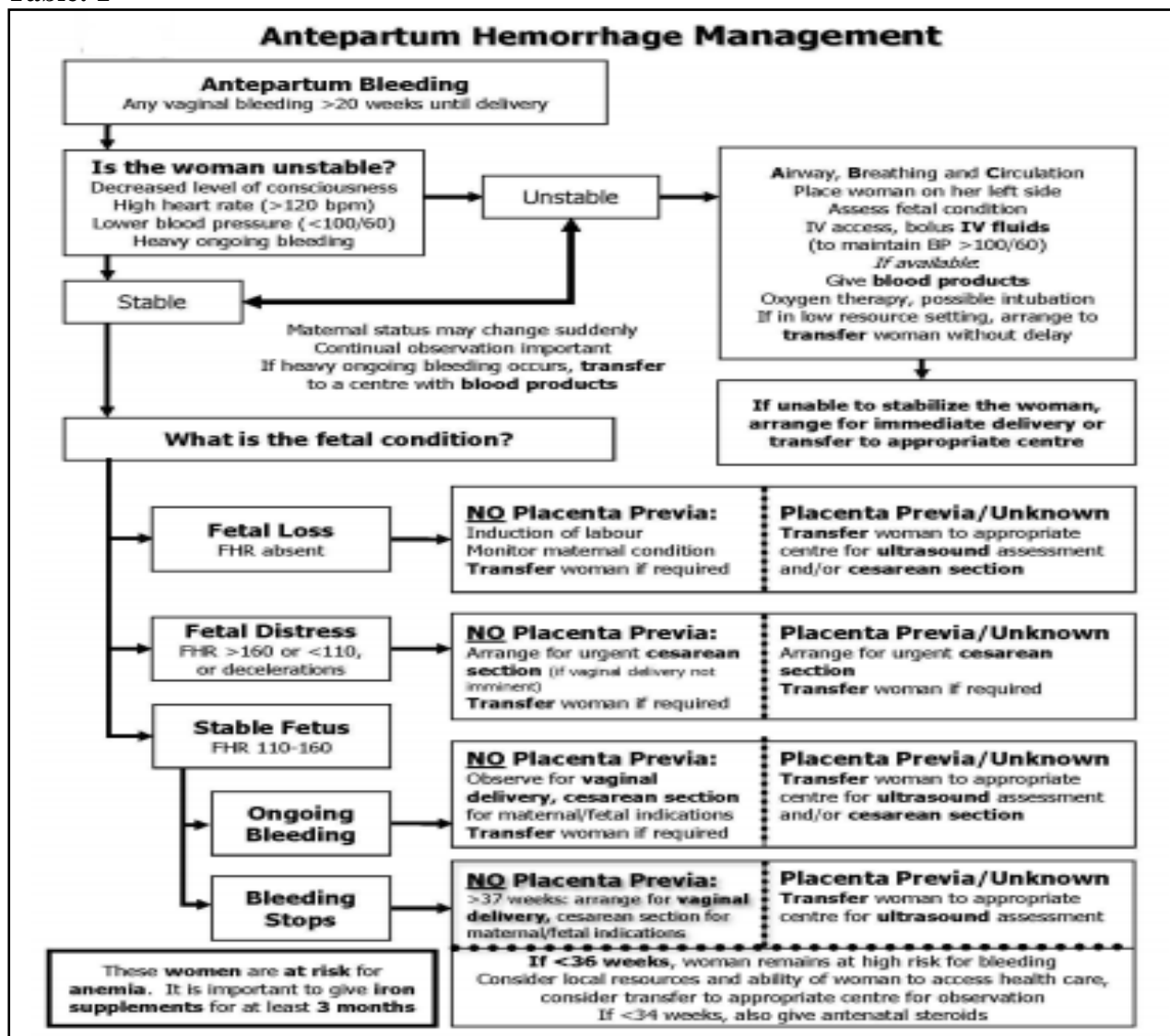
**Question:** Please tell us your plan of medical management for same case. In general management of the APH is in table 1.

However in the present case:

Vaginal examination at the health facility is **CONTRAINDICATED** for fear of heavy bleeding. If need to confirm the diagnosis it is done in operation theater. Palpate the Abdomen for confirmation to identify underline cause.

<b>Palpate the Abdomen</b>		
↓	↓	↓
Placenta Praevia	Abruptio placentae	Rupture uterus
<ul style="list-style-type: none"> <li>Bleeding is painless, causeless and recurrent.</li> <li>Uterus is relaxed.</li> <li>FHS usually present (may be absent).</li> </ul>	<ul style="list-style-type: none"> <li>Abdominal pain</li> <li>Anaemia out of proportion to blood loss (concealed abruption).</li> <li>Uterus is tense and tender.</li> <li>Fetal parts are not easily felt.</li> <li>FHS is usually absent (may be present).</li> </ul>	<ul style="list-style-type: none"> <li>Shock.</li> <li>Abdomen – tender</li> <li>uterine contour - not felt / may be felt on one side of lower abdomen.</li> <li>Fetal parts - Superficial.</li> <li>FHS absent.</li> </ul>

Table: 1



Management of this case would be:

1. Preterm labour is onset of labour after 20 weeks and before 37 wks. of gestation.
2. Estimate gestational age of foetus.
3. Administer antibiotics.
4. < 34 weeks Inj. Betamethasone 12 mg. IM, first dose.
5. Give first dose of Tocolytics.

## BRIEF ACCOUNT OF POSTPARTUM HAEMORRHAGE

PPH is one more obstetric emergency condition which is increasing globally because of high rates of induction of labor and rising cesarean rates. Among all PPH cases, 40% cases are from PPH due to high risk factors and remaining 60% are due to low risk group. Hence I think any mother is potential candidate for PPH. Now I request the Panelist to respond to case.

## **PRESENTATION OF CASE-2**

Gravida 2; Para 2, Spontaneous labor; 8 hours labor duration, second stage 35 minutes.

### **EXPERT SISTER**

**Question:** Does the above said patient have a risk of PPH? What are the risk factors for PPH?

**Answer:** According to me above said patient is not at the risk for PPH.

And the risk factors for PPH are

**Moderator comments:** According to research studies 60% of reported cases do not have any risk factor for PPH. Hence the presented case could be consider as case for PPH. Hence the midwife should be prepared for it.

**Question:** What are the risk factors for PPH?

**Answer: Antenatal risk factors:**

- Antepartum haemorrhage in this pregnancy.
- Placenta praevia.
- Suspected or proven placental abruption.
- Multiple pregnancies also other causes of uterine over-distention such as polyhydramnios or macrosomia.
- Pre-eclampsia or pregnancy-induced hypertension.
- Grand multiparity (four or more pregnancies).
- Previous PPH or previous history of retained placenta.
- Maternal obesity. Body mass index  $>35 \text{ kg/m}^2$
- Existing uterine abnormalities.
- Maternal age (40 years or older).
- Maternal anaemia Hb  $<9 \text{ g/dL}$

**Factors relating to delivery:**

- Emergency caesarean section
- Elective caesarean section
- Retained placenta
- Mediolateral episiotomy
- Operative vaginal delivery
- Labour of  $>12$  hours
- $>4 \text{ kg}$  baby
- Maternal pyrexia in labour

**Pre-existing maternal haemorrhagic conditions:**

- Factor 8 deficiency - haemophilia A carrier.
- Factor 9 deficiency - haemophilia B carrier.

**Moderator comments:** I think all the points are covered; I would like to add few points that PPH may be immediate or delayed.

Immediate PPH may be due to a number of causes, such as:

The causes of primary PPH include:

1. Atonic uterus (due, for example, to retained placenta or membranes);

2. Genital trauma (including both spontaneous trauma and trauma caused by treatment or interference, e.g. instrumental delivery including Caesarean section, episiotomy);
3. Primary haematological disorders (e.g. von Willebrand's or other clotting factor deficiency);
4. Disseminated intravascular coagulation (rare);
5. Inversion of the uterus (rare).

The last two causes are associated with a high incidence of maternal death.

#### Secondary PPH

1. The causes of secondary PPH are:
2. Retained fragments of placenta or membranes;
3. Shedding of dead tissues following obstructed labour (this may involve cervix, bladder, rectum);
4. Breakdown of uterine wound (after Caesarean section or ruptured uterus).

Secondary PPH can occur at any time from 24 hours after delivery up to the sixth postnatal week, but the most common time is between 7 and 12 days after delivery.

#### **Question: What will be nursing actions in case of PPH?**

**Answer:** No answer

**Moderator comments:** Shout for Help: Mobilise all available health personnel; Evaluate Vital Signs: Pulse, BP, respiration and temperature; Establish IV. Line; draw blood for blood grouping & cross matching and catheterize the bladder; Start rapid infusion of Normal Saline/Ringer Lactate & 1L in 15-20min, if possible; Massage the uterus to expel the clots; Give Oxygen @ 6-8 L per minute by mask ; Monitor Vital Signs and blood loss (every 15 minutes); Monitor fluid intake and urinary output. Check to see if placenta has been expelled. Give uterotonics, i.e. ergometrine (0.5 mg) or methergine (methylergometrine) (IV or IM) or oxytocin (10–20 units IM or IV). Check that the placenta and membranes are complete. If retained bits of placenta are suspected, the women will need curettage of the uterus to remove them. Keep the uterus well contracted. Try putting the baby to the breast or use nipple stimulation if the baby will not suckle. (If in hospital add 40 units of oxytocin to 1 litre and run it at 40 drops per minute; you may need to set up a second intravenous drip.) If the bleeding persists and the uterus keeps relaxing, use bimanual compression; if the bleeding persists and the uterus is well contracted, examine the vagina and cervix for lacerations which are bleeding. In cases of severe shock use plasma expanders till the blood transfusion, available. If there are any indications that infection may be present, including fever, chills or foul smelling vaginal discharge, start broad-spectrum antibiotics according to doctor's order. If there are no facilities for advance treatment refer patient with continued treatment to referral unit.

#### **EXPERT DOCTORS**

**Question:** Do you agree to the statement that increases in the rate of Cesarean section made women more prone for PPH.

**Answer:** Yes we are not disagreeing with the statement because the research studies have notated that intra operative blood loss and operative procedure causes uterine atony.

**Question:** Do we need to offer prophylaxis against PPH? Why & in what form.



**Answer:** For prevention of PPH we can administer combination of misoprostol 600 microgram rectally at the time of scrubbing, in addition to oxytocin 20 IU in 500 ml N.S infusion over 30 minutes.

FOGSI recommends active management to prevent PPH in cesarean sections. Oxytocin (IM/IV diluted) is the recommended uterotonic drug for the prevention of PPH in cesarean section. Oxytocin 10 units IM is recommended. If administered intravenously it should be given in a dose of 5 units diluted to 5ml over 1 minute. Intravenous infusion of oxytocin 10-20 U in 500ml (150ml/hour) is acceptable alternative. Cord traction is the recommended method for removal of the placenta in cesarean section.

**Question:** Explain us; is there a high risk for PPH? What form of prophylaxis should be used in these cases? What will be the protocol for oxytocin? How long oxytocin takes to work?

**Answer:** Woman undergoing Cesarean section may have following risk factors:

Factors placing the woman at increased risk		
Predating present pregnancy	Arising during present pregnancy	Arising during labour
Primigravida	Placenta praevia	Induced labour
High parity (5+)	Abruption placenta	Prolonged/obstructed labour
Fibroids	Polyhydramnios	Precipitate labour
Previous retained placenta, previous PPH	Multiple pregnancy	Forceps delivery
Previous surgery to the uterus including previous Caesarean section	Intrauterine death	Caesarean section
Previous prolonged/obstructed labour	Eclampsia	General/epidural anaesthesia
Pre-existing disease (cardiac disease, diabetes, clotting defects)	Hepatitis	Chorio-amnionitis
Anaemia	Any condition associated with anaemia (e.g. malaria, hookworm)	Disseminated intravascular coagulation

Amongst these factors many are avoidable such as anaemia, induction of labour, etc.

Active management of third stage of labor (AMTSL) is a prophylactic, deliberate, effective intervention to ensure smooth expulsion of the placenta and prevention of postpartum hemorrhage.

Components of AMTSL are Components of the AMTSL primarily are administration of uterotonics, controlled cord traction and uterine massage after the delivery of the placenta. Oxytocin 10 units administered intramuscularly are the preferred medication and route for the prevention of PPH in low-risk vaginal deliveries. Oxytocin 5 IU diluted to 5ml and given intravenously over 1 to 2 minutes can also be used. Intravenous infusion of oxytocin 10-20 U in 500ml (150ml/hour) is an acceptable alternative or an additional method. If oxytocin is not available, Methylergometrine 0.2 mg intramuscular can be used. Misoprostol 600 mcg orally/rectally can be used if injectable uterotonics are not available. Physiological prevention of PPH –nipple stimulation or early breast feeding is advocated as a possible adjuvant method. Note that in cases of multifetal pregnancy, all fetuses must be delivered prior to administration of oxytocic drugs to avoid intrauterine asphyxia. Methyl ergometrine should not be given to women with hypertension, cardiac disease, severe anemia and Rh negative mothers. Protocol for oxytocin and time duration for its action:

Drug	Dosage route of administration	Action	Side effects	Caution
Oxytocin	10 U IM 5 U IV diluted to 5 ml over 1-2 mins slow 20 U in 500ml NS/RL infusion @ 150 ML/hour	Onset 2-3 mins Lasts upto:15-20 mins	None or minimal	direct IV oxytocin contra indicated in cases of cardio vascular failure and heart diseases.
Misoprostol	600 mcg oral/SL/PR	Onset 3-5 mins. Peak 20-30 mins Lasts upto:75 mins	Shivering ,slight rise in temperature	No contraindications
Ergometrine	0.2 mg IM	Onset:2-7mins Lasts 2-4 hours	May increase risk of retained placenta ,nausea vomiting, headache ,hypertension	Avoid in hypertension, heart disease, Rh negative mothers
Carboprost	250 mcg IM	Onset: 1-2 mins Lasts 15-20 mins	Vomiting, diarrhea ,bronchospasm	Avoid bronchial asthma

### PRESENTATION OF CASE-3

Patient delivered at home before 1 hour (Night time) rushed to hospital for bleeding per vaginally, on examination relaxed uterus, pulse 40/ minute, BP 80 mm of Hg systolic. Anesthetic and blood will require 30 minutes. (We will not go in to basic management).

### EXPERT DOCTOR

**Question:** Give us information about the mechanical measures to prevent PPH?

**Answer:**

#### 1. Bimanual compression of the uterus

- Wearing sterile gloves insert a hand into the anterior fornix of vagina and form a fist.
- Apply pressure against the anterior wall of the uterus.
- With the other hand on the abdomen, apply pressure against the posterior wall of the uterus.
- Maintain compression until bleeding is controlled and the uterus contracts.

#### 2. Internal bimanual compression

- Internal bimanual compression is advisable in the following circumstances:
- Severe haemorrhage if external compression is not effective; if bleeding persists after manual removal of the placenta; sometimes in case of anaesthesia.

#### Procedure for internal bimanual compression of the uterus

- Scrub your hands and use sterile gloves.
- Place your left hand on the fundus as in external bimanual compression. Gently introduce your right hand into the vagina and make it into a fist. Exert pressure by the left hand downwards and the right hand (fist) directed towards the anterior fornix of the vagina. This maintains the uterus well contracted and empty and prevents further bleeding, encouraging haemostasis to occur. You will need to maintain this procedure until skilled assistance arrives or during transfer of the patient to a suitably equipped unit, where skilled staff are available.

#### 3. Aortic compression per abdomen

- Apply downward pressure with a closed fist over the abdominal aorta directly through the abdominal wall:

- The point of compression is just above the umbilicus and slightly to the left.
- Aortic pulsations can be felt easily through the anterior abdominal wall in the immediate postpartum period.
- With the other hand, palpate the femoral pulse to check the adequacy of compression: If the pulse is palpable during compression, the pressure exerted by the fist is inadequate and if the femoral pulse is not palpable, the pressure exerted is adequate.
- Maintain compression until bleeding is controlled.

#### **In case of retained placenta**

- Empty the bladder and attempt controlled cord traction to deliver the placenta. If this is successful, examine the placenta to ensure it is complete.

Uterine packing is no longer recommended by the WHO due to concerns around potential harms. The WHO does recommend intrauterine balloon tamponade (IUB). IUB placement may reduce the need for invasive procedures; however, the evidence base is solely comprised of case-reports. Uterine balloons such as the Sengstaken tube, Bakri and R  sch balloons are available in higher-resource countries.



Figure: **Intra Uterine Balloon**

Use of IUB in conjunction with B-lynch or other compression sutures is a technique referred to as the 'uterine sandwich'; this joint method has been successful at avoiding hysterectomy in all reported cases with no postpartum morbidity.

**Non-pneumatic anti-shock garment (NASG):** External aortic compression significantly reduces blood flow to the pelvic organs while preserving blood supply to surrounding organs. The NASG plays a unique role in hemorrhage and shock management by reversing shock and decreasing blood loss; thereby stabilizing the woman until definitive care is accessed. The NASG increases blood pressure by decreasing the vascular volume and increasing vascular resistance within the compressed region of the body, but does not exert pressure sufficient for tissue ischemia like its predecessors.



Figure: **Non-pneumatic anti-shock garment**

**Moderator comments:**

Life threatening event of PPH is preventable by early identification of risk factor. However 60% women with PPH have no evidence of risk factor hence one cannot predict the incidence of PPH. If the PPH is evident the use of uterotonics (oxytocin alone as the first choice) plays a central role in the treatment of PPH.

Uterine massage is recommended for the treatment of PPH as soon as it is diagnosed, and initial fluid resuscitation with isotonic crystalloids is recommended. The use of tranexamic acid is advised in cases of refractory atonic bleeding or persistent trauma-related bleeding. The use of intrauterine balloon tamponade is recommended for refractory bleeding or if uterotonics are unavailable.

Bimanual uterine compression, external aortic compression, and the use of non-pneumatic anti-shock garments are recommended as temporizing measures until substantive care is available. If there is persistent bleeding and the relevant resources are available, uterine artery embolization should be considered. If bleeding persists, despite treatment with uterotonic drugs and other conservative interventions, surgical intervention should be used without further delay.

## **PEDIATRIC EMERGENCIES**

**Dr Charusha Salunke**

**M.B.B.S., DCH.**

**Medical officer**

**Pediatric dept. Kamala Nehru Hospital, Pune**

### **Febrile convulsions –**

1. Most common seizure disorder and pediatric emergency.
  2. Definition: Seizure occurring with temp > 38 degree Celsius, in absence of detectable CNS infections but there may be association of acute extra cranial infections and high environmental temperatures.
- Incidence: 3% - 5%.
  - Autosomal dominant inheritance.
  - Thus family history is important.
  - Age group: 5 months to 5 years.

### **Pathogenesis**

- Due to temporary impairment of the balance between the convulsant and anticonvulsant system of brain.
- Threshold level of anticonvulsant system of brain is very lower.
- Other suggestion- endogenous pyrogens, such as interleukin-1, increase neuronal excitability and cause seizures.

### **Types of febrile convulsions**

- SIMPLE: Generalized, Brief, Isolated.
- COMPLEX: Focal, prolonged, multiple.

### **Simple febrile convulsions**

- Duration- < 15 min.
- Generalized –tonic- clonic.
- Fever - > 100.4 to 101.4 F rectal temperatures.
- No recurrence IN 24 hours.
- No Post-ictal neuro abnormalities. { e.g. Todd's paralysis }
- Most common 6 months to 5 yrs. Normal development.

#### **➤ Investigations -**

- Lumbar puncture; need to be considered in child < 1 yr.
- EEG
- Neuroimaging; - In case of complex, atypical seizures.

#### **➤ CARE AND MANAGEMENT OF CONVULSING CHILD**

- Self-limiting @benign.
- Protective measures rarely required.



- Protective measures :- appropriate posture
- {Lateral recumbent, with head extension,}.
- A B C.
- Rectal

#### ➤ **Temperature control –**

- Tepid sponging
- Antipyretics: - Paracetamol, Ibuprofen. iv Febrinil

#### ➤ **DRUG THERAPY –**

- RECTAL DIZEPAM:- 0.2 TO 0.5 mg/kg.
- INTRANASAL MIDAZOLAM :- 0.2 mg/kg
- IV MIDAZOLAM :- 0.15 mg/kg – 0.2 mg/kg
- COUNSELLING REASSURANCE OF PARENTS:-
  - a] about benign nature of illness.
  - b] no neurological sequelae or developmental delay.
- PARENT EDUCATION: - regarding nature of illness and prophylaxis for next event.
- PROPHYLAXIS:- temperature control , consult doctor if convulsion lasts > 15 min or post ictal phase is > 30 min. Use of intranasal midaz spray or rectal diazepam. Use of frisium for 3 days in case high grade fever.
- PROGNOSIS- **Excellent**

## **DROWNING**

SUBMERSION INJURY is also known as the “SILENT EVENT” It is the second leading cause of accidental death in children [national safe kids campaign 2005-b] one of the most important nursing responsibilities is related to drowning is prevention of injury, including water safety education and training, drowning measures and teaching .CPR

### **Definition**

Drowning is submersion that results in asphyxia and death within 24 hours. If the child survives longer than 24 hrs. It is referred to as near drowning

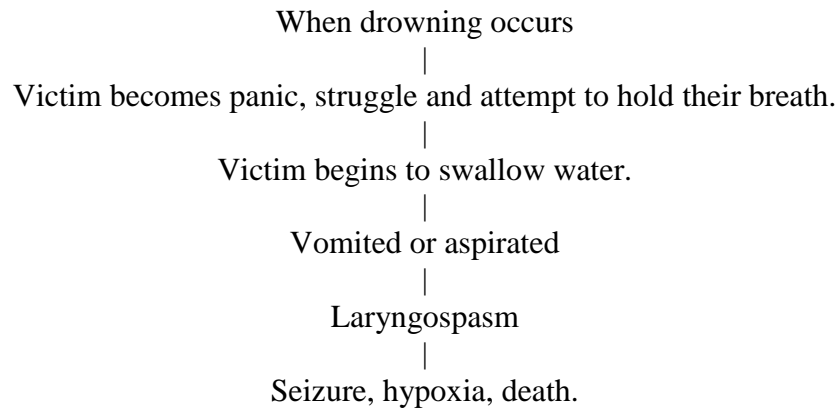
### **Etiology**

- Most drowning occurs in :- in, bath tubs, swimming pools, buckets, toilets, open water sites like lakes, rivers, oceans most common among teenagers.

### **Epidemiology**

- Children between 1-4 YRS R Most affected.
- In teenagers males r mostly affected

## Pathophysiology



## Manifestations

- **THE CHILDS CONDITION DEPENDS UPON FOLLOWING FACTORS**
- Age of child
- Submersion time
- Water temperature
- Elapsed time before resuscitation started.
- Neurological status
- ABG

## Signs and symptoms

- 75 % of kids who develop signs and symptoms do so within 7 hrs of event.
- Coma or agitated alertness.
- Cyanosis, coughing, production of frothy pink sputum.
- Tachypnea, Tachycardia.
- Low grade fever
- Rales, rhonchi, and less often wheezes.
- Signs of trauma to head and neck should be sought out.

## Management

- Pre hospital: rescue victim remove from water.
- Prompt initiation of CPR.
- Activation of emergency medical system.
- goal of pre hospital care is to maintain adequate
- Oxygenation and circulation stabilize cervical spine and prevent injuries.
- Child's airway is opened; suction to remove mucus and fluids.
- Mouth to mouth breathing for delivery of oxygen.
- In case of availability of emergency kit, bag and mask ventilation, endotracheal intubation.

## PAEDIATRIC EMERGENCIES



**Mrs. Meena Sonawane**  
**Professor, J.J. I.N.E**  
**Mumbai.**

Accidents and pediatric emergencies are common threat for the survival of children life. In India 40% population is children and adequate facilities may not be available at centre.

### **Common pediatric emergencies**

Cardiopulmonary resuscitation; Cardiac arrest; Cardiac tamponade; Diarrhea; Drowning; Acute respiratory failure; Coma; Hyperpyrexia; Shock; Hemorrhage; Transfusion reactions; Burns ; Electric burns ; Foreign Body Aspirations; Poisoning of different kinds Kerosene poisonings; DDT Poisoning; Dhatura poisoning; Lead poisoning; Mercury poisoning; Hypoglycemia and hyperglycemias; Snake bite & Scorpion bites; Road traffic accidents.

Amongst all above pediatric emergencies Hemorrhage; foreign body aspiration and Drowning are the very common which requires emergency life saving actions.

**Hemorrhage:** Hemorrhage is a process of loss of blood either through a wound or because of any medical condition. Children are very prone to injuries as they are in the stage of attaining their motor developments. A complex system of clotting, anti-clotting mechanics exists to ensure clot formation only in the presence of blood vessel injury and to limit clotting process. Dysfunction of these system leads to bleeding.

**Foreign body aspiration:** The lodgment of foreign bodies of all sizes, shapes and varieties in the ear and upper respiratory tract is a common accident in childhood and accounts for a significant number of cases in the pediatric as well as the ENT departments.

**Drowning:** Is a leading cause of death among children, including infants and toddlers. Most infant drowning occurs in bathtubs and buckets. Toddlers between one and four years most commonly drown in swimming pools. Kids are especially at risk because they're curious and attracted to water but are not yet able to understand how dangerous it is. Each year, almost 8,000 people die from drowning. 70% of all near drowning victims recover; 25% die, and 5% have brain damage.

### **Therapeutic management for hemorrhage:**

Examine the Injury; Clean the Wound; Stop the Bleeding; Treat the Wound;

### **Therapeutic management for foreign body aspiration:**

Assess for placement of foreign bodies, degree of object, volume of foreign body; assess the child's vitals and maintain proper position. Correct positioning of the airway, appropriate

intervention used to ensure patency of the airway and adequate oxygenation and ventilation. Foreign bodies are removed from the respiratory tract by direct laryngoscopy or bronchoscopy. After the procedure, the child should remain hospitalized for observation for laryngeal edema and respiratory distress. Antibiotics are unnecessary, unless respiratory sign and symptoms suggest an infection. Cool mist and administration of bronchodilators and/or corticosteroids 24 hours after the removal of the foreign body may be indicated.

**Therapeutic management for Drowning:** Get Help; Move the Person; Check for Breathing; if there is No Pulse; Start CPR.

## PSYCHIATRIC EMERGENCIES



**Dr. Nischol Raval**  
**Consultant Psychiatrist and Psychotherapist**  
**Sahyadri Hospital, Pune**

### Definition

- An **emergency** is defined as an unforeseen combination of circumstances which calls for an immediate action.
- A **psychiatric emergency** is a disturbance in thought, mood and / or action which causes sudden distress to the individual (or to significant others) and / or sudden disability, thus requiring immediate management.
- **Crisis** means a situation that presents a challenge to the patient, the family and / or the community.

### Types of Psychiatric emergencies

- A new psychiatric disorder with an acute onset (Mania)
- A chronic psychiatric disorder with a relapse (Psychosis relapse)
- An organic psychiatric disorder (Delirium)
- An abnormal response to a stressful situation (Conversion reaction)
- Iatrogenic emergencies - Side-effects of psychotropic medications or other medications (dystonia, NMS)
- Alcohol or drug dependence (withdrawal, intoxication or complications)
- Deliberate harm to self or others (Suicide and Violence)

### Assessment of Psychiatric emergency

- Before examining the patient (Ensure own safety first and have help readily available if needed)
- Detailed Psychiatric History (Ideally get as much information prior to examining the patient, i.e. from all sources possible, e.g. referring doctor, relatives etc.)
- Detailed general physical and neurological examination (Rule out organic causes, drug use)
- Mental status examination (screen for organicity, look for risks of suicide, self harm or violence)
- Investigations (when needed to rule out organic causes)
- Toxicological screening (to rule out drug misuse or overdose)
- Let's look into a few of the commonly presenting psychiatric emergency.
  - Suicide
  - Medication induced psychiatric emergencies
  - Violence
  - Delirium



## **Suicide**

- It is Important as it is one of the preventable causes of death.
- It is defined as a human act of self intentioned and self inflicted cessation (death). It ends with a fatal outcome.
- An attempted suicide is an unsuccessful act with a non-fatal outcome.
- DSH (deliberate self harm) is an act of intentionally injuring oneself irrespective of the actual outcome.
- A suicidal gesture is an attempted suicide where the person performing the action never intends to die by the act.

## **Epidemiology**

- It is one of the top 10 causes of death in India and most other countries. Suicide rate in India is 15 per Lakh population, males more than females.
- Ratio of attempted suicide to completed suicide is 10-20: 1.
- Highest suicide rate is in the age group of 15 – 29 years

### **Methods Used**

- Ingestion of poison – 38.4 %
- Hanging – 29.4 %
- Burning – 11 %
- Drowning – 9%
- Jumping in front of train or vehicle – 3 %
- Men use more violent methods than women

## **Risk Factors for suicide**

- Psychiatric disorders: Depression, Substance dependence and Schizophrenia
- Physical disorders: Incurable or painful physical disorders like cancer or AIDS.
- Unmarried
- Failure in exams
- Dowry and marital problems
- Economic problems and work related difficulties
- Social isolation.
- Male
- Age more than 40 years
- Previous suicide attempt
- History of suicide in family
- Break up of relationship
- Family disputes

## **Management**

- The main aim is early diagnosis and prevention. The clinician need to always be alert and ask for information to assess the risk of suicide in each and every patient.

## **Assessment in all patients:**

- History to screen for risk factors of suicide. Also ask whether the patient has been having any thoughts of ending life or that life is not worth living.
- There is a popular myth that asking such a question will prompt the patient to think about suicide. On the contrary patients feel understood and share their thoughts more freely and thus enable the clinician to help them.
- Also assess whether the patient is able to speak about the future with any degree of hope.

### **Assessment in patients with suicidal ideation**

- Does the patient have a plan?
- Does the patient have the means for carrying out the plan?
- How frequent and intense is the suicidal ideation?
- Is there a sense of control over the ideation or impulse?
- The time period since onset of these thoughts?
- What is the motivation for thoughts of suicide – wish to die / wish to communicate anger or pain / acting on the hallucinations.
- Are there any deterrents to the attempt – religion, family or fear?
- Does the patient expect to make an attempt and if so when?
- Is the patient less agitated at the end of the interview and has the patients views about suicide changed?

### **Assessment in Patients with recent suicide attempts**

- Medical seriousness of the attempt.
- Stated Intent of the attempt:
  - Does the patient say it was an attempt to die or end the pain or to communicate the degree of pain to others?
  - Does the patient say that he or she believed that death was an unlikely result, possible but unlikely, probable or certain?
- Inferred intent of attempt:
- Preparations for death (making will)
- Communication of an intent before the attempt (suicide note)
- Evidence of premeditation (hoarding of pills)
- Precautions for or against discovery
- To what degree was the attempt impulsive
- Whether under influence of alcohol or drugs
- Reaction to the attempt:
  - Does the patient feel that important people in his life have responded appropriately
  - Does the patient have regret for the attempt or for failure of the attempt
  - Patients state of mind at examination:
    - Is the patient still confused and / or disoriented
    - Is patient hostile and uncommunicative
- Plans for the future:
- Does the patient feel that the suicidal impulses can be controlled in near future
- Can the future be visualised and spoken about with some hope
- Is the patient able to collaborate with for future treatment

### **Use of Hospitalization**

- Patient expresses intention and has definite plan and means
- Strong suicidal impulses and these are difficult to control
- Has acute psychosis with suicidal ideation
- Past history of serious attempt with suggestion of intent to die
- Presence of suicidal intention of mild to moderate severity along with at least one of the following –
  - Depression
  - Lack of support system
  - Need for treatment not available in OPD
  - Failure of OPD treatment
  - Escalating pattern of suicide

- Substance abuse plus mental illness

### **Precautions to prevent self-harm during Hospitalization**

- 24 hour attendant
- Search and remove any sharp objects and any other items with which patients can harm themselves
- Close observation levels by staff members
- Ensure medications are being complied with
- Do not let the patient be on his own if perceived increase in risk ( attendant to accompany patient even to toilet)
- Explain the risks to family members
- Review the patient at least twice a day

#### **Treatment**

- Treatment of underlying psychiatric disorder if any
- Treatment of underlying medical problems if any
- Reduce anxiety or stress (which may be due to psycho-social factors)
- Non – pharmacological treatment like crisis resolution, supportive psychotherapy
- ECT (Electro-convulsive therapy) in certain conditions not responding to the above

### **Medication induced psychiatric emergencies**

#### **Side – effects of Anti - Psychotic medications**

Some of the older anti – psychotic medications can often lead to common side – effects. These at times can be serious in some individuals and may present as a psychiatric emergency.

#### **Acute Dystonia**

- Sudden tonic contraction of a muscle group which can be very painful. It can involve large group of muscles (e.g. Neck muscles, extremities, muscles of eye, tongue, etc.
- It presents mainly in young individual at the start of anti-psychotic treatment.
- There is dramatic improvement on treatment which consists of Inj. Anti-cholinergic medications (Procyclidine, promethazine, etc).
- The patient may need change of anti-psychotic or addition of oral prophylactic anti-cholinergic medication.

#### **Akathisia**

It is characterised by extremely unpleasant motor restlessness. It presents during the initial phase of treatment with anti-psychotic medications. It responds well to change of anti-psychotic medication or addition of beta-blocker like Propranolol. At times addition of anti-cholinergic medication may be helpful.

#### **Neuroleptic Malignant Syndrome (NMS, Lethal Catatonia)**

A potentially life threatening condition caused due to a idiosyncratic reaction following treatment with anti-psychotic medications.

Characterised by the following:

- Extreme extra – pyramidal syndrome
- Raised temperature
- Raised blood levels of CPK (Creatininephospho Kinase)

#### **Neuroleptic Malignant Syndrome (NMS, Lethal Catatonia)**

- Autonomic disturbances (tachycardia, tachypnoea, abnormal blood pressure)
- Altered consciousness
- Leucocytosis

It is treated as a medical emergency in ICU. The anti-psychotic medications are to be stopped. If needed mood stabilizers, benzodiazepines and ECT can be used to control and / or treat psychiatric disturbances.

### **Violence**

Violence to self or others is one of the commonest forms of psychiatric emergency. Violence towards self as seen in deliberate self-harm (DSH) and suicide has already been discussed and so now we will be discussing mainly about violence towards others. It is though very important to remember that 16 – 27 % of the violent patients are also known to be suicidal. One third of the psychiatric admissions are preceded by violence.

### **Risk of violence**

Demographic characteristics like -

- Male
- Young (Age between 15 – 25 years old)
- Poor economic status
- Uneducated
- Unemployed
- Minority community
- Poor social network

### **Risk of violence**

Diagnostic characteristics like -

- Organic brain syndrome
- Intoxications
- Psychosis
- Personality disorders
- Epilepsy

Past History -

Past behaviour is best predictor of the future. Therefore past history of violence or early victimization is a predictor of future risk of violence

Psychological characteristics like –

- Low frustration tolerance
- Low self esteem
- Low tolerance for interpersonal closeness
- Low tolerance for criticism
- Tendency to blame and externalize problems

### **Predictors of Potential Violence during Interview**

- Posture – Sitting on the edge of the chair, gripping armrests
- Speech – becomes increasingly loud and angry
- Pacing – increased motor restlessness
- Affect – angry or irritable
- Increased startle reflex
- Loss of distractibility (unable to shift focus or unwilling to do this)
- Agitated, intoxicated or paranoid
- Violent acts in the recent past
- Clenched fist or jaw

### **Interview of Patients at Risk of becoming Violent**

- Your own safety is of paramount importance and should never be compromised upon
- Always have help available at hand (staff or security), make them stand outside the interview room
- Make sure that if there are increased risks then, to interview the patient in a safe environment in company of other members of staff
- Always be aware that your body posture, facial expressions and tone of voice are soothing and non-threatening
- Allow more physical space than usual
- Do not approach patients from behind
- Do not confront
- Avoid gazing and staring
- Keep hands to the midline of your body and do not place them folded or on your waist (so as to give a wrong impression of confrontation)
- Facial expressions should be neutral, attentive and accepting
- Avoid being in striking range and stand about 1.5 arm lengths away. Stand sideways
- Never turn your back to the patient. Stay close to an exit and turn sideways to leave if the patient becomes increasingly hostile
- Proceed with interview using name the patient prefers to be called by
- Address in a calm, direct and reassuring manner
- Keep your questions and requests simple and brief
- Enquire about and encourage verbal expressions of feelings (clarify that talking about the feelings is acceptable)
- Make it clear that patient can be held responsible for the actions
- State that the patient's behaviour is frightening or threatening to others
- State that you want to do all that is possible within your power to try and help him
- Search and remove weapons and other objects with which patient can harm himself or others

### **Use of Restraints**

- When an aggressive and potentially violent / assaultive patient cannot be managed by the interventions noted above then the most humane and effective response to protect patients and others (including staff) is to either isolate them or to apply physical or chemical restraints (rapid tranquilization).
- For restraints at least 5 members of staff are needed (one for each extremity and one to direct and supervise).
- During the process of applying restraints the patient should be informed that this is being done for his own safety. If patient is intoxicated or delirious then restraint should be applied so as to have their head on one side and in propped up position (so as to avoid aspiration).

### **Recommended standards for seclusion and restraint**

- Examination by qualified mental health professional before restraint
- Examination by psychiatrist within 2 hours of applying restraint
- Patient is checked every 15 minutes
- Patient is re-evaluated for need of restraints within 12 hours
- Careful records to be kept for need of restraints and seclusion
- Patient to be allowed to use bathroom and be bathed
- Monitor for and avoid complications due to pressure of restraints (restricted blood flow and air entry etc.)
- Maintain adequate food and fluid intake



- Release the restraint of one limb at a time and observe for indicators of impending violence
- Use chemical restraints (rapid tranquilization) if possible to minimize the use of physical restraints

#### **Aetiology of violence**

- Intermittent explosive disorder
- Adjustment disorder with disturbances of conduct
- Organic personality disorder
- Alcohol or drug intoxication
- Anti-social personality and Borderline personality disorder
- Acute mania and psychosis (acting on hallucinatory or psychotic experiences)
- Akathisia
- Epilepsy

#### **Psychopharmacology (Rapid tranquilization)**

- It is the use of psychotropic medications to rapidly de-escalate the risk of violence in potentially violent mentally ill persons. Most preferred medications are Haloperidol and Lorazepam.
- Ideally use oral preparations if patient agrees otherwise can be given as i/m dose.
- In elderly patients and in persons who have suspected intoxications, psychosis and history suggestive of respiratory problems in past use Haloperidol 5 – 10 mg (maximum 30 mg per 24 hours). Remember to watch for side effect especially Dystonia and treat this if needed.
- In patients who are not known to the psychiatry services or who have not previously received anti-psychotic medications it is safer to initially use Lorazepam 1 – 2 mg orally or i/m (maximum 4 mg per 24 hours). Watch for signs and symptoms of respiratory depression.
- Delirium / Acute confusional state

#### **Delirium**

- Delirium comes from the Latin word- “Delirare”, which means to be deranged or be crazy. Delirium is defined as:
- **"A transient organic mental syndrome of acute onset, characterized by global impairment of cognitive functions, a reduced level of consciousness, attentional abnormalities, increased or decreased psychomotor activity, and a disordered sleep-wake cycle".**

#### **Epidemiology**

- Delirium is commonest at extremes of age (children and elderly).
- Commonly seen in hospitalized, physically ill, elderly patients.
- 10 – 15% of medical and surgical ward inpatients in a general hospital are delirious at any given time.
- Increased incidence following increase in age above 70 years.

The clinical presentation of delirium is diverse. The onset of delirium is typically rapid, usually developing within a few hours to days

- Rapidly fluctuating course
- Disorders of consciousness. There is disorientation to time, place and in severe cases person.
- Attentional deficits
- Sleep – wake cycle disturbances

## Clinical features

- Memory impairments
- Disordered thinking and speech
- Altered perceptions
- Emotional lability
- Psychomotor activity disorders
  - Hyperactive – hyper-alert type (Delirium tremens)
  - Hypoactive – hypo-alert type (catatonia due to metabolic encephalopathy)

## Course and outcome of Delirium

- Full recovery, usually within a week (may extend to a few weeks in case of elderly people).
- Progression to stupor, coma, sudden cardiovascular collapse and death. Several studies, which have focused on the **mortality rate in delirium**, have found it to be in the range of **18 - 37 %**.
- Has temporary cognitive, affective, behavioral, or mixed abnormalities followed by gradual recovery.
- Progression to an irreversible mental syndrome, with either global or relatively circumscribed cognitive deficits, or to an organic personality disorder or dementia.
- Functional psychosis or posttraumatic stress disorder.

## Aetiology:

### Predisposing factors

- Delirium is a disorder to which everyone is potentially susceptible. To highlight this universal susceptibility it was referred by some researchers as “everyone’s psychosis”. But it is more common in some patients, who are at a higher risk of developing this disorder.
- There is increased susceptibility with increase in age (above 60 years)

### Facilitating factors

These factors at times facilitate the onset of delirium, increase its severity and even prolong its course. The facilitating factors are:

- Psychological stress
- Sleep deprivation and disorders of sleep-wake cycle
- Sensory deprivation and overload
- Unfamiliar situations

## Precipitating factors

### “I-WATCH-DEATH”

- **I** --- Infections: Meningitis, Encephalitis
- **W** --- Withdrawal: From alcohol, barbiturates
- **A** --- Acute metabolic: Acidosis, Liver failure, and renal failure
- **T** --- Trauma: Head injury, Post-stroke and burns
- **C** --- CNS: Stroke, Tumors, and Hemorrhage
- **H** --- Hypoxia: Anemia, Hypotension, and Cardiac failure
- **D** --- Deficiencies: B12, Niacin, and Thiamin
- **E** --- Endocrinal: Hyper or hypo-adrenalcortism
- **A** --- Acute Vascular: Shock
- **T** --- Toxic: Poisoning by various substances, e.g., Organo-phosphorus compounds
- **H** --- Heavy metals: Lead, Arsenic and mercury poisoning

## Treatment

- Treated in ICU
- Consultation liaison
- If a specific aetiology is found, then treat it
- If no specific etiology is found, treatment consists of **general symptomatic and supportive measures**, aimed at securing adequate rest, sleep, water and electrolyte balance, optimal comfort and security

## Psychiatric consultation

- The psychiatrist role is centered on the following key aspects -
  - Assistance with the diagnoses
  - Advice on investigations for finding the etiology
  - Advice and supervision of the management and the psychotropic medications
  - Teaching medical and nursing staff how to recognize and treat delirium
  - Advice on issues pertaining to a delirious person's competence in medico – legal matters
  - Supportive psychotherapy.
  - To be really helpful a psychiatric consultation should be requested early, i.e., as soon as delirium is suspected.

## Crisis Intervention

Most psychiatric emergencies occur at a time of crisis – a time when external stresses have overwhelmed the coping mechanisms that a patient ordinarily uses to deal with stress. During a crisis an individual is anxious, is not functioning efficiently and is trying to find relief. Crisis intervention is important as it prevents further complications and distresses to the individual and significant others.

- **Immediate intervention** - As crisis is a time of danger it needs to be resolved as soon as possible. Ideally response should be within 4 hours and may be in the form of direct contact or indirect (telephone call). This may not always be possible but should be within the next 24 hours in most cases.
- **Action** - The mental health professional comes up with a plan of action along with the concerned individual to help reduce the distress and resolve the crisis. The client or patient then agrees to carry out the components of the plan.
- **Limited goal** – The minimal goal of crisis intervention is to avert complications like self harm, suicide and violence. The basic overall goal is to restore the client to a state of equilibrium.
- **Hope and expectations** – The professional must instill hope but at the same time avoid any false expectations.
- **Support** – Must provide emotional support by being readily available. The support should be sufficient but not excessive and not make the patient dependant. Also patient to be informed of alternatives when the primary mental health professional cannot be available (e.g. night hours or over weekends).
- **Focused problem solving** – It is the backbone of crisis intervention. Helps the client focus on the problem at hand and ways of dealing or coping or resolving this situation.
- **Self-image** – assess the patients self image and suggest ways of enhancing this.
- **Self-reliance** – From the onset it should be clear that the aim is to help and support the patient in solving his problems independently.

## Role of nurse in psychiatric emergency



**Mrs. L. Bijayalakshmi Devi**  
**Associate Professor**  
**MKSSS BT INE**

Triage or psychiatric emergency decisions determine client placement at appropriate levels of care often parallel the client's presentation and include the following:

1. Danger of harm to self or others
2. Level of functioning, and capacity for self-care
3. Severity of psychiatric symptoms
4. Ability to comply with treatment recommendations
5. Co morbid psychiatric and physical disorders
6. Quality and availability of support systems
7. Client and family preferences
8. Available resources

### **PRINCIPLES OF PSYCHIATRIC EMERGENCY:**

- Safety consideration
- Developing a Sense of Severity of the Clients' Symptoms (differentiating an emergent situation from urgent or non-emergent situations).

### **SUICIDE INCIDENCE:**

- Every 40 seconds a life is lost through suicide (Worldwide as per WHO data). Suicide Rate (India 2006-07): General Population-11.5 % per lakh. Army-7.5 % per lakh. Mumbai: (As per Police stats) 3 lives lost per day due to suicide. Navi Mumbai As per Police stats) 2 lives lost per week due to suicide
- In India according to National Crime Records Bureau 110,417 people committed suicide in the year 2002, which is 1.8% more than compared to 2001., i.e.; a suicide is committed every five minutes. Seven times that number attempt to take their lives and as for those who feel desperate and unable to cope, the number is mind boggling. More suicides occur between 18 and 45 - in other words in the most productive age group of our society.
- Suicide estimates suggest fatalities worldwide could rise to 1.5 million by 2020. Suicide is a largely preventable public health problem, causing almost half of all violent deaths as well as economic costs in the billions of dollars, says the WHO.
- According to the report, 258,075 people committed suicide in India in 2012, with 99,977 women and 158,098 men taking their own lives. India's suicide rate was 21.1 per 100,000 people, according to the report.

- India accounted for the highest estimated number of suicides in the world in 2012, according to a WHO report published in Thursday which found that one person commits suicide every 40 seconds globally.

#### **FACT SHEETS:**

- The majority of people who complete suicide have visited a healthcare provider in the previous month of their suicide (Luoma, Martin & Pearson, 2002)
- Registered nurses (RNs) are considered “front-line” in suicide prevention, at both primary and secondary levels, because of their significant amount of contact with patients (Berlim, Perizzolo, Lejderman, Fleck & Joiner, 2007).
- Nurses routinely treat patients that are considering suicide, but these patients are rarely identified as at-risk. Perhaps as a result, suicide is the second leading sentinel event in hospitals (Neville & Roan, 2013).

#### **BARRIERS IN SUICIDE PREVENTION:**

1. Lack of knowledge
2. Lack of training programme
3. Lack of time
4. Attitude and believe of nurses toward suicidal patient.

#### **ESSENTIAL COMPETENCIES FOR NURSES:**

- Understands the phenomenon of suicide (suicidality, risk and protective factors)
- The nurse manages personal reactions, attitudes, and beliefs.( being self-aware, attend debriefing, attend own emotional safety)
- The psychiatric nurse develops and maintains a collaborative, therapeutic relationship with the patient. (nonjudgmental and supportive stance, voices authentic intent to help, conveys hope)
- Performs an independent risk assessment for self-directed violence
- Suicide assessment
  - Are you thinking of suicide?
  - Have you thought about suicide in the last two months?
  - Have you ever attempted to kill yourself?
  - Ideation- acute vs. chronic, passive vs. active- if active is there a plan, if there is a plan? Lethality of method, intent.
  - Demographic/Environmental: Risk factors include >65, unmarried, living alone, unemployed, family history of suicide of first degree relative, recent interpersonal loss, lethal means available (particularly firearms)
  - Clinical factors: Personal history of suicide attempt, substance use, chronic medical illness, agitation, Psychiatric illnesses/Sx including severe anxiety, schizophrenia, depression, Bipolar disorder, Borderline or antisocial personality disorder. H/o TBI, current hopelessness, anhedonia or apathy, current sleep disturbance, social isolation, recent psychiatric hospitalization
  - Protective factors: actively making plans for the future verbalize hope for the future, cognitive flexibility, responsibility to dependents, therapeutic relationship with treatment provider, social network or family, belief that suicide is immoral or will be punished. Fear of social disapproval of suicide, fear of the act of suicide
- The psychiatric nurse develops an ongoing nursing plan of care based on continuous assessment.



- The psychiatric nurse performs an ongoing assessment of the environment in determining the level of safety and modifies the environment accordingly. (identify environmental hazards like ligature points, knife, rope, level of supervision)
- The psychiatric nurse understands legal and ethical issues related to suicide
- The psychiatric nurse accurately and thoroughly documents suicide risk.
- Interview skills to detect suicidal intent and ability to communicate by indirect interrogation.

#### **NURSES ROLE IN MANAGING VIOLENT PATIENT:**

- **Violent risk assessment by checking Behavioral Predictors of violence like**
  - Angry words
  - Loud language
  - Abuse language
  - Physical agitation such as making fists, pacing and akathisia

#### **What nurse need to do?**

- Position yourself between client and exit.
- Appropriate environment include providing ample space (leg s length), privacy, minimal noise or stimuli and well lit.
- Afford privacy, but not at the risk of compromising personal safety.
- Firm, calm reassurance of the patient and also those accompanying him.

#### **MANAGING THE VIOLENT PATIENT:**

- **Verbal De-escalation**
  - a. Use a calm voice
  - b. Sit down with the patient
  - c. Maintain adequate physical distance of at least 6 feet
  - d. Attempt to establish rapport
  - e. Listen to the patients concerns
- **Physical restraint** one person per limb and one in addition (as per order) calling appropriate authority (restraint and seclusion may only be imposed by train staff to ensure the immediate physical safety of the patient, staff, or others)
- **Mental status and Physical examination** (within 1 hour of physical restraint)
- **Chemical restraint** (as per order, Benzodiazepines like lorazepam, or antipsychotic like haloperidol )
- **1:1 observation and seclusion**

#### **SIDE EFFECT OF PHYSICAL RESTRAINT:**

Adverse events associated with the use of restraint and seclusion include dehydration, choking, circulatory and skin problems, loss of muscle strength and mobility, pressure sores, incontinence and injury from associated physical/mechanical restraint, injury from other patients, increased psychological distress and, in rare circumstances, death.

#### **RAPE TRAUMA SYNDROME:**

According to the National Crime Records Bureau 2013 annual report, 24,923 rape cases were reported across India in 2012. Out of these, 24,470 were committed by someone known to the victim (98% of the cases). Some research indicates that only 5-6% of rape cases in India are reported to the police.

Rape trauma syndrome (RTS) is the psychological trauma experienced by a rape victim that includes disruptions to normal physical, emotional, cognitive, and interpersonal behavior. The theory was first described by psychiatrist Ann Wolbert Burgess and sociologist Lynda Lytle Holmstrom in 1974.

### **NURSING CARE ASPECT:**

#### **1. Qualities of the nurse**

- Making eye contact, calm approach (not rushing)
- Active listening, presenting information, reassurance.
- Being respected as a whole person
- Unconditional positive regard, nonjudgmental attitude.
- Caring , empathetic, compassionate
- To believe and validate survivors accounts of Sexual assaults.
- Follow-up and referral.

#### **2. Physical care of the survivor**

- Post exposure prophylaxis (PEP)- during this, nurse need to be proactive and sensitive as it causes emotional distress.
- Performing physical examination and direct care to ease physical pain / soreness or other physiological need of the person (bruises, erythema, abrasions, swelling, laceration of internal and external genitalia, disturb sleep and eating habits, G.I complains).

#### **3. Mental health care of the survivors**

- Assessment for phobias, denial, anger, suicidal ideation, guilt etc.
- Observe patient behavior.
- Encourage ventilation of feeling and person concern related to the incident.
- Emotional support (confusion, shock, fear, anxiety, anger, irritation, sudden emotional outburst)
- Support grieving process.
- Referral to psychiatrist

#### **4. Continuing care**

- Initial referral
- Retest for HIV, hepatitis or STI screening after 3 and 6 months
- Need to check for additional counseling and mental health care need
- Assess for stress related physical problem and decrease functionality.

**CONCLUSION:** As a nurse working in ER or general ward in a hospital, nurse may face many emergencies including psychiatric emergency. But the nurse working in the emergency departments are least prepared to face the patient with suicidal ideation or cases of aggression. It is imperative that the nurse should have the necessary knowledge to handle such emergency.

## DISASTER PREPAREDNESS



**Dr. Yogesh Gavali**  
**Associate Professor,**  
**Anesthesia, B. J. Govt. Medical, Pune**

**Definition of disaster:** WHO defines disasters as a sudden ecologic phenomenal of sufficient magnitude that requires assistance. Disaster is an event that overwhelms the resources of region or location in which it occurs; further more hospital disaster is similarly defined as an event that overwhelms the resources of receiving hospitals.

It is important to note that hospital disaster may in its size is not limited to mass casualty incidents. Single patient can also be a disaster if he / she overwhelm the resources of hospital in which he / she is being treated.

**ED surge capacity:** Ability of ED to care for more patients than it's typical.

**Types of disaster:** Disasters are sub divided into different categories.

External disaster: Occurs at location that are physically separate from the hospital i.e. transportation accident, industrial accidents

Internal disaster: Is an event that occurs within the confines of the hospital i.e. bomb scare, laboratory accidents, involving radiological agents, power failure etc.

Disaster type	Definition	Example
Natural disaster	Disaster cause by naturally occurs event	Earth quake, tsunamis, tornadoes, hurricane, typhoons, volcanoes etc.
Manmade disaster	Non-natural events that are not purposefully produced	Vehicle crash, plane, car, bus etc., Mass casualty event, explosions, fires, industrial chemical release etc.
Terrorist related disaster	Events that are purposefully produced in an efforts to cause terror	Events such as 7/11 etc.
Internal disaster	Events that occurs within the hospitals	Hazardous material spill in hospital laboratory, fire explosion within the hospital, power failure etc.
External disaster	Event that occurs that external to the hospital	Transportation accidents, industrial accident etc.
Acute disaster	Disaster that occurs in an narrow and a well define time frame	Explosion, industrial release, earthquake etc.

Non acute disaster	Disaster with no well define start time or continuous production of casualty over a broad time frame	Pandemic infection decease, incremental release of a biological or toxins (Anthrax sent through mail)
--------------------	--	---

**Disaster preparedness and planning:** Hospital disaster planning group is responsible for generating the hospital's emergency hospitals operation plan.

Hospital Planner	Role in disaster planning and response
Public safety	Crowd control, hospital lock down and controlling access to hospitals.
Facilities / Engineering	Evaluate structural damage and advise on stability of facility
Logistic / Equipment supply	Provides rapid catches of supplies /equipment, arrange for rapid ordering of additional supplies
Pharmacies	Provide cash of pharmaceutical / provide anti dote /antibiotics and arrange for rapid ordering of additional pharmaceuticals
Transportation	Assist with transportation of patients
Clinical fields	Wide array of clinical fields should be represented, including representative of ED , internal medicine, family medicine, paediatrics, orthopaedics, general surgery and trauma care specialist
Media /Public relation	Act as a single point of contact for media and liasioning between media and clinical areas, disaster control centre and other hospital resources
Communication officer	Co-ordinate communication to the employee during the disaster through e-mail, web site, paging group, phone, whatsapp group etc.
Non clinical patient care	Housekeeping, food services etc.
Safety officer	Determine and ensure safe practises for the employee, i.e. Appropriate personal protective equipment for de-contamination etc.
Radiation safety officer	Prepare plan for response to radiological emergencies
Infection control officer	Prepare for and respond to infectious diseases emergencies

The general components of disaster plan include hazard, vulnerability analysis, compliance with agency requirement hospital community co-ordination integration with national response team training and disaster drills.

**Hazard Vulnerability analysis:** May be used to prioritize to planning efforts because different disasters are characterized by different morbidity and mortality pattern and different challenges to the ED and hospitals.

**Training and disaster drills:** Regular training and drills help to familiarize the staff with their disaster roles and responsibility .This also helps to point out weakness or emissions in the plan that requires additions or revisions.

**Hospital emergency operation plan:**

<b>Component</b>	<b>Function</b>
Activate emergency plan	Notify and mobilise personal and equipment
Set up emergency operation centre	Nerve centre hospital response and communication with outside agencies
Asses hospital capacity	Determines safety of hospital itself and determine capabilities of hospital in all unit
Create hospital search capacity	Determine ways to handle maximum number of patient.
Establish communication system	Develop multiple and redundant systems including cellular phone , satellite phone , to ay radio , runners
Provide supplies and equipment	Deliver available supplies to proper areas and plan for free supplies and obtaining required material.
Establish support area	Volunteer , pear , press and family information centre
Establish de-contamination , triage and treatment are	De-Contamination , triage , resuscitation ,acute care , minor care areas, surgical triage and holding , psychiatric area , morgue
Terminate disaster response and provide re-mediation	Return personal and supplies to normal activity , provide emotional support for care givers , improve operational plan for future incidents

## DISASTER PREPAREDNESS: TRIAGE



**Dr. Mrs. Sangeeta S. Bhujbal**  
**Ph.D. (Nursing), Lecturer**  
**College of Nursing**  
**B.J.G.M.C. & Sassoon General Hospital, Pune.**

### Introduction

Disasters strike at any time. They can be predicted, or without warning, large-scale or local, extreme or limited. Natural or man-made, disasters can be scary, chaotic, and tragic events. Disaster is an interaction between a hazard and community. Thus preparedness of community and hospital will help in reducing the casualties, minimizing the property loss and thus saving the environment. When disaster strikes, nurses are needed. Registered nurses are considered essential responders, and will be there when called upon. Nurses should be aware of their expected role in any response efforts. Nurses must be professionally and personally prepared. They should know the process of applying medical priority to patients to do “the most for the most” This could be done by equipping the nurses with knowledge and practices regarding Disaster Preparedness and Triage.

**Definitions of Disaster :**WHO defines Disaster as” any occurrence that causes damage, ecological disruption, loss of human life, deterioration of health and health services, on a scale sufficient to warrant an extraordinary response from outside the affected community or area”.

**Preparedness:** Preparedness is a continuous cycle of planning, organizing, training, equipping, exercising, evaluation and improvement activities to ensure effective coordination and the enhancement of capabilities to prevent, protect against, respond to, recover from, and mitigate against natural disasters, acts of terrorism, and other man-made disasters.

**Definition of triage:** “Triage is the process of prioritizing or sorting of sick or injured people for treatment according to the **seriousness** of the condition **or injury**”.

The process of applying medical priority to patients to do “the most for the most”

### Primary and Secondary Triage

#### Primary triage

- 1st contact
- Assign triage category

#### Secondary triage

- Ongoing process that takes place after the patient has been moved to a **treatment/holding area** awaiting transport.



## Triage Categories

1. **Red (1)** =immediate - critical patient or T1 or Priority 1): Patients whose lives are in immediate danger and who require immediate treatment;
2. **Yellow (2)** =delayed - T2 or Priority 2): Patients whose lives are not in immediate danger and who will require urgent, not immediate, medical care; that could wait until all reds have been transported
3. **Green(3)** = ambulatory “Minimal “T3 or Priority 3): Patients with minor injuries who will eventually require treatment;
4. **Black** = deceased (“Expectant” or No Priority) patients who are either dead or who have such extensive injuries that they cannot be saved with the limited resources available.

## The “START” System of Triage

**Simple Triage and Rapid Treatment:** It is a method used by first responders to quickly classify victims during a mass casualty incident (MCI) based on the severity of their injury.

**The “START” System of Triage is the** method developed in 1983 by the staff members of the Newport Beach Fire Department located at Hoag Memorial Hospital in Newport Beach, CA

This Method is

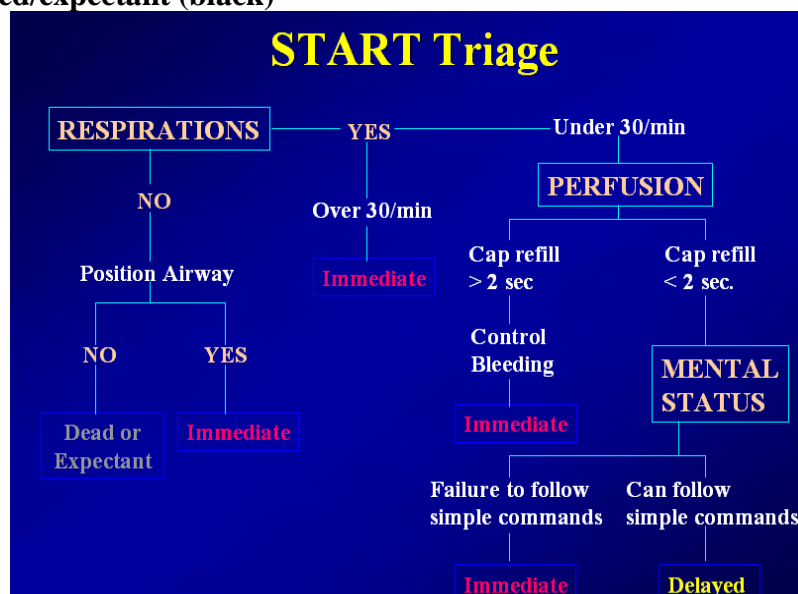
- Easy to use
- Focus is on signs and symptoms
- Fast

## START Helps–to think about 4 things ...

- ❖ Ability to follow directions and walk
- ❖ Respiratory effort-
- ❖ Pulses/perfusion
- ❖ Mental status

**USING START Triage, evaluate victims and assign them to one of the following four categories:**

- Walking wounded/minor (green)
- Delayed (yellow)
- Immediate (red)
- Deceased/expectant (black)



## **START” Focus on tagging the patients**

Clear out all **ambulatory patients** – tag **Green** –

Rest of the patients who require MORE triage will be either red, yellow or black.—3 steps needs to be followed:

### **START – Step 1**

- **Respiratory effort-:** Is your patient breathing? If not, tilt the head back or, if you have them, insert an oral airway if you have an open airway and no breathing, that victim is tagged black. If the victim breathes once an airway is restored or is breathing more than 30 times a minute, tag red. If the victim is breathing normally, move to perfusion.
- **START – Step 2**
- **Pulses/perfusion-** Perfusion is an evaluation of how normal the blood flow or circulation is. Check for a radial pulse and/or press on the nail bed (use the pad of a finger) firmly and quickly remove. It will go from white to pink in less than 2 seconds in a normal individual. This is referred to as the **Capillary Refill Time (CRT)**. If no radial pulse or it takes longer than 2 seconds for nail bed color to return to pink, tag red. If a pulse is present and CRT is normal, move to mental status.
- **START – Step 3**
- **Mental status-** Can the victim follow simple commands (“open your eyes”, “what’s your name”)? If the patient is breathing and has normal perfusion but is unconscious or can’t follow your commands, tag red. If they can follow commands, tag yellow if they can’t get up or green if they can. Remember that, as a consequence of the explosion, some victims may not be able to hear you well

**The “Greens”-**Once they walk toward you –designate a place for them to go

- Someone needs to tag them green
- Someone needs to stay with them & keep them informed.

Keep in mind that in a larger scale event, patients may be spread out over a large area or even on several floors or rooms in a building. In this type of situation, you may encounter further ambulatory patients as you progress. They are still tagged green –direct them to the area that you selected for the “greens” to stage.

## **Types of triage tags**

There are several types of tags on the market EMS System uses the **SMART Tag**.

### **Advantages of using triage tags**

1. Triage separates out those who need rapid medical care to save life or limb.
2. By separating out the minor injuries, triage reduces the urgent burden on medical facilities and organizations. On average, only 10-15% of disaster casualties are serious enough to require over-night hospitalization.
3. By providing for the equitable and rational distribution of casualties among the available hospitals, triage reduces the burden on each to a manageable level, often even to "non-disaster" levels.

## **Patient Tracking**

Document minimal information depending on the situation

**Primary Triage-** Very little documentation

**Secondary Triage**

- More information needs to be collected from the victim and mentioned on the tag
- More assessment and treatment will be done
- Smart Tag has a command board to keep track of where the patient went.

### **Morgue –Tagged Black**

- Establish an area away from other patients
- It should be a secure area away from on-lookers, media, etc.
- Accessible for you and coroner staff

Important Information to keep in mind -

- Remember that anyone who can walk at the scene will be tagged **GREEN**.
- The patient **could deteriorate** or you may determine a different priority when you re-triage at the scene or the ED.

If a bus-load of “**greens**” is sent to you from the incident site, you can hold them on the bus in the ED parking lot until you are ready for them. Just make sure someone boards the bus to see what you have in case anyone needs immediate attention.

**In The Treatment Area**, Patients should be separated as tagged

Designate someone to **oversee** the entire treatment area or each color depending on scale of the event. **Additional treatment** can be provided in this area while awaiting transport

Secondary triage is **ongoing** and the patients can deteriorate in this phase

### **Summary**

One should know how to use the **SMART TAG** this will

- Assure the appropriate people receive the appropriate care
- Prevent re-triage
- Assure your Mass Casualty scene does not become a **DISASTER**.
- Assist with priority of treatment and transfer to save the life of the victims.

**“ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES  
REGARDING PSYCHIATRIC EMERGENCIES AMONG RELATIVES OF  
SCHIZOPHRENIC PATIENTS IN SELECTED HOSPITALS  
TO DEVELOP A SELF INSTRUCTIONAL MODULE.”**

**Ms. Aksa Gorinta**

**KEYWORDS**

Schizophrenic; Psychiatric emergencies, Self instructional module

**OBJECTIVES:**

1. To assess the baseline knowledge, attitude and practices among relatives of the schizophrenic patients regarding psychiatric emergencies.
2. To correlate the findings with selected demographic variables.
3. To prepare and validate a self instructional module

**RESEARCH METHODOLOGY:**

Quantitative approach with descriptive survey design

**TOOLS AND TECHNIQUE:**

Structured questionnaire on knowledge, attitude and practices regarding psychiatric emergencies

**Section I :** Basic information

**Section II :**

1. **Structured knowledge questionnaire**
2. **Attitude scale**
3. **Semi-structured practice questionnaire**

**DATA GATHERING PROCESS:**

100 subjects selected using simple random sampling technique

**MAJOR FINDINGS:**

**Section I: Demographic variables.**

72% had stayed with patient for more than 5 years and experienced psychiatric emergency.

**Section II:** Baseline knowledge, attitude and practices which is divided into

**Section II (a): Distribution according to knowledge:**

55% had good knowledge regarding management. 47% had a good knowledge regarding prevention of psychiatric emergencies.

**Section II (b): Distribution according to attitude:**

15% had highly positive attitude.

**Section II (c): Distribution according to practices**

61% became confused while 71% tried to talk to him initially. 60% would manage the situation themselves.

**Section III: Correlation of knowledge scores with selected demographic variables:**

Demographic variables that showed high levels of significance with knowledge scores were education (p-value 0.002), occupation (p-value 0.019) type of family (p-value 0.017).

**Section IV: Development of a Self Instructional Module (SIM) based on the findings**

SIM's title “A guide to managing psychiatric emergencies at your home” dealing with basic concepts of psychiatric emergencies, two common emergencies and role of relatives in management and prevention.

**CONCLUSION:** The researcher found it satisfactory in assessing the knowledge, attitude and practices regarding psychiatric emergencies among relatives of schizophrenic patients.

## **CHALLENGES FACED BY NURSES IN THE INTENSIVE CARE UNITS – A CASE STUDY**

**Ms. Sara Oommen**

### **KEY WORDS:**

Immune Thrombocytopenic Purpura (ITP), Dengue fever, Acute Respiratory Distress Syndrome (ARDS), Tracheostomy, Extra Corporeal Membrane Oxygenation (ECMO), Cytosorb therapy

### **INTRODUCTION:**

A 32 year old young lady was admitted to the intensive care unit of a tertiary care hospital in Pune on 16/10/2016. She had gone to Dubai last October and noticed some blood clots on her leg and that was just the beginning of a series of complications in her life. She came back to India for affordable treatment.

### **RESULTS & DISCUSSION:**

When she was admitted she looked very tired and was very restless and breathless. She had a past history of ITP. ITP is a condition in which there is low level of circulating platelets which can lead to bleeding. Her platelet count was very low and she was diagnosed with dengue fever, a very common condition. Reports showed that she was developing Acute Respiratory Distress Syndrome (ARDS). This is a syndrome where there is widespread inflammation in the lungs that can lead to respiratory failure. On the 3<sup>rd</sup> day after admission she developed severe bleeding from the renal system (hematuria), respiratory system (hemoptesis) and gastrointestinal system (hematemesis) which lead to severe acidosis. On the same day, she was intubated and connected to ventilatory support. She was treated with high inotropic support, antibiotics, steroids, immunoglobulin and sedatives. In course of time her bleeding stopped, but her lung complications (ARDS) increased, with increased carbon dioxide levels and decreased Oxygen levels in her blood. On the 14<sup>th</sup> day since admission a tracheostomy (an artificial opening in the trachea for ventilatory support) was performed for her. The normal level of oxygen in her blood could not be maintained only with ventilatory support. She was started on Extra Corporeal Membrane Oxygenation (ECMO) on 05/11/2016 since the chances of recovery was very high. ECMO is an advanced therapy by which the oxygenation of the tissues of the body is improved.

On the 14<sup>th</sup> day after starting ECMO, it was discontinued as her oxygenation had improved. The ventilatory support was continued. On the 35<sup>th</sup> day she had a cardiac arrest. The ICU team was up and about, did their level best and she was revived. But it did not stop here. She had high grade fever and infection that was not settling down. Her antibiotic therapy was changed. She was started on Cytosorb therapy which helps in removal of inflammatory mediators from the blood. After 3 cycles of Cytosorb therapy her fever reduced and she started improving.

She was weaned from ventilatory support gradually and on the 59<sup>th</sup> day she was taken off the ventilator. On the 76<sup>th</sup> day of admission to ICU, her tracheostomy tube was removed and oxygen was given through face mask. Her oxygenation was monitored closely and as tolerated by her the amount was reduced till she was able to breathe normal air by herself and maintain normal oxygen levels in her body. By the 80<sup>th</sup> day of admission and being in bed full time, the day arrived when she was slowly, with assistance made to move out of the bed. What a wonderful experience for her, her family members and all the members of the team caring for her.

On the next day (02/01/17) she was shifted to the ward from ICU and continued to receive good care from the health care team. During this period of hospitalization, though she battled with life and death, she did not develop any pressure ulcers and her will power stayed strong. On the 89<sup>th</sup> day (14/01/2017) this young lady who came straight into the ICU, walked out of the portals of the health care organization with a smile and determination to fight the battles of life and live.

**IMPLICATIONS:**

With the advancement in science and technology, nurses and especially critical care nurses need to be up breast with treatment modalities. Revision of nursing curriculum to add on these topics and regular in service education programs to keep the nurses at the bedside updated is essential.

**PATIENT'S NARRATION:**

“We are really thankful to Dr. Prachee and the ICU team for giving me a second life and for all the love and care. God worked through your hands. Love you all.”



## **“AWARENESS REGARDING ROAD SAFETY RULES AMONG SCHOOL CHILDREN”**

**Mrs. Kale Kalpana S.**

### **KEYWORDS:**

Awareness; Road safety; School going children.

### **BACKGROUND:**

Unintentional injuries are important contributors to the preventable causes of mortality & morbidity among school children worldwide. Information of road safety rules is vital in preventing the road traffic accidents. The present study was carried out to assess the awareness level regarding road safety rules among school children.

### **MATERIAL AND METHODS:**

Non experimental, Descriptive cross sectional survey design was used for the study. Around 225 school children (10- 13) age group 5<sup>th</sup> to 7<sup>th</sup> Standard from Rayat high school was selected by using Probability method: stratified random sampling techniques. The pre tested structure interview schedule was used to collect the data .It consists of three sections. Section **A:** Socio Demographic data of children (8 Items ) , Section **B:** Questionnaire to assess the knowledge regarding road safety measures while walking, travelling in vehicle (10 Items), Rules and symbols for road safety Measures After obtaining the informed consent, data was collected. The collected data was analyzed with descriptive and inferential statistics.

### **RESULTS:**

The findings of the study revealed that, overall mean knowledge score was (13±3.4) which is 65% of total score indicating that the children's had average level of awareness on Road safety rules followed by (14%) had good level of awareness, however 21% of them had poor awareness of road safety rules. There was a significant association found between awareness with socio demographic variables like age, mother's education, and source of information at  $p \leq 0.05$  level.

### **CONCLUSION:**

The findings of the study support the need to conduct the health education and training program to impart the knowledge regarding road safety; it gives the motivation to the school children. If they are starting to follow the safety aspect is good to make our country RTA free.

## ADVERTISES



*Jayesh B Lahoti*

**9822152980**

Proprietor

Since - 1998

**Shri Krishna**  
**SURGICALS**  
Your Partner for  
complete surgical solutions

### Quality & Critical Surgical Instrument & Equipment

- General Surgery
- Gynaecology
- Orthopaedic
- ENT
- Ophthalmology
- Micro Surgery
- Hospital Furniture
- O. T. Equipments
- Rehabilitation Products
- Hospital Holloware



### Servicing & Repairing for Hospital Equipment

1213, Sadashiv Peth, Shop no. 3 & 4,  
Parmesh Plaza, Near Hatti Ganpati  
Chowk, Pune 411030.

**Tel : 020-24490781, 24450776**

Email: [info@shrikrishnasurgicals.com](mailto:info@shrikrishnasurgicals.com)  
Website : [www.shrikrishnasurgicals.com](http://www.shrikrishnasurgicals.com)



### All types of Patient Requirement available on Purchase and Rental Basis



रुग्णोपयोगी साहित्य  
विकत व भाड्याने मिळेल.





**a complete perfection**



Dear Sir / Madam,

We, J. R. Garments are amongst the praiseworthy manufacturers of an excellent quality collection of Hospital Uniforms. Established in the year 1984, our respected clients can avail these products from us in a wide range of colours, designs, sizes and patterns. In order to do hospital work and daily activities more hygienically and easily. Fabric used is widely appreciated in the market for their smooth texture, colour fastness, skin-friendly nature, appealing design and shrink resistance. The products available here are at most competitive prices.

Our well-equipped infrastructural facility assists us to design products as per the newest market trend. Moreover, we have employed a team of professionals who help us to execute all our businesses in an organised manner.

*Doctors Aprons*

*Female Nurse Dress*

*Male Nurse Dress*

*Hospital Staff Dress*

*O. T. Dress*

*Surgeon Gown*

*Scrub Dress*

*Patients Dress*

*Cardigan / Sweater*

*Dupatta*

*Panjabi Dress*

*Shoes*



### **J. R. Traders**

21/22, Bizzylund Complex,  
Opp. Vishrambaug Wada, 776 - A,  
Sadashiv Peth, Pune - 411 030.

020 24479123 / 9226777305

jrgarments1984@gmail.com

9226777305

@jrgarments

www.jrpune.com



