COURSE CURRICULUM FOR THIRD PROFESSIONAL B.S.M.S
(PRESCRIBED BY NCISM)

Avasara Maruthuvam
(Emergency Medicine or Casualty)

(SUBJECT CODE : SIDUG-EM)

(Applicable from 2021-22 batch, from the academic year 2024-25 onwards for 5 batches or until further notification by NCISM, whichever is earlier)

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BOARD OF UNANI, SIDDHA AND SOWA-RIGPA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110026

NCISM

III Professional SIDDHA MARUTHUVA ARIGNAR
(Bachelor of Siddha Medicine and Surgery (B.S.M.S))
Subject Code : SIDUG-EM

Avasara Maruthuvam

(Emergency Medicine or Casualty)

Summary

Total number of Teaching hours: 60			
Lecture (LH) - Theory		**0**	**0(LH)**
Paper I	0		
Non-Lecture (NLHT)		**0**	**60(NLH)**
Paper I	0		
Non-Lecture (NLHP)		**60**	
Paper I	60		

Examination (Papers & Mark Distribution)					
Item	**Theory Component Marks**	**Practical Component Marks**			
		Practical	**Viva**	**Elective**	**IA**
Paper I	-	-	-	-	-
Sub-Total	-	-			
Total marks	-				

Important Note :- The User Manual III B.S.M.S is a valuable resource that provides comprehensive details about the curriculum file. It will help you understand and implement the curriculum. Please read the User Manual III before reading this curriculum file. The curriculum file has been thoroughly reviewed and verified for accuracy. However, if you find any discrepancies, please note that the contents related to the MSE should be considered authentic. In case of difficulty and questions regarding curriculum write to **syllabus24sid@ncismindia.org**

PREFACE

The competency-based syllabus for Avasara Maruthuvam (Emergency Medicine and Critical Care) has been introduced for the first time to provide a comprehensive understanding of emergency care in the Siddha system of medicine. Emergency medicine requires quick thinking, decisive action, and precise clinical skills to manage trauma, cardiac emergencies, respiratory distress, hypoglycemia, fever, and other acute conditions. This syllabus ensures that students gain expertise in rapid patient assessment, stabilization techniques, and evidence-based interventions, integrating Siddha principles with conventional emergency care. Special emphasis is placed on effective communication, teamwork, and decision-making under pressure, ensuring that physicians can provide timely, efficient, and compassionate care in critical situations.

The curriculum incorporates clinical reasoning and patient examination techniques, including pulse assessment, breathing patterns, cognitive functions, and Siddha-specific diagnostic tools such as Avathaigal, Anthakaranam, Swasa Nilai, Envagaithervu, Kanmendhiriyam, and Gnanendhiriyam. Patient stabilization strategies include Varma therapy, Thadaval Muraigal, and therapeutic interventions, along with the timely administration of Siddha treatments like Akaranam, Nasiyam, Kalikkam, and Varma therapy. Additionally, the syllabus provides guidelines for referring critically ill patients to higher medical centers when necessary, ensuring an integrated approach to critical care management.

The structured learning objectives, assessment strategies, and resource allocations in this curriculum aim to prepare Siddha physicians to handle acute emergency conditions with confidence. By combining traditional Siddha knowledge with modern advancements, this syllabus ensures that students develop competency in emergency response, patient stabilization, and ethical clinical decision-making. This initiative is the result of collective contributions from esteemed experts, and we acknowledge their invaluable efforts in shaping a curriculum that strengthens the role of Siddha emergency medicine in contemporary healthcare.

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Course Code and Name of Course

Course code	Name of Course
SIDUG-EM	Avasara Maruthuvam

Table 1 : Course learning outcomes and mapped PO

SR1 CO No	A1 Course learning Outcomes (CO) SIDUG-EM At the end of the course SIDUG-EM, the students should be able to-	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Apply knowledge of of symptom and classification of diseases according to Siddha literature and recognize imbalances and aggrevated *kutrams* to upgrade with the contemporary advances in Siddha.	PO1,PO4,PO10
CO2	Perform clinical skills such as history taking,physical examination to predict the type and the severity of the disease and document patient information effectively inaccordance with medical record standards.	PO11
CO3	Demonstrate clinical diagnosis through proficiency in assessing *Envagaithervu, naadi parisothanai*,application of *neerkuri*, *neikuri* and *manikadainool* and also planning the line of treatment.	PO2,PO3,PO4
CO4	Diagnose diseases by integrating knowledge of Anatomy, Physiology, Biochemistry, Microbiology, Pathology, and Imaging studies.	PO4,PO9
CO5	Prescribe disease specific Siddha medicine with suitable *anubanam* as well as special treatment wherever available and develop personalised treatment plans such as internal and external therapies and capable of advising on food and lifestyle modification according to yaakkai and dearranged kutram.	PO2,PO3,PO5,PO6,PO7,PO8
CO6	Demonstrate continuous self directed learning and seek further expertise or pursue research in a chosen area of medicine. Understanding how manuscripts are utilized for the development in research field & Entrepreneurship	PO11,PO12
CO7	Demonstrate hands-on proficiency in managing common medical emergencies and delivering immediate care effectively.	PO1,PO11

Table 2 : Contents of Course

Paper 1 (AVASARA MARUTHUVAM)						
Sr. No	**A2 List of Topics**	**B2 Term**	**C2 Marks**	**D2 Lecture hours**	**E2 Non-Lecture hours Theory**	**F2 Non-Lecture hours Practical**
1	**Examination of the patient in Sanni mayakkam** • *Sanni Mayakkam* is a condition where a person experiences confusion, disorientation and abnormal mental status leading to uncounsiousness. • Examination involves assessment of *Sanni Mayakkam* patients in Siddha and Modern parameters • Siddha parameters include, History taking, *Avathai, Anthakaranam, Naadi, Envagai Thervu and Udal Kattugal.* • It also involves analysing the survival symptoms and fatal symptoms as laid down in Siddha textbooks.	1	0	0	0	3
2	**First aid treatment for Sanni Mayakkam** • First Aid treatment for *Sanni Mayakkam* or uncounsiousness involves treatment to normalize the three humours *Vatham, Pitham and Kapham.* • After assessing the *Theerum Theera Nilai*, manage the patients S*wasa Nilai.* • Do appropriate *Thadaval Murai* and *Adangal.* • If the patient is still in *Sanni Mayakkam* adminIster *Akkaranam, Nasiyam, Pugai* and if needed *Kalikam*. After restoring counsiousness administer emergency Siddha oral drugs. • If the patient vitals are still in abnormal condition refer the patient to the nearby ICU (Intensive Care Unit)	1	0	0	0	3
3	**First aid treatment for manthara kaasam** • First aid treatment for *Manthara Kasam* involves, treating *Manthara Kasam*/Asthma patients after assessing through Siddha and	1	0	0	0	3

	Modern parameters. • After assessment give *Pugai* as laid down in the textbook of *Noigaluku Siddha Parikaram* and *Gunapadam Mooligai Vaguppu* in appropriate doses depending upon the patient condition. • If the patient vitals are abnormal and the *Naadi* does not normalize from *Sanni Naadi* refer the patient.					
4	**First aid treatment for Murivu(fracture)/ Isangal(dislocation)** • First aid treatment for *Murivu* (Fracture)/*Isangal* (Dislocation) involves assessment and treatment of injured patient. • After assessment administer Siddha analgesic drugs. • Do reduction for the *Murivu/Isangal.* • Maintain the reduction by bandaging it. • Administer Siddha internal drugs to normalize the deranged *Vatham, Pitham* and *Kapham* for atleast six days with *Pathiyam.*	1	0	0	0	3
5	**Cardiopulmonary resuscitation** • CPR is necessary for sudden unresponsive and pulseless patients. • CPR procedure involves compressing the chest to push down hard and fast at a rate of about 100 to 120 compressions per minute. • After 30 chest compressions tilt the head back slightly to open the airway and lift the chin. • Continue alternating 30 chest compressions with 2 rescue breaths until the patient begins to breathe on their own or the emergency provider arrives.	1	0	0	0	3
6	**Examination and Management for Valippu (Seizures)** • *Valippu* is a broad entity that needs emergency medical care. • It can occur as a separate disease or a manifestation of variety of clinical condition.	2	0	0	0	3

	• Observe the patient, remove the obstacles that can cause injury to the patient. • Raise head, tilt the patient to the lateral position to avoid secretion from the mouth reaching the airway. • Give external medications like *Pugai, Nasiyam, Naasikaparam* to arrest *Valippu.* • Analyse the cause of the condition through Siddha and Modern parameters and treat the cause.					
7	**Examination and Management for Mugavaatham/ Uraga vaatham** • *Mugavadham/Uragavadham* is a lower motor neuron type of facial palsy. • It can occur mostly as a separate disease or as a separate manifestation of a pre-existing disorder. • Do Siddha and Modern parameters of examination and arrive at a specific diagnosis. • Treatment includes internal drugs and external application like *Ottradam, Poochu, Pugai, Thadavumurai and Adangal.* • Refer the patient, if the patient meets the refer criteria.	2	0	0	0	3
8	**Examination and Management for Eruvai Kuruthi Perukku (Lower gastro intestinal bleeding)** • *Eruvai Kuruthi Perukku* is an emergency condition necesscetating immediate intervention. • Analyse the patient through Siddha and Modern parameters and assess the amount of bleeding. • Examine Siddha emergency drugs to stop the bleeding. • Incase of severe hypovolemic, administer IV fluid in the presence of modern allopathy doctor whose presence is mandatory as per NCISM regulations. • If the patient needs the referral criteria, refer the patient to the nearby ICU.	2	0	0	0	3
9	**Management of Thol Pusam Netti Thaalvu or Kai Kuli Kundu Isangal (Anterior dislocation of shoulder)**	2	0	0	0	3

	• *Thol Pusam Netti Thaalvu/Kai Kuli Kundu Isangal* is the Anterior Dislocation of the Shoulder. • Usually patient supports the Forearm to the opposite hand. • Examine the patient and assess vascular and neurological integrity. • Do Modern diagnostic methods like X-ray and obtain reports. • Prepare the patient for reduction and do the appropriate reduction technique. • Do bandaging and advise rest for 3-4 weeks.					
10	**Management of Manibantha murivu or Kozhikazhuthu murivu(Distal end of radius fracture** • *Manibantha Murivu /Kozhikazhuthu Murivu* is a Distal end of radius fracture. • It is the most common fracture among post-menopausal female. • Do physical examination of the injured wrist and assess the position of the fractured fragments. • Do X-ray and get the X-ray report. • Prepare the patient for reduction and do reduction of fractured fragments promptly. • Bandage the injured forearm and use an armsling for 3-4 weeks. • Do *Thadavu Murai* after removal of the bandaging to avoid stiff joints. • Refer the patient incase of open injuries.	2	0	0	0	3
11	**Oxygen therapy** Oxygen therapy is the administration of oxygen at concentration of pressure greater than that found in the environment atmosphere. The air that be breath contains approximately 21% oxygen. Oxygen is carried by haemoglobin and heart pump the blood to various tissues. O2 therapy is the key treatment in respiratory care. The purpose is two increase O2 saturation in tissues where saturation levels are too low due to illness or injury	2	0	0	0	3
12	**IV fluid administration and Suturing** Assess the patient using modern diagnostic parameters and administer IV fluids as directed by	2	0	0	0	3

	the specialist. Suturing is a procedure to close a wound.					
13	**BREATHLESSNESS** A complaint of shortness of breath (dyspnoea) implies that the act of breathing has became conscious effort. Here is the detailed description about handling of a patient with shortness of breath.	2	0	0	0	3
14	**CHEST PAIN** An unpleasant sensation of pressure, tightness, heaviness, or squeezing in the chest, which may radiate to the arms, back, neck, jaw, or throat.	2	0	0	0	3
15	**Fever** Fever	2	0	0	0	3
16	**Enema and Urinary Catheter** Enemas is the administration of fluids rectally to cleanse or stimulate the emptying of bowel. Urinary catheterization is a procedure to drain retained urine from the bladder.	3	0	0	0	3
17	**Coma** Assess the patient in coma as directed by the concerned specialist	3	0	0	0	3
18	**Hypoglycemia** Assess the patient with hypoglycemia and treat as directed by the concerned specialist	3	0	0	0	3
19	**Shock** Assess the patient in shock and treat as directed by the concerned specialist.	3	0	0	0	3
20	**Treating vomiting and diarrhea** Assess the patient with vomiting, diarrhea, or both, and treat as directed by the concerned specialist	3	0	0	0	3
Total Marks			**0**	**0**	**0**	**60**

Table 3 : Learning objectives of Course

Paper 1 (AVASARA MARUTHUVAM)										
A3 Course outcome	**B3 Learning Objective (At the end of the session, the students should be able to)**	**C3 Domain/sub**	**D3 MK / DK / NK**	**E3 Level**	**F3 T-L method**	**G3 Assessment**	**H3 Assessment Type**	**I3 Term**	**J3 Integration**	**K3 Type**
Topic 1 Examination of the patient in Sanni mayakkam (LH :0 NLHT: 0 NLHP: 3)										
A3	**B3**	**C3**	**D3**	**E3**	**F3**	**G3**	**H3**	**I3**	**J3**	**K3**
CO1, CO2, CO3, CO4, CO7	Demonstrate on the model for examination of unconsious patient using Siddha paramaters	PSY-GUD	MK	KH	CD,PT, CBL	P-PRF	F&S		-	NLHP1.1
Non Lecture Hour Theory										
S.No	**Name of Activity**	**Description of Theory Activity**								
Non Lecture Hour Practical										
S.No	**Name of Practical**	**Description of Practical Activity**								
NLHP 1.1	Examination of unconsious patient using Siddha paramaters	Examination of the ***Sanni Mayakkam*** (Unconscious) in Model: Stepwise Procedure 1. **History** • Take a detailed history from the person accompanying the patient (attender) regarding: • The circumstances leading to sanni mayakkam (unconsciousness). • Any known medical conditions such as *Madhu megam, Pitthathikkam, Valippu, Varma injury, Suram, Sobai.* • Recent drug intake or allergies.								

- Previous episodes of unconsciousness or related symptoms.
- Whether associated with loss of muscle power, paresis, or paralysis of one side (upper and lower limb) to rule out stroke.

2. **Consent**

- Obtain consent.
- Get written consent from the patient or immediate relatives, acknowledging the need for examination and potential interventions.

3. ***Avathai*** (Condition Assessment)

- Assess *Avathai.*
- Evaluate the condition of the patient based on *Nanavu, Kanavu, Urakkam, Perurakkam, and Uyirpadakkam.*

4. ***Anthakaranam*** (Mental State Assessment)

- Assess *Anthakaranam.*
- Evaluate the mental state based on *Manam, Buththi, Siddham, and Agankaram.*

5. ***Naadi*** (Pulse Assessment)

- Check *Naadi.*
- Assess the *Vali*, *Azhal*, *Iyam*, and *Thontam* of the pulse in all ten pulse sites, paying special attention to:
- *Sanni Naadi*: Determine if it’s associated with Kuthirai Vali, Ulveechu, Puraveechu, or

Mantha Sanni.
- *Karpa Naadi and Saaga Naadi Kuri.*

6. ***Envagai Thervu*** (Physical Assessment)
Evaluate *Envagai Thervu.*

- *Naa:* Observe for cyanosis or color changes of the tongue.
- *Niram*: Assess for overall color changes in the skin.
- *Mozhi*: Check if the patient can speak or not.
- *Vizhli*: Examine for pupil dilation (Garuda Paarvai - movement of the eyeball).
- *Sparisam:* Look for signs of sweating or coolness of the skin.
- *Malam*: Check for incontinence or emptied bowel.
- *Moothiram*: Assess for emptied bladder or urinary incontinence.

7. ***Udal Kattugal*** (Body Condition Assessment)
Note any ejaculation of semen *(Sukkil),* as this indicates *Asaathiya nilai.*
8. **Analyze the Chance of Survival**
Survival Analysis

- Evaluate the clinical signs and overall condition of the patient to determine the likelihood of survival based on the assessment.
- Normal *Pitha Naadi.*
- Absence of fatal symptoms.

9. **Fatal Symptoms**

- Assess for fatal symptoms:
- Pupil dilation with a fixed eyeball (*Garuda Parvai).*

		• Emptied *Sukkilam (*ejaculation). • Emptied urine or urinary incontinence. • Emptied bowel or fecal incontinence. • Severe respiratory distress or absence of respiration (*Swasa Nilai maruthal*). • Absence of pulse (*Naadi Illamai*). 10. **Survival Symptoms** • Assess for survival symptoms: • Normal pupil size without dilation. • No ejaculation of semen. • No urinary or fecal incontinence. • Normal respiratory function (Swasa Nilai). • Normal pulse assessment. 11. **Diagnosis** *Sanni Mayakkam.* 12. **Criteria for Referral** Referral Criteria: • Persistent *Sanni Naadi.* • Abnormal *Swaasa Nilai.* • Deep coma or altered consciousness. • Abnormal vital signs. Clinical Practice for Three Hours
Topic 2 First aid treatment for Sanni Mayakkam (LH :0 NLHT: 0 NLHP: 3)		

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Demonstrate the First aid treatment for unconscious patient / model	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP2.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 2.1	First aid treatment for *Sanni Mayakkam* (unconscious) patient	Examination and First Aid Treatment for ***Sanni Mayakkam*** (Unconscious) Patien/modelt: Stepwise Procedure 1. **History** • Obtain History: Gather details from the person who brought the patient or from family members. • Associated Symptoms: Note any symptoms observed prior to the loss of consciousness and diseases like *Suram, Iraippu, Thamaraga noi, Pithathikkam, Madumegam, Valippu, Varma injury, previous episodes of vatha noigal like pakka vatham and Sobai.* 2. **Consent** Obtain explicit consent from family members for treatment. 3. ***Avathai*** (Conscious Status Assessment)

- Assess the patient's condition based on *Nanavu, Kanavu, Urakkam, Perurakkam, Uyirpadakkam* (parameters indicating consciousness).

4. ***Anthakaranam*** (Mental State Assessment)

- Assess mental state through *Manam* (mind), *Buththi* (intellect), *Siddham* (wisdom), *Agankaram* (memory).

5. **Physical Examination**

- Examine the patient from head to toe for any injuries, bites, or signs of trauma, respiration, and pupils.

6. ***Envagai Thervu*** (Vital Signs and Physical Signs)

- *Naa*: Check for color changes of the tongue.
- *Niram*: Observe color changes in the skin.
- *Mozh*i: Assess for slurred speech.
- *Vizhi:* Pupil differences,Changes in pupil size, Fixed pupil, Movement of the eyeball, Kuruthi nira maaruthal, Kan veekkam, Manjal nira maruthal.
- *Naadi*: Evaluate for Sanni naadi (weak pulse) or absent pulse.
- *Sparisam*: Note skin temperature (cold and clammy
- *Malam*: Incontinence.
- *Moothiram*: Urine incontinence.

7. ***Theera Nilai*** (Critical Signs)
Look for:

- Pupil dilatation with fixed eyeballs.
- Ejaculation (*Sukkilam*).
- Urinary incontinence.
- Fecal incontinence.
- Respiratory distress (*Swasa nilai maruthal*).
- Absent pulse (*Naadi illamai*).

8. **Diagnosis**

- *Sanni Mayakkam.*

9. **Management** - *Swasa Nilai*
After the initial assessment, maintain the airway by:

- Removing secretions from the mouth.
- Raising the chin to maintain *Swasa nilai.*

10. **Management** - *Thadaval Murai* (Restoration Techniques)

- Perform techniques outlined in reference materials to restore alertness.

11. **Management** - *Adangal* (Specific Treatments)

- Provide adangal relevant to any observed injuries.

12. **First-Line Drug Treatments**

- Administer *Akranam* (nasal instillation) and *Nasiyam.*
- Second-line treatments include *Pugai* (fumigation) and *Kalikam.*

13. Medications After Restoring Consciousness

- *Kaya Sanni Thylam*
- *Kukkudathi Thylam*
- *Vettu Maaran Kuligai*
- *Varma Sanni Kuligai*
- *Murivennai*
- *Vasavennai*
- *Muthuchippi Parpam*
- *Silasathu Parpam*
- *Jaathi Jambeera Kulambu*
- *Thayir Chundi Chooranam*
- *Padiga Linga Thuvar*
- *Linga Chenduram*
- *Nasiyam*
- *Naasigaparanam*
- *Utthamani patru*
- *Kollu ottadam*
- *Sanni Merpoochu Thylum*
- *Seeraga Pugai*
- *Pottiluppu Pugai*
- *Adathodai Pugai*
- *Veerabatra Kalikam*
- *Thetraan Naasigaparanam*
- *Kalnandu Uttamani Kalikam* (65mg)

Emergency drugs as mentioned in books of 1st schedule of Drugs and Cosmetic Act1940
Treatment appropriate for the causes like hypoglycemia, hypoxia, electrolyte imbalance, convulsion,

		or metabolic disorder. 14. **Referral Criteria** • Stable Condition: Refer to the appropriate department after stabilizing the patient. • Unstable Condition: Referral to a nearby ICU if the patient exhibits unstable vital signs or *Naadi.* Vital Signs for Referral • Blood Pressure: < 90/60 mm Hg. • Heart Rate: < 60/min or > 120/min. • Respiratory Rate: > 30/min or < 12/min. • Temperature: > 103°F or < 95°F. • Oxygen Saturation: < 93%. Clinical Practice for Three Hours

Topic 3 First aid treatment for manthara kaasam (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Demonstartion of the First aid treatment for *Manthara kaasam*	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP3.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity
Non Lecture Hour Practical		
S.No	**Name of Practical**	**Description of Practical Activity**
NLHP 3.1	First aid treatment for *Manthara kaasam*	First Aid Treatment for ***Manthara Kaasam*** Stepwise Procedure 1. **History:** • Obtain Previous History: Investigate any prior instances of Manthara Kaasam, recent travel, exposure to allergens,food or drug intake and suram. 2. **Consent:** • Obtain Consent: Get consent from the patient or their immediate relatives for treatment. 3. ***Avathai*** (Consciousness Assessment): • Assess *Avathai Nilai* Evaluate the patient's consciousness based on *Nanavu, Kanavu, Urakkam, Perurakkam, Uyirpadakkam.* 4. ***Anthakaranam*** (Mental State Assessment): • Assess Anthakaranam Evaluate mental state through Manam (mind), Buththi (intellect), Siddham (wisdom), Agankaram (memory) 5. ***Envagai Thervu*** (Vital Signs and Physical Signs):

- *Na*: Observe the color of the tongue.
- *Niram*: Note any color changes in the skin.
- *Mozhi:* Assess if the person can speak sentences in one breath.
- *Vizhi:* Check for puffiness around the eyes or face.
- *Sparisam* : Look for signs of shock (cold, clammy skin).
- *Naadi:* Evaluate pulse characteristics (guru naadi).
- *Malam*: Assess for incontinence.
- *Moothiram*: Note any urine incontinence.

6. ***Udal Thaathugal*** (Body Assessment):

- Look for signs of dehydration and other body responses.

7. ***Pranavaayuvin Nila***i (Breath Assessment)

Assess the severity of:

- Breathlessness.
- Coughing.
- Sneezing.
- Difficulty in inhalation and exhalation.

8. ***Swasa Nilai*** (Breathing Condition)

- Assess:

- Type of breathing.
- Use of accessory muscles.

- SpO2 level.
- Abnormal breath sounds.
- Sputum examination.

9. **Diagnosis**: *Manthara kasam*
10. Association of ***Manthara Kaasam***

- Assess for any comorbidities that may contribute to asathiya nilai as listed in Noi Naadal Noi Mudhal Naadal Part I.

11. **Bedside Assessment** (Breathing Alterations):
- Evaluate:

- Spo2, Co2 level
- Vital signs.
- Cardiac status.
- Renal status.

12. **Management**
- Follow treatment protocols as per reference books:

- *Mooligai Vaguppu:* Apply appropriate herbal remedies.
- *Noigaluku Siddha Parigaram*: Provide Siddha treatments for associated symptoms.

13. **Referral Criteria**

- Inability to complete sentences in one breath

		• Failure to respond, silent chest, Neelam paarithal, Sanni Mayakkam, Kaba vatha naadi, Sanni naadi, Melintha naadi, changes in avathai and anthakaranam. • Vital Sign Indicators: - Blood Pressure: < 90/60 mm Hg. - Heart Rate: < 60/min or > 120/min. - Respiratory Rate: > 30/min or < 12/min. - Temperature: > 103°F or < 95°F. - Oxygen Saturation: < 93% • Hypercapnoea Clinical Practice for Three Hours

Topic 4 First aid treatment for Murivu(fracture)/ Isangal(dislocation) (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO6, CO7	First aid treatment for *Murivu* (Fracture) / *Isangal* (Dislocation)	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP4.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity

NLHP 4.1	First aid treatment for *Murivu* (Fracture)/ Isangal (Dislocation)	First Aid Treatment for ***Murivu*** (Fracture)/Isangal(Dislocation): Stepwise Procedure 1. **History** Take History Gather detailed information from the patient or bystanders regarding the incident, previous injuries, and any relevant medical history. 2. **Consent** Obtain Consent: Get consent from the patient or immediate relatives for examination and treatment. 3. **Conscious Level** Assess Conscious Level Use Siddha parameters and the Coma Scale to evaluate the patient's level of consciousness. 4. ***Avathai*** (Consciousness Assessment) Assess *Avathai Nilai* Evaluate consciousness using *Nanavu, Kanavu, Urakkam, Perurakkam, Uyirpadakkam.* 5. ***Envagai Thervu*** (Vital Signs and Physical Signs) - Assess Vital Signs: • *Naa:* Observe the color of the tongue. • *Niram*: Note any color changes in the skin and specially around the injured area. • *Mozhi:* Assess if the person can speak. • *Sparisam*: Look for signs of shock (cold, clammy skin). • *Vizhi:* Examine the eyes for any abnormalities. • *Malam:* Assess for incontinence. • *Moothiram:* Note any urine incontinence. 6. ***Swaasa Nilai*** (Breathing Condition) Assess Breathing: Evaluate the type of respiration the patient is having and measure oxygen saturation using a pulse oximeter. 7. Examination of the Patient -*Paarvai Thervu* (Visual Examination):

Look for

- swelling,
- redness, and
- deformity at the injury site.

- ***Thottu Paarthal*** (Physical Examination):
Assess for

- heat
- tenderness
- crepitus and
- any excessive mobility or restricted movement at the site of injury.

8. **X-ray or Scan**
Diagnostic Imaging: Perform X-rays or scans to confirm the murivu (fracture) or isangal (dislocation) and assess its severity.
9.**Diagnosis**: *Murivu (*Fracture), or *Isangal* (Dislocation)
10.**Management**

- Pain Management Administer appropriate siddha analgesics.
- Reduction: If applicable, perform reduction to realign the fracture or dislocated joint.
- Splinting: Apply a splint and bandage to immobilize the injured area.
- Rest.
- Medication

- *Kaaya Sanni Thylam* 15 ml BD for 6 days.
- *Murivennai* (external).

		-*Vasavennai* (external). 10. **Referral Criteria** Indications for Referral • *Murivu* (Fracture) at *Vishabanda Varmam* • Unstable murivu or isangal. • Profuse bleeding. • Signs of shock. • Unstable vital signs. • Presence of comorbidities. Clinical Practice for Three Hours

Topic 5 Cardiopulmonary resuscitation (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Demonstarte the Cardiopulmonary resuscitation	PSY-GUD	MK	KH	CBL,SIM	P-CASE	F&S		-	NLHP5.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 5.1	Cardiopulmonary resuscitation	**CPR (CARDIOPULMONARY RESUSCITATION):** Basic life support:

On encountering an unconscious simulation/mannequin, the following are recommended.

Make sure the scene is safe before proceeding.
Position and assessment of the person

Shake the person, Position the patient on a firm flat surface

If the victim is found to be in face down position roll the patient as a unit, so the head, neck and tarso move simultaneously.

Tap their shoulder hard and talk to them loudly (Do not shake the patients head or neck, if trauma to this area is suspected)

Check to see if the person is breathing (Agonal breathing, which is occasional gasping and is ineffective, does not count as breathing)
Call EMS 108
Send someone for help or to call your emergency number 108 and to get an AED
Open the patient airway

The patients mouth needs to be open and dentures should not be removed.

If Neck injury is not suspected the head tilt chin lift should be performed

If neck injury is suspected with possible cervical fracture use the jaw thrust maneuver to limit the potential for spinal cord injury.
Assess for the presence of respiration:
Once by airway is open, an open airway maybe all that is necessary for spontaneous respiration to resume and continue.
If spontaneous respiration is not present, give two slow breaths- Mouth to mouth breathing (1.5 -2 seconds per breath)

The rescuer should take a breath after each ventilation.

Rapid or high-pressure breath may result in gastric distension.

Each ventilation should be performed with sufficient volume to make the patient chest rise followed by a 2 second pause.

If the patient can't be ventilated reposition the patients head and attempt ventilation again.

If ventilation is unsuccessful after a second attempt use obstructed airway maneuvers
Begin sets of compression and rescue breaths:
i)**Assess for pulse**;

- By palpating the patients carotid Artery for at least 5 seconds.
- If carotid pulse is present continue, rescue breathing at a rate of 12 slow breath per minute.

ii)**Chest compressions:**

It should be initiated at a rate of 80-100 per minute in the absence of carotid pulse or if the blood pressure is inadequate for cerebral perfusion, despite appropriate treatment.

If you are not sure you feel a pulse begin CPR with a cycle of 30 chest compressions and two breaths.

The patient should be lying on a firm surface.

Chest compression is performed with the heel of one hand on the back of the other hand.

Head position should be 1 inch cephalad to the patient's xiphoid process.

Straighten your arms and press straight down.

Be sure that between each compression you completely stop pressing on the chest and allow the chest wall to return to it's natural position.

Leaning or resting on the chest between compression can keep the heart from refilling in between each compression and make CPR less effective.

After 30 compressions stop compression and open the airway by tilting the head and tilting the chin.

Put your hand on the person's forehead and tilt the head back.

Lift the persons jaw by placing your Index and middle finger on the lower jaw; lift up.

Do not perform the head- tilt/chin - lift maneuver, if you suspect the person may have a neck injury. In that case, jaw thurst is used.

For the jaw +thrust maneuver, grasp the angles of the lower jaw and lift it with both hands. One on each side moving the jaw forward. If their lips are closed, open the lower lip using your thumb.

Give a breath while watching the chest rise. Repeat while giving a second breath.

Breath should be delivered over one second.

Rescue chest compression. Switch quickly between compression and rescue breath to minimize interruption in compression.

It should be done for minimum 30 minutes.
If an unconscious patient cannot be ventilated:

After two attempts at positioning the head and chin and a laryngoscope is unavailable,

Perform 6 to 10 abdominal thurst (the Heimlich maneuver)

		Active compression and decompression and interposed abdominal compression are experimental techniques that hold promise for increasing cerebral and cardiac blood flow. Clinical Practice for Three Hours

Topic 6 Examination and Management for Valippu (Seizures) (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Demonstrate the managemnt of *Valippu*	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP6.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 6.1	Managemnt of *Valippu*	Examination and Management of *Valippu* (Seizures) Stepwise Procedure 1. **History** • Gather Detailed History • Previous episodes of seizures. • Any history of *Madhumegam* (diabetes). • History of *Ruthra Vaayu* (Ischaemic Heart Disease/Arrhythmia). • History of *Iraippu* (Asthma or other respiratory illnesses).

- Recent *Suram* (Fever) or Sanni (Acute Confusional State).
- Check for underlying conditions such as *Vaatha, Pitha or Kaba Noigal* (humoral imbalances).
- Drug withdrawal history.
- Any history of Trauma.

2. **Consent**

Obtain Consent:

Get consent from the patient or immediate relatives to proceed with assessment and treatment.

3. ***Avathai*** (Condition Assessment of level of Consciousness)

- Assess *Avathai:*
- Evaluate the patient's condition using parameters like *Nanavu, Kanavu, Urakkam,perurakkam, Uyirpadakkam.*
- Assess the level of Coma if applicable.

4. ***Anthakaranam*** (Mental State Assessment)

Assess Anthakaranam:

Evaluate altered sensorium based on:

- Absence of response.
- Presence of hallucinations
- Inability to speak

5. ***Envagai Thervu*** (Physical Assessment)

- Evaluate *Envagai Thervu:*

- *Naadi*: Assess for S*aani, Ulveechu, Puraveechu.*

- *Niram:* Check for pallor or cyanosis.
- *Mozhi:* Assess speech capability.
- *Vizhi:* Observe pupil color and presence of nystagmus.
- *Sparisam:* Note any sweating or coolness of the skin.
- *Malam:* Check for incontinence.
- *Moothiram:* Assess urinary incontinence.
- *Naa*: Look for frothy mucus or bites.

6. ***Udal Kattugal*** (Body Condition Assessment)

- Assess Body Condition:
- Check for signs of dehydration, pain, or tiredness.

7. ***Kanmendhiriyam*** (Motor Assessment)

- Evaluate for Types of Seizures:
- Assess for tonic, clonic seizures, rigidity, or epileptic cry.

8. ***Gnanendriyan*** (Aura and Sensory Changes)

- Check for Aura:
- Evaluate for abnormal tastes or smells before the seizure onset.

9. ***Assessment with Investigation***

- Duration and Characteristics:
- How long did the seizure last?

- Epilepsy 1-2 minutes.
- Status Epilepticus: more than 4-5 minutes usually more than 30 minutes.

- Identify body parts involved, and check for:

- Drug history.
- Trauma.
- Fever.
- Apnea or cyanosis.
- Pregnancy.
- Incontinence.

- **Investigations:**

- Blood sugar level.
- Oxygen saturation.
- Electrolytes.
- Kidney Function Tests (KFT).
- Liver Function Tests (LFT).

10) **Diagnosis: *Valippu.***

11. **Management**

- Immediate Management:

- Avoid placing any objects in the mouth of the patient.
- Cover sharp edges of the bed with sheets for safety.
- Clear frothy sputum from the mouth to prevent aspiration.

		• Place the patient in lateral decubitus position after the seizure episode to avoid aspiration and to maintain airway. • Follow Pura Maruthuvam as in Siddha Maruthuvam guidelines. • Correct oxygen levels and electrolytes. • Use *Periya Kavuli Adangal* for convulsions due to trauma. 12. **Referral Criteria** - Criteria for Referral • Convulsions lasting more than 2 minutes. • Presence of comorbidities. • Call EMS or ambulance at phone number 108 in Tamil Nadu. Clinical Practice for Three Hours

Topic 7 Examination and Management for Mugavaatham/ Uraga vaatham (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Demonstrate the examination and Management of *Muga Vatham* / *Uraga Vatham*	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP7.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical		
S.No	**Name of Practical**	**Description of Practical Activity**
NLHP 7.1	Examination and Management of *Muga Vatham* / *Uraga Vatham*	Stepwise Procedure 1. **History** • Gather Detailed History: • Acute onset of symptoms upon waking. • Exposure to chill air. • Symptoms such as *Sevi Soolai (*pain in the ear) or *Sevi Padu Vaatham* (ear-related vatha disorders). • Any history of *Madhumegam* (diabetes). • Presence of *Vaatha Nooigal.* • Recent Trauma (such as *Kona Saani Varmam or Sevi Kutri Kaalam).* 2. **Consent** Obtain Consent Get consent from the patient or immediate relatives before proceeding. 3. ***Avathai*** (Level of Consciousness Assessment) Assess *Avathai* Evaluate the patient's condition using parameters like *Nanavu Kanavu, Urakkam, Perurakkam and Uyirpadakkam* 4. ***Envagai Thervu*** (Physical Assessment) Evaluate Envagai Thervu • *Naa*: Changes in taste and salivation. • *Vizhi:* Difficulty in eyelid opening or lateral gaze. • *Niram:* Note any changes in color. • *Mozhi:* Assess for any changes in speech.

- *Sparisam*: Observe for sensory changes on the pinna or face.
- *Malam:* Note any changes in bowel function.
- *Moothiram*: Conduct urine examination.
- *Naadi:* Assess for Vatha Naadi and Varma Naadi.

5. ***Kanmendhiriyam*** (Assessment of Motor Function)
- Evaluate Kanmendhiriyam

- *Vaai:* Difficulty in speech.
- *Kaal:* Difficulty in using lower limbs.
- *Kai:* Difficulty in using upper limbs.
- *Eruvaai:* Changes in bladder and bowel function.
- *Karuvaai*: Assess reproductive history and function.

6. ***Kanmavidayam*** (Facial Sensory Assessment)
- Evaluate *Kanmavidayam**

- *Sevi:* Assess for pain, discharge, tinnitus, or deafness.
- *Kan*: Visual defects.
- *Naaku* Taste perception over the anterior 2/3 of the tongue.
- *Mooku:* Assess for changes in the olfactory function.
- *Mei:* Observe for any changes in skin sensation.

7. ***Thummal kaatru (Naagan):***
- Evaluate *Thummal kaatru (Naagan)*
- Check for drooping, smoothing of wrinkles, difficulty in raising eyebrows, and inability to close eyes.

8***. Vizhi kaatru(Koorman):***
Assess with clenching of teeth, whether closure of eye is normal or not.

9.***Naadi:***

- Assess for Ida *mookku narambu(Idakalai), Vala mooku narambu(Pinkalai), Nadu moochu narambu(Suzhumunai), Valakkan narambu (Purudan), Idakkan narambu (Kanthari), and Vala sevi narambu (Atthi), Ida sevi narambu) Alampudai)* function.

10. **Assessment**

- Clinical Assessment:

- Deviation of one side of face, Pain, drooping of eyebrow, inability of raising eyebrow, dribbling of saliva through the angle of mouth, i*raichal* in ear(tinnitus), and loss of taste.
- Determine if the entire half of the face or only the lower half is affected.
- Conduct a clinical examination for associated *Pakka Vaatham* or other *vata disorders.*

11.**Diagnosis: *Muga Vatham***

12. **Management:**

- Drugs:

- *Kaaya Sanni Thylam:* 15 ml BD for 6 days.
- *Kurunthotti Thylam* External application *(Therayar Vaakadam).*
- *Pal vali podi: a*s Oral tooth powder (Therayar Kudineer).
- *Venkkara Sanjeevi Maathirai* External use *(Therayar Vaakadam).*

- Other Treatments:

- *Ottradam* (Fomentation).
- *Poochu* (Dry heat treatment).
- *Pugai (*Fumigation).
- *Thadavumurai* (Therapeutic Ennai Application).
- *Valapingalai Adangal* (Specific compresses).

		12. **Prognosis** - Prognosis: - The condition generally resolves within 3 to 6 weeks for 90% of patients. Remaining experience residual facial palsy. 12. **Referral Criteria** - Criteria for Referral: • Associated *Pakkavadham* (complications). • *Mugavadham* associated with acoustic neuroma. Clinical Practice for Three Hours

Topic 8 Examination and Management for Eruvai Kuruthi Perukku (Lower gastro intestinal bleeding) (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Assess the patient with *Eruvai kuruthi perukku* using both Siddha and modern diagnostic tools, and treat according to the guidelines in the reference books	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP8.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 8.1	Examination and Management for *Eruvai Kuruthi*	Stepwise Procedure

	Perukku (Lower Gastrointestinal Bleeding) (LGIB)	1. **History** • Collect Detailed History • Duration and Volume of bleeding. • Any Previous Illnesses: jaundice, liver disease, or gastrointestinal disorders. • Presence of Symptoms fever, abdominal pain, or changes in bowel habits. • Medication History: drug intake, including anticoagulants, NSAIDs, or any other relevant medications. • Laboratory Values: inquire about previous hemoglobin (Hb) and red blood cell (RBC) levels. - Check for Features Suggestive of Shock - Heart Rate (HR) > 100 bpm. - Respiratory Rate (RR) > 30 breaths/min. - Blood Pressure (BP) < 90/60 mm Hg. 2. **Consent** • Obtain Consent • Get informed consent from the patient or immediate relative for examination and potential interventions. 3. **Assessment** Physical Examination: • Vital signs: assess HR, BP, and RR. • Abdominal examination: palpate for tenderness, distension, and organomegaly. • Evaluate for signs of shock: cool, clammy skin; altered mental status; or decreased urine output.

4. **Investigations**

Laboratory Tests

- Complete Blood Count (CBC) to assess hemoglobin and hematocrit levels.
- Erythrocyte Sedimentation Rate (ESR) and C-reactive protein (CRP) to check for inflammation.
- Bleeding time (BT), Activated Partial Thromboplastin Time (APTT), Prothrombin Time (PT), and International Normalized Ratio (INR) for coagulation profile.
- Serum Urea and Creatinine to assess renal function.
- Liver function tests: Serum Glutamic-Oxaloacetic Transaminase (SGOT) and Serum Glutamic-Pyruvic Transaminase (SGPT).
- CT abdomen to identify the source of bleeding, if needed.

5. **Diagnosis**: *Eruvai kuruthi perukku.*

6. ***Management***

- General Management:
- *Noigaluku Siddha Parigaram Part I, Siddha Maruthuvam, Vanni pitham, Rattha pitham, and Sem pitham treatments in Agatheesar Pitha Nithanam.*
- Address Hypovolemia
- Administer IV fluids (crystalloids or colloids) to restore blood volume.
- Blood transfusions if necessary, especially if hemoglobin is critically low.
- Monitor vital signs continuously and reassess the patient's status frequently.

6. **Complications**

Potential Complications

- Severe Anemia due to ongoing bleeding.

		• Shock hypovolemic or septic. • Multi organ Failure: as a result of prolonged shock. • Possible need for surgical intervention if bleeding is uncontrolled. 7. **Criteria for Referral** Referral Criteria • Severe anemia with hemoglobin levels < 5 g/dL. • Increased INR, indicating a higher risk of bleeding. • Elevated CRP suggesting significant inflammation or infection. • Severe jaundice that may complicate the management of bleeding. Clinical Practice for Three Hours

Topic 9 Management of Thol Pusam Netti Thaalvu or Kai Kuli Kundu Isangal (Anterior dislocation of shoulder) (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Demonstrate the management of *Thol Pusam Netti Thaalvu* or *Kai Kuzhi Kundu Isangal* (Anterior Dislocation of Shoulder)	PSY-GUD	MK	KH	CBL,PBL	P-CASE	F&S		-	NLHP9.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity

NLHP 9.1	Management of *Thol Pusam Netti Thaalvu* or *Kai Kuzhi Kundu Isangal* (Anterior Dislocation of Shoulder)	Management of *Thol Pusam Netti* (Anterior Dislocation of Shoulder) 1. **History** Assess for: • Mechanism of Injury • Fall on the hand • Trauma or blow from the posterior aspect of the shoulder 2. **Symptoms** • Common symptoms include: • Severe pain • Inability to move the shoulder • Patient often supports the forearm with the opposite hand 3. **Examination** Visual Assessment (*Paarvai Thervu)* Observe for: • Flattening of the shoulder • Prominence below the acromion (kaakattai kaalam) • Lowered anterior axillary fold compared to the normal arm • Emptiness over the posterior aspect of the shoulder Palpation (*Thottu Paarthal)* Note:

- Palpable humeral head below the acromion
- Emptiness over the posterior aspect of the shoulder

4. **Assessment** (*En Vagai Thervu*)

- *Nadi:* Assessment: Vital for vascular integrity
- *Sparism:* Heat indicates inflammation
- *Naa:* Evaluate oral cavity
- *Niram:* Redness may show hematoma or bruising
- *Mozhi*: Check for speech abnormalities
- *Vizhi*: Inspect for visual changes
- *Malam*: Assess for any abnormalities
- *Moothiram:* To assess vali, azhal, aiyya,and mukkutra thontham.

5. **Motor Function Assessment** (***Kanmendriyam*)**

Evaluate: Movements at the shoulder, elbow, wrist, and fingers to rule out any nerve palsy

6. **Investigation**

- X-Ray: Obtain an anteroposterior (AP) and lateral view of the shoulder. Axillary and Y-view may be necessary.
- Scan: A CT scan may be done to assess vascular status and identify any mild fractures (though not routinely performed).

7. **Consent**

- Explain the procedure to the patient and obtain written consent from the patient or immediate legal relative.

8. **Management**

Reduction Techniques

- **Procedure I:**

Patient lies down. One person holds the patient along the chest and the other hand. Another person applies lateral pressure on the humeral head while the physician holds the palm in supination with traction, raising the hand to 90 degrees. A click sound indicates reduction.

- **Procedure II:**

- Flex the arm at the elbow and laterally rotate the forearm. Apply traction downwards and medially at the elbow; this usually reduces the shoulder head.
- If the patient loses conciousness during reduction which is very rare, doing *Vaari poottadangal* or *Kuvattadangal* will restore conciousness. Always do a quick cardiac evaluation clinically in all middle age and old age patients clinically before reduction.

Post-Reduction Care:

- Place a ball of cotton in the axilla secured with a roll of cotton cloth tied to the opposite neck.
- Confirm reduction with X-ray.
- Maintain an arm sling with a cotton cloth for 3 to 4 weeks.
- Advice to visit op twice a week.
- Drugs (External Application)

- *Murivu Ennai*

- *Vasavennai* - *Kaaya Sanni thylam* 15ml twice a day before food for 6 days with pathiyam.

- Schedule the patient for review twice a week with *thadavumurai*, ensuring no disturbance to shoulder joints.

		9. **Complications** Potential complications include: • Stiff joints (Keel Vaayu) • Nerve palsy • Vascular injury (which may cause serious outcomes) • Fracture • Unreduced dislocation • Recurrent dislocation Clinical Practice for Three Hours

Topic 10 Management of Manibantha murivu or Kozhikazhuthu murivu(Distal end of radius fracture (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO3, CO4, CO5, CO7	Demonstrate the Management of *Manibantha Murivu* or *Kozhikazhuthu murivu* (Distal end of Radius Fracture)	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP10.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 10.1	Management of *Manibantha Murivu*	1. **History** Assess for

	or *Kozhikazhuthu murivu* (Distal end of Radius Fracture)	• **Mechanism of Injury** • Fall on hand with the wrist in extension. 2**. Symptoms** • Common symptoms include: ◦ Pain ◦ Swelling ◦ Deformity ◦ Inability to move the wrist joint 3. **Examination** Visual Assessment (*Paarvai Thervu*) • Observe for: ◦ Swelling at the wrist ◦ *Kozhikazhuthu* deformity (dorsal angulation) Palpation (*Thottu Paarthal*) • Note: ◦ Posterior or dorsal displacement of the fractured distal fragment of the radius. ◦ Impaction of the dorsal fragment over the proximal radius. ◦ Shortening of the radial styloid process compared to the ulnar styloid process. ◦ Dorsal displacement of the fractured distal fragment from the proximal radius, resulting in a K*ozhi kazhuth*u deformity(dinner fork).

4. **Assessment (*En Vagai Thervu)***

- *Nadi*: Vital for vascular integrity.
- *Sparism:* Heat indicates inflammation.
- *Naa:* Assess oral cavity (may need more context).
- *Niram*: Redness may indicate hematoma or bruising.
- *Mozhi*: Check for speech abnormalities (may need more context).
- Vizhi: Inspect for visual changes (may need more context).
- *Malam*: Assess for any discharge or secretions (may need more context).
- *Moothiram*: Consider systemic implications (may need more context).

5. **Motor Function Assessment (*Kanmendriyam*)**

- Evaluate:
    - Movements at the shoulder, elbow, and fingers to rule out any nerve palsy.

6. **Investigation**

- **X-Ray**: Obtain an anteroposterior (AP), oblique and lateral view of the wrist.
- **Scan**: A CT scan may be performed in cases of crush injury or if the fracture line is not clearly defined on X-ray.

7. **Consent**

- Explain the procedure to the patient and obtain written consent from the patient or immediate legal relative.

8. **Management**

- **Reduction Techniques**:
  Procedure I:
    - One assistant holds the elbow firmly.
    - The physician holds the palm in a semi-prone position.
    - Both the physician and assistant apply constant, steady traction and counter-traction.
    - The physician then turns the patient's hand to the prone position.
    - With constant traction, the physician flexes the wrist with a mild ulnar tilt.
    - After reduction, the physician assesses the reduction and hands over the patient's hand over to another assistant.
- **Post-Reduction Care**:
    - Apply *Murivu Ennai* (external application).
    - Tie three pieces of cotton cloth over the forearm from the wrist up to the elbow.
    - Secure four pieces of *Cheezhi* (coconut stalk) over the cloth.
    - Then tie two more pieces of cotton cloth over this setup, creating a conventional conservative bandage.
    - Ensure the bandage is tight enough to stabilize but not so tight as to cause undue swelling or cyanosis in the wrist and fingers.
    - Maintain an arm sling with a cotton cloth for 3 to 4 weeks. After 4 weeks, remove the entire bandage setup and perform *thadavumurai to facilitate normal wrist movements.*
    - Advise the patient to return twice a week for rebandaging without disturbing the reduced bony fragments.
- **Drugs (External Application)**:
    - *Murivu Ennai*
    - *Vasavennai*
    - *Kaaya Sanni thylam 15ml twice a day before food with pathiyam for first 6 days.*
    - *After 6th day administer Silasathu parpam 130mg twice a day in ghee and*

		Muthuchippi parpam 200mg twice a day with hot water. 9. **Complications** Potential complications include: • Stiff joints (*Keel Vaayu*) • Atrophy • Persistent edema • Cyanosis of fingers • Unreduced fractured fragments Clinical Practice for Three Hours

Topic 11 Oxygen therapy (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Demonstrate the Oxygen Adminstration	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP11.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 11.1	• Oxygen therapy is the administration of oxygen at concentration of pressure greater than that found in the environment	OXYGEN THERPY: Oxygen therapy is the administration of oxygen at concentration of pressure greater than that found in the environment atmosphere. The air that be breath contains approximately 21% oxygen. Oxygen is carried by haemoglobin and heart pump the blood to various tissues. O2 therapy is the key treatment in respiratory care. The purpose is two increase O2 saturation in tissues where saturation levels are too

	atmosphere. • The air that be breath contains approximately 21% oxygen. Oxygen is carried by haemoglobin and heart pump the blood to various tissues. • O2 therapy is the key treatment in respiratory care. • The purpose is two increase O2 saturation in tissues where saturation levels are too low due to illness or injury	low due to illness or injury Eg: • Hypoxemia • Severe respiratory distress • Severe trauma • COPD (chronic obstructive pulmonary disorder) • Pulmonary hypertension • Acute myocardial infraction • Short term therapy (Post anaesthesia recovery) **Preparation:** Physician order is required for O2 therapy Clinical observation Arterial blood gas (ABG) measurement Pulse oximetry When to consider ABG: Dyspnoea, Respiratory distress ABG interpretation Normal pH is 7.35 to 7.45 pH less than 7.35 indicates acidosis pH more than 7.45 indicates Alkalosis Analysis • SI units • Non-SI units Pao2 • 12-15 kpa/L	

- 9.-113 mmHg

Paco2

- 4.5-6.0 kpa
- 35-45 mmHg

Bicarbonate

- 21-29 mmol/L
- 21-29 mEq/L

Hydrogen ion

- 37-45 mmol/L
- 25-45 mmHg

Interpreting ABG
Ph
PaCo2
Aco3
Metabolic acidosis
Low
Normal or low
Low
Respiratory acidosis
Low
High

Normal or high
Metabolic alkalosis
High
Normal or high
High
Respiratory alkalosis
High
Low
Normal or low
Administrating oxygen:
Oxygen should be provided. Titrate by patients SPO2 and clinical condition. Use the lowest flow delivery system necessary to maintain SPO2 within the target range. Humidification is only required for longer term delivery of O2. Oxygen can be administered conveniently by oronasal devices such as nasal catheter, canula and different type of mask.
Nasal canula:
For mild to moderate hypoxemia. O2 delivery is relatively Imprecise may cause nasal soreness. Flow rate 1- 4 l/min saturation of O2 (24% to 40%) used to maintain us Sao2 when nebulizer need to run using air eg. COPD
Simple face Mask:
Delivers a variable amount of oxygen depending on the rate of inflow low precise than venturi mask. Risk of co2 accommodation not to be used in hypercapnia or type II respiratory failure flow rate less than 5L /min. Cautiously to be used in COPD.
Venturi mask:
For controlled O2 therapy. Provides precise percentage or fraction of O2 at high flow rate. Start at 24%-28% in COPD.
COLOUR OF MASK

- Blue -24% at 2L per minute
- white-28% at 4 L per minute
- yellow -35% at 8 L per minute

		• red -40% at 10 L /min • green-60% at 15 L per minute Non rebreathing mask: This have reservoir bag and delivers high concentration of O2 at (60% to 90%) flow rate =10 to 15 L per minute and presence of the flop valves on the side commonly used in emergency but are imprecise, should be avoided in those requiring controlled oxygen therapy. High flow nasal oxygen: This is humidified warmed oxygen delivers at 60 L per minute. The major advantages of standard oxygen are it provides some positive end expiratory pressure which improves O2 by recruitment of alveoli can deliver fio2 100% Promoting oxygenation Other ways to improve oxygenation to reach target sao2 Treat anaemia (transfuse if essential) Improve cardiac output (treat cardiac failure) chest physio to improve ventilation or perfusion mismatch consider patient positioning eg:(sitting upright in pulmonary oedema)

Topic 12 IV fluid administration and Suturing (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Demonstrate the appropriate IV Fluid administration	PSY-GUD	MK	KH	CBL,D-M	CBA	F&S		-	NLHP12.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity
Non Lecture Hour Practical		
S.No	**Name of Practical**	**Description of Practical Activity**
NLHP 12.1	Demonstrate the appropriate IV Fluid administration and suturing	TYPES OF IV FLUIDS 1. CRYSTALLOID 2. COLLOIDS **Crystalloid** • Isotonic • Hypotonic • Hypertonic **ISOTONIC:** • 0.9% Nacl • Lactated finger • Ringers solution • 5% Dextrose in water **HYPOTONIC:** • 0.45% Nacl • 0.33% Nacl

- 0.2% Nacl
- 2.5% Dextrose water

HYPERTONIC:

- 3% Nacl
- 5% Nacl
- 3% Nacl or 5% Ncal with Dextrose water
- >5% Dextrose water example D10 W

Crystalloid fluids: Dextrose (5% glucose) - Isotonic solution, It contains small amount of glucose (50g/l) so provides little energy. (N10% energy D/L) - Rapidly metabolized by liver so glucose leaving with water and rapidly equilibrates Throughout all fluid compartment. It is therefore useless for maintain water balance. Excess 5% glucose Iv may leads to water overload & Hyponatraemia.

Hypertonic glucose:

Small dose used in Treatment of Hypoglycaemia (l00ml 20% dextrose stat) - It is irritant to vein so care needed when it used. Infusion cite should be Inspected regularly and fushed with 0.9% saline after use.

Normal Saline (NS) 0.9% saline Isotonic unbalanced crystalloid electrolyte compositions (Na+ cl_ bath 15 mmol/L) differs from plasma Ns-will equilibrate rapidly throughout the Ec compartment only, take longer & reach Ic compartment Than Dextrose - so. 'Ns is appropriate for fluid resuscitation Risk-High Volume administration a Hyperchloraemic acidosis (each lit of Ns delivers around 50 mmol more cl than lit of plasma)

Hartmann's solution Balanced crystalloid (Na + 131 mmol, Cl - 111 mmol, lactate 29 mmol, K+ 5 mmol, HCO3 -29 mmol, Ca+ 2 mmol / lit of fluid. It is generally preferred to 0.9% saline, particularly when large volume administration is required.

It prevents dilutional reduction of normal plasma components such as Ca & K and avoid a hyper chloraemic acidosis.

Colloid – Gelofusion: large molecules proteins that do not readily pass through the capillary membrane so it remains in the intravascular space for extended dermoids – In IVS they increase the osmotic

pressure causing fluid to move into the intravascular space & thus are often referred to us Volume expanders – It may cause anaphylactic reactions.
Isotonic sodium bicarbonate (1.26%) 150ml of 8.4% NaHCO3 to 850ml of 5% Dextrose. It used as a buffered crystalloid for fluid resuscitation, incases of Metabolic acidosis eg. due to GI / Renal losses Condition

- Acute blood loss- Resuscitate with Hartmann's (0.9% saline)
- Children - Use glucose with sodium chloride for fluid maintenance
- Elderly -Use IV fluids (smaller fluid bolus)
- GI losses (diarrhoea, vomiting, NG tubes) – replace K+ loss as well as lost fluid volume.
- Heart failure – IV fluids
- Liver failure - salt poor albumin / blood preferentially for resuscitation (?Total Body sodium) avoid 0.9% Saline for maintenance.

Acute pancreatitis – Aggressive fluid Resuscitation.

Poor urine output – 500ml Hartmann's fluid over 1 hour

Shock - use balanced crystalloid via large bore cannulae

Fever Burns- large amount of fluid resuscitation

IV CANNULA:

Iv cannula is often called as IV line or catheter is a medical device used to administer fluids, medications, blood or other treatments directly into patient bloodstream.
Preparation
1. Equipment: set up a tray with cleaning swabs, sterile Gloves, gauze, cannulae, dressings, 0.9% saline,10 ML syringe, needle free adopter, blood tubes if required, portable sharp bins.
2. Patient: Have the patient lying down, explain procedure, obtain verbal consent and place the tourniquet round arm. Rest the arm below the heart to aid venous filling
3. Sites: from arm to leg, look for the best view. It should be palpable, some of the best views are not

easily visible, some of the most visible sites collapse on insertion. Tapping will be helpful. Choose with distal site first if unsuccessful, choose the proximal vein or else take a help from senior person.
4. Avoid: site crossing joint example Cephalic vein in renal patients and AV fistula.
5. Consider: cold spray or 1%. Lidocaine for children or those with needle phobia.
Insertion care Bundle: Aseptic technique, hand hygiene, apron with non-sterile gloves, Skin preparation with 2% cholhexidine, in 70%, Isopropyl alcohol (flow to dry for 30 seconds). Do not re-palpate the view after drawing unless wearing sterile gloves, dressing sterile and transparent so that insertion sight can be observed
After insertion.

Take a blood with the syringe or an adopter.
Remove the torniquet.
Attach needle free device or flush with 10 ML of 0.9 normal saline.
Apply dressing
Write up appropriate fluids or parental medications.
When seeing the patient on the daily ward rounds, do the RAID assessment

Required- Can the patient manage with the oral medication or fluid?

Appropriate- Should we consider a PICC, Central line long-term line etc?

Infected- Any signs of inflammation or infection, if yes remove. peripheral cannulae should be replaced earlier 72 to 96 hours

Dressed properly- Watch for fallen out drips or kinked from poor dressing
Tissued or infected Influenced cannula need replacing either with peripheral cannula are with a long-term access device such as PICC line.
PICC-Peripherally Inserted Central Catheter

IV Cannula Sizes and Specifications
Gauge - Colour - Diameter (mm) - Length (mm) - Max Flow Rate (ml/min)

- **14G** - Orange/Brown - 2.0 mm - 45 mm - 250 ml/min
- **16G** - Grey - 1.7 mm - 42 mm - 170 ml/min
- **18G** - Green - 1.2 mm - 40 mm - 90 ml/min
- **20G** - Pink - 1.0 mm - 32 mm - 55 ml/min
- **22G** - Blue - 0.28 mm - 25 mm - 25 ml/min
- **24G** - Yellow - 0.07 mm - 19 mm - 24 ml/min

Flow rate is given as maximum flow rate under gravity, faster rates may be achievable with rapid infusion device (Infusion pump)

SUTURE

FOR ADJUSTMENT AND CLOSURE OF WOUND:

1. Of its deeper parts.
2. Closure of the lips of the wound.

1.OF IT'S DEEPER PARTS:

Fixation of parts more securely can be done by,

- Sutures, passed far below the surface – DEEP SUTURES.
- Needles or Hair-lip-pins passed at a similar depth – BURIED SUTURES.

DEEP SUTURES:

- It is used if the depth of the wound have to be kept together as there may be tendency for the parts to separate.
- All the contrivances which have been deviced to prevent this by pulling upon an area of skin at the margin of the wound which shielded in someway from direct pressure.
- After sutures have been passed through the strips, two ends are simply twisted together, so as

to close the depth of the wound.

BURIED SUTURES:

- They are used especially in antiseptic surgery.
- They are designed to obviate the use of drainage tubes.
- In deep wound, layers will be sutured to corresponding layers, that means, periosteum may be joined to periosteum, fascia to fascia and finally skin to skin by an external stitch.
- **HAIR-LIP-PINS:**

- They are steel pins which may be passed across the depth of the wound entering the skin a little away from the edge on one side and coming out at a corresponding distance on the other.
- Silk or worsted is twisted over the protruding ends to bring both deeper parts of skin into apposition.

2.CLOSURE OF THE LIPS OF THE WOUND:
SUPERFICIAL SUTURES:

- They are for the accurate adjustment of the divided skin surface and of tissues near it.
- Wire of silk or cat gut is used.
- A twist or knot should be at one side and not over the line of the wound and the actual skin surface should be bought together but the edges should be little everted than inverted.
- A number of continuous suture must be as many as the wound will close.
- Adhesive stappling may be used to relieve tension and may be employed to close a wound.

REMOVAL:

- Deep sutures are easier to remove by using a pair of scissors placed between skin and shield on

		one side and cutting the wire short off there and then can be drawn out from the other side. • In case of Hair-lip-pins, the point and head of the pins are nipped off with a pair of cutting pliers. • If they are not removed in 36-48 hrs, they will begin to cause ulceration and leave obvious scar. • Silk sutures requires only to be snipped and removal with forceps. • Cat gut, used for deep layers, will be disintegrated and need not be removed. **REFERENCE:** Peye's surgical Handicraf Clinical Practice for Three Hours

Topic 13 BREATHLESSNESS (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO2, CO4, CO7	Demonstrate the management of Breathelessness	PSY-GUD	MK	KH	D-M,CBL	CBA,P-CASE	F&S		-	NLHP13.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 13.1	• A complaint of shortness of breath (dyspnoea) implies that the act of breathing has become conscious effort. • There are respiratory, Cardiac and other causes of shortness of breath.	BREATHLESSNESS A complaint of shortness of breath (dyspnoea) implies that the act of breathing has became conscious effort. Although many dyspnoeic patients breathe rapidly, there is no direct correlation between the observed rate of breathing and the subjective sensation of dyspnoea. Patients with acute pneumonia, especially children, may take many as 60 breaths per minute without experiencing respiratory discomfort, while in other conditions, such as respiratory paralysis, a feeling of breathlessness may not be accompanied by any increase in the rate of breathing. There is considerable variation in what might

		• Here is the detailed description about handling of a patient with shortness of breath.	be called the dyspnoea threshold. Some patients with objective evidence of gravely impaired respiratory function may complain of relatively mild breathlessness while others with only slight disturbance of function while may experience quite severe respiratory distress Factors contributing to the production of breathlessness While hypoxaemia and dyspnoea frequently co- exist, hypoxia, unless it is severe, plays a relatively minor part in the production of dyspnoea. Many patients with severe breathless- ness are not hypoxaemic, while in hypoxaemic patients dyspnoea is not always a conspicuous symptom. There is a similar lack of direct correlation between breathlessness and hypercapnia. Although a rise in the carbon dioxide tension of arterial blood immediately causes hyperventilation and dyspnoea in normal subjects, it may not do so in patients with chronic ventilatory inadequacy in whom the respiratory centre may have become un- responsive to carbon dioxide or to an increase in hydrogen ion concentration. Stimulation of peripheral receptors in the lung thought to be situated in alveolar capillary walls (juxtapulmonary-capillary receptors or J receptors) is thought to contribute to the sensation of dyspnoea in disorders such as pulmonary oedema and thrombo-embolism. The disturbances of respiratory function which may contribute to the production of breathlessness are now well recognised. The most important of these are an increase in the work of breathing, increased pulmonary ventilation, and weakness of the respiratory muscles. Each of these disturbances has a variety of causes, and there are thus many factors which may operate, singly or in combination, to produce dyspnoea in an individual case. 1.Breathlessness associated with an increase in the work of breathing Airways obstruction, decreased pulmonary compliance (‘stiff lungs”) and restricted chest expansion all increase the work. 2.Breathlessness associated with increased pulmonary ventilation An increase in the respiratory dead space, severe hypoxaemia and metabolic acidosis, may all be responsible for an increase in pulmonary ventilation. Hyperventilation may also be a manifestation of hysteria. An Increase in the volume of the physiological dead space occurs in massive pulmonary embolism as a result of a drastic reduction in blood flow through capillaries perfusing well ventilated alveoli Patients who survive a massive embolism for a few hours may exhibit striking hyperventilation (‘air hunger’), but this is usually overshadowed by the effects of a sudden severe reduction of cardiac output, such as hypotension and syncope. Severe hypoxaemia, in conditions such as pneumonia, pulmonary oedema and interstitial lung disease,

increases pulmonary ventilation by reflex stimulation of the respiratory centre via the aortic and carotid chemoreceptors.

In metabolic acidosis, caused for example by diabetic ketoacidosis or renal failure, the respiratory centre is stimulated by the increased hydrogen ion concentration in the blood, and the resultant hyperventilation may produce the sensation of breathlessness.

Hyperventilation syndrome is also accompanied by a sensation of breathlessness. Breathing is often Irregular, and may be sighing. If the hyperventilation is sufficiently severe and prolonged, it may lead to tetany, or even to an epileptic fit.

1. Breathlessness associated with weakness of the muscles of respiration

Neuromuscular lesions, such as high spinal cord injuries, poliomyelitis, polyneuropathy and myasthenia gravis may cause partial or complete paralysis of the muscles of respiration, with the result that the patient is no longer able to meet the ventilatory requirements.

2. Breathlessness associated with multiple factors

In some cases a single factor may be chiefly or even entirely responsible for the breathlessness, as for example in patients with airflow limitation or with respiratory paralysis. In most conditions, however, the mechanisms responsible for the production of dyspnoea are more complex. Two examples are given:

a.In pneumonia the restriction of chest expansion by pleural pain is probably the chief cause of dyspnoea in the early stages of the illness; later, if the lungs become extensively consolidated, dyspnoea is mainly due to a combination of decreased pulmonary compliance and increased pulmonary ventilation caused by stimulation of J receptors and hypoxaemia.

b. Pulmonary oedema of cardiac origin begins in the alveolar walls and causes dyspnoea by stimulating pulmonary receptors and reducing pulmonary compliance thereby increasing the work of breathing. Later, intra-alveolar transudate aggravates the dyspnoea, at first by increasing pulmonary ventilation in response to hypoxaemia, and then by producing airways obstruction.

Clinical forms of breathlessness

The sensation of dyspnoea is apparently the same, whatever its cause, but its mode of presentation varies considerably. There are, however, two main patterns, which may occur either independently or together namely acute onset breathlessness and exertional breathlessness.

1. Acute onset breathlessness

This usually develops when the patient is at rest, but in some conditions is provoked by exertion. An acute attack of dyspnoea is usually due to the rapid development either of airflow limitation of a

restrictive lesion of lungs or pleura. Rarely, as in massive pulmonary embolism, it may be as sociated with a sudden increase in the volume of the physiological dead space. Four major causes are: (a)Bronchial asthma (b) Left heart failure (c) Massive pulmonary embolism (d) Spontaneous pneumothorax.History. A carefully taken history is often of great help in identifying the cause of an acute attack of dyspnoea.

a. Bronchial asthma. Usually an attack of bronchial asthma is readily recognised. As airways obstruction in this condition is maximal during ex- piration, the latter is slow and laboured while inspiration is relatively rapid but restricted because the lungs may already be almost fully inflated. Wheeze and rhonchi are commonly present and predominantly expiratory. In severe attacks of asthma, however, there may be insufficient airflow to generate these noises and the chest will be paradoxically ‘silent’. Often there have been previous episodes which will probably have responded promptly to a bronchodilator drug. It may be difficult to recognise a patient’s first attack of asthma from the history. This is particularly a problem the child, as anxious parents are often unable to give an accurate account. The diagnosis usually becomes obvious, however, when a subsequent at tack is witnessed by a trained observer.

b. Left heart failure. Attacks of breathless occuring during the night (paroxysmal nocturnal dyspnoea) may be due to bronchial asthma, but in middle-aged and elderly patients pulmonary oedma secondary to left heart failure is the likely cause. In such patients a previous history of exertional dyspnoea can usually be elicited and they often state that they sleep more comfortably in the upright position, supported by several pillows. The attack usually develops in the early hours of the morning as a result of sliding into the recumbent position during deep sleep. They then waken with intense breathlessness, which often produces feelings of suffocation and panic. The usual reaction is to sit upright and legs over the side of the bed or even struggle to an open window in the hope that cool fresh air will ease their breathing. In most cases the attack subsides spontaneously in about half an hour, but acute pulmonary oedema may occasionally be Fatal.

In the later stages of left heart failure paroxysms of breathlessness may develop whenever the patient lies down. Such intolerance of the recumbent position is known as orthopnoea. In left heart failure the recumbent position is avoided because the increase in venous return is liable to compromise cardiac function and induce pulmonary oedema. In emphysema, on the other hand, the upright position is more comfortable because it improves pulmonary ventilation by facilitating the range of movements of the thoracic cage and allowing the use of the accessory muscle of inspiration.Paroxysmal dyspnoea may also be experienced during the phase of overventilation in Cheyne- Stokes breathing

c . Massive pulmonary embolism. The dyspnoea which follows massive pulmonary embolism produces a sensation of suffocation in which the patient feels desperately short of air, although, in fact, breathing may be deep (‘air hunger’). It is accompanied by acute circulatory failure caused by a fall in left ventricular output. The differential diagnosis from myocardial infarction may be very difficult or even impossible by clinical methods, particularly in the elderly who may experience similar pain in the two conditions. However, the character of the breathlessness and the absence of crepitations favour the possibility of pulmonary embolism.

d.Spontaneous pneumothorax

Dyspnea due to this cause usually develops suddenly and is distressing. In other cases the dyspnoea is slight at first but becomes more severe following exertion or a bout of coughing. Unilateral chest pain or ‘tightness’ typically precedes or accompanies the onset of breathlessness.

e.Other causes of acute onset breathlessness. These include the very rapid accumulation of fluid in the pleural space. Massive intrapleural haemorrhage is probably the only condition in which this occurs and can usually be recognised without difficulty, as the dyspnoea is accompanied by features of acute blood loss.

In children the possibility of a foreign body in the larynx or of membranous exudate obstructing the air passages should not be forgotten. In adults unable to cough effectively because of weakness of the respiratory muscles, the retention of secretions may produce acute breathlessness, as may the inhalation, during coma or

anaesthesia, of acid gastric secretions, with the production of a chemical pneumonia.

Physical examination. The following findings are of particular value in the differential diagnosis of acute breathlessness

a.Clinical features indicating a possible cause for left heart failure, e.g. arterial hypertension, myocardial infarction, aortic or mitral valve disease.

b. An increase in jugular venous pressure which is usually raised in massive pul- monary embolism and in some cases of dyspnoea of cardiac origin.

c. Central cyanosis which is a relatively late feature in acute dyspnoea of cardiac origin but develops at an early stage in severe airflow limitation of all types. In massive pulmonary embolism cyanosis is both central and peripheral which, in combination with intense cutaneous vasoconstriction, imparts a slate-grey colour to the lips and cheeks.

D. Hypotension, which occurs in massive pulmonary embolism and also in extensive myocardial Infarction, and may be associated with acute dyspnoea in both conditions.

e.Physical signs indicating either a primary abnormality in bronchi, lungs or pleura, or a pulmonary abnormality secondary to a cardiac lesion:
(i) Expiratory rhonchi which, if the sole clinical abnormality, strongly suggest a diagnosis of bronchial asthma.
(ii) Markedly diminished or absent breath sounds on one side of the chest, accompanied by hyperresonance on percussion in spontaneous pneumothorax and by stony dullness in pleural effusion or haemorrhage.
(iii) Basal crepitations produced by pulmonary oedema, are very common in acute dyspnoea of cardiac origin.
2. Exertional breathlessness
When breathlessness on exertion is the dominant complaint it is usually due to heart failure or chronic lung disease, although it may be aggravated, or even caused, by obesity, anaemia or hyperthyroidism. Its severity can be assessed and graded only by reference to the level of physical activity at which it is induced.
History. Patients with sustained exertional dyspnoea should be asked whether it is increasing or improving in severity. If it varies spontaneously in degree, this may provide a lead to its cause, as in the case of chronic asthma, while an improvement following treatment with a diuretic will suggest a cardiac origin. The nature of the patient's other symptoms may also be of value in identifying the cause of exertional breathlessness
Physical examination. The clinical investigation of exertional dyspnoea calls, in particular, for a detailed examination of the cardiovascular and respiratory systems. Amongst the abnormalities which should be looked for are, in the cardiovascular system, increased jugular venous pressure, peripheral oedema, cardiac enlargement, the heart rate and rhythm, left ventricular hypertrophy, hypertension, valve lesions, added heart sounds and pericardial effusion, and in the respiratory system, severe chest deformities, airways obstruction and emphysema, interstitial lung disease, pulmonary oedema, pleural effusion and pneumothorax
Conclusion
Breathlessness may be the presenting complaint in a large number of important cardiovascular and respiratory diseases. A correct assessment of its significance requires a clear understanding of the disturbances in physiology with which it is as sociated, and of the pathological processes by which these disturbances are created. By taking a careful history the possible causes of dyspnoea in an individual patient can usually be narrowed down to two or three conditions, and a final diagnosis can

		often be made from the physical signs. In some cases, however, special investigations such as radiological examination of the chest, ECG or tests of respiratory function (including arterial blood gas studies) may be required. Clinical Practice for Three Hours

Topic 14 CHEST PAIN (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Demonstrate the Management of Chest pain and ECG	PSY-GUD	MK	KH	SIM,CBL,D-M	CBA	F&S		-	NLHP14.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 14.1	Management of Chest pain and ECG	• There are Cardiac, Respiratory and other causes of chest pain. • Chronic and Acute causes need to be differentiated. • Investigations include ECG, Chest X-ray, Echocardiogram, CT thorax and related Blood tests. • Management is according to the cause of the chest pain usually with the help of the modern allopathy doctors. **CHEST PAIN:** An unpleasant sensation of pressure, tightness, heaviness, or squeezing in the chest, which may radiate to the arms, back, neck, jaw, or throat. Causes: i)Cardio pulmonary : Cardiac

Myocardial Ischemia :
Ischemia of the heart results from an imbalance between myocardial oxygen supply and demand producing pain called angina

Stable Angina
- Site of chest pain: Retrosternal
- Radiation: Typically radiates to arm, neck,jaw or shoulder, sometimes epigastric
- Character: Squeezing, pressure tightness, heaviness or burning
- Severity: Typically mild to moderate
- Duration: Typically lasts for 2-10 minutes
- Frequency: May occur frequently, especially with exertion
- Periodicity: May occur at predictable times, such as during exercise
- Special times of occurrence: Typically occurs with exertion, emotional stress, or exposure to cold
- Aggravating factors: Exertion, emotional stress, exposure to cold, heavy meals
- Relieving factors: Rest, nitroglycerin, oxygen
- Associated phenomena:

Shortness of breath, fatigue, lightheadedness, palpitations
S4 gallop or mitral regurgitation murmur (rare)during pain

Unstable Angina
- Site of chest pain: Retrosternal
- Radiation: Typically radiates to arm, neck,jaw or shoulder, sometimes epigastric
- Character: Squeezing, pressure, tightness, heaviness or burning
- Severity: Typically moderate to severe
- Duration: Increasing pattern or at rest
- Frequency: May occur frequently, especially at rest
- Periodicity: May occur unpredictably
- Special times of occurrence: May occur at rest, without provocation
- Aggravating factors: None specific, may occur without provocation
- Relieving factors: Nitroglycerin, oxygen, rest
- Associated phenomena: Shortness of breath, fatigue, lightheadedness, palpitations, nausea, vomiting

Myocardial Infarction (MI)*
- Site of chest pain: Retrosternal
- Radiation: Typically radiates to arm, neck, jaw or shoulder, sometimes epigastric
- Character: Squeezing, pressure, tightness, heaviness or burning
- Severity: Typically, severe
- Duration: >30 minute
- Frequency: May occur once, with possible recurrence
- Periodicity: May occur unpredictably
- Special times of occurrence: May occur at rest, without provocation
- Aggravating factors: None specific, may occur without provocation
- Relieving factors: Nitroglycerin, oxygen, rest, morphine
- Associated phenomena: Shortness of breath, fatigue, lightheadedness, palpitations, nausea, vomiting, diaphoresis, anxiety
. S3 or rales if severe ischemia or complication of myocardial infraction

Pericarditis
-Site of Chest Pain: Retrosterenal or towards cardiac apex
-Radiation: Radiate to left shoulder
-Character: Pleuritic, sharp
-Severity: Typically, severe and may be excruciating
-Duration- Variable, hours to days, maybe episodic
-Frequency: May occur frequently, especially with deep breathing, coughing, or movement
-Periodicity: May occur unpredictably
-Special Times of Occurrence: Typically occurs at rest, May be exacerbated by lying down or deep breathing
-Aggravating Factors: Deep breathing, Coughing, Movement, Lying down
-Relieving Factors: Sitting up and leaning forward, Breathing shallowly
Associated Phenomena: Fever, Fatigue, Shortness of breath, Cough, Palpitations, Pericardial rub

Acute Coronary syndrome
-Site of Chest Pain: Central chest,

-Radiation: Typically radiates to left arm, neck, or jaw
-Character: Tightness, heaviness, congestion, burning
-Severity: Typically, severe and may be excruciating
-May be described as 7-10/10 in severity
-Duration: Typically lasts for 30 minutes to several hours, May be persistent or recurrent
-Frequency: May occur frequently, especially with exertion or stress, May be unpredictable
-Periodicity: May occur unpredictably, May be triggered by exertion or stress
-Special Times of Occurrence: Typically occurs with exertion or stress, May occur at rest, especially in severe cases
-Aggravating Factors: Exertion, Stress, Cold weather, Heavy meals
-Relieving Factors: Rest, Nitroglycerin, Oxygen, Morphine
-Associated Phenomena: Shortness of breath, Fatigue, Lightheadedness, Palpitations, Vomiting, sweating , Anxiety

Acute aortic syndrome:

- Acute Aortic Syndrome is a medical emergency that requires immediate attention
- Site of Chest Pain: Anterior chest
- Radiation: May radiate to the back, between the shoulder blades,
- Character: Tearing or ripping, knife -like
- Severity: Typically, severe and may be excruciating
- Duration: Sudden onset of unrelenting pain, may last for hours or days
- Frequency: May occur frequently, especially with movement or deep breathing
- Periodicity: May occur unpredictably
- Special Times of Occurrence: Typically occurs suddenly and without warning
- Aggravating Factors: Movement, Deep breathing, Coughing
- Relieving Factors: None specific, pain often persists despite treatment
- Associated Phenomena: Associated with hypertension or underlying connective tissue disorder murmur of aortic insufficiency, loss of peripheral pulses

Pulmonary embolism:

-Site of Chest Pain: Often lateral on the side of embolism
_Radiation: May radiate to the back, arm, or abdomen
_Character: Pleuritic may manifest as Heaviness with massive pulmonary embolism
_Severity: Typically, severe and may be excruciating
_Duration: Sudden onset, may last for hours or days
_Frequency: May occur frequently, especially with deep breathing or coughing
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs suddenly and without warning
_Aggravating Factors: Deep breathing, Coughing, Movement
_Relieving Factors: Oxygen, Rest, Analgesics
_Associated Phenomena: Shortness of breath, Tachypnea, Cough, Fever, Tachycardia, Hypotension

Pulmonary Hypertension
_Site of Chest Pain: Substernal
_Radiation: May radiate to the arms, neck, or jaw
_Character: Pressure
_Severity: Typically mild to moderate, but may be severe
_Duration: Sudden onset
_Frequency: May occur frequently, especially with exertion
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs with exertion or at rest
_Aggravating Factors: Exertion, Cold weather, High altitude
_Relieving Factors: Oxygen, Rest
_Associated Phenomena: Signs of increased Venous pressure, Shortness of breath, Fatigue, Lightheadedness, Palpitations, Swelling in the legs and ankles,

Pneumonia or pleuritis
-Site of Chest Pain: Unilateral, often localized
_Radiation: May radiate to the back or abdomen
_Character: Pleuritic
_Severity: Typically mild to moderate, but may be severe
_Duration: May last for several days or weeks

_Frequency: May occur frequently, especially with deep breathing or coughing
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs with respiratory infections or after aspiration
_Aggravating Factors: Deep breathing, Coughing, Movement
_Relieving Factors: Rest, Analgesics, Antibiotics
_Associated Phenomena: Fever, Cough, Shortness of breath, Rales, Occasional rub

Spontaneous Pneumothorax
_Site of Chest Pain: Lateral to side of pneumothorax
_Radiation: May radiate to the back or abdomen
_Character: Pleuritic
_Severity: Typically, severe and may be excruciating
_Duration: Sudden onset
_Frequency: May occur once, but may recur
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs suddenly and without warning
_Aggravating Factors: Deep breathing, Coughing, Movement
_Relieving Factors: Oxygen, Rest, Analgesics, Chest tube insertion (in severe cases)
_Associated Phenomena: Dyspnea, Decreased breath sound on the side of pneumothorax
Non- cardiopulmonary:
Gastro intestinal

Esophageal reflex
-Site of Chest Pain: Substernal, epigastric
-Radiation: May radiate to the neck, throat, or arms
_Character: Burning
-Severity: Typically mild to moderate, but may be severe
_Duration: 10-60 min
_Frequency: May occur frequently, especially after eating or at night
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs after eating, lying down, or bending over
_Aggravating Factors: Eating large or fatty meals, Lying down or bending over, Caffeine, Alcohol,

		Citrus fruits or juices _Relieving Factors: Antacids, Associated Phenomena: Heartburn, Regurgitation, Dysphagia (difficulty swallowing), Coughing or wheezing Esophageal Spasm _Site of Chest Pain: Retrosternal _Radiation: May radiate to the neck, throat, or arms _Character: Pressure, tightness, burning _Severity: Typically, severe _Duration: 2-30 min _Frequency: May occur frequently, especially after eating or at night _Periodicity: May occur unpredictably _Special Times of Occurrence: Typically occurs after eating, lying down, or bending over _Aggravating Factors: Eating large or fatty meals, Lying down or bending over, Caffeine, Alcohol, Citrus fruits or juices _Relieving Factors: Nitroglycerin, Calcium channel blockers, Antacids, Avoiding trigger foods or activities _Associated Phenomena: Can closely mimic angina, Dysphagia (difficulty swallowing), Chest tightness or constriction, Shortness of breath Peptic Ulcer _Site of Chest Pain: Epigastric, substernal _Radiation: May radiate to the back or arms _Character: Burning _Severity: Typically, moderate to severe _Duration: Prolonged,60-90 min after meals _Frequency: May occur frequently, especially at night or between meals _Periodicity: May occur unpredictably _Special Times of Occurrence: Typically occurs at night or between meals _Aggravating Factors: Eating spicy or fatty foods, Drinking caffeine or alcohol, Smoking, Stress _Relieving Factors: Relieved with food, Antacids, Histamine-2 (H2) blockers, Proton pump inhibitors

(PPIs), Avoiding trigger foods or activities
_Associated Phenomena: Abdominal tenderness, Nausea and vomiting, Bleeding or melena (black, tarry stools)

Gallbladder Disease
_Site of Chest Pain: Epigastric,Right upper quadrant abdominal pain or discomfort, often radiating to the chest or back
_Radiation: May radiate to the chest, back, or right shoulder
_Character: Aching or colicky
_Severity: Typically, severe
_Duration: Prolonged
_Frequency: May occur frequently, especially after eating fatty foods
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs after eating fatty foods, especially at night
_Aggravating Factors: Eating fatty foods, Eating large or heavy meals
_Relieving Factors: Pain medication, Avoiding trigger foods or activities, Surgery (in severe cases)
_Associated Phenomena: Nausea and vomiting, Fever, Jaundice (yellowing of the skin and eyes), Abdominal tenderness, Neuromuscular
Cervical Disc Disease
-Site of Chest Pain: Arms and shoulders
_Radiation: May radiate to the upper back or scapula
_Character: Aching, May include numbness
_Severity: typically mild to moderate, but may be severe
_Duration: Variable, may be sudden
_Frequency: May occur frequently, especially with movement or activity
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs with movement or activity, such as heavy lifting or bending
_Aggravating Factors: Movement or activity, such as heavy lifting or bending, Coughing or sneezing, Poor posture
_Relieving Factors: Rest, Physical therapy or exercise, Pain medication
_Associated Phenomena: Neck pain or stiffness, Arm pain or numbness, Tingling or weakness in the

arms or hands, Headaches, Dizziness or lightheadedness
Costochondritis
_Site of Chest Pain: Sternal
_Radiation: May radiate to the arms, shoulders, or back
_Character: Aching
_Severity: Typically mild to moderate, but may be severe
_Duration: May last for several hours or days
_Frequency: May occur frequently, especially with movement or activity
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs with movement or activity, such as heavy lifting or bending
_Aggravating Factors: Movement or activity, such as heavy lifting or bending, Coughing or sneezing, Deep breathing,Pain reproduces by localised pressure on examination
_Relieving Factors: Rest, Pain medication, Heat or cold therapy, Avoiding trigger activities
_Associated Phenomena: Tenderness to the touch at the costosternal junction, Swelling or redness at the costosternal junction, Fever, Fatigue

Herpes Zoster (Shingles)
_Site of Chest Pain: Dermatomal distribution
_Radiation: May radiate to the back, arms, or abdomen
_Character: Burning, sharp
_Severity: Typically, moderate to severe
_Duration: May last for several days to weeks
_Frequency: May occur frequently, especially with movement or activity
_Periodicity: May occur unpredictably
_Special Times of Occurrence: Typically occurs 1-5 days before the onset of the rash
_Aggravating Factors: Movement or activity, Touch or pressure on the affected area, Stress
_Relieving Factors: Pain medication, Antiviral medication, Topical creams or ointments, Rest
_Associated Phenomena: Vesicular Rash or blisters in a dermatomal distribution, Fever, Headache, Fatigue, Swollen lymph nodes

Basics of ECG

ECG is used for diagnosing cardiac disorders particularly rhythm disorder (arrhythmia) and coronary

artery diseases. ECG should be analysed methodically to arrive at a logical conclusion.

- First identify the name, age and sex of the patient.
- Look for standardisation. 1 mV should produce a 10 mm deflection.
- ECG is recorded at a speed of 25 mm per second.
- 1 large square contains 5 small squares.
- 1 small square represents 40 millisecs.
- Hence, 1 large square is equal to 200 milliseconds.

1. Rate:

- Identify the rate
- 1500/RR interval (no. of small squares)
- Less than 60 - bradycardia
- More than 100 - tachycardia

2. Identify the P waves

P waves proceed the QRS complex. They are produced and generated by atrial electrical activities. Best identified in lead II and in v1. Upright in lead II and inverted in avR. P wave duration is less than 100. Amplitude is less than 100.

PR Interval:

- Starts from the beginning of P wave to the beginning of the QRS complex. It denotes the time taken for the impulses to travels the AV node. Normal PR interval is 120-200ms. (3-5 small squares)
- In various types of AV nodal block (first and second degree blocks)
- PR interval will be prolonged.
- In third degree heart block, there is no conduction across the AV node.

- In WPW syndrome, PR interval shortened.

QRS interval:

Axis:

Frontal plane axis:

A simple method to determine the QRS axis is as follows:

1. Net QRS is positive in lead I and avF - normal axis
2. QRS is positive in lead I and negative in avF- left axis
3. QRS negative in lead I and positive in avF- right axis

Common conditions causing left axis deviation: Left bundle branch block, left ventricular disorders, systemic hypertension

Common conditions causing right axis deviation: Right bundle branch block, right axis deviation, lung diseases, pulmonary hypertension.

QRS morphology:

- It is generated by ventricular electrical activitity.
- avR will be negative. avR is a mirror image of lead II.
- The R waves in QRS progression is progressively increases and s wave progressively decreases from v1 to v6.
- QRS voltage can be used to diagnose left ventricular hypertrophy.

ST segment:

ST segment follows the QRS complex and is isoelectric. It is elevated in ST elevation and acute myocardial infarction (STMI). It imperceptibly merges with the succeeding T wave.

T wave:

- T wave upright in v3-v6, lead I, lead II , avL. T wave represents ventricular repolarisation.
- Abnormal, if inverted in lead II, III, V4-V6.
- T wave is inverted in ischemia and flattened in hypokalemia, taller in hyperkalemia.

		QT segment: Represents the total time taken for ventricular depolarisation and depolarisation. It varies with heart rate. Hence conducted in interval is used. QT interval is the duration from the beginning of QRS complex and end of the T wave. Corrected QT(QTc) is calculated using the formula: QT interval / ? RR interval (in secs) Normal - 0.38 to 0.42 secs QT interval is prolonged in electrolytes disturbances (drugs or congenital). Abnormalities that can be diagnosed by ECG includes myocardial ischemia, infarction, electrolyte disturbances (hypokalemia, hyperkalemia, hypocalcemia, hypercalcemia), ventricular hypertrophy, atrial enlargement, tachy arrhythmias and Brady arrhythmias. Clinical Practice for Three Hours

Topic 15 Fever (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Assess the Fever Patient	PSY-GUD	MK	KH	CBL,D-M,SIM	CBA	F&S		-	NLHP15.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 15.1	Assessment of Fever Patient	FEVER: Humans are warm blooded mammals. Body temperature follows the circadian rhythm Fever is one of the most common presenting features in any doctor’s practice. It is the hallmark of the body’s

response to infection or inflammation. Before looking at the causes of fevers it is important to understand what we mean by the term and how the reaction is generated in the body. Fever is an increase in the core body temperature (the temperature within the deep tissues of the body) above the daily range for an individual. The daily range of core body temperature is between 35.6°C and 37.8°C (97.0°F and 100.4°F). The closest to core body temperature we can measure is rectal temperature. As this is usually not easily performed and is less acceptable to patients, the next best is ear (tympanic) temperature. This requires a specific device that can be inserted into the ear using disposable covers. Oral temperature is about 0.5°C less than ear temperature and axillary temperature a further 0.5°C lower than oral temperature. The normal core temperature of any individual does not remain static but varies according to certain rhythms and characteristics. It is affected by time of the day (known as diurnal variation), age, gender, height, time in the menstrual cycle, as well as with exercise and meals. The diurnal variation of core body temperature is usually up to 0.6 degree C but can be exaggerated with a variation of 2-3degree C. Core body temperature is at its highest in the late afternoon and evening, with lowest point in the early hours of the morning.

Control of body temperature is termed thermoregulation, and under normal circumstances the body temperature will be in a state of stable internal temperature, or in homeostasis. The temperature of the body depends on the balance between heat production and heat loss. Core body temperature is regulated by a system of control mechanisms affecting heat generation and heat loss. These include the autonomic nervous system, the endocrine system, musculoskeletal system and behavioural responses. The centre of this mechanism is called the thermoregulatory centre. It lies in the hypothalamus and acts like a thermostat in controlling the systems to produce the right balance of heat production and loss. The thermoregulatory centre has heat-sensitive receptors which respond to changes in body temperature by switching on and off systems to keep the balance within normal range. The range of temperature considered normal by the hypothalamus is termed the set point. Damage to the hypothalamus can lead to loss of its thermostat control and result in very high or low core body temperatures. Heat is gained and lost by the body through normal

body functioning. Heat is produced all the time in the tissues of the body as a product of their metabolic processes. Heat is also produced by increased activity of skeletal muscles, such as during exercise or when shivering. Normally this heat is lost to the environment through transfer from deep tissues, via the blood stream, to body areas in contact with the outside. This is mostly through the skin but also occurs through the lungs The amount of heat lost from the skin via the above mechanisms depends on environmental conditions with more heat loss occurring in cold, dry and windy

environments. When the temperature of the environment is higher than body temperature or when there is a lot of humidity, heat cannot easily be lost, leading to a rise in body temperature.
Mechanism:

Evaporation: Sweating and panting cool by increasing heat loss
Convection: Increasing blood flow to body surfaces leads to heat loss
Conduction: Losing heat by being in contact with a colder surface, e.g. swimming in cold water or lying on a cold floor
Radiation: Increased exposure of the body surface will lead to increased heat loss
During infection or inflammation pyrogens (cytokines) are released which inturn induces prostaglandins formation. Prostaglandins sets the hypothalamic temperature regulatory centre to a higher point. Psychorespones (switching AC, fan adding a layer of cloth) followed by vasoconstriction of cutaneous blood vessels. The temperature at this point, maybe normal when the equilibrium is not achieved by this method or rise in temperature at the regulatory centre is too rapid, Patient develops Rigor. At this new equilibrium, Heat production and loss are at equilibrium. If the temperature is brought out by antibiotics or pyrogenic stimuli ceases heat loss will now exceed the heat production facilitated by sweating. there is adequate hydration, sponging, can be applied at this stage. It is a procedure where gauze, cotton or cloth is soaked in lukewarm water is applied over the forehead. When the new equilibrium is achieved, thermoregulator point, patient feels warms rigger stops disappear, so they remove extra layers of clothing.
Types of fever
Sustained/continuous fever:

- Persistent rise in temperature (<1°c) with minimal diurnal variation.
- Causes: pneumonia, meningitis, UTI, brucella

Intermittent fever

- fever spikes lost for few hours and occur several times a day but inbetween the spikes

- Causes- Malaria, drug fever, Deep seated infection, abscesses, Kala-azar, malignancy.

Remittent fever

- Temperature spikes fall daily with diurnal Variation of >2°c, but don't go down to normal.
- Causes. TB, infective endocarditis, many viral and bacterial infections

Relapsing fever

- Febrile episodes are separated by intervals temperature. of normal
- Causes: Malaria, borrelia (relapsing force), TB, lymphoma

Quotidian fever

- If this relapsing occurs daily, it is called quotidian fever
- Causes: Plasmodium falciparum

Double quotidian Fever

- It occurs when there are two spikes of fever everyday, generally once in the morning and once in the evening
- Causes: Miliary Tuberculosis

Tertian Fever

- If it occurs every 48 hrs it is called tertian fever

- causes: Plasmodium falciparum, P.vivax, P,ovale. If it occurs every 72 hrs it is called quartan fever.

Step-ladder fever

- A type of sustained fever where the temperature rises gradually to a higher level with every spike Causes Typhoid, Typhus
- Night sweats
- In some diseases, the rise in the body temperature is evident only in the evening or late night when the patient is woken up sweating. This pattern is seen when the mild rise normal diurnal evening rise leading to the body temperature rising beyond the normal level
- Causes: TB, leukaemia, lymphoma, autoimmune disorders.

Temperature - pulse disparity
This is the counter - intuitive response of a slower pulse associated with a high fever, commonly associate with typhoid fever.

Causes of fever

- Infection 50%
- Non-infectious inflammatory diseases -9%
- Autoimmune inflammatory
- Auto inflammatory vasculitis
- Malignancy 20% miscellaneous causes such as drug reactions 15%
- Undiagonsed 6%
- Infections (both viral and bacterial infections):
- Tuberculosis disseminated or extra pulmonary
- Intra-abdominal abscess cytomegalovirus infectious endocarditis
- ENT/dental infection (mastoiditis, sinusitis otitis, dental abscess) prostatitis
- osteomyelitis

		• prosthetic joint infections • Tick born illness (fever often accompanied by rash) meningitis (viral and bacterial meningitis) cellulitis • Animal or human bite (blood born viral transmission) • Inflammatory conditions: • Temporal arteritis • Adult onset still diseases systemic lupus erythematous • rheumatoid arthritis • inflammatory bowel disease • Malignancy:Lymphoma, leukaemia, solid tumours often with metastasis • Miscellaneous • Drug fever (commonly due to captopril, Erythromycin hydralazime, hydrochlorothiazide and penicillin) however virtually any drug can cause fever. well appearing patient with temporal association of fever and drug administration • Hematomas, deep vein thrombosis **Investigation and management:** Determine if the patient is at risk of being immunocompromised (example- malignancy, chemotherapy, HIV, chronic use of immunosuppressant). A careful History should include the complete history and surgical history, Current medication list and social history identified, travel, occupational sexual environment, dietary and sick contacts. A thorough physical examination is essential. Laboratory evaluation varies based upon the suspected source of fever. basic laboratory evaluation for fever includes CBC routine, serum, chemistry and lever function test, stool examination, urine examination as appropriately and blood sample of blood culture to be obtained before patient starts antibiotics. Majority of the infection or viral and doesn't need antibiotics. Antibiotic should be given only when bacterial cause is proven. It should not be taken by assumption. Siddha Management: Linga Chenduram 65mg twice a day Clinical Practice for Three Hours
Topic 16 Enema and Urinary Catheter (LH :0 NLHT: 0 NLHP: 3)		

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Demonstrate the Enema for digestive disorders and Urinary Catheter insertion for retention of urine.	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP16.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 16.1	Enema and Urinary Catheter	ENEMA: • Enema is usually given to relieve constipation • There are many different types of enema such as sodium phosphate, glycerin, bisacodyl etc.. • There also risk for enema and they need to be addressed • There are different kinds of catheter such as Foley's, Intermittent catheter, suprapubic catheter, condom catheter, coude's catheter and Triple lumen catheter • Complications such as bleeding, Infections, Urethral injury, Bladder spasm, cystitis/Urethritis need to be addressed. • Enemas is the administration of fluids rectally to cleanse or stimulate the emptying of bowel. • This procedure has been used for years to treat constipation and similar issues. • They are also used to clean the bowel before any test or surgery. • Enema can also treat fecal incontinence, a condition in which the stool leaks from the rectum unexpectedly. A professional usually does the enema procedure but you can also self-administer enemas at home. When should you have an enema?

Relieve constipation: Usually, an enema is a last-ditch effort to relieve constipation. You may need an enema if you can't poop and lifestyle changes haven't helped you have a bowel movement. Usually, increasing your water and fiber intake can get things moving. If not, stool softeners you take by mouth may help. If that's a no-go, it may be time to go directly to the source by trying an enema.

Treat fecal impaction: Severe constipation can cause poop to get stuck inside your colon, so it's impossible to pass on your own. An enema is an invasive treatment option, but it's much less invasive than other options, like removing the stool with surgery.

Prepare for surgery: You may need an enema to flush out poop before surgery on your colon or rectum. Getting rid of the poop reduces your risk of infection during surgery.

Prepare for a colonoscopy: During a colonoscopy, a provider inserts a scope into your anus (butthole) and through your rectum to check for abnormal growths inside your colon. Part of your preparation instructions may involve doing an enema the day before so your provider can get a clear view of your colon.

Have an imaging procedure: During a barium enema, a provider inserts liquid that contains a chalky white powder called barium into your rectum. The barium solution makes problem areas easier to spot on an X-ray.

Receive medicine: A healthcare provider may insert medicine directly into your colon using an enema. For example, some medicines
administered via enema reduce inflammation associated with gastrointestinal diseases, like ulcerative colitis.
Some people use enemas to rid their bodies of toxins or lose weight, but there's no evidence that enemas help with this.
Types of enemas:

Sodium phosphate enemas are the most common and fastest-acting type. A sodium phosphate enema is a mix of water and salt (saline). These enemas pull water from your colon and into your stool, so it's easier to pass.

Glycerin enemas also pull water into your colon to soften stools.

Bisacodyl enemas stimulate your colon to move, so it pushes the poop out.
Mineral oil enemas lubricate your colon so that poop can slide through easily.

Barium enemas are only used during a special X-ray procedure.

Tap water enemas soften poop so it can pass more easily.
Purpose of the enema:

Cleansing enemas clean you out fast — within a matter of minutes. You insert the liquid, and then you poop. Most enemas are cleansing enemas.

Retention enemas require you to “hold it” or retain the fluid for a bit so the enema has time to work inside your colon. For example, holding a mineral oil enema gives it time to lubricate your colon so you can poop easier.
Amount of solution

Large-volume enemas (from 500 to 1,000 milliliters of fluid) push fluid higher into your colon, cleansing it completely.

Small-volume enemas (less than 500 milliliters of fluid) clean the lower part of your colon, which may be all you need.
Regardless of the enema type, you should follow the instructions — to the letter — to ensure you’re inserting the right amount of fluid. Otherwise, you may experience unpleasant side effects. Too much fluid can damage your colon.
Procedure:
No two enema kits are the same. For example, the container that holds the fluid may be a bottle or a bag. The part that administers the solution may be a tube, a nozzle or a syringe. Follow the instructions on the kit or from your healthcare provider closely.
steps to should follow.

1. Lay a towel on the floor and have a timer nearby so you know when you should feel the urge to poop. The towel can catch any accidents if you can't get to the toilet in time.
2. Wash your hands and prepare the solution as needed. You may need to mix and measure the solution and transfer it to a container. Make sure the solution is at room temperature. Liquid that's too hot or cold will hurt.
3. Get in a position that makes it easy to insert the enema. If you're doing an enema alone, lie on your side with the knee of your other leg pulled to your chest. It's a good idea to lie on your nondominant side so that your dominant hand can insert the tube or syringe. If someone's helping you, you can kneel (as if the bottom half of your body were in the child's pose in yoga) and lean forward, resting the side of your face on the towel.
4. Lubricate the tube (petroleum jelly or K-Y Jelly® are good options) and gently insert it into your butthole. The kit will tell you how far it should go. Don't force the tube. If it won't go in, contact your provider.
5. Squeeze the solution until you've administered the correct amount of fluid, then slowly remove the tube. If you're doing a retention enema, wait until the designated time described on the kit before pooping. Otherwise, once you feel the urge to poop, go.

Risks/ contraindication:

Pain or discomfort. An enema may hurt if you use fluid that's too hot or cold or if you force the tube and damage tissue. You should take extra care to be gentle when inserting if you have hemorrhoids.

Puncturing your rectum. You can tear your rectum if you're not careful. Contact your provider if you have a bloody stool. Bright red blood may signal a tear.

Puncturing your colon. The tissue can tear if you overwhelm your colon with too much fluid. Your risk is higher if you've had previous colon surgery that's weakened the tissue.

Infection. You can introduce bacteria into your body with the enema if the materials aren't clean. You may need to avoid enemas if you have a compromised immune system.

Chronic constipation. Overusing enemas can cause your colon to lose the "muscle memory" it uses to help you poop. This can lead to long-term constipation issues.

Electrolyte imbalance. You should avoid sodium phosphate enemas if you have chronic kidney disease (CKD). They may disrupt your electrolyte balance to dangerous levels.

A missed diagnosis. Relying on frequent enemas to relieve constipation can prevent you from learning if you have an underlying condition causing your constipation. Instead of reaching for immediate relief, contact your healthcare provider. Constipation may be a symptom of a condition your provider needs to diagnose and treat.

CATHERETIZING BLADDERS

CATHETER:

Usually a 12 or 14 size catheter is right. Use the smallest you can. Latex is soft, simplistic, firmer. A silastic (silicon) catheter may be used long term, but costs more. Coude (elbow) catheters have an angled up to ease around prostates but are more risky. Teeman catheters have tapered ends for similar reason. Condom catheters have no indwelling parts, and are preferred by nurses and patients (less pain, less restriction of movement).

METHODS OF CATHETERIZING BLADDERS:

1.Per urethram:

This route is used to relieve urinary retention, to monitor urine output in critically ill patients, or to collect urine for diagnosis uncontaminated by urethral flora. It is contraindicated in urethral injury (eg pelvic fracture) and acute prostatitis. Catheterization introduces bacteria into the bladder, so aseptic technique is essential. Women are often catheterized by nurses but you should be able to catheterize patients of either sex.

• Lie the patient in a supine position with knees flexed and hips abducted with heels together. Use a gloved hand to prep urethral meatus in a pubis-to-anus direction, holding the labia apart with the other hand. With uncircumcised men, retract the foreskin to 'prep' the glans; use a gloved hand to hold the penis still and off the scrotum, The hand used to hold the penis or labia should not touch the catheter.

• Put sterile lignocaine 2% gel on the catheter tip and ?10mL into the urethra (?5mL if female). In men, stretch the penis perpendicular to the body to eliminate any urethral folds that may lead to false passage.

• Use steady gentle pressure to advance the catheter. Insert to the hilt; wait until urine emerges before inflating the balloon. Remember to check the balloon's capacity before inflation. Pull the catheter back

		so that the balloon comes to rest at the bladder neck. • Remember to reposition the foreskin in uncircumcised men to prevent massive oedema of the glans after the catheter is inserted. **Self-catheterization**: This is a good, safe way of managing chronic retention from a neuropathic bladder (eg in multiple sclerosis, diabetic neuropathy, spinal tumour). Never consider a patient in difficulties from a big residual volume to be too old, young, or disabled to learn. A 'numb bum' implies less sensation of full bladder, higher sensory loss may mean catheterization will be painless. Get help from your continence adviser who will be in a position to teach the patient or carer that catheterizations must be gentle, particularly if sensation is lacking, and must number >4/day. **2.Suprapubic catheterization**: It is sometimes necessary and may be preferred. Ensure the bladder is distended, then clean the skin. Infiltrate with local anaesthetic down to the bladder, nick the skin, and then insert the catheter down vertically above the symphysis pubis. When urine is draining advance the catheter over the trocar and tape it down securely. **REFERENCE**: Oxford Handbook of Clinical Medicine Clinical Practice for One and half Hours

Topic 17 Coma (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO2, CO4, CO7	Assess the patient of coma as instructed by the specialist	PSY-GUD	MK	KH	CBL	CBA,P-CASE	F&S		-	NLHP17.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity

NLHP 17.1	• It is a state of unresponsiveness to the surrounding environment can be assessed by motor, verbal and eye movement. • The leading cause been shock, trauma, metabolic disorders and toxins. • The aim of the treatment is to treat further progression and correcting the primary cause.	COMA: Looks surrounding of the patient and our safety. History of patient should be taken from relatives or by standards inspection and examination of patient for possible trauma, tongue biting, any bleeding, fracture, urine or fecal incontinence, pupil size, symmetry or any other changes. Monitor the vitals. CPR should be done when breathing and heartbeat was stopped, in case of suspected or possible cervical trauma stabilize the cervical spine. Position of the patient should be maintained at left lateral. Protect the air way with bag and mask to target saturation at 94 to 98% (88 to 92% for COPD). Level of consciousness can be assessed semi quantitatively and followed by all level of Glasgow Coma Scale. POINTS EYE OPENING/VERBAL OPENING/MOTOR RESPONSE 1- None 2 -To pain,Vocal but not verbal,Extension 3 -To voice,Verbal but not conversational,Flexion 4 - Spontaneous oriented,Withdraws from pain 5 - Localizes pain 6 - Obeys commands This indicates the severity of traumatic brain injury • Mild 13-15 • Moderate 9-12 • Severe less than or equal to 8 No oral fluids and diet or given as it causes aspiration. IV dextrose 25% D/50% D should be given in case of hypoglycaemia. Place an IV line ensure adequate circulation and send blood for CBC, arterial blood gas analysis, culture, glucose, electrolyte, BUN, calcium, liver and serum ammonium level, prothrombin time, APTT, typing and cross matching. Perform urine analysis and toxicology drug analysis on blood and urine. History should focus on activity medication alcohol or drugs used, Diabetes mellitus. General physical examination main reveal systemic illness associated with, Cirrhosis, haemodialysis, rash of meningiococemia or sign of head trauma (eg laceration, peri orbital

		or mastoid ecchymosis, hemotympanum). Look for possible in case of neurological pulmonary oedema, autonomic disturbance in GBS, spinal shock, high spinal injury, acute brain injury refer the patient to nearby hospital where facilities are available. Clinical Practice for Three Hours

Topic 18 Hypoglycemia (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Management of Hypoglycemia	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP18.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 18.1	• Hypoglycaemia is a common acute complication of Diabetes mellitus. • Symptoms include sweating, Trembling, Hunger. • Fatigue, Anxiety leading to confusion, Drowsiness, unconsciousness and convulsions. • Treatment is IV fluid administration of glucose.	HYPOGLYCEMIA: Hypo glycemia values: • mild 50-70 mg/dl, • moderate 30-49 mg/dl • severe less than 30 mg/dl Consider the patient medical history, including any previous diagnosis of diabetes, medication and allergy. Evaluate the symptoms such as polyuria, polydipsia, fatigue, blurred vision or headache. Drugs particularly alcohol or agents used to treat diabetes should be first consideration even in the

		absence of known use of relevant drug, given the possibility of surrepititious, accidental or malicious drug administration. Other considerations include evidence of relevant critical illness, hormone deficiency (less commonly) and a non-Beta cell tumour that can be pursued diagnostically. Treatment should be initiated as soon as possible. Capillary blood collection Values helps in the confirmation of the diagnosis and should not be delayed until formal Lab confirmation has been obtained. If the patient is able and conscious Oral treatment with glucose tablet or glucose containing fluids, juices or food is appropriate. A reasonable initial dose is 20 g of glucose, if patient is unable to take orally, parental therapy is necessary. IV administration of 25g glucose (25% D) should be followed by glucose infusion guided by serial plasma glucose measurement. These treatments raise plasma glucose concentration orally transiently, so patients should therefore be urged to eat as soon as possible to replace glycogen store. Continuous dextrose infusion may be necessary especially in sulphonylurea poisoning, IM glucagon stimulate hepatic glucose release but ineffective in patients with depleted glycogen reserve such as alcohol in excess or liver disease. If patient fails to regain consciousness after blood glucose is restored to normal cerebral oedema, alcohol intoxication, cerebral haemorrhage should be considered and referred to nearby hospital where appropriate facilities are available. Clinical Practice for Three Hours

Topic 19 Shock (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Management of Shock	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP19.1

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity

NLHP 19.1	• Reduced blood flow and oxygen delivery to the tissue is called shock. • There are different type of shocks such as Hypovolemic, Cardiac, Septic and Neurogenic shock. • Types include, (i) Distributive (ii) Hypovolemic (iii) Cardiogenic (iv) Obstructive shock • Patient in pre-shock with symptoms of tachycardia, vasoconstriction and reduced systolic BP should be screened initially to avoid end organ damage leading to multiorgan failure.	**SHOCK:** A process in which blood flow and oxygen delivery to tissues are deranged, leading to tissue hypoxia and resultant compromises of cellular metabolic activity and organ function. Main goal of therapy is a rapid Cardio vascular resuscitation to re-establish tissue perfusion. Classification, • Distributive shock, • Hypovolemic shock • Cardiogenic Shock • Septic Shock. **Distributive shock:** Shock caused by massive vasodilatation and impaired distribution of blood flow, resulting in tissue hypoxia. *Causes of distributive shock:* most common causes of distributive shock in the emergency department are sepsis and anaphylaxis. In cases of trauma, the neurogenic shock should also be on the differential. Other less common causes of distributive shock include adrenal insufficiency and capillary leak syndrome. Drug overdose or toxicity should always be considered, particularly potent vasodilators such as calcium channel blockers and hydralazine.Distributive shock as a result of sepsis occurs due to a dysregulated immune response to infection that leads to systemic cytokine release and resultant vasodilation and fluid leak from capillaries. These inflammatory cytokines can also cause some cardiac dysfunction, called septic cardiomyopathy, which can contribute to the shock state. A common cause is the systemic inflammatory response syndrome due to noninfectious causes such as pancreatitis and burns. In anaphylaxis, the patient typically has a history of previous exposure to an antigen, although this is not required, with resulting IgE formation to that antigen. These IgE molecules then attach to the surface of mast cells in the tissues and basophils in blood. Consequent exposure to the same antigen results in the IgE-mediated release of histamine from mast cells and basophils, leading to systemic vasodilation and capillary fluid leak. Toxic shock syndrome should be considered in distributive shock. This disease is caused by Staphylococcus aureus and group A streptococci exotoxins that stimulate systemic

cytokine release with resulting vasodilation and capillary leak. Historically, this is associated with both vaginal and nasal tampon use. Neurogenic shock classically occurs in cases of trauma involving the cervical spinal cord. The sympathetic nervous system is damaged resulting in a decreased adrenergic input to the blood vessels and heart, causing vasodilation with resultant hypotension and paradoxical bradycardia. The distributive shock from adrenal insufficiency occurs due to decreased alpha-1 receptor expression on arterioles secondary to cortisol deficiency, which results in vasodilation. This is seen in patients on chronic steroids that are stopped suddenly. Capillary leak syndrome, while rare, should be considered in the oedematous patient with distributive shock. It occurs due to low blood albumin. Decreased oncotic pressure leads to fluid loss from the blood into the interstitium.
Symptoms of infection, like shortness of breath, cough, fever, chills, nausea, vomiting, abdominal pain, and dysuria, as well as an immunocompromised status and recent hospitalizations, should be noted as this information may point to sepsis. Additionally, identifying known allergies and a history of anaphylaxis as well as possible.Exposures to known allergens can aid the identification of the cause of the patient’s presentation. Review the patient’s medications, particularly steroids and anti-hypertensives, and illicit drug use to determine if overdose or intoxication could be contributing to the clinical picture.
While the physical exam is unreliable in determining the source of shock, some findings can be suggestive of underlying etiology. Warm extremities can point to vasodilation as the cause of shock. A careful skin exam should be completed to identify a cutaneous source of infection such as cellulitis, ulcers, or abscess. Urticaria strongly suggests anaphylaxis.
Always consider adrenal insufficiency in a patient with hypotension, no signs of an infection and showing resistance to usual methods of resuscitation.
The physical exam will reveal:

- Altered mental status
- Tachycardia and tachypnea
- Hypotension
- Warm extremities with bounding pulses in early shock
- Hypo or hyperthermia
- Decreased urine output
- Low oxygen saturation

- Parameters: increased cardiac output (CO), decreased systemic vascular resistance (SVR), increased Central Venus O2 saturation (SCVO2)
- Primary goals of therapy
- Volume resuscitation; Iv crystalloid fluid,
- Antimicrobial therapy (septic shock)
- Removal of offending agent in Anaphylactic shock
- cardiovascular support with vasoactive agents

Hypovolemic shock:

Hypovolemic shock is due to loss of circulatory volume

Hypovolemic shock can be divided into hemorrhagic and non-hemorrhagic. Hemorrhagic shock is due to an acute reduction in the effective intravascular volume from bleeding.

In contrast, non-hemorrhagic is due to reduced effective intravascular volume from body fluid loss.

Traumatic injury is by far the most common cause of hemorrhagic shock. Other causes of hemorrhagic shock include gastrointestinal (GI), genitourinary, and bleeding from surgical intervention.

Non hemorrhagic shock:

Renal cause:Renal losses of salt and fluid can lead to hypovolemic shock

GIT losses fluid loss occurs in the presence of intractable vomiting, diarrhea, bowel obstruction, or external drainage via stoma or fistulas.

Skin causes: Excessive fluid loss can also occur from the skin. In a hot and dry climate, skin fluid losses can be as high as 1 to 2 liters/hour. Patients with a skin barrier interrupted by burns or other skin lesions also can experience significant fluid losses that lead to hypovolemic shock.

Third-Space Sequestration: Sequestration of fluid occurs when intravascular fluid leaves the interstitial compartment leading to effective intravascular volume depletion and hypovolemic shock.

Third space fluid losses: Third-spacing of fluid can occur in intestinal obstruction, pancreatitis, burn, post-operatively, obstruction of a major venous system, or any other pathological condition that results in a massive inflammatory response

Symptoms: volume depletion, electrolyte, imbalance or acid base disorders that accompanied hypovolemic shock.

Due to volume depletion: complain of thirst, muscle cramps, and / or orthostatic hypertension.

Due to mesenteric and coronary ischaemia: abdominal or chest pain, agitation, lethargy, confusion from brain malperfusion, Physical findings: Dry mucus membrane, decrease the skin turgor, Low jugular Venous distention.

Tachycardia and hypotension can be seen along with decreased urinary output.
Parameters: increased cardiac output (CO), Increased systemic vascular resistance (SVR), Decreased Central Venus O2 saturation (SCVO2)
Goal of therapy: Volume resuscitation (IV blood product and crystalloid were used with goal mean arterial pressure (MAP) of 60-65 mm Hg)
Obstructive shock: obstruction of the heart/ great vessels, resulting in decreased left ventricular filling and CVS collapse
Parameters decreased CO increased SVR or normal, Decreased SCVO2
Goal of therapy: supportive therapy, patients are volume overload, fluid administration can lead to right ventricular overload followed by acute pulmonary oedma, thereby worsening shock
Cardiovascular Shock: caused by left ventricular systolic failure, resulting in decreased CO, Subsequent insufficient O2 distribution
Parameters: decreased CO, increased SVR, decreased SCVO2
Goal of therapy: careful fluid management
Septic shock:
Septic shock criteria SIRS: two of the following 4 finding must be present.

- Tachypnoea (RR>20/min/paco2 <32 mmHg)
- WBC count (<4000 cells/microL/>12000 cells micro/L)
- Tachycardia (HR>90bpm)
- Hypothermia or Hyperthermia (Temperature >38 C/<36.0 C)
- Abnormal hepatic enzymes,
- Altered mental status
- Platelet blood count <80000/microL

- PH <7.30
- plasma lactate> 4 mmol/L

Therapy of septic shock:

- Volume resuscitation
- Patients should initially receive 30 ml per kilogram Ideal Body Weight IBW IV crystallite fluid in 1st hour of presentation.
- Parameter to determine volume responsiveness should be closely monitor during volume recreation to prevent volume overload
- Lung injury (mechanical ventilation)
- Cardiovascular support maintains Mean Arterial Pressure (MAP) greater than or equal to 65 mmHg
- Source control intervention should be performed with the first 12 hr

List of drugs that must be available in *Avasara Maruthuvam* Department:
The following drugs must be administer and supervised by allopathy doctors,

- Inj. Atropine
- Inj. Adrenaline
- Inj. Noradrenaline
- Inj. Sodium bicarbonate
- Inj. Calcium gluconate
- IVF 5% dextrose
- IVF 25% dextrose
- IVF 1/2 NS
- Inj. Dopamine
- Inj. Dobutamine
- Inj. Lasix

		• Inj. Avil Clinical Practice for Three Hours

Topic 20 Treating vomiting and diarrhea (LH :0 NLHT: 0 NLHP: 3)

A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3
CO1, CO2, CO4, CO7	Demonstarte the management of First Aid for Vanthi(Vomiting)	PSY-GUD	MK	KH	CBL	P-CASE	F&S		-	NLHP20.1
CO1, CO2, CO4, CO7	Management of Kalichal(Diarrhea)	PSY-GUD	DK	KH	CBL	P-CASE	F&S		-	NLHP20.2

Non Lecture Hour Theory

S.No	Name of Activity	Description of Theory Activity

Non Lecture Hour Practical

S.No	Name of Practical	Description of Practical Activity
NLHP 20.1	• Vomiting is involuntary expulsion of the condess of the stomach through mouth. • The chief cause be Gastrointestinal, Infection, Motion sickness, pregnancy, Drugs, Migraine and malignancies like brain tumour.	First Aid for *Vanthi*(Vomiting) 1. History - Gather patient history covering: - Previous illnesses - Recent food intake - Bowel habits - Travel history - Allergies to drugs or foods

	• Treating the case is providing Hydration, giving test and treating the cause of the vomiting.	- History of trauma - For females, menstrual or pregnancy history - Family, social history, and previous episodes of vomiting - Vomiting Content: Check if the vomit contains blood, mucus, or bile. 2. Consent - Obtain consent from the patient or attender before proceeding. 3. Bedside Assessment - Observe for: - Frequency and severity of vomiting - Presence of abdominal pain or tenderness - Vital signs, checking for any abnormalities 4. Investigation - Blood investigations, especially electrolyte levels to assess dehydration or imbalance. 5. Management - Medications Siddha Maanagement; Jaathi Jambeera kulambu - 32mg to 130mg three to four times a day. Mayiliragathi chooranam - 2.5 gm two times a day with honey if there is associated hiccup. 1. Antiemetics - Ondansetron, Metoclopramide, Promethazine 2. Antihistamines: - Diphenhydramine, Hydroxyzine 3. Gastroprokinetics: - Domperidone, Erythromycin 4. Anti-inflammatory (if needed for associated symptoms): - Ibuprofen - Rehydration: - Oral or IV fluid therapy to prevent or manage dehydration. - Monitor Electrolytes: - Regularly assess for any imbalances and address as needed. - If Symptoms Persist:	

		- Identify and address the underlying cause of vomiting. 6. Referral Criteria - Referral to healthcare provider is needed if: 1. Vomiting blood or material resembling coffee grounds 2. Severe abdominal pain or tenderness 3. Fever over 101.5°F (38.6°C) 4. Signs of shock (pale, cool skin; rapid heartbeat; shallow breathing) 5. Altered mental status or confusion 6. Severe vomiting causing dehydration (excessive thirst, dark urine, dizziness) 7. Inability to keep any fluids down Clinical Practice for One and half Hours
NLHP 20.2	• Diarrhoea is the watery and frequent bowel movements • The chief cause being infections, Drugs, Food poisoning, pre-existing medical diseases and diet. • Treatment include providing Hydration and Anti-diarrhoeal medications.	Management of Diarrhea 1. History - Patient history including: - Past diseases or recent illnesses. - Food intake and dietary habits. - Bowel patterns and recent changes. - Travel history (to assess possible infections). - Known allergies to drugs or foods. - Previous episodes of diarrhea. - For females, menstrual or pregnancy history. - Stool characteristics: Frequency, presence of blood or mucus. 2. Consent - Obtain consent from the patient or an immediate relative. 3. Bedside Assessment - Vital signs: Temperature, pulse rate, blood pressure. - Signs of dehydration: Dry mouth, dark urine, dizziness, and excessive thirst. - Frequency and nature of stools. - Abdominal assessment: Pain, tenderness, or distension. 4. Investigations

		- Blood Tests: Electrolytes to monitor imbalances. - Stool Examination: Check for blood, pathogens, or abnormal substances. 5. Management Siddha Management: Thayirchundi Chooranam 1gm three times a day with warm water. - Fluid Replacement: - Oral Rehydration Solution (ORS) or IV fluids if oral intake is insufficient. - Medications: - Anti-diarrheal Loperamide or diphenoxylate (use with caution and only if non-infectious). - Antibiotics: Ciprofloxacin, metronidazole, or vancomycin (only if a bacterial infection is suspected and prescribed by a healthcare provider). - Probiotics: Lactobacillus or Saccharomyces boulardii for gut flora support. - Monitor Electrolytes regularly to prevent imbalances. 6. Referral Criteria - Severe Diarrhea: - More than 6 stools/day, or with blood, mucus, severe pain, or high fever (>101.5°F / 38.6°C). - Signs of dehydration (dark urine, dizziness). - Diarrhea with Complications: - Severe vomiting, abdominal distension, guarding, or rebound tenderness. - Suspected Infectious Diarrhea: - Severe symptoms, blood in stool, high fever (>102°F / 39°C), or recent travel. - Immunocompromised Patients: Special attention for those with weakened immune systems. Clinical Practice for One and half Hours

Table 4 : NLHT Activity

(*Refer table 3 of similar activity number)

Activity No*	CO No	Activity details

Table 5 : List of Practicals

(*Refer table 3 of similar activity number)

Practical No*	CO No	Practical Activity details
1.1	CO1,CO2,CO3,CO4, CO7	Examination of unconsious patient using Siddha paramaters
2.1	CO1,CO2,CO3,CO4, CO5,CO7	First aid treatment for *Sanni Mayakkam* (unconscious) patient
3.1	CO1,CO2,CO3,CO4, CO5,CO7	First aid treatment for *Manthara kaasam*
4.1	CO1,CO2,CO3,CO4, CO6,CO7	First aid treatment for *Murivu* (Fracture)/ Isangal (Dislocation)
5.1	CO1,CO2,CO4,CO7	Cardiopulmonary resuscitation
6.1	CO1,CO2,CO3,CO4, CO5,CO7	Managemnt of *Valippu*
7.1	CO1,CO2,CO3,CO4, CO5,CO7	Examination and Management of *Muga Vatham* / *Uraga Vatham*
8.1	CO1,CO2,CO3,CO4, CO5,CO7	Examination and Management for *Eruvai Kuruthi Perukku* (Lower Gastrointestinal Bleeding) (LGIB)
9.1	CO1,CO2,CO3,CO4, CO5,CO7	Management of *Thol Pusam Netti Thaalvu* or *Kai Kuzhi Kundu Isangal* (Anterior Dislocation of Shoulder)
10.1	CO1,CO2,CO3,CO4, CO5,CO7	Management of *Manibantha Murivu* or *Kozhikazhuthu murivu* (Distal end of Radius Fracture)
11.1	CO1,CO2,CO4,CO7	• Oxygen therapy is the administration of oxygen at concentration of pressure greater than that found in the environment atmosphere. • The air that be breath contains approximately 21% oxygen. Oxygen is carried by haemoglobin and heart pump the blood to various tissues. • O2 therapy is the key treatment in respiratory care. • The purpose is two increase O2 saturation in tissues where saturation levels are too low due to illness or injury
12.1	CO1,CO2,CO4,CO7	Demonstrate the appropriate IV Fluid administration and suturing
13.1	CO2,CO4,CO7	

		• A complaint of shortness of breath (dyspnoea) implies that the act of breathing has become conscious effort. • There are respiratory, Cardiac and other causes of shortness of breath. • Here is the detailed description about handling of a patient with shortness of breath.
14.1	CO1,CO2,CO4,CO7	Management of Chest pain and ECG
15.1	CO1,CO2,CO4,CO7	Assessment of Fever Patient
16.1	CO1,CO2,CO4,CO7	Enema and Urinary Catheter
17.1	CO2,CO4,CO7	• It is a state of unresponsiveness to the surrounding environment can be assessed by motor, verbal and eye movement. • The leading cause been shock, trauma, metabolic disorders and toxins. • The aim of the treatment is to treat further progression and correcting the primary cause.
18.1	CO1,CO2,CO4,CO7	• Hypoglycaemia is a common acute complication of Diabetes mellitus. • Symptoms include sweating, Trembling, Hunger. • Fatigue, Anxiety leading to confusion, Drowsiness, unconsciousness and convulsions. • Treatment is IV fluid administration of glucose.
19.1	CO1,CO2,CO4,CO7	• Reduced blood flow and oxygen delivery to the tissue is called shock. • There are different type of shocks such as Hypovolemic, Cardiac, Septic and Neurogenic shock. • Types include, (i) Distributive (ii) Hypovolemic (iii) Cardiogenic (iv) Obstructive shock • Patient in pre-shock with symptoms of tachycardia, vasoconstriction and reduced systolic BP should be screened initially to avoid end organ damage leading to multiorgan failure.
20.1	CO1,CO2,CO4,CO7	

		• Vomiting is involuntary expulsion of the condess of the stomach through mouth. • The chief cause be Gastrointestinal, Infection, Motion sickness, pregnancy, Drugs, Migraine and malignancies like brain tumour. • Treating the case is providing Hydration, giving test and treating the cause of the vomiting.
20.2	CO1,CO2,CO4,CO7	• Diarrhoea is the watery and frequent bowel movements • The chief cause being infections, Drugs, Food poisoning, pre-existing medical diseases and diet. • Treatment include providing Hydration and Anti-diarrhoeal medications.

Table 6 : Assessment Summary: Assessment is subdivided in A to H points

6 A : Number of Papers and Marks Distribution

Not Applicable

6 B : Scheme of Assessment (Formative and Summative)

Not Applicable

6 C : Calculation Method for Internal assessment Marks

Not Applicable

6 D : Evaluation Methods for Periodical Assessment

Not Applicable

6 E : Question Paper Pattern

Not Applicable

6 F : Distribution of theory examination

Not Applicable

6 G : Instructions for UG Paper Setting & Blue print

Not Applicable

6 H : Distribution of Practical Exam

Not Applicable

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Abbreviations

Domain		T L Method		Level		Assessment		Integration	
CK	Cognitive/Knowledge	L	Lecture	K	Know	T-CS	Theory case study	V-SATV	V-SATV
CC	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	KH	Knows how	T-OBT	Theory open book test	V-UK	V-UK
CAP	Cognitive/Application	L&GD	Lecture & Group Discussion	SH	Shows how	P-VIVA	Practical Viva	V-UT	V-UT
CAN	Cognitive/Analysis	L_VC	Lecture with Video clips	D	Does	P-REC	Practical Recitation	V-UV	V-UV
CS	Cognitive/Synthesis	REC	Recitation			P-EXAM	Practical exam	V-NU	V-NU
CE	Cognitive/Evaluation	SY	Symposium			PRN	Presentation	V-MT	V-MT
PSY-SET	Psychomotor/Set	TUT	Tutorial			P-PRF	Practical Performance	V-GMM	V-GMM
PSY-GUD	Psychomotor/Guided response	DIS	Discussions			P-SUR	Practical Survey	V-GMK	V-GMK
PSY-MEC	Psychomotor/Mechanism	BS	Brainstorming			P-EN	Practical enact	V-SSM-NM	V-SSM-NM
PSY-ADT	Psychomotor Adaptation	IBL	Inquiry-Based Learning			P-RP	Practical Role play	V-NN1	V-NN1
PSY-ORG	Psychomotor/Origination	PBL	Problem-Based Learning			P-MOD	Practical Model	V-NN2	V-NN2
AFT-REC	Affective/ Receiving	CBL	Case-Based Learning			P-POS	Practical Poster	V-NAVO	V-NAVO
AFT-RES	Affective/Responding	PrBL	Project-Based Learning			P-CASE	Practical Case taking	H-MM	H-MM
AFT-VAL	Affective/Valuing	TBL	Team-Based Learning			P-ID	Practical identification	H-VPS	H-VPS
AFT-SET	Affective/Organization	TPW	Team Project Work			P-PS	Practical Problem solving	H-AM	H-AM
AFT-CHR	Affective/ characterization	FC	Flipped Classroom			QZ	Quiz	H-SMM	H-SMM
PSY-PER	Psychomotor/perception	BL	Blended Learning			PUZ	Puzzles	H-KM	H-KM
PSY-COR	Psychomotor/ Complex Overt Response	EDU	Edutainment			CL-PR	Class Presentation	H-RM	H-RM
		ML	Mobile Learning			DEB	Debate		
		ECE	Early Clinical Exposure			WP	Word puzzle		
		SIM	Simulation			O-QZ	Online quiz		
		RP	Role Plays			O-GAME	Online game-based assessment		
		SDL	Self-directed learning			M-MOD	Making of Model		
		PSM	Problem-Solving Method			M-CHT	Making of Charts		

		KL	Kinaesthetic Learning			M-POS	Making of Posters		
		W	Workshops			C-INT	Conducting interview		
		GBL	Game-Based Learning			INT	Interactions		
		LS	Library Session			CR-RED	Critical reading papers		
		PL	Peer Learning			CR-W	Creativity Writing		
		RLE	Real-Life Experience			C-VC	Clinical video cases		
		PER	Presentations			SP	Simulated patients		
		D-M	Demonstration on Model			PM	Patient management problems		
		PT	Practical			CHK	Checklists		
		X-Ray	X-ray Identification			Mini-CEX	Mini-CEX		
		CD	Case Diagnosis			DOPS	DOPS		
		LRI	Lab Report Interpretation			CWS	CWS		
		DA	Drug Analysis			RS	Rating scales		
		D	Demonstration			RK	Record keeping		
		D-BED	Demonstration Bedside			COM	Compilations		
		DL	Demonstration Lab			Portfolios	Portfolios		
		DG	Demonstration Garden			Log book	Log book		
		FV	Field Visit			TR	Trainers report		
						SA	Self-assessment		
						PA	Peer assessment		
						360D	360-degree evaluation		
						PP-Practical	Practical		
						VV-Viva	Viva		
						DOAP	Demonstration Observation Assistance Performance		
						SBA	Scenario Based Assessment		
						CBA	Case based Assessment		
						S-LAQ	Structured LAQ		
						OSCE	Objective Structured Clinical Examination		
						OSPE	Objective Structured Practical Examination		

						DOPS	Direct observation of procedural skills		