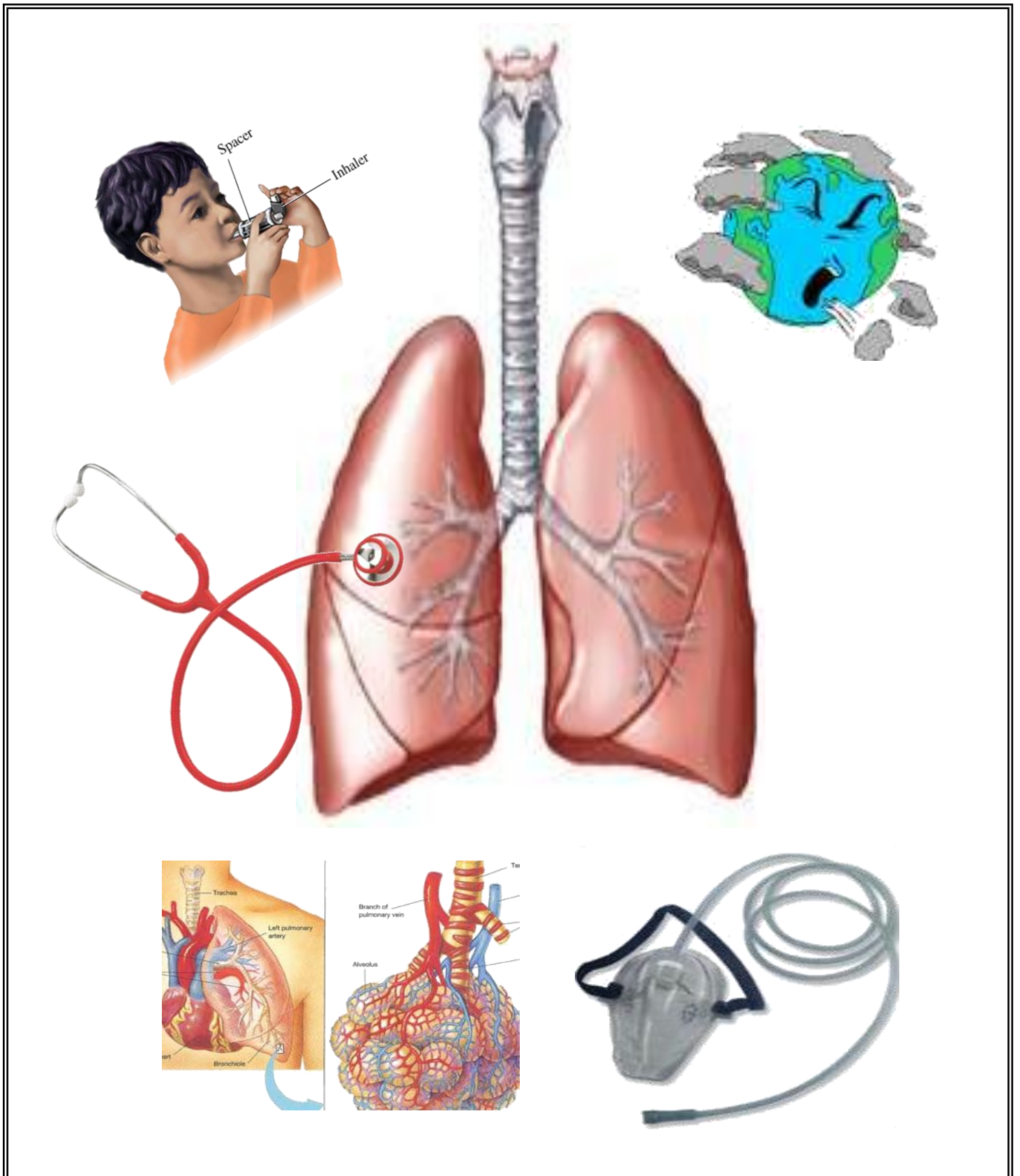


RESPIRATORY MODULE

PHASE 11



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MEMBERS OF THE MODULE COMMITTEE

DEVELOPMENT STAGE

IMPLEMENTATION STAGE

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Member	Dr. S.D. Jayaratne
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INTRODUCTION

The Respiratory Module is a 4 week module you will follow during phase 2 of your medical curriculum. As you have already learnt the normal function of the respiratory tract, you will now be in a position to appreciate the abnormalities of this system and how it affects the human body.

Respiratory diseases are a major cause of morbidity and mortality globally as well as in Sri Lanka. In 2002, Respiratory diseases in children was responsible for **13.2/100,000 population**, child deaths under 5 years. Apart from these major effects, recurrent and chronic respiratory problems result in a significant loss of productivity and man hours in a country. This is of such importance that in Sri Lanka, a national program named “Acute Respiratory Infection Control Program” is in place in order to reduce the burden of disease in the community.

During this module we will cover the important areas of respiratory problems in adults and children. But we stress that all problems of this system will not be covered in such a short time period. Therefore the emphasis should be on active learning and self study by the student, using the respiratory module as a guide. A list of suggested reading material is annexed at the end of your module hand book and we suggest that you use the internet and other supplementary readers where necessary to further your knowledge.

Teaching of this module will be in the form of lectures, tutorials, problem based learning, practicals and teacher-student seminars. There will also be sessions in the skills laboratory which will help you master ‘hands on’ skills which will be essential in the diagnosis and management of respiratory diseases and emergencies,

At the end of this term, you will have a formative assessment of all the modules that have been taught during the term. The assessment will be in the form of an MCQ paper. There will also be a summative assessment at the end of the 3rd year which will test the contents of all the modules you would have completed in your 3rd year.

The objectives of this module are listed below. At the end of the module, you should check if all or most of these objectives have been achieved.

GENERAL OBJECTIVES

At the end of the respiratory module, the student should be able to;

1. Recapitulate normal structure and function of the lungs and correlate the changes which occur in diseases of the respiratory tract.
2. Enumerate the important and common disorders of the respiratory tract.
3. Describe the etiology and the pathogenesis of common respiratory disorders and correlate clinical features to the pathophysiology of the disease.
4. Take a relevant history and perform a clinical examination to diagnose respiratory tract disorders.
5. Plan out investigations to diagnose and manage respiratory disorders.
6. Perform simple bed side and laboratory investigations to confirm/ assist clinical diagnosis.
7. Describe principles of the pharmacological basis in the treatment of respiratory disorders.
8. Describe the impact of social, occupational and environmental factors in respiratory disorders.
9. Describe the basic management of the respiratory disorders
10. Be able to diagnose, manage and counsel patients whose respiratory disorders are caused by social, occupational , environmental factors.
11. Perform basic emergency procedures in life threatening conditions encountered in respiratory tract disorders.

MAIN CONTENT AREA

1. Introduction to respiratory module.
2. Upper Respiratory Tract Infections
3. Lower Respiratory Tract Infections
4. Bronchial Asthma and Chronic Obstructive Pulmonary Disease
5. Diffuse Parenchymal lung diseases
6. Malignancies of the lung
7. Respiratory disorders of children
8. Occupational lung diseases, Smoking, Air pollution
9. Epidemiology, prevention and control of spread of respiratory infections.
10. Management of Respiratory emergencies.

 **MAIN CONTENT AREA - INTRODUCTION TO RESPIRATORY MODULE**

Intermediate objectives	Content Area	Activity	Duration	Department
(1) To describe the normal structure, function & gas exchange of respiratory system. (Recall)	<ul style="list-style-type: none"> ❖ (A) Reinforcement of normal structure of respiratory system ❖ (A) Functions of respiratory system ❖ (A) Gas exchanges ❖ (A) Interpretation of lung function tests. ❖ (A) use peak expiratory flow meter and interpret results. ❖ (A) Interpret arterial blood gas reports. 	1 Lecture/ handout	45 min	Physiology

MAIN CONTENT AREA – UPPER RESPIRATORY TRACT INFECTIONS

Intermediate objectives	Detailed content area	Learning	duration	Department
<p>1) To describe the normal flora and host defenses</p> <p>2) To describe the Aetiopathogenesis, clinical features, lab diagnosis & management of :</p> <ul style="list-style-type: none"> ✓ Coryza ✓ Laryngitis and tracheitis, Laryngo trachio bronchitis ✓ Influenza 	<ul style="list-style-type: none"> ❖ (A) Normal flora and host defense mechanism ❖ (A) Causative organisms, clinical features and investigations and management of ; * Coryza, * Laryngitis, * Tracheitis, * Laryngo trachio bronchitis, * Influenza 	<p>1 FiLM</p> <p>1 PBL</p>	<p>45x3 min</p>	<p>Microbiology</p> <p>Microbiology</p>

✚ MAIN CONTENT AREA-LOWER RESPIRATORY TRACT INFECTIONS

Intermediate Objectives	Content areas	Learning activity	Time	Dept
<p>1) To describe the pathogenesis, pathological changes and complications of</p> <ul style="list-style-type: none"> ✓ broncho, lobar, typical pneumonias ✓ lung abscess / empyema ✓ bronchiectasis 	<p>❖ (A) Classification of pneumonias Pathology of</p> <ul style="list-style-type: none"> * broncho, lobar, atypical pneumonias * lung abscess empyema * bronchiectasis and their complications 	<p>1Lecture</p> <p>1 Practical</p>	<p>45 sessions</p> <p>45 x 3</p>	<p>Pathology</p> <p>Pathology</p>
<p>2) To describe the microbiological agents responsible for different types of pneumonias</p> <p>3) To describe the collection / transport of samples (sputum/secretions) and methods used in laboratory diagnosis of pneumonias</p>	<p>❖ (A) Microbiological aspects of causative agents – Viral, Bacterial, Fungal causes.</p> <p>❖ (A) Laboratory diagnosis of pneumonias</p>	<p>1 Practical</p>	<p>45x3 mins</p>	<p>Microbiology</p>

<p>4) To describe the clinical features and investigations useful in diagnosing and detecting complications of</p> <ul style="list-style-type: none"> ✓ broncho,lobar,atypical pneumonias ✓ lung abscess / empyema ✓ bronchiectasis <p>5) To describe the management and complications of</p> <ul style="list-style-type: none"> ✓ pneumonias ✓ lung abscess / empyema ✓ bronchiectasis 	<p>❖ (A) Clinical features and management of,</p> <ul style="list-style-type: none"> * broncho,lobar,atypical pneumonias * lung abscess empyema * bronchiectasis <p>❖ (A) Outline the management of complications of</p> <ul style="list-style-type: none"> * pneumonias * lung abscess / empyema * bronchiectasis 	<p>1 Lecture</p>	<p>45 mins</p>	<p>Medicine</p>
<p>6) To describe rare infections of the Lung in the immuno compromised patients</p>	<p>❖ (C) Aetiopathogenesis, Clinical features & diagnosis of,</p> <ul style="list-style-type: none"> ✚ Fungal infections of Lung ✚ Pneumocytis carinii 	<p>FiLM</p>		<p>Microbiology</p>
	<p>(A) Patient presenting with haemoptysis Pneumonia, Lung abscess, Empyema, Influenza</p>	<p>Student Seminar</p>	<p>90 min</p>	<p>Medicine Pathology Pharmacology Community - Medicine Paediatrics</p>

✚ MAIN CONTENT AREA - BRONCHIAL ASTHMA /COPD

Intermediate objectives	Detailed content areas	Activity	Duration (min)	Department
<p>1) To describe the aetiopathology of bronchial asthma (BA)+ COPD</p> <p>2) To discuss the pharmacology & drug therapy in BA</p> <p>3) To discuss the therapeutic management (Mx) of BA +COPD</p>	❖ (A) Definition, aetiology and pathogenesis and pathology of BA / COPD	1 lecture 1 Practical	45 45x3	Pathology Pathology
	❖ (A) Clinical features, diagnosis and complications of BA / COPD	1 lecture	45	Medicine
	❖ (A) Bronchodilators	1 lecture	45	Pharmacology
	❖ (A) Preventors - their pharmacokinetics, actions, adverse effects, contraindications , drug interactions	1 lecture	45	Medicine
	❖ (A) Acute management – including assessment of severity, complications of severe asthma and stepwise treatment	1 Lecture	45	Medicine
	❖ (A) Long term management – including avoidance of precipitating factors and inhaler therapy	1 tutorial	45x3	Pharmacology
	❖ (A) Drug therapy in Asthma – acute and long term management			
<p>4) To discuss the aetiology, Clinical features, Diagnosis & management of Childhood asthma (CA)</p>	❖ (A) Aetiology, clinical presentations ,diagnosis and management of CA	1 lecture	45	Pediatrics
		1 PBL/SGD	45	Pediatrics

	(A) Patient presenting with <u>chronic /recurrent cough</u> Bronchial Asthma	Student Seminar	90	Medicine, Pathology Pharmacology, Community Medicine Paediatrics
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 **MAIN CONTENT AREA - RESPIRATORY DISORDERS OF CHILDREN**

Intermediate objectives	Detailed content area	Activity	Duration	Department
1) To describe the Pathophysiology, diagnosis and management of diphtheria	❖ (B) Pathophysiology, diagnosis and management of diphtheria	1 FiLM		Pediatrics
2) To describe the, Pathophysiology, diagnosis and management of, ✓ Childhood TB ✓ Bronchiolitis	❖ (A) Pathophysiology, diagnosis and management of croup, Pertussis & bronchiolitis	1 lecture	45 min	Pediatrics

 **MAIN CONTENT AREA –MALIGNANCIES OF THE LUNG**

Intermediate objectives	Detailed content area	Activity	Duration	Department
<p>1) To be able to,</p> <ul style="list-style-type: none"> ✓ classify lung tumours ✓ list the risk factors ✓ describe the pathological changes, clinical features and effects of lung tumours on the host . 	<ul style="list-style-type: none"> ❖ (A)WHO classification of lung tumours <ul style="list-style-type: none"> * Benign – adenomas * Malignant – epithelial bronchial carcinoma(squamous, adeno, small, large mixed) * Carcinoid tumours * Malignant mesothelioma * Secondary tumours (A)* Aetiological factors (A)* Macroscopic and microscopic changes of each type (A)* Effects and spread of lung cancers 	<p>Lectures – 1</p> <p>Practical –1</p> <p>Tutorial -1</p>	<p>45x1</p> <p>45x3</p> <p>45x3</p>	<p>Pathology</p>
<p>2) To describe the clinical features and management of Lung carcinoma</p>	<ul style="list-style-type: none"> ❖ (A) Symptoms and signs ❖ (A) Prevalence & presentation ❖ (A) Investigation & treatment of lung carcinoma 	<p>1 Lecture</p> <p>1 PBL</p>	<p>45 x1</p> <p>45x3</p>	<p>Medicine</p> <p>Medicine</p>

MAIN CONTENT AREA - OCCUPATIONAL LUNG DISEASE / SMOKING/AIR POLLUTION.

Intermediate objectives	Detailed content area	activity	duration	Department
<p>1) To describe the health hazards associated with air pollution</p> <p>2) To be able to list and describe the sources of air pollution ,the possible health effects and measures to control the hazards</p>	<ul style="list-style-type: none"> ❖ (A) To describe the methods of air pollution ❖ (A)To list the problems associated with air pollution ❖ (A)To list the common air pollutants on the atmosphere and their effects ❖ (A) To describe the green house effect and its effects on the environment 	lecture	45 x1	Community Medicine
<p>3) To describe hazards of smoking and methods of prevention</p>	<ul style="list-style-type: none"> ❖ (A) Hazards of smoking ❖ (A) Methods of prevention 	lecture	45x1	Community Medicine
<p>4) To define pneumoconiosis and extrinsic allergic alveolitis</p>	<ul style="list-style-type: none"> ❖ (B) Definition of pneumoconiosis and extrinsic allergic alveolitis. 	Lecture	45 x1	Pathology

<p>5) To describe the aetiopathogenesis and pathological changes of the lung in</p> <ul style="list-style-type: none"> ✓ extrinsic allergic alveolitis ✓ coal workers pneumoconiosis ✓ silicosis ✓ asbestosis disease 	<ul style="list-style-type: none"> ❖ (B) Common aetiological agents ❖ (B) Pathogenesis and pathological changes of the lung in <ul style="list-style-type: none"> * extrinsic allergic alveolitis * coal workers pneumoconiosis * silicosis * asbestosis disease ❖ (B) Complications 			
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✚ MAIN CONTENT AREA -DIFFUSE PARENCHYMAL LUNG DISEASE

Intermediate Objectives	Content areas	Learning activity	Time	Dept	
1) To describe the pathological basis, criteria for diagnosis, management of Adult respiratory distress syndrome (ARDS)	<ul style="list-style-type: none"> ❖ (A) Define adult respiratory distress syndrome ❖ (A) Identify causes, precipitating factors, pathophysiological basis and criteria for diagnosis ❖ (A) management strategies including assisted ventilation 	1 Lecture	45 min	Medicine	
2) To describe the pathological basis and principles of management of Idiopathic Interstitial Lung disease (ILD)	❖ (C) Definition , Pathophysiology, diagnosis and management of ILD				
3) To describe the pathological basis, diagnosis, management and prognosis. Cryptogenic Fibrosing Alveolitis (CFA)	❖ (C) Definition, pathophysiology, diagnosis and management of CFA				Medicine
4) To describe definitions and clinical features of Eosinophilic lung disease	❖ (C) Definition, pathophysiology, diagnosis and management of tropical pulmonary eosinophilia and other rare lung diseases				1 FiLM
5)To describe radiological abnormalities of Respiratory disorders	❖ (A) Interpretation of radiological abnormalities of the lung	Practical session	45x3 min	Radiology	

✚ MAIN CONTENT AREA - EPIDEMIOLOGY, PREVENTION AND CONTROL OF INFECTIVE DISEASES OF THE UPPER RESPIRATORY TRACT

Intermediate objectives	Detailed content area	activity	duration	Department
1) To describe the epidemiology prevention and control of infective diseases of the upper respiratory tract	<ul style="list-style-type: none"> ❖ (A) ARI Control Programme ❖ (B) Prevention of; <ul style="list-style-type: none"> * Pertusis * Diphtheria 	lecture	45x1	Community Medicine

✚ MAIN CONTENT AREA – RESPIRATORY EMERGENCIES

Intermediate objectives	Detailed content area	activity	duration	Department
1) To be able to recognize and manage Respiratory emergencies	(A) Diagnosis and initial resuscitation / management of	1 PBL	45x1	Medicine
	<ul style="list-style-type: none"> ✚ Respiratory failure ✚ Pneumothorax ✚ Child with Stridor 	1PBL	45x1	Paediatrics

(A)*SKILLS TO BE ACQUIRED

SKILLS –

- 1) CPR and intubation including neonatal intubation.
- 2) Identify and know the use of different types of inhalers and choose the appropriate type of inhaler for adults/children according to age and requirement
- 3) Be able to demonstrate proper Inhaler technique to patients
- 4) Nebulization in acute asthmatic patients
Administering O₂

- **RECOMMENDED READING MATERIAL**

Pharmacology

- Clinical pharmacology – Bennet and Brown
- Pharmacology – Rang & Dale
- Text book of Pharmacology – Bowman WC & Rand MJ
- Basic and Clinical Pharmacology – *Katzung* BG

Pathology

- Pathological basis of disease – Robbins and Cotran (7th edition)
- Muir's text book of pathology – 15th addition.
- Concise pathology – Chandrasoma and Taylor
- Clinical medicine – Praveen J Kumar and Michael L Clark

Community Medicine

- Frontiers in Social Paediatrics – Editors:- H.P.S. Sachdev & P. Chawdry
-Jaypee Brothers-
- Park & Park
-Preventive & Social Medicine-

Medicine

- Clinical Medicine – Kumar & Clerk
- Practice of clinical medicine - Davidson

Paediatrics

- Illustrated textbook of Pediatrics – Tom Lissauer & Graham Clayden
- Essential Pediatrics – by O. P. Ghai
- Hospital Pediatrics – Anthony de Milner & David Hull