FAMILY HEALTH DEVELOPMENT DIVISION
2003

MINISTRY OF HEALTH
MALAYSIA

STANDARD OPERATING PROCEDURES

FOR MEDICAL ASSISTANTS IN PRIMARY HEALTH CARE

PART 2

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FOREWORD

Standard Operating Procedures For Medical Assistants In Primary Health Care Part 2 serves as a guide to meet the standard of care and professionalism set out by the Ministry of Health, Malaysia. It also serves to enhance public awareness of such standards expected from Medical Assistants who provide health care to the community. Such awareness will hopefully encourage greater compliance to these guidelines and I therefore urge all Medical Assistants to adhere to the Standard Operating Procedures laid down in this book at all times.

Of late, Medical Assistants, have seen many positive changes, initiated by the Family Health Development Division, Ministry of Health, in recognition of their invaluable contribution especially in primary health care services. Several senior posts for Medical Assistants have been created to further enhance and improve clinical supervision and management of patients in outpatient clinics. The Ministry of Health has always stressed the importance of effective supervision of their peers by senior Medical Assistants, under the guidance of Medical Officers. The preparation of Standard Operating Procedures and other guidelines are efforts aimed at providing knowledge for quality patient care and I hope that these guidelines will be useful reference for Medical Assistants.

I am confident these Standard Operating Procedures will be well received and updates will be embarked on, with new topics introduced in future editions. I am sure that the Standard Operating Procedures (Part 1) has served Medical Assistants throughout the country well, as they continue to provide quality health care to the community.

May I congratulate the Family Health Development Division, Ministry of Health, for their efforts and commitment and all Doctors and Medical Assistants involved in the successful preparation of Standard Operating Procedures For Medical Assistants In Primary Health Care Part 2, which is indeed a commendable accomplishment.

Tan Sri Datu' Dr Mohamad Taha bin Arif
Director General of Health
Ministry of Health, Malaysia

FOREWORD

I would like to extend my compliments to all those involved in the initial preparation and the successful production of Standard Operating Procedures for Medical Assistants in Primary Health Care Part 2.

Medical Assistants have been serving in rural health clinics since early 1900. Primary health care in Malaysia has since expanded significantly and in tandem with higher demand for quality health care from the general public, primary health care services provided by the Ministry of Health have become more sophisticated and comprehensive. The preparation of this document, the contents of which is actually derived from various sources of clinical practice guidelines, is an initiative aimed at providing useful guidelines for Medical Assistants in the holistic management of patients within their level of qualification and competency.

The excellent reception given to the first edition, by Medical Assistants and also Medical Officers in primary health care facilities, has greatly encouraged the preparation of this second edition. I am confident that both Part 1 and Part 2 of Standard Operating Procedures for Medical Assistants in Primary Health Care will be highly appreciated and regularly used by Medical Assistants in Community Polyclinics. Medical Assistants should at all times practice the corporate culture values of caring, teamwork and professionalism when they provide promotive, preventive, rehabilitative and curative health care to patients in their daily routines.

The usage and effectiveness of Standard Operating Procedures for Medical Assistants in Primary Health Care Part 1 & 2 will be assessed by a survey and the findings will be used to facilitate the production of future editions.

Dato' Dr Shafie Ooyub
Deputy Director General of Health
(Public Health)
Ministry of Health Malaysia

PREFACE

This book (Part 2), containing 20 Standard Operating Procedures for Medical Assistants is an appropriate and necessary continuation of Part 1 which documented 33 Standard Operating Procedures. The Medical Assistants are to be commended on this excellent effort; and indeed these Standard Operating Procedures have provided the impetus and encouragement for the development of other Standard Operating Procedures relevant to the function of the various units of the Family Health Development Programme.

There is evidence that Part 1 is being used optimally by Medical Assistants throughout the country, and I have no doubt that Part 2 will be used with the same degree of intent and enthusiasm. By their very nature, procedures in medical care undergo constant change. Therefore, these documents will be updated accordingly, both in content and presentation, to be of optimal value.

The Family Health Development Programme is greatly encouraged by requests for these documents made by health authorities of agencies outside the Ministry of Health, such as the Malaysian Armed Forces and Petronas. This portrays a dual positive feature – firstly that health care providers in all agencies consider quality and standard important, and secondly, that the Ministry of Health is capable of leading the way in providing these quality and standard.

I would like to thank, those who have contributed to this document, the drafting team and the reviewers. I would also like to thank the Technical Committee of Medical Assistants (Public Health) who have worked alongside the drafting team and reviewers in making this document a reality.

Dato' Dr Narimah Awin
Director
Family Health Development Division
Ministry of Health Malaysia

INTRODUCTION AND DEDICATION

Medical Assistants in Public Health are privileged to prepare Standard Operating Procedures For Medical Assistants In Primary Health Care Part 2. The first part with 33 Standard Operating Procedures was very well received and appreciated by all. It was very encouraging to see many Medical Assistants regularly using the SOP Part 1 as a reference for better management of patients and this has indeed justified the preparation of Part 2.

In this document, which has 20 new topics, the format has been simplified, while maintaining the quality and comprehensiveness of its contents. The preparation process, involving Clinical Consultants from hospitals, Family Medicine Specialists, Public Health Specialists and several Senior Medical Assistants, was carried out as meticulously as possible to capture all the relevant details of patient management at primary health care level.

Medical Assistants are reminded that all patients are to be examined in the presence of a chaperon, assurance given to patients to allay their anxiety and fear, practice Standard Precautions at all times and carry out clinical procedures, under the request and supervision of Medical Officers.

Medical Assistants would like to extend their heartfelt appreciation and gratitude to the Director General of Health, Tan Sri Datu Dr Mohamad Taha bin Arif, Deputy Director General of Health (Public Health), Dato' Dr Shafie Ooyub, the Director of Family Health Development Division, Dato' Dr Narimah Awin and Deputy Director, Dr Hjh Safurah Hj Jaafar for their untiring support and invaluable guidance towards the continuous professional development of Medical Assistants in Public Health. Our very special and sincere thanks are also extended to the Clinical Consultants from hospitals, Family Medicine Specialists, Public Health Specialists and Medical Officers for their commitment in producing this document and providing this useful guideline for Medical Assistants in primary health care.

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Abdominal Distension

1

1. MANAGEMENT OF ABDOMINAL DISTENSION IN ADULTS (>12 YEARS OLD)

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** • Sphygmomanometer • Thermometer • Stethoscope • Measuring Tape • Rectal Examination Tray, consisting of KY Jelly, Gauze & Glove. • Ryle's Tube • Flatus Tube • Foley's Urinary Catheter **Drugs** • Analgesics • Antacids • ORS • Anti Inflammatory Agents
2. History Taking	Proper history taken on present complaint. 2.1. Painful Distension Due to: • Trauma • Intestinal Obstruction • Perforated Gastric Ulcer • Acute Hepatitis/ Pancreatitis • Cirrhosis of Liver • Drug Toxicity e.g. Paracetamol overdose with liver failure 2.2. Painless Distension: • Pregnancy • Acute Gastro Enteritis. • Dyspepsia • Ascites e.g. in Congestive Cardiac Failure, End Stage Renal Failure, Liver Cirrhosis • Obesity • Ovarian Cyst (can be painful if twisted) • Uterine fibroid (can be painful) 2.3. Associated symptoms: • Prolonged Fever • Vomiting • Diarrhoea • Jaundice • Spider Naevi • Pitting oedema 2.4. Other relevant Information • Last Menstrual Period (L.M.P) • Past H/O operation	
3. Examination	3.1. General Examination. Place patient in a comfortable position. • Check Vital Signs- B/P, Pulse, Temperature, Respiration, Hydration Status ? Pink/pale ? Jaundice	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	• Level of Consciousness, Glasgow Coma Scale (G.C.S) • Pupil Size. • Is Patient Distressed/Dyspneic? • Examination of Chest (Lungs & GVS) • Abdomen. • Specific attention to abdominal examination for bowel sound, rebound tenderness, rigidity. **(Do palpation, percussion and auscultation)** • Lower extremities inspection • Per Rectal Examination for possibility of malenic stool/ rectal carcinoma.	
4. Investigation	• Full Blood Count • Abdominal X-Ray - Plain AP (erect & supine) • Blood group and cross matching • BUSE. • Urine Pregnancy Test • Urine FEME for RBC • Urine Bile & Urobilinogen • Liver Function Test • RBS (end stage renal failure may present with hypoglycaemia)	
5. Management	Depends on the cause and nature of abdominal distension. Measure abdominal girth to monitor the progress of abdominal distension. 5.1. Painful Distension Due To: • Intra abdominal Injury. • Intestinal Obstruction. • Intra Abdominal Perforation • Perforated Gastric ulcer • Perforated Appendix Treatment • Oxygen Administration • Nil Orally.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	• IV Fluids e.g. Normal Saline, with Large Bore cannula 16 G x 2 Lines • Ryle's Tube, Free Flow • Group and cross match whole blood 3-4 pints • Strict continuous vital signs monitoring, preferably 1/4 hourly. • Explain condition of patient to relatives • Upon stabilization, refer patient to the nearest hospital . 5.2. Painless Distension: • Dyspepsia • Unplanned Pregnancy (premarital / rape etc) Reassurance and refer to MO or nearest Hospital if required .	
6. Health Education	6.1. Personal Hygiene. 6.2. Prevention of Acute Gastro Enteritis. 6.3. Prevention of worms infestation. 6.4. Avoidance of smoking, alcohol. 6.5. The needs for proper and balanced diet.	
7. Referral	All cases of acute abdominal distension should be referred. 7.1. Trained personnel to escort 7.2. Standard referral letter. 7.3. Inform receiving hospital.	

REFERENCE

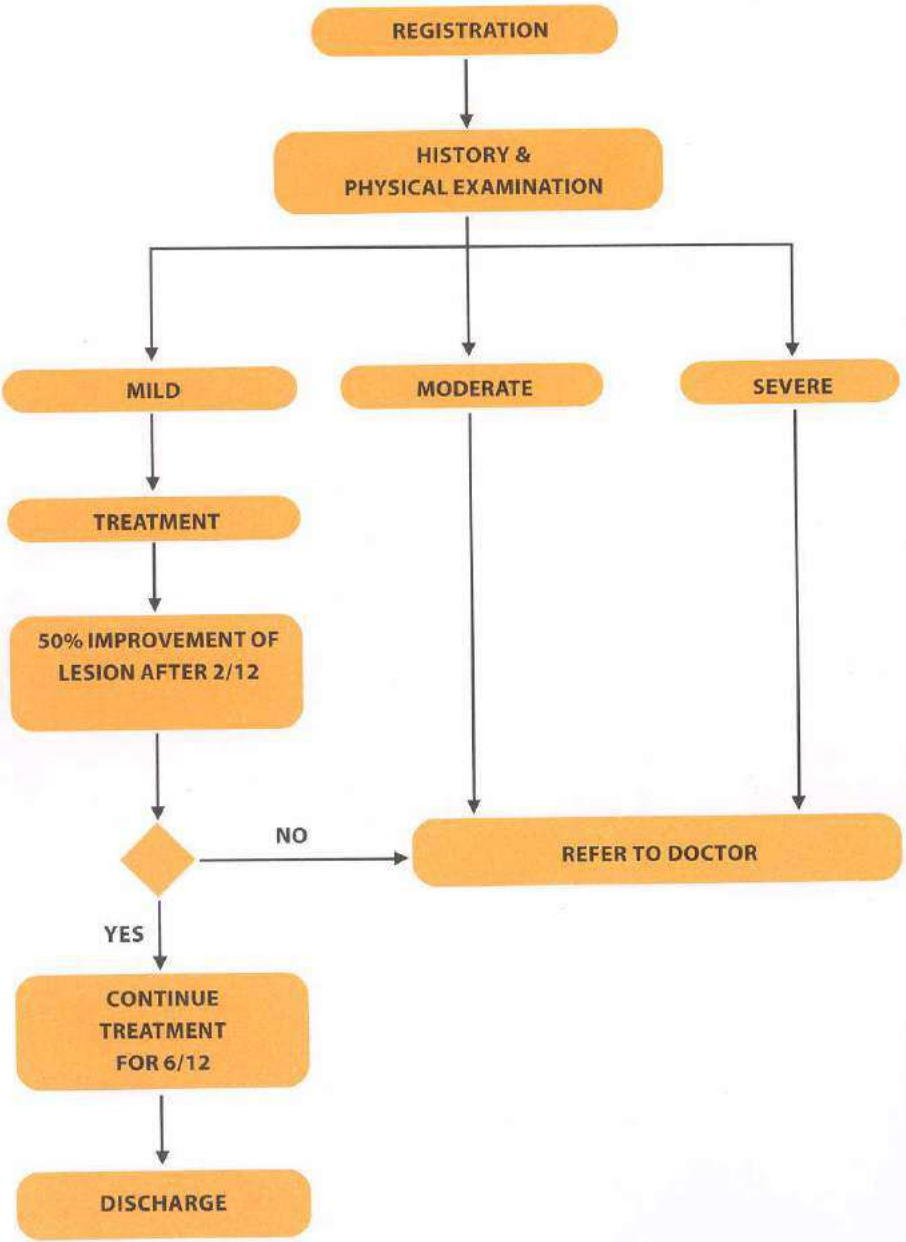
R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R34 *Woodley & Alison Whealan (1992)* The Washington Manual, Manual of Medical Therapeutics 27th Edition, *Little Brown and Company, Boston.*

Acne Vulgaris

2

2. MANAGEMENT OF ACNE VULGARIS



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Drugs** • Antibiotics • Antihistamine • Calamine + 6% Sulphur • Benzoyl Peroxide 2.5% - 10% cream/gel.
2. History Taking	2.1. Present Complaint • Duration of acne • Location 2.2. Past History • Aggravation by stress. • Current and past treatment Topical and systemic drug. 2.3. Family History. • Genetic/Hereditary. 2.4. Occupational History. • Job - exposure to petroleum products. • Work place. 2.5. For women: • Last Menstrual Period • Taking oral contraceptive • Cosmetics and moisturizer • Exposure to petroleum products	
3. Examination	3.1. General Examination • Examine all clients with acne and classify into Mild, Moderate and Severe. • Vital signs. 3.2. Specific Examination • Lesion Type: • Non Inflammatory - Comedo (White And Black Head) • Inflammatory - Papules, pustules, nodules, cystic • Location : - Face and Neck - Back - Anterior Chest - Extremities - Others - Look for Hirsutism, truncal obesity	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
4. Management	4.1. Mild - Less than 15 inflammatory lesions • Health Education. • Topical treatment. • Review monthly x 2/12. • If there is no 50 % improvement, systemic antibiotics is indicated. 4.2. Moderate - Above 15 inflammatory lesions. • Health Education • Refer M.O. 4.3. Severe - Presence of nodule and cystic lesion. • Health Education • Refer M.O.	
5. Health Education	5.1. Cleansing - 2 to 3 times a day with soap or cleanser 5.2. Moisturiser - Use non irritating, Ph balanced cleansing agent. Do not use oil based moisturiser 5.3. Do not squeeze comedo 5.4. Food - no scientific evidence on taboo. Take well balanced diet. 5.5. Cosmetics - light and non greasy. 20 to 30 minutes interval between topical treatment and application of cosmetic. 5.6. Chemical hazards like grease and petroleum products – wear personal protective equipment 5.7. Encourage positive thinking.	
6. Referral	All cases of moderate and severe Acne Vulgaris should be referred to M.O.	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R27 Diagnostic Problems and Dermatology *by Neil H Cox, Clifford M.Lawrence*

R28 Skin Disorders *by Eugen J Barone M.D, Judon c Jones MD, Joann E Scheafer MD.*

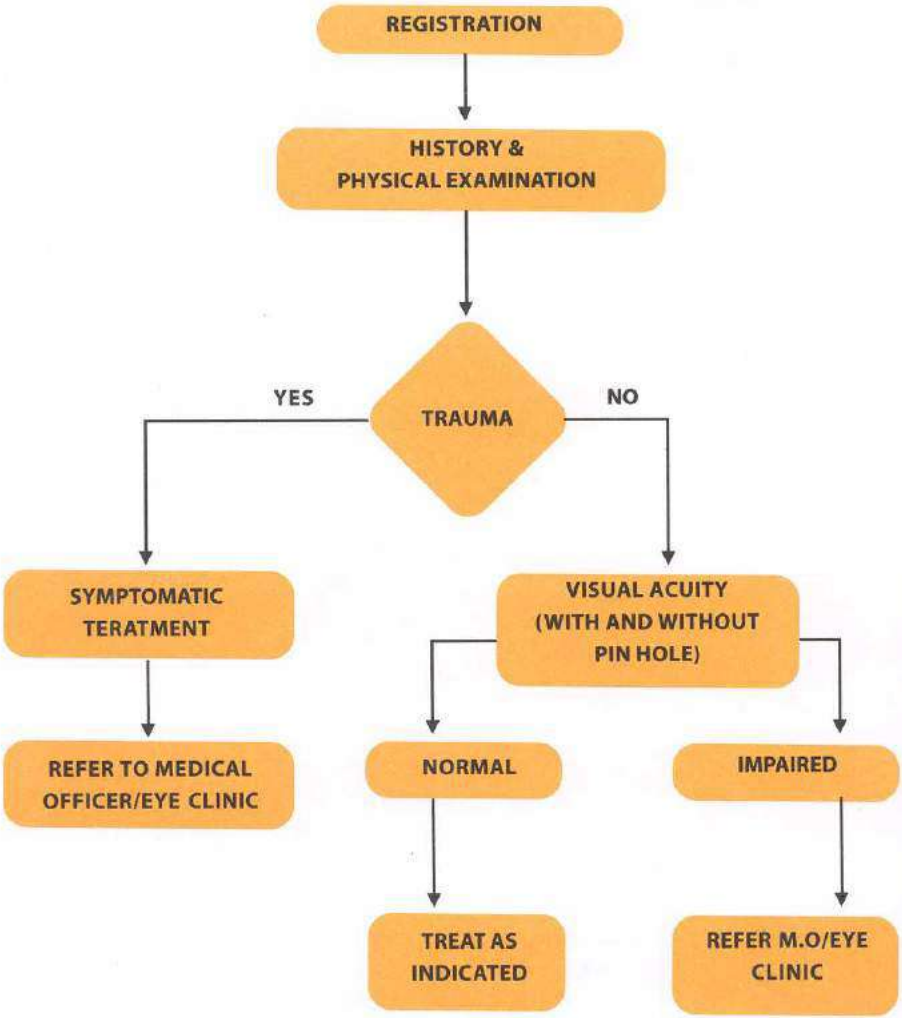
R29 Consensus Statement on The Management of Acne *by Persatuan Dermatologi Malaysia, Sept. 1998*

R30 Acne and Other Eruptions by Tony C Chu – Medicine@1997

Acute Eye Pain

3

3. MANAGEMENT OF ACUTE EYE PAIN



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · Penlight · Ophthalmoscope · Thermometer · B/P Set · Snellen's Chart · Stethoscope · Pin hole cards · Eye pad · Binocular loupe · Fluorescein Stain · Eye irrigation set – undine,normal saline, eye pad **Drugs** · Analgesics · Stemetil · Antibiotic eye drop · Normal Saline eye drop · Systemic antibiotic
2. History Taking	Proper history to be taken and documented in the OPD card Pin 1/78 2.1. To rule out a few important causes of eye pain. · Lid - ? presence of hordeolum (small abscess of the lid), chalazion, cellulitis · Conjuctival – irritant exposure, infection, lack of sleep · Corneal – abrasions, foreign body, ingrown lashes, contact lens abuse · Intraocular – glaucoma · Referred pain – tension head ache, sinusitis 2.2. Present complaints & duration · Visual loss / Impaired vision · Trauma to eye · Ocular pain during palpation · Photophobia · Red eye · Haloes around white light · Nausea & vomiting · Foreign body 2.3. Past history · Family history of glaucoma · Hypertension · Diabetes · Very Farsighted / shortsighted-ness · Past injuries to the eyes · Occupational hazard (welders flash) 2.4. Opthalmic history of surgery/ medications/ follow up	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
3. Examination	3.1. General Examination · Blood Pressure · Pulse Rate 3.2. Specific Examination · Visual Acuity without and with pinhole · Lid / Corneal / Conjunctival redness · Pupils – size & reactivity · Evidence of foreign body · Ocular pain during palpation	
4. Management	Give symptomatic treatment if required. · Eye irrigation · Apply eye pad to affected eye · Reassurance · Review the next day	
5. Health Education	Health Education to all patients regarding eye care	
6. Referral	Criteria for referral · Trauma cases · Impaired vision/ loss of vision · Progressive pain / redness / discharge that fails to respond to conservative treatment · Iritis · Unsure of diagnosis	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

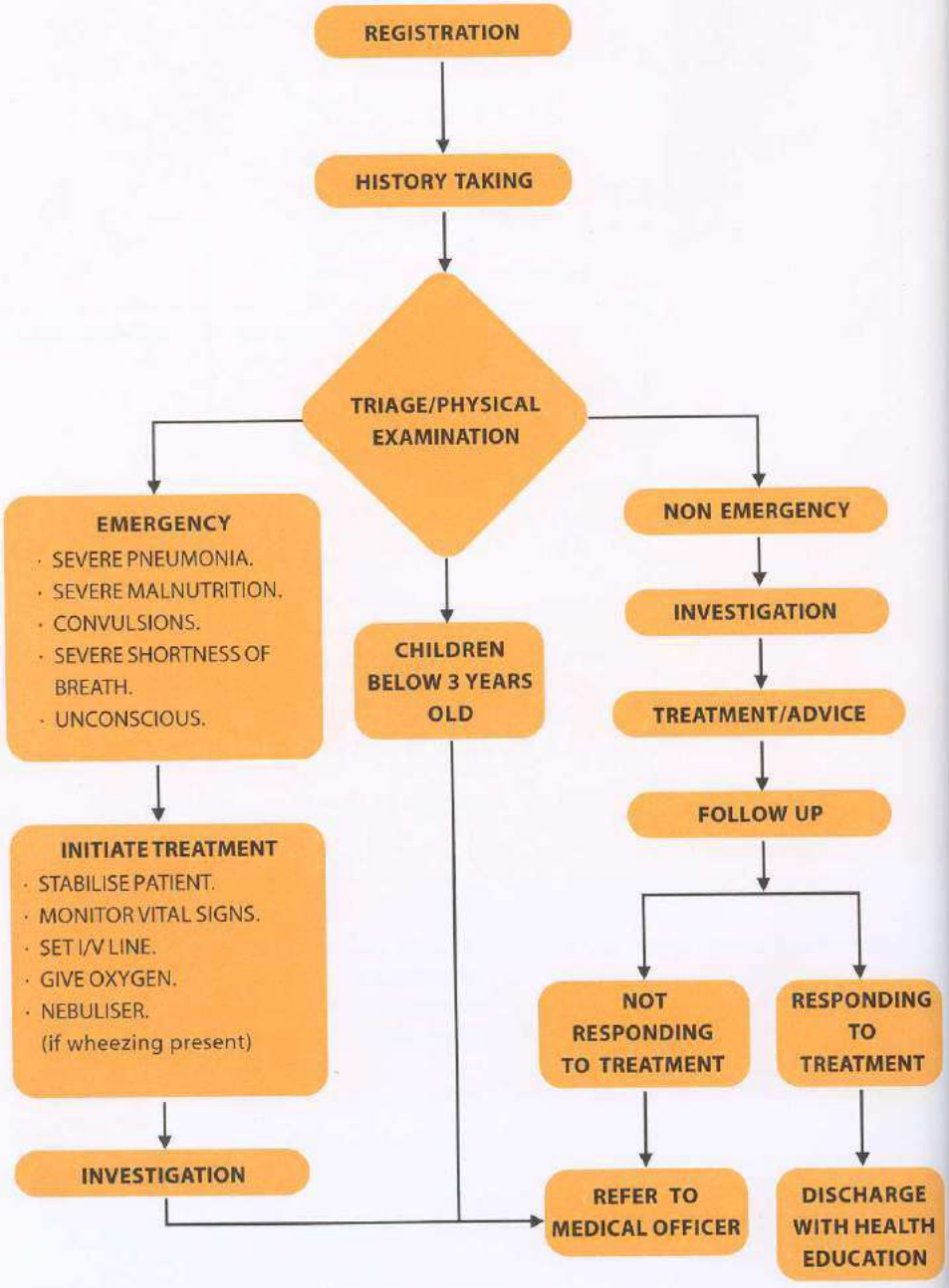
R16 Procedures for Primary Care Physicians – *John L. Prenninger*

R17 Manual Penjagaan Mata Untuk Anggota Kesihatan Primer *MOH/K/EPI/ 30.02(HB) Oktober 1977*

Respiratory Infection

4

4. MANAGEMENT OF ACUTE RESPIRATORY INFECTION



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · B/P Set, Stethoscope · I/V Infusion set · Oxygen · Thermometer · Nebulizer set · Peak flow meter · Resuscitation Equipment – laryngoscope, ET Tube · PEFR charts · ECG Machine · Torchlight · Diagnostic Set · Nasal Speculum · Pulse Oximeter **Drugs** · Antipyretics · Cough Mixtures · Anti histamines · Antibiotics · Bronchodilators
2. History Taking	Obtain history from patient and record in OPD card Pin. 1/78 2.1. Present complaint · Cough · Fever · Shortness of breath · Tachypnoea · Wheezing · Chest Pain · Haemoptysis · Nature of sputum – ? thick mucoid, blood, yellow, green, black or frothy 2.2. Associated Symptom · Convulsions · Malnutrition 2.3. Past Medical /Surgical History · PTB, Br. Asthma, Hypertension, Diabetes · Admission, Recent Surgery 2.4. Family History · PTB, Ca Lung, HPT, IHD, · Br. Asthma 2.5. Drug History · Allergy · NSAIDs 2.6. Social History · Alcohol · Smoking · Drug Abuse · Housing Condition · Contact with PTB patient 2.7. Occupational History · Quarry Workers · Cement factory workers · Ceramic factory workers · Road makers · Foundry workers · Sawmill workers	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
3. Examination	Place patient in a comfortable position. 3.1. General Examination · Pallor, Cyanosis, Tachypnoea, · Hydration, · Chest indrawn · Wheezing, Stridor, · Clubbing finger · B/P, Pulse, Temperature · Respiratory rate · Pulse oxymeter for O2 saturation · PEFR 3.2. Specific Examination Ear · Pus · Tympanic membrane · Swelling behind ear Nose · Tender · Sinuses · Turbinate enlargement Throat · Inflammation · Exudation · Tonsils enlargement Lungs · Rhonchi · Crepitations · Air entry	
4. Investigations	4.1. Blood – FBC / ESR / BUSE 4.2. Sputum – AFB / C&S 4.3. Swabs – Throat swab for C&S 4.4. CXR 4.5. ECG	
5. Management	5.1. Emergency Management · Rest in bed (comfortable position) · Give Oxygen (high flow mask) · Set I/V Drip	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	• Rapid acting Bronchodilator eg: Nebulizer if wheezing heard (to be given with O2 driven device) • Treat fever if present • Monitor Vital Signs eg: BP, Pulse rate, Temperature, Respiratory rate, Signs of cyanosis, Oxygen saturation (pulse oximeter) • Refer to Medical Officer 5.2. Non Emergency Management • Symptomatic Treatment eg: PCM for Fever, Cough Mixture for Cough • Antibiotic Treatment (with MO's consent) • Monitor Vital Signs • Treat Wheezing e.g. Nebulize with bronchodilator and do pre and post PEFR readings • Treat underlying cause e.g. Ear, Nose & Throat problem • Follow up patients	
6. Health Education	6.1. Educate patient on avoiding polluted environment / allergens 6.2. Avoid oily food 6.3. Drink lots of fluids 6.4. Breathing exercises 6.5. Complete medications given/look out for adverse reactions 6.6. Consult M.O. if problem arises.	
7. Referral	7.1. Children below 3 years old 7.2. All Emergency Cases 7.3. If not responding to treatment 7.4. If unsure of diagnosis 7.5. Unstable vital signs	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R31 Out Patient Management of Young Children With ARI: A Four Day Clinical

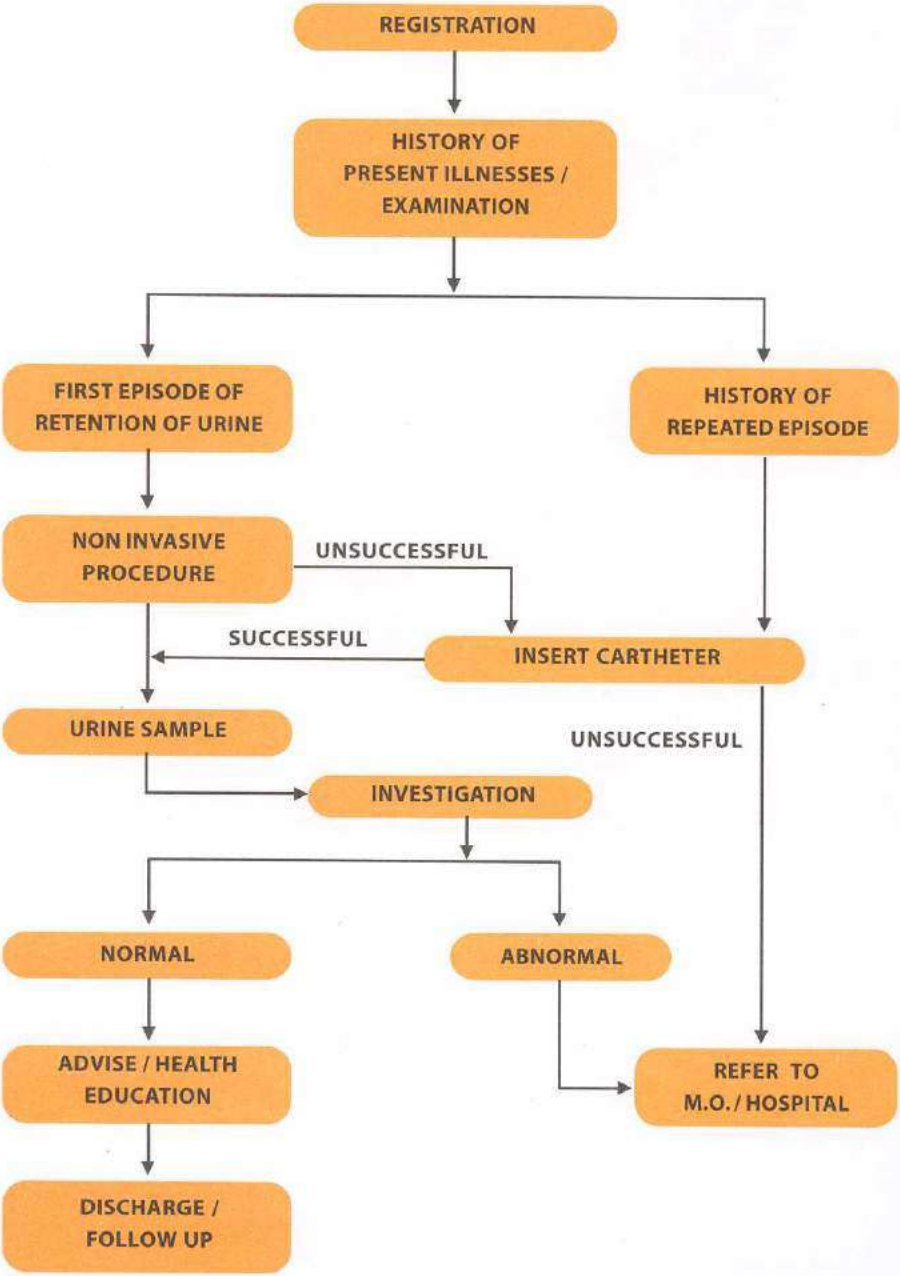
R32 Paediatric Problem in Tropical Countries. Edited by MJ. Robinson and Lee Eng Lam 2000

R33 Principles and Practice of Medicine. *Edited by Christopher Edwards Ian A.D Boucher 1991*

Acute Retention of Urine

5

5. MANAGEMENT OF ACUTE RETENTION OF URINE



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · B/P set · Stethoscope · Thermometer · Warm water bottle · Continuous bladder drainage set · Culture & Sensitivity specimen bottles **Drugs** · Mist. Pot. citrate · Analgesic · Antibiotic
2. History Taking	Proper history recorded in OPD card. 2.1. Present History For first episode. · Duration · Urinary symptoms - Hesistancy - Terminal dribbling - Frequency · Haematuria · Onset · Dysuria · Trauma · Supra pubic pain · Fever · Passing out stones / sandy particles in urine 2.2. Past Medical/Surgical History · Enlarged Prostate · Urinary Calculi · Trauma · Cancer · Old PTB · Sexually transmitted infection · Haematuria 2.3. Associated Factors · Alcoholic · Drugs eg. Psychotropic drugs. · Urine Habit (Holding on)	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
3. Physical Examination	3. All patients should be examined and assessed accordingly. General Condition · Restless · Pallor · In pain Vital Signs · Temperature · B/P · Pulse · Respiratory rate · Hydration Abdominal Examination · Tenderness · Bladder distention · Supra pubic mass Per Rectum Examination · Prostate enlargement Perineal Sensation	
4. Management	Place patient in comfortable position. Relieve pain whenever indicated Non invasive procedure · Tap water · Warm water bag Invasive procedure · Continuous bladder drainage · Suprapubic catheter Drugs · Analgesic · Antispasmodic · Mist pot citrate · Antibiotic	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Investigation	Immediate Urine FEME Urine C & S FBC Renal profile Diagnostic confirmation by M.O. · X ray (KUB) · Ultra Sound	
6. Referral	Refer patient with first episode of retention of urine. · For repeated case - advise patient to follow the appointment given	
7. Health Education	· Urine output habit. · Care of catheter · Counseling - Follow the appointment date given - Surgery if needed · Family support · Family care · Personal hygiene	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

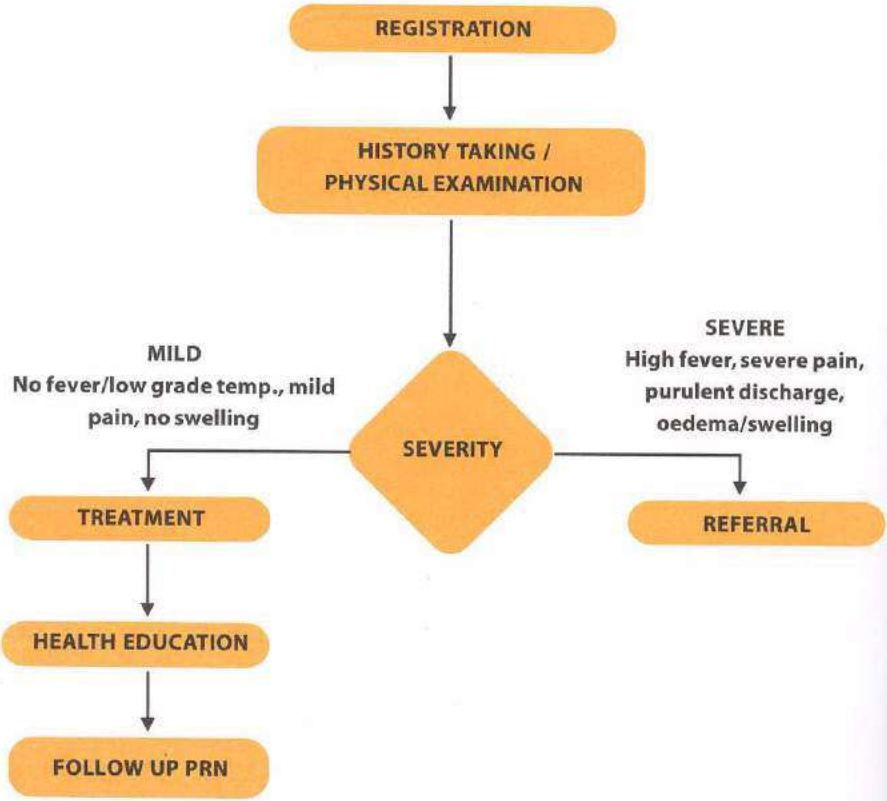
R24 Trauma Care, Dr Abu Hassan Asaari Abdullah, MBBS, FRCS 1994

R25 Lecture Notes on General Surgery

Acute Sinusitis

6

6. MANAGEMENT OF ACUTE SINUSITIS



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment:** · Thermometer · BP set · Stethoscope · Cotton swabs · Torchlight · Headlamp · Nasal speculum · Diagnostic set · Suction Machines · Swabs for C&S **Drugs:** · Antibiotics · Ephedrine Nasal Drop · Menthol Inhalation · Antihistamine · Antipyretic · Analgesic
2. History Taking	2.1. Proper history recorded in the OPD card Pin 1/78. 2.2. Identify drug abuse patients. 2.3. History of symptoms of nasal congestion and discharge that persist beyond the expected 7 to 10 days of the common cold. 2.4. Other relevant history: · Fever · Headache · Frequent / recurrent nasal discharge · Post nasal drip · Ear pain · Pain worse by bending or coughing · Oedema of eye lids · Cough while lying down. · Dental problems · Trauma · Foreign body · Swimming & Diving · Rapid change in altitude · H/O allergy	
3. Physical Examination	3.1. General examination: Sit patient in comfortable position to avoid nasal congestion. Check routine vital signs. 3.2. Specific Examination: Nasal discharge Dental sepsis Post-nasal drips / Tonsillitis Deviated nasal septum Puffiness of lower eye lids Tenderness over the affected sinus.	
4. Investigation	4.1. X ray of sinus 4.2. FBC 4.3. Nasal swab for C&S	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Management	**Principles of Treatment** 5.1. To control infection 5.2. To encourage opening of the sinus ostium · Nasal decongestion · Steam inhalation · Anti-histamine 5.3. Symptomatic relief · Rest · Analgesics	
6. Health Education	**Health Education on:** 6.1. Drug allergy 6.2. Local heat 6.3. Diet · Plenty of fluids · Nourishing diet · Vitamins, especially Vit. C 6.4. Mouth care 6.5. Foreign body – avoid putting foreign body into the nostril, especially in children. 6.6. Breathing hot water vapour 6.7. Wipe a stuffy nose 6.8. Do not blow the nose · May cause earache & sinus infection	
7. Referral	Criteria for referral 7.1. All severe cases 7.2. Complete nasal obstruction 7.3. Not responding to antibiotics	

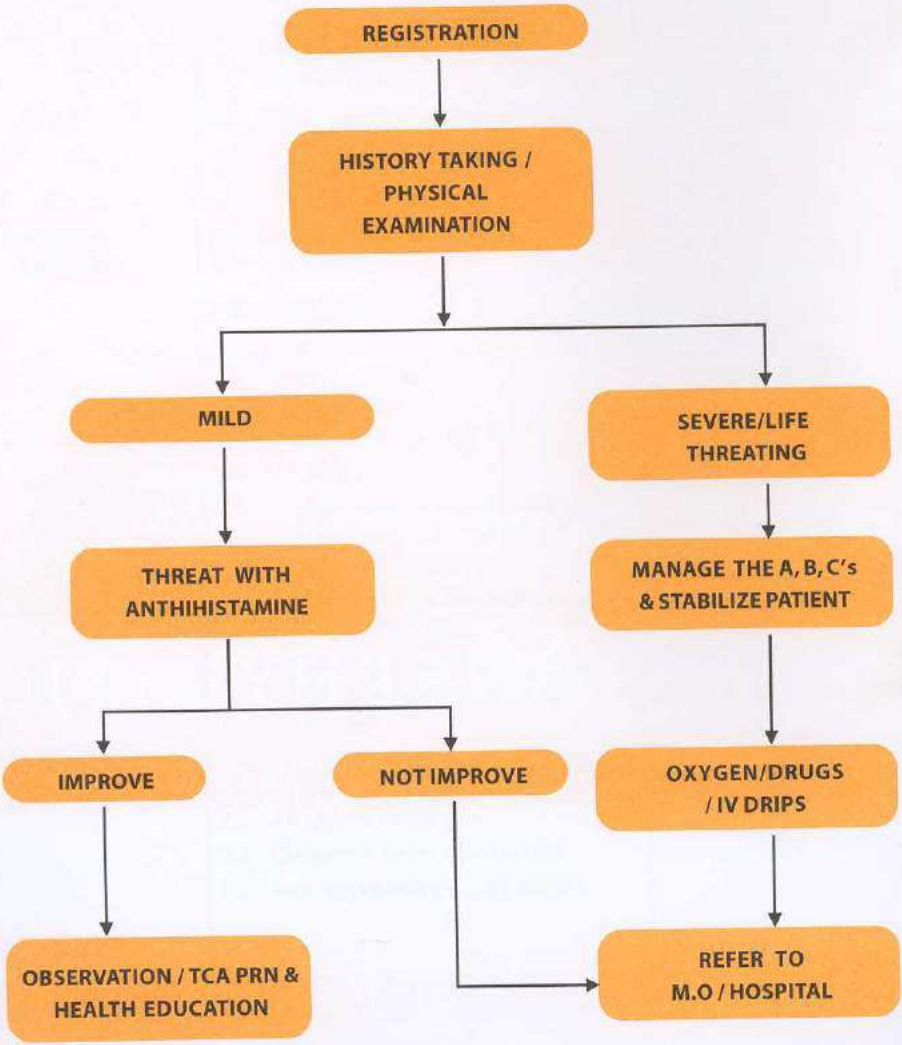
REFERENCE

R19 Primary Care Medicine 3rd Edition
R20 Illustrated ENT *by R.S, Dhillon* No.

Anaphylatic Reaction

7

7. MANAGEMENT OF ANAPHYLATIC REACTION



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should must be registered in the standard registration book. (To be done after resuscitation in severe cases)	**Equipment** · BP set · Stethoscope · IV infusion sets · Oxygen set / Tank · Resuscitation bag · Laryngoscope · Endotracheal tube (various sizes) · Face Mask · Torchlight · Emergency bag · IV solutions (Colloids & Crystalloids) · Resuscitation Flow chart. · Cricothyroidotomy set. **Drugs** · Inj. Adrenaline · Inj. Chlorpheniramine · Inj. Hydrocortisone
2. History Taking	All patients must have proper history taken and recorded in the OPD card Pin.1/78 2.1. Present history · H/O allergic exposure (drugs included) · Symptoms · Progression 2.2. Past history · 1st episode or repeated episode 2.3. Social history · Occupational exposure Place patient in a comfortable position	
3. Examination	3.1. General examination: · Appearance · Level of consciousness, breathing · Check vital signs – BP, Pulse,Temp, CVS, Respiration rate. · Oedema (periorbital, laryngeal) · Look for medic alert bracelet around neck / wrist. 3.2. Specific examination: · Respiratory distress · Chest, heart, abdomen and limbs	
4. Management	Manage as per severity: 4.1. <u>Mild Anaphylaxis:</u> · Reassurance · Antihistamines 4.2. <u>Severe anaphylaxis:</u> · Call for help · Check ABC (airway, breathing & circulation) and do CPR · Give oxygen (high flow mask) & start artificial ventilation if needed. · If no pulse, do external cardiac compression.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	• If unmonitored patient, no veins, give s/c adrenaline 0.5 mg • Set up IV line & give 1-2 litres of crystalloids rapidly (adults) • Repeat adrenaline and crystalloids (90% respond to this regime) • Inform M.O. and Infuse steroid. (hydrocortisone 200 mg)	
5. Health Education	Educate patient : 5.1. To identify, keep record and avoid known allergens (food / drugs / stings) 5.2. To prevent from recurrence of attack. 5.3. Advice to get a medic alert bracelet 5.3. To seek immediate treatment.	
6. Referral	Referral criteria: 6.1. Failure to respond 6.2. All children after stabilization 6.3. All patients with severe anaphylaxis and mild cases with no improvement should be referred to the hospital.	

REFERENCE

R6 Key Topics in Accident and Emergency Medicine. Bior Scientific, Oxford. *Howarth, P. & Evans, R. (1994)*

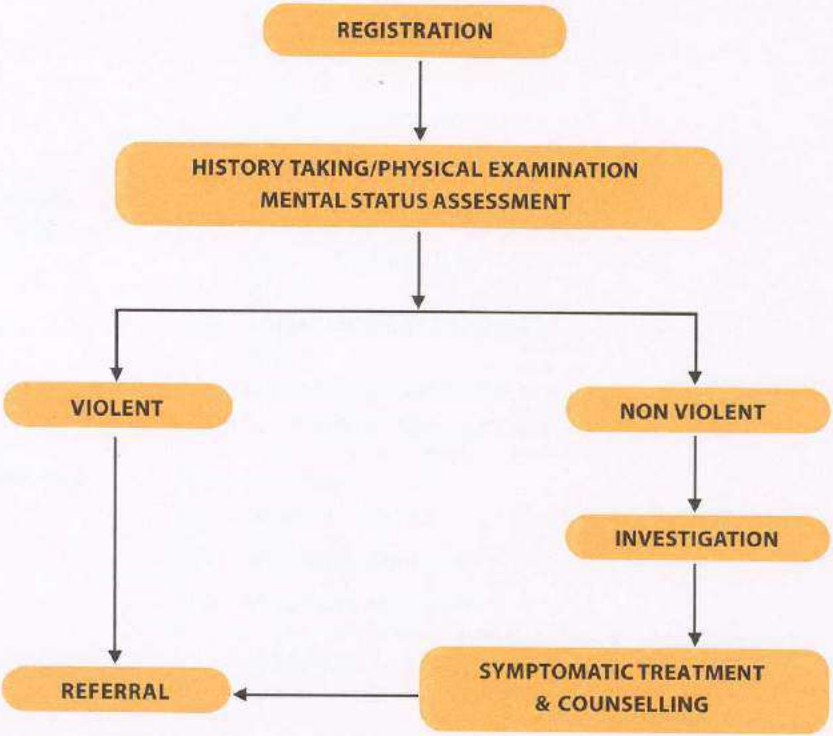
R7 Cline, D. M., et al, (2001). Just The Facts in Emergency Medicine *Mc Graw-Hill, New York.*

R8 Hamilton, G.C., et al, (1991). Emergency Medicine – An Approach To Clinical Problem – Solving. *W.B Saunders, Philadelphia.*

Disturbed Patient

8

8. MANAGEMENT OF DISTURBED PATIENT



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · BP Set · Stethoscope · Thermometer · Fever Scanner · Glucometer · Glucostrip · Lancet · Swabs · Alcohol · Gauze · Galipot · Kidney Dish · Tepid Sponge Set · I/V infusion set · Oxygen sets **Drugs** · Dextrose 50% · Dextrose 10 %
2. History Taking	2.1. Present Complaint 2.2. Past History · Psychiatric problem e.g. mania, depression, schizophrenia 2.3. Medical Illness · Meningitis · High Fever · Diabetes - hypoglycaemia · Renal failure - uraemia · Alcoholism · Hysteria · Delirium · Head injury · Stroke · Electrolyte imbalance – severe diarrhoea/ vomiting/ poor oral intake · Hepatic encephalopathy 2.4. Family history 2.5. Drug History · Substance abuse · Drug toxicity · Intoxication · Digitoxin · Anti epileptic drugs	
3. Examination	If patient co-operates sit / lie in a comfortable position. 3.1. General Examination · Check Vital Signs · Look for jaundice / cyanosis / size of pupils · Physical Examination not necessary for violent patient 3.2. Mental Assessment should be done. General Description · Appearance · Disorientation · Motor activity · Speech patterns · General attitude	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	3.3. Emotions · Moods · Affect 3.4. Thought Processes · Form of thought · Content of thought 3.5. Perceptual Disturbances Hallucination 3.6. Sensorium and Cognitive · Impulse Control · Judgement and Insight	
4. Investigation	4.1. BF/MP-To rule out cerebral malaria 4.2. FBC - To rule out infection 4.3. RBS - To rule out hypoglycemia 4.4. BUSE - To look at Na+ / K+ / urea levels 4.5. ECG-Arrhythmia / sign of drug toxicity 4.6. URINE - To rule out drug abuse	
5. Management	Symptomatic Treatment: 5.1. Fever with high temperature · Tepid sponging and antipyretic drug 5.2. Cyanosis · Give Oxygen Therapy 5.3. Hypoglycemia · Give I/V Dextrose 50% 20 mls	
6. Health Education	All cases should be counselled and stabilized.	
7. Referral	All disturbed patients should be referred to the doctor. 7.1. Violent patient · Make a police report · Refer to hospital with police escort. 7.2. Non Violent · Refer to doctor	

REFERENCE

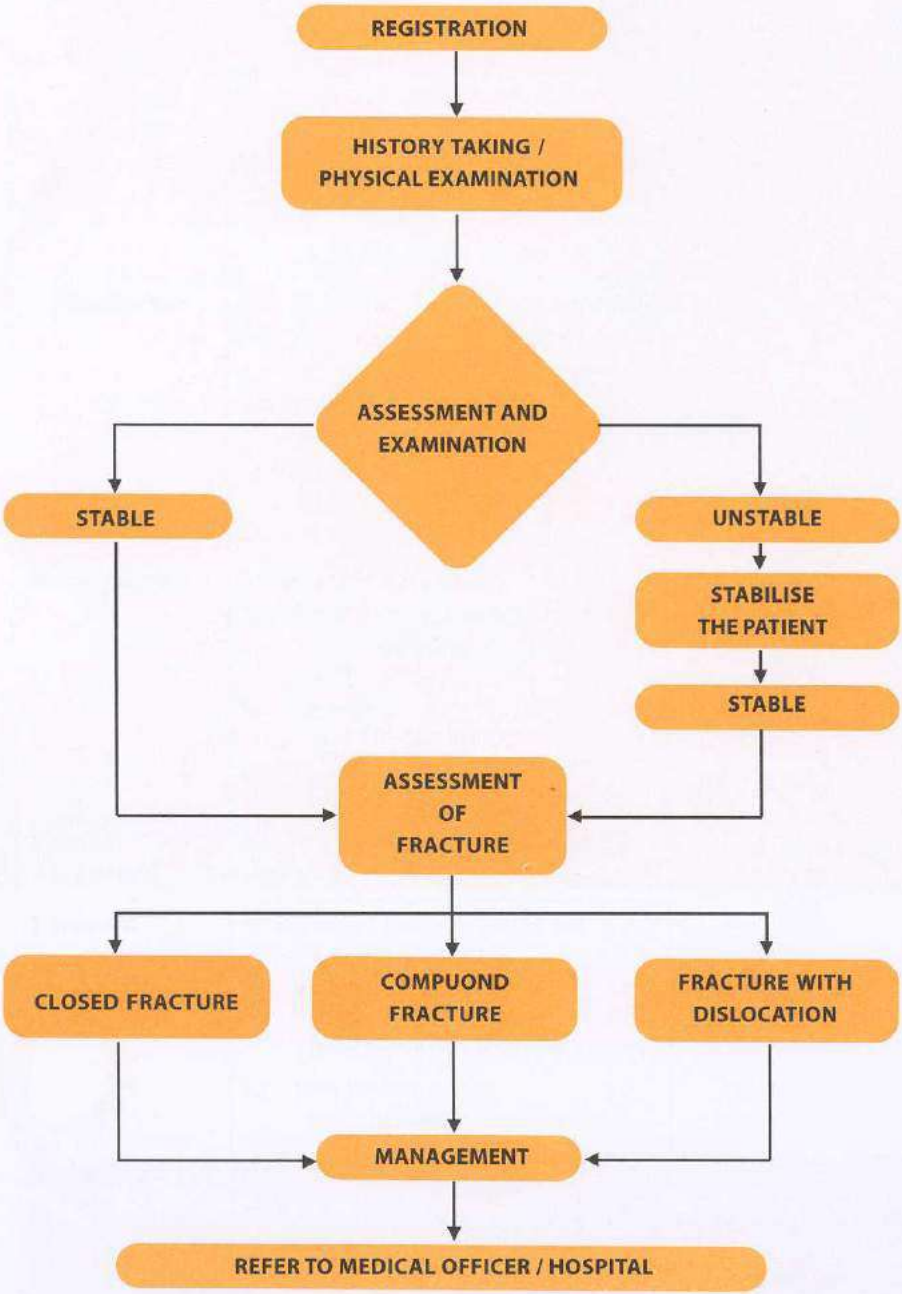
R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R22 Nursing Diagnosis in Psychiatric Nursing 4th Edition *E.A. Davis 1994*

Fracture

9

9. MANAGEMENT OF FRACTURE



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · BP Set · Torch Light · Stethoscope · Cervical Collar of Various sizes · Splint of various Sizes and types · Bandages · Spinal Board · Scoop stretcher · Oxygen Set · Wheel Chair · IV Set · Resuscitation Set · Sterile Dressing · Sand Bags · Head Immobilizer **Drugs** · Inj. ATT · Normal Saline · Hartmans Solution · Hydrogen peroxide (For dirty wounds)
2. History Taking	History taken should be documented in the OPD card Pin.1/78. 2.1. Present complaints: · H/o injury / trauma · Direct / indirect injury 2.2. Past history of fracture 2.3. Social history: · Occupational hazards · Drugs that induce osteoporosis · Alcoholism · Assault	
3. Examination	Place patient in a comfortable position. 3.1. General examination · Quick thorough assessment to determine the condition and extent of injury. · Airway · Breathing · Circulation · Vital Signs · Dysfunction 3.2. Specific examination · Signs and symptoms of fracture. · Wounds · Multiple wounds · Deep laceration · Bone exposed · Joints movement · Loss of function · Deformities. · Swelling · Bleeding	
4. Management	All fractures should be immobilized using appropriate splints 4.1. Simple Fracture. Application of sling, swathe and splint. 4.2. Compound Fracture Splint the fracture	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	• Arrest bleeding • Clean and apply sterile dressing to wounds • Two I/V Lines Sodium Chloride 0.9% or Hartman's Solution 4.3. Spinal fracture Use of spinal board 4.4. Cervical fracture Application of correct size cervical collar 4.5. Injection. ATT 0.5ml. 4.6. Administration of oxygen 4.7. Observation of blood circulation at extremities of the splinted limbs. 4.8. X-Ray where available 4.9. Blood for Grouping & Cross Match 4.10. Reassurance Advice Nil orally if indicated.	
5. Referral	Referral criteria 5.1. All patients with fractures must be referred to the medical officer/ hospital 5.2. In a case of compound fracture, patient must be transported in an ambulance to the hospital accompanied by a qualified medical staff.	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R6 Key Topics in Accident and Emergency Medicine. Bior Scientific, Oxford. *Howarth, P. & Evans, R. (1994)*

R12 Advance Trauma Life Support Course for Physicians *by Raymond H. Alexander, MD, FACS and Herbert J. Proctor, MD, FACS.*

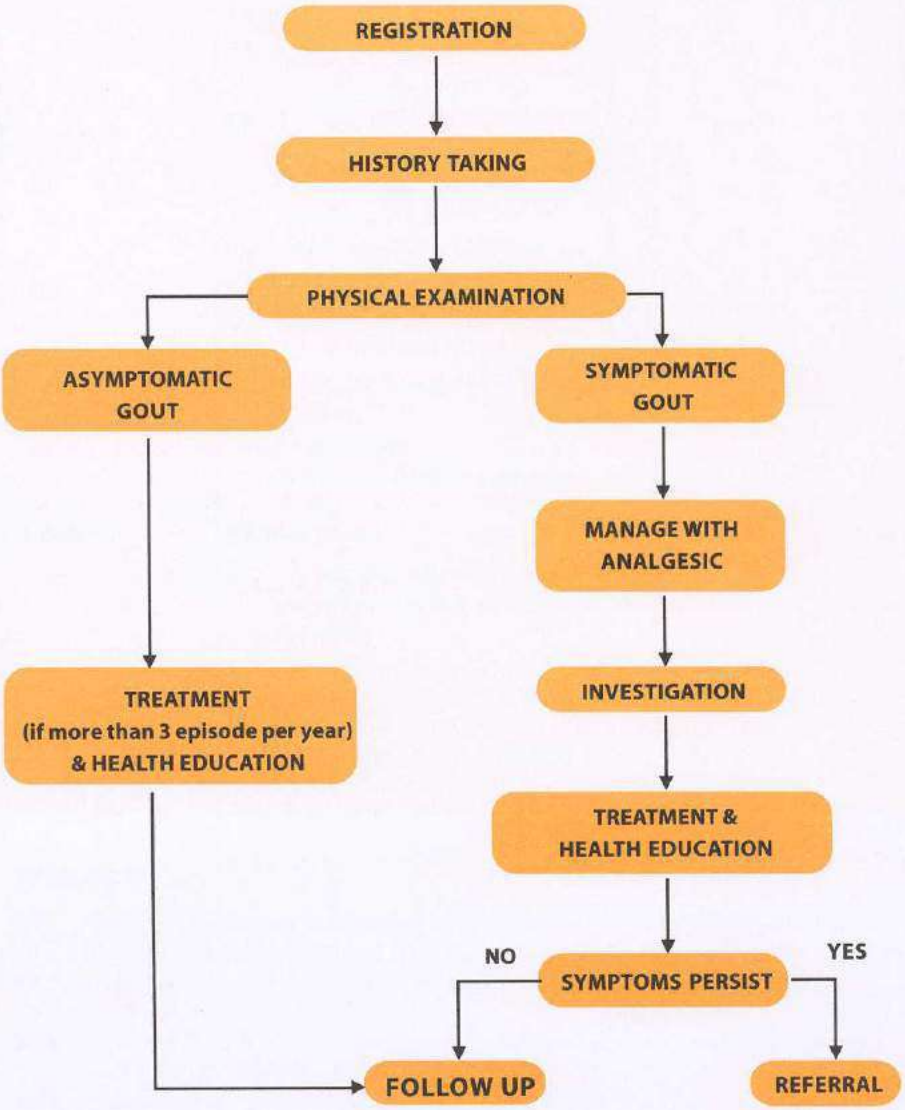
R23 Hand Book of Surgery *by John L. Wilson MD 1969.*

R24 Trauma Care, Dr Abu Hassan Asaari Abdullah, MBBS, FRCS 1994

Gout

10

10. MANAGEMENT OF GOUT



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · BP set · Thermometer. · Stethoscope **Drugs:** · Indomethacin · Inj. Diclofenac Sodium
2. History Taking	2.1. Present Complaint : · Onset · Recurrent attacks · Progression · Precipitating factors (alcohol, drugs) 2.2. Past Medical History : · Hypertension · Renal Diseases · Taking drugs like diuretics / aspirin 2.3. Factors that precipitate attacks · Dehydration · Fasting · Binge eating (protein diets) · Alcohol consumption	
3. Examination	All patients should be examined and assessed accordingly. 3.1. General Examinations: · General Condition · Mental status · Vital signs 3.2. Specific Examinations: · Joint swellings, deformities over small or medium-size joints · Inflammation · Asymmetrical · Tophi - clue to diagnosis	
4. Investigation	4.1 Serum Uric Acid 4.2 Buse 4.3 X-Ray of joints * Usually a good clinical examination is sufficient for diagnosis	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Management	Principles of Management: 5.1. Symptomatic Gout: • All cases of Acute Gout should be treated with parenteral / oral analgesics when necessary (I/M Diclofenac 75 mg, Indomethacine 50 mg tds with meals) 5.2. Asymptomatic Gout: • All cases of more than 3 episode per year should be treated and followed up • Need allopurinol for life	
6. Health Education	6.1 Low purine diet 6.2 Good fluid intake 6.3 Importance of exercise (only after attack totally subsides) 6.4 Weight reduction (if obese) 6.5 Compliance to medication 6.6 Total abstinence of alcohol 6.7 Cold compress at site of swelling may help. 6.8 Raise affected area while sitting / lying. 6.9 Restrict movement of affected area. 6.10 Never stop taking allopurinol – it can trigger an attack	
7. Referral	Refer case if symptoms persist.	

REFERENCE

R3 Clinical Medicine, A Text Book For Medical Student & Doctors, 2nd. Edition Bailliere Tindall, London. *by Kumar, P.J Clark, M.L.(1991).*

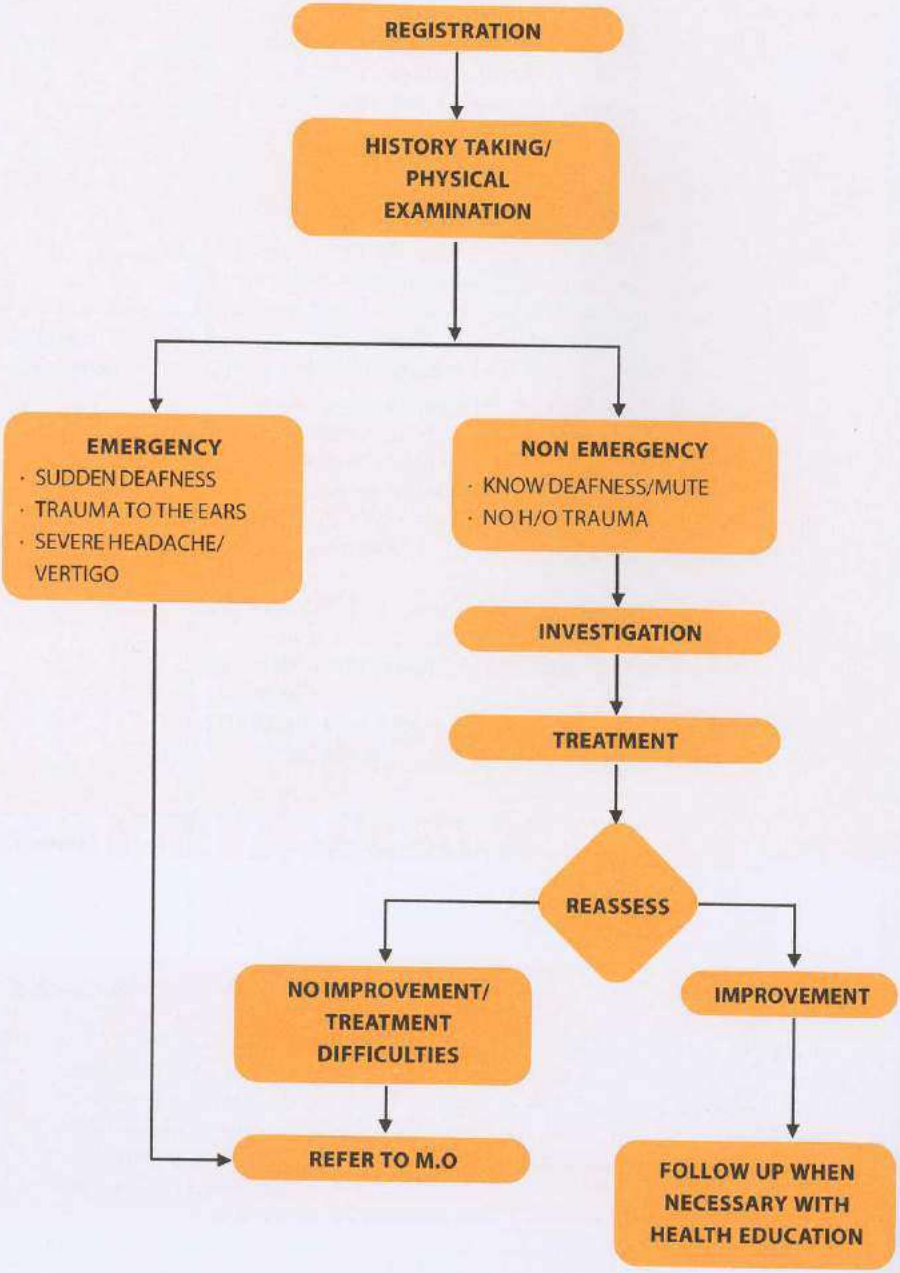
R4 Hutchinson Clinical Methods 20th.Edition by W.B. Saunders, London. *by Swash, M (1995).*

R5 Essentials of Family Medicine 3rd.Edition by Williams & Wilkins, Baltimore *Sloane, P.D. et al, (1998).*

Hearing Loss/ Deafness

11

11. MANAGEMENT OF HEARING LOSS/DEAFNESS



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All cases should be registered in the standard registration book.	**Equipment:** · Torchlight · Thermometer · Diagnostic set · BP set · Crocodile forceps · Stethoscope · Tuning fork · Ear syringe · Audiometer · Silenced booth **Drugs:-** · Analgesics · Ear drops · Antibiotics · Normal saline · Swab.
2. History Taking	All patients must have proper history taken and recorded in OPD card Pin 1/78. 2.1. Present complaints a) Onset · Rapid / gradual · Constant / fluctuating · Age at onset b) Severity of hearing loss c) Duration d) Trauma · Head trauma · Direct ear injury e) Drugs – Ototoxicity (antimalarials, aminoglycosides, chemotherapy) 2.2. Associated symptoms · Vertigo · Tinnitus · Headache / dizziness · Pain or fullness in the ear. · Discharge 2.3. Precipitating factors · Noise induced-exposure to loud noise or single blast or repeated blast of gun shots. · Sudden pressure change flying/ diving · Anomalies congenital, malformations. · Infections-otitis media. · Old age-Presbycusis · Obstruction – wax, foreign body · Perforation of ear drum · Tumours · Diseases (e.g. viral infections like mumps, measles, meningitis, herpes and Meneires' Disease · Family history of hearing loss	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
3. Examination	Place patient in a comfortable position. 3.1. General examination · Temperature · BP · Pulse · Respiratory rate 3.2. Specific examination · Systematic otoscopy · Tuning fork test - to grossly assess hearing and to differentiate conductive or sensorineural hearing loss. · Neurologic examination Inspection,palpation and auscultation of neck. · Look for associated anomalies	
4 Investigation	Refer to MO for:- 4.1. Pure Tone Audiometry (PTA) · if suspected sensory nerve damage 4.2. Tympanogram · if suspected tymphanic membrane rupture. 4.3. C&S, FBC · if suspect infection	
5. Management	5.1. Give treatment depending on causes · Pain - give analgesics · Presbycusis – To use hearing aid. · Wax – remove by ear syringing . Cerumenolytic Infections · Treat with antibiotics. · Trauma - treatment based on the type of injuries. · If due to drugs - remove ototoxic drugs	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
6. Health Education	6.1. Educate on proper use of Personal Protective Equipment 6.2. Avoid exposure to noise esp. high frequency sounds and loud noise. 6.3. Proper ear toilet. 6.4. Avoid direct trauma 6.5. Usage of hearing aids 6.6. Rehabilitation of noise induced hearing loss	
7. Referral	Referral criteria 7.1. Emergency referral to hospital / MO • Sudden hearing loss • Trauma to the ears • Severe symptoms-due to what ever causes 7.2. Elective • Not responding to treatment or for second opinion. • For ENT (ear nose throat) assessment	
8. Notification	Occupational Hazard For noise induced hearing loss (NIHL) cases, notify MOH and DOSH using Borang WEHU – E1 / E2	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R13 Lippincotts Textbook for Medical Assistants

R16 Procedures for Primary Care Physicians – *John L. Prenninger*

JAUNDICE

12

12. MANAGEMENT OF JAUNDICE

REGISTRATION

↓

HISTORY OF PRESENT ILLNESS

↓

PHYSICAL EXAMINATION

MILD JAUNDICE

- ASYMPTOMATIC /MILDLY SYMPTOMATIC WITH NOCLINICAL EVIDENCE TO SUGGEST SEVERE JAUNDICE.
(REF.TO SEVERE JAUNDICE)

↓

INVESTIGATION
(refer to MO)
LFT, Hepatitis Screening, Haemoglobin, BTCT*.
(* IF ABNORMAL TREAT AS SEVERE, URINE FOR BILE).

↓

REFER TO M.O AT EARLIEST POSSIBILITY

↓

M.O TO REVIEW INVESTIGATION / CARRY OUT FURTHER IX AND MANAGE ACCORDINGLY

SEVERE JAUNDICE

- SEVERE SYMPTOMATIC
- DRUG OVER DOSE
- EVIDENCE OF LINER FAILURE OR DECOMPENSATED LIVER DISEASE
- SURGICAL CAUSES OF JAUNDICE
- ACTIVE HAEMOLYSIS/ HAEMOLYTIC ANAEMIAS
- JAUNDICE IN PREGNANCY

↓

REFER TO HOSPITAL IMMEDIATELY

- Pallor
- Confusion
- Ascites
- Liver flap
- Abdominal mass
- Cachexic
- Pregnant

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patient should be registered in the standard registration book.	**Equipment.** · BP set. · Stethoscope · Thermometer · Gloves · Oxygen set · I/V Drip set /solution · Glucometer **Drugs.** · For mild symptoms only eg. Chlorpheniramine for pruritus · Avoid hepatotoxic drugs/drugs metabolized by the liver in jaundice cases · Watch out for : - Antibiotics – erythromycin Antifungals – ketocanazole Traditional drugs High dose Paracetamol
2. History Taking	2.1. Present Complaint · Onset · Duration 2.2. Associated Complaints · Fever · Upper abdominal pain · Change in colour of urine, stools · Anorexia · Weight loss · Pruritis 2.3. Drug history 2.4. Past History · H/O blood transfusion · H/O jaundice 2.5. Social History · Alcohol · Drug Abuse · Smoker · Sexual contact · Hepatitis B carrier status · Food intake - to rule out Hepatitis A 2.6. Family History 2.7. Occupational History · Job (sewerage workers) · Working place	
3. Physical Examination	Place patient in comfortable position. 3.1. General Examination · General condition- severity, pallor, cachexia. · Vital Signs 3.2. Specific Examination · Abdominal examination · Tenderness · Hepatosplenomegaly · Masses - lymphadenopathy · Evidence of drug abuse * Signs of Chronic liver disease: · Spider Naevi, liver palms	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	· Finger Clubbing · Gynaecomastia · Ascites and portal hypertension · Skin excoriations	
4. Investigaion	Refer to MO for investigations. Blood : Liver function tests: · Sr.Bilirubin,Alk Phosphatase (obstructive jaundice if raised) · AST ALT (liver necrosis) · Hb/FBC (if Hb low suggests haemolytic anaemia) · BF for MP,Coombs Test, Retic. Count if haemolysis suspected · RBS · Coagulation profile · Renal function test · Hepatitis Screening · HIV screening if indicated	
5. Management	5.1. Mild Jaundice · Treat symptomatically whilst waiting for MO to review investigation. Avoid hepatotoxic drugs 5.2. Severe Jaundice · Refer to MO using standard referral letter	
6. Referral criteria	· Cases of mild jaundice, refer to MO in KK stat. · Severe jaundice, refer immediately to hospital if no MO in KK	
7. Health Education	General advice: · Complications of jaundice · Personal hygiene · Diet · Regular follow up	

REFERENCE

R3 Clinical Medicine, A Text Book For Medical Student & Doctors, 2nd. Edition Bailliere Tindall, London. *by Kumar, P.J Clark, M.L.(1991).*

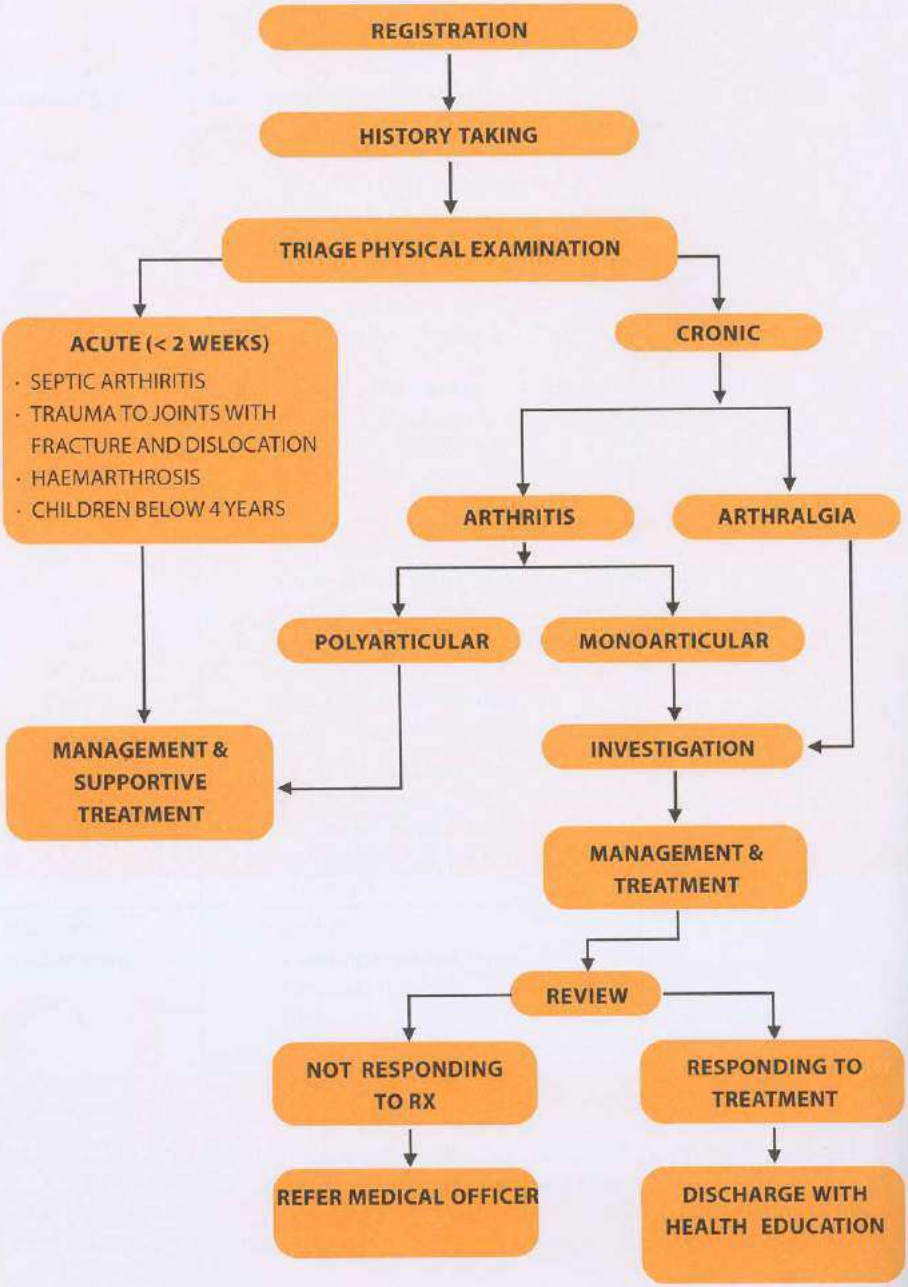
R16 Procedures for Primary Care Physicians – *John L. Prenninger*

R32 Paediatric Problem in Tropical Countries. Edited by MJ. Robinson and Lee Eng Lam 2000

Joint Pain

13

13. MANAGEMENT OF JOINT PAIN



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patient must be registered in the standard registration book.	**Equipment** · B/P set. · Stethoscope. · Thermometer. · Weighing scale · Height scale. · Splint · Bandages **Drugs** · Analgesics · Liniment
2. History Taking	All patients must have proper history taken and recorded in the OPD card Pin.1/78 (M.F. 6 or M.F. 5.) 2.1. Present complaint · Onset · Location/Site (Monoarticular or Polyarticular) · Character of pain & duration · Severity (Acute/Chronic) · Limitation of movements · Radiating Pain · Associated systemic complaints e.g. fever · History of Trauma 2.2. Past History · History of Trauma or Fracture · Past Medical/Surgical history · Drug history- use of Steroids 2.3. Social History · Work related	
3. Examination	Place patient in a comfortable position. · General examination · Specific Examination · Examine for evidence of Arthritis or inflammation. · Check number of joints involved: Palpate for swelling, tenderness and deformity. · Check range of movement (active or passive) · Check color of overlying skin · Check vital signs e.g. B./P, pulse and temperature. · Check lymph nodes · Neurological assessment.	
4. Investigation	4.1. FBC. 4.2. X- Ray of joints 4.3. ESR 4.4. Serum Uric acid 4.5. RA factor	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Management	5.1. If joint pain is due to trauma:- R = Rest I = Ice C = Compression E = Elevation 5.2. Medication · Analgesics 5.3. Supportive treatment · Ice treatment for trauma · Splint · Bandages · Liniment only for non arthritic cases.	
6. Health Education	Health education must be given as specified:- 6.1. Non weight bearing 6.2. Care of the joints(limited movement). Graduated exercise programme 6.3. Practice healthy life style – weight reduction	
7. Referral	Criteria for referral 7.1. Septic Arthritis 7.2. Trauma to joints with fracture and dislocation. 7.3. Children below 4 years old 7.4. Haemarthrosis 7.5. Unsure of diagnosis 7.6. Cases not responding to treatment.	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

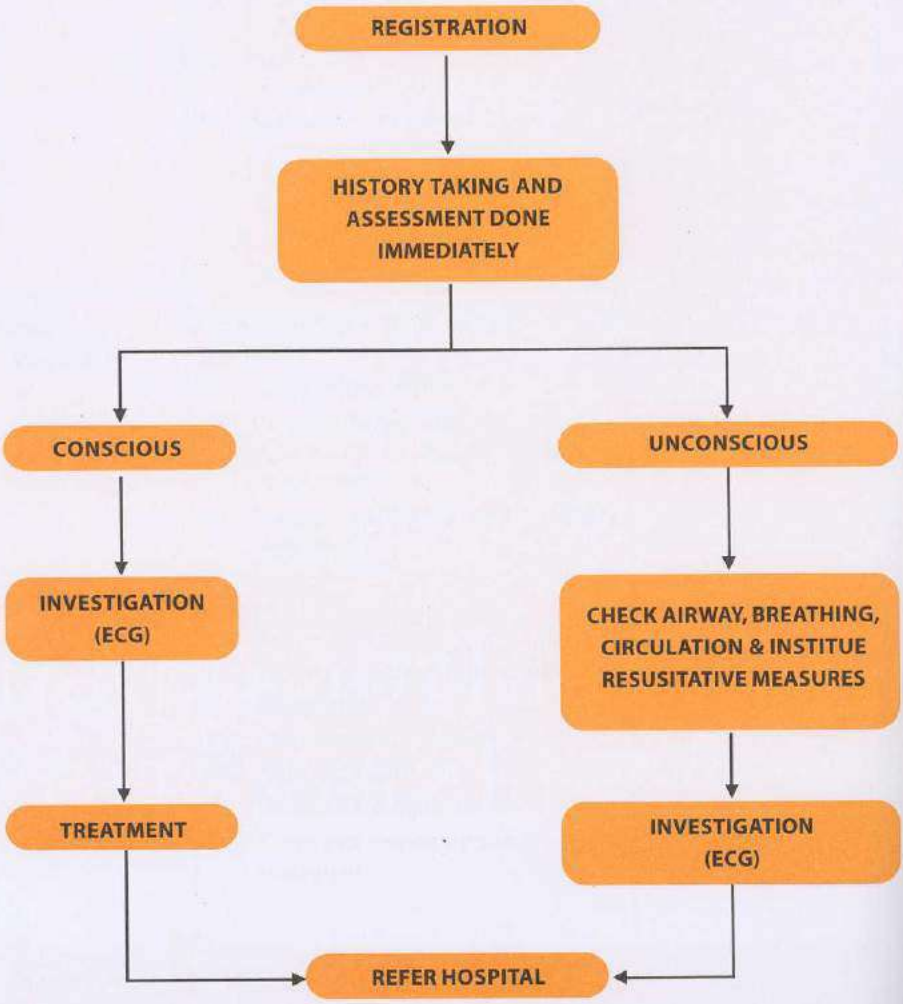
R3 Clinical Medicine, A Text Book For Medical Student & Doctors, 2nd. Edition Bailliere Tindall, London. *by Kumar, P.J Clark, M.L.(1991).*

R19 Primary Care Medicine 3rd Edition

Myocardial Infarction

14

14. MANAGEMENT OF MYOCARDIAL INFARCTION



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	Patients should be registered in the standard registration book.	**Equipment:** · Airway. · Oxygen. · B.P. set. · Stethoscope. · I.V.Sets. · ECG machine. · Torch light. · Laryngoscope. · Endotracheal tube. · Ambu Bag. · Emergency bag · Cardiac board. · Suction Pump. **Drugs :** · Tab.GTN (sublingual) · Tab.Aspirin. · Inj. I/V Morphine · Inj. I/V Phenergan
2. History Taking	2.1. Present complaint · Type of pain · Severity. · Radiating to left arm. · Whether relieved or not with GTN or on resting. · Duration and frequency. · Is it increasing with exertion? · Lasts more than 20 minutes. · Dyspnoea / SOB · Epigastric pain · Sweating · Nausea * *For unconscious cases, history can be taken from the relatives* 2.2. Past Medical History. · Hypertension. · Diabetes Mellitus. · Hyperlipidaemia. · Family history of IHD and MI. 2.3. Social History. · Smoking. · Stress.	
3. Physical Examination	Place patient in a comfortable position 3.1. General Examination: · Take vital signs - BP, PULSE, TEMP., RESP. RATE 3.2. Specific Examination: · Check for cyanosis, cold and clammy, sweating.	
4. Investigation	4.1. ECG. 4.2. Blood Glucose level	
5. Management	5.1. Conscious case: · Call MO & help · Reassure the patient · Give Oxygen via nasal prongs. · Set two IV line.(large bore needle). · Tab.Aspirin 300mg crushed orally with glass of water	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	• Tab. GTN. Sublingually (can repeat many times if pain still bad and systolic B/P > 100 mm Hg) • Give I/V Morphine after consultations with the MO.(slow injection – dose 1- 4 mg and can increase to 10 mg) – look out for side effects like hypotension, respiratory depression & nausea. • Avoid intramuscular injection. • To give Oxygen to the patient during transportation in the ambulance. 5.2. Unconscious patient; Use Automatic External Defibrillator Please refer to SOP on Management of Unconscious Patient.	
6. Health Education	6.1. Educate patients on healthy life style. Eg: Quit smoking. 6.2. Regular follow-up for medication. 6.3. Usage and storage of GTN	
7. Referral	7.1. Criteria for referral of all cases of Myocardial Infarction including all suspected cases: • Inform nearest hospital • The patient should be accompanied by MO or Para Medic. • Bring along the Emergency Bag for cardiac rehabilitation. • If patient unconscious, use Automatic External Defibrillator during transit as required.	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

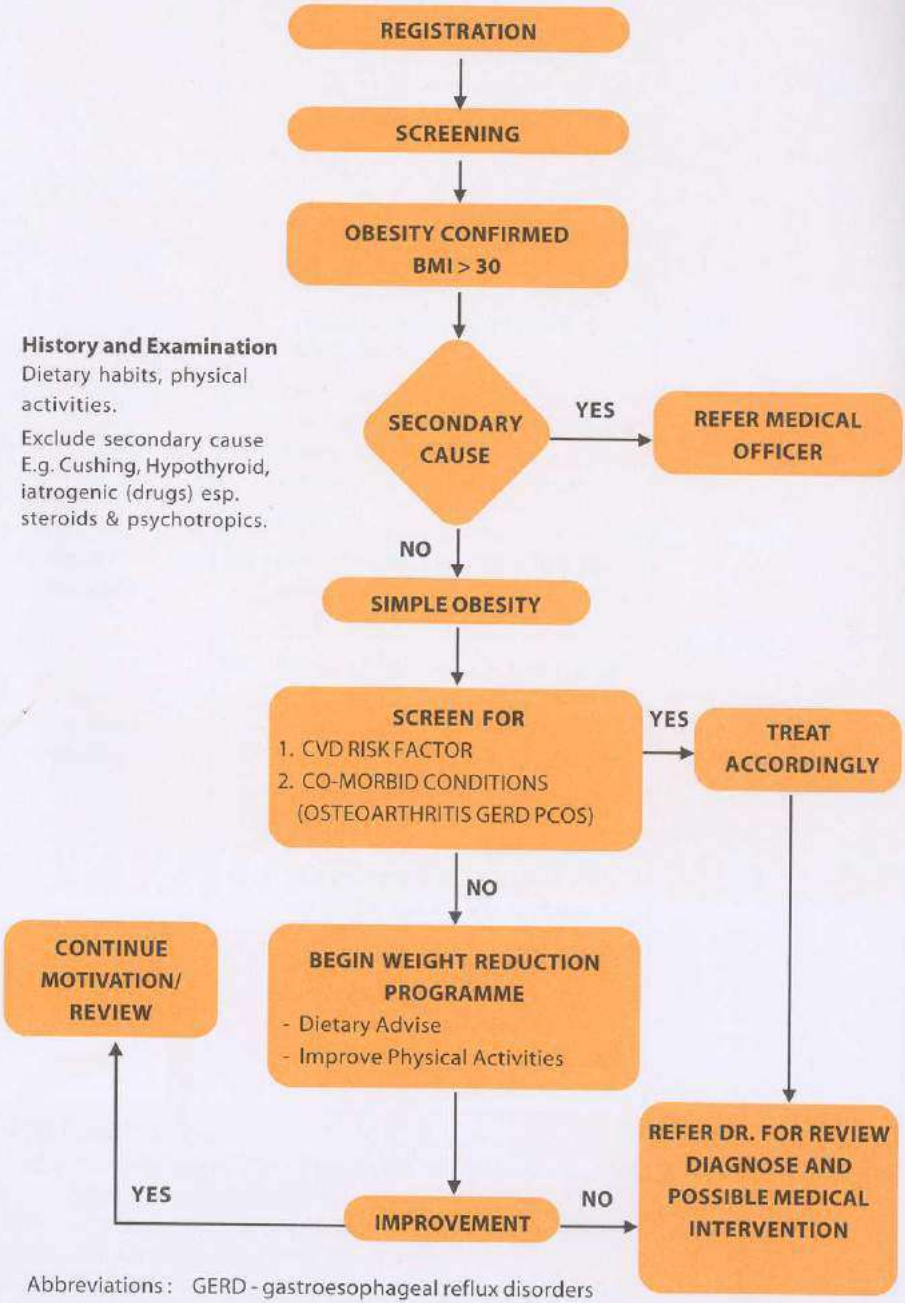
R7 Cline, D. M., et al, (2001). Just The Facts in Emergency Medicine *Mc Graw-Hill, New York.*

R18 Acute Myocardial Infarction, *Institut Jantung Negara.*

Obesity

15

15. MANAGEMENT OF OBESITY



Abbreviations: GERD - gastroesophageal reflux disorders
PCOS – polycystic ovarian syndrome

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipments:** · Weighing machine with height measurement · ECG machine · B/P set · Stethoscope · Glucometer. · Cholesterolmeter
2. History Taking	2.1. Present Complaints · Overweight. 2.2. Past History · Dietary habits, · Smoking, 2.3. Family History · Obesity · Diabetes Mellitus 2.4. Social History · Dietary habits, · Smoking status, · Physical activities	
3. Examination	3.1. General examination · General condition · Calculate BMI · Vital signs 3.2. Specific Examination · Cardiovascular, lungs and abdomen · Cushing, Hypothyroid.	
4. Investigation	4.1. Blood Test · RBS / FBS, · Lipid profile, 4.2. Thyroid Function Test	
5. Health Education	5.1. Dietary Advice · Reduce calories intake, · Reduce fat intake, · Reduce sugar intake. 5.2. Physical Activity · Increase physical activity, · Regular exercises at least 30 min / at least 3 times / week. 5.3. Regular follow up every three months.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
6. Referral	6.1. Failure to reduce weight. 6.2. Patient with severe obesity and co morbid risk factor e.g. HPT uncontrolled DM & IHD should be referred to hospital for management and dietary advice by dietician 6.3. Patient requiring medication and surgery. 6.4. For behavioral counseling or for surgery .	

REFERENCE

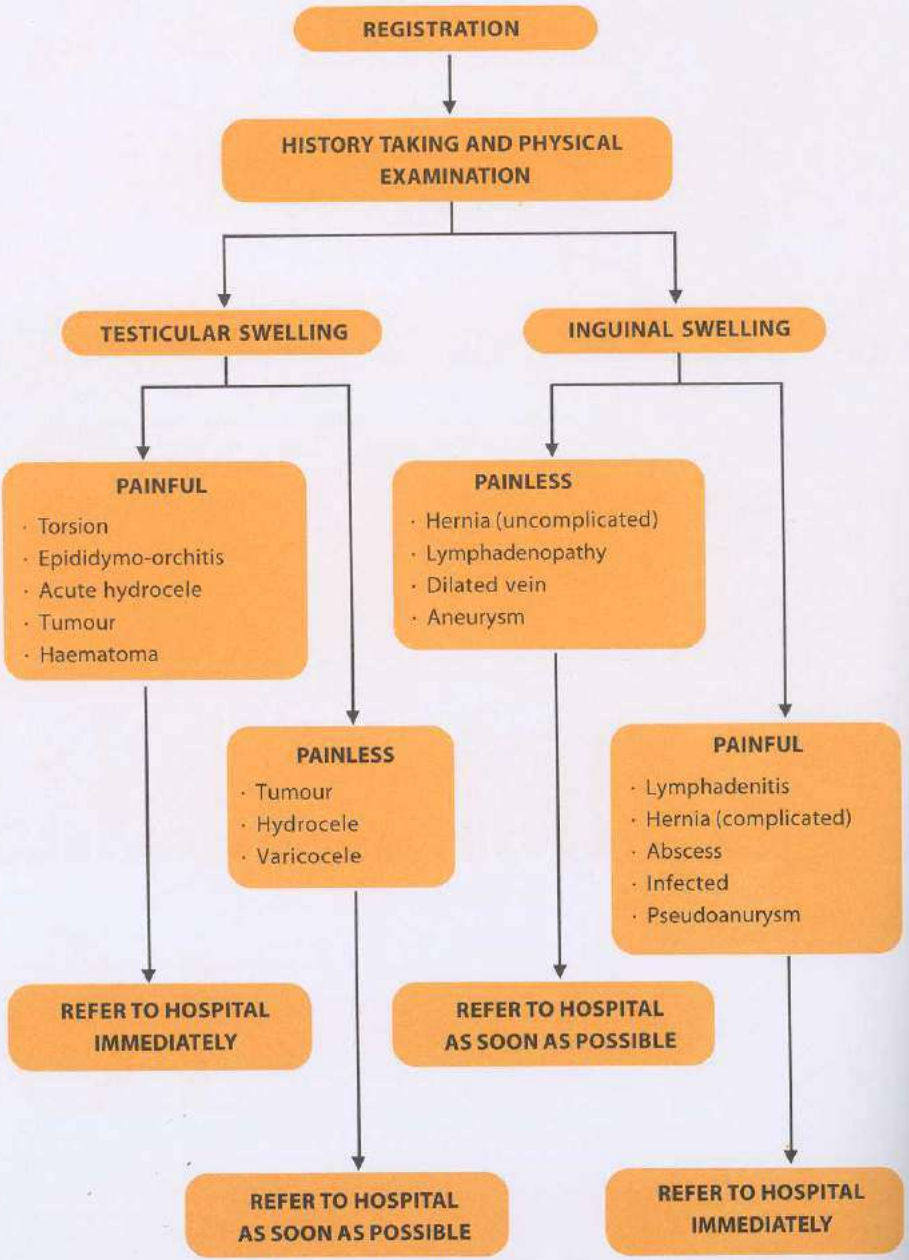
R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R2 Decision Making in Medicine *by Harry L. Greene II MD.*

Scrotal and Inguinal Lumps

16

16. MANAGEMENT OF SCROTAL AND INGUINAL LUMPS (SWELLING)



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book.	**Equipment** · BP set · Stethoscope · Torch light **Drugs.** · Analgesics · Antacids · Antibiotics
2. History Taking	History taking including: 2.1. Painful / painless · Fever · Vomiting · BO & PU 2.2. H/O past surgery 2.3. Type of Occupation – physical strain 2.4. H/O chronic cough	
3. Examination	3.1. General Examinations: · Place patient in comfortable supine position. · Check Vital signs BP, Pulse, Temperature, CVS, Respiration Rate. · Systemic examination-Chest, heart, abdomen, Limbs. 3.2. Specific Examination *(Inguinal)* · Palpate abdomen for mass detection. · Reducible / Non- reducible · Tender / Non tender · Inflammation · Cough Impulse · Auscultate the mass area and scrotum. · Detect bowel sounds 3.3. Specific Examination (*Scrotal Lump*) · Size of scrotum / testis · Transilumination test to the scrotum. · Auscultation of the mass area and scrotum. · Bowel sounds. · Inflammation. · Tender or non tender. · Feels like a bag of worms : varicocele.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
4. Investigation	4.1. Urine FEME : To detect UTI	
5. Management	Manage as per severity: 5.1. Inguinal: - Give analgesic injection stat to relief pain - Give antibiotics if infection present. 5.2. Scrotal Lump : - Give antipyretic medications if high fever. - Give analgesic drug to relief pain - Give antibiotics if bacterial orchitis present.	
6. Health Education	Health Education on Healthy Life Style. Avoid lifting heavy objects	
7. Referral	All cases should be referred to MO. 7.1. Inguinal Lump: - Severe pain. - Non-reducible. - Vomiting - Inflammation - High fever 7.2. Scrotal Lump: - Severe pain to the mass. - Inflammation - High fever	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R23 Hand Book of Surgery *by John L. Wilson MD 1969.*

Tobacco Dependence

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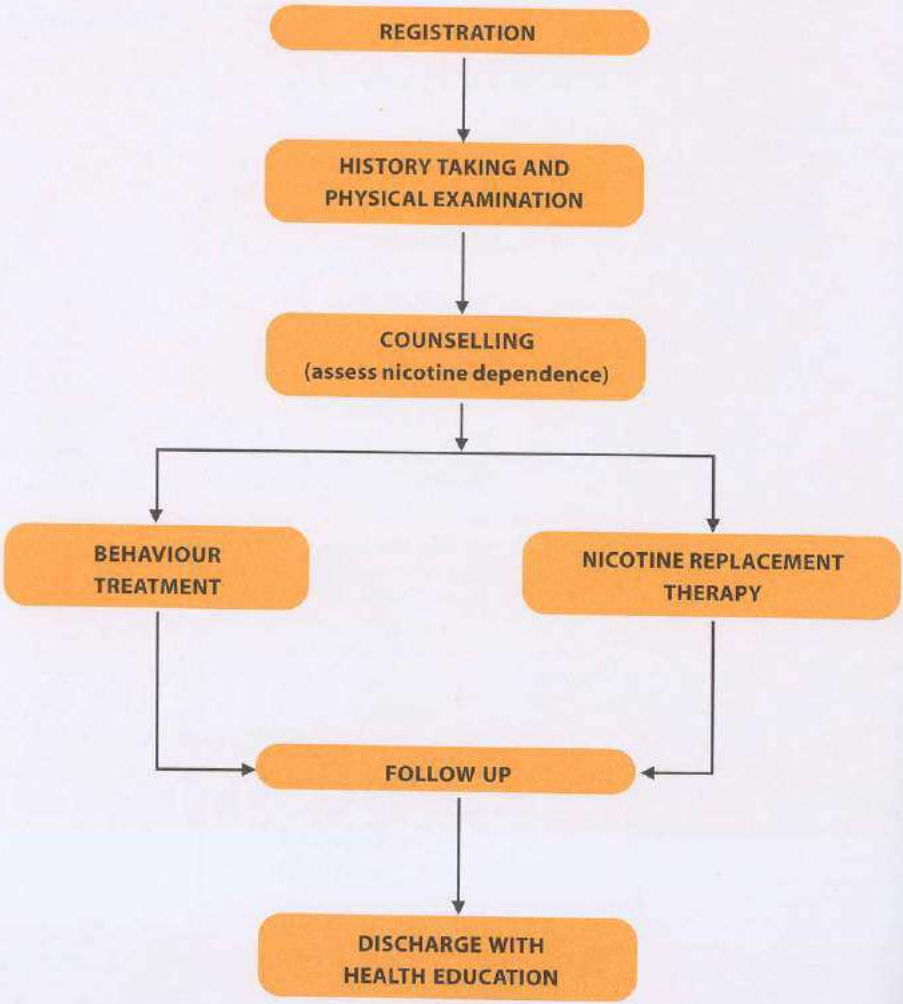
17. MANAGEMENT OF TOBACCO DEPENDENCE



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients should be registered in the standard registration book and Quit Smoking clinic registry.	**Equipment** · B/P Set · Stethoscope · ECG machine · Weighing machine · Peakflow meter · Spirometer **Drugs** · Nicotine Gum/patch · Other drugs to treat complication
2. History Taking	2.1. Present complaint · Duration of usage · Quantity/ day · Time taken of the day 2.2. Past History · Medical / surgical - ? IHD /stroke/ Chronic Obstructive Airway Disease (COAD), asthma 2.3. Social History 2.4. Family History - ? young IHD/ COAD / Cancer 2.5. Any quitting attempt before and reason for failure 2.6. Assess the dependence on nicotine	
3. Examination	3.1. General Examination · Vital Signs – B/P, Pulse, Respiration, PEFR · General appearances 3.2. Specific Examination: · Lungs – air entry - respiratory rate - rhonchi - crepitations · Extremities – fingers shape & colour · Gum and teeth discoloration · Respiration odour	
4. Investgation	· CXR if indicated by history e.g. prolonged cough · ECG only if indicated e.g. symptoms of angina · Spirometer	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Management	5.1. Counseling. Topic: · Effect of tobacco to smoker, family and community · Cost of smoking. · Benefits of quit smoking · Role of Nicotine Replacement Therapy 5.2. Drugs · Nicotine Replacement Therapy after MO's consent · Symptomatic treatment 5.3. Defaulter tracing 5.4. Set-up support group	
6. Health Education	6.1. Educate patient on disadvantages of tobacco taking. 6.2. Choose Healthy Life style. 6.3. Tips to quit smoking	
7. Referral	Referral criteria. 7.1. To start Nicotine Replacement Therapy for problem cases 7.2. For treatment of associated complications.	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R9 Panduan Berhenti Merokok. *Kementerian Kesihatan Malaysia*

R10 Modul Berhenti Merokok. *Kementerian Kesihatan Malaysia*

Trauma and Soft Tissue Injury

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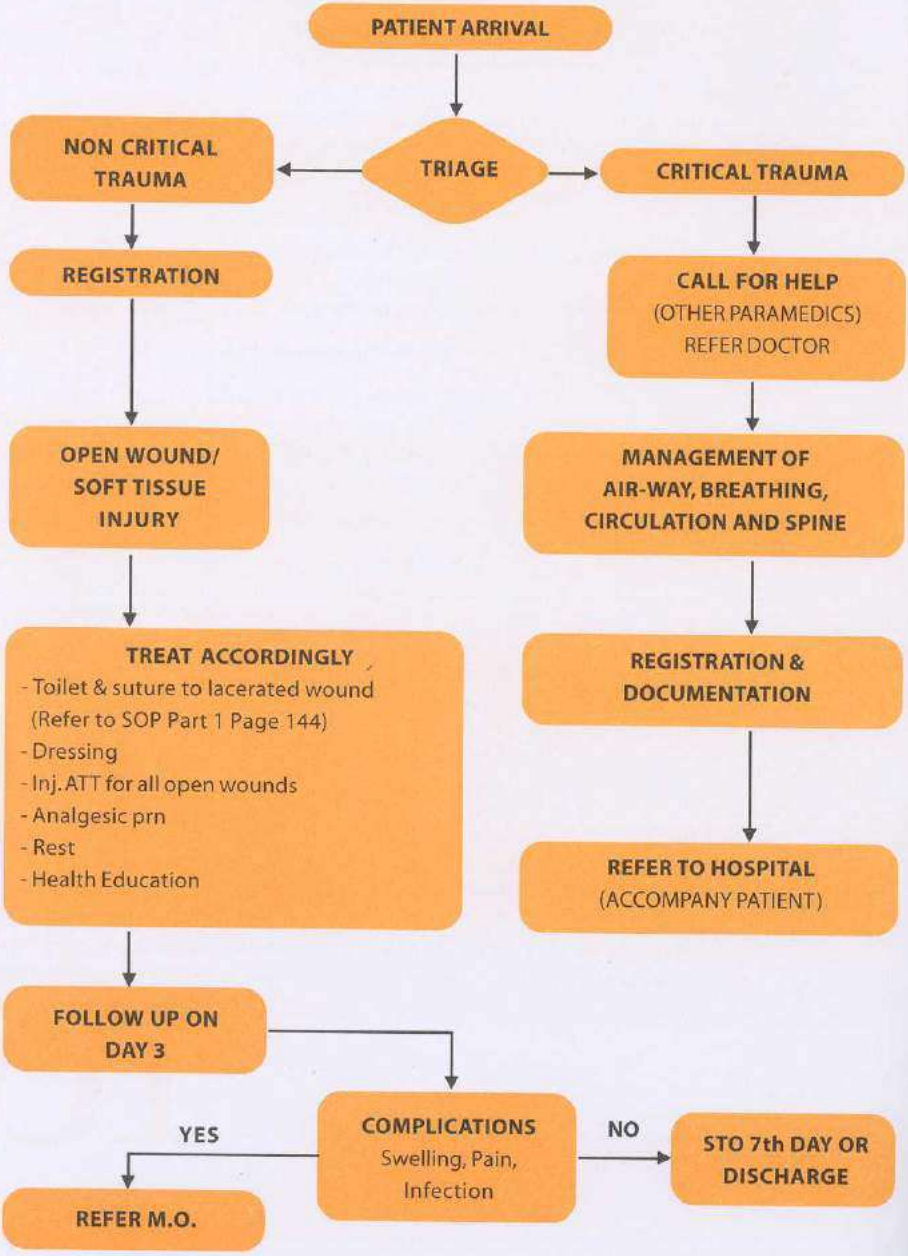
18. MANAGEMENT OF TRAUMA AND SOFT TISSUE INJURY



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Triage	Triage (assessment) ➢ **Determine ABC** Place patient in supine position – determine: ➢ **A**irway with cervical spine control · Open airway · Remove obstruction · Application of cervical collar/ head immobilizer ➢ **B**reathing · Present or absent · Nature ➢ **C**irculation and haemorrhage control · Open wound · Color, pallor, cyanosis · Skin appearance, pale, cold and clammy · Quality of pulse, · Beware of concealed / internal bleeding e.g · Fracture pelvis, femur · Organ rupture · Blood pressure ➢ **D**ysfunction of CNS · Neurological status, · Level of consciousness- · Alert · Responce to verbal command · Pain or unresponsive (AVPU) ➢ **E**xposure · Expose or undress patient completely and identify all injuries ➢ **F**ahrenheit · Maintain patient's normal body temperature ➢ **G**lasgow Coma Scale (GCS* –*(for head injury/LOC patient)* Spinal Management Proper immobilization with spinal board/scoop stretcher.	**Equipment** 1.Emergency trolley - Inj. Hydrcortisone - Inj. Atropine - Inj. Lignocaine - Inj. Adrenaline - Inj.Sodium Bicarbonate 2. Stethoscope 3. B/P set 4. Guerdal's Airway 5. Resuscitation set 6.Diagnostic set 7. Laryngoscope 8. Oxygen administration set 9. Suction Machine 10. Torch Light 11. Tendon Hammer 12. I/V line sets 13. IV Solutions 14. Head Immobilzer 15. Cervical Collar 16. Dynamic traction splint 17. Fracture Immobilizer 18. Spinal Board/ Scoop Stretcher 19. Defibrillator **Drugs** · Analgesics · Antibiotics · Anti inflammatory

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
2. History Taking	Proper History Taking- · Mechanism of injury: · How / why / when / where–work place / home / playground · Determine nature of injury, · Examine head, neck, chest, abdomen and limbs	
3. Examination	Assess limitation of movement : · General examination · Physical examination · Specific examination (as per ABC Protocol) · X-ray –TRO any fracture or damage to adjacent structure (vessel, nerve or internal organ)	
4. Investigation	Clinical lab investigations · RBS · Blood Count	
5. Management	Non critical Trauma: Minor cases which do not require referral should be given necessary treatment accordingly : · Toilet & dressing to all wound - Bandaging - IM ATT 0.5ml Critical Trauma: - Stabilization e.g I/V infusion, airway management - Immobilization - Medication - Referral - Notify hospital - Inform relatives	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
6. Registration	All cases should be registered in the standard registration book.	
7. Health Education	Advice on avoidance of injuries.	
8. Referral	Refer all critical patients to hospital	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R11 Quick Reference for Emergency Nursing *by Beverly Tipsord-Klinkhammer and Colleen P. Andreoni*

R12 Advance Trauma Life Support Course for Physicians *by Raymond H. Alexander, MD, FACS and Herbert J. Proctor, MD, FACS.*

Unconscious Patient

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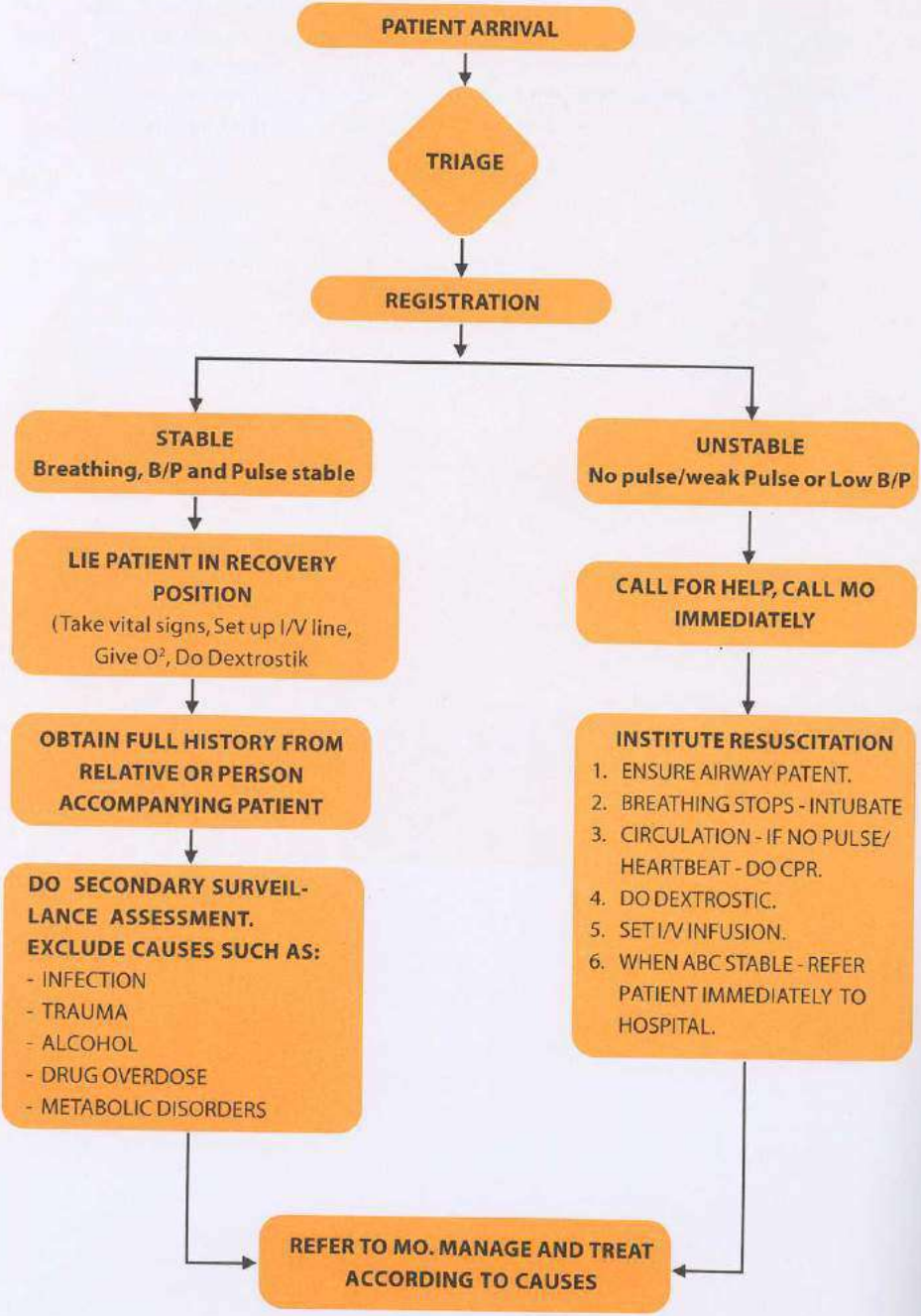
19. MANAGEMENT OF UNCONSCIOUS PATIENT



WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All cases should be registered in the standard registration book.	**Equipment** · BP Set · Stethoscope · Airway · Oxygen tank & regulator · TorchLight · Spatula · Suction Machine · ECG Machine · Glucometer · Diagnostic Set · Rescusitation Set · IV Infusion Set · Catheter & Urine Bag · Specimen Bottles · Syringes & Needles. **Drugs** · 50% Dextrose Solution · NaCl 5% Dextrose · Hartmans Soln · Inj. Diazepam · Inj. Adrenaline · Inj. Phenergan · Inj. Hydrocortisone
2. Physical Examination	Place patient in comfortable position. 2.1. General Examination. Check and ensure :- · Air way – open the airway · Breathing – chest rise · Circulation – carotid pulse · Smell of alcohol · Assess GCS score · Check BP, pulse, respiration, temperature, SpO2 · Pupils reaction to light - equal or not and size - small or large/ pin - point (state in mm) · Do Dextrostix 2.2. Physical examination · Examine and look for injury at skull and other injuries · Venepuncture marks 2.3. Specific Examination · Check level of consciousness · Rate according to Glasgow Coma Scale (GCS) · Bleeding from ears, nose, throat · Neck stiffness · Smell of breath for alcohol or acidosis · Muscle tone/power /reflexes · Air entry (equal or unequal → pneumothorax) · Lungs - crepts, wheezing, rhonchi. · Bradycardia – heart block, digitalis, beta blockers, acute myocardial infarct, ? organophosphate poisoning · Tachycardia – hypovolaemia, hypoglycaemia	
3. History Taking	3.1. Present complaint. Proper history must be taken and recorded from accompanying relative / patient after stabilization of patient.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
	· Onset · Duration, Frequency · Mechanism – how / why. · ? Tonic clonic movement 3.2. Past History · Diabetes Mellitus · Hypertension · Heart Problems · Heart disease · Stroke · Epilepsy · Allergy · Depression · Trauma/ Assault 3.3. Social History · Alcohol. · Drug Abuse · Smoker. 3.4. Family History · Diabetes Mellitus · Hypertension · Heart Problems. · Stroke · Epilepsy · Allergy · Marital Disharmony 3.5. Occupational History · Job. · Working Place	
4. Investigation	4.1. Blood · Glucose · Full blood count · BUSE · Blood samples for drug Analysis. · BFMP 4.2. Urine · Urine FEME · Urine Ketone. 4.3. ECG. 4.4. X-Ray.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Management	5.1. Lie patient on recovery position – only if breathing / pulse present. · Ensure airway is always patent, · Breathing and circulation is present · Suction prn. · Set up 2 I/V lines. 5.2. Do CPR if no breathing or pulse is present. 5.3. Intubate if necessary – use Laryngeal Mask Airway 5.4. Control circulation by appropriate treatment of hypotension and poor perfusion or hypertension. 5.5. Control bleeding if present. 5.6. Catheterisation if necessary. 5.7. Manage according to cause: · Diabetes Mellitus with hypoglycaemia - Bolus dose of 50 ml. of 50% Dextrose stat. Set up IV Infusion using Dextrose 10 %. · Anaphylactic Shock - Give s/c adrenaline 0.5 mg - I/V Hydrocortisone 200mg - I/V Chlorpheneramine 10 mg · Epilepsy - IV Clonazepam 1 – 2 mg or IV Diazepam 10mg. Repeat if seizure has not ceased within 5 minutes. - If no I/V line available, give rectal Diazepam 10 mg · Syncope - Lie patient flat with head slightly down. - Relieve any compression at neck. - Maintain airway.	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
6. Health Education	6.1. Personal hygiene 6.2. Positioning of unconscious patient (for carers) 6.3. Compliance to medication	
7. Referral	Referral Criteria: 7.1. Refer all unstable cases to hospital immediately.	

REFERENCE

R18 Acute Myocardial Infarction, *Institut Jantung Negara.*

R19 Primary Care Medicine 3rd Edition

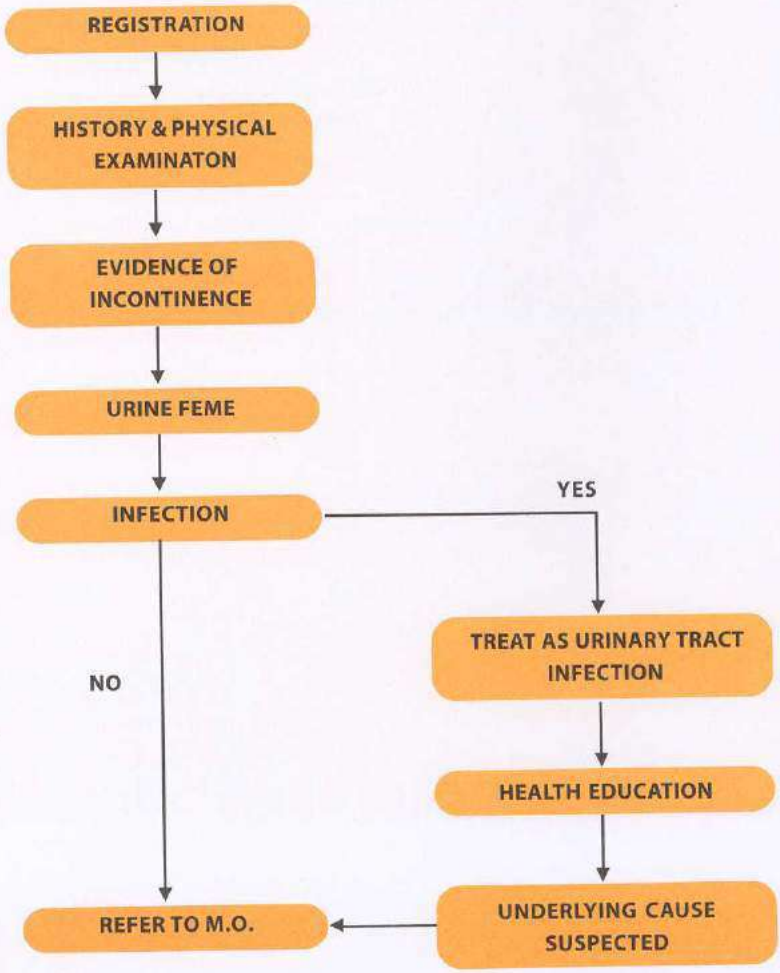
R26 Oxford Hand Book of Clinical Medicine 1998 4th Edition.

R33 Principles and Practice of Medicine. *Edited by Christopher R.W Edwards Ian A.D Boucher 1991*

Urinary Incontinence

20

20. MANAGEMENT OF URINARY INCONTINENCE (ADULT)



NOTES:-

1. Please follow protocol on management of geriatrics for all known cases of incontinence amongst the elderly.
2. All males with Urinary Tract Infection need full investigation for underlying cause.

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
1. Registration	All patients seen should be registered in the standard registration book.	**Equipment** · BP Set · Stethoscope · Catheter · Catheterisation set · Urine bag · Gloves · KY Jelly **Drugs** · Antibiotic · Analgesic
2. History Taking	2.1. Present illness · Onset · Duration · Nature – frequency persistent , acute. 2.2. Past history · Any injury · Obstetric · Surgical · Physical / occupational stress. 2.3. Medical history · Hypertension · Diabetes · Stroke · Lower urinary tract infection / disease · H/O prostatism – urgency, frequency, hesistancy · Pregnancy Associated symptoms · Chronic cough · Dysuria · Haematuria · Anxiety · Physical stress	
3. Examination	Place patient in comfortable position. 3.1. General examination · Vital Sign · General condition. 3.2. Specific examination. · Abdominal palpation · Surgical scar · Per rectal – to detect enlarged prostate in males	
4. Investigation	4.1. Urine FEME / C & S. 4.2. X- ray – if necessary (KUB) 4.3. Ultrasound of genitourinary tract	

WORK PROCESS	STANDARD	EQUIPMENT / DRUGS
5. Management	5.1. Conservative · Pelvic floor exercises 5.2. Catheterisation · As a last resort, short-term measure and for acute cases. 5.3. Psychological support · Patient & carers · Care of the elderly	
6. Health Education	6.1. Patient and carer. · Adult diapers, pads, scheduling voiding time. 6.2. Care of catheter. 6.3. Personal hygiene	
7. Referral	Referral Criteria 7.1. Refer all cases to M.O. for assessment and intervention.	

REFERENCE

R1 Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*

R13 Lippincotts Textbook for Medical Assistants

R14 Consensus on Management of Benign Prostatic Hypertrophy AMM 1998

R15 Surgery for Nurses – *L. Mooney*

R16 Procedures for Primary Care Physicians – *John L. Prenninger*

NOTES:-

Incontinence is the patient's inability to control emptying of the bladder.

Causes:

1. The sphincter is damaged – nervous control is eliminated – uncoordinated micturation
2. Paradoxical/ False incontinence – patient suffering from prostatic obstruction – acute retention – 1 litre urine in bladder – 60/90 ml may overflow. This condition is retention and its complication is overflow
3. Stress incontinence – usually women with coughing, laughing, sneezing or condition that increases the intra-abdominal pressure – the sphincter have damaged due to injuries sustained during child birth – some element of cystocele is present.
4. Increased frequency of micturation

   a. Irritation of the mucous membrane of the trigone of the bladder due to infection, a stone or a growth
   b. TB of urinary tract – mucous membrane damage- contraction of the bladder

Assessment

Acute Onset

Within 2/52 – reversible causes such as UTI, atrophic vaginitis, adverse drug effects, urinary retention, stool impactation, acute condition – delirium/restricted mobililty

Persistent

Types – stress, urge, overflow and functional
Diagnostic evaluation :-
History
Physical Examination
Urine Analysis
Basic assessment of lower urinary tract function
– 1 week voiding diary; determine daily volume, fluid consumed and voided, number of incontinence episodes
– pad test
– stress manoeuvre
i. start the test when patient feels his/her bladder is full
ii. place a small pad over the urethral area
iii. ask patient to cough forcefully three times in the standing position
iv. leakage of urine after 5-10 seconds indicates stress incontinence

Inventory of References

R1	Standard Operating Procedures for Medical Assistants In Primary Health Care Part 1 *Kementerian Kesihatan Malaysia.*
R2	Decision Making in Medicine *by Harry L. Greene II MD.*
R3	Clinical Medicine, A Text Book For Medical Student & Doctors, 2nd. Edition Bailliere Tindall, London. *by Kumar, P.J Clark, M.L.(1991).*
R4	Hutchinson Clinical Methods 20th. Edition by W.B. Saunders, London. *by Swash, M (1995).*
R5	Essentials of Family Medicine 3rd. Edition by Williams & Wilkins, Baltimore. *Sloane, P.D. et al, (1998).*
R6	Key Topics in Accident and Emergency Medicine. Bior Scientific, Oxford. *Howarth, P. & Evans, R. (1994).*
R7	Cline, D. M., et al, (2001). Just The Facts in Emergency Medicine *Mc Graw-Hill, New York.*
R8	Hamilton, G.C., et al, (1991). Emergency Medicine : An Approach To Clinical Problem Solving. *W.B Saunders, Philadelphia.*
R9	Panduan Berhenti Merokok. *Kementerian Kesihatan Malaysia.*
R10	Modul Berhenti Merokok. *Kementerian Kesihatan Malaysia.*
R11	Quick Reference for Emergency Nursing, *by Beverly Tipsord-Klinkhammer and Colleen P. Andreoni.*
R12	Advance Trauma Life Support Course for Physicians, *by Raymond H. Alexander, MD, FACS and Herbert J. Proctor, MD, FACS.*
R13	Lippincotts Textbook for Medical Assistants.
R14	Consensus on Management of Benign Prostatic. *Hypertrophy AMM 1998.*
R15	Surgery for Nurses – *L. Mooney.*

R16	Procedures for Primary Care Physicians. *John L. Prenninger.*
R17	Manual Penjagaan Mata Untuk Anggota Kesihatan Primer, *MOH/K/EPI/30.02(HB) Oktober 1977.*
R18	Acute Myocardial Infarction, *Institut Jantung Negara.*
R19	Primary Care Medicine 3rd Edition.
R20	Illustrated ENT *by R.S, Dhillon* No.
R21	Medical and Surgical Nursing, ELBS Books, London.
R22	Nursing Diagnosis in Psychiatric Nursing 4th Edition. *E.A. Davis 1994*
R23	Hand Book of Surgery *by John L. Wilson MD 1969.*
R24	Trauma Care, *Dr Abu Hassan Asaari Abdullah, MBBS, FRCS 1994.*
R25	Lecture Notes on General Surgery.
R26	Oxford Hand Book of Clinical Medicine 1998 4th Edition.
R27	Diagnostic Problems and Dermatology *by Neil H Cox, Clifford M.Lawrence*
R28	Skin Disorders *by Eugen J Barone M.D, Judon c Jones MD, Joann E Scheafer MD.*
R29	Consensus Statement on The Management of Acne *by Persatuan Dermatologi Malaysia, Sept. 1998*
R30	Acne and Other Eruptions by Tony C Chu – *Medicine@1997.*
R31	Out Patient Management of Young Children With ARI: A Four Day Clinical
R32	Paediatric Problem in Tropical Countries. *Edited by M.J. Robinson and Lee Eng Lam 2000*
R33	Principles and Practice of Medicine. *Edited by Christopher R.W Edwards Ian A.D Boucher 1991*
R34	*Woodley & Alison Whealan (1992)* The Washington Manual, Manual of Medical Therapeutics 27th Edition, *Little Brown and Company, Boston.*

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